

11th International Congress of the IUPESM - Medical Physics and Biomedical Engineering World Congress 2009 - For the benefit of the Patient Program

Tuesday, Sep 8

08:00 - 09:45

Th. 01/1.8: Immobilization and Localization Techniques : Hardware and Methods

Room: [Hall 04a](#) Chair: James M. Balter (University of Michigan, USA) , Gabriele Sroka-Perez (University Hospital Heidelberg, Germany)

8:00 *Invited: Innovative Methods for Patient Positioning: Alternative patient positioning based on implanted markers and external skin contours*

Katja Langen (Orlando Health, USA)

8:30 *Image-guided stereotactic body radiation therapy using a low-Z target imaging beam line and a high dose rate unflattened beam*

Olivier Gayou (Allegheny General Hospital, USA)

8:45 *An Augmented Reality application for patient positioning and monitoring in radiotherapy*

James Talbot (Auckland District Health Board, New Zealand); Juergen Meyer (University of Canterbury, New Zealand); Raphael Grasset (University of Canterbury, New Zealand); Richard Watts (University of Canterbury, New Zealand)

9:00 *Extend distance treatment for Stereotactic Body Radiation Therapy of Lung Cancer*

Long Huang (University of Texas, Southwestern Medical Center, USA); Lech Papiez (University of Texas, Southwestern Medical Center, USA); Ramin Abolfath (University of Texas, Southwestern Medical Center, USA); Ewa Papiez (UT Southwestern Medical Center, USA); Robert Timmerman (University of Texas Southwestern Medical Center, USA); Timothy Solberg (University of Texas, Southwestern Medical Center, USA)

9:15 *Out-of-treatment room set-up for patient positioning in external beam radiotherapy*

Lars Weber (Lund University Hospital, Sweden); Kjell Westerlund (ONCOlog Medical, Sweden); Ingemar Naslund (Karolinska University Hospital, Sweden); Hans Dahlin (ONCOlog Medical, Sweden)

9:30 *Patient setup using a 3D laser surface scanning system*

Thorsten Frenzel (University Hospital Hamburg-Eppendorf, Germany)

Th. 09/1.12: Innovative Orthotics and Prostheses for Amputees

Room: Hall 11 Chair: Marc Kraft (TU Berlin, Germany) , Jörg Subke (Fachhochschule Friedberg-Gießen, Germany)

8:00 Patient-Specific Finite Element Models of Transtibial Amputation in Several Prosthetic Users: The Inter-Subject Variability

Sigal Portnoy (Tel Aviv University, Israel); Itzhak Siev-Ner (Chaim Sheba Medical Center, Israel); Noga Shabshin (Chaim Sheba Medical Center, Israel); Anat Kristal (Chaim Sheba Medical Center, Israel); Ziva Yizhar (Tel Aviv University, Israel); Amit Gefen (Tel Aviv University, Israel)

8:15 A New Lightweight, Robust and Forceful Finger for an Artificial Limb

Marc Franke (University of Leipzig, Germany); Martin Bogdan (Universität Leipzig, Germany)

8:30 Field applications of a prosthetic mobile measuring system

Simone Oehler (Technische Universität Berlin, Germany); David Hochmann (Technische Universität Berlin, Germany); Marc Kraft (TU Berlin, Germany)

8:45 Design of a Hybrid Powered Upper Limb Orthosis

Stefan Schulz (Forschungszentrum Karlsruhe, Germany); Christian Pylatiuk (Forschungszentrum Karlsruhe, Germany); Artem Kargov (Forschungszentrum Karlsruhe, Germany); Immanuel Gaiser (Forschungszentrum Karlsruhe, Germany); Markus Reischl (Forschungszentrum Karlsruhe GmbH, Germany); Oliver Schill (University of Karlsruhe, Germany); Ute Eck (Orthopaedic University Hospital, Germany); Ruediger Rupp (Orthopaedic University Hospital, Germany)

9:00 The use of muscle “creep” as opposed to relaxation in stretching braces: a pseudoelastic device

Simone Pittaccio (Italian National Research Council, Italy); Stefano Viscuso (Italian National Research Council, Italy)

9:15 Functional assessment of orthopedic aids using open vertical MRIs

Martin Tettke (Technical University of Berlin, Germany); Roland Bittner (Helios-Clinic Emil-von-Behring, Germany); Marc Kraft (TU Berlin, Germany)

Th. 02/1.5: X-Ray Imaging / Methods

Room: Hall 14a Chair: Franz Pfeiffer (Technical University Munich, Germany) , Stephen Glick (University of Massachusetts Medical School, USA)

8:00 Laser-driven particle acceleration utilizing nm-thin diamond foils: Improved ion acceleration for cancer therapy, improved electron acceleration and potentially ultra-brilliant X-ray beams for medical diagnostics

Dietrich Habs (LMU Munich, Germany)

8:30 *Evaluation of The Parameters of The Quality of Radiographic Image Obtained with Rex Simulator*

Luis Alexandre Magalhaes (Universidade do Estado do Rio de Janeiro, Brazil); Carlos Eduardo de Almeida (Universidade do Estado do Rio de Janeiro, Brazil); Gunter Drexler (Universidade do Estado do Rio de Janeiro, Brazil)

8:45 *Use of CNR as metric for optimisation in digital radiography*

Nadia Oberhofer (Health Service South Tyrol, Bolzano Hospital, Italy); Gaetano Compagnone (S.Orsola-Malpighi University Hospital, Italy); Ehrenfried Moroder (Health Service South Tyrol, Bolzano Hospital, Italy)

9:00 *The Effect of Rare Earth Screen on Dose Reduction for Conventional Imaging Procedures*

Stephen Inkoom (Ghana Atomic Energy Commission, Ghana)

9:15 *A new technique based on coded-apertures capable of taking X-ray phase contrast imaging into clinical use*

Alessandro Olivo (University College London, United Kingdom); Konstantin Ignatyev (University College London, United Kingdom); Peter Munro (University College London, United Kingdom); Robert Speller (University College London, United Kingdom)

9:30 *Phase-Contrast and Dark-Field Imaging - Advanced Contrast Modalities in X-Ray Radiology*

Franz Pfeiffer (Technical University Munich, Germany)

Th. 10/1.2: Cellular Mechanics

Room: Hall 14b Chair: Jochen Guck (University of Cambridge & Cavendish Laboratory, United Kingdom) , Josef Kaes (Universitaet Leipzig, Germany)

8:00 *Keynote: Quantitative analysis and manipulation of cell adhesion to molecular resolution*

Daniel J. Müller (Biotechnology Center, Germany)

8:30 *Invited: On the impact of single cell biomechanics on the spatio-temporal organization of regenerative tissue.*

Galle Jörg (IZBI Interdisciplinary Center for Bioinformatics, Germany); Axel Krinner (University of Leipzig, Germany); Peter Buske (University of Leipzig, Germany); Dirk Drasdo (French National Institute for Research in Computer Science and Control, France); Markus Loeffler (University of Leipzig, Germany)

8:45 *Finite element simulation of mechanical tests of individual cells*

Jiri Bursa (Brno University of Technology, Faculty of Mechanical Engineering, Czech Republic); Vladimir Fuis (Brno University of Technology, Faculty of Mechanical Engineering, Czech Republic)

9:00 *Effect of fluid shear stress on tubular kidney epithelial cell structure*

Lucia Condorelli (Mario Negri Institute, Italy); Irene Cattaneo (Mario Negri Institute, Italy); Chiara Arrigoni (Mario Negri Institute, Italy); Luca Antiga (Mario Negri Institute, Italy); Norberto Perico (Mario Negri Institute, Italy); Andrea Remuzzi (University of Bergamo, Italy)

9:15 *Transforming growth factor β 3 causes decreased HaCaT cell alignment to extracellular matrix proteins Fibronectin, Laminin and Collagen type I as a result of an enhanced migratory phenotype*

Rebecca Berends (University of Bradford, United Kingdom); Morgan Denyer (University of Bradford, United Kingdom)

Th. 04/1.11: Image Registration and Reconstruction

Room: Hall 03 Chair: Heinz Handels (Universität Hamburg, Germany) , Xavier Pennec (INRIA, France)

8:00 *4D Lung Reconstruction with Phase Optimization*

Mark Lyksborg (Technical University of Denmark, Denmark); Rasmus Larsen (Technical University of Denmark, Denmark)

8:15 *A method for 3D motion correction of nuclear medicine planar imaging data*

Francisco Caramelo (Faculty of Medicine of University of Coimbra, Portugal); Diogo Faria (HPP Medicina Molecular, SA, Portugal); Nuno Ferreira (Faculty of Medicine of University of Coimbra, Portugal); João Pedroso Lima (Faculty of Medicine of University of Coimbra, Portugal)

8:30 *Registration of planar scintigraphy data onto video images obtained at different perspectives*

Francisco Caramelo (Faculty of Medicine of University of Coimbra, Portugal); Diogo Faria (HPP Medicina Molecular, SA, Portugal); Nuno Ferreira (Faculty of Medicine of University of Coimbra, Portugal); João Pedroso Lima (Faculty of Medicine of University of Coimbra, Portugal)

8:45 *Atlas guided Identification of Multiple Abdominal Organs in Small Animal PET*

SooMin Song (Ewha Womans University, Korea); Myeong-Hee Kim (Ewha University, Korea)

9:00 *A comparison and evaluation of several algorithms as part of a template matching registration method*

Markus Graf (German Cancer Research Center, Germany); Oliver Nix (German Cancer Research Center, Germany)

Th. 02/1.4: MRI-Molecular Imaging (1)

(former session MR - Technological Issues)

Room: Hall 13b Chair: Jochen Mosig (IMST GmbH, Germany) , Thomas Schmitz-Rode (RWTH Aachen, Germany)

8:00 *Invited: Labeling of cancer cells with magnetic nanoparticles for magnetic resonance imaging*

Ben Fabry (University of Erlangen-Nuremberg, Germany); Fabian Blank (Telethon Institute for Child Health Research, Perth, Australia, Australia); Adrian West (Physiology, UWA, Australia, Australia); Gregory Black (Department of Physics, UWA, Australia, Australia); Robert Woodward (Department of Physics, UWA, Australia, Australia); Matt Carroll (Department of Physics, UWA, Australia, Australia); Elizabeth Hallam (ANU, Australia, Australia); Jeremy Shaw (Centre for Microscopy, UWA, Australia, Australia); John Murphy (Centre for Microscopy, UWA, Australia, Australia); Wey Yang Teoh (School of Chemical Sciences and Engineering, UNSW, Australia, Australia); Rose Amal (School of Chemical Sciences and Engineering, UNSW, Australia, Australia); Mike House (Department of Physics, UWA, Australia, Australia); Tim St Pierre (Department of Physics, UWA, Australia, Australia)

8:30 *Evaluation of different Tracer Kinetic Models in DCE-MRI of Rectal Cancer*

Mario Sansone (University 'Federico II' of Naples, Italy); Roberta Fusco (University 'Federico II' of Naples, Italy); Felice Aprile (University 'Federico II' of Naples, Italy); Mario Petrillo (IRCCS Fondazione Pascale Naples, Italy); Antonella Petrillo (IRCCS Fondazione Pascale Naples, Italy); Umberto Bracale (S. Camillo Hospital, Trento, Italy)

8:45 *Magnetic Resonance Signal Analysis in Inhomogenous Magnetic Fields*

Emre Arpinar (Middle East Technical University, Turkey); Behcet Murat Eyuboglu (Middle East Technical University, Turkey)

9:00 *A Novel Measurement System for Cardiac Flow Analysis Applied to Phase Contrast Magnetic Resonance Imaging of the Heart*

Kelvin Wong (University of Adelaide, Australia); Richard Kelso (The University of Adelaide, Australia); Stephen Worthley (The University of Adelaide, Australia); Prashanthan Sanders (The University of Adelaide, Australia); Jagannath Mazumdar (The University of Adelaide, Australia); Derek Abbott (University of Adelaide, Australia)

9:15 *Which Factors influence MRI in-stent lumen visibility of coronary in-stent stenosis? An in-vitro model investigation*

Gerrit Schönwald (University Witten/Herdecke, Germany); Gregor Schaefers (MR:comp GmbH, Germany); Georg Haltern (University Witten/Herdecke, Germany); Alexei Kmelnitski (Fachhochschule Gelsenkirchen, Germany); Brigitte Kipfmüller (Fachhochschule Gelsenkirchen, Germany)

9:30 *Electromagnetic Fields near Implanted Cardiac Devices during Magnetic Resonance Imaging*

Sebastian Seitz (Universitaet Karlsruhe (TH), Germany); Olaf Doessel (Universität Karlsruhe (TH), Germany)

Th. 03/1.1: Clinical Applications of Radiobiology

Room: Hall 01 Chair: Hans Menzel (CERN European Organization for Nuclear Research, Switzerland) , Christian Streffer (University Clinics Essen, Germany)

8:00 Keynote: Cancer Risk at Very Low Radiation Doses: Why did the US and French National Academies Come to Directly Opposite Conclusions
David Brenner (Columbia University Medical Center, USA)

8:30 Effective Dose in Radiological Diagnostics: For which purposes is it useful?
Hans Menzel (CERN European Organization for Nuclear Research, Switzerland); John Harrison (Health Protection Agency, United Kingdom); Christian Streffer (University Clinics Essen, Germany)

9:00 Invited: Epidemiological Studies of Children with CT Scans
Elisabeth Cardis (CREAL-Centre for Research in Environmental Epidemiology, Spain)

9:15 Biological effects actually observed in the dose range of CT scans
Wolfgang-Ulrich Müller (University of Essen, Germany)

9:30 Radioprotective effects of hesperidin against genotoxicity induced by gamma irradiation in human lymphocytes
Seyed Jalal Hosseinimehr (Mazandaran University of Medical Sciences, Iran); Aziz Mahmoudzadeh (Novin Medical Radiation Institute, Tehran, Iran, Iran); Amirhossein Ahmadi (Faculty of Pharmacy, Mazandaran University of Medical Sciences, Sari, Iran)

Th. 04/1.6: EEG, EP and ERP Analysis

Room: Hall 14c Chair: Mauricio Cagy (Fluminense Federal University, Brazil)

8:00 Automated Epileptic Seizure Type Classification through Quantitative Movement Analysis
Joao Silva Cunha (University of Aveiro, Portugal); Christian Vollmar (University of Munich, Germany); José Maria Fernandes (University of Aveiro, Portugal); Soheyl Noachtar (University of Munich, Germany)

8:15 A study on the EEG phase reset analysis by an inverse transform method
Yin Fen Low (Saarland University Hospital, Germany); Daniel Strauss (HTW Saarland, Germany)

8:30 Shannon Entropies of Seizure
Serap Aydin (University of Ondokuz Mayıs, Turkey)

8:45 Singular Spectrum Analysis of Sleep EEG in Insomnia
Serap Aydin (University of Ondokuz Mayıs, Turkey)

9:00 A Bayesian methodology to estimate single-trial ERPs with application to the study of the P300 variability in cirrhosis
Costanza D'Avanzo (University of Padua, Italy); Giovanni Sparacino (University of Padova, Italy)

9:15 *Event-related EEG desynchronization and synchronization assessed during a time discrimination task*

Anahita Goljahani (University of Padova, Italy); Costanza D'Avanzo (University of Padova, Italy); Vincenza Tarantino (University of Padova, Italy); Patrizia Bisiacchi (University of Padova, Italy); Giovanni Sparacino (University of Padova, Italy)

9:30 *Statistical Evoked Potential Detection with Number of Degrees of Freedom Estimated from EEG Autocorrelation Function*

Mauricio Cagy (Fluminense Federal University, Brazil); Antonio Fernando Infantosi (COPPE-Federal University of Rio de Janeiro, Brazil); Antonio Mauricio Miranda de Sá (Federal University of Rio de Janeiro, Brazil); David Simpson (University of Southampton, United Kingdom)

Th. 12/1.10: Evidence Based Medicine - an Issue for Cooperation between Industry, University and Healthcare

Room: Hall 02 **Chair:** Jan Persson (Linköping University, Sweden) , Olof Lindahl (Luleå University of Technology, Sweden)

8:00 *Invited: Collaboration between academia, manufacturers and healthcare services for development and adoption of medical devices with regard to costs and effects*

Jan Persson (Linköping University, Sweden); Thor-Henrik Brodtkorb (Linköping University, Sweden); Kerstin Roback (Linköping University, Sweden)

8:30 *From biomedical research to viable products on the health care market - a North Sweden model called CMTF*

Olof Lindahl (Luleå University of Technology, Sweden)

8:45 *Health Technology Assessment of Home Monitoring for the Continuity of Care of patient suffering from congestive heart failure.*

Leandro Pecchia (University Federico II of Naples, Italy); Umberto Bracale (S. Camillo Hospital, Trento, Italy); Marcello Bracale (University of Naples, Italy)

9:00 *Improving the interpretation of Patent Data by the employment of the Semantic-Web formalism in the specific context of Biomedical Technology*

Vasileios Spyropoulos (Technological Education Institute of Athens, Greece); Maria Botsivaly (Technological Education Institute of Athens, Greece); Georgios Manousaridis (Greek Atomic Energy Commission (GAEC), Athens, Greece, Greece)

9:15 *Electronic Medical Equipment: Statistics and Analysis of Patent Data for Technology Assessment*

Zhaolian Ouyang (Institute of medical information /Chinese Academy of Medical Sciences, P.R. China); Hui Chi (Institute of medical information /Chinese Academy of Medical Sciences, P.R. China); GuoZhong Yang

(Institute of medical information /Chinese Academy of Medical Sciences, P.R. China)

9:30 Endoscope test bench, guaranteeing optical quality of endoscopes in clinical practice

Herke Jan Noordmans (University Medical Center Utrecht, The Netherlands); Henk van den Brink (University Medical Center Utrecht, The Netherlands); Rudolf Verdaasdonk (University Medical Center Utrecht, The Netherlands)

Th. 13/1.14: Measurement of Tumor & Tissue Micro-Environment

Room: Hall 21a Chair: Peter Vaupel (University of Mainz, Germany) , Michael Molls (Klinikum rechts der Isar, Germany)

8:00 Invited: Causes, Detection and Characterization of Tumor Hypoxia
Peter Vaupel (Klinikum rechts der Isar, Technische Universität, Germany)

8:30 Invited: Integration of tumour hypoxia imaging into clinical radiotherapy
Daniel Zips (Technische Universität Dresden, Germany)

8:45 Quantification of blood flow changes in invasive ductal carcinoma tumors induced by electroporation
Elham Raeisi (Tarbiat Modares University, Iran)

9:00 Induction of Apoptosis and Inhibition of SMMC-7721 Growth by 2-Arsonoacetic Acid
Jianhua Wang (Chongqing University, P.R. China)

9:15 Image-based fluorescence photobleaching technique for measurement of diffusion in biological porous media
Donghee Lee (Kookmin University, Korea); Jeonghoon Lee (Seoul National University, Korea); Jung Kyung Kim (Kookmin University, Korea)

Th. 08/1.3: On-Chip Cell Analysis and Manipulation (1)

Room: Hall 13a Chair: Alfred Stett (NMI Naturwissenschaftliches und Medizinisches Institut, Germany) , Bernhard Wolf (Technische Universität München, Germany)

8:00 Keynote: High throughput microelectrode array platforms for quantitative pharmacology, toxicology and drug development
Guenter Gross (University of North Texas, USA)

8:30 Invited: Cell based assays for label free investigation of living cells
Joachim Wiest (cellasys GmbH, Germany); Michael Schmidhuber (Technische Universität München, Germany); Daniel Grundl (Technische Universität München, Germany); Franz Demmel (Technische Universität München, Germany); Marlies Zottmann (TU München, Germany); Helmut Grothe (Technische Universität München,

Germany); Martin Brischwein (Technische Universität München, Germany); Bernhard Wolf (Technische Universität München, Germany)

9:00 *Diamond microelectrodes for amperometric detection of secretory cells activity*

Alberto Pasquarelli (University of Ulm, Germany); Erhard Kohn (University of Ulm, Germany); Emilio Carbone (University of Torino, Italy); Andrea Marcantoni (University of Turin, Italy); Valentina Carabelli (University of Torino, Italy)

9:15 *Cell Select – a New Concept for Collecting of Rare Cell Populations in vivo*

Silvia Pietschmann (Charité - Universitätsmedizin Berlin, Germany); Rachel Martin (Max-Planck-Institute for Metals Research, Germany); Tobias Schoen (Max-Planck-Institute for Metals Research, Germany); Joachim Spatz (Max-Planck-Institute for Metals Research, Germany); Ulrich Pison (Charité - Universitätsmedizin Berlin, Germany)

9:30 *Towards Artificial Liver Sinusoids by Dielectrophoretic Cell Assembly in Microfluidic System for Use in Substance Screening*

Julia Schütte (NMI Natural and Medical Sciences Institute, Germany); Brigitte Angres (NMI Natural and Medical Sciences Institute, Germany); Karin Benz (NMI Natural and Medical Sciences Institute, Germany); Christian Freudigmann (NMI Natural and Medical Sciences Institute, Germany); Britta Hagemeyer (NMI Natural and Medical Sciences Institute, Germany); Felix Holzner (NMI Natural and Medical Sciences Institute, Germany); Massimo Kubon (NMI Natural and Medical Sciences Institute at the University of Tübingen, Germany); Jan Böttger (University Leipzig, Germany); Rolf Gebhardt (University Leipzig, Germany); Holger Becker (microfluidic ChipShop GmbH, Germany); Martin Stelzle (NMI Reutlingen, Germany)

Th. 07/1.17: Injection and Infusion Systems

Room: [Hall 22b](#) Chair: Helmut Schwilden (University of Erlangen-Nuremberg, Germany) , Ewald Konecny (University of Luebeck, Germany)

8:00 *Invited: Monitoring of drug application as a basis for automated infusion systems*

Martin Grossherr (University of Luebeck, Germany); Andreas Hengstenberg (Research Unit, Draegerwerk AG, Lübeck, Germany); Balamurugan Varadarajan (University of Luebeck, Germany); Peter Schmucker (University of Luebeck, Germany); Leif Dibbelt (University of Lübeck, Germany); Ralf Noel (University of Luebeck, Germany); Hartmut Gehring (University of Luebeck, Germany)

8:30 *Flow controlled micropumps - Closing the gap towards medical applications*

Severin Dahms (Bartels Mikrotechnik GmbH, Germany)

8:45 *Significance of the Insulcagon Pump in the Treatment of Diabetes*

Muhammad Iqbal Bhatti (Sir Syed University of Engineering and Technology, Pakistan); Syed Ghufran Khalid (Sir Syed University of Engineering and Technology, Pakistan); Kamran Hameed (Sir Syed University of Engineering and Technology, Pakistan)

9:00 *Development and validation of a new method for real-time measurement of fluid dynamics during simulated multi-infusion setups*

Annemoon Timmerman (University Medical Center Utrecht, The Netherlands); Rudolf Verdaasdonk (University Medical Center Utrecht, The Netherlands); Brechtje Riphagen (University Medical Center Utrecht, The Netherlands); John Klaessens (University Medical Center Utrecht, The Netherlands)

9:15 *Invited: Interactive knowledge-based anaesthetic drug infusion systems*

Helmut Schwilden (University of Erlangen-Nuremberg, Germany)

Th. 11/1.16: Focus Session - Optical Coherence Tomography

Room: Hall 22a Chair: Aljoscha Neubauer (LMU University of Munich, Germany) , Robert Huber (Lehrstuhl für BioMolekulare Optik, Germany)

8:00 *Invited: Fourier Domain Mode Locking (FDML): Wavelength Swept Lasers for Ultrahigh Speed Optical Coherence Tomography*

Robert Huber (Lehrstuhl für BioMolekulare Optik, Germany)

8:30 *Evaluation of Blood-Retinal Barrier Function from Fourier Domain High Definition Optical Coherence Tomography*

Rui Bernardes (Inst. Biophysics&Biomathematics,IBILI,Fac. Medicine,University Coimbra,Portugal, Portugal); Torcato Santos (AIBILI, Portugal); José Cunha-Vaz (IBILI,Fac. Medicine,University Coimbra,Portugal, Portugal)

8:45 *Dynamic Retinal Ultra-High Speed Optical Coherence Microscopy*

Rainer A Leitgeb (Medical University Vienna, Austria); Tilman Schmall (Medical University Vienna, Austria); Christoph Kolbitsch (Medical University Vienna, Austria)

9:00 *3D OCT retinal vessel segmentation based on boosting learning*

Juan Xu (University of Pittsburgh, USA); David Tolliver (Carnegie Mellon University, USA); Hiroshi Ishikawa (University of Pittsburgh, USA); Gadi Wollstein (University of Pittsburgh Medical Center, USA); Joel Schuman (University of Pittsburgh Medical Center, USA)

9:15 *Computerized Detection of Retinal Nerve Fiber Layer Defects in Retinal Fundus images by Modified Polar Transformation and Gabor Filtering*

Chisako Muramatsu (Gifu University, Japan); Yoshinori Hayashi (Tak Company, Ltd, Japan); Akira Sawada (Gifu University, Japan); Yuji Hatanaka (University of Shiga Prefecture, Japan); Takeshi Hara (Gifu University, Japan); Tetsuya Yamamoto (Gifu University, Japan); Hiroshi Fujita (Gifu University, Japan)

9:30 *Texture analysis of the retinal nerve fiber layer in fundus images via Markov Random Fields*

Radim Kolar (Brno University of Technology, Czech Republic); Pavel Vácha (Institute of Information Theory and Automation, Czech Republic)

Th. 01/1.9: Dosimetry in Brachytherapy

Room: Hall 04b Chair: Jeffrey Williamson (Virginia Commonwealth University, USA) , Dimos Baltas (Klinikum Offenbach, Germany)

8:00 *Calorimetric determination of absorbed dose to water for a 192Ir HDR brachytherapy source in near-field geometry*

Markus Bambynek (Physikalisch-Technische Bundesanstalt, Germany); Achim Krauss (Physikalisch-Technische Bundesanstalt, Germany); Hans-Joachim Selbach (Physikalisch-Technische Bundesanstalt, Germany)

8:15 *Calibration of 125I brachytherapy sources in terms of reference air kerma rate*

Hans-Joachim Selbach (Physikalisch-Technische Bundesanstalt, Germany)

8:30 *A new device for the measurement of the absorbed dose to water for low energy x-ray sources used in brachytherapy*

Thorsten Schneider (Physikalisch-Technische Bundesanstalt, Germany); Markus Meier (Physikalisch-Technische Bundesanstalt, Germany); Hans-Joachim Selbach (Physikalisch-Technische Bundesanstalt, Germany)

8:45 *Response of lithium formate EPR dosimeters at photon energies relevant to brachytherapy*

Emelie Adolfsson (Linköping University, Sweden); Gudrun Alm Carlsson (Linköping University, Sweden); Jan-Erik Grindborg (Swedish Radiation Safety Authority, Sweden); Håkan Gustafsson (Linköping University, Sweden); Eva Lund (Linköping University, Sweden); Åsa Carlsson Tedgren (Linköping University, Sweden)

9:00 *A Joint Research Project to improve the accuracy in dosimetry of brachytherapy treatments, in the framework of the European Metrology Research Programme.*

Maria Pia Toni (ENEA, Italy); Isabelle Aubineau-Laniece (CEA - Laboratoire National Henri Becquerel, France); Maurizio Bovi (ENEA, Italy); Joao Cardoso (Instituto Tecnológico e Nuclear, Portugal); Dominique Cutarella (CEA - Laboratoire National Henri Becquerel, France); Frantisek Gabris (Physikalisch-technischer Prüfdienst, Austria); Jan-Erik Grindborg (Swedish Radiation Safety Authority, Sweden); Antonio Stefano Guerra (ENEA, Italy); Hannu Jarvinen (Radiation and Nuclear Safety Authority, Finland); Carlos Oliveira (Instituto Tecnológico e Nuclear, Portugal); Maria Pimpinella (ENEA, Italy); Johann Plagnard (CEA - Laboratoire National Henri Becquerel, France); Thorsten Sander (National Physical Laboratory, United Kingdom)

Kingdom); Hans-Joachim Selbach (Physikalisch-Technische Bundesanstalt, Germany); Vladimir Sochor (Czech Metrology Institute, Czech Republic); Jan Solc (Czech Metrology Institute, Czech Republic); Jacco de Pooter (NMI Van Swinden Laboratorium B.V, The Netherlands); Eduard Van Dijk (NMI Van Swinden Laboratorium B.V, The Netherlands)

9:15 *Experimental determination of the radial dose distribution in high gradient regions from a low dose rate iridium-192 wire sources using EPR imaging*

Natalia Kolbun (Université catholique de Louvain, Belgium)

9:30 *Optimization of Radial Dose Function for Varian Ir-192 Brachytherapy Source Model VS2000*

Ahmed Outif (King Fahad Medical City, Saudi Arabia); Abou-Saleh Elawadi (King Fahad Medical City, Saudi Arabia)

08:30 - 09:45

Th. 03/1.7: Patient Exposures in Diagnostic Imaging (1)

Room: Hall 05 **Chair:** Philipp Trueb (Federal Office of Public Health, Switzerland) , Hilde Olerud (Norwegian Radiation Protection Authority, Norway)

8:30 *CT Quality Assurance Protocol and its validation in various Ministry of Health Hospitals in Oman.*

Arun Kumar L S (Ministry of Health, Oman); Rashid Al-Hajri (Ministry of Health, Oman); Sultan Al-Busaidy (Ministry of Health, Oman)

8:45 *Patient dose reduction in some routine radiographic Examinations in Iran*

Mohammad Reza Deevband (National Radiation Protection Department, Iran); mohammad Javad keykhah Farzaneh (Shiraz University, Iran); Hamid Reza Khosravi (Nuclear Science and Technology Institute, Iran); Mohammad Reza Kardan (Nuclear Science and Technology Institute, Iran); Farshad Faghihi (Shiraz University, Iran); Reza Faghihi (Shiraz University, Iran); Ahmad Eshraghi (National Radiation Protection Department, Iran)

9:00 *Patient Dose Assessment For Selected Interventional Radiology and Cardiology Procedures in Malaysia*

Bazli Sapiin (Ministry of Health Malaysia, Malaysia)

9:15 *Trigger Levels to prevent tissue reaction in interventional radiology procedures*

Annalisa Trianni (Udine University Hospital, Italy); Renato Padovani (SO di Fisica Sanitaria, Italy)

9:30 *Radiosensitizing Effect of IUdR Combined with Co-60 γ Radiation on Malignant Glioma Spheroids*

Bijan Hashemi (Tarbiat Modares University, Iran); Hamid Khankeshizadeh (Tarbiat Modares University, Iran); Ali Neshastehriz (Iran university of Medical Sciences, Iran)

9:45 *A Kinetic Model for Tumor Survival Curves: Its Relation to the Linear-Quadratic Model*

Rafael Martín-Landrove (Universidad Central de Venezuela, USA); Nilo Guillén (Universidad Central de Venezuela, Venezuela); Miguel Martín-Landrove (Universidad Central de Venezuela, Venezuela)

Th. 08/1.13: Nanoparticles (1)

Room: Hall 12b Chair: Michael Krüger (University of Freiburg, Germany) , Gregor Kijanka (Biomedical Diagnostics Institute, Dublin City University, Ireland)

8:30 *Effect of polymer molecular weight on morphology and particle size of chitosan microspheres prepared via spray drying method*

Mohsen Janmaleki (Shahid Beheshti University (M.C), Iran); Shahrouz Taranejoo (University of Tehran, Iran); Mohammad Rafienia (Isfahan University of Medical Science, Iran); Mehdi Kamali (Baghiatallah University of Medical Sciences, Iran); Mohammad Rafienia (Isfahan University of Medical Science, Iran)

8:45 *Driving force of a neutrophil in liquid using concentration Marangoni effect for developing microcapsule for Drug Delivery Systems*

Masaaki Tamagawa (Kyushu Institute of Technology, Japan)

9:00 *An Innovative Rotational Magnetic System to enhance Cell Transfection with Magnetic Nanoparticles*

Chiheb Dahmani (Technische Universität München, Germany)

9:15 *Fate of drug loaded-LNCs in cell culture medium – impact on drug delivery strategies*

Henning Rohm (Universität Rostock, Germany); Thomas Perrier (Inserm U64610, France); Nolwenn Lautram (Inserm U64610, France); Klaus-Peter Schmitz (Universität Rostock, Germany); Patrick Saulnier (Inserm U64610, France); Marian Löbler (Universität Rostock, Germany)

9:30 *Development of Tri-component Copolymer Rods as Implantable Drug Delivery Systems for Liver Cancer Therapy*

Norased Nasongkla (Mahidol University, Thailand); Pat Akarajirathun (Mahidol University, Thailand); Suradej Hongeng (Mahidol University, Thailand)

Th. 13/1.15: The Art of Scientific Visualization

Room: Hall 21b Chair: André C. Linnenbank (University of Amsterdam, The Netherlands) , Rob MacLeod (University of Utah & UofU/SCI/CVRTI, USA)

8:30 *Invited: Biomedical Visualization*

Chris Johnson (University of Utah, USA)

9:00 *The Glycocalyx*

André C. Linnenbank (University of Amsterdam, The Netherlands)

9:15 *Size Matters - Revealing small scale structures in large datasets*

Thomas Fogal (SCI Institute, USA); Jens Krueger (SCI, USA)

10:15 - 12:00

Th. 07/2.6: Microwaves in Medicine

Room: Hall 14c Chair: Andreas Melzer (University of Dundee, United Kingdom)

10:15 *Applications of microwave sensors in Medicines*

Navneet Agrawal (Maharana Pratap University of Agriculture & Tech., India); K Venugopalan (Director & Professor , Computer science, MLSU Udaipur 313001 Rajasthan India, India)

10:30 *Focusing Pulsed Electromagnetic Radiation for Therapy and Imaging*

Shu Xiao (Old Dominion University, USA); Karl Schoenbach (Old Dominion University, USA); Carl Baum (University of New Mexico, USA)

10:45 *Role of Microwave Imaging for Early Detection of Breast Cancer*

Navneet Agrawal (Maharana Pratap University of Agriculture & Tech., India); K Venugopalan (Director & Professor , Computer science, MLSU Udaipur 313001 Rajasthan India, India)

11:00 *Improved Breast Surface Identification for UWB Microwave Imaging*

Marko Helbig (Ilmenau Technical University, Germany); Christiane Geyer (University Hospital Jena, Germany); Matthias Hein (Ilmenau University of Technology, Germany); Ralf Herrmann (Ilmenau Technical University, Germany); Ingrid Hilger (University Hospital Jena, Germany); Ulrich Schwarz (Ilmenau University of Technology, Germany); Jürgen Sachs (Ilmenau Technical University, Germany)

2.10: IAMBE Symposium

Room: Hall 02

Th. 10/2.2: Cellular Interactions

Room: Hall 14b Chair: Josef Kaes (Universitaet Leipzig, Germany) , Jochen Guck (University of Cambridge & Cavendish Laboratory, United Kingdom)

10:15 *Invited: Contractile forces during cancer cell invasion*

Ben Fabry (University of Erlangen-Nuremberg, Germany); Thorsten Koch (University of Erlangen-Nuremberg, Germany); Stefan Münster (University of Erlangen-Nuremberg, Germany); Claudia Mierke

(University of Erlangen-Nuremberg, Germany); James Butler (Harvard University, USA)

10:45 PEG-based thermo-responsive polymer coatings for the control of cell adhesion

Andreas Lankenau (Fraunhofer Institute for Biomedical Engineering, Germany); Erik Wischerhoff (Fraunhofer Institute for Applied Polymer Research, Germany); Katja Uhlig (Fraunhofer Institute for Biomedical Engineering, Germany); Hans Börner (Max Planck Institute for Colloids and Interfaces, Germany); Jean-Francois Lutz (Fraunhofer Institute for Applied Polymer Research, Germany); Claus Duschl (Fraunhofer Institute for Biomedical Engineering, Germany)

11:00 Real time monitoring of ultrasound induced alterations in cell microrheology

Nataly Mizrahi (Technion, Israel); Jeffrey Fredberg (Harvard School of Public Health, USA); Eitan Kimmel (Technion, Israel); Daphne Weihs (Technion, Israel)

11:15 Relaxation of strained actin networks

Wolfgang Losert (University of Maryland, USA); Andrew Pomerance (University of Maryland, USA)

11:30 Interactions of cells with elastic cholesteric liquid crystals

Chin Phong Soon (University of Bradford, United Kingdom)

11:45 Electromechanically Active Polymers: New Opportunities for Biomaterials and Tissue Engineering

Federico Carpi (University of Pisa, Italy); Gabriele Frediani (University of Pisa, Italy); Danilo De Rossi (University of Pisa, Italy)

Th. 04/2.11: Image Registration and Data Fusion

Room: Hall 03 Chair: Kiran Kumar (Philips Healthcare, India) , Xavier Pennec (INRIA, France)

10:15 Invited: Three-Band MRI Image Fusion: A Curvelet Transform Approach

Kiran Kumar (Philips Healthcare, India)

10:45 A new multi-resolution optimization algorithm for PET - CT cardiac images registration

Martina Marinelli (Scuola Superiore Sant'Anna, Pisa, Italy); Francesco Tucci (Department of Information Engineering, University of Pisa, Pisa, Italy); Vincenzo Positano (G Monasterio Foundation, Pisa, Italy); Danilo Neglia (G. Monasterio Foundation, Pisa, Italy); Luigi Landini (University of Pisa, Italy)

11:00 Quasi-Newton Algorithms for Medical Image Registration

Martin Schröter (University of Wuerzburg, Germany); Otto Sauer (Universitätsklinikum Würzburg, Germany)

11:15 MatchPoint: On bridging the innovation gap between algorithmic research and clinical use in image registration

Ralf Floca (German Cancer Research Center, Germany)

11:30 A Fast Nonrigid Registration Algorithm for Adaptive Radiotherapy

Gernot Wurst (German Cancer Research Center, Germany); Rolf Bendl (University of Applied Sciences Heilbronn, Germany)

11:45 Registration of 3D pre-interventional to 2D intra-interventional medical images

Primoz Markelj (University of Ljubljana, Slovenia); Dejan Tomazevic (University of Ljubljana, Slovenia); Bostjan Likar (University of Ljubljana, Slovenia); Franjo Pernus (University of Ljubljana, Slovenia)

12:00 Monoscopic Imaging for Intra-fraction Motion Management

Nzhde Agazaryan (UCLA School of Medicine, USA); Steve Tenn (UCLA School of Medicine, USA); Michael Selch (UCLA School of Medicine, USA); Joerg Rehs (BrainLAB AG, Germany); Stephan Erbel (BrainLAB AG, Germany); Gregor Remmert (BrainLAB AG, Germany); Michael Steinberg (UCLA School of Medicine, USA)

Th. 02/2.4: MRI-Molecular Imaging (2)

Room: Hall 13b Chair: Ben Fabry (University of Erlangen-Nuremberg, Germany) , Christina Schraml (University Hospital Tuebingen, Germany)

10:15 Delay and dispersion correction for simultaneous quantification of perfusion and permeability in the prostate using DCE-MRI with a dual-contrast sequence

Lutz Lüdemann (Charité, Germany); Daniel Prochnow (Charité, Germany); Tobias Franiel (Charité, Germany); Matthias Taupitz (Charité, Germany); Hagen Rehbein (Charité, Germany); Dirk Beyersdorff (Charité, Germany)

10:30 Functional MR-imaging of human emotions: towards single subject diagnosis

Ewald Moser (Medical University of Vienna, Austria); Birgit Derntl (University of Vienna, Austria); Florian Gerstl (Medical University of Vienna, Austria); Simon Robinson (Center for Mind/Brain Sciences, Italy); Karl Karlsson (Reykjavik University, Iceland); Christian Windischberger (Medical University of Vienna, Austria)

10:45 Reference based time intensity curves quantification in DCE-MRI monitoring of rectal cancer

Mario Sansone (University 'Federico II' of Naples, Italy); Felice Aprile (University 'Federico II' of Naples, Italy); Roberta Fusco (University 'Federico II' of Naples, Italy); Mario Petrillo (IRCCS Fondazione Pascale Naples, Italy); Antonella Petrillo (IRCCS Fondazione Pascale Naples, Italy); Umberto Bracale (S. Camillo Hospital, Trento, Italy)

11:00 Use of Diffusion Tensor MR Imaging and 3D tractography software in mild traumatic brain injury

Prasun Dastidar (Tampere University Hospital, Finland); Minna Wäljas (Tampere University Hospital, Finland); Suvi Liimatainen (Tampere University Hospital, Finland); Antti Kalliokoski (Technical University of Tampere, Finland); Juha Öhman (Tampere University Hospital, Finland); Kirsi Holli (Tampere University of Technology, Finland); Hannu Eskola (Technical University of Tampere, Finland); Seppo Soimakallio (Tampere University Hospital, Finland)

11:15 *Detection of Amyloid-b-plaques by means of quantitative magnetization transfer*

Claus Kiefer (University Hospital of Bern, Switzerland); Lisa Brockhaus (University Hospital Bern, Switzerland); Katja Cattapan (University Hospital of Bern, Switzerland); Yuliya Burren (University Hospital of Bern, Switzerland); Gerhard Schroth (University Hospital of Bern, Switzerland); Roland Wiest (University Hospital of Bern, Switzerland)

11:30 *Pushing the limit – MRI of the Lung Using Hyperpolarized 3-Helium in Conjunction with Parallel Imaging*

Florian Meise (Johannes Gutenberg University Medical Center, Germany); Julien Rivoire (Johannes Gutenberg University Medical Center, Germany); Maxim Terekhov (Johannes Gutenberg University Medical Center, Germany); Davide Santoro (Johannes Gutenberg University Medical Center, Germany); Zahir Salhi (Johannes Gutenberg University Mainz, Germany); Laura Schreiber (Johannes Gutenberg University Medical Center, Germany)

11:45 *Theoretical and clinical aspects of TWIST based 4D time-resolved MR angiography*

Claus Kiefer (University Hospital of Bern, Switzerland); Marwan El-Koussy (University Hospital of Bern, Switzerland); Gerhard Schroth (University Hospital of Bern, Switzerland); Christoph Ozdoba (University Hospital of Bern, Switzerland)

Th. 03/2.13: IOMP/ ISR Session on Radiological Risk Communication

Room: Hall 12b Chair: Cari Borrás (Universidade Federal de Pernambuco, Brazil) , Reinhard WR Loose (Hospital Nuernberg-North, Germany)

10:15 *Invited: What are the radiation risks to communicate?*

Jolyon Hendry (Retired, United Kingdom)

10:30 *Invited: Cognitive Neuroscience and Radiation Risk*

Richard Toohey (ORAU, USA)

10:45 *Initiatives of IRPA in Risk Communication*

Kenneth Kase (International Radiation Protection Association, France)

11:00 *Invited: Image Gently: An International Education and Communication Campaign in Radiology to Promote Radiation Protection for Children*

Keith Strauss (Children's Hospital Boston, USA); Priscilla Butler (American College of Radiology, USA); Marilyn Goske (Cincinnati)

Children's Hospital Medical Center, USA); Thomas Toth (GE Healthcare, USA); Kimberly Applegate (Riley Hospital for Children, USA); Gregory Morrison (American Society of Radiologic Technologists, USA)

11:15 *Invited: Informed Consent: Communicating Radiation Risk*

Stephen Balter (Columbia University, USA); David Brenner (Columbia University Medical Center, USA); Rochelle Balter (John Jay College of Criminal Justice, USA)

11:30 *Discussion IOMP*

Th. 03/2.7: Patient Exposures in Diagnostic Imaging (2)

Room: Hall 05 Chair: Hilde Olerud (Norwegian Radiation Protection Authority, Norway) , Abbas Aroua (CHUV and University of Lausanne, Switzerland)

10:15 *WHO's role in the assessment of medical radiation exposures and devices*

Ferid Shannoun (World Health Organization, Switzerland); Maria Perez (World Health Organization, Switzerland); Narayan Pendse (World Health Organization, Switzerland); Adriana Velazquez Berumen (World Health Organization, Switzerland); Björn Fahlgren (World Health Organization, Switzerland); Steffen Groth (World Health Organization, Switzerland); Emilie Van Deventer (World Health Organization, Switzerland)

10:30 *Lessons learned from 25 years in exploring Norwegian radiology practices from a radiation protection point of view*

Hilde Olerud (Norwegian Radiation Protection Authority, Norway)

10:45 *Population exposure from medical X-rays in Germany: time trends – 1996 to 2005*

Elke Nekolla (BfS Federal Office for Radiation Protection, Germany); Jürgen Griebel (Federal Office for Radiation Protection, Germany); Gunnar Brix (Federal Office for Radiation Protection, Germany)

11:00 *Estimation of patient doses from interventional radiology procedures in Pakistan result of IAEA project RAS /9/047*

Areasha Zaman (Hospital, Pakistan); Aftab Ahmed (PIC, Pakistan); Hamid Naseer (Hospital, Pakistan); Numair Yunous (Hospital, Pakistan); Mahboob Ali (Pnra, Pakistan); Maham Zaman (Student, Pakistan)

11:15 *Patient exposure from interventional cardiology procedures in Slovenia*

Dejan Zontar (Slovenian Radiation Protection Administration, Slovenia); Vojko Kanic (University Medical Centre Maribor, Slovenia); Dimitrij Kuhelj (University Medical Centre Ljubljana, Slovenia); Damijan Skrk (Slovenian Radiation Protection Administration, Slovenia); Urban Zdesar (Institute of Occupational Safety, Slovenia)

11:30 *Trends in Dosimetry at the Neonatal Intensive Care Unit*

Job Gutteling (Máxima Medical Center, The Netherlands)

11:45 *Patient Dose Measurements in Full Field Digital Mammography and Comparison with Dose to the Standard Breast*

Nicola Tyler (Royal Surrey County Hospital, United Kingdom); Celia Strudley (Royal Surrey County Hospital, United Kingdom); Philip Hollaway (Royal Surrey County Hospital, United Kingdom); Debbie Peet (Royal Surrey County Hospital, United Kingdom)

Th. 07/2.17: Focus Session: The Wearable Artificial Kidney

Room: Hall 22b Chair: Jacek Waniewski (Institute of Biocybernetics and Biomedical Engineering, Poland) , Jack Patzer (University of Pittsburgh, USA)

10:15 *Invited: Wearable Artificial Kidneys: A Historical Perspective.*

Martin Roberts (VA Greater LA Healthcare System, USA); David Lee (VA Greater Los Angeles Healthcare System, USA)

10:30 *Invited: An Integrated Membrane/Sorbent PD Approach to a Wearable Artificial Kidney*

Norma Ofsthun (Fresenius Medical Care, USA); Amanda Stennett (Fresenius Medical Care, USA)

11:00 *Invited: Automated Wearable Artificial Kidney (AWAK): A Peritoneal Dialysis Approach*

David Lee (VA Greater Los Angeles Healthcare System, USA); Martin Roberts (VA Greater LA Healthcare System, USA)

11:15 *Distributed model for fluid flow driven by hydrostatic and osmotic pressures during peritoneal dialysis*

Jacek Waniewski (Institute of Biocybernetics and Biomedical Engineering, Poland)

11:30 *Invited: Kidney Regeneration Using Stem Cells And Acellular Whole Organ Scaffolds: Perspective And Recent Developments*

Edward A. Ross (University of Florida, USA)

11:45 *Urea concentrating ability of artificial renal tubule based on countercurrent multiplier system using electro dialysis, dialysis and filtration*

Kenichi Kokubo (Kitasato University School of Allied Health Sciences, Japan); Yoshihiro Otani (Kitasato University, Japan); Hiroshi Tsukao (Kitasato University School of Allied Health Sciences, Japan); Toshihiro Shinbo (Kitasato University School of Allied Health Sciences, Japan); Minoru Hirose (Kitasato University School of Allied Health Sciences, Japan); Hirotsuke Kobayashi (Kitasato University School of Allied Health Sciences, Japan)

Th. 08/2.3: On-Chip Cell Analysis and Manipulation (2)

Room: Hall 13a Chair: Bernhard Wolf (Technische Universität München, Germany) , Alfred Stett (NMI Naturwissenschaftliches und Medizinisches Institut, Germany)

10:15 Keynote: Semiconductor Chips with Nerve Cells and Brain Tissue
Peter Fromherz (Max Planck Institute for Biochemistry, Germany)

10:45 Invited: Microelectrode Array (MEA) high resolution electrophysiological mapping of cardiac cell, tissue and organ preparations

Thomas Meyer (Multi Channel Systems MCS GmbH, Germany); Udo Kraushaar (NMI, Natural and Medical Sciences Institute at the University Tübingen, Germany); Elke Guenther (Natural and Medical Sciences Institute at the University Tübingen, Germany)

11:15 Local electrical stimulation of single myocytes using three-dimensional electrode arrays with small interelectrode distances

Dries Braeken (IMEC vzw, Belgium); Roeland Huys (IMEC vzw, Belgium); Danny Jans (IMEC vzw, Belgium); Josine Loo (IMEC vzw, Belgium); Danielle Rand (IMEC vzw, Belgium); Gustaaf Borghs (IMEC vzw, Belgium); Geert Callewaert (K.U.Leuven, Belgium); Carmen Bartic (IMEC, Belgium)

11:30 Development and fabrication of multielectrode arrays for immuno-assisted whole cell detection systems

Anja Steude (University of Leipzig, Germany); Oliver Pänke (University of Leipzig, Germany); Sabine Schmidt (University of Leipzig, Germany); Andrea Robitzki (Universität Leipzig, Germany)

Th. 11/2.16: Physics and Electrophysiology for Ophthalmology

Room: Hall 22a Chair: Jong-Mo Seo (Seoul National University, Korea) , Robert Wilke (University of Tuebingen, Germany)

10:15 Mechanism of Oscillatory Rhythm of Retinal Ganglion cells in rd1 Mouse Retina

Jang Hee Ye (Chungbuk National University, Korea); Sang Baek Ryu (Yonsei University, Korea); Kyung Hwan Kim (Yonsei University, Korea); Byeong Cheol Rim (Chungbuk National University, Korea); Yong Sook Goo (Chungbuk National University, Korea)

10:30 Objective Methods for the Detection of Pattern Electroretinograms (PERG)

David Simpson (University of Southampton, United Kingdom); Anthony Fisher (University of Liverpool, United Kingdom); Laura Milner (Royal Liverpool University Hospital, United Kingdom); Richard Hagan (Royal Liverpool University Hospital, United Kingdom); Michael Austin (Royal Liverpool University Hospital, United Kingdom)

10:45 Development of the eyeglasses-based electrooculogram (EOG) for the objective measurement of the visual acuity

Hyuk-June Moon (Seoul National University, Seoul, Korea, Korea);
Jeong-Min Hwang (Seoul National University, Korea); Jong-Mo Seo
(Seoul National University, Korea)

11:00 *Is Cornea Compliant with respect to Age?*

Takumi Gosho (Osaka University, Japan)

11:15 *Alterations in Eye Refraction under Non-ablative Laser irradiation*

Olga Baum (Institute on Laser and Information Technologies, RAS, Russia); Emil Sobol (Institute on Laser and Information Technologies, RAS, Russia); Alexander Omelchenko (Institute on Laser and Information Technologies, RAS, Russia); Andrej Bolshunov (Institute of Eye Diseases, RAMN, Russia); Vladimir Sipliviy (Institute of Eye Diseases, RAMN, Russia)

11:30 *Determination of inertia forces at an intraocular lens implant during saccades*

Heiner Martin (Universität Rostock, Germany); Ulf Bahlke (University of Rostock, Germany); Rudolf Guthoff (Universitätsaugenklinik Rostock, Germany); Liane Rheinschmitt (Forschungszentrum Karlsruhe, Germany); Klaus-Peter Schmitz (Universität Rostock, Germany)

11:45 *Novel geometric model of the scleral buckle effect*

Hyeong Gon Yu (Seoul National University, Korea); Hyo Jin Shin (Seoul National University School of Medicine, Korea); Eun Sil Shin (Seoul National University School of Medicine, Korea); Young Joo Kim (Seoul National University School of Medicine, Korea); So Hyun Bae (Seoul National University School of Medicine, Korea); Kwang-Suk Park (Seoul National University, Korea); Hum Chung (Seoul National University, Korea); Jong-Mo Seo (Seoul National University, Korea)

Th. 10/2.14: Scaffolds and Implants

Room: Hall 21a Chair: Klaus Liefeith (iba Heiligenstadt, Germany) , Bassil Akra (Ludwigs-Maximilians-University, Germany)

10:15 *Two-Photon Polymerization for Microfabrication of Three-Dimensional Scaffolds for Tissue Engineering Application*

Thomas Weiß (Institute for Bioprocessing and Analytical Measurement Techniques (iba) e.V., Germany)

10:30 *Fabrication of a composite bio-scaffold with osteoblasts secreted extracellular matrix coating for bone tissue repair*

Fazel Gorjipour (Center for gifted and talented students, Iran University of Medical Sciences, Iran); Ali Samadikuchaksaraei (Iran University of Medical Sciences, Iran)

10:45 *Strategies combining cells and scaffolds for bone tissue engineering*

Enrica Saino (University of Pavia, Italy); Lorenzo Fassina (University of Pavia, Italy); Maria Sonia Sbarra (University of Pavia, Italy); Maria Gabriella Cusella De Angelis (University of Pavia, Italy); Giovanni

Magenes (University of Pavia, Italy); Francesco Benazzo (University of Pavia, Italy); Livia Visai (University of Pavia, Italy)

11:00 Behaviour of Osteoblast-Like Cells Cultured In Vitro on the Novel Composite-Based Porous Scaffolds

Radoslaw Olkowski (Medical University of Warsaw, Poland); Anna Chroscicka (Medical University of Warsaw, Poland); Christopher Lam (National University of Singapore, Singapore); Kim Tan (Temasek Polytechnic, Singapore); Wojciech Swieszkowski (Warsaw University of Technology, Poland); Dietmar Hutmacher (Queensland University of Technology, Australia); Malgorzata Lewandowska-Szumiel (Medical University of Warsaw, Poland)

11:15 Cytological evaluation of a porous implant made from TPU

Hongbin Wu (Technische Universität München, Germany); Sabine Wacker (Technische Universität München, Germany); Henning Schlicht (Medi-Globe GmbH, Germany); Erich Wintermantel (MedTech - Lehrstuhl für Medizintechnik, Germany)

11:30 Biological evaluation of non-degradable polyurethane for aortic valve tissue engineering

Bassil Akra (Ludwigs-Maximilians-University, Germany); Rony Abou Rahal (Ludwigs-Maximilians-University, Germany); Antje Uhlig (Ludwigs-Maximilians-University, Germany); Ulrike Haas (Ludwigs-Maximilians-University, Germany); Cornelia Fano (ITV-Denkendorf, Germany); Martin Dauner (ITV-Denkendorf, Germany); Helmut Gulbins (University Medical Center Hamburg-Eppendorf, Germany); Bruno Meiser (Ludwigs-Maximilians-University, Germany); Guenther Eissner (Ludwigs-Maximilians-University, Germany); Bruno Reichart (Ludwigs-Maximilians-University, Germany)

11:45 Inhibition of E-Selectin by selectively deSulfated Heparin through chitosan microspheres impregnated collagen scaffold

Ramya Lakshmi (Central Leather Research Institute, India); Shanmugasundaram Natesan (US Army Institute of Surgical Research, Fort Sam Houston, Texas 78234, USA); Mary Babu (Central Leather Research Institute, India)

Th. 09/2.12: Electrical Stimulation in Rehabilitation

Room: Hall 11 Chair: Milos Popovic (University of Toronto & Toronto Rehab, Canada) , Thierry Keller (Institute for Biorobotics, Spain)

10:15 Invited: Vision and Distance Based Control of Prehension

Dejan Popović (Aalborg University, Denmark); Strahinja Dosen (Aalborg University, Denmark); Mirjana Popovic (Aalborg University, Denmark)

10:30 Invited: Intensive FES therapy and its effect on the upper limb motor recovery after stroke

Noritaka Kawashima (National Rehabilitation Center for Persons with Disabilities, Japan); Vera Zivanovic (Toronto Rehabilitation Hospital)

Lyndhurst Site, Canada); Milos Popovic (University of Toronto, Canada)

10:45 Invited: Skin properties and the influence on electrode design for transcutaneous (surface) electrical stimulation

Thierry Keller (Institute for Biorobotics, Spain); Andreas Kuhn (Altran AG, Switzerland)

11:00 The European R&D Project RISE - Use of Electrical Stimulation to Restore Standing in Paraplegics with Long-Term Denervated Degenerated Muscles

Winfried Mayr (Medical University of Vienna, Austria)

11:15 Density Distribution of Denervated Degenerated Rectus Femoris Muscle in Electrical Stimulation treatment.

Thordur Helgason (Landspítali - University Hospital, Iceland); Paolo Gargiulo (University Hospital of Iceland Landspítali, Iceland); Brynjar Vatnsdal (Landspítali-University Hospital, Iceland)

11:30 Video game-based exercise for improvement of calf muscle properties: A case study

Dimitry Sayenko (Toronto Rehabilitation Institute, Canada); Matija Milosevic (Ryerson University, Canada); Kei Masani (University of Toronto, Canada); Egor Sanin (Toronto Rehabilitation Institute, Canada); Kristiina McConville (Ryerson University, Canada); Milos Popovic (University of Toronto, Canada)

Th. 11/2.8: Dental (1)

Room: Hall 04a Chair: Lutz Ritter (University of Cologne, Germany) , Said Boujraf (University of Ulm, Germany)

10:15 Keynote: The Future of Imaging in Dentistry

Chung Kau (University of Texas -Houston, USA)

10:45 Geometric accuracy of cone beam devices for maxillofacial imaging

Robert Mischkowski (University of Cologne, Germany); Lutz Ritter (University of Cologne, Germany); Timo Dreiseidler (University of Cologne, Germany); Jörg Neugebauer (University of Cologne, Germany); Daniel Rothamel (University of Cologne, Germany); Joachim Zöllner (University of Cologne, Germany)

11:15 Impact of citric acid etching on biocompatibility and osseous organisation of a natural bovine bone mineral. Preliminary results of an in-vitro/in-vivo study.

Daniel Rothamel (University of Cologne, Germany); Frank Schwarz (Heinrich-Heine University Düsseldorf, Germany); Monika Herten (University Hospital Düsseldorf, Germany); Kathrin Berndsen (MundArt Dental Practice, Germany); Tim Fienitz (Heinrich-Heine University Düsseldorf, Germany); Lutz Ritter (University of Cologne, Germany);

Timo Dreiseidler (University of Cologne, Germany); Joachim Zöller (University of Cologne, Germany)

11:30 Stress distribution around implants with different interproximal contacts: A photoelastic analysis

Cleudmar Araújo (Federal University of Uberlândia, Brazil); Marina Naves (Federal University of Uberlândia, Brazil); Helder de Menezes (HD Post-graduation School of Dentistry, Brazil); Denildo de Magalhães (Dentistry School UFU, Brazil); Paulo Junior (Federal University of Uberlândia, Brazil); Flávio Neves (Federal University of Uberlândia, Brazil)

11:45 Short-term stress relaxation of porcine periodontal ligament – finding an appropriate visco-elastic model.

Robert Reuben (Heriot Watt University, United Kingdom); Matthias Hien (Heriot Watt University, United Kingdom); Roisin Tohill (Edinburgh University, United Kingdom)

12:00 Success of autogenous tooth transplantation influenced by different parameters: a retrospective and prospective approach

Hanne Gonnissen (University Hasselt, Diepenbeek, Belgium, Belgium); Joke Schuermans (St. John's Hospital Genk, Belgium); Constantinus Politis (Professor, Belgium); Serge Schepers (St. John's Hospital, Genk, Belgium); Ivo Lambrichts (University Hasselt, Diepenbeek, Belgium); Luc Vrielinck (St. John's Hospital, Genk, Belgium); Yi Sun (St. John's Hospital, Genk, Belgium)

Th. 04/2.5: Cardiac Models for Functional Analysis

Room: Hall 14a Chair: Boudewijn Lelieveldt (Leiden University Medical Center, The Netherlands) , Rob MacLeod (University of Utah & UofU/SCI/CVRTI, USA)

10:15 Parameter Estimation of a 3D Cardiac Electrophysiology Model including the Restitution Curve using Optical and MR Data

Jatin Relan (INRIA Sophia Antipolis, France); Sermesant Maxime (INRIA, France); Hervé Delingette (INRIA, France); Mihaela Pop (Sunnybrook Health Sciences Centre, University of Toronto, Canada); Michel Sorine (INRIA, France); Graham Wright (University of Toronto, Canada); Nicholas Ayache (INRIA, France)

10:45 Semi-automatic segmentation of sinus node, Bachmann's Bundle and Terminal Crest for patient specific atrial models

Martin Krueger (Universität Karlsruhe (TH), Germany); Frank Weber (Universität Karlsruhe (TH), Germany); Gunnar Seemann (University Karlsruhe (TH), Germany); Olaf Doessel (Universität Karlsruhe (TH), Germany)

11:00 A Computational Cardiovascular Model for Characterizing Arterial pulses under Various Physiopathological Conditions

Fuyou Liang (RIKEN, Japan); Shu Takagi (RIKEN, Japan); Ryutaro Himeno (Riken, Japan); Hao Liu (Chiba University, Japan)

11:15 *Model-based Method and Instrumentation for Noninvasive Identification of Local Ischemic Lesions in the Heart*

Milan Tysler (Institute of Measurement Science, South Africa); Jana Svehlikova (Institute of Measurement Science, Slovakia); Vladimir Rosik (Institute of Measurement Science SAS, Slovakia); Slavomir Karas (Institute of Measurement Science SAS, Slovakia); Eva Heblakova (Institute of Measurement Science SAS, Slovakia); Peter Kneppo (Faculty of Biomedical Engineering, CTU in Prague, Czech Republic); Jan Muzik (Faculty of Biomedical Engineering, CTU in Prague, Czech Republic); Michal Kania (Institute of Biocybernetics and Biomedical Engineering PAS, Poland); Rajmund Zaczek (Medical University of Warsaw, Poland); Malgorzata Kobylecka (Medical University of Warsaw, Poland)

11:30 *A velocity driven lumped-parameter model of mitral valve blood flow*

Lee Waite (University Heidelberg, Germany); Jerry Fine (Rose-Hulman Institute of Technology, USA); Gábor Veres (University Heidelberg, Germany); Gábor Szabó (University Heidelberg, Germany)

11:45 *4D Cardiac Segmentation of the Epicardium and Left Ventricle*

Gerard Pons Moll (Leibniz Universitaet - Hannover, Germany); Gilead Tadmor (Northeastern University, USA); Rob MacLeod (University of Utah, USA); Bodo Rosenhahn (Leibniz Universitaet - Hannover, Germany); Brooks Dana H. (Northeastern University, USA)

Th. 01/2.1: Functional Imaging in Radiation Therapy

Room: Hall 01 Chair: Daniela Thorwarth (UKT Tübingen, Germany) , Peter Kneschaurek (Klinikum rechts der Isar, Germany)

10:15 *Keynote: Integrating Biology with high Technology to Advance modern radiation*

Michael Baumann (Medical Faculty Carl Gustav Carus, Germany)

10:45 *Treatment Response Assessment*

Robert Jeraj (University of Wisconsin, USA)

11:00 *Clinical utility of biological imaging: treatment adaptation*

Daniela Thorwarth (UKT Tübingen, Germany)

11:15 *Biomarkers in the mouse today, in man tomorrow*

Hans-Jürgen Machulla (Uni. Klinik Tübingen, Germany)

11:30 *Computational Simulation of Tumour Hypoxia as applied to Radiation Therapy Applications*

Entesar Dalah (University of Surrey, United Kingdom); David Lloyd (University of Surrey, United Kingdom); David Bradley (University of Surrey, United Kingdom); Andrew Nisbet (Royal Surrey County Hospital, United Kingdom)

11:45 *Predicting Response in Lung Cancer from FDG-PET Uptake Characteristics*

Issam El Naqa (Washington University in St. Louis, USA); Manushka Vaidya (Washington University in St. Louis, USA); Aditya Apte (Washington University in St. Louis, USA); Farrokh Dehdashti (Washington University in St. Louis, USA); Deasy Joseph (, USA); Jeffrey Bradley (Washington University in St. Louis, USA)

Th. 13/2.15: Automation in Medicine

Room: Hall 21b **Chair:** Olaf Simanski (University of Rostock, Germany)

10:15 *Invited: Automation in medicine - general ideas and example in automatic drug delivery*

Olaf Simanski (University of Rostock, Germany); Matthias Janda (University of Rostock, Germany); Jörn Bajorat (University of Rostock, Germany); Bernhard Lampe (University of Rostock, Germany)

10:45 *Invited: The Assessment of Heart Rate Variability (HRV) and Task Load Index (TLI) as Physiological Markers for Physical Stress*

Mahdi Mahfouf (Sheffield university, United Kingdom); Derek Linkens (The University of Sheffield, United Kingdom); Glyn Hockey (The University of Sheffield, United Kingdom); Ahmed Nassef (University of Sheffield, United Kingdom); Emad Elsamahy (The University of Sheffield, United Kingdom); Adam Roberts (The University of Sheffield, United Kingdom); Peter Nickel (Universite de Fribourg, Switzerland); George Panoutsos (The University of Sheffield, United Kingdom)

11:00 *Invited: Object-oriented Model Library of the Cardiovascular System Including Physiological Control Loops*

Anja Brunberg (RWTH Aachen University, Germany); Jan Maschuw (RWTH Aachen University, Germany); Rüdiger Autschbach (University Hospital Aachen, Germany); Dirk Abel (RWTH Aachen University, Germany)

11:15 *Invited: Mechanical Ventilation: Much Ado about Ventilation Modes*

Florian Dietz (Weinmann Geräte für Medizin GmbH+Co. KG, Germany)

11:30 *Invited: Effects of automation to the surgeons*

Norman Geissler (Universität Leipzig, Germany); Gero Strauss (Universitätsklinik Leipzig, Germany); Pierre Jannin (Université of Rennes 1, France); Werner Korb (ICAAS Leipzig, Germany)

11:45 *Invited: Automation in Rehabilitation: How to Include the Human into the Loop*

Robert Riener (ETH and University of Zurich, Switzerland); Alexander Duschau-Wicke (ETH Zurich, Switzerland); Alexander Koenig (ETH Zurich, Switzerland); Marc Bolliger (ETH Zurich, Switzerland); Martin Wieser (ETH Zurich, Switzerland); Heike Vallery (ETH Zürich, Switzerland)

10:45 - 12:00

Th. 01/2.9: Dose Calculation: Brachytherapy and Internal Dosimetry

Room: Hall 04b Chair: Günther H. Hartmann (German Cancer Research Center, Germany)

10:45 *Quality control of brachytherapy source using MCNP5 calculation and radiochromic films measurement*

Jose Ródenas (Universidad Politécnica de Valencia, Spain); Isabelle Gerardy (Institut Supérieur Industriel de Bruxelles, Belgium); van Dycke Michel (Clinique Saint Jean, Brussels, Belgium); Sergio Gallardo (Universidad Politécnica de Valencia, Spain)

11:00 *EGSnrc Monte Carlo-aided dosimetric studies of the 192Ir microSelectron v2 HDR brachytherapy source*

Liu Hong (Anhalt University of Applied Sciences, Germany); Golam Zakaria (Kreiskrankenhaus Gummersbach, Germany, Germany); Günther H. Hartmann (German Cancer Research Center, Germany)

11:15 *Combined dose distribution for the external beam whole breast irradiation and MammoSite breast brachytherapy: Monte Carlo investigation*

Saleh Bensaleh (University of Adelaide, Australia); Eva Bezak (Royal Adelaide Hospital, Australia); Thuc Pham (University of Adelaide, Australia)

11:30 *Accelerated Dose Calculation Engine for Interstitial Brachytherapy*

Omar Chibani (King Faisal Specialist Hospital & Research Center, Saudi Arabia); Belal Mofteh (King Faisal Specialist Hospital & Research Center, Saudi Arabia); C-M Charlie Ma (Fox Chase Cancer Center, USA)

13:45 - 14:45

Plenary 1

Room: Hall 01

13:45 *Radiation Oncology: Medical Physics meets Molecular Biology*

Sören Bentzen (University of Wisconsin, USA)

14:15 *Protonic Prospects*

Thomas Bortfeld (Massachusetts General Hospital, USA)

15:00 - 16:45

Th. 12/3.10: Education and Training of Medical Physics in the AFOMP Area

Room: Hall 02 Chair: Kiyonari Inamura (Kansai University of International Studies, Japan) , Anchali Krisanachinda (Chulalongkorn University, Thailand)

15:00 Invited: Training of Qualified Medical Physicists: Problems and Struggles in AFOMP Region

Kiyonari Inamura (Kansai University of International Studies, Japan)

15:30 Professional Training of Medical Physicists in AFOMP - The Role of IOMP PRC

Kin Yin Cheung (Prince of Wales Hospital, P.R. China); Raymond Wu (Barrow Neurological Institute, USA)

15:45 Invited: The Current Status of Medical Physics in Asia-Oceania

Tae-Suk Suh (The Catholic University of Korea, Korea)

16:15 Medical Physics Training Programme at Chulalongkorn University and evaluation of its effectiveness

Franco Milano (University of Florence, Italy)

16:30 Creating an Independent International Medical Physics Board

Raymond Wu (Barrow Neurological Institute, USA)

16:45 The Role of National Radiation Regulatory Agencies in the Education and Training of Medical Physicists in the Republic of the Philippines

Agnette Peralta (Bureau of Health Devices and Technology, Philippines)

Th. 02/3.5: X-Ray Imaging / Applications

Room: Hall 14a Chair: Heinz-Otto Peitgen (Fraunhofer MEVIS, Bremen, Germany) , James Seibert (University of California, Davis, USA)

15:00 Invited: Quantification of fractional flow reserve using angiographic image data

Sabee Molloy (University of California, USA); Jerry Wong (University of California, USA); David Chalyan (University of California, USA); Huy Le (University of California, USA)

15:30 Do additional x-rays taken by a radiographer during x-ray screening for gastric cancer improve detection?

Hidetoshi Yatake (Okayama University, Japan); Toshizo Katsuda (Himeji Dokkyo University, Japan); Chikazumi Kuroda (Osaka Cancer Prevention and Detection Center, Japan); Hideo Yamazaki (Osaka Cancer Prevention and Detection Center, Japan); Tsugio Kubo (Osaka Cancer Prevention and Detection Center, Japan); Rumi Gotanda (Ibaraki Prefectural University of Health Sciences, Japan); Tatsuhiro Gotanda (Okayama University, Japan); Koichi Yabunaka (Katsuragi Hospital, Japan); Kenyu Yamamoto (Okayama University, Japan); Masanori Iguchi (Kaizuka City Hospital, Japan); Takahiro Kozuka (Kaizuka City Hospital, Japan); Yoshihiro Takeda (Okayama University, Japan)

15:45 Evaluation of the quality of radiographic films utilized in diagnostic radiology.

Luis Alexandre Magalhaes (Universidade do Estado do Rio de Janeiro, Brazil); Gunter Drexler (Universidade do Estado do Rio de Janeiro, Brazil); Carlos Eduardo de Almeida (Universidade do Estado do Rio de Janeiro, Brazil)

16:00 MIQuaELa, software for DQE measuring in DIGITAL radiography/mammography

Rafael Ayala (Hospital General Universitario Gregorio Marañón, Spain); Rafael Linares (Hospital General Universitario "Gregorio Marañón", Spain); Rafa García-Mollá (Hospital Universitario Gregorio Marañón, Spain)

16:15 The use of Digital X-ray to monitor decalcification in sheep femora.
Sarah Dawson (University of Edinburgh, United Kingdom)

16:30 CAD Performance Quantification of a Dual-energy Radiography Technique

James Seibert (University of California, Davis, USA); Robert Alvarez (Aprend Technology, USA); Paul Kane (Aprend Technology, USA); Ulf Tylen (University of California Davis, USA); Elizabeth Moore (University of California Davis, USA)

Th. 04/3.11: Focus Session: Image Registration, Motion and Deformation

Room: Hall 03 Chair: Bernd Fischer (University of Luebeck, Germany) , Xavier Pennec (INRIA, France)

15:00 Invited: 4D Motion Modeling: Estimation of Respiratory Motion for Radiation Therapy

Jan Ehrhardt (University Medical Center Hamburg-Eppendorf, Germany); René Werner (University Medical Center Hamburg-Eppendorf, Germany); Alexander Schmidt-Richberg (University Medical Center Hamburg-Eppendorf, Germany); Heinz Handels (Universität Hamburg, Germany)

15:30 Dose Accumulation based on Optimized Motion Field Estimation using Non-Linear Registration in Thoracic 4D CT Image Data

René Werner (University Medical Center Hamburg-Eppendorf, Germany); Jan Ehrhardt (University Medical Center Hamburg-Eppendorf, Germany); Alexander Schmidt-Richberg (University Medical Center Hamburg-Eppendorf, Germany); Bernd Bodmann (University Medical Center Hamburg-Eppendorf, Germany); Florian Cremers (University-Medical Center Hamburg, Germany); Heinz Handels (Universität Hamburg, Germany)

15:45 Feasibility study of atlas-to-CT B-Spline deformable registration for application to trigeminal neuralgia radiosurgery.

Marta Peroni (Politecnico di Milano, Italy); Joseph Stancanello (Research&Clinical Collaborations, Siemens AG, Germany); Alexander Muacevic (European Cyberknife Center, Germany); Marco Riboldi (Politecnico di Milano, Italy); Maria Francesca Spadea (Università

Magna Graecia di Catanzaro, Italy); Gregory Sharp (Massachusetts General Hospital, USA); Guido Baroni (Politecnico di Milano, Italy)

16:00 *An image based approach for in vivo evaluation of the brain-skull relative displacement and brain deformation in quasi-static conditions*

Aida Georgeta Asiminei (Katholieke Universiteit Leuven, Belgium); Bart Depreitere (Katholieke Universiteit Leuven, Belgium); Jos Vander Sloten (Katholieke Universiteit Leuven, Belgium); Ignace Verpoest (Katholieke Universiteit Leuven, Belgium); Jan Goffin (Katholieke Universiteit Leuven, Belgium)

16:15 *Derivation of high-resolution pulmonary ventilation using local volume change in four-dimensional CT data*

Geoffrey Zhang (Moffitt Cancer Center, USA); Tzung-Chi Huang (China Medical University, Taiwan); Craig Stevens (Moffitt Cancer Center, USA); Thomas Dilling (Moffitt Cancer Center, USA); Kenneth Forster (Moffitt Cancer Center, USA)

16:30 *Landmark constrained non-rigid image registration with anisotropic tolerances*

Thomas Lange (Charité - Universitätsmedizin Berlin, Germany); Nils Papenberg (University of Lübeck, Germany); Janine Olesch (University of Lübeck, Germany); Bernd Fischer (University of Lübeck, Germany); Peter M. Schlag (Charité - Universitätsmedizin Berlin, Germany)

Th. 02/3.4: MRI: From Humans to Animals

Room: Hall 13b Chair: Karl-Heinz Herrmann (Jena University Hospital, Germany) , Evangelia Kaza (University of Greifswald, Germany)

15:00 *MRE imaging for elasticity and viscosity of biological tissues*

Kazuhiro Homma (The National Institute of Advanced Industrial Science and Technology (AIST), Japan)

15:15 *Comparison of BOLD-signal magnitude between a 32-channel and a 12-channel head coil*

Evangelia Kaza (University of Greifswald, Germany); Uwe Klose (University Hospital of Tuebingen, Germany); Martin Lotze (University of Greifswald, Germany)

15:30 *Detection of fMRI Activations After Acoustic Stimulation by Correlation Analysis*

Michalina Ryn (University Hospital Tuebingen, Germany); Michael Erb (Section Experimental MR of the CNS, Germany); Uwe Klose (University Hospital of Tuebingen, Germany)

15:45 *Regularization of Diffusion MRI Q-Ball Fields for Crossing Fiber Tractography*

Kay Otto (University of Applied Sciences Stralsund, Germany); Hans-Heino Ehricke (University of Applied Sciences Stralsund, Germany); Vinod Kumar (University Hospital of Tübingen, Germany); Uwe Klose (University Hospital of Tuebingen, Germany)

16:00 Quantification in molecular MRI: challenges and solutions

Yi Wang (Cornell University, USA)

16:15 Brain White Matter Pathological Assessment in MS Clinically Isolated Syndrome and Relapsing-Remitting Patients using Quantitative Magnetization Transfer Imaging (qMTI)

Nader Riyahi-Alam (Tehran University of Medical Sciences, Iran); Khodarahm Pahlavan (Tehran University of Medical Sciences, Iran); Mohammad Hosein Harirchian (Tehran University of Medical Sciences, Iran); Alireza Bozorgi (Tehran University Of Medical Sciences, Iran); Kavous Firuznia (Tehran University of Medical Sciences(TUMS)/Tehran University-Tehran-Iran, Iran); Majid Shakiba (Tehran University of Medical Sciences(TUMS)/Tehran University-Tehran-Iran, Iran); Morteza Bakhtiary (Tehran University of Medical Sciences, Iran); Behruz Rafie (Tehran University of Medical Sciences(TUMS)/Tehran University-Tehran-Iran, Iran)

16:30 4D velocity measurements in intracranial aneurysms using 3T phase contrast MRI angiography

Pim van Ooij (Academic Medical Center Amsterdam, The Netherlands); Joppe Schneiders (Academic Medical Center, The Netherlands); Ed VanBavel (Academic Medical Center, The Netherlands); Charles Majoie (Promoter, The Netherlands); Aart Nederveen (Academic Medical Center, The Netherlands)

16:45 The Alliance for MRI: A European Initiative

Stephen Keevil (Guy's and St Thomas' NHS Foundation Trust, United Kingdom)

Th. 03/3.7: Diagnostic Reference Levels

Room: Hall 05 Chair: Philipp Trueb (Federal Office of Public Health, Switzerland) , Jürgen Griebel (Federal Office for Radiation Protection, Germany)

15:00 DICOM DOSE: Capture and Reporting

Stephen Balter (Columbia University, USA); Heinz Blendinger (Siemens Healthcare, Germany)

15:15 Diagnostic Reference Levels in Computer Tomography at IPOCFG, EPE

Ana Roda (Instituto Português de Oncologia de Coimbra Francisco Gentil, Portugal); Maria do Carmo Lopes (Instituto Portugues de Oncologia de Coimbra, Portugal); Agnes Fausto (Universidade Estadual de Santa Cruz, Brazil)

15:30 First Report of Radiation Dose to Pediatric Patients Arising From Diagnostic Chest and Abdomen Examination

Malakeh Malekzadeh (Mashhad university of medical sciences, Iran); Bahreyni Toossi (Mashhad university of medical sciences, Iran); Shahram Bayani Roudi (Mashhad University of Medical Sciences, Iran); Mohammad Taghi Shakeri (Mashhad university of medical

sciences, Iran); Fateme Akbari (Mashhad university of medical sciences, Iran)

15:45 Diagnostic Reference Levels in Cardiology and Interventional Radiology

Philipp Trueb (Federal Office of Public Health, Switzerland); Abbas Aroua (CHUV and University of Lausanne, Switzerland); Anja Stuessi (Federal Office of Public Health, Switzerland); Eleni Samara (CHUV and University of Lausanne, Switzerland); Reto Treier (Federal Office of Public Health, Switzerland); Francis Verdun (CHUV and University of Lausanne, Switzerland); François Bochud (CHUV and University of Lausanne, Switzerland); Werner Zeller (Federal Office of Public Health, Switzerland)

16:00 Diagnostic Reference Levels in Computed Tomography in Switzerland

Reto Treier (Federal Office of Public Health, Switzerland); Abbas Aroua (CHUV and University of Lausanne, Switzerland); François Bochud (CHUV and University of Lausanne, Switzerland); Eleni Samara (CHUV and University of Lausanne, Switzerland); Francis Verdun (CHUV and University of Lausanne, Switzerland); Anja Stuessi (Federal Office of Public Health, Switzerland); Philipp Trueb (Federal Office of Public Health, Switzerland); Werner Zeller (Federal Office of Public Health, Switzerland)

16:15 Medical use of Computed Tomography (CT) and patient doses in New Zealand in 2007

Stirling (National Radiation Laboratory, New Zealand); Anthony Cotterill (National Radiation Laboratory, New Zealand)

16:30 Patient Dose and National Diagnostic Reference Levels in computed tomography in Iran

Hamid Reza Khosravi (Nuclear Science and Technology Institute, Iran); Mohammad Reza Deevband (National Radiation Protection Department, Iran); Saeed Setayeshi (Faculty of Nuclear engineering and physics Amir Kabir University, Iran); Mohammad Reza Kardan (Nuclear Science and Technology Institute, Iran); Javad Ghasemi (University of tehran, Iran); Ali Shokraei (National Radiation Protection Department, Iran); Asad Babakhani (Iran National Regulatory Authority, Iran); Reza Paidar (National Radiation Protection Department, Iran); Hossein Tajik ahmadi (Nuclear Science and Technology Institute, Iran)

Th. 04/3.6: Biosignal Analysis for Medical Devices and Systems (1)

Room: Hall 14c Chair: Frida Lindberg (Royal Institute of Technology, Sweden) , Antonio Fratini (University of Naples "Federico II", Italy)

15:00 Frequency domain SpO2 estimation based on multichannel photoplethysmographic measurements at the sternum

Rolf Vetter (CSEM, Switzerland); Andrea Ridolfi (CSEM, Switzerland); Leopoldo Rossini (CSEM, Switzerland); Josep Maria Sola i Caros (CSEM (Swiss Center for Electronic and Microtechnology),

Switzerland); Olivier Chetelat (CSEM, Switzerland); Marc Correvon (CSEM, Switzerland); Jens Krauss (CSEM (Swiss Center for Electronic and Microtechnology), Switzerland)

15:15 *Tracking the Dynamics of the Cerebral Autoregulation Response to Sudden Changes of PaCO₂*

Jia Liu (Shenzhen Institute of Advanced Technology, P.R. China)

15:30 *Development of a miniaturized in-ear pulse oximeter for long term monitoring of risk patients*

Markus Hülsbusch (Institut für Hochfrequenztechnik der RWTH Aachen, Germany); Vladimir Blazek (RWTH Aachen University, Germany); Markus Herzog (RWTH Aachen University, Germany); Stefan Vogel (RWTH Aachen University, Germany); Tobias Wartzek (RWTH Aachen University, Germany); Dietmar Starke (CiS Institut für Mikrosensorik gGmbH, Germany); Thomas Hennig (CiS Institut für Mikrosensorik GmbH, Germany)

15:45 *Tissue strain from Tissue Velocity Imaging (TVI) during sub-maximal isotonic muscle contractions*

Frida Lindberg (Royal Institute of Technology, Sweden)

16:00 *Method for monitoring fetal heart rate from pulsed wave ultrasound during the active stage of labor*

Oded Luria (Tel-Aviv University, Israel); Yuri Megel (Barnev LTD, Israel); Dima Smakhtin (Barnev LTD, Israel); Dalia Schwake (Holy Family Hospital, Israel); Ofer Barnea (Tel Aviv University, Israel)

16:15 *Pattern Recognition and Feature Selection for the Development of a New Artificial Larynx*

Megan Russell (University of the Witwatersrand, Johannesburg, South Africa); David Rubin (University of the Witwatersrand, Johannesburg, South Africa); Tshilidzi Marwala (University of the Witwatersrand, Johannesburg, South Africa); Brian Wigdorowitz (University of the Witwatersrand, Johannesburg, South Africa)

Th. 08/ 3.3: Nanoparticles (2)

Room: Hall 13a Chair: Andreas Jordan (MagForce Nanotechnologies AG, Germany), Michael Krüger (University of Freiburg, Germany)

15:00 *Keynote: Thermotherapy Using Magnetic Nanoparticles: Principles and Clinical Application*

Andreas Jordan (MagForce Nanotechnologies AG, Germany)

15:30 *Ferroelectric Nanoparticles for Contrast Enhancement Microwave Tomography: Feasibility Assessment for Detection of Lung Cancer.*

Serguei Semenov (Keele University, United Kingdom)

15:45 *Synthesisation radiations toxicity of Micro Beam Radiotherapy using Nanoparticles*

Pradip Deb (RMIT University, Australia); Wan Nordiana Rahman (RMIT University, Australia); Rob Davidson (RMIT University, Australia); Moshi Geso (RMIT University, Australia)

16:00 *Application of Carbonyl Iron Powder as a Novel Mediator for Arterial Embolization Hyperthermia—Feasibility Investigation*

Lingyun Zhao (Tsinghua University, P.R. China); Wei Jiang (Beijing University of Chinese Medicine, P.R. China); Yongjian Jin (2nd Affiliated Hospital of Tsinghua University, P.R. China); Xiaowen Wang (Tsinghua University, P.R. China); Xufei Wang (Tsinghua University, P.R. China); Jintian Tang (Tsinghua University, P.R. China)

16:15 *Dynamics of Kerr Nanoparticles under a Femtosecond Optical Trap*

Romeric Pobre (De La Salle University, Philippines); Caesar Saloma (University of the Philippines, Philippines)

16:30 *Nanomaterials for Positive Contrast Imaging of MR-Visible Implants*

Ioana Slabu (RWTH Aachen University, Germany); Gernot Güntherodt (RWTH Aachen University, Germany); Thomas Schmitz-Rode (RWTH Aachen, Germany); Michael Hodenius (University (RWTH) Aachen, Germany); Nils Krämer (RWTH Aachen University, Germany); Gabriele Krombach (RWTH Aachen University, Germany); Jens Otto (RWTH Aachen University, Germany); Uwe Klinge (RWTH Aachen University, Germany); Martin Baumann (RWTH Aachen University, Germany)

Th. 04/3.13: Modeling and Simulation for Imaging

Room: Hall 12b **Chair:** Antonella Meloni (University of Pisa, Italy)

15:00 *Monte Carlo Simulation of Intrinsic Count Rate Performance for Scintillation Gamma Camera*

Ali Asghar Mowlavi (Sabzevar University, Iran)

15:15 *Monte Carlo Simulations for I-131 imaging using a variance reduction technique*

Hamid Reza Khosravi (Nuclear Science and Technology Institute, Iran); Saeed Sarkar (Tehran University of Medical Sciences, Iran); Abass Takavar (Tehran University of Medical Sciences(TUMS)/Tehran University-Tehran-Iran, Iran); Mohammad Reza Deevband (National Radiation Protection Department, Iran); Hossein Khosravi (Tehran University of Medical Sciences, Iran)

15:30 *Numerical modeling of photonic nanojet behind dielectric microcylinder*

Denisa Maderankova (Brno University of Technology, Czech Republic); Ivo Provaznik (Brno University of Technology, Czech Republic); Karel Kleparnik (Institute of Analytical Chemistry of the ASCR, v.v.i., Czech Republic)

15:45 *Measurement of optical pulsation and transmission spectra as reference for a Monte Carlo simulation of the finger tip*

Benno Doemer (Fachhochschule Heidelberg, Germany); Dominic Klausmann (Fachhochschule Heidelberg, Germany); Uwe Bindig (LMTB, Germany); Ingo Gersonde (LMTB, Germany); Matthias Schwaibold (MCC GmbH & Co. KG, Germany); Bernd Schöller (MCC GmbH & Co. KG, Germany); Benno Kotterba (Fachhochschule Heidelberg, Germany)

16:00 *GATE Mammogram Simulation of NCAT Breast Phantom*

Isabel Duarte (University of Coimbra, Portugal); Liliana Caldeira (University of Lisbon, Portugal); Filipe Soares (University of Beira Interior, Portugal); Filipe Janela (Siemens, Healthcare Sector, Portugal); José Silva (Universidade de Coimbra, Portugal)

16:15 *Obtaining Molecular Interference Functions of X-ray Coherent Scattering for Breast Tissues by Combination of Simulation and Experimental Methods*

Ali Chaparian (Thehran University of Medical Sciences, Iran); Mohammad Ali Oghabian (Thehran University of Medical Sciences, Iran); Vahid Changizi (Thehran University of Medical Sciences, Iran)

Th. 01/3.1: Past, Present and Future of IMRT

Room: Hall 01 Chair: Steve Webb (University of London, United Kingdom) , Thomas Bortfeld (Massachusetts General Hospital, USA)

15:00 *Keynote: The 21st birthday party for Intensity-Modulated Radiation Therapy (IMRT); 21 years from 1988-2009; From concept to practical reality*

Steve Webb (Institute of Cancer Research and Royal Marsden Hospital, United Kingdom)

15:30 *Design and Physical Properties of an Iris Collimator for Robotic Radiosurgery*

Warren Kilby (Accuray Inc., USA); Gernot Echner (German Cancer Research Center (DKFZ), Germany); Mu Young Lee (Accuray Inc., USA); Eric Earnst (Accuray Inc., USA); Sohail Sayeh (Accuray Inc., USA); Bernhard Rhein (DKFZ, Germany); Clemens Lang (DKFZ, Germany); Calvin Maurer (Accuray Incorporated, USA); Wolfgang Schlegel (Deutsches Krebsforschungszentrum, Germany)

15:45 *Optimal delivery of DMLC Arc Therapy*

Dharanipathy Rangaraj (Washington University Saint Louis, USA); Lech Papiez (University of Texas, Southwestern Medical Center, USA)

16:00 *Dosimetric Effects of Gantry Angular Acceleration and Deceleration in Volumetric Modulated Radiation Therapy*

Yulin Song (Memorial Sloan-Kettering Cancer Center, USA); Pengpeng Zhang (Memorial Sloan-Kettering Cancer Center, USA); Ceferino Obcemea (Memorial Sloan-Kettering Cancer Center, USA); Boris Mueller (Memorial Sloan-Kettering Cancer Center, USA); Chandra

Burman (Memorial Sloan-Kettering Cancer Center, USA); Borys Mychalczak (Memorial Sloan-Kettering Cancer Center, USA)

16:15 *First Assessment of a Novel IGRT Device for Stereotactice Body Radiation Therapy*

Michael Speiser (University of Texas Southwestern Medical Center at Dallas, USA); Paul Medin (University of Texas, Southwestern Medical Center, USA); Weihua Mao (University of Texas Southwestern Medical Center at Dallas, USA); Lech Papiez (University of Texas, Southwestern Medical Center, USA); Franz Gum (Brainlab AG, Germany); Timothy Solberg (University of Texas, Southwestern Medical Center, USA)

16:30 *In-vivo proton beam shaping using static magnetic field for cancer therapy*

Darush Sardari (Islamic Azad University, Iran); Pooneh Saeidi (Azad University, Iran)

Th. 07/3.17: Focus Session: Cardiovascular and Hemodynamic Modeling in Dialysis and Apheresis

Room: Hall 22b Chair: Edward A. Ross (University of Florida, USA) , Daniel Schneditz (Medical University of Graz, Austria)

15:00 *Invited: Prediction of Dialysis-induced Hypotension*

Kristian Solem (Lund University, Sweden)

15:30 *Sodium profiling, but not cold dialysate, improves the absolute plasma refill rate during hemodialysis, measured by computer-guided, algorithm-controlled ultrafiltration*

Walter Brummelhuis (University Medical Center Utrecht, The Netherlands)

15:45 *An Attempt at Explanation for Etiology of Stenotic Lesions Proximal of the Venous Anastomosis at Arteriovenous Vascular Grafts*

Ulf Krüger (Königin Elisabeth Krankenhaus Herzberge, Germany)

16:00 *Non-linear resistance associated to complex geometry at high flow rates in vascular access for hemodialysis*

Luca Antiga (Mario Negri Institute, Italy); Nils Planken (Amsterdam Medical Center, Amsterdam, the Netherlands, The Netherlands); Koen Van Canneyt (Ghent University, Belgium); Lorenzo Botti (University of Bergamo, Italy); Anna Caroli (Mario Negri Institute, Italy); Bogdan Ene-lordache (Mario Negri Institute, Italy); Jan Tordoir (Adademisch Ziekenhuis Maastricht, The Netherlands); Pascal Verdonck (Ghent University, Belgium); Andrea Remuzzi (University of Bergamo, Italy)

16:15 *Vascular Access Blood Flow Measured Without Indicator Injection*

Laura Rosales (Renal Research Institute, USA); Daniel Schneditz (Medical University of Graz, Austria); Mary Carter (Renal Research Institute, USA); Peter Kotanko (Renal Research Institute, USA); Nathan Levin (Renal Research Institute, USA)

16:30 *In-vitro validation of catheter recirculation measured by thermal dilution*

Christian Mohr (University of Applied Sciences Wiesbaden, Germany); Wolfgang Kleinekofort (University of Applied Sciences Wiesbaden, Germany)

Th. 09/3.12: Focus Session on Neural Modelling in Epilepsy

Room: Hall 11 Chair: Dominique M. Durand (Case Western Reserve University, USA) , Berj L. Bardakjian (University of Toronto, Canada)

15:00 *Invited: Closed-loop control of epileptic seizures via deep brain stimulation in a rodent model of chronic epilepsy*

Shivkumar Sabesan (Arizona State University, USA); Leonidas Jassemidis (Arizona State University, USA)

15:30 *Model-based interpretation of active stimulation effects in temporal lobe epilepsy*

Fabrice Wendling (INSERM, France); Piotr Suffczynski (University of Warsaw, Poland); Stiliyan Kalitzin (SEIN, The Netherlands); Jaime Parra (SEIN, The Netherlands); Demetrios Velis (SEIN, The Netherlands); Fernando Lopes da Silva (University of Amsterdam, The Netherlands)

15:45 *Model of non-synaptic epilepsy*

Dominique M. Durand (Case Western Reserve University, USA)

16:00 *Invited: Dynamics of the Seizure Engine*

Osbert Zalay (University of Toronto, Canada); Berj Bardakjian (University of Toronto, Canada)

16:15 *Application of 3D modeling and modern visualization technique*

Marek Gzik (Silesian University of Technology, Poland); Wojciech Wolański (Silesian University of Technology, Poland)

Th. 10/3.14: Cell-Material Interactions

Room: Hall 21a Chair: Michael Teske (Universität Rostock, Germany) , Oliver Pänke (University of Leipzig, Germany)

15:00 *Microstructure and Cell Adhesion of Hydroxyapatite/Collagen Composites*

Huirong Le (University of Dundee, United Kingdom)

15:15 *Microstructural Comparison and Analysis of Bone Scaffold Prepared by FDM and SLS Process*

Bin Rong (Shanghai University, P.R. China); L Liulan (Shanghai University, P.R. China)

15:30 *Chemical surface modification of poly(ϵ -caprolactone) for accelerated wound healing after implantation of vascular devices*

Michael Teske (Universität Rostock, Germany); Henning Rohm (Universität Rostock, Germany); Katharina Kunna (University of Rostock, Germany); Helmut Keul (RWTH Aachen University, Germany); Matthias Wilhelmi (Hannover Medical University, Germany); Stefan Jockenhoevel (Helmholtz Institute for Biomedical Engineering, RWTH Aachen, Germany); Alexandr Ovsianikov (Laserzentrum Hannover e. V., Germany); Klaus-Peter Schmitz (Universität Rostock, Germany); Katrin Sternberg (Universität Rostock, Germany)

15:45 Activated Endothelial Cell Capture by Stents Coated With Antibody Against CD105

Song Cui (Anzhen Hospital Affiliated to Capital Medical University, Beijing, China, P.R. China)

16:00 Study on Adhesion Force of Endothelial Progenitor Cells and Endothelial Cells on Different Adhesion Substrates

Gui-Xue Wang (Chongqing University, P.R. China); Chao-Jun Tang (Chongqing University, P.R. China); Li Xiao (Chongqing University, P.R. China); Xue Wu (Chongqing University, P.R. China); Xiang Xie (Chongqing University, P.R. China); Li Yang (Chongqing University, P.R. China)

16:15 Effects of BaTiO₃ Piezoelectric Thin Film Coating on Activity

Yuki Tateyama (Doshisha University, Japan)

16:30 Mechanical conditions and cell differentiation in an in vitro model of fracture healing

Georg N. Duda (Charité - Universitätsmedizin Berlin, Germany)

Th. 11/3.16: Retinal Image Analysis (1)

Room: Hall 22a Chair: Alfredo Ruggeri (University of Padua, Italy) , Xiaoyi Jiang (University of Muenster, Germany)

15:00 Invited: Publicly available retinal image data and the use of competitions to standardize algorithm performance comparison

Niemeijer Meindert (University Medical Center Utrecht, The Netherlands); Michael Abramoff (University of Iowa, USA); Bram van Ginneken (University Medical Center Utrecht, The Netherlands)

15:15 Segmentation of retinal blood vessels by multi-scale feature extraction and fuzzy segmentation methods

A. Montserrat Alvarado-Gonzalez (National Autonomous University of Mexico (U.N.A.M.), Mexico); Edgar Garduño (National Autonomous University of Mexico (U.N.A.M.), Mexico); M. Elena Martinez-Perez (National Autonomous University of Mexico (U.N.A.M.), Mexico)

15:30 Recursive algorithm for blood vessel detection in eye fundus images: preliminary results

Martynas Patasius (Kaunas University of Technology, Lithuania); Vaidotas Marozas (Kaunas University of Technology, Lithuania); Darius

Jegelevicius (Kaunas University of Technology, Lithuania); Arunas Lukosevicius (Kaunas University of Technology, Lithuania)

15:45 Retinal Vessel Axis Estimation through a Multi-Directional Graph Search Approach

Enea Poletti (University of Padova, Italy); Diego Fiorin (University of Padova, Italy); Enrico Grisan (University of Padova, Italy); Alfredo Ruggeri (University of Padova, Italy)

16:00 Fast adaptive axis-based segmentation of retinal vessels through matched filters

Diego Fiorin (University of Padova, Italy); Enea Poletti (University of Padova, Italy); Enrico Grisan (University of Padova, Italy); Alfredo Ruggeri (University of Padova, Italy)

16:15 Automated Measurements of Retinal Bifurcations

Bashir Al-Diri (University of Lincoln, United Kingdom); Andrew Hunter (University of Lincoln, United Kingdom)

16:30 Evaluating the Accuracy of Optic Nerve Detection in Retina Imaging Using Complementary Methods

Thomas Karnowski (Oak Ridge National Laboratory, USA); Deniz Aykac (Oak Ridge National Laboratory, USA); Edward Chaum (University of Tennessee Health Science Center, USA); Luca Giancardo (Oak Ridge National Laboratory, USA); Yaqin Li (University of Tennessee Health Science Center, USA); Kenneth Tobin (ORNL, USA); Michael Abramoff (University of Iowa, USA)

Th. 13/3.2: Small Animal Irradiation and Imaging Technologies

Room: Hall 14b Chair: John W. Wong (Johns Hopkins University, USA) , Fridtjof Nüsslin (Technische Universität München, Germany)

15:00 Keynote: The New Frontier in Pre-clinical Radiation Research: Anatomic and Biologic Image Guidance

John W. Wong (Johns Hopkins University, USA)

15:30 Image Guided Stereotactic Small Animal Irradiator

Rajesh Pidikiti (The University of Texas Southwestern Medical Center at Dallas, USA); Strahinja Stojadinovic (University of Texas, Southwestern Medical Center, USA); Kwang Hyun Song (The University of Texas Southwestern Medical Center at Dallas, USA); Michael Speiser (University of Texas Southwestern Medical Center at Dallas, USA); Debabrata Saha (The University of Texas Southwestern Medical Center at Dallas, USA); Serguei Seliounine (The University of Texas Southwestern Medical Center at Dallas, USA); Timothy Solberg (University of Texas, Southwestern Medical Center, USA)

15:45 Small Animal Imaging with Micro, Flat-panel and Clinical CT-Scanners: An Applicability Analysis

Wolfram Stiller (University Hospital Heidelberg, Germany); Fabian Kiessling (University Hospital Aachen, Germany); Wolfhard Semmler (German Cancer Research Center, Germany)

16:00 Quantification of the experimental limitations of a semiconductor PET camera

David Oxley (University of Liverpool, United Kingdom); Andrew Boston (University of Liverpool, United Kingdom); Helen Boston (University of Liverpool, United Kingdom); John Cresswell (University of Liverpool, United Kingdom); A Grint (University of Liverpool, United Kingdom); Laura Harkness (University of Liverpool, United Kingdom); Daniel Judson (University of Liverpool, United Kingdom); Paul Nolan (University of Liverpool, United Kingdom); Ian Lazarus (Daresbury, United Kingdom)

Th. 11/3.8: Dental (2)

Room: Hall 04a Chair: Robert Mischkowski (University of Cologne, Germany)

15:00 Preclinical analysis of stents for microvascular anastomoses: A method to analyse the tensile strength

Stefan Pfeifer (Technische Universität München, Germany); Denys Loeffelbein (Technische Universität München, Germany); René Opitz (Technische Universität München, Germany); Klaus-Dietrich Wolff (Technische Universität München, Germany); Erich Wintermantel (MedTech - Lehrstuhl für Medizintechnik, Germany)

15:15 The application of ultra-short echo time MRI (UTE) for the structural assessment of dental hard-tissue components

Volker Rasche (University of Ulm, Germany); Christian Hofmann (University Ulm, Germany); Regine Maschka (University of Ulm, Germany); Johannes Ulrici (Sirona Dental Systems GmbH, Germany); Erich Hell (Sirona Dental Systems GmbH, Germany); Bernd Haller (University of Ulm, Germany); Said Boujraf (University of Ulm, Germany)

15:30 FE-analysis of dental implants with sinus lift

Peter Schuller-Götzburg (Paracelsus Medical University Salzburg, Austria, Austria); Karl Entacher (Salzburg University of Applied Sciences, Austria); Alexander Petutschnigg (Salzburg University of Applied Sciences, Austria); Werner Pomwener (Salzburg University of Applied Sciences, Austria); Franz Watzinger (Landesklinikum St. Pölten – Lilienfeld, Austria)

15:45 Variation in Anterior Temporal Muscles' Electromyogram in Accordance With Herbst in Situ

Sadık Kara (Fatih University, Turkey); Sükrü Okkesim (Fatih University, Turkey); Fatma Latifoğlu (Erciyes University, Turkey); Tancan Uysal (Erciyes University, Turkey); Aslı Baysal (Erciyes University, Turkey)

16:00 In-vivo monitoring of bruxism with an intelligent tooth splint – Reliability and validity

Johannes Clauss (Technische Universität München, Germany); Martin Sattler (Technische Universität München, Germany); Wolf-Dieter Seeher (Praxis Dres. Seeher, München, Germany); Bernhard Wolf (Technische Universität München, Germany)

16:15 Utilizing RFID Technology for Biomedical Sensor Applications

Martin Brandl (Danube University Krems, Austria)

16:30 In Vivo 3D Imaging of Carious Lesions and Dental Pulp Using Magnetic Resonance

Olga Tymofiyeva (University of Wuerzburg, Germany); Kurt Rottner (University of Wuerzburg, Germany); Julian Boldt (University of Wuerzburg, Germany); Florian Schmid (University of Wuerzburg, Germany); Ernst-Juergen Richter (University of Wuerzburg, Germany); Peter Jakob (University of Wuerzburg, Germany)

Th. 07/3.15: Sleep Recording and Device Developments

Room: Hall 21b Chair: Thomas Penzel (Charité - Universitätsmedizin Berlin, Germany) , Andre Dittmar (Insa Lyon, France)

15:00 Invited: Brain Temperature & Autonomic Nervous System for the study of relaxation

Andre Dittmar (Insa Lyon, France); Claudine Gehin (INL, France); Aurélien Oliveira (INL, France); Bertrand Massot (INL, France); Ronald Nocua (Université Joseph Fourier, France); Eric McAdams (INL, France)

15:30 Sleep Recording And Sleep Analysis Methods

Thomas Penzel (Charité - Universitätsmedizin Berlin, Germany); Martin Glos (Charité-Universitätsmedizin Berlin, CCM, Germany); Christoph Schoebel (Charité - Universitätsmedizin Berlin, Germany); Ingo Fietze (Charité-Universitätsmedizin Berlin, Algeria)

15:45 A Pilot Study on Non-contacting Detection of Central Apneas

Gerhard Weinreich (Ruhrlandklinik, University Hospital,, Germany)

16:00 Prediction of cardiovascular risk from peripheral pulse wave

Dirk Sommermeyer (MCC GmbH & Co. KG, Germany); Matthias Schwaibold (MCC GmbH & Co. KG, Germany); Bernd Schöller (MCC GmbH & Co. KG, Germany); Ludger Grote (Sleep Lab., Dept. of Pulmonary Medicine, University of Gothenburg, Sweden); Jan Hedner (Sleep Lab., Dept. of Pulmonary Medicine, University of Gothenburg, Sweden); Armin Bolz (University of Karlsruhe, Germany)

16:15 Sleep stage classification based on discriminant analysis

Niels Wessel (Humboldt-Universität zu Berlin, Germany); Carolina Figueroa (University of Potsdam, Germany); Alexander Suhrbier (Forschungszentrum Karlsruhe GmbH, Germany); Thomas Penzel (Charité - Universitätsmedizin Berlin, Germany); Juergen Kurths (Humboldt University, Germany)

16:30 *Wards Clustering Method for Distinction between Neonatal Sleep Stages*

Vaclav Gerla (Czech Technical University in Prague, Czech Republic);
Martin Macas (CTU-FEE Prague, Czech Republic); Lenka Lhotska
(Czech Technical University in Prague, Czech Republic); Vladana
Djordjevic (Czech Technical University in Prague, Czech Republic);
Vladimir Krajca (Faculty Hospital Na Bulovce Prague, Czech Republic);
Karel Paul (Institute for Care of Mother and Child, Prague, Czech
Republic)

15:30 - 16:45

Th. 01/3.9: Brachytherapy - Sources and Technology

Room: Hall 04b Chair: Christian Kirisits (Medical University of Vienna, Austria) ,
Hans-Joachim Selbach (Physikalisch-Technische Bundesanstalt, Germany)

15:30 *Invited: Three-Dimensional Conformal Brachytherapy: Basic Concepts and Technological Challenges*

Jeffrey Williamson (Virginia Commonwealth University, USA)

16:00 *Development of New Radioactive Seeds Tm-170 for Brachytherapy*

Amal Ayoub (Ben Gurion University of the Negev, Israel); Gad Shani
(Ben Gurion University of the Negev, Israel)

16:15 *Use of nanoparticles in brachytherapy - an alternative for enhancing doses in cancer treatment*

Maritza Rodríguez Gual (InSTEC, Cuba); Caridad Alvarez (InSTEC,
Cuba); Landy Castro González (InSTEC, Cuba); Jesus Rosales García
(InSTEC, Cuba); Rafael Miller (InSTEC, Cuba)

16:30 *Reproducibility of neutron activated Sm-153 in tablets intended for human volunteer studies*

Chai Yeong (University of Malaya, Malaysia); Kwan Ng (University of
Malaya, Malaysia); Basri Johan Abdullah (University of Malaya,
Malaysia); Alan Perkins (Professor, United Kingdom)

16:30 - 18:00

Th. 12/3.10: Round Table Social Impact of Alternative Careers

Can alternative career pathways in bioengineering and medical physics lead toward a new framework for improving health, human security, and environmental sustainability? Leading practitioners from the government, business, academia, non-governmental agency, and public policy will discuss and debate this question.

Panelists:

Luis Kun, National Defense University, USA,
Göran Salerud, Linköpings University, Sweden,
Horst Siebold, Siemens Medical Systems, Germany,
Salvik Tabakov, King's College of London, UK

Room: B0 (Forum) Chair: Guruprasad Madhavan (State University of New York at
Binghamton & Thomas J. Watson School of Engineering and Applied Science, USA)

16:45 - 18:45

4.7: Presentation of 2015 Bids

Room: Hall 05

17:15 - 19:00

Th. 11/4.8: Audiology

Room: Hall 04a Chair: Birger Kollmeier (HörTech gGmbH, Germany)

17:15 Invited: *The mechanical response of the tectorial membrane in the frog inner ear*

Pim Van Dijk (University Medical Center Groningen, The Netherlands); Johannes Segenhout (University Medical Center Groningen, The Netherlands); Richard Schoffelen (University Medical Center Groningen, The Netherlands)

17:30 Invited: *Is fine structure in hearing threshold an indicator of a highly sensitive cochlea? Investigations on amplitude modulation detection*

Manfred Mauermann (Universität Oldenburg, Germany); Stephan Heise (Universität Oldenburg, Germany); Jesko Verhy (Universität Oldenburg, Germany); Birger Kollmeier (HörTech gGmbH, Germany)

17:45 Invited: *Distortion product otoacoustic emissions – a tool for assessing the non-linear sound amplification of the ear*

Thomas Janssen (Technical University of Munich, Germany); Jörg Müller (Technical University Munich, Germany)

18:00 Invited: *Laserinterferometrically measured distortion product otoacoustic emissions*

Ernst Dalhoff (HNO-Klinik Tübingen, Germany); Diana Turcanu (HNO-Klinik Tübingen, Germany); Anthony Gummer (HNO-Klinik Tübingen, Germany)

18:15 Invited: *The Precision of Neuronal Coding in the Auditory Brainstem and Implications for Cochlear Implants*

Huan Wang (Infineon Technologies, Germany); Marcus Holmberg (Oticon A/S, Denmark); Werner Hemmert (Technische Universität München, Germany)

18:30 *Testing of Eustachian Tube Functioning via Strain Gauge Measurement of Tympanic Membrane Movement*

Wiebke Saß (Hamburg University of Technology (TUHH), Germany); Thorsten Zehlicke (Universität Rostock, Germany); Christian Moß (Hamburg University of Technology, Germany); Hans Wilhelm Pau (Universität Rostock, Germany); Jörg Müller (TU Hamburg Harburg, Germany)

18:45 Invited: *Failures of phonemic restoration*

Deniz Baskent (Starkey Hearing Research Center, Berkeley, CA, USA, USA); Cheryl Eiler (Starkey Hearing Research Center, Berkeley, CA, USA, USA); Anastasios Sarampalis (Dept. Psychology, University of California, Berkeley, CA, USA, USA)

19:00 Novel designs for Middle Ear Implants produced by Micro Injection Molding

Marc Hoffstetter (MedTech - Lehrstuhl für Medizintechnik, Germany); Karl-Herbert Karl-Herbert Ebert (Scholz-HTIK Ltd., Kronach, Germany, Germany); Michael Schaumann (MedTech - Lehrstuhl für Medizintechnik, Germany); Erich Wintermantel (MedTech - Lehrstuhl für Medizintechnik, Germany)

Th. 04/4.11: Image Segmentation

Room: Hall 03 Chair: Jan Ehrhardt (University Medical Center Hamburg-Eppendorf, Germany)

17:15 An Improved Segmentation of Chromosomes in Q-Band Prometaphase Images Using a Region Based Level Set

Enrico Grisan (University of Padova, Italy); Enea Poletti (University of Padova, Italy); Alfredo Ruggeri (University of Padua, Italy)

17:30 Automatic segmentation of arteries in multi-stain histology images

Laura Leal Taixe (Leibniz Universitaet Hannover, Germany); Brooks Dana H. (Northeastern University, USA); Bodo Rosenhahn (Leibniz Universitaet - Hannover, Germany); Ahmet Coskun (Northeastern University, USA)

17:45 Application of a Probabilistic Statistical Shape Model to Automatic Segmentation

Heike Hufnagel (University Medical Center Hamburg-Eppendorf, Germany); Jan Ehrhardt (University Medical Center Hamburg-Eppendorf, Germany); Xavier Pennec (INRIA, France); Heinz Handels (Universität Hamburg, Germany)

18:00 New Evidences on Automatic Tumor Segmentation in Magnetic Resonance Brain Images

Liliana Caldeira (University of Lisbon, Portugal); Pedro Almeida (Universidade de Lisboa, Faculdade de Ciências, Portugal); João Seabra (Siemens Healthcare, Portugal)

18:15 Cognition Network Technology for Fully Automatic 3D Segmentation of Lymph Nodes in CT Data

Gunter Schmidt (Definiens AG, Germany); Gerd Binnig (Definiens AG, Germany); Markus Kietzmann (Definiens AG, Germany); Johann Kim (Definiens AG, Germany)

18:30 Invited: Micro Array Images Segmentation Using a Novel Approach

Pooria Jafari Molghadam Fard (AmirKabir University of Technology, Iran); Mh Moradi (Amir kabir University of Tech, Iran)

Th. 13/4.15: IOMP Symposium: Research in Medical Physics

Room: Hall 21b Chair: Nataalka Suchowerska (Royal Prince Alfred Hospital & The University of Sydney, Australia) , Colin Orton (Wayne State University, USA)

17:15 *Research in Medical Physics: "What, Why and How"*

John M. Boone (University of California, USA)

17:35 *Ethics in Research*

William Hendee (Medical College of Wisconsin, USA)

17:55 *Advice for writing a successful research proposal*

Paul J. Keall (Stanford University, USA)

18:15 *Invited: The Art of Grantsmanship*

Helen Jamil Khoury (Universidade Federal de pernambuco, Brazil)

18:35 *The challenge and the reward of being an entrepreneur in medical physics and biomedical engineering*

William Hendee (Medical College of Wisconsin, USA)

Th. 03/4.1: Radiobiology at Low Doses

Room: Hall 01 Chair: Christian Streffer (University Clinics Essen, Germany) , David Brenner (Columbia University Medical Center, USA)

17:15 *Keynote: Biological Effects of Ionising Radiation-with Special Emphasis on Low Level Doses*

Christian Streffer (University Clinics Essen, Germany)

17:45 *Gamma Dose Rate Measurement and Dose Rate Calculation of Sensitive Organs in the Vicinity of Hot Springs in Kerman Province, Southeastern Iran*

Ali Jomehzadeh (Rafsanjan University of Medical Sciences, Iran);
Zahra Jomehzadeh (Kerman University of Medical Sciences, Iran)

18:00 *Estimation of External Natural Background Gamma Rays Doses to the Population of Caspian Coastal Provinces in North of Iran*

Ali Shabestani Monfared (Babol University of Medical Sciences, Iran)

18:15 *Establishment of In-vitro ⁶⁰Co Dose Calibration Curve for Dicentrals in National Biodosimetry Laboratory of Malaysia*

Noriah Jamal (Malaysian Nuclear Agency, Malaysia); Rahimah Rahim (Malaysian Nuclear Agency, Malaysia); Noraisyah Yusof (Malaysian Nuclear Agency, Malaysia); Nelly Nai Lee Bo (Malaysian Nuclear Agency, Malaysia); Yahaya Talib (Malaysian Nuclear Agency, Malaysia); Rehir Dahalan (Malaysian Nuclear Agency, Malaysia)

18:30 *Melatonin modulates the expression of "vascular endothelial growth factor" gene in irradiated rat cervical spinal cord*

Gholam hassan Haddadi (Fassa University of Medical Sciences, Iran); Alireza Shirazi (Tehran University of Medical Sciences, Iran); Mahmoud Ghazi Khansari (Tehran University of Medical Sciences, Iran); Zargham

Sepehrizadeh (Tehran University of Medical Sciences, Iran); Seied Rabi Mahdavi (Iran University of Medical Sciences, Iran); Bagher Minaee (Tehran University of Medical Sciences, Iran); Mohamad Hassan Meshkibaf (Fassa University of Medical Sciences, Iran); Ahmadreza Farzaneh Nejad (Tehran University of Medical Sciences, Iran); Maryam Haddadi (Iran University of Medical Sciences, Iran); Said Khademi (Fasa University of Medical Sciences, Iran)

18:45 *Radioprotective effects of Daflon against genotoxicity induced by gamma irradiation in human cultured lymphocytes*

Seyed Jalal Hosseinimehr (Mazandaran University of Medical Sciences, Iran); Amirhossein Ahmadi (Faculty of Pharmacy, Mazandaran University of Medical Sciences, Sari, Iran); Aziz Mahmoudzadeh (Novin Medical Radiation Institute, Tehran, Iran, Iran); Soheila Mohamadifar (Novin Medical Radiation Institute, Tehran, Iran, Iran)

Th. 04/4.6: Focus Session: Biomagnetic Signals in the Human Fetus – Advanced Signal Analysis and Clinical Applications

Room: Hall 14c Chair: Jens Haueisen (Ilmenau University of Technology, Germany) , Hubert Preissl (University of Arkansas for Medical Sciences, USA, USA)

17:15 *Invited: Fetal development, nonlinear heart rate dynamics, and self-organization*

Dirk Hoyer (University Hospital, Biomagnetic Center, Friedrich Schiller University of Jena, Germany); Uwe Schneider (Friedrich Schiller University, Jena, Germany)

17:45 *Forward Modeling of Uterine EMG and MMG Contractions*

Patricio La Rosa (Washington University in St Louis, USA); Hari Eswaran (University of Arkansas for Medical Sciences, USA); Hubert Preissl (University of Arkansas for Medical Sciences, USA, USA); Arye Nehorai (Washington University in St. Louis, USA)

18:15 *Identifying fetal breathing movements on the basis of spectral analysis in fetal heart period time series*

Peter Van Leeuwen (Groenemeyer Institute of Microtherapy, Germany); Anna Voss (Groenemeyer Institute of Microtherapy, Germany); Daniel Geue (Groenemeyer Institute of Microtherapy, Germany); Dietrich Groenemeyer (Groenemeyer Institute of Microtherapy, Germany)

18:30 *Synchronisation of quadratic phase couplings in EEG and heart rate of preterm neonates during quiet sleep*

Karin Schwab (Friedrich Schiller University of Jena, Germany); Helga Skupin (Friedrich Schiller Universtiy of Jena, Germany); Mario Walther (Friedrich Schiller University of Jena, Germany); Michael Eiselt (Friedrich Schiller University Jena, Germany); Herbert Witte (Friedrich Schiller University of Jena, Germany)

18:45 *Improvements in Processing of Neonatal Sleep Electroencephalographic Recordings*

Vladana Djordjevic (Czech Technical University in Prague, Czech Republic); Vaclav Gerla (Czech Technical University in Prague, Czech Republic); Lenka Lhotska (Czech Technical University in Prague, Czech Republic); Vladimir Krajca (Faculty Hospital Na Bulovce Prague, Czech Republic); Karel Paul (Institute for Care of Mother and Child, Prague, Czech Republic)

Th. 10/4.2: Current Advances in Stem Cell Biology

Room: Hall 14b Chair: Martin Zenke (RWTH Aachen, Germany) , Jan-Thorsten Schantz (Technical University of Munich, Germany)

17:15 *Keynote: Feeling for cells with light*

Jochen Guck (University of Cambridge, United Kingdom)

17:45 *Induced Pluripotent Stem Cells for Cellular and Tissue Engineering*

Martin Zenke (RWTH Aachen, Germany)

18:15 *Shear Stress Induces Differentiation of Arterial Endothelial Cells From Murine Embryonic Stem Cells*

Kimiko Yamamoto (University of Tokyo, Japan); Tomomi Masumura (University of Tokyo, Japan); Nobutaka Shimizu (University of Tokyo, Japan); Syotaro Obi (University of Tokyo, Japan); Joji Ando (University of Tokyo, Japan)

18:30 *The isolation and proliferation characteristics of rabbit adipos derived stromal cells at early stage in vitro*

Jianjiang Xu (Eye & ENT Hospital of Fudan University, P.R. China); Jiaxu Hong (Eye & ENT Hospital, Fudan University, P.R. China); Xinghuai Sun (Eye & ENT Hospital, Fudan University, P.R. China)

18:45 *Non-invasive characterization of the Osteogenic Differentiation of hMSCs in 3D by Impedance Spectroscopy*

Cornelia Hildebrandt (Fraunhofer-IBMT, Germany); No Impidjati (Fraunhofer-IBMT, Germany); Hagen Thielecke (Fraunhofer-IBMT, Germany)

Th. 01/4.4: IGRT Equipment

Room: Hall 13b Chair: Sonke Jan-Jakob (Netherlands Cancer Institute - Antoni van Leeuwenhoek Hospital, The Netherlands) , Daniel McShan (University of Michigan, USA)

17:15 *Keynote: Image-guided Radiation Therapy: Beyond the Obvious*

David Jaffray (RMP, Canada)

17:45 *Invited: Development and Clinical Application of a Genuine High-Precision Image-Guided Radiotherapy System*

Kenji Takayama (Kyoto University, Japan); Masaki Kokubo (Institute of Biomedical Research and Innovation, Japan); Takashi Mizowaki (Kyoto University, Graduate School of Medicine, Japan); Yuichiro Narita (Kyoto University, Graduate School of Medicine, Japan); Kazuo Nagano (Institute of Biomedical Research and Innovation, Japan); Yuichiro Kamino (Mitsubishi Heavy Industries, Ltd., Japan); Shuji Kaneko (Mitsubishi Heavy Industries, Ltd., Japan); Masahiro Hiraoka (Kyoto University, Graduate School of Medicine, Japan); Akira Sawada (Kyoto University, Graduate School of Medicine, Japan)

18:15 *Systematic Studies on the Beam Stability and the Transient Effect of a Siemens ONCOR Impression Accelerator*

Lukasz Wieczorkowski (OncoRay – Center for Radiation Research in Oncology, TU Dresden, Germany)

18:30 *Why still Multibeam Tomotherapy?*

Nils Achterberg (Universitätsklinikum Erlangen, Germany); Reinhold Mueller (University Erlangen-Nuernberg, Germany); Jan Forster (Forster Bau Ingenieurgesellschaft GmbH, Germany); Renate Forster (Forster Bau Ingenieurgesellschaft GmbH, Germany); Tilman Müller (Otto-Friedrich-Universität Bamberg, Germany)

18:45 *Clinical Evaluation of an Intra-Modality 3D Ultrasound IGRT System*

Christoph Kleefeld (Galway Univeristy Hospitals, Ireland); Margaret Moore (Galway University Hospitals, Ireland); Wil van der Putten (Galway University Hospitals, Ireland)

Th. 08/4.3: Nanoparticles (3)

Room: Hall 13a Chair: Michael Krüger (University of Freiburg, Germany) , Andreas Jordan (MagForce Nanotechnologies AG, Germany)

17:15 *Invited: Nanoparticles for (Bio)Medical Applications*

Michael Krüger (University of Freiburg, Germany)

17:45 *Fluorescent Gold Nanoclusters for Biomedical Applications*

Cheng-An J. Lin (Chung Yuan Christian University, Taiwan); Chih-Hsien Lee (Chung Yuan Christian University, Taiwan); Hung-I Yeh (Mackay Memorial Hospital, Taiwan); Walter H. Chang (Chung Yuan Christian University, Taiwan)

18:00 *Cellular Uptake of Gold Nanoparticles in Normal and Cancer Cells*

Jade Trono (The University of Tokyo, Japan); Kazue Mizuno (The University of Tokyo, Japan); Noritaka Yusa (Tohoku University, Japan); Takehisa Matsukawa (Juntendo University Hospital, Japan); Mitsuru Uesaka (The University of Tokyo, Japan)

18:15 *Development of EGFR-targeting nanomedicine for effectively and noninvasively treats lung cancer patients by aerosol delivery*

Ching-Li Tseng (National Health Research Institutes, Taiwan)

18:30 Estimation of Magnetic Nanoparticle Diameter with a Magnetic Particle Spectrometer

Sven Biederer (University of Luebeck, Germany); Tobias Knopp (University of Luebeck, Germany); Timo Sattel (University of Luebeck, Germany); Kerstin Lüdtke-Buzug (University of Luebeck, Germany); Thorsten Buzug (University of Luebeck, Germany)

18:45 A novel microfluidic based technique for encapsulation of Langerhans' islets using high viscosity alginate and BaSO₄ nanoparticles

Friederike Ehrhart (Fraunhofer IBMT, Germany); Patrick Stumpf (Fraunhofer IBMT, Germany); Stefan Wiedemeier (Institute for Bioprocessing and Analytical Measurement Techniques, Germany); Esther Weyand (University hospital Mainz, Germany); Rolf Danzebrink (Nanogate, Germany); Mathias Weber (Universitätsklinikum der Johannes Gutenberg Universität, Germany); Josef Metze (Institut für Bioprocess- und Analysenmesstechnik, Germany); Vladimir Sukhourukov (Chair for Biotechnology University Würzburg, Germany); Ulrich Zimmermann (University Würzburg, Germany); Heiko Zimmermann (Fraunhofer Institute for Biomedical Engineering, Germany)

Th. 04/4.13: Biosignal Analysis for Medical Devices and Systems (2)

Room: **Hall 12b** Chair: Claudia Igney (Philips Research Europe, Germany)

17:15 Dynamic generation of physiological model systems

Jörn Kretschmer (Furtwangen University, Germany); Alexander Wahl (University Hospital Freiburg, Germany); Josef Guttman (Universitätsklinikum Freiburg, Germany); Knut Moeller (Furtwangen University, Germany)

17:30 Calculation of the interference voltage at the input of cardiac pacemakers in low frequency magnetic fields: Influence of the homogenous and heterogeneous coupling medium

Jean-Paul Andretzko (Université Henri Poincaré, France)

17:45 Artificial Neural Network Analysis in the Evaluation of Ear Canal and Tympanic Membrane Properties from Acoustic Reflectometry Data

Manne Hannula (Oulu University of Applied Sciences, Finland); Henry Hinkula (Oulu University of Applied Sciences, Finland); Tuomas Holma (Oulu University Hospital, Finland); Eeva Löfgren (Oulu University Hospital, Finland); Martti Sorri (University of Oulu, Finland)

18:00 Magnetic induction tomography measurement system based on a fixed point DSP module

Hoe Cher Wee (University of Glamorgan, United Kingdom); Stuart Watson (University of Glamorgan, United Kingdom); Ralf Patz (University of Glamorgan, United Kingdom); Richard William (University of Glamorgan, United Kingdom)

18:15 Constrained Reconstruction for Sparse Magnetic Resonance Imaging

Giuseppe Placidi (University of L'Aquila, Italy)

18:30 Metabonomics based on pattern recognition methods in 1H in vivo MRS in differentiation metabolic profiles of multiple sclerosis subtypes

Łukasz Boguszewicz (Maria Skłodowska-Curie Memorial Cancer Center and Institute of Oncology, Poland); Maria Sokół (Comprehensive Cancer Centre, MSC Memorial Institute, Branch Gliwice, Poland); Agnieszka Polnik (Maria Skłodowska Curie Cancer Center and Institute of Oncology, Poland); Maciej Maciejowski (Medical University in Katowice, Poland)

Th. 07/4.17: Focus Session: Monitoring and Modeling in Adsorptive and Diffusive Blood Purification

Room: Hall 22b Chair: Norma Ofsthun (Fresenius Medical Care, USA) , Kristian Solem (Lund University, Sweden)

17:15 Invited: Hepatic Assist Devices : From Where? To Where?

Jack Patzer (University of Pittsburgh, USA)

17:45 Clearance and rate of conjugated bilirubin removal during extracorporeal liver support therapy with FPSA Prometheus™

Aleksandra Jung (AGH University of Science and Technology, Poland); Peter Krisper (Medical University of Graz, Austria); Maciej Zadora (AGH University of Science and Technology, Poland); Bernd Haditsch (Medical University of Graz, Austria); Rudolf Stauber (Medical University of Graz, Austria); Herwig Holzer (Medical University of Graz, Austria); Daniel Schneditz (Medical University of Graz, Austria)

18:00 Extracorporeal liver support: Albumin removal vs. albumin regeneration

Steffen Mitzner (University of Rostock, Germany)

18:15 In vitro online postdilution hemodiafiltration: effect of various bicarbonate dialysis fluid concentrations on acid-base status

Helene Morel (University of Technology of Compiègne, France)

18:30 Flow Based Two-Compartment Models - A Comparative Computational Study

Przemysław Korohoda (AGH University of Science and Technology, Poland)

18:45 An enhanced optical method for measuring concentration of uric acid removed during dialysis

Jana Jerotskaja (Tallinn University of Technology, Estonia); Ivo Fridolin (Tallinn University of Technology, Estonia); Kai Lauri (Tallinn University of Technology, Estonia); Merike Luman (Tallinn University of Technology, Estonia)

Th. 12/4.10: Health Technology Management in Developing Countries (1)

Room: Hall 02 Chair: Heikki Teriö (Karolinska University Hospital, Sweden) , Andrei Issakov (Health Technology and Facilities Planning (TFP), Switzerland)

17:15 Invited: Health Technologies, Health System Governance and Service Delivery

Andrei Issakov (Health Technology and Facilities Planning (TFP), Switzerland)

17:45 Invited: Towards Appropriate Selection and Procurement of Medical Devices: A Proposed Model for Health care Planners

Adham Ismail (World Health Organization, Egypt)

18:15 Invited: Human resources as an important factor in the management of medical equipment: Institutions involved and their expertise in Peru

Leopoldo Yabar Escribanel (Universidad Tecnologica Del Peru, Peru); Daniel Garcia Romero (Universidad Tecnologica Del Peru, Peru)

18:30 Strengthening Healthcare Technology Management (HTM) in East Africa

James Wear (Scientific Enterprises, Inc, USA); Tom Judd (Kaiser Permanente, USA); Andrei Issakov (Health Technology and Facilities Planning (TFP), Switzerland)

18:45 Health Technology Management in a Developing Country Like the Philippines

Miguel Gutierrez (De La Salle University, Philippines)

19:00 Developing a Database of Generic Specifications for Medical Equipment for Healthcare Institutions in a Developing Country

Shashi Sinha (Ministry Of Health and Family Welfare, India); Andrew Gammie (Fishtail Consulting, United Kingdom); Peter Mellon (Crown Agents, India)

Th. 09/4.12: Modelling in Neural Engineering

Room: Hall 11 Chair: Dominique M. Durand (Case Western Reserve University, USA) , Berj L. Bardakjian (University of Toronto, Canada)

17:15 Customizable neuro-mechanical model of a hemiplegic elbow interacting with a pseudoelastic dynamic orthosis

Simone Pittaccio (Italian National Research Council, Italy); Stefano Viscuso (Italian National Research Council, Italy)

17:30 A Consideration of the Expanded Partial Differential Equations and the Compartment System as the Background of the ABR System

Masahiro Aruga (Tokai University, Japan)

17:45 Sensitivities of Bipolar Subcutaneous and Cortical EEG Leads

Juho Väisänen (Tampere University of Technology, Finland); Katrina Wendel (Tampere University of Technology, Finland); Gunnar Seemann (University Karlsruhe (TH), Germany); Malmivuo Jaakko

(Tampere University of Technology, Finland); Jari Hyttinen (Tampere University of Technology, Finland)

18:00 Use of Artificial Neural Networks for Classification Intracranial EEG Signals from Epileptic Patients

Pedro Marchena (Simon Bolivar University, Venezuela); Mary Díaz (Simón Bolívar University, Venezuela); Rosana Esteller (NeuroPace, Inc., USA); Andreina Zambrano (Simon Bolivar University, Venezuela); Ivette Martinez (Universidad Simón Bolívar, Venezuela)

18:15 Seizure Control in an In-Silico Model of epilepsy Using Backstepping Technique

Naghmeh Mostofi (Iran University of Science and Technology, Iran)

18:30 An Improved Method for Dipole Modeling in EEG-Based Source Localization

Fredrik Edelvik (Fraunhofer-Chalmers Research Centre, Sweden); Björn Andersson (Fraunhofer-Chalmers Research Centre, Sweden); Stefan Jakobsson (Fraunhofer-Chalmers Research Centre, Sweden); Stig Larsson (Chalmers University of Technology, Sweden); Mikael Persson (Chalmers University of Technology, Sweden); Yazdan Shirvany (Chalmers University of Technology, Sweden)

18:45 Force fluctuations in a simulated motoneuron pool

Andre Kohn (University of Sao Paulo, Brazil)

Th. 11/4.16: Retinal Image Analysis (2)

Room: Hall 22a Chair: Alfredo Ruggeri (University of Padua, Italy) , Xiaoyi Jiang (University of Muenster, Germany)

17:15 Automatic Change Detection of Retinal Images

Giulia Troglio (University of Iceland, Italy); Alessandra Nappo (University of Genoa, Italy); Jon Benediktsson (University of Iceland, Iceland); Gabriele Moser (Università degli Studi di Genova, Italy); Sebastiano Serpico (University of Genoa, Italy); Einar Stefansson (University of Iceland, Iceland)

17:30 Automated Measurement of Cup-to-Disc Ratio for Diagnosing Glaucoma in Retinal Fundus Images

Yuji Hatanaka (University of Shiga Prefecture, Japan); Keisuke Fukuta (Gifu University, Japan); Chisako Muramatsu (Gifu University, Japan); Akira Sawada (Gifu University, Japan); Takeshi Hara (Gifu University, Japan); Tetsuya Yamamoto (Gifu University, Japan); Hiroshi Fujita (Gifu University, Japan)

17:45 A Robust Lesion Boundary Segmentation Algorithm using Level Set Methods

Elizabeth Massey (University of Lincoln, United Kingdom); Andrew Hunter (University of Lincoln, United Kingdom); James Lowell (Foster Findlay Associates Limited, United Kingdom); David Steel (Sunderland Eye Infirmary, United Kingdom)

18:00 *Bright Retinal Lesions Detection using Color Fundus Images Containing Reflective Features*

Luca Giancardo (Oak Ridge National Laboratory, USA); Thomas Karnowski (Oak Ridge National Laboratory, USA); Edward Chaum (University of Tennessee Health Science Center, USA); Fabrice Meriaudeau (Uni Bourgogne, France); Kenneth Tobin (ORNL, USA); Yaqin Li (University of Tennessee Health Science Center, USA)

18:15 *Retina Image Gradings' Comparison by Weighted Matching Analysis*

Andre Mora (Uninova, Portugal); José Fonseca (Uninova, Portugal); Pedro Vieira (FCT-UNL, Portugal)

18:30 *Computer Assisted 'Top-Down' Assessment of Diabetic Retinopathy*

Herbert Jelinek (Charles Sturt University, Australia); Karim Al-Saedi (Al-Mustainsiriyah University, Iraq); Lars Bäcklund (Karolinska Institutet, Sweden)

18:45 *Bayesian Transductive Markov Random Fields for Interactive Segmentation in Retinal Disorders*

Noah Lee (Columbia University, USA); Andrew Laine (Columbia University, USA); Theodore Smith (Columbia University, USA)

Th. 09/4.5: Human Movement and Posture Analysis (1)

Room: Hall 14a Chair: Vladimir Medved (KIF, Croatia) , Jiri Hozman (Czech Technical University in Prague, Faculty of Biomedical Engineering, Czech Republic)

17:15 *Ultrasound pre-study of the kinematics of the residual tibia within a trans-tibial socket during gait*

Sebastian Klasen (Fraunhofer IPA, Germany); Carolin Uplegger (Fraunhofer IPA, Germany); Thomas Bächle (Fraunhofer IPA, Germany); Urs Schneider (Fraunhofer IPA, Germany); Sebastian Rensch (Fraunhofer IPA, Germany)

17:30 *Measurement of Eye and Head Position in Neurological Practice*

Jaroslav Charfreitag (Czech Technical University in Prague, Czech Republic); Jiri Hozman (Czech Technical University in Prague, Faculty of Biomedical Engineering, Czech Republic)

17:45 *A lightweight approach for activity classification on microcontrollers*

Martin Rulsch (Fraunhofer Institut Integrierte Schaltungen, Germany); Michaela Benz (Fraunhofer Institut Integrierte Schaltungen, Germany); Christian Arzt (Fraunhofer Institut Integrierte Schaltungen, Germany); Christian Podolak (Fraunhofer Institut Integrierte Schaltungen, Germany); Jinghua Zhong (Fraunhofer Institut Integrierte Schaltungen, P.R. China); Robert Couronné (Fraunhofer Institut Integrierte Schaltungen, Germany)

18:00 Comparison of k-Means and Bayes classifiers for Human Body Motions Classification

Jan Havlík (Czech Technical University in Prague, Czech Republic);
Jan Uhlíř (Czech Technical University in Prague, Czech Republic);
Zdeněk Horčík (Czech Technical University in Prague, Czech Republic)

17:45 - 19:00

Th. 01/4.9: Radiotherapy: Measurements and Observations

Room: Hall 04b Chair: Frank Van den Heuvel (University of Leuven, Belgium) ,
Timothy Solberg (University of Texas, Southwestern Medical Center, USA)

17:45 Comparison of Localization Techniques for Prostate Radiotherapy

Ryan Foster (UT Southwestern Medical Center, USA); Ewa Papiez (UT Southwestern Medical Center, USA); Timothy Solberg (University of Texas, Southwestern Medical Center, USA)

18:00 Accuracy evaluation of using MV EPID and / or integrated kV imaging system to locate 3D positions of internal fiducial markers using a Calypso system

Weihua Mao (University of Texas Southwestern Medical Center at Dallas, USA); Ryan Foster (UT Southwestern Medical Center, USA); Timothy Solberg (University of Texas, Southwestern Medical Center, USA)

18:15 Tumor Alignment between 4DCT and 4D Cone Beam CT for Irregular Respiratory Patient – a Phantom Study

Chuxiong Ding (University of Texas Southwestern Medical Center, USA); Long Huang (University of Texas, Southwestern Medical Center, USA); Lech Papiez (University of Texas, Southwestern Medical Center, USA); Robert Timmerman (University of Texas Southwestern Medical Center, USA); Timothy Solberg (University of Texas, Southwestern Medical Center, USA)

18:30 Observations of Prostate Intrafractional Motion during External Beam Radiation Therapy

Jinsheng Li (Fox Chase Cancer Center, USA); Alan Pollack (University of Miami, USA); Eric Horwitz (Fox Chase Cancer Center, USA); Mark Buyyounouski (Fox Chase Cancer Center, USA); C-M Charlie Ma (Fox Chase Cancer Center, USA)

18:45 Image enhancement techniques allowing observation of intra-fractional motion in IMRT treatment for prostate carcinoma

Frank Van den Heuvel (University of Leuven, Belgium); Pieter Slagmolen (University of Leuven, Belgium); Jesse Larrew (Wayne State University, USA)

Th. 10/4.14: Novel Techniques in Tissue Engineering and Regenerative Medicine

Room: Hall 21a Chair: Keith Cook (University of Michigan, USA) , Michael Hacker (Universität Leipzig & Pharmaceutical Technology, Germany)

17:45 Nanoparticulate detection systems for the evaluation of New Drug Delivery Approaches and Drug Targeting principles

Joerg Tessmar (Universität Regensburg, Germany)

18:15 5-Fluorouracil encapsulation in hydroxyapatite/poly(lactide-co-glycolide) composite microspheres for drug delivery

Chui Ping Ooi (SIM University, Singapore); Yuting Lin (Nanyang Technological University, Singapore); Yan Li (Nanyang Technological University, Singapore)

18:30 Repair of cardiac damage using intrapericardial drug delivery by means of MR-trackable alginate beads

Yanmin Yang (NRC-CNRC Institute for Biodiagnostics, Canada); Marco Gruwel (NRC-CNRC Institute for Biodiagnostics, Canada); Patricia de Gervai (NRC-CNRC Institute for Biodiagnostics, Canada); Jiankang Sun (NRC-CNRC Institute for Biodiagnostics, Canada); Olga Jilkina (NRC-CNRC Institute for Biodiagnostics, Canada); Eugene Gussakovsky (NRC-CNRC Institute for Biodiagnostics, Canada); Valery Kupriyanov (NRC-CNRC Institute for Biodiagnostics, Canada)

18:45 Consideration of Measurement of Electrical Characteristics for Sacrificed Cow Muscles

Wataru Kiyoyama (Tokyo University of Science, Japan)

19:00 Lubrication Property of Hydrogel Layer on Articular Cartilage Surface

Takaki Tokuyama (Doshisha University, Japan)

19:15 The Role of Porous Media in Modeling Fluid Flow within Hollow Fiber Membranes of the Total Artificial Lungs

Khalil Khanafer (University of Michigan, USA); Keith Cook (University of Michigan, USA)

Wednesday, Sep 9

08:15 - 10:00

Th. 03/5.14: Dosimetry in Radiation Therapy

Room: Hall 21a Chair: Georg Stücklschweiger (Medical School of Graz OEGMP, Austria) , Otto Sauer (Universitätsklinikum Würzburg, Germany)

8:15 Evaluating the dosimetric effect of lack of side-scatter volume for measurements of large fields with an integration diode array

Pan Ma (Cancer Institute (Hospital), Chinese Academy of Medical Sciences, P.R. China)

8:30 In-phantom peripheral organ doses from prostate irradiation using 18 MV external beam radiotherapy measured with 6LiF:Mg,Cu,P & 7LiF:Mg,Cu,P glass-rod TLDs

Rungdham Takam (Royal Adelaide Hospital, Australia); Eva Bezak (Royal Adelaide Hospital, Australia); Eric Yeoh (Royal Adelaide Hospital, Australia); Guilin Liu (Royal Adelaide Hospital, Australia)

8:45 Water-equivalent calibration of 192Ir HDR Brachytherapy source using MAGIC Gel Polymer

Mirko Alva (University of Sao Paulo, Brazil); Tatiana Marques (University of São Paulo, Brazil); Leandro Gonçalves (University of São Paulo, Brazil); Oswaldo Baffa (Universidade de Sao Paulo, Brazil); Patrícia Nicolucci (University of São Paulo, Brazil)

9:00 Dose calculation of Ru-106 Ophthalmic plaques with Multi slice X-ray CT PAGAT gel dosimetry and MCNP4c code

Zohreh Azma (Shahid Beheshti University, Iran); Seyed Mahmoud Reza Aghamiri (Shahid Beheshti University, Iran); Mohammad Hassan Zahmatkesh (Novin Medical Radiation Institute, Iran); Ramin Jaberri (Medical University of Tehran, Iran)

9:15 Charge recombination correction in the dosimetry by means ionization chambers of a high dose-per-pulse electron accelerator for intraoperative radiation therapy (IORT)

Eugenia Moretti (Azienda Ospedaliero-Universitaria "S. Maria della Misericordia", Italy); Maria Rosa Malisan (Azienda Ospedaliero-Universitaria "S. Maria della Misericordia", Italy); Kabyr Frisano (Università degli Studi di Udine, Italy); Renato Padovani (SO di Fisica Sanitaria, Italy)

9:30 Characterization of a Radiochromic Solid Polymer Dosimeter According to its' Composition

Bijan Hashemi (Tarbiat Modares University, Iran); Ahmad Mostaar (Tarbiat Modares University, Iran); Mohammad Hassan Zahmatkesh (Novin Medical Radiation Institute, Iran); Seyed Mahmoud Reza Aghamiri (Shahid Beheshti University, Iran); Seied Rabi Mahdavi (Iran University of Medical Sciences, Iran)

Th. 04/5.7: Image Analysis (1)

Room: Hall 05 Chair: Sarah Lee (King's College London, United Kingdom) , Ewald Moser (Medical University of Vienna, Austria)

8:15 Brain Activity Movie functional MRI with ultra-high temporal resolution at 7 Tesla

Christian Windischberger (Medical University of Vienna, Austria); Florian Gerstl (Medical University of Vienna, Austria); Florian Fischmeister (Medical University of Vienna, Austria); Veronika Schöpf (Medical University of Vienna, Austria); Christian Kasess (Medical University of Vienna, Austria); Ewald Moser (Medical University of Vienna, Austria)

8:30 *Effect of Slice Thickness on Texture Analysis of Multiple Sclerosis*

Sami Savio (Tampere University of Technology, Finland); Lara Harrison (University of Tampere, Finland); Prasun Dastidar (Tampere University Hospital, Finland); Seppo Soimakallio (Tampere University Hospital, Finland); Hannu Eskola (Technical University of Tampere, Finland)

8:45 *Analysis of multiple resolution μ -CT image sets for pore-size distribution estimation*

Baran Aydogan (Tampere University of Technology, Finland); Markus Hannula (Tampere University of Technology, Finland); Niko Moritz (University of Turku, Finland); Erkki Levänen (Tampere University of Technology, Finland); Jari Hyttinen (Tampere University of Technology, Finland)

9:00 *A Data-Driven fMRI Analysis Method Using Connected Components and K-Means Algorithm*

Sarah Lee (King's College London, United Kingdom); Fernando Zelaya (King's College London, United Kingdom); Stephanie Amiel (King's College London, United Kingdom); Michael Brammer (King's College London, United Kingdom)

9:15 *Video-EEG-fMRI: Contribution of in-bore Video for the Analysis of Motor Activation Paradigms*

José Maria Fernandes (University of Aveiro, Portugal); Sérgio Tafula (IEETA - Instituto de Engenharia Electrónica e Telemática de Aveiro, Portugal); Fernanda Sofia Brandao (Hospital de S. João, Portugal); António Bastos-Leite (University of Oporto, Faculty of Medicine, Portugal); Isabel Ramos (Faculdade de Medicina da Universidade do Porto, Portugal); Joao Silva Cunha (University of Aveiro, Portugal)

9:30 *A Study of Computer Aided Visualization and Quantification of Emphysema*

Kok Liang Tan (Keio University, Japan); Toshiyuki Tanaka (Keio University, Japan)

9:45 *The role of model-based illumination correction in processing colour eye fundus images*

Tomi Kauppi (Lappeenranta University of Technology, Finland); Lasse Lensu (Lappeenranta University of Technology, Finland); Joni Kämäräinen (Lappeenranta University of Technology, Finland); Pauli Fält (University of Joensuu, Finland); Jouni Hiltunen (University of Joensuu, Finland); Markku Hauta-Kasari (University of Joensuu, Finland); Valentina Kalesnykiene (University of Kuopio, Finland); Iiris Sorri (University of Kuopio, Finland); Heikki Kälviäinen (Lappeenranta University of Technology, Finland); Hannu Uusitalo (University of Tampere, Finland); Juhani Pietilä (Perimetria Ltd., Finland)

Th. 02/5.1: Breast Imaging

Room: Hall 01 **Chair:** Sabee Molloi (University of California, USA)

8:15 Keynote: A Breast CT System for Diagnostic Imaging and Treatment of Breast Cancer

John M. Boone (University of California, USA)

8:45 Breast phantom design for dedicated breast CT and breast tomosynthesis

Sabrina Vollmar (University of Erlangen-Nuremberg, Germany); Oliver Langner (University of Erlangen-Nuremberg, Germany); Michaela Weigel (University of Erlangen-Nuremberg, Germany); Hilde Bosmans (KU Leuven, Belgium); Willi Kalender (Universität Erlangen-Nürnberg, Germany)

9:00 Who may benefit from a combined review of radiologic and pathologic images of breast diseases?

Heike Seyffarth (MeVis Medical Solutions (MMS), Germany); Benjamin Geisler (Fraunhofer MEVIS, Bremen, Germany); Heinz-Otto Peitgen (Fraunhofer MEVIS, Bremen, Germany)

9:15 Towards a Quality Assurance protocol for 2D and 3D breast X-ray imaging techniques

Hilde Bosmans (KU Leuven, Belgium); Ken Young (NCCPM, United Kingdom); Ruben van Engen (LRCB, The Netherlands); Barbara Lazzari (Azienda Ospedaliero Universitaria Careggi, Italy); Patrice Heid (ARCADES, France); Martin Thijssen (LRCB, The Netherlands); Sabrina Vollmar (University of Erlangen-Nuremberg, Germany); Kim Lemmens (University Hospitals of the KU Leuven, Belgium); Valentina Ravaglia (Azienda Ospedaliero Universitaria Careggi, Italy); Willi Kalender (Universität Erlangen-Nürnberg, Germany)

9:30 An alternative approach to CDMAM analysis using a new perceptual algorithm: MS-SSIM*

Gabriel Prieto (Universidad Complutense de Madrid, Spain); Margarita Chevalier (Universidad Complutense, Spain); Eduardo Guibelalde (Universidad Complutense de Madrid, Spain)

9:45 Automated DICOM image metadata collection and analysis

Hans-Erik Källman (Uppsala university, Sweden)

Th. 07/5.11: Focus Session: Measurement and Analysis Techniques for Quantification of Magnetic Nanoparticle Distributions

Room: Hall 03 Chair: Lutz Trahms (Physikalisch-Technische Bundesanstalt, Germany) , Jens Hauelsen (Ilmenau University of Technology, Germany)

8:15 Distribution of Magnetic Nanoparticles after Magnetic Drug Targeting in an Ex Vivo Bovine Artery Model

Christoph Alexiou (University Hospital Erlangen, Germany); Stefan Lyer (University Hospital Erlangen, Germany); Rainer Tietze (University Hospital Erlangen, Germany); Lutz Trahms (Physikalisch-Technische Bundesanstalt, Germany); Heike Richter (Physikalisch-Technische Bundesanstalt, Germany); Frank Wieckhorst (Physikalisch-Technische

Bundesanstalt, Germany); Kay Schwarz (Physikalisch-Technische Bundesanstalt, Germany)

8:30 *A physical phantom modeling extended magnetic nanoparticle distributions in biological systems*

Frank Wiekhorst (Physikalisch-Technische Bundesanstalt, Germany); Daniel Baumgarten (Ilmenau University of Technology, Germany); Wolfgang Haberkorn (Physikalisch-Technische Bundesanstalt, Germany); Uwe Steinhoff (Physikalisch-Technische Bundesanstalt, Germany); Jens Haueisen (Ilmenau University of Technology, Germany); Markus Baer (Physikalisch-Technische Bundesanstalt, Germany); Lutz Trahms (Physikalisch-Technische Bundesanstalt, Germany)

8:45 *Imaging of magnetic nanoparticle loaded rat organs using a 16 channel micro SQUID system*

Daniel Baumgarten (Ilmenau University of Technology, Germany); Mario Liehr (University of Jena, Germany); Jens Haueisen (Ilmenau University of Technology, Germany)

9:00 *Localization and quantification of magnetic nanoparticles by multichannel magnetorelaxometry for in vivo hyperthermia studies in carcinoma models*

Heike Richter (Physikalisch-Technische Bundesanstalt, Germany); Melanie Kettering (University Hospital Jena, Germany); Frank Wiekhorst (Physikalisch-Technische Bundesanstalt, Germany); Uwe Steinhoff (Physikalisch-Technische Bundesanstalt, Germany); Dietmar Eberbeck (Physikalisch-Technische Bundesanstalt, Germany); Ingrid Hilger (University Hospital Jena, Germany); Lutz Trahms (Physikalisch-Technische Bundesanstalt, Germany)

9:15 *Magnetic Relaxation Imaging of Magnetic Nanoparticle Distributions*

Dennis Rühmer (TU Braunschweig, Germany); Erik Heim (TU Braunschweig, Germany); Thilo Wawrzik (TU Braunschweig, Germany); Frank Ludwig (TU Braunschweig, Germany); Meinhard Schilling (Technische Universität Braunschweig, Germany)

9:30 *Quantitative and Qualitative Characterization of Magnetic Nanoparticles by Magnetorelaxometry using a Laboratory MRX Analyzer*

Erik Heim (TU Braunschweig, Germany); Marianne Gerloff (TU Braunschweig, Germany); Frank Ludwig (TU Braunschweig, Germany); Meinhard Schilling (Technische Universität Braunschweig, Germany)

Th. 12/5.10: Round Table Innovations in Career Development: Perspectives for Educational Policy

Bioengineering, medical physics, and related fields offer a number of innovative career pathways for growth. In a highly engaging discussion, world leaders in education will focus on responsibilities and strategies to capitalize on crosscutting career development opportunities, and brainstorm ideas for new policy frameworks.

Moderated by: Guruprasad Madhavan, Binghamton University (SUNY), New York, USA

Panelists:

Robert Nerem, Georgia Institute of Technology, USA,

Joachim Nagel, IUPESM and University of Stuttgart, Germany,
Joseph Barbenel, University of Strathclyde, Scotland,
Shankar M. Krishnan, Wentworth Institute of Technology, USA,
Kenneth Nkuma-Udah, Nigerian Institute of Biomedical Engineering,
Niranjan Khambete, SCTIMST, India.

Room: Hall 02 Chair: Guruprasad Madhavan (State University of New York at Binghamton & Thomas J. Watson School of Engineering and Applied Science, USA)

Th. 06/5.13: Endoscopic Applications - Manipulators

Room: Hall 12b Chair: Gero Strauss (Universitätsklinik Leipzig, Germany)

8:15 Invited: Active robotic capsules for wireless endoscopy

Marc Schurr (novineon Healthcare Technology Partners GmbH, Germany)

8:45 Robotic Magnetic Manoeuvring of Endoscopic Video Capsules: Phantom Tests

Federico Carpi (University of Pisa, Italy)

9:00 A Comparison of Confocal and Two-Photon Microendoscopy

Richard Meier (Großhadern Medical Campus, Germany); Katharina Kromer (Großhadern Medical Campus, Germany); Herbert Stepp (Ludwig Maximilian University Munich, Germany); Ronanld Sroka (Ludwig Maximilians University, Germany)

9:15 Endoscopic Guided Brachytherapy in Gastric Cancer

Sanaz Hariri (Shahid Beheshti University, Iran); Seyed Mahmoud Reza Aghamiri (Shahid Beheshti University, Iran); Siamak Najarian (Amirkabir University of Technology, Iran); Ramin Jaber (Medical University of Tehran, Iran); Mehrdad Azmi (Medical University of Tehran, Iran); Hamid Reza Dehghan (Iran University of Medical Sciences, Iran); Siamak Hajizadeh (Amirkabir University of Technology, Iran)

9:30 Development of minimally invasive laser device using composite-type optical fiberscope of 1.1 mm in diameter

Takeshi Seki (Akita university, Japan); Kiyoshi Oka (Japan Atomic Energy Agency, Japan); Akihiro Naganawa (Akita University, Japan); Toshio Chiba (National Center for Child Health and Development, Japan)

9:45 Distance Measuring Navigation for Fetoscopic Laser Photocoagulation to treat Twin-to-twin Transfusion Syndrome: Feasibility Evaluations

Hiromasa Yamashita (The University of Tokyo, Japan); Toshihiko Yamashita (The University of Tokyo, Japan); Ken Masamune (The University of Tokyo, Japan); Hongen Liao (The University of Tokyo, Japan); Keri Kim (National Center for Child Health and Development, Japan); Toshio Chiba (National Center for Child Health and Development, Japan); Takeyoshi Dohi (The University of Tokyo, Japan)

Th. 04/5.6: Biosignal Analysis: Miscellaneous (1)

Room: Hall 14c Chair: Werner Wolf (Universität der Bundeswehr München, Germany), Giulio Pasquariello (University of Naples "Federico II", Italy)

8:15 Examination of both Sympathetic and Parasympathetic Influence for Normogastric Rhythm Extracted from Electrogastrographic (EGG) Signal

Ewaryst Tkacz (Silesian University of Technology, Institute of Electronics, Poland); Zbigniew Budzianowski (Silesian University of Technology, Institute of Electronics, Poland); Barbara Mika (Silesian University of Technology, Institute of Electronics, Poland); Paweł Kostka (Silesian University of Technology, Institute of Electronics, Poland)

8:30 Interaction Analysis after Electrical Stimulation in Patients with Major Depression and Controls

Lutz Leistritz (Friedrich Schiller University Jena, Germany); Jaroslav Ionov (Friedrich Schiller University Jena, Germany); Thomas Weiss (Friedrich Schiller University Jena, Germany); Karl-Jürgen Bär (Department of Psychiatry, Friedrich-Schiller-University, Jena, Germany); Wolfgang Miltner (Friedrich Schiller University Jena, Germany); Herbert Witte (Friedrich Schiller University of Jena, Germany)

8:45 Preprocessing for Spectral Analysis of Electrogastrogram

Dariusz Komorowski (Silesian University of Technology, Gliwice, Poland, Poland); Stanislaw Pietraszek (Silesian University of Technology, Gliwice, Poland, Poland)

9:00 A simulation of the surface EMG for analysis of muscle activity during whole body vibratory stimulation

Antonio Fratini (University of Naples "Federico II", Italy); Mario Cesarelli (University of Naples "Federico II", Italy); Paolo Bifulco ("Federico II" University of Naples, Italy); Maria Romano (University of Naples "Federico II", Italy); Mariano Ruffo (University of Naples "Federico II", Italy)

9:15 Development of a New Surface EMG Amplitude Estimator and the SNR Performance Evaluation Study

Changmok Choi (KAIST, Korea); Jung Kim (KAIST, Korea)

9:30 Slow-phase onset influence on waveform identification and foveation time measure in Congenital Nystagmus

Giulio Pasquariello (University of Naples "Federico II", Italy); Mario Cesarelli (University of Naples "Federico II", Italy); Maria Romano (University of Naples "Federico II", Italy); Paolo Bifulco ("Federico II" University of Naples, Italy); Antonio Fratini (University of Naples "Federico II", Italy); Antonio La Gatta (University of Ferrara, Italy); Domenico Boccuzzi (University of Naples "Federico II", Italy)

9:45 Estimation of multiple change-points in kinetic signals

Gerhard Staude (University FAF Munich, Germany); Heiko Hofer (University of A. F. Munich, Germany); Werner Wolf (Universität der Bundeswehr München, Germany); Gerhard Bauch (Universität der Bundeswehr München, Germany)

Th. 01/5.4: Image Guided Radiotherapy - Reconstruction and Image Quality

Room: Hall 13b Chair: David Jaffray (RMP, Canada) , Christian Karger (German Cancer Research Center (DKFZ), Germany)

8:15 Impact of truncation correction in flat-detector computed tomography on carbon ion radiotherapy treatment planning

Daniel Kolditz (University Erlangen-Nürnberg, Germany); Michael Meyer (Institute of Medical Physics, Germany); Yiannis Kyriakou (University of Erlangen, Germany); Eike Rietzel (Siemens Healthcare, Germany); Willi Kalender (Universität Erlangen-Nürnberg, Germany)

8:30 Improved Techniques to Assign Accurate Phase Information of Respiratory Signals for 4D CT Reconstruction

Hae-Jin Park (The Catholic University of Korea, Korea); Jai-Woong Yoon (Department of Biomedical Engineering, Catholic university of Korea, Korea); Won-Gyun Jung (Catholic University of Korea, Korea); Ju-Young Song (Department of Radiation Oncology, The chonnam Ntioanl universityi Hospital, Korea); Tae-Suk Suh (The Catholic University of Korea, Korea)

8:45 Stationary-gantry tomosynthesis system for on-line image guidance in radiation therapy based on a 52-source cold cathode x-ray tube

Jonathan Maltz (Siemens Healthcare, USA); Frank Sprenger (XinRay Systems LLC, USA); Jens Fuerst (Siemens AG Healthcare, Germany); Ajay Paidi (Siemens Healthcare, USA); Franz Fadler (Siemens AG Healthcare, USA); Ali Bani-Hashemi (Siemens Healthcare, USA)

9:00 Development of Image-guidance Approach Using Nanotube Stationary Tomosynthesis Technology

Sha Chang (University of North Carolina, USA); Brandon Federick (University of North Carolina and North Carolina State university, USA); Xiaoxiao Liu (University of North Carolina, USA); Gregg Tracton (University of North Carolina, USA); Michael Lawrence (University of North Carolina, USA); Stephen Pizer (University of North Carolina at Chapel Hill, USA); David Lalush (University of North Carolina and North Carolina State University, USA)

9:15 Suitability of the MVCT of TomoTherapy and Siemens Oncor for treatment planning

Daniela Schmitt (University of Hamburg, Germany); Dirk Albers (University Medical Center Hamburg-Eppendorf, Germany); Florian Cremers (University-Medical Center Hamburg, Germany)

9:30 Conversion of greyscale intensity values from CBCT images acquired on Elekta XVI to HU for treatment planning dose calculations

Sonny La (Lund University Hospital, Sweden); Crister Ceberg (Lund University, Sweden); Andrej Tomaszewicz (University hospital in Lund, Sweden); Lars Weber (Lund University Hospital, Sweden)

9:45 MR based treatment workflow for external radiotherapy of prostate cancer

Tufve Nyholm (Umeå University Hospital, Sweden); Magnus Karlsson (Umeå University Hospital, Sweden); Mikael Karlsson (Umeå University, Sweden)

Th. 04/5.8: Modeling and Simulation of Physiology & Function

Room: Hall 04a Chair: Tim Kröger (Fraunhofer MEVIS, Germany)

8:15 Modeling of Stretch-Activated Sarcolemmal Channels in Smooth Muscle Cells

Katrin Lunze (RWTH Aachen, Germany); Jonas Stalhand (Linköping Institute of Technology, Sweden); Steffen Leonhardt (RWTH Aachen University, Germany)

8:30 Type 1 Diabetes Regulated by ANFIS at Molecular Levels

Levente Kovacs (Budapest University of Technology and Economics, Hungary); Andras Gyorgy (Budapest University of Technology and Economics, Hungary); Balázs Benyó (Budapest University of Technology and Economics, Hungary); Adalbert Kovacs (Politehnica University of Timisoara, Romania)

8:45 Material model of the collagen decrease in a single trabecula

Roberto Carretta (Swiss Federal Institute of Technology (ETH), Switzerland)

9:00 A comparison between the proliferation rate of SAOS-2 human osteoblasts and BMSC (Bone Marrow Stromal Cells) using mathematical models

Deborah Prè (University of Pavia, Italy); Gabriele Ceccarelli (University of Pavia, Italy); Maria Gabriella Cusella De Angelis (University of Pavia, Italy); Giovanni Magenes (University of Pavia, Italy)

9:15 Evaluating the Effects of Border Zone Approximations with Subject Specific Ischemia Models

Darrell Swenson (University of Utah, USA); Jeroen Stinstra (Scientific Computing and Imaging Institute, USA); Brett Burton (University of Utah, USA); Kedar Aras (University of Utah, USA); Lindsey Healy (University of Utah, USA); Rob MacLeod (University of Utah, USA)

9:30 Estimation of Betamethasone Release Profiles from an in Situ Forming System Based on the Biodegradable Polymer Using Artificial Neural Networks

Mahmood Amiri (University of Tehran, Iran)

9:45 The oral glucose minimal model in type 1 diabetes: an ingredient of DIAdvisorTM

Stefania Guerra (University of Padua, Italy); Chiara Dalla Man (University of Padua, Italy); Giovanni Sparacino (University of Padua, Italy); Eric Renard (University of Montpellier, CHU, France); Claudio Cobelli (University of Padua, Italy)

Th. 11/5.5: Advancement in Ophthalmic Instrumentation

Room: Hall 14a Chair: Gisbert Richard (University Medical Center, Germany) , Marie-Josè Tassignon (University of Antwerp, Belgium)

8:15 Keynote: Where is retinal optical coherence tomography heading for ?

Wolfgang Drexler (School of Optometry and Vision Sciences, Cardiff University, United Kingdom)

8:45 Development of an instrument to measure pupil dynamics in subjects suffering from Neuro-Ophthalmologic disorders - World Congress on Biomedical Engineering

Gonçalo Leal (Faculty of Sciences and Technology, New University of Lisbon, Portugal)

9:00 Digital Color Stimulator for Vision Research

Dietmar Link (Ilmenau University of Technology, Germany); Sascha Klee (Ilmenau University of Technology, Germany); Bernd Seifert (Imedos GmbH, Germany); Jens Haueisen (Ilmenau University of Technology, Germany)

9:15 Implementation of the digital high-definition (HD) operation video system for the ophthalmologic surgery

Hyo Jin Shin (Seoul National University School of Medicine, Korea); Eun Sil Shin (Seoul National University School of Medicine, Korea); Hyuk-June Moon (Seoul National University, Seoul, Korea, Korea); Jang hyuk Yim (Seoul National University, Korea); Hyeong Gon Yu (Seoul National University, Korea); Jong-Mo Seo (Seoul National University, Korea)

9:30 Dynamic palpation device to evaluate IOP; simulation on a mechanical eyeball system

Matthias Hien (Heriot Watt University, United Kingdom); Robert Reuben (Heriot Watt University, United Kingdom)

9:45 Long-Term Head Posture Monitoring Reduces Complications Following Vitrectomy

Martin Cizek (Brno University of Technology, Czech Republic); Jiri Dlouhy (Brno University of Technology, Czech Republic); Petr Cech (Brno University of Technology, Czech Republic); Igor Vicha (University Hospital Brno, Czech Republic); Jiri Rozman (Brno University of Technology, Czech Republic)

10:00 An Electronic Smart Stick For The Visually Challenged

Govinda Ahuja (Fachhochschule Jena, Germany); Mita Bhowmick (Thadomal Shahani Engineering College, India); Chiranjeev Singh

Arora (Mumbai, India); Mangesh Mhatre (All India Institute of Physical Medicine and Rehabilitation, India); Suvarnkumar Gunde (National University of Ireland, Galway, Ireland)

Th. 01/5.9: Hadron Therapy (1)

Room: Hall 04b Chair: Uwe Oelfke (DKFZ, Germany) , Katia Parodi (Heidelberg Ion Therapy Center, Germany)

8:15 *Influence of density variations on the proton range in therapy of ocular tumors*

Jens Heufelder (Charité, Germany); Dino Cordini (Charité, Germany); Roland Stark (Charité, Germany); Andreas Weber (Charité, Germany)

8:30 *Range, Setup and Dose calculation errors in IMPT and their interrelation*

Jan Unkelbach (IDSIA, Switzerland); Martin Soukup (CMS, Germany); Markus Alber (University of Tuebingen, Germany); Thomas Bortfeld (Massachusetts General Hospital, USA)

8:45 *Robust radiobiological optimization for proton therapy treatment planning*

Florian Kroupal (German Cancer Research Center (DKFZ), Germany); Malte Frese (German Cancer Research Center (DKFZ), Germany); Emily Heath (German Cancer Research Center (DKFZ), Germany); Uwe Oelfke (DKFZ, Germany)

9:00 *Uncertainties of RBE in treatment planning for ion beam tumor therapy: Experimental and modeling aspects*

Thomas Friedrich (Gesellschaft für Schwerionenforschung, Germany); Thilo Elsässer (Gesellschaft für Schwerionenforschung, Germany); Michael Scholz (Gesellschaft für Schwerionenforschung (GSI), Germany)

9:15 *On the risks of a constant RBE for proton treatment planning*

Malte Frese (German Cancer Research Center (DKFZ), Germany); Zahra Taheri-Kadkhoda (Sahlgrenska University Hospital, Sweden); Jan Wilkens (Technische Universität München, Germany); Uwe Oelfke (DKFZ, Germany)

9:30 *Comparison of PET Concepts for Dose Delivery Monitoring of Particle Therapy*

Daniela Kunath (Forschungszentrum Dresden-Rossendorf, Germany); Henning Braess (Siemens Health Care, Germany); Fine Fiedler (Forschungszentrum Dresden-Rossendorf, Germany); Kristin Laube (Forschungszentrum Dresden-Rossendorf, Germany); Katia Parodi (Heidelberg Ion Therapy Center, Germany); Marlen Priegnitz (Forschungszentrum Dresden-Rossendorf, Germany); Georgy Shakirin (Forschungszentrum Dresden-Rossendorf, Germany); Wolfgang Enghardt (Technische Universität Dresden, Germany)

9:45 Basic investigation of boron neutron capture therapy (BNCT) using novel boron agents and accelerator based neutron source

Makoto Sakai (Osaka University, Japan); Naohiro Fujimoto (Osaka University, Japan); Katsunori Ishii (Osaka University, Japan); Isao Murata (Osaka University, Japan); Chun Man Lee (Osaka University Hospital, Japan); Yasufumi Kaneda (Osaka University, Japan); Hiroyuki Nakamura (Gakushuin University, Japan); Kunio Awazu (Osaka University, Japan)

Th. 13/5.3: Hyperthermia

Room: Hall 13a Chair: Gerard Van Rhoon (Erasmus Medical Center, The Netherlands) , Peter Wust (Charité – Universitätsmedizin Berlin, Germany)

8:15 Keynote: The Heat is on in Cancer Therapy

Rolf Issels (Department of Internal Medicine III, University Hospital, Grosshadern, Munich, Germany)

8:45 Invited: The need for controlled delivery of hyperthermia as indicated by thermal dose effect relationships

Gerard Van Rhoon (Erasmus Medical Center, The Netherlands)

9:00 Invited: Optimization of clinical radiofrequency hyperthermia by use of MR-thermography in a hybrid system

Peter Wust (Charité – Universitätsmedizin Berlin, Germany)

9:20 Thermosensitive Mn²⁺- Liposomes for MR-Guided Hyperthermia – Solvent-Dependent Mn²⁺- Release.

Herbert Reinl (University Hospitals Munich, Germany); Martin Hossann (University Hospitals Munich, Germany); Lars Lindner (Ludwig-Maximilians University of Munich, University Hospital, Germany); Maximilian Reiser (Ludwig-Maximilians-University Munich, Germany, Germany)

9:35 Potential Applications of Microwave in NanoMagnetic Particle Hyperthermia

Mohsen Janmaleki (Shahid Beheshti University (M.C), Iran)

Th. 10/5.15: Bioreactors

Room: Hall 21b Chair: Oliver Pänke (University of Leipzig, Germany) , Lorenzo Fassina (University of Pavia & Centre for Tissue Engineering (C.I.T.), Italy)

8:15 Development of a System for the Performance and Evaluation of Mechanical Conditioning on Tissue Engineered Vascular Grafts

Stefanos Diamantouros (RWTH Aachen University, Germany); Thomas Flanagan (Helmholtz Institute for Biomedical Engineering, RWTH Aachen, Germany); Thomas Finocchiaro (RWTH Aachen University, Germany); Thorsten Deichmann (RWTH Aachen University, Germany); Matthias Wilhelmi (Hannover Medical University, Germany); Katrin Sternberg (Universität Rostock, Germany); Thomas Schmitz-Rode

(RWTH Aachen, Germany); Stefan Jockenhoevel (Helmholtz Institute for Biomedical Engineering, RWTH Aachen, Germany)

8:30 Novel Dynamic Bioreactor System for Heart Valve Cultivation under Echocardiographic Control

Sebastian Kreitz (Helmholtz Institute for Biomedical Engineering, RWTH Aachen, Germany); Guido Dohmen (Universitätsklinikum Aachen, Germany); Stefanos Diamantouros (RWTH Aachen University, Germany); Julia Frese (Aachen University, Germany); Thomas Flanagan (Helmholtz Institute for Biomedical Engineering, RWTH Aachen, Germany); Thomas Schmitz-Rode (RWTH Aachen, Germany); Rüdiger Autschbach (University Hospital Aachen, Germany); Stefan Jockenhoevel (Helmholtz Institute for Biomedical Engineering, RWTH Aachen, Germany)

8:45 Bioreactor Development for the Study of Angiogenesis within Tissue Engineered Constructs

Julia Frese (Aachen University, Germany); Karin Motejlek (University Hospital Aachen, Germany); Thomas Schmitz-Rode (RWTH Aachen, Germany); Joseph Neulen (University Hospital Aachen, Germany); Stefan Jockenhoevel (Helmholtz Institute for Biomedical Engineering, RWTH Aachen, Germany)

9:00 Enhancement of a culture of human osteoblasts inside hydroxyapatite scaffolds via [2 mT; 75 Hz]-electromagnetic bioreactor

Lorenzo Fassina (University of Pavia, Italy); Enrica Saino (University of Pavia, Italy); Livia Visai (University of Pavia, Italy); Maria Gabriella Cusella De Angelis (University of Pavia, Italy); Francesco Benazzo (University of Pavia, Italy); Giovanni Magenes (University of Pavia, Italy)

9:15 Tissue engineering of heart valve leaflet by self-assembly of tissue spheroids biofabricated from human fat tissue derived stem cells

Vladimir Mironov (Medical University of South Carolina, USA)

9:30 Tissue Engineering of Small Caliber Vessel Grafts from Human Umbilical Veins

Markus Hoenicka (University of Regensburg Medical Center, Germany); Siegfried Schrammel (University of Applied Sciences, Germany); Volker Jacobs (Technical University Munich, Germany); Georgine Huber (University of Regensburg, Krankenhaus Barmherzige Brüder, Klinik St. Hedwig, Germany); Christof Schmid (University of Regensburg Medical Center, Germany); Dietrich Birnbaum (University of Regensburg Medical Center, Germany)

9:45 Perfusion Bioreactor: A new pulsatile system for the perfusion of tissue engineered cardiovascular prostheses

Bassil Akra (Ludwigs-Maximilians-University, Germany); Antje Uhlig (Ludwigs-Maximilians-University, Germany); Ulrike Haas (Ludwigs-Maximilians-University, Germany); Cornelia Fano (ITV-Denkendorf, Germany); Martin Dauner (ITV-Denkendorf, Germany); Peter Lohse (Ludwigs-Maximilians-University, Germany); Helmut Gulbins

(University Medical Center Hamburg-Eppendorf, Germany); Bruno Meiser (Ludwigs-Maximilians-University, Germany); Guenther Eissner (Ludwigs-Maximilians-University, Germany); Bruno Reichart (Ludwigs-Maximilians-University, Germany)

Th. 10/5.2: Biomaterials

Room: Hall 14b Chair: Federico Carpi (University of Pisa, Italy) , Michael Hacker (Universität Leipzig & Pharmaceutical Technology, Germany)

8:15 Keynote: A Road Map from Bench to Bedside for Scaffold-based Bone Engineering

Dietmar Hutmacher (Queensland University of Technology, Australia)

8:45 Poly(vinyl alcohol) based monomers for lithography-based 3D fabrication

Jürgen Stampfl (TU Vienna, Austria)

9:15 Materials and Structures for Gastrointestinal Stents

Richard Rothwell (University of Dundee, United Kingdom); Mark Pridham (University of Dundee, United Kingdom); Gareth Thomson (Aston University, United Kingdom)

9:30 Biomechanical in-vitro Evaluation of a new Carrier Material for ADCT

Jens Beger (Aesculap AG, Germany)

9:45 Microsystems for the Characterization of 3D-ECM Analogous Bio-Interfaces

Ulrike Fröber (Ilmenau University of Technology, Germany); Thomas Weiß (Institute for Bioprocessing and Analytical Measurement Techniques (iba) e.V., Germany); Klaus Liefeith (iba Heiligenstadt, Germany); Hartmut Witte (Technische Universität Ilmenau, Germany); Martin Hoffmann (Technische Universität Ilmenau, Germany)

Th. 09/5.16: Human Movement and Posture Analysis (2): Instrumentation and Rehabilitation

Room: Hall 22a Chair: Jiri Hozman (Czech Technical University in Prague, Faculty of Biomedical Engineering, Czech Republic) , Silvia Conforto (University Roma Tre, Italy)

8:15 Development of a Telemetric Goniometer

Gustavo Laskoski (Federal University of Technology - Parana, Brazil); Sérgio Pichorim (Federal University of Technology - Parana, Brazil); Paulo Abatti (Federal University of Technology - Parana, Brazil); Luiz Martins (Federal University of Technology - Parana, Brazil)

8:30 Development of a shoe-type device for collecting gait information

Yukinobu Sugimura (Kyushu Institute of Technology, Japan); Chikamune Wada (Kyushu Institute of Technology, Japan); Kenji Hachisuka (University of Occupational and Environmental Health,

Japan); Futoshi Wada (University of Occupational and Environmental Health, Japan); Takafumi Ienaga (Institutes of System, Information Technologies and Nanotechnologies, Japan); Yoshihiko Kimuro (Institutes of System, Information Technologies and Nanotechnologies, Japan); Zhimei Yang (Institutes of System, Information Technologies and Nanotechnologies, Japan); Takuro Tsuji (Logical Product Corporation, Japan); Futoshi Koriyama (Logical Product Corporation, Japan); Naoto Yukitake (Logical Product Corporation, Japan); Takenori Otawa (Logical Product Corporation, Japan); Taishi Oda (University of Occupational and Environmental Health, Japan); Kenichiro Makino (University of Occupational and Environmental Health, Japan)

8:45 *A biofeedback based portable device to support elderly mobility in the home environment*

Martina Mancini (University of Bologna, Italy); Elisabetta Farella (DEIS - University of Bologna, Italy); Laura Rocchi (University of Bologna, Italy); Carlo Tacconi (University of Bologna, Italy); Luca Benini (University of Bologna, Italy); Lorenzo Chiari (University of Bologna, Italy)

9:00 *Habilitation Aid for Children with Balance Disorders*

Balázs Jantek (Budapest University of Technology and Economics, Hungary); Ákos Jobbágy (Budapest University of Technology and Economics, Hungary); János Szemán (Budapest University of Technology and Economics, Hungary); Judit Schultheisz (Gézungúz Foundation, Hungary); Piroska Bacsó (Gézungúz Foundation, Hungary)

9:15 *A device for sagittal and transversal knee stability detection*

Ronald Boos (Fraunhofer IPA, Germany); Hans Telles (Bort Medical, Germany); Jörg Richter (Orthopädische Klinik Markgröningen, Germany); Axel Keim (Fraunhofer IPA, Germany); Frank Stegmaier (Fraunhofer IPA, Germany); Urs Schneider (Fraunhofer IPA, Germany)

9:30 *Motion Capture of Patients with Neurological Disorders by HD Digital Cameras*

Radim Krupicka (Czech Technical University in Prague, Czech Republic); Pavel Janda (Czech Technical University in Prague, Czech Republic); Zoltan Szabo (Czech Technical University in Prague, Czech Republic)

9:45 *Gait Posture Estimation by Wearable Acceleration and Gyro Sensor*

Ryo Takeda (Hokkaido University, Japan); Shigeru Tadano (Hokkaido University, Japan); Akiko Natorigawa (Hokkaido University, Japan); Masahiro Todoh (Hokkaido University, Japan); Satoshi Yoshinari (Hokkaido Industrial Research Institute, Japan)

Th. 12/5.17: Biomedical Physics Education for the Medical and Healthcare Professions and the General Public

Room: Hall 22b **Chair:** Carmel J. Caruana (Institute of Health Care, University of Malta, Malta) , Jan Meijer (VU University Medical Center, The Netherlands)

8:15 EFOMP Project 'Biomedical Physics Education for the Healthcare Professions' - an Update for WC2009

Carmel J. Caruana (Institute of Health Care, University of Malta, Malta)

8:30 Biomedical Physics Education of Medical and Healthcare Personnel. The Cyprus Experience

Stelios Christofides (Nicosia General Hospital, Cyprus); Prodromos Kaplanis (Nicosia General Hospital, Cyprus); Charalambos Yiannakkaras (Nicosia General Hospital, Cyprus); Nicolaos Papadopoulos (Nicosia General Hospital, Cyprus); Christos Papaefstathiou (Nicosia General Hospital, Cyprus); Georgiana Kokona (Nicosia General Hospital, Cyprus); Georgios Menikou (Nicosia General Hospital, Cyprus); Demetris Kaolis (Nicosia General Hospital, Cyprus)

8:45 Medical physics education in health care: quality assurance and safety as starting point

Stan Heukelom (VU University Medical Center, The Netherlands); Jan Meijer (VU University Medical Center, The Netherlands)

9:00 A Medical Biophysics Conceptual Base for Medical / Healthcare / Technology Students at the department of Biophysics, Faculty of Medicine, Masaryk Uni., Brno

Daniel Vlk (Masaryk University, Czech Republic); Vojtech Mornstein (Masaryk University, Czech Republic); Carmel J. Caruana (Institute of Health Care, University of Malta, Malta)

9:15 Biomedical Physics Education for Diagnostic and Therapeutic Radiographers in Europe – a Review

Carmel J. Caruana (Institute of Health Care, University of Malta, Malta)

9:30 Clinical simulation - Complementary Study Strategy in Medical Technological Education

Elena Toader (University of Medicine and Pharmacy "Gr. T. Popa", Romania)

9:45 Teaching signal processing to the medical profession

Jan Meijer (VU University Medical Center, The Netherlands); Stan Heukelom (VU University Medical Center, The Netherlands); Ben tenVoorde (Tergooziekenhuizen, The Netherlands); Jan Dekker (VU University Amsterdam, The Netherlands)

08:45 - 10:15

Th. 02/5.12: CT: Flat-Detector CT

Room: Hall 11 Chair: John M. Boone (University of California, USA)

8:45 Towards Quantitative Flat-Detector CT using Advanced Scatter Correction

Yiannis Kyriakou (University of Erlangen, Germany); Michael Meyer (Institute of Medical Physics, Germany); Willi Kalender (Universität Erlangen-Nürnberg, Germany)

9:00 *Metal artifact reduction in CBCT using forward projected reconstruction information and mutual information realignment*

Manuel Meilinger (University of Regensburg, Germany); Christian Schmidgunst (Siemens Healthcare Erlangen, Germany); Oliver Schütz (Siemens Healthcare Erlangen, Germany); Lang (Institute of Biophysics, University of Regensburg, Germany)

9:15 *Optimization of Magnification in a VRX CT Scanner*

Hosein Arabi (Shahid Beheshti University, Iran); Alireza Kamali-Asl (University of Shahid Beheshti, Iran); Shahba Tamhidi (University of Amir-Kabir, Iran)

9:30 *The influence of the heel effect on FD-CT imaging with shifted detectors*

Harald Braun (University of Erlangen-Nürnberg, Germany); Marc Kachelrieß (University of Erlangen-Nürnberg, Germany); Yiannis Kyriakou (University of Erlangen, Germany); Willi Kalender (Universität Erlangen-Nürnberg, Germany)

9:45 *A Validation Framework for Head-Motion Artifacts in Dental Cone-Beam CT*

Svitlana Ens (University of Luebeck, Germany); Ralf Bruder (University of Luebeck, Germany); Thorsten Buzug (University of Luebeck, Germany)

10:30 - 12:15

Th. 07/6.11: Focus Session: Improving Safety in Anaesthesia? Intelligent Systems or Advanced Analysis

Room: Hall 03 **Chair:** Guy Dumont (University of British Columbia, Canada) , J Mark Ansermino (University of British Columbia, Canada)

10:30 *Invited: The future of intelligent monitoring technology in improving patient safety*

J Mark Ansermino (University of British Columbia, Canada)

11:00 *Breath Analysis during Artificial Ventilation: Volatile Substances in Exhaled Breath during i.v. Anesthesia and Sedation in the OR and ICU with Propofol*

Andreas Hengstenberg (Research Unit, Draegerwerk AG, Lübeck, Germany); Catherine Schüller (University of Lübeck, Germany); Leif Dibbelt (University of Lübeck, Germany); Ernst-Günther Kraatz (University of Lübeck, Germany); Hartmut Gehring (University of Luebeck, Germany); Martin Grossherr (University of Luebeck, Germany)

11:15 *Measurement of propofol exhalation in pigs, humans and sheep during anesthesia - the impact of reference methods*

Martin Grossherr (University of Luebeck, Germany)

11:30 *Model Predictive Control for Propofol Sedation*

Antonello Caruso (ETH Zurich, Switzerland); Manfred Morari (ETH Zurich, Switzerland)

11:45 *Monitoring of perioperative ventilation therapy by electrical impedance tomography (EIT) in clinical practice*

Jan Karsten (University of Luebeck, Germany); Alexander Jedmowski (University of Luebeck, Germany); Henning Luepschen (RWTH Aachen University, Helmholtz-Institute for Biomedical Engineering, Germany); Hermann Heinze (University of Lübeck, Germany); Hartmut Gehring (University of Luebeck, Germany); Steffen Leonhardt (RWTH Aachen University, Germany); Torsten Meier (University of Lübeck, Germany)

12:00 *Anesthesiological management in a non-accessible environment - Preparation of volunteers for investigations with controlled hypoxemia in a 3 Tesla magnetic field for assessing cerebral energy metabolism*

Soehnke Boye (University of Luebeck, Germany); Michaela Voß (University of Luebeck, Germany); Harald Scholand-Engler (University of Luebeck, Germany); Ferdinand Binkowski (University of Luebeck, Germany); Hartmut Gehring (University of Luebeck, Germany); Uwe Melchert (University of Luebeck, Germany); Kerstin Oltmanns (University of Luebeck, Germany)

Th. 10/6.15: Cytomics in High-Content Diagnosis

Room: Hall 21b Chair: Attila Tarnok (University of Leipzig, Germany) , J. Paul Robinson (Purdue University Cytometry Laboratories, USA)

10:30 *Cytomics for predictive medicine*

Attila Tarnok (University of Leipzig, Germany)

11:00 *Invited: Materials science aspects of bone fracture and regeneration*

Peter Fratzl (Max Planck Institute of Colloids and Interfaces, Germany); Richard Weinkamer (Max Planck Institute of Colloids and Interfaces, Germany); Inderchand Manjubala (Max Planck Institute of Colloids and Interfaces, Germany); Paul Roschger (Ludwig Boltzmann Institute of Osteology, Vienna, Austria); Andreas Lendlein (GKSS Research Centre, Teltow, Germany); Georg N. Duda (Charité - Universitätsmedizin Berlin, Germany)

11:30 *From transcriptome to cytome: Putting candidate genes in a global immunophenotypical context*

Andreas Gruetzkau (Deutsches Rheuma-Forschungszentrum (DRFZ), Germany); Joachim Grün (Deutsches Rheuma-Forschungszentrum (DRFZ), Germany); Marta Steinbrich-Zoellner (Charité, CBF, Germany); Joachim Sieper (Charité, CBF, Germany); Andreas Radbruch (Deutsches Rheuma-Forschungszentrum (DRFZ), Germany)

11:45 Reverse Transcription PCR Screening of different neuronal guiding cues and their receptors in human staurosporine differentiated SH-SY5Y cells

Marco Glaß (University of Leipzig, Germany)

12:00 Invited: Quantitative assessment of bone properties during defect healing in an animal defect model by scanning acoustic microscopy

Mathias Schulz (Martin Luther University of Halle-Wittenberg, Germany); Kay Raum (Charité-Universitätsmedizin Berlin, Germany); Joerg Brandt (Martin Luther University of Halle-Wittenberg, Germany); Kay Brehme (Martin Luther University of Halle-Wittenberg, Germany)

12:15 Fractal dimension characteristics of human mesenchymal stem cell proliferation

Mohsen Janmaleki (Shahid Beheshti University (M.C), Iran); Mohsen Rabbani (Amirkabir University of Technology, Iran); Mohammad Tafazoli Shadpoor (Amirkabir University of Technology, Iran)

Th. 03/6.14: Developments in Dosimetric Techniques

Room: Hall 21a Chair: Dieter Regulla (Helmholtz Zentrum München, Germany) , Michael Moores (Integrated Radiological Services Ltd, United Kingdom)

10:30 Mammodos – In-Vivo Dosimetry in Mammography

Jan Wuerfel (PTW-Freiburg, Germany); Christian Pychlau (PTW-Freiburg, Germany); Chiara Cappellini (University of Insubria, Italy); Antonio Bulgheroni (Istituto Nazionale di Fisica Nucleare - Sez. di Milano, Italy); Fabio Risigo (University of Insubria, Italy); Valery Chmill (University of Insubria, Italy); Massimo Caccia (University of Insubria, Italy); Alexander Martemiyarov (Institute for Theoretical and Experimental Physics, Moscow, Russia)

10:45 Half-Value Layer Measurement for Effective Energy, Using Radiochromic Film and Step-Shaped Aluminum Filter

Tatsuhiko Gotanda (Okayama University, Japan); Toshizo Katsuda (Himeji Dokkyo University, Japan); Rumi Gotanda (Ibaraki Prefectural University of Health Sciences, Japan); Akihiko Tabuchi (Okayama University, Japan); Tadao Kuwano (Okayama University, Japan); Kenyu Yamamoto (Okayama University, Japan); Hidetoshi Yatake (Okayama University, Japan); Kazuyuki Kashiya (Okayama University, Japan); Yoshihiro Takeda (Okayama University, Japan)

11:00 Tube housing leakiness radiation and patient related radiation protective measures – Gonads radiation exposure from panoramic radiography

Matthias Burwinkel (University Medical Center of the Johannes Gutenberg University Mainz, Germany, Germany); Andreas Baumeister (Student of the Johannes Gutenberg University Mainz, Germany); Markus Sanger (University Medical Center of the Johannes Gutenberg University Mainz, Germany, Germany); Bernd d Hoedt (University Medical Center of the Johannes Gutenberg University Mainz, Germany, Germany)

11:15 *Quality Assurance in Digital Volume Tomography*

Felix Schoefer (Helmholtz Zentrum München - German Research Center for Environmental Health, Germany); Christoph Hoeschen (Helmholtz Zentrum München - German Research Center for Environmental Health, Germany)

11:30 *Feasibility of Polycrystalline Alanine-in-Glass Tubes as Gamma-Ray Dosimeters*

Anan Al-Karmi (King Fahd University of Petroleum & Minerals, Saudi Arabia); Mohamed Morsy (King Fahd University of Petroleum & Minerals, Saudi Arabia)

11:45 *The effects of hydrogenous medium on MRI image of MAGICA gel dosimeter*

Sayed Mohammad Mahdi Abtahi (Shahid Beheshti University, Iran); Majid Shahriari (Shahid beheshti university, Iran); Mohammad Hassan Zahmatkesh (Novin Medical Radiation Institute, Iran); Bijan Hashemi (Tarbiat Modares University, Iran); Sayed Mahmood Reza Aghamiri (Shahid Beheshti University, Iran)

12:00 *Estimation of Core Temperature Elevation in Humans and Animals for Radio-Frequency Exposures*

Akimasa Hirata (Nagoya Institute of Technology, Japan)

Th. 04/6.7: Image Analysis (2)

Room: Hall 05 Chair: Tomi Kauppi (Lappeenranta University of Technology, Finland), Sadie Reed (Institute of Cancer Research, United Kingdom)

10:30 *Constrained RLTV Deblurring for Confocal Microscopy*

Steffen Remmele (University of Heidelberg, Germany); Jürgen Hesser (University of Heidelberg, Germany)

10:45 *Comparison of breast density assessments based on interactive thresholding and automated fast fuzzy c-means clustering in three-dimensional MR imaging*

Gokhan Ertas (Institute of Cancer Research, United Kingdom); Sadie Reed (Institute of Cancer Research, United Kingdom); Martin Leach (Institute of Cancer Research, United Kingdom)

11:00 *Automated Assessment of Wound Pathology in Clinical Practice*

Herbert Jelinek (Charles Sturt University, Australia); Michael Prinz (Medical University of Vienna, Austria); Harriet Farquhar (Charles Sturt University, Australia); Thomas Wild (Medical University of Vienna, Austria)

11:15 *Automated High Content Analysis of Multidimensional Image Data of Cells and Tissue*

Maria Athellogou (Definiens AG, Germany); Guenter Schmidt (Definiens AG, Germany); Owen Feehan (Definiens AG, Germany); Gerd Binnig (Definiens AG, Germany)

11:30 *Texture analysis of corpus callosum in mild traumatic brain injury patients*

Kirsi Holli (Tampere University of Technology, Finland); Lara Harrison (University of Tampere, Finland); Prasun Dastidar (Tampere University Hospital, Finland); Minna Wäljas (Tampere University Hospital, Finland); Juha Öhman (Tampere University Hospital, Finland); Seppo Soimakallio (Tampere University Hospital, Finland); Hannu Eskola (Technical University of Tampere, Finland)

11:45 *Vertebrae tracking through fluoroscopic sequence: a novel approach*

Paolo Bifulco ("Federico II" University of Naples, Italy); Mario Cesarelli (University of Naples "Federico II", Italy); Maria Romano (University of Naples "Federico II", Italy); Robert Allen (University of Southampton, United Kingdom); Tommaso Cerciello (University of Naples "Federico II", Italy)

Th. 06/6.2: Image Guided Interventions (1)

Room: Hall 14b Chair: Marc Schurr (novineon Healthcare Technology Partners GmbH, Germany) , Latchaw Richard (UC Davis Cancer Center, USA)

10:30 *Endoscopic video images analysis for surgical training and image-guided surgery*

Patricia Sánchez-González (Universidad Politécnica de Madrid, Spain); Ignacio Oropesa García (Universidad Politécnica de Madrid, Spain); Alicia M. Cano (Universidad Politécnica de Madrid, Spain); Francisco Gayá (Universidad Politécnica de Madrid, Spain); Pablo Lamata (University of Oxford, United Kingdom); Francisco Sánchez-Margallo (Minimally Invasive Surgery Centre Jesús Usón, Spain); Francisco del Pozo (Universidad Politécnica de Madrid, Spain); Enrique Gómez (Universidad Politécnica de Madrid, Spain)

10:45 *Resonant prosthetic heart valves for improved MR visualization and MRI guided implantation in an ex vivo model*

Erwin Immel (University of Dundee, United Kingdom); Fiona Gilbert (Dept. of Radiology, University Aberdeen, United Kingdom); Andreas Melzer (University of Dundee, United Kingdom)

11:00 *Phenomenological Models for intraoperative Positron Emission Surface Imaging using Handheld Probes*

Coskun Özgür (Technische Universität München, Germany); Jakub Bieniarz (Technische Universität München, Germany); Tobias Lasser (Technische Universität München, Germany); Sibylle Ziegler (Klinikum rechts der Isar der TU München, Germany); Nassir Navab (Technische Universität München, Germany); Thomas Wendler (Technische Universität München, Germany)

11:15 *TAM – A Thermal Ablation Monitoring Tool: In vivo Evaluation*

Florian Maier (German Cancer Research Center, Germany); Axel Krafft (German Cancer Research Center (DKFZ), Germany); Jürgen Jenne (German Cancer Research Center, Germany); Wolfhard Semmler

(German Cancer Research Center, Germany); Michael Bock (German Cancer Research Center (DKFZ), Germany)

11:30 Registration-free Navigation for Computer-Assisted Cervical Spine Surgery

Uwe Kirschstein (University of Erlangen-Nuremberg, Germany); Ralf Tita (University of Erlangen-Nuremberg, Germany); Saúl Tovar-Arriaga (University of Erlangen-Nuremberg, Germany); Willi Kalender (Universität Erlangen-Nürnberg, Germany)

11:45 Implementation of real-time 2D/3D image registration in radiation oncology

Christelle Gendrin (Medical University Vienna, Austria); Christophe Weber (Medical University Vienna, Austria); Michael Figl (Medical University of Vienna, Austria); Dietmar Georg (Medical University Vienna, Austria); Helmar Bergmann (Center for Biomedical Engineering, Austria); Wolfgang Birkfellner (University of Vienna, Austria)

12:00 Evaluation of the Application Accuracy of 3D-Navigation through Measurements and prediction

Martina Bickel (Innsbruck Medical University, Austria); Özgür Güler (Innsbruck Medical University, Austria); Florian Kral (Innsbruck Medical University, Austria); Frank Schwarm (Innsbruck Medical University, Austria); Wolfgang Freysinger (Innsbruck Medical University, Austria)

12:15 Correcting brain shift using intra-operative landmarks based on GPU technology

Herke Jan Noordmans (University Medical Center Utrecht, The Netherlands); Sander van der Steen (UMC Utrecht, The Netherlands); Rudolf Verdaasdonk (University Medical Center Utrecht, The Netherlands)

Th. 08/6.3: Drug Delivery Technologies

Room: Hall 13a Chair: Jens Ducreé (Dublin City University & Biomedical Diagnostics Institute, Ireland) , Stefan Haeberle (HSG-IMIT, Germany)

10:30 Invited: Microfluidics for Drug Delivery

Stefan Haeberle (HSG-IMIT, Germany); David Hradetzky (Hahn-Schickard-Institut für Mikro- und Informationstechnik, Germany); Axel Schumacher (HSG-IMIT, Germany); Michael Vosseler (HSG-IMIT, Germany); Stephan Messner (HSG-IMIT, Germany); Roland Zengerle (Hahn-Schickard-Gesellschaft, Institut für Mikro- und Informationstechnik, Germany)

11:00 Biodegradable polymeric implants as drug delivery systems for brain cancer therapy

Norased Nasongkla (Mahidol University, Thailand)

11:15 Compact Drug Delivery System for Analysis Arrays

Michael Scheuenpflug (Technische Universität München, Germany);
Tim Lueth (Technical University of Munich, Dept. MIMED, Germany)

11:30 Remote Controlled Drug Release Induced by a Rotating Magnetic Field

Matthias Bellemann (University of Applied Sciences, Germany)

11:45 Electroactive Nanoporous Valve for Controlled Drug Delivery

Randy Kurz (Universität Leipzig, Germany); Anselm Sickinger (Universität Leipzig, Germany); Andrea Robitzki (Universität Leipzig, Germany)

12:00 A polymer based local drug delivery system on plasma activated silicon implant surfaces

Henning Rohm (Universität Rostock, Germany); Katrin Sternberg (Universität Rostock, Germany); Timo Stöver (Hannover Medical School, Germany); Gerrit Paasche (Hannover Medical School, Germany); Stephan Barcikowski (Laser Zentrum Hannover e.V., Germany); Anne Hahn (Laser Zentrum Hannover e.V., Germany); Klaus-Peter Schmitz (Universität Rostock, Germany)

Th. 03/6.13: IOMP/ ICRP Session on the New ICRP Recommendations

Room: Hall 12b Chair: Cari Borrás (Universidade Federal de Pernambuco, Brazil) ,
Christopher Clement (International Commission on Radiological Protection, Canada)

10:30 Invited: The Impact of the 2007 Recommendations of the International Commission on Radiological Protection (ICRP) in Medical Applications

Christopher Clement (International Commission on Radiological Protection, Canada)

10:45 The ICRP protection quantities and their applications

Hans Menzel (CERN European Organization for Nuclear Research, Switzerland); John Harrison (Health Protection Agency, United Kingdom); Christian Streffer (University Clinics Essen, Germany)

11:00 Radiation Dose to Patients from Radiopharmaceuticals

Sören Mattsson (Lund University, Sweden); Lennart Johansson (Umeå University, Sweden); Julian Liniecki (Medical University of Lodz, Poland); Dietmar Nosske (Bundesamt für Strahlenschutz, Germany); Michael Stabin (Vanderbilt University, USA); Sigrid Leide-Svegborn (Malmö University Hospital, Sweden); David Taylor (Cardiff University, United Kingdom)

11:15 Invited: Effective Dose – A Flawed Concept that Could and Should be Replaced

David Brenner (Columbia University Medical Center, USA)

11:30 Invited: Medical exposure issues in the revision of the International Basic Safety Standards for Protection against Ionization Radiation and for the Safety of Radiation Sources

Cari Borrás (Universidad Federal de Pernambuco, Brazil)

11:45 Discussion

Th. 04/6.6: Time-Frequency and Wavelet Analysis

Room: Hall 14c Chair: Hartmut Dickhaus (University of Heidelberg, Germany) , Costanza D'Avanzo (University of Padua, Italy)

10:30 Time-variant phase-locking properties of EEG/MEG oscillations during photic driving

Matthias Wacker (Friedrich Schiller University of Jena, Germany); Karin Schwab (Friedrich Schiller University of Jena, Germany); Miroslav Galicki (Friedrich Schiller University of Jena, Germany); Herbert Witte (Friedrich Schiller University of Jena, Germany)

10:45 Comparative Analysis of different Wigner-Ville Distribution Implementations for the ECG-based Detection of Obstructive Sleep Apnea

Johannes Krug (Otto-von-Guericke-Universität Magdeburg, Germany); Sebastian Zaunseder (Dresden University of Technology, Germany); Matthias Rabenau (Technische Universität Dresden, Germany); Rüdiger Poll (Technische Universität Dresden, Germany)

11:00 Application of asymmetric waveforms for time-frequency representation, on the example of otoacoustic emissions

Konrad Kwaskiewicz (Warsaw University, Poland); Katarzyna Blinowska (University of Warsaw, Poland); Wiesław Jedrzejczak (Institute of Physiology and Pathology of Hearing, Poland)

11:15 Glaucoma detection by wavelet-based analysis of the Global Flash Multifocal Electroretinogram

Juan Miguel-Jiménez (University of Alcalá, Spain); Sergio Ortega (University of Alcalá, Spain); Luciano Boquete (Universidad de Alcalá, Spain); José Rodríguez (Universidad de Alcalá, Spain); Román Blanco (Universidad de Alcalá, Spain)

11:30 Time-frequency based estimation of transient endogen evoked components

Galina Ivanova Haralampieva (MGH/MIT/HMS Athinoula A Martinos Center for Biomedical Imaging, USA); Sylvi Herzog (Technische Universität Ilmenau, Ilmenau, Germany); Jens-Uwe Knotte (Central Clinic Bad Berka, Bad Berka, Germany); Reinhardt Both (Central Clinic Bad Berka, Bad Berka,, Germany)

Th. 01/6.4: Estimating the Cumulative Dose/Imaging Dose

Room: Hall 13b Chair: Tomas Kron (Peter MacCallum Cancer Centre, Australia) , Marcel van Herk (The Netherlands Cancer Institute, The Netherlands)

10:30 Invited: Estimating 4D Cumulative Dose for Adaptive Radiotherapy
Di Yan (Beaumont, USA)

11:00 Computerized treatment planning directives for adaptive radiation therapy management

Daniel McShan (University of Michigan, USA); Xiaoping Chen (University of Michigan, USA); Marc Kessler (University of Michigan, USA); Wayne Keranen (University of Michigan, USA); Benedick Fraass (University of Michigan, USA)

11:15 Impact of Kilo-Voltage Cone Beam Computed Tomography on Image-Guided Radiotherapy of Prostate Cancer

Jun Deng (Yale University, USA); Zhe Chen (Yale University, USA); Ravinder Nath (Yale University, USA)

11:30 Low-Dose Cone-Beam CT Imaging for Radiotherapy

Jing Wang (Stanford University, USA); Tianfang Li (UPMC, USA); Xing Lei (Stanford University, USA)

11:45 In vivo measurements of the dose delivered by kilovoltage cone-beam CT during prostate radiation therapy

Ginette Marinello (APHP Groupe Hospitalier Henri Mondor, France); Jean-Pierre Mege (APHP Groupe Hospitalier Henri Mondor, France); Marie-Laure Herve (APHP Groupe Hospitalier Henri Mondor, France); Jean-Leon Lagrange (APHP Groupe Hospitalier Henri Mondor, France)

12:00 The integration of the dose-guided radiation therapy process on a clinical workstation

Joey Cheung (University of California San Francisco, USA); Thomas Boettger (Siemens AG, Heidelberg, Germany); Weigang Hu (Fudan University, P.R. China); Jean-Francois Aubry (University of California San Francisco, USA); Jean Pouliot (University of California San Francisco, USA)

Th. 11/6.17: Artificial Vision and Neural Prosthesis in Ophthalmology

Room: Hall 22b Chair: Eberhart Zrenner (University of Tübingen & Centre for Ophthalmology, Germany) , Botond Roska (Friedrich Miescher Institute for BioMedical Research, Switzerland)

10:30 Exploring Retinal Network with Multielectrode Array for Retinal Prosthesis

Yong Sook Goo (Chungbuk National University, Korea); Jang Hee Ye (Chungbuk National University, Korea)

10:45 Seoul Artificial Retina Project

So Hyun Bae (Seoul National University School of Medicine, Korea); Jong-Mo Seo (Seoul National University, Korea); Kyung Hwan Kim (Yonsei University, Korea); Yong Sook Goo (Chungbuk National University, Korea); Dong-il Cho (Seoul National University, Korea); Kwang-Suk Park (Seoul National University, Korea); Sung June Kim (Seoul National University, Korea); Hum Chung (Seoul National University, Korea)

11:00 *Subretinal Microelectrode Arrays Implanted Into Blind Retinitis Pigmentosa Patients Allow Recognition of Letters and Direction of Thin Stripes*

Eberhart Zrenner (University of Tübingen, Germany); Robert Wilke (University of Tuebingen, Germany); Helmut Sachs (Klinikum Friedrichstadt, Dresden, Germany); Karl Ulrich Bartz-Schmidt (University of Tuebingen, Germany); Florian Gekeler (University of Tuebingen, Germany); Dorothea Besch (University of Tuebingen, Germany); Heval Benav (University of Tuebingen, Germany); Anna Bruckmann (University of Tuebingen, Germany); Udo Greppmaier (Retina Implant AG, Germany); Alex Harscher (Retina Implant, Germany); Steffen Kibbel (Retina Implant AG, Germany); Akos Kusnyerik (Semmelweis University, Budapest, Hungary); Tobias Peters (University of Tuebingen, Germany); Katarina Porubska (University of Tuebingen, Germany); Alfred Stett (NMI Naturwissenschaftliches und Medizinisches Institut, Germany); Barbara Wilhelm (University of Tuebingen, Germany); Walter-G. Wrobel (Retina Implant AG, Germany)

11:15 *An Implantable Epiretinal Vision Prosthesis for Retinitis Pigmentosa Patients*

Thomas Schanze (EpiRet GmbH, Germany); Uwe Thomas (EpiRet GmbH, Germany)

11:30 *Implants for Epiretinal Stimulation of Retinitis Pigmentosa Patients*

Hoc Khiem Trieu (Fraunhofer IMS, Germany); Michael Görtz (Fraunhofer Institut Mikroelektronische Schaltungen und Systeme, Germany); Christian Koch (RWTH Aachen, Germany); Wilfried Mokwa (RWTH Aachen, Germany); Peter Walter (UK Aachen, Germany)

11:45 *'InfoCane' based on wireless technology for the visually-handicapped people*

Dong-Seok Cho (Seoul National University, Korea); Jong-Mo Seo (Seoul National University, Korea)

12:00 *Morphological and functional vitreous body equivalents*

Qianying Gao (Zhongshan Ophthalmic Center, Sun Yat-sen University, Guangzhou, 510060, China, P.R. China); Jiajia Chen (Zhongshan Ophthalmic Center, Sun Yat-sen University, Guangzhou, 510060, China, P.R. China); Zhichong Wang (Zhongshan Ophthalmic Center, Sun Yat-sen University, Guangzhou, 510060, China, P.R. China)

Th. 12/6.10: ICMCC - Compunetics

Room: Hall 02 Chair: Lodewijk Bos (International Council on Medical & Care Compunetics, The Netherlands) , Stephen Benton (University of Westminster, United Kingdom)

10:30 *Keynote: Compunetics, the other side of Technology*

Lodewijk Bos (International Council on Medical & Care Compunetics, The Netherlands)

11:00 *Towards Patient Empowerment – Can the patient really decide?*

Filipa Falcão-Reis (Faculty of Science, University of Porto, Portugal);
Manuel Correia (Faculty of Science - University of Porto, Portugal);
Lucília Sousa (Carvalhido's Health Extension, Aldoar's Health Center, Portugal)

11:20 *How patients use access to their full health records; a qualitative study*

Brian Fisher (PAERS, United Kingdom)

11:40 *Invited: Cognitive Behavioural Therapy (CBT): A Method for Coping with Low Frequency Noise Annoyance*

Stephen Benton (University of Westminster, United Kingdom)

12:00 *Application of Neuro-Fuzzy Technology in Medical Diagnosis: Case Study of Heart Failure*

Faith-Michael Uzoka (Mount Royal College, Canada)

12:20 *How Patients Use Access To Their Electronic GP Record – A Quantitative Study*

Brian Fisher (PAERS, United Kingdom)

12:40 *Future of personalized therapies in diabetes mellitus: A crossroads among EHR, knowledge management and digital healthcare*

Manuel Prado-Velasco (I2BC, Spain); Christian Costa (I2BC, Spain);
Gonzalo Aranda (I2BC, Spain)

13:00 *Autism and Technology: an approach to new technology-based therapeutic tools*

Silvia Blasco (University of Seville, Spain); Pablo Cerro (University of Seville, Spain); Maria Elena (University of Seville, Spain); Juan Uceda (University of Seville, Spain)

Th. 04/6.5: Biosignals and Modeling of the Lung

Room: Hall 14a Chair: Heinz Handels (Universität Hamburg, Germany)

10:30 *Transmission sounding of human lungs by complex acoustic signals*

Vladimir Korenbaum (Pacific Oceanologic Institute FEB RAS, Russia);
Anatolii Nuzhdenko (Pacific Oceanologic Institute FEB RAS, Russia);
Alexander Tagiltsev (Pacific Oceanologic Institute FEB RAS, Russia);
Anatoly Kostiv (Pacific Oceanologic Institute FEB RAS, Russia)

10:45 *Alveolar Consonant Recognition of Malay Children Using Neural Networks*

Hua Nong Ting (Universiti Malaya, Malaysia); Jian Xing Lee (University of Malaya, Malaysia)

11:00 *A multi-compartmental mechanical model of the neonatal respiratory system*

Ahmed Al-Jumaily (The Auckland University of Technology, New Zealand)

11:15 *Applying Computational Fluid Dynamics Methods on Nasal Flow Investigations Based on a Real Domain Generated from CT Data*

Iris Pantle (University of Karlsruhe, Germany); Ernst-Jürgen Haberland (University of Halle, Germany); Stephan Knipping (City Hospital Dessau, Germany); Manfred Knoergen (University of Halle, Germany); Karsten Stock (University of Halle, Germany); Kerstin Neumann (University of Halle, Germany)

11:30 *Identifying Mathematical Models of the Mechanically Ventilated Lung Using Equation Discovery*

Steven Ganzert (University Hospital Freiburg, Germany); Knut Moeller (Furtwangen University, Germany); Stefan Kramer (Technische Universität München, Germany); Kristian Kersting (Fraunhofer IAIS, Germany); Josef Guttmann (Universitätsklinikum Freiburg, Germany)

11:45 *Numerical modeling of turbulent airflow and particle deposition in a bifurcating airway model*

Harikrishnan Radhakrishnan (University of Cyprus, Cyprus); Stavros Kassinos (University of Cyprus, Cyprus)

Th. 02/6.1: Molecular Imaging: Probes and Applications

Room: Hall 01 Chair: Fabian Kiessling (University Hospital Aachen, Germany)

10:30 *Keynote: Molecular Imaging - from Bedside to Bench (Wolfgang Weber)*

11:00 *In-vivo red fluorescent protein tomography*

Nikolaos Deliolanis (Technische Universität München and Helmholtz Zentrum München, Germany); Thomas Wurdinger (Harvard Medical School and Massachusetts General Hospital, Boston, USA, USA); Lisa Pike (Massachusetts General Hospital, USA); Bakhos Tannous (Harvard Medical School and Massachusetts General Hospital, USA); Vasilis Ntziachristos (Technische Universität München, Germany)

11:15 *Multispectral Optoacoustic Tomography (MSOT) characterization in resolving Molecular Biomarkers*

Adrian Taruttis (Helmholtz Zentrum München and Technische Universität München, Germany); Nikolaos Deliolanis (Technische Universität München and Helmholtz Zentrum München, Germany); Amir Rosenthal (Helmholtz Center Munich, Germany); Daniel Razansky (Technical University of Munich and Helmholtz Center Munich, Germany); Vasilis Ntziachristos (Technische Universität München, Germany)

11:30 *Characterization and Detection of Clinically Relevant Microbial Biofilms with Ultrasound Contrast Agents*

Pavlos Anastasiadis (University of Hawaii at Manoa, USA); Kristina Mojika (University of Hawaii at Manoa, USA); Michelle Matter (John A.

Burns School of Medicine, University of Hawaii at Manoa, USA); John Allen (University of Hawaii at Manoa, USA)

11:45 *Imaging Multidrug Resistance in Osteosarcoma: a pre-clinical approach using an orthotopic animal model*

Celia Gomes (University of Coimbra, Portugal); Mick Welling (Department of Radiology, Section of Nuclear Medicine, LUMC, The Netherlands); Ivo Que (Department of Endocrinology, Leiden University Medical Center, The Netherlands); Niek Henriquez (Department of Pathology, Leiden University of Medical Center, The Netherlands); Gabri van der Pluijm (Depts. of Urology & Endocrinology, Leiden University of Medical Center, The Netherlands); Antero Abrunhosa (IBILI - Faculty of Medicine of Coimbra University, Portugal); M. Filomena Botelho (University of Coimbra, Portugal); Pancras Hogendoorn (Department of Pathology, Leiden University of Medical Center, The Netherlands); Ernest Pauwels (Department of Radiology, Section of Nuclear Medicine, LUMC, The Netherlands); Anne-Marie Cleton-Jansen (Department of Pathology, Leiden University of Medical Center, The Netherlands)

12:00 *Probing Development and Molecular Function in Diffusive Living Organisms with MSOT*

Daniel Razansky (Technical University of Munich and Helmholtz Center Munich, Germany); Vasilis Ntziachristos (Helmholtz Zentrum München, Germany)

12:15 *Fluorescence Spectroscopy as Tool for Bone Development Monitoring in Newborn Rats*

Zofia Drzazga (University of Silesia, Poland)

Th. 01/6.9: Hadron Therapy (2)

Room: Hall 04b Chair: Antony Lomax (Paul Scherrer Institut, PSI, Switzerland) , Jan Wilkens (Technische Universität München, Germany)

10:30 *Invited: Medical Physics Aspects of Ion Therapy*

Oliver Jäkel (Heidelberg Ion Beam Therapy Center (HIT); German Cancer Research Center, Germany)

11:00 *Motion management in scanned particle therapy: beam gating & tracking*

Christoph Bert (GSI Helmholtzzentrum für Schwerionenforschung, Germany); Alexander Gemmel (GSI Helmholtzzentrum für Schwerionenforschung, Germany); Nami Saito (GSI Helmholtz Centre for Heavy Ion Research, Germany); Naved Chaudhri (GSI Helmholtzzentrum für Schwerionenforschung, Germany); Robert Lüchtenborg (GSI Helmholtzzentrum für Schwerionenforschung, Germany); Marco Durante (GSI, Germany); Eike Rietzel (Siemens Healthcare, Germany)

11:15 *Technical accuracy of a beam tracking system for scanned particle therapy of intra-fractionally moving targets*

Nami Saito (GSI Helmholtz Centre for Heavy Ion Research, Germany); Christoph Bert (GSI Helmholtzzentrum für Schwerionenforschung, Germany); Naved Chaudhri (GSI Helmholtzzentrum für Schwerionenforschung, Germany); Alexander Gemmel (GSI Helmholtzzentrum für Schwerionenforschung, Germany); Dieter Schardt (GSI Helmholtzzentrum für Schwerionenforschung, Germany); Gerhard Kraft (GSI Helmholtzzentrum für Schwerionenforschung, Germany); Marco Durante (GSI, Germany); Eike Rietzel (Siemens Healthcare, Germany)

11:30 *On-line compensation of dose changes introduced by tumor motion during scanned particle therapy*

Robert Lüchtenborg (GSI Helmholtzzentrum für Schwerionenforschung, Germany); Nami Saito (GSI Helmholtz Centre for Heavy Ion Research, Germany); Naved Chaudhri (GSI Helmholtzzentrum für Schwerionenforschung, Germany); Marco Durante (GSI, Germany); Eike Rietzel (Siemens Healthcare, Germany); Christoph Bert (GSI Helmholtzzentrum für Schwerionenforschung, Germany)

11:45 *Fast and Accurate Proton Computed Tomography Image Reconstruction for Applications in Proton Therapy*

Scott Penfold (University of Wollongong, Australia); Reinhard Schulte (Loma Linda University Medical Center, USA); Vladimir Bashkirov (Loma Linda University Medical Center, USA); Anatoly Rosenfeld (University of Wollongong, Australia)

12:00 *Second source model of collimator scatter and spectra of proton beams*

Waldemar Ulmer (Varian International, Switzerland)

Th. 09/6.8: Focus Session: The NeuroProbes Project – Multifunctional Probe Arrays for Intracortical Applications

Room: Hall 04a Chair: Hercules Neves (Interuniversity Microelectronics Centre (IMEC), Belgium) , Patrick Ruther (University of Freiburg, Germany)

10:30 *Introduction to the NeuroProbes project*

10:45 *Passive probes and their assembly and packaging*

Sebastian Kisban (University of Freiburg, Germany)

11:00 *Biosensor probe arrays for real-time monitoring of neurotransmitters*

Olivier Frey (Institute of Microtechnology (IMT), University of Neuchâtel, Switzerland)

11:15 *Microfluidic probe array for local drug delivery and recording*

Sven Spieth (HSG-IMIT, Germany)

11:30 *CMOS based probe arrays for electronic depth control*

Karsten Seidl (University of Freiburg, Germany)

11:45 *Effect of bio-coatings on probe biocompatibility/tolerability (Emmanuelle Göthelid)*

Th. 09/6.16: Human Movement and Posture Analysis (3): Scientific and Practical Methods

Room: Hall 22a Chair: Silvia Conforto (University Roma Tre, Italy) , Jiri Hozman (Czech Technical University in Prague, Faculty of Biomedical Engineering, Czech Republic)

10:30 *The role of the sEMG signal processing in the field of the Human Movement Analysis*

Silvia Conforto (University Roma Tre, Italy)

11:00 *Leg muscles motion during whole body linear frequency sweep vibration*

Antonio Fratini (University of Naples "Federico II", Italy); Antonio La Gatta (University of Ferrara, Italy); Paolo Bifulco ("Federico II" University of Naples, Italy); Mario Cesarelli (University of Naples "Federico II", Italy); Giulio Pasquariello (University of Naples "Federico II", Italy)

11:15 *Analysis of Joint movements and muscle length during sit-to-stand at various sitting heights in the Korean elderly daily life*

Sung-Jae Hwang (Yonsei University, Korea); Jongsang Son (Yonsei University, Korea); Jungyoon Kim (Yonsei, Korea); Hyun Dong Kim (Yonsei University, Korea); Dohyung Lim (Korea Institute of Industrial Technology, Korea); Young-Ho Kim (Yonsei University, Korea)

11:30 *Estimation Method of Energy Consumption in Human Activities for Daily Living*

Takao Sugimoto (Nihon University, Japan)

11:45 *Human gait data mining by symbol based descriptive features*

Vladimir Ergovic (FER, University of Zagreb, Croatia); Stanko Tonkovic (FER, Croatia); Vladimir Medved (KIF, Croatia)

12:00 *Real-time adaptive neural predictors for upper limb gestures blind recognition*

Massimo Gneo (University Roma Tre, Italy); Rossana Muscillo (Applied Electronics Department, University of "Roma TRE", Rome (Italy), Italy); Michela Goffredo (Applied Electronics Department, University of "Roma TRE", Rome (Italy), Italy); Silvia Conforto (University Roma Tre, Italy); Maurizio Schmid (University Roma Tre, Italy); Tommaso D'Alessio (University Roma Tre, Italy)

11:00 - 12:15

Th. 02/6.12: CT: Image Quality

5 oral papers only

Room: Hall 11 Chair: John M. Boone (University of California, USA) , Heinz-Otto Peitgen (Fraunhofer MEVIS, Bremen, Germany)

11:00 *Breath-hold target localization with simultaneous kilovoltage/megavoltage cone-beam CT and fast reconstruction*

Manuel Blessing (University of Heidelberg, Germany); Dzmitry Stsepankou (University Medical Center Mannheim, Germany); Hansjoerg Wertz (University Medical Center Mannheim, Germany); Anna Arns (University Medical Center Mannheim, Germany); Frank Lohr (University Medical Center Mannheim, Germany); Jürgen Hesser (University of Heidelberg, Germany); Frederik Wenz (University of Heidelberg, University Medical Center Mannheim, Germany)

11:15 *Image Quality Evaluation for a Robot-Driven C-Arm CT System*

Daniel Prell (Universität Erlangen-Nürnberg, Germany); Yiannis Kyriakou (University of Erlangen, Germany); Willi Kalender (Universität Erlangen-Nürnberg, Germany)

11:30 *Innovative method for objective evaluations of the quality of CT systems*

Alexander Schegerer (Helmholtz Zentrum München, Germany); Claudia Brunner (Helmholtz Zentrum München, Germany); Helmut Schlattl (Helmholtz Zentrum Muenchen, Germany); Bernhard Renger (Klinikum rechts der Isar, Germany); Wolfgang Dietz (Helmholtz Zentrum München, Germany); Christoph Hoeschen (Helmholtz Zentrum München - German Research Center for Environmental Health, Germany)

11:45 *Novel application of MRI-polymer gel dosimeter for measurement of CTDI on X-ray 64 slices CT scanner*

Leila Karimiafshar (Tehran university of medical sciences, Iran); Nader Riyahi-Alam (Tehran University of Medical Sciences, Iran); Mohammad Reza Ay (Tehran University of Medical Sciences, Iran); Mahmoud Allahverdi (Tehran University of Medical Sciences, Iran); Tayeb Allahverdi Pourfallah (Mazandaran University of Medical Sciences, Sari, Iran); Hasan Hashemi (Mazandaran University of Medical Sciences, Sari, Iran); Ali Frahani (Imaging Center, Imam Hospital, Tehran University of Medical Sciences, Iran); Behrouz Rafiei (Imaging Center, Imam Hospital, Tehran University of Medical Sciences, Iran); Morteza Bakhtiary (Tehran University of Medical Sciences, Iran)

12:00 *Computer-Assisted Risk Analysis and 3-Dimensional Reconstruction based on multislice Lung Computer Tomography*

Stefan Limmer (University of Schleswig-Holstein, Campus Luebeck, Germany); Volker Dicken (MeVis medical research, Bremen, Germany); Stefan Krass (MeVis medical research, Bremen, Germany); Markus Kleemann (University Hospital Schleswig-Holstein-Campus Lübeck, Germany); Heinz-Otto Peitgen (Fraunhofer MEVIS, Bremen, Germany); Peter Kujath (University of Schleswig-Holstein, Campus Luebeck, Germany)

12:15 - 13:30

Th. 12/: Mini-Symposium Beyond Drugs and Devices: The Changing Role of Medical Engineering

Speaker (Keynote Speaker): Luis Kun, National Defense University and American Institute of Medical and Biological Engineering, Washington, DC, USA

In this special symposium, Dr. Luis Kun will build upon his multidisciplinary experiences in academic research, product development, government policy, and improving health and technology security, and engage the audience with case studies to illustrate the dramatically changing responsibilities of medical engineering and physics, and what it means to our profession.

Room: B0 (Forum) Chair: Luis Kun (National Defense University, USA)

13:30 - 14:30

Plenary 2

Room: Hall 01

13:30 *Neurprosthesis and Neurobiomarkers*

Apostolos Georgopoulos (University of Minnesota, USA)

14:00 *X-Ray Computed Tomography: State of the Art and Future Directions*

Willi Kalender (Universität Erlangen-Nürnberg, Germany)

14:45 - 16:30

7.10: IFMBE Secretaries Meeting

7.7: IOMP Council

Room: Hall 05

Th. 03/7.2: Dosimetry with Phantoms (1)

Room: Hall 14b Chair: Barry Wall (Health Protection Agency, United Kingdom) , Maria Zankl (Helmholtz Zentrum München - German Research Center for Environmental Health, Germany)

14:45 *Keynote: The reference computational phantoms adopted by ICRP and ICRU*

Maria Zankl (Helmholtz Zentrum München - German Research Center for Environmental Health, Germany); Janine Becker (Helmholtz Zentrum München - German Research Center for Environmental Health, Germany); Nina Petoussi-Henss (Helmholtz Zentrum München, Germany); Helmut Schlattl (Helmholtz Zentrum München, Germany); Wesley Bolch (University of Florida, Gainesville, USA); Keith Eckerman (Oak Ridge National Laboratory, USA); Hans Menzel (CERN European Organization for Nuclear Research, Switzerland); Christoph Hoeschen (Helmholtz Zentrum München - German Research Center for Environmental Health, Germany)

15:15 *Application of the new ICRP reference phantoms to internal dosimetry: Calculation of specific absorbed fractions of energy for photons and electrons*

Lama Hadid (Institut de Radioprotection et de Sûreté Nucléaire, France); Aurélie Desbrée (Institut de Radioprotection et de Sûreté Nucléaire, France); Helmut Schlattl (Helmholtz Zentrum Muenchen, Germany); Didier Franck (Institut de Radioprotection et de Sûreté Nucléaire, France); Eric Blanchardon (Institut de Radioprotection et de Sûreté Nucléaire, France); Maria Zankl (Helmholtz Zentrum München - German Research Center for Environmental Health, Germany)

15:30 *Simulation of beta-emitters for radiopharmaceutical dosimetry using voxel phantoms and Monte Carlo calculations*

Nina Petoussi-Henss (Helmholtz Zentrum München, Germany); Maria Zankl (Helmholtz Zentrum München - German Research Center for Environmental Health, Germany); Helmut Schlattl (Helmholtz Zentrum Muenchen, Germany); Christoph Hoeschen (Helmholtz Zentrum München - German Research Center for Environmental Health, Germany); Weibo Li (Helmholtz Zentrum München, Germany)

15:45 *Preview of a series of adult human phantoms for radiation protection dosimetry*

Richard Kramer (Universidade Federal de Pernambuco, Brazil); Helen Jamil Houry (Universidade Federal de pernambuco, Brazil); Vagner Ferreira Cassola (Universidade Federal de Pernambuco, Brazil); Vanildo Junior de Melo Lima (Universidade Federal de Pernambuco, Brazil)

16:00 *Calculation of normalized organ doses for pediatric patients undergoing CT examinations on four types of CT scanner*

Jan Jansen (Health Protection Agency, United Kingdom); Paul Shrimpton (Radiation Protection Division, HPA, United Kingdom)

16:15 *Implementation of tube current modulation in CT dose computations with voxel phantoms*

Helmut Schlattl (Helmholtz Zentrum Muenchen, Germany); Maria Zankl (Helmholtz Zentrum München - German Research Center for Environmental Health, Germany); Christoph Hoeschen (Helmholtz Zentrum München - German Research Center for Environmental Health, Germany)

Th. 06/7.4: Image Guided Interventions (2)

Room: Hall 13b Chair: Walter Kucharczyk (University of Toronto, Canada) , Marc Schurr (novineon Healthcare Technology Partners GmbH, Germany)

14:45 *Keynote: Accurate, quantifiable deposition of fluids and cells for human endovascular and intraparenchymal therapies-the development of catheters and other access devices*

Latchaw Richard (UC Davis Cancer Center, USA)

15:15 Stereotactic radiofrequency ablation: providing new dimensions in interventional oncology

Gerlig Widmann (Medical University Innsbruck, Austria); Marion Haidu (Medical University Innsbruck, Austria); Leo Pallwein (Medical University Innsbruck, Austria); Peter Kovacs (Medical University Innsbruck, Austria); Werner Jaschke (Medical University Innsbruck, Austria); Reto Bale (Medical University Innsbruck, Austria)

15:30 Enhancement of Drug Delivery in Prostate Tumor in vivo using MR Guided Focused Ultrasound (MRgHIFU)

Lili Chen (Fox Chase Cancer Center, USA); Zhaomei Mu (Fox Chase Cancer Center, USA); C-M Charlie Ma (Fox Chase Cancer Center, USA); Alan Pollack (University of Miami, USA)

15:45 Experimental MR inductively coupled active Occluder for cardiac septal defects PFO, ASD and VSD

Erwin Immel (University of Dundee, United Kingdom); Stephan Michitsch (University of Applied Sciences, Gelsenkirchen, Germany); Andreas Melzer (University of Dundee, United Kingdom)

16:00 Accuracy of Optical Localizers for Computer Aided Surgery

Robert Elfring (RWTH Aachen University, Helmholtz-Institute, Germany); Matias de la Fuente (RWTH Aachen University, Germany); Klaus Radermacher (RWTH Aachen, Germany)

Th. 07/7.11: Focus Session: Advances in Electromagnetic Stimulation

Room: Hall 03 Chair: Tilmann Sander-Thoemmes (Physikal.-Technische Bundesanstalt, Germany) , Arye Nehorai (Washington University in St. Louis, USA)

14:45 Development of a Portable Low Frequency Electromagnetic Field Stimulator for Promoting Bone Tissue Proliferation

Chih-Kuo Liang (Southern Taiwan University, Taiwan); Shih-Jui Yang (Southern Taiwan University, Taiwan); Aaron Raymond See (Southern Taiwan University, Taiwan)

15:00 Frequency analysis of the electromyographical signal of the sphincter anus internus after electrical stimulation

Karin Somerlik (inomed Medizintechnik GmbH Teningen, Germany); Thilo Krüger (inomed Medizintechnik GmbH Teningen, Germany); Daniel Kauff (University Medical Center of the Johannes Gutenberg University, Germany); Klaus Peter Koch (University of Applied Sciences Trier, Germany); Werner Kneist (University Medical Center of the Johannes Gutenberg University, Germany)

15:15 Multilevel biofeedback technology for electromagnetic therapy of vascular diseases

Peter Luzhnov (BMSTU, Russia); Shamkina (BMSTU, Russia); Sergey Shchukin (Bauman Moscow State Technical University, Russia)

15:30 Electrical Responses by Acupuncture Stimulation for Electrical Grounding and Insulation Conditions

Yong Heum Lee (Yonsei University, Korea); Sun Min Kwon (Yonsei University, Korea)

15:45 *Inhibition of the Neural Activity by Paired Stimulation in Somatosensory Evoked Potentials and High Frequency Oscillations*

Daisuke Nomura (Kyushu University, Japan); Akira Hyodo (Kyushu University, Japan); Yoshinori Katayama (Kyushu University, Japan); Keiji Iramina (Kyushu University, Japan)

16:00 *Vector magnetic field mapping of a Transcranial Magnetic Stimulation coil using Magnetic Resonance Imaging: in vitro and in vivo experiments*

Andre Peres (Universidade de Sao Paulo, Brazil); Victor Souza (Universidade de São Paulo, Brazil); Danilo Maziero (Universidade de São Paulo, Brazil); Draulio Araujo (Universidade de Sao Paulo, Brazil); Carlos Garrido Salmon (Universidade de Sao Paulo, Brazil); Oswaldo Baffa (Universidade de Sao Paulo, Brazil)

16:15 *Recording of DC-MEG and peripheral signals in stroke patients*

Tilmann Sander-Thoemmes (Physikal.-Technische Bundesanstalt, Germany); Stefanie Leistner (Charite, Campus Benjamin Franklin, Germany); Gabriel Curio (Neurophysics Group, Department of Neurology, Campus Benjamin Franklin, Charite, Germany); Martin Burghoff (PTB, Germany); Bruno-Marcel Mackert (Neurophysics Group, Department of Neurology, Campus Benjamin Franklin, Charite, Germany); Lutz Trahms (Physikalisch-Technische Bundesanstalt, Germany)

Th. 12/7.13: Women in BME and Physics: Talent to the Top - Levelling the Playing Field by Going Diverse

Room: Hall 12b Chair: Maria Siebes (University of Amsterdam & Academic Medical Center, The Netherlands) , Laura Poole-Warren (University of New South Wales, United Kingdom)

14:45 *Opening Remarks*

Maria Siebes (University of Amsterdam, The Netherlands)

15:00 *Women in Science and Engineering - The Relevance of Gender Issues in the Excellence Initiative at German Universities (Susanne Ihsen, Technical University Munich, Germany)*

Susanne Ihsen (Technical University Munich, Germany)

15:20 *Invited: Women in Science in Europe: EU Policies for the Promotion of Women Scientists and the Role of the European Platform of Women Scientists in Shaping Them*

Emmanuelle Causse (European Platform of Women Scientists, Belgium)

15:40 *Women Leaders in MBE: Challenges, Opportunities, and Key Policy Initiatives in the USA (Jennifer Ayers, AIMBE, USA)*

Jennifer Ayers (American Institute for Medical and Biological Engineering, USA)

16:00 Panel Discussion with Audience

Maria Siebes (University of Amsterdam, The Netherlands); Laura Poole-Warren (University of New South Wales, United Kingdom); Emmanuelle Causse (European Platform of Women Scientists, Belgium); Jennifer Ayers (American Institute for Medical and Biological Engineering, USA); Susanne Ihsen (Technical University Munich, Germany)

Th. 02/7.1: MRI Neuroimaging

Room: Hall 01 Chair: Martin Burghoff (PTB, Germany) , Nicola Martini (University of Pisa, Italy)

14:45 Keynote: Nearly 40 but still going strong: Hot Topics in MR today
Jürgen Hennig (University of Freiburg, Germany)

15:15 Invited: Approaches to detect Neuronal Currents using a DC-Mechanism by means of Low Field Magnetic Resonance

Martin Burghoff (PTB, Germany); Stefan Hartwig (Physikalisch-Technische Bundesanstalt, Germany); Lutz Trahms (Physikalisch-Technische Bundesanstalt, Germany); Antonio Cassarà (Museo Storico della Fisica e Centro Studi e Ricerche "E. Fermi", Italy)

15:45 Diffusion Tensor Imaging and MR-Tractography for characteristic of microstructural integrity of white matter in patients with Parkinson's disease (PD)

Zinayida Rozhkova (Medical Clinic "BORIS", Ukraine)

16:00 High resolution Chemical Shift Imaging of the Human Brain without Water Suppression at 3T

Grzegorz Chadzynski (University Hospital Tuebingen, Germany); Uwe Klose (University Hospital of Tuebingen, Germany)

16:15 Diagnosis of Alzheimer's disease using fMRI data and modifications of random forests algorithm

Evanthia Tripoliti (University of Ioannina and Biomedical Research Institute-FORTH, Greece); Dimitrios Fotiadis (University of Ioannina, Greece); Maria Argyropoulou (University of Ioannina, Medical School, Greece)

16:30 ADC values and Glutamate/Creatine ratios in the brain in normally developing children and in children with seizure disorders: DWI and 1H in-vivo MRS study

Zinayida Rozhkova (Medical Clinic "BORIS", Ukraine)

Th. 08/7.3: Sensing Platforms in Biomedical Applications

Room: Hall 13a Chair: Christine Kranz (University of Ulm, Germany) , Gerald Urban (University of Freiburg, Germany)

14:45 Keynote: Micro– and Nanosensors for Medical Applications

Gerald Urban (University of Freiburg, Germany)

15:15 QCM based on flow system for cardiovascular disease

Krongkamol Wong-ek (Chulalongkorn University, Thailand); Noppadon Nuntawong (NECTEC, Thailand)

15:30 Application of an electronic nose to diagnose liver cirrhosis from the skin surface

Katharina Witt (University of Applied Sciences Jena, Germany); Thomas Jochum (Friedrich-Schiller-University Jena, Germany); Wolf Poitz (Jenasensoric e.V. Jena, Germany); Karl-Jürgen Bär (Department of Psychiatry, Friedrich-Schiller-University, Jena, Germany); Andreas Voss (University of Applied Sciences Jena, Germany)

15:45 Optimization of Ligand Surface Concentration for Biosensor based on Imaging Ellipsometry

Gang Jin (Institution of mechanics, Chinese academy of Sciences, P.R. China)

16:00 The Design and Construction of a Set of Modular Synthetic BioLogic Devices for Programming Cells

Richard Kitney (Imperial College London, United Kingdom); Baojun Wang (Imperial College London, United Kingdom)

16:15 Characterization of Electron Conduction in Unsaturated Organic Monolayers on Silicon(111) using Electrical Impedance Spectroscopy

Terry Chilcott (University of Sydney, Australia); Hans Coster (University of Sydney, Australia); Diyana Zamri (University of Sydney, Australia)

16:30 CD146 detection with real-time total internal reflection imaging ellipsometry

Gang Jin (Institution of mechanics, Chinese academy of Sciences, P.R. China)

Th. 04/7.10: Biosignal Analysis for Medical Devices and Systems (3)

Room: Hall 02 Chair: Stefan Zimmerer (University of Basel, Switzerland) , Kevin Dolan (Philips Research, Eindhoven, The Netherlands)

14:45 Application of Multivariate Analysis to Detect Significant Change in MEG

Iku Nemoto (Tokyo Denki University, Japan)

15:00 Detection of the EEG spike-wave patterns evoked by volatile anaesthetics

Elzbieta Olejarczyk (Institute of Biocybernetics and Biomedical Engineering PAS, Poland); Robert Rudner (Medical University of Silesia, Poland); Radoslaw Marciniak (Medical University of Silesia, Poland); Magdalena Wartak (Medical University of Silesia, Poland); Michal Stasiowski (Medical University of Silesia, Poland); Przemyslaw

Jalowiecki (Medical University of Silesia, Poland); Aleksander Sobieszek (Department of Neurology and Epileptology CMKP, Poland)

15:15 *Motion Artifacts in Capacitively Coupled ECG Electrodes*

Joerg Ottenbacher (University of Karlsruhe, Germany); Stephan Heuer (FZI Forschungszentrum Informatik, Germany)

15:30 *Experimental “true” CPR artifact generation in human ECG signals*

Marcus Granegger (University of Applied Sciences Technikum Wien, Austria); Hermann Gilly (Med Univ Vienna, Austria)

15:45 *Transferring an Artifact Handling System into a Mobile Long-term ECG Device with Dry Electrodes*

Malte Kirst (FZI Forschungszentrum Informatik, Germany); Stefan Lamparth (University of Karlsruhe, Germany); Silvester Fuhrhop (University of Karlsruhe, Germany); Joerg Ottenbacher (University of Karlsruhe, Germany); Christophe Kunze (FZI Forschungszentrum Informatik, Germany)

16:00 *Operator Fatigue Estimation Using Heart Rate Measures*

Christian Heinze (University of Applied Sciences Schmalkalden, Germany); Udo Trutschel (Circadian Technologies, Inc., USA); Thomas Schnupp (University of Applied Sciences Schmalkalden, Germany); David Sommer (University of Applied Sciences Schmalkalden, Germany); Adolf Schenka (University of Applied Sciences Schmalkalden, Germany); Jarek Krajewski (Institute of Work and Organizational Psychology, University of Wuppertal, Germany); Martin Golz (University of Applied Sciences Schmalkalden, Germany)

Th. 04/7.14: Computational Biology

Room: Hall 21a Chair: Rafael Sebastian (Universitat Pompeu Fabra, Spain) , Fernando Campos (Medical University of Graz & Center for Physiological Medicine, Austria)

14:45 *Application of Genetic Algorithms in Prediction of Protein Structure*

Pallavi Chaudhari (Sr. Lecturer , P. I. E. T. , Nagpur , India, India)

15:00 *Modern stereological methods for studying blood and lymphatic microvessels*

Renat Krasnoperov (Proxima Technology Ltd., Russia)

15:15 *On Various Mechanisms of Wave Formation in the Pulmonary Parenchyma*

Valery Oliynik (Institute of Hydromechanics of NASU, Ukraine)

15:30 *Model Generation from Imaging Data for Simulation in Biomechanics*

Philippe Young (University of Exeter, United Kingdom); David Raymont (University of Exeter, United Kingdom); Sam Coward (University of Exeter, United Kingdom); Liliana Beldie (ARUP, United Kingdom);

Brian Walker (ARUP, United Kingdom); Ash Harkara (Simpleware Ltd., United Kingdom)

15:45 Spatially-realistic and reduced models for integrative biomedical computing

Chandrajit Bajaj (University of Texas at Austin, USA); Antonio DiCarlo (Università Roma Tre, Italy); Alberto Paoluzzi (Roma Tre University, Italy)

16:00 A two dimensional model of coupled electromechanics in cardiac tissue

Bernardo Rocha (Universidade Federal de Juiz de Fora, Brazil); Bernardo Lino (Universidade Federal de Juiz de Fora, Brazil); Rodrigo dos Santos (Universidade Federal de Juiz de Fora, Brazil); Elson Toledo (Laboratorio Nacional de Computacao Cientifica, Brazil); Luis Paulo Barra (Universidade Federal de Juiz de Fora, Brazil); Joakim Sundnes (Simula Research Laboratory, Norway)

16:15 Evaluation of Numerical Methods and Computational Techniques for Solving Cardiac Cell Models

Fernando Campos (Medical University of Graz, Austria); Ricardo Campos (Federal University of Juiz de Fora, Brazil); Rodrigo dos Santos (Universidade Federal de Juiz de Fora, Brazil)

Th. 04/7.6: Focus Session: Methodological Aspects of Sleep Related Disorders (1)

Room: Hall 14c Chair: Thomas Penzel (Charité - Universitätsmedizin Berlin, Germany) , Hartmut Dickhaus (University of Heidelberg, Germany)

14:45 Can Patient-Specific Classification Improve the Accuracy of Sleep Apnea Detection From the ECG?

Christoph Maier (Heilbronn University, Germany); Heinrich Wenz (Thoraxklinik at the University Hospital of Heidelberg, Germany); Hartmut Dickhaus (University of Heidelberg, Germany)

15:15 Detection of sleep disorders by a modified Matching Pursuit algorithm

Dirk Sommermeyer (MCC GmbH & Co. KG, Germany); Matthias Schwaibold (MCC GmbH & Co. KG, Germany); Bernd Schöller (MCC GmbH & Co. KG, Germany); Ludger Grote (Sleep Lab., Dept. of Pulmonary Medicine, University of Gothenburg, Sweden); Jan Hedner (Sleep Lab., Dept. of Pulmonary Medicine, University of Gothenburg, Sweden); Armin Bolz (University of Karlsruhe, Germany)

15:30 Detection of sleep related breathing disorders by grid based biosignal processing

Dagmar Krefting (Charité - Universitätsmedizin Berlin, Germany); Thomas Penzel (Charité - Universitätsmedizin Berlin, Germany); Karl Kesper (University of Marburg, Germany); Sebastian Canisius (Philipps-University Marburg - Faculty of Medicine, Germany)

15:45 *A Method for Quantifying Sleep Eye Movements That Reflects Medication Effects*

Peyman Shokrollahi (Ryerson University, Canada); Sri Krishnan (Ryerson University, Canada); Karthikeyan Umapathy (University Health Network, Canada); Kristiina McConville (Ryerson University, Canada); Mark Boulos (Department of Medicine, Division of Neurology, Canada); Dana Jewell (Department of Medicine, Division of Neurology, Canada); Brian Murray (Department of Medicine, Division of Neurology, Canada)

16:00 *Autoregressive and Cepstral Analysis of Electromyogram in Rapid Eye Movement Sleep*

Mehrnaz Shokrollahi (Ryerson University, Canada); Sri Krishnan (Ryerson University, Canada); Dana Jewell (Department of Medicine, Division of Neurology, Canada); Brian Murray (Department of Medicine, Division of Neurology, Canada)

16:15 *Predicting Accident Probability from Frequency of Microsleep Events*

Udo Trutschel (Circadian Technologies Inc., USA)

Th. 04/7.5: Modeling Flow for Cardiology

Room: Hall 14a Chair: Dieter Liesch (University of Applied Sciences Munich & Institut f. Biotechnik, e.V., Germany)

14:45 *New Studies in the Cardiovascular System: Diagnostic and Therapeutic Applications*

Dieter Liesch (University of Applied Sciences Munich, Germany)

15:00 *Effect of Leaflet Geometry on Mechanical Performance of Stentless Pericardial Aortic Valves. A Dynamic Simulation*

Fangli Xiong (Nanyang Technological University, Singapore); Wolfgang Goetz (German Heart Center Technical University Munich, Germany); Yeow Leng Chua (National Heart Center of Singapore, Singapore); Joon Hock Yeo (Nanyang Technological University, Singapore)

15:15 *Construction and Analysis of Human Thoracic Aorta Based on CT Images*

Aike Qiao (Beijing University of Technology, P.R. China)

15:30 *Effects of VAD Placement on 3D Fluid Flow in a Patient Specific Numerical Model of the Left Ventricle with Ischemic Heart Failure*

Markus Perschall (Universität Karlsruhe (TH), Germany); Kathrin Spiegel (Universität Karlsruhe (TH), Germany); Torsten Schenkel (Universität Karlsruhe (TH), Germany); Herbert jr. Oertel (Universität Karlsruhe (TH), Germany)

15:45 *The Karlsruhe Heart Model KaHMo: A modular framework for numerical simulation of cardiac hemodynamics*

Torsten Schenkel (Universität Karlsruhe (TH), Germany); Sebastian Krittian (Universität Karlsruhe (TH), Germany); Kathrin Spiegel

(Universität Karlsruhe (TH), Germany); Stefan Höttges (Universität Karlsruhe (TH), Germany); Markus Perschall (Universität Karlsruhe (TH), Germany); Herbert jr. Oertel (Universität Karlsruhe (TH), Germany)

16:00 *Fluid-Structure Interaction of Pre- and Post-operative Abdominal Aortic Aneurysms*

David Molony (University of Limerick, Ireland); Michael Walsh (University of Limerick, Ireland); Timothy McGloughlin (University of Limerick, Ireland)

16:15 *Hemodynamic Effects of the Orientation of a Bi-leaflet Mechanical Heart Valve Implanted in an Anatomic Aorta*

Iman Borazjani (University of Minnesota, USA); Trung Le (University of Minnesota, USA); Fotis Sotiropoulos (University of Minnesota, USA)

16:30 *Numerical Models of an Artery with a Net Structured Stent*

Moshe Brand (Ariel University Center of Samaria, Israel); Jacob Rosen (University of California, Santa Cruz, CA, USA)

Th. 11/7.17: Advancements in Ophthalmic Diagnostics

Room: Hall 22b Chair: Michael Abramoff (University of Iowa, USA) , Aljoscha Neubauer (LMU University of Munich, Germany)

14:45 *Invited: Availability of fluorescence spectroscopic in the accompaniment of formation of corneal cross-linking*

Mardoqueu Costa (University of São Paulo, Brazil); Cristina Kurachi (University of São Paulo, Brazil); Vanderlei Bagnato (University of São Paulo, Brazil); Liliane Ventura (University of Sao Paulo, Brazil)

15:00 *3D Dynamic Sensing of Human Eye Toward Evaluation of Cornea Stiffness*

Kenji Yamada (Osaka University, Japan)

15:15 *Impact of colored contact lenses on color vision*

Annette Walter (University Erlangen Nürnberg, Germany); Michael Schürer (Institute of Medical Physics, Germany); Achim Langenbacher (Friedrich-Alexander-University Erlangen-Nuremberg, Germany); Holger Brünner (Institute of Medical Physics, Germany)

15:30 *Dynamic Time Warping and Cross Correlation for the estimation of cell movements in conjunctival capillaries: a comparison through simulation*

Enrico Grisan (University of Padova, Italy); Andrea Tiso (University of Padova, Italy); Alfredo Ruggeri (University of Padua, Italy)

15:45 *Characteristic Parameters of MTF of the Retina-Brain System*

Bixin Zeng (Wenzhou Medical College, P.R. China)

16:00 *Invited: Navigating Comfortably across the Retina*

Ben Liesfeld (OD-OS GmbH, Germany); Kay-Uwe Amthor (OD-OS GmbH, Germany); Dennis Dowell (OD-OS GmbH, Germany); Ulrike Weber (OD-OS GmbH, Germany); Winfried Teiwes (OD-OS GmbH, Germany)

16:30 *Wearable video-based eye tracking system with a webcam*

Jang hyuk Yim (Seoul National University, Korea); Jeong-Min Hwang (Seoul National University, Korea); Jong-Mo Seo (Seoul National University, Korea)

Th. 04/7.8: Biosignals: Cardiovascular and Ventilation

Room: Hall 04a Chair: Thomas Schmitz-Rode (RWTH Aachen, Germany)

14:45 *Superior effects of Losartan to propranolol on opening angle of portal vein of carbon tetrachloride- induced portal hypertension*

Zongqi Zhang (Second Military Medical University, P.R. China)

15:00 *Flow-structure-acoustic interaction in a prestressed human larynx model*

Stefan Kniesburges (University Erlangen-Nuremberg, Germany); Stefan Becker (University Erlangen-Nuremberg, Germany); Antonio Delgado (University Erlangen-Nuremberg, Germany); Michael Döllinger (University of Erlangen, Germany)

15:15 *Optical alveolar elastometry: On the optical determination of lung tissue properties*

David Schwenninger (University Hospital of Freiburg, Germany); Knut Moeller (Furtwangen University, Germany); Matthias Schneider (Universitätsklinikum Freiburg, Germany); Stefan Schumann (Universitätsklinikum Freiburg, Germany); Josef Guttmann (Universitätsklinikum Freiburg, Germany)

15:30 *New technique of characteristic impedance determination Within the arterial system: Part I*

Khaled Ben Abdessalem (UR of Biophysics, Tunisia); Saber Ben Abdessalem (University, Tunisia); Sofienne Mansouri (Biophysics Research unit (Medical school of Tunis), Tunisia); Ridha Ben Salah (University, Tunisia)

15:45 *A Perfusion Culture System Used to Study Vessels with Different Size*

Chang-yan Lin Changyan (Beijing Anzhen Hospital affiliated Capital University of Medical Sciences, P.R. China)

16:00 *Passive step response of airway smooth muscle*

Ahmed Al-Jumaily (The Auckland University of Technology, New Zealand)

Th. 01/7.9: Brachytherapy: Planning and Verification

Room: Hall 04b Chair: Dimos Baltas (Klinikum Offenbach, Germany) , Panayiotis Mavroidis (Karolinska Institutet and Stockholm University, Sweden)

14:45 Influence of Modulation Restriction in Inverse Optimization with HIPO of Prostate Implants on Plan Quality: Analysis using Dosimetric and Radiobiological Indices

Dimos Baltas (Klinikum Offenbach, Germany); Zaira Katsilieri (Klinikum Offenbach GmbH, Germany); Vasiliki Kefala (Klinikum Offenbach GmbH, Germany); Sokrates Papaioannou (Klinikum Offenbach GmbH, Germany); Andreas Karabis (Pi Medical Ltd, Greece); Panayiotis Mavroidis (Karolinska Institutet and Stockholm University, Sweden); Nikolaos Zamboglou (Klinikum Offenbach GmbH, Germany)

15:00 Brachytherapy seed localization via iterative forward projection matching (IFPM) algorithm using intraoperative conebeam CT sinogram projections

Damodar Pokhrel (Virginia Commonwealth University, USA); Martin Murphy (Virginia Commonwealth University, USA); Dorin Todor (Virginia Commonwealth University, USA); Dimitrios Lazos (Virginia Commonwealth University, USA); Elisabeth Weiss (Virginia Commonwealth University, USA); Yuichi Motai (Virginia Commonwealth University, USA); Jeffrey Williamson (Virginia Commonwealth University, USA)

15:15 Using Correlated Sampling to Accelerate CT-Based Monte Carlo Dose Calculations for Brachytherapy Treatment Planning

Andrew Sampson (Virginia Commonwealth University, USA); Yi Le (Johns Hopkins University, USA); Dorin Todor (Virginia Commonwealth University, USA); Jeffrey Williamson (Virginia Commonwealth University, USA)

15:30 Influence of Patient Movement and Anatomy Alteration on the Quality of 3D US-Based Prostate HDR Brachytherapy Treatment

Natasa Milickovic (Offenbach Clinic, Germany); Nikolaos Tselis (Offenbach Clinic, Germany); Ileyana Nikolova (Offenbach Clinic, Germany); Hasin Anupama (Teacher, Bangladesh); Nikolaos Zamboglou (Klinikum Offenbach GmbH, Germany); Dimos Baltas (Klinikum Offenbach, Germany)

15:45 Localization of high dose rate Ir-192 source during brachytherapy treatment using silicon detectors

Matej Batič (Institute Jožef Stefan, Slovenia); Janez Burger (Institute of Oncology, Slovenia); Vladimir Cindro (Institute Jožef Stefan, Slovenia); Gregor Kramberger (Institute Jožef Stefan, Slovenia); Igor Mandić (Institute Jožef Stefan, Slovenia); Marko Mikuž (University of Ljubljana / Institute Jožef Stefan, Slovenia); Andrej Studen (Institute Jožef Stefan, Slovenia); Marko Zavrtanik (Institute Jožef Stefan, Slovenia)

16:00 Optimization of Catheter Position and Dwell Time in Prostate HDR Brachytherapy using HIPO and Linear Programming

Andreas Karabis (Pi Medical Ltd, Greece); Pietro Belotti (Lehigh University, USA); Dimos Baltas (Klinikum Offenbach, Germany)

16:15 Comparative study between IBT or EBRT boost doses at organs at risk in Cervical Cancer treatment

Rui Pirraco (IPOFG Porto, Portugal); Alexandre Pereira (IPOFG Porto, Portugal); Teresa Viterbo (IPOFG Porto, Portugal)

Th. 09/7.16: Human Movement and Posture Analysis (4)

Room: Hall 22a Chair: Jiri Hozman (Czech Technical University in Prague, Faculty of Biomedical Engineering, Czech Republic) , Silvia Conforto (University Roma Tre, Italy)

14:45 Invited: Comparative study on the posture of individuals with and without cervical pain

Sandra Galera (São Paulo State University, Brazil); Luiz Fernando Nascimento (UNITAU, Brazil); Elaine Cristina Teodoro (São Paulo State University, Brazil); Jose Tomazini (Sao Paulo State University, Brazil)

15:15 Is Posturography a Candidate for a Vigilance Test?

Thomas Schnupp (University of Applied Sciences Schmalkalden, Germany); Adolf Schenka (University of Applied Sciences Schmalkalden, Germany); David Edwards (Caterpillar Inc., USA); Jarek Krajewski (Institute of Work and Organizational Psychology, University of Wuppertal, Germany); Martin Golz (University of Applied Sciences Schmalkalden, Germany)

15:30 The Effect of Computer Use on Carpal Tunnel Syndrome

Maurice Donoghue (University of Limerick, Ireland); Michael Walsh (University of Limerick, Ireland); David O'Reilly (University of Limerick, Ireland)

15:45 Movement analysis by accelerometry of newborns for the early detection of movement disorders due to infantile cerebral palsy

Franziska Heinze (RWTH University Aachen, Germany); Nico Breitbach-Faller (Social Pediatric Centre, Klinikum Esslingen, Germany); Thomas Schmitz-Rode (RWTH Aachen, Germany); Catherine Disselhorst-Klug (PD Dr. rer. nat., Germany)

16:00 Estimation of Physical Performance for Elderly People via Markerless Sit to Stand Analysis

Michela Goffredo (Applied Electronics Department, University of "Roma TRE", Rome (Italy), Italy); Rossana Muscillo (Applied Electronics Department, University of "Roma TRE", Rome (Italy), Italy); Massimo Gneo (University Roma Tre, Italy); Maurizio Schmid (University Roma Tre, Italy); Silvia Conforto (University Roma Tre, Italy); Tommaso D'Alessio (University Roma Tre, Italy)

16:15 Position of the Head Measured by Digital Photograph Analysis

Jiri Hozman (Czech Technical University in Prague, Faculty of Biomedical Engineering, Czech Republic); Rudolf Cerny (Charles University in Prague, 2nd Faculty of Medicine, Czech Republic); Jaroslav Charfreitag (Czech Technical University in Prague, Czech

Republic); Patrik Kutilek (Czech Technical University in Prague, Faculty of Biomedical Engineering, Czech Republic)

Th. 07/7.15: Pulmonary Systems

Room: Hall 21b Chair: Steffen Leonhardt (RWTH Aachen University, Germany) , Hartmut Gehring (University of Luebeck & Universitätsklinikum Schleswig-Holstein, Germany)

14:45 Automation of protective ventilation in acute lung injury

Torsten Meier (University of Lübeck, Germany); Henning Luepschen (RWTH Aachen University, Helmholtz-Institute for Biomedical Engineering, Germany); Jan Karsten (University of Luebeck, Germany); Jens Trautmann (University of Lübeck, Germany); Robert Pikkemaat (RWTH Aachen, Germany); Martin Grossherr (University of Luebeck, Germany); Hartmut Gehring (University of Luebeck, Germany); Steffen Leonhardt (RWTH Aachen University, Germany)

15:15 An adaptive controller for noisy pressure controlled ventilation

Alessandro Beda (Dept. of Anesthesiology and Intensive Care Therapy, University Hospital Dresden, Germany); Spieth Peter (Dept. of Anesthesiology and Intensive Care Therapy, University Hospital Dresden, Germany); Thomas Handzuj (Dräger Medical, Lübeck, Germany); Paolo Pelosi (Department of Ambient Health and Safety, University of Insubria, Varese, Italy); Edmund Koch (Technische Universität Dresden, Germany); Thea Koch (Technische Universität Dresden, Germany); Marcelo Gama de Abreu (Dept. of Anesthesiology and Intensive Care Therapy, University Hospital Dresden, Germany)

15:30 Signal waveform agreement between spirometer and impedance pneumography of six chest band electrode configurations

Ville-Pekka Seppä (Tampere University of Technology, Finland); Jari Viik (Tampere University of Technology, Finland); Ahmed Naveed (Tampere University of Technology, Finland); Juho Väisänen (Tampere University of Technology, Finland); Jari Hyttinen (Tampere University of Technology, Finland)

15:45 Automatic lung recruitment maneuvers using robust closed-loop control of the oxygen saturation in mechanical ventilation

Henning Luepschen (RWTH Aachen University, Helmholtz-Institute for Biomedical Engineering, Germany); Stefanie Konowalczyk (RWTH Aachen University, Germany); Torsten Meier (University of Lübeck, Germany); Robert Pikkemaat (RWTH Aachen, Germany); Steffen Leonhardt (RWTH Aachen University, Germany)

16:00 Monitoring of cyclic opening and closing of ventilatory lung units using Electric Impedance Tomography - preliminary data

Thomas Muders (University of Bonn, Germany); Joerg Zinserling (University of Bonn, Germany); Henning Luepschen (RWTH Aachen University, Helmholtz-Institute for Biomedical Engineering, Germany); Steffen Leonhardt (RWTH Aachen University, Germany); Hermann

Wrigge (University of Bonn, Germany); Christian Putensen (University of Bonn, Germany)

16:15 Regional Pulmonary Time-Constant Maps based on EIT-Measurements

Robert Pikkemaat (RWTH Aachen, Germany); Henning Luepschen (RWTH Aachen University, Helmholtz-Institute for Biomedical Engineering, Germany); Torsten Meier (University of Lübeck, Germany); Til Aach (RWTH Aachen University, Germany); Steffen Leonhardt (RWTH Aachen University, Germany)

15:15 - 16:45

Th. 02/7.12: CT: Applications

Initial invited lecture by Prof. GH Chen

Room: Hall 11a Chair: Willi Kalender (Universität Erlangen-Nürnberg, Germany) , Guang-Hong Chen (University of Wisconsin-Madison, USA)

15:15 Invited: Temporal Resolution Improvement Using PICCS (TRI-PICCS)

Guang-Hong Chen (University of Wisconsin-Madison, USA)

15:45 Perfusion Measurements in Micro-CT: Increased Dose Efficiency by use of HYPR LR Image Reconstruction

Robert Brauweiler (University Erlangen-Nuremberg, Germany); Dirk Ertel (University of Erlangen-Nuremberg, Germany); Lauren Keith (University of Wisconsin - Madison, USA); Michael Speidel (University of Wisconsin-Madison, USA); Charles A. Mistretta (University of Wisconsin-Madison, USA); Willi Kalender (Universität Erlangen-Nürnberg, Germany)

16:00 Temporal Resolution Assessment Using a Dedicated Edge Spread Function Approach

Dirk Ertel (University of Erlangen-Nuremberg, Germany); Hee-Jeong Lee (University of Erlangen-Nuremberg, Germany); Willi Kalender (Universität Erlangen-Nürnberg, Germany)

16:15 Spatially resolved automatic cardiac rest phase determination in coronary computed tomography angiography (CTA)

Holger Schmitt (Philips Research Europe, Germany); Jochen Peters (Philips Research Europe, Germany); Jonathan Lessick (Rambam Healthcare Campus and Philips Healthcare, Israel); Jürgen Weese (Philips, Germany); Michael Grass (Philips Research Europe, Germany)

16:30 Image-Based Dual Energy CT using Optimized Precorrection Functions: A Practical New Approach to Material Decomposition in the Image Domain

Matthias Baer (University of Erlangen-Nürnberg, Germany); Clemens Maaß (University of Erlangen-Nürnberg, Germany); Willi Kalender

(Universität Erlangen-Nürnberg, Germany); Marc Kachelrieß
(University of Erlangen-Nürnberg, Germany)

17:00 - 18:45

Postdeadline Poster Session

Assessment of Air Pollution from Vehicular Emission

Anthony Shadrack (Jomo Kenyatta University, Kenya); Robert Kinyua
(Jomo Kenyatta University, Kenya)

***Electromechanical Interventricular Delay with Transesophageal Left
Ventricular ECG and Impedance Cardiography Recording in Patients
With and Without Heart Failure***

Daniela Eisentraeger (University of Jena, Germany); Matthias Heinke
(University of Jena, Germany); Bruno Ismer (University of Rostock,
Germany); Andreas Voss (University of Applied Sciences Jena,
Germany); Ralf Surber (University of Jena, Germany); Helmut
Kuehnert (University of Jena, Germany); Dirk Prochnau (University of
Jena, Germany); Olaf Solbrig (Medis GmbH Ilmenau, Germany);
Jürgen Querengässer (Medis GmbH Ilmenau, Germany); Hans Reiner
Figulla (University of Jena, Germany)

QA for VMAT technologies at ELEKTA Linac

Hilbert Blank (Radiotherapy Dept. Distler, Germany); Holger Neumann
(Radiotherapy Dept. Distler, Germany); Joerg Distler (Radiotherapy
Dept. Distler, Germany)

Physical Therapy System for Children with Hemiplegia

Vladimir Genis (Goodwin College, Drexel University, USA)

***Biomedical Engineering Technology Concentration within Engineering
Technology Program***

Vladimir Genis (Goodwin College, Drexel University, USA)

***Modelling Fractionated Radiotherapy Schedules and Dynamic Hypoxia
Levels for Individualisation of Head and Neck Cancer Radiotherapy***

Wendy Harriss (University of Adelaide, Australia); Eva Bezak (Royal
Adelaide Hospital, Australia); Eric Yeoh (Royal Adelaide Hospital,
Australia)

***Comparison of Elastin-Like Polypeptide [(VGRGD)(GVVPG)₆]_n and
[(GVVPG)₇]_n as Biomaterials***

Bo Hyung Park (DGIST, Korea); Mi Ae Kwon (DGIST, Korea); Rang-
Woon Park (Kyungpook National University, Korea); Won Bae Jeon
(DGIST, Korea)

A Simplified Method for Intradialytic Cardiac Output Measurement

Joakim Cordtz (Copenhagen University Hospital, Denmark); Jan
Sternby (Gambro Lundia AB, Sweden)

Tranexamic acid an alternative to aprotinin in fibrin-based tissue engineering

Eva Cholewinski (Helmholtz Institute for Biomedical Engineering, RWTH Aachen, Germany); Maren Dietrich (Helmholtz Institute, Germany); Thomas C. Flanagan (School of Medicine & Medical Science, Ireland); Stefan Jockenhoevel (Helmholtz Institute for Biomedical Engineering, RWTH Aachen, Germany); Thomas Schmitz-Rode (RWTH Aachen, Germany)

The trouble with calcium blooming at low voltage CT angiography

Marcel van Straten (Erasmus MC, The Netherlands); Michiel Schaap (Erasmus MC, Rotterdam, The Netherlands); Marcel Dijkshoorn (Erasmus MC, The Netherlands); Adriaan Moelker (Erasmus MC, The Netherlands); Gabriel Krestin (Erasmus MC, Rotterdam, The Netherlands); Wiro Niessen (Erasmus MC, Rotterdam, The Netherlands)

Evaluation and Investigation of Quality Control of Dual Head SPECT Gamma Camera Mediso.

Emad Eldin Shaekhoon (Radiation & Isotope Centre Khartoum, Sudan)

Detection of Cervical Cancer with Blood Samples Using Raman Spectroscopy and Multivariate Analysis

Jose Gonzalez (Centro Universitario de los Lagos, Mexico)

Investigation of the effects of different parameters on ESD to premature infants undergoing diagnostic radiology using MCNP4C code

Simin Mehdizadeh (radiation research center, School of Engineering, Shiraz University, Iran); Reza Faghihi (Shiraz University, Iran); Fatemeh Noroozalizadeh (radiation research center, School of Engineering, Shiraz University, Iran); Imen Namazi (ray medical engineering department, Shiraz University, Shiraz, Iran, Iran); M Heirani (ray medical engineering department, Shiraz University, Shiraz, Iran, Iran); H Mahani (ray medical engineering department, Shiraz University, Shiraz, Iran, Iran); M Sharifzadeh (ray medical engineering department, Shiraz University, Shiraz, Iran, Iran); M Moshkriz (ray medical engineering department, Shiraz University, Shiraz, Iran, Iran); Azimeh Noorizadeh (School of Engineering, Shiraz University, Iran); Sedigheh Sina (radiation research center, School of Engineering, Shiraz University, Iran); Kourosh Mansouri (Radiation research center, School of engineering, Shiraz University, Iran); Sedigheh Sina (radiation research center, School of Engineering, Shiraz University, Iran)

Dosimetric characteristics of Standard and Micro MOSFET dosimeters for clinical electron beam

Jin beom Chung (Seoul National University Bundang Hospital, Korea); Jeong-Woo Lee (Konkuk University hospital, Korea); Jae Sung Kim (Seoul National University Bundang Hospital, Korea); Kyoung-Sik Choi (Sam Anyang Medical Center, Korea); Tae-Suk Suh (The Catholic University of Korea, Korea); Doo-Hyun Lee (National Cancer Center, Korea); Jae-Sung Kim (Seoul National Budang Hospital, Korea)

IAEA interregional project to strengthen Medical Physics in radiation medicine: a progress report

Maria-Ester Brandan (Universidad Nacional Autonoma de Mexico, Mexico); Adlin López-Díaz (ALFIM, Cuba); Taofeeq Ige (National Hospital, Nigeria); Chris Constantinou (B.O.Cyprus Oncology Centre, Cyprus); Ahmed Meghzifene (Internatinal Atomic Energy Agency, Austria); Joanna Izewska (International Atomic Energy Agency, Austria); Sandra Steyskal (Internatinal Atomic Energy Agency, Austria)

IT Governance in Swiss Healthcare Business

Mike Krey (University of Applied Sciences Zurich, Switzerland)

IT Governance in Swiss Healthcare Sector

Mike Krey (University of Applied Sciences Zurich, Switzerland)

Can additional dose associated to magnification mammography be reduced through post-processing? Effect of contrast enhancement on Monte Carlo simulated images.

Matthaios Koutalonis (Barts and the London NHS Trust - Queen Mary University of London, United Kingdom); Ana Pascoal (Faculty of Engineering, Catholic University of Portugal, Portugal); Harry Delis (University of Patras, Greece); Eleni Costaridou (University of Patras, Greece); George Spyrou (Academy of Athens, Greece); George Panayiotakis (Medical School, University of Patras, Hong Kong)

Comparison of Blood Pressure Measurement Accuracy between Folded Airbag and Closely Contacted Bladder in Partial Pressurization Volume-Oscillometric Method on the Wrist

Jong Pal Kim (Samsung Advanced Institute of Technology, Korea); Kun Soo Shin (Samsung Advanced Institute of Technology, Korea)

An Effort on Structuring the Contribution of Biomarker and Risk Factor of Susceptibility to Alzheimer's Disease

H. A. Razak (Universiti Teknologi Mara, Malaysia)

Spectroscopic technique improves Near-infrared spectroscopy (NIRS)

Hideo Eda (Grad. school for GPI, Japan)

MicroSPECT/CT Imaging and Pharmacokinetics of ¹⁸⁸Re-(DXR)-liposome in Human Colorectal Adenocarcinoma-bearing Mice

Min-Hua Chen (National Health Research Institute, Taiwan); Chih-Hsien Chang (Institute of Nuclear Energy Research, Taiwan); Ya-Jen Chang (Institute of Nuclear Energy Research, Taiwan); Liang-Cheng Chen (Institute of Nuclear Energy Research, Taiwan); Chia-Yu Yu (Institute of Nuclear Energy Research, Taiwan); Yu-Hsien Wu (Institute of Nuclear Energy Research, Taiwan); Wan-Chi Lee (Institute of Nuclear Energy Research, Taiwan); Chung-Hsin Yeh (Institute of Nuclear Energy Research, Taiwan); Te-Wei Lee (Institute of Nuclear Energy Research, Taiwan); Chung-Sh Yang (National Health Research Institute, Taiwan); Gann Ting (National Health Research Institute, Taiwan)

Pain Detection in ECG Signals Using Artificial Intelligence

Uri Shaham (Zikit, Israel); Eran Tomer (Zikit, Israel); Alex Beizerov (Ben Gurion University, Israel); Zvia Rudich (Ben Gurion University, Israel); Shai Tejman-Yarden (University of California San Diego, USA)

PVA vehicle system for apatite coating on electrospun poly(ϵ -caprolactone) fibers

In Ae Kim (Seoul national university, Korea); Sangho Roh (Seoul National University School of Dentistry, Korea); Sang-Hoon Rhee (Seoul National University, Korea)

Occupational stress in the workers of a dairy factory exposed to sever humidity

Amirreza Soltani (Tehran Medical Branch, Islamic Azad University, Iran)

Quantitative evaluation of alveolar mechanics during in vivo microscopy

Michael Czaplík (University Hospital Aachen, Germany); Johannes Bickenbach (Department of Surgical Intensive Care, Germany); Sven Meißner (Technical University Dresden, Germany); Thomas Soodt (Chair of Fluid Mechanics and Institute of Aerodynamics, Germany); Rolf Rossaint (Universitätsklinikum Aachen, Germany)

Influence of Aging on Discriminability of Tactile Symbols

Kouki Doi (Tokyo Metropolitan University, Japan); Hiroshi Fujimoto (Waseda University, Japan)

Measurement and Evaluation of Scatter Fraction with Digital Radiography Using Beam Stop Array

Yu na Choi (University of Yonsei, Korea); Hee-Joung Kim (Yonsei University, Korea); Hyo Min Cho (University of Yonsei, Korea)

Smart and Precise Surgical Trajectory Navigation

Axel Follmann (RWTH Aachen, Germany); Matias de la Fuente (RWTH Aachen University, Germany); Sabine Linke (RWTH Aachen University, Germany); Peter Belei (Helmholtz-Institute of Biomedical Engineering of the RWTH Aachen University, Germany); Melanie Strake (RWTH Aachen University, Germany); Klaus Radermacher (RWTH Aachen, Germany)

Home Telecare as a Basis for Model Center of Diabetes Treatment

Piotr Ladyzynski (Institute of Biocybernetics and Biomedical Engineering PAS, Poland); Piotr Foltynski (Institute of Biocybernetics and Biomedical Engineering PAS, Poland); Jan Wojcicki (Institute of Biocybernetics and Biomedical Engineering PAS, Poland); Karolina Migalska-Musial (Institute of Biocybernetics and Biomedical Engineering PAS, Poland); Maria Molik (Institute of Biocybernetics and Biomedical Engineering PAS, Poland); Janusz Krzymien (Warsaw Medical University, Poland); Grzegorz Rosinski (Warsaw Medical University, Poland); Grzegorz Opolski (Warsaw Medical University, Poland); Krzysztof Czajkowski (Warsaw Medical University, Poland); Mariusz Tracz (Warsaw Medical University, Poland); Waldemar Karnafel (Warsaw Medical University, Poland)

Temporal stability of percutaneously implanted coiled wire fiducial markers for liver IGRT

Valerie Gironde (University of South Florida, USA); Geoffrey Zhang (Moffitt Cancer Center, USA); Mark Russell (Moffitt Cancer Center, USA); Junsung Choi (Moffitt Cancer Center, USA); Sarah Hoffe (Moffitt Cancer Center, USA)

Recording of visual evoked potential in the subjects with opacity of lens in visual system.

Mahsa Nooralishahi (Medical Azad university, The Netherlands); Seyed Mohammad Masoud Shushtarian (Tehran Medical Branch-Islamic Azad University, Iran)

The effects of CYP2C19 polymorphisms on the COX-2 mRNA expression in the Iranian patients with erosive reflux esophagitis.

Nader Zendeheel (Digestive Disease Research Center, Iran); Firouzeh Biramijamal (NIGEB, Iran); Arash Hossein-Nezhad (NIGEB, Iran); Nasrin Zendeheel (Shahid beheshti University, Iran); Masoud Doughaiemoghaddam (DDRC, Iran); Hamid Reza Sarie (DDRC, Iran); Akram Pourshams (DDRC, Iran); Reza Malekzadeh (DDRC, Iran)

MRI-tracking and phenotypic analysis of magnetic nanoparticle-pulsed dendritic cells

Sebastian Schwarz (RWTH Aachen, Germany); Daniela Bross (RWTH Aachen, Germany); Claus Lang (LMU Munich, Germany); Michael Hodenius (University (RWTH) Aachen, Germany); John Wong (RWTH Aachen, Germany); Dirk Schueler (LMU Munich, Germany); Walter Richtering (RWTH Aachen, Germany); Mathias Hoehn (Max Planck Institute, Germany); Martin Zenke (RWTH Aachen, Germany); Thomas Hieronymus (RWTH Aachen, Germany)

Validation of novel 2D (helical dosimetry®) and 3D (COMPASS®) QA tools for VMAT

Ramesh Boggula (Universitätsmedizin Mannheim, University of Heidelberg, Germany); Friedlieb Lorenz (Universitätsmedizin Mannheim, University of Heidelberg, Germany); Hansjoerg Wertz (Universitätsmedizin Mannheim, University of Heidelberg, Germany); Florian Stieler (Universitätsmedizin Mannheim, University of Heidelberg, Germany); Mattias Birkner (IBA dosimetry, Schwarzenbruck, Germany); Lutz Mueller (IBA dosimetry, Schwarzenbruck, Germany); Frank Lohr (Universitätsmedizin Mannheim, University of Heidelberg, Germany); Frederik Wenz (Universitätsmedizin Mannheim, University of Heidelberg, Germany)

Modernising Scientific Careers: the European Dimension

Derek Pearson (Nottingham University Hospitals NHS Trust, United Kingdom); Shelley Heard (Department of Health, United Kingdom); Sue Hill (Department of Health, United Kingdom)

Dialysis fluid flow in a hollow-fiber dialyzer and its effects on dialysis performance

Ayaka Hirano (Waseda University, Japan); Ken-ichiro Yamamoto (Waseda University, Japan); Masato Matsuda (Waseda University, Japan); Takehito Ogawa (Waseda University, Japan); Taiji Yakushiji (Himeji Dokkyo University, Japan); Takehiro Miyasaka (Himeji Dokkyo University, Japan); Kiyotaka Sakai (Waseda University, Japan)

Determination of polyvinylpyrrolidone elution from synthetic polymer dialysis membranes

Koki Namekawa (Waseda University, Japan); Makoto Fukuda (Himeji Dokkyo University, Japan); Kaori Aomatsu (Waseda University, Japan); Ami Kaneko (Waseda University, Japan); Masato Matsuda (Waseda University, Japan); Ken-ichiro Yamamoto (Waseda University, Japan); Kiyotaka Sakai (Waseda University, Japan)

The Investigation of Drug Release Behavior of the Multilayer pH Sensitive Drug Carrier

Kuofeng Chou (Yuanpei University, Taiwan); Shih-Tsang Tang (Ming Chuan University, Taiwan)

Super resolution in Optical Coherence Tomography (OCT)

Maximilian Heinig (University of Lübeck, Germany); Alexander Schlaefer (University of Luebeck, Germany); Achim Schweikard (Universität Lübeck, Germany)

Comparison of IMRT treatment plans using a sliding window method between two different treatment planning systems

Masaya Tamura (Kinki University School of Medicine, Japan); Naoya Shintani (Kinki University Hospital, Japan); Kouhei Shimomura (Kinki University Hospital, Japan); Tamaki Nishi (Kinki University Hospital, Japan); Masahiko Okumura (Kinki University Hospital, Japan); Toru Shibata (Kinki University School of Medicine, Japan); Yasumasa Nishimura (Kinki University School of Medicine, Japan)

System of Communication and Control Based on the Thought

Avid Roman Gonzalez (IEEE Member, France)

Evaluation of survival fraction and inflammatory response on cells lines after exposure to silver nanoparticles.

Fidel Martinez (Centro de Investigaciones en Materiales Avanzados S.C., Mexico); Peggy Olive (British Columbia Cancer Research Centre, Vancouver, BC, Canada); Adriana Banuelos (British Columbia Cancer Research Centre, Vancouver, BC, Canada); Errasmo Orrantia (Centro de Investigaciones de Materiales Avanzados, Chihuahua, Mexico); Facundo Ruiz (Facultad de Ciencias, Universidad Autonoma de San Luis Potosi, Mexico); Horacio Bach (University of British Columbia, Division of Infectious Diseases. Vancouver, BC, Canada); Yossef Av-Gay (University of British Columbia, Division of Infectious Diseases. Vancouver, BC, Canada)

Derivation of putative embryonic stem cells from in vitro produced Korean cattle blastocysts

Kiyoung Kim (Seoul National University School of Dentistry, Korea); SangKyu Park (Seoul National University School of Dentistry, Korea); Yeon-Gil Jung (ET Biotech, Korea); Sang-Hoon Rhee (Seoul National University, Korea); Sangho Roh (Seoul National University School of Dentistry, Korea)

Modeling of the oxygen effect for treatment planning in high-LET radiation therapy

Tatiana Dorsch (Klinikum rechts der Isar der Technischen Universität München, Germany); Jan Wilkens (Technische Universität München, Germany)

Monitoring of brain activity in children without restraint using wireless EEG and moving sensor

Saki Fujiyama (Kyushu University, Japan); Keiji Iramina (Kyushu University, Japan)

Inorganic nanoparticle as a carrier for hepatitis B viral capsids

Yuri Dekhtyar (Riga Technical University /BENI, Latvia); Anna Kachanovska (Riga Technical University, Latvia); Aloizis Patmalnieks (University of Latvia, Latvia); Paul Pumpens (Biomedical research and study centre, Latvia); Regina Renhofa (Biomedical research and study centre, Latvia); Marina Romanova (Riga Technical University, Latvia); Aleksandr Sudnikovich (Riga Technical University, Latvia)

Saturable or non-saturable binding in radioimmunotherapy - A quantitative analysis based on pharmacokinetic modelling

Ilona Keller (Universität Ulm, Germany); Peter Kletting (Universität Ulm, Germany); Gerhard Glatting (Universität Ulm, Germany)

Attenuation of photon beams by carbon fiber couch tops/inserts used in external beam radiotherapy

Elinore Wieslander (Lund university hospital, Sweden); Lars Weber (Lund University Hospital, Sweden); Kerstin Löfvander Thapper (Lund University Hospital, Sweden); Andrej Tomaszewicz (University hospital in Lund, Sweden)

A comparison of different methods of calculating the radiation dose from F-18 releases trapped in building near wake re-circulation regions

Derek Pearson (Nottingham University Hospitals NHS Trust, United Kingdom)

Radiological impact assessment for the use of radioactive O-15 labelled gas for PET/CT

Derek Pearson (Nottingham University Hospitals NHS Trust, United Kingdom)

Cranial Immobilization for Radiosurgical Applications in TomoTherapy

Satish Jaywant (Cancer Institute of New Jersey, USA)

Implications of kidney depth measurement in evaluating renal function using planar scintigraphy

Ana Marques da Silva (Pontificia Universidade Catolica do RS, Brazil);
Claudia Brambilla (Pontificia Universidade Catolica do RS, Brazil)

Development of computerized surgical instrument by the ceramic RFID tag

Kazuhiko Yamashita (Tokyo Healthcare University, Japan); Yumi Iwakami (Tokyo Healthcare University, Japan); Kazuya Imaizumi (Tokyo Healthcare University, Japan); Hirohide Komatsu (KRD corporation, Japan); Hiroshi Honda (Kurihashi Hospital, Japan); Ryosuke Hosaka (Shonan Institute of Technology, Japan); Shigenobu Shimada (Tokyo Metropolitan Industrial Technology Research Institute, Japan); Shuichi Ino (National Institute of Advanced Industrial Science and Technology, Japan); Takashi Okubo (Tokyo Healthcare University, Japan)

Simulation of non-steady local structure of the blood flow and relationships between rheological and electrical properties of human blood

Nadia Antonova (Institute of Mechanics, Bulgarian Academy of Sciences, Bulgaria)

Blood Salvage by Percutaneous Puncture: A Report of 4 Cases

Anele Agu (Abia State University Teaching Hospital, Aba, Nigeria)

Notching In Anterior Femur – When Should Be Used Femoral Stems?

Antonio Completo (Univesity of Aveiro, Portugal)

Predicted Effect on Biological Effective Dose and Tumour Control Probability of changing from LDR / MDR to FHDR Brachytherapy treatments

Ruth Wyatt (University Hospital Birmingham NHS Trust, United Kingdom)

Effect of external load and trunk posture on muscle activity in subjects with and without chronic low back pain

Neda Ershad (Tarbiat Modares University, Iran)

In vivo dosimetry combined with Monte Carlo simulation: a method to improved quality control in HDR Brachytherapy treatments

Tatiana Marques (University of São Paulo, Brazil); Mirko Alva (University of Sao Paulo, Brazil); Leandro Gonçalves (University of São Paulo, Brazil); Oswaldo Baffa (Universidade de Sao Paulo, Brazil); Patrícia Nicolucci (University of São Paulo, Brazil)

Bone density changes during adjuvant aromatase inhibitor treatment in breast cancer patients

Mohammad Almatari (ABM Univeristy Trust, United Kingdom); Maung Moe (ABM University Trust, United Kingdom); Parvaiz Ali (ABM Univeristy Trust, United Kingdom); Peter Willshaw (Swansea University, United Kingdom)

Development of an Implantable Micro Circulation Observation System for Total Artificial Heart

Yusuke Inoue (The University of Tokyo, Japan)

Determination of absorbed dose of organs (Thyroid, Sternum, Neck vertebra) in thyroid cancer patients under iodine therapy

Darioush Shahbazi-Gahrouei (Isfahan University of Medical Sciences, Iran)

FEM based Computational Model for the Reconstruction of Inhomogeneities in Tissue in Optical Tomography

Mita Bhowmick (Thadomal Shahani Engineering College, India); Uday Desai (IIT Bombay, India); Seshu Pasumarthy (IIT Bombay, India)

Fibre Optic Environmental Sensors for Monitoring and Distributed Control of Artificially Irrigated Areas (FOES)

Tarek Elsarnagawy (King saud university, Saudi Arabia); Mirza Beg (King saud university, Saudi Arabia)

The Effect of an RGD-Human Chitin binding domain fusion protein on the adhesion of fibroblasts to reacylated chitosan films

Vera Carvalho (Institute for Biotechnology and Bioengineering, Portugal); Lucília Domingues (Institute for Biotechnology and Bioengineering, Portugal); Francisco Gama (Universidade do Minho, Portugal)

Three-dimensional continuous curvatures of the human cardiac geometry from magnetic resonance imaging

Liang Zhong (National Heart Centre Singapore, Singapore); Yi Su (Institute of High Performance Computing, A*Star, Singapore); Si Yong Yeo (School of Engineering, Swansea University, UK, United Kingdom); Dhanjoo Ghista (Parkway College, Singapore); Ghassan Kassab (University-Purdue University Indianapolis, US, USA); Rusan Tan (National Heart Centre Singapore, Singapore)

Relationship between Sympathetic Skin Response and Psychologic Index Alterations while Listening to Different Sounds

Masuda Fumihiko (Kyushu Institute of Technology, Japan); Chikamune Wada (Kyushu Institute of Technology, Japan)

A New Method for Monocular Featureless Localization and Surface Tracking in Medical Applications

Oliver Ruepp (Technische Universität München, Germany); Darius Burschka (Technische Universität München, Germany)

4D velocity measurements in intracranial aneurysms using 3T phase contrast velocity mapping

Pim van Ooij (Academic Medical Center Amsterdam, The Netherlands); Joppe Schneiders (Academic Medical Center, The Netherlands); Ed VanBavel (Academic Medical Center, The Netherlands); Charles Majoie (Promoter, The Netherlands); Aart Nederveen (Academic Medical Center, The Netherlands)

A convertible pneumatic actuator for brain/phantom elastography implemented on a clinical MR Scanner.

Peter Latta (Institute for Biodiagnostics - NRC, Canada); Patricia Debergue (IMI-NRC, Canada); Christopher Bowman (Institute for Biodiagnostics - NRC, Canada); Marco Gruwel (NRC-CNRC Institute for Biodiagnostics, Canada); Brendon Matwiy (Institute for Biodiagnostics - NRC, Canada); Boguslaw Tomanek (Institute for Biodiagnostics - NRC, Canada)

Sealed Sources of P-32 for Intravascular Brachytherapy

Mariano Vela Mora (Instituto Peruano de Energía Nuclear (IPEN), Peru)

The development of gating system for ocular proton therapy

Dongho Shin (Medical Physicist, Korea); Sung Y. Park (National cancer center, Korea); Myonggeun Yoon (National Cancer Center, Korea); Young Kyong Lim (National Cancer Center, Korea); Se Byeong Lee (National Cancer Center, Korea); Dongwook Kim (National Cancer Center, Korea); Ui-Jung Hwang (National Cancer Center, Korea); Sung Hwan Ahn (National Cancer Center, Korea)

Secondary neutron dose equivalent to the proton absorbed dose measurement for proton therapy of the eye at the National Cancer Center of Korea

Dongwook Kim (National Cancer Center, Korea); Dongho Shin (Medical Physicist, Korea); Sung Y. Park (National cancer center, Korea); Myonggeun Yoon (National Cancer Center, Korea); Young Kyong Lim (National Cancer Center, Korea); Se Byeong Lee (National Cancer Center, Korea); Sung Hwan Ahn (National Cancer Center, Korea)

Optimization in Localization accuracy of imaging in radio surgery procedures using Image fusion

Sajeev Thomas (NIMHANS, India); M Musthafa (University of calicut, India)

Radiation dose estimates in CT coronary angiography

Mohammad Reza Alinaghi Zadeh (Noor Medical Imaging Center, Iran); Abbas Arjmand Shabestari (Shahid Beheshti University, Iran); Shahram Akhlaghpour (Tehran University, Iran); Payman Moghaddam (Shahid Beheshti University, Iran)

Tributylin inhibits proliferation and promotes apoptosis of vascular smooth muscle cells in flow-reduced carotid remodeling in rats

Zhiqiang Yan (Shanghai Jiao Tong University, P.R. China); Mingliang Zhang (Shanghai Jiao Tong University, P.R. China); Baorong Shen (Shanghai Jiao Tong University, P.R. China); Zonglai Jiang (Shanghai Jiao Tong University, P.R. China)

Classification Model Based on Raman Spectra of Selected Morphological and Biochemical Tissue Constituents for Identification of Atherosclerosis in Human Coronary Artery

Marines Peres (Universidade Comunitária Regional de Chapecó, Brazil); Landulfo Silveira Jr. (Universidade Camilo Castelo Branco, Brazil); Renato Zângaro (Universidade Camilo Castelo Branco, Brazil); Marcos Pacheco (Universidade Camilo Castelo Branco, Brazil); Carlos Pasqualucci (Faculty of Medicine, Universidade de São Paulo, Brazil)

Automatic Alignment Detection of Beam Shaping Devices with Respect to the Physical Patient Position in Radiation Therapy Machines

Boris Selby (MedCom GmbH, Germany); Georgios Sakas (Fraunhofer IGD, Darmstadt, Germany); Wolfgang-Dieter Groch (University of Applied Sciences, Darmstadt, Germany); Uwe Stilla (Technische Universität München (TUM), Germany)

Monitoring Pulmonary Edema in CHF Patients Using Bio-Impedance

Marina Arad (Sheba Medical Center, Tel-Hashomer, Israel); Sharon Zlochiver (Tel Aviv University, Israel); Shimon Abboud (Tel Aviv University, Israel)

The study on the accuracy of the 3-D image reconstruction from endoscopic images with stereo matching method and the influence of image resolution

Masako Kawai (Suzuka University of Medical Science, Japan); Kenji Yamada (Osaka University, Japan); Hideya Takahashi (Osaka City University, Japan); Tomoki Michida (Osaka Kosei Nenkin Hospital, Japan); Kunimitsu Kawahara (Osaka Prefectural Medical Center for Respiratory and Allergic Diseases, Japan); Toshiaki Nagakura (Osaka Electro-Communication University, Japan)

Altered Wear Behavior of Artificial Knee Implants

Jan Philippe Kretzer (University of Heidelberg, Germany)

Corrosion in total hip arthroplasty

Jan Philippe Kretzer (University of Heidelberg, Germany)

Prototype tactile sensor for catheters made from vinylidene fluoride oligomer

Kazuto Takashima (RIKEN, Japan); Satoshi Horie (Kobe University, Japan); Kenji Ishida (Kobe University, Japan); Toshiharu MUKAI (Bio-Mimetic Control Research Center, Japan); Kazumi Matsushige (Kyoto University, Japan); Tetsuhiro Kodani (Daikin Industries, Ltd., Japan); Meiten Koh (Daikin Industries, Ltd., Japan); Takashi Kanemura (Daikin Industries, Ltd., Japan)

Inverse Verification of Dose Distribution for Intensity Modulated Radiation Therapy Patient-specific Quality Assurance Using dynamic MLC Log Files

Jeong-Woo Lee (Konkuk University hospital, Korea); Ji-Yeon Park (The Catholic University of Korea, Korea); Jeong-Hoon Park (The Catholic University of Korea, Korea); Jin beom Chung (Seoul National University Bundang Hospital, Korea); Kyoung-Sik Choi (Sam Anyang Medical Center, Korea); Doo-Hyun Lee (National Cancer Center, Korea); Tae-Suk Suh (The Catholic University of Korea, Korea)

Experience of FDG - PET Imaging of Lymphoma in Egypt

Hamed Farag (King Abdulaziz University, Saudi Arabia)

Development of fiber optic scintillator dosimetry system for proton therapy

Ui-Jung Hwang (National Cancer Center, Korea); Dongho Shin (Medical Physicist, Korea); Sung Y. Park (National cancer center, Korea); Se Byeong Lee (National Cancer Center, Korea); Young Kyong Lim (National Cancer Center, Korea); Dongwook Kim (National Cancer Center, Korea); Sung Hwan Ahn (National Cancer Center, Korea); Myonggeun Yoon (National Cancer Center, Korea)

Finite Element Method Simulation of Atrial Pacing and Termination Threshold for Atrial Flutter with Transesophageal Electro-Echocardiography

Matthias Heinke (University of Jena, Germany); Bruno Ismer (University of Rostock, Germany); Tobias Heinke (Siemens AG Healthcare Sector, Rudolstadt, Germany); Helmut Kuehnert (University of Jena, Germany); Ralf Surber (University of Jena, Germany); Dirk Prochnau (University of Jena, Germany); Gudrun Dannberg (University of Jena, Germany); Hans Reiner Figulla (University of Jena, Germany)

Ventricular Desynchronisation with Transesophageal Bipolar Left Ventricular ECG Recording of Interventricular and Intraleftventricular Delay in Patients With and Without Heart Failure

Matthias Heinke (University of Jena, Germany); Bruno Ismer (University of Rostock, Germany); Ralf Surber (University of Jena, Germany); Helmut Kuehnert (University of Jena, Germany); Dirk Prochnau (University of Jena, Germany); Tobias Heinke (Siemens AG Healthcare Sector, Rudolstadt, Germany); Daniela Eisentraeger (University of Jena, Germany); Gudrun Dannberg (University of Jena, Germany); Martin Lorenz (University of Jena, Germany); Hans Reiner Figulla (University of Jena, Germany)

Analysis of the Thyroid Gland as Acoustic Resonator

Gheorghe Gavriiloaia (University of Pitesti, Romania); Mariuca-Roxana Gavriiloaia (Medical and Pharmaceutical University of Bucharest, Romania)

Duration of cardiorespiratory coordination is reduced in patients with obstructive sleep apnea

Muammar Kabir (The University of Adelaide, Australia); Hany Dimitri (The University of Adelaide, Australia); Prashanthan Sanders (The University of Adelaide, Australia); Ral Antic (Royal Adelaide Hospital, Australia); Eugene Nalivaiko (University of Newcastle, Australia); Derek Abbott (University of Adelaide, Australia); Mathias Baumert (The University of Adelaide, Australia)

Statistical Properties of Heart Rate Variability Parameters in Patients with Congestive Heart Failure

Ko Keun Kim (Seoul National University, Korea); Yong Gyu Lim (Sangji University, Korea); Kwang Suk Park (Seoul National University, Korea)

Advances in Targeted Therapy for Cancer: Molecular Targeting of Alpha Emitting Radioisotopes

Barry Allen (St. George Hospital, Australia)

Nano-medicine and cancer

Dag Olsen (Institute for Cancer Research, Oslo University Hospital, Norway)

Radioactive Source Reloading and Commissioning of Leksell Gamma Knife B-Model unit

Suresh I (Medical Physicist, India); Surendran J (Medical Physicist, India)

From Expert Knowledge to a Real-Time Expert System for Physiological Monitoring

J Mark Ansermino (University of British Columbia, Canada); Joanne Lim (University of British Columbia, Canada); Dustin Dunsmuir (University of British Columbia, Canada); Maryam Dosani (University of British Columbia, Canada); Chris Brouse (University of British Columbia, Canada); Guy Dumont (University of British Columbia, Canada)

In vivo Real Time Imaging by a Micromachined based Dual-axes Confocal Microscope

Wibool Piyawattanametha (Stanford University and NECTEC, USA)

Development of Low Noise Active Electrode for High-Resolution EEG

Sari Ahokas (Tampere University of Technology, Finland)

Computer-Supported Statistical Analysis of Liver Elastograms

Małgorzata Przytułska (IBBE, Poland); Juliusz Kulikowski (IBBE, Poland)

Stress Analysis of Eyeball with Cornea removed by Laser Ablation

Toshiro Matsumoto (Kinki University, Japan); H Uozato (Kitasato University, Japan); Y Nawa (Nara Medical University, Japan); Y Hara (Nara Medical University, Japan)

Hemostatically Active Liposomes as Synthetic Platelet Substitutes

Madhumitha Ravikumar (Case Western Reserve University, USA); Anirban Sen Gupta (Case Western Reserve University, USA)

Contractile Tension of Endothelial Cells: An LPS Based In-vitro Sepsis Model

Eylem Kurulgan Demirci (RWTH Aachen University, Germany); Peter Linder (Aachen, University of Applied Sciences, Institute of Bioengineering, Germany); Taylan Demirci (Dokuz Eylul University, School of Medicine, Turkey); Jürgen Trzewik (Aachen, University of Applied Sciences, Institute of Bioengineering, Germany); Ilya Digel (Aachen, University of Applied Sciences, Institute of Bioengineering, Germany); Peter Kayser (Aachen, University of Applied Sciences, Institute of Bioengineering, Germany); Dariusz Porst (Aachen,

University of Applied Sciences, Institute of Bioengineering, Germany); Matthias Gossmann (Aachen, University of Applied Sciences, Institute of Bioengineering, Germany); Gerhard Artmann (Fachhochschule Aachen, Germany); Aysegul Temiz Artmann (Aachen, University of Applied Sciences, Institute of Bioengineering, Germany)

Contribution to the training in Medical Physics starting in graduate programs

Ricardo Terini (Pontificia Universidade Católica de São Paulo, Brazil);
Rosana Santos (Pontificia Universidade Católica de São Paulo, Brazil)

Determination of immunoglobulin G by fluorescence enhancement using fluorescent-labeled protein A

Takehito Ogawa (Waseda University, Japan); Satoka Aoyagi (Shimane University, Japan); Takehiro Miyasaka (Himeji Dokkyo University, Japan); Kiyotaka Sakai (Waseda University, Japan)

Experimental study on the variation of ionization chamber response by the external magnetic fields in water

Young-Kee Oh (Keimyung University, Korea); Dong-Hyuk Jeong (Wonkwang University Hospital, Korea); Jhin-Kee Kim (Chonbuk National University Hospital, Korea); Ki-Hwan Kim (Chungnam National University Hospital, Korea); Kyo-Chul Shin (Dankook University Hospital, Korea); Jeung-Kee Kim (Donga University Hospital, Korea); Jin-Hee Kim (Keimyung University, Korea); Ok-Bae Kim (Keimyung University, Korea)

Evaluation of Universal Plan-Indices and Quality Factor of Radiation Therapy Treatment Plans.

Anil Pyakuryal (University of Illinois at Chicago, Northwestern Memorial Hospital, USA)

Simulation of ferromagnetic microparticles in streaming liquid under influence of external magnetic forces

Thomas Posniecek (Danube University Krems, Austria)

Low-Cost Digital Fluorescence Microscope

Martin Hessling (Hochschule Ulm - University of Applied Sciences, Germany); Michael Otzen (Hochschule Ulm - University of Applied Sciences, Germany); Nadine Berger (Hochschule Ulm - University of Applied Sciences, Germany)

Development of an optical method for monitoring urine glucose level for the use of long-term home healthcare

Shinobu Tanaka (Kanazawa University, Japan); Yuuto Hayakawa (Kanazawa University, Japan); Mitsuhiro Ogawa (yu.sys Corp., Japan); Ken-ichi Yamakoshi (Kanazawa University, Japan)

Detection of Periodicity in Complex Fractionated Atrial Electrograms (CFAEs)

Marc Aubreville (Universität Karlsruhe (TH), Germany); Christopher Schilling (Universität Karlsruhe (TH), Germany); Armin Luik

(Städtisches Klinikum Karlsruhe, Germany); Frank Weber (Universität Karlsruhe (TH), Germany); Claus Schmitt (Städtisches Klinikum Karlsruhe, Germany); Olaf Doessel (Universität Karlsruhe (TH), Germany)

A new and simple method for attenuation correction in cardiac imaging by SPECT system

Alireza Karimian (University of Isfahan, Iran); Mahan Mohamadrezaee (Booali Sina University of Hamedan, Iran); Fariba Saddadi (NSTRI, Iran); Ghasem Forozani (Booali Sina University of Hamedan, Iran)

Dosimetric evaluation of a prototype commercial VMAT system implemented in a multi-vendor environment

Vladimir Feygelman (Moffitt Cancer Center, USA); Geoffrey Zhang (Moffitt Cancer Center, USA); Craig Stevens (Moffitt Cancer Center, USA)

Add-on Device for automated Citrate-Calcium Anticoagulation

Martin Brandl (Danube University Krems, Austria)

Human Abdominal Fat Scanning by Electrical Impedance Tomography; A Preliminary Report

Tohru Yamaguchi (Kao Corporation, Japan); Kazuo Maki (Kao Corporation, Japan); Mitsuhiro Katashima (Kao Corporation, Japan)

Swiss Essential Data Sets (SEDS) – The merge of clinical proved relevant emergency data

Jennifer Kajahn (Inselspital, University Hospital Bern, Switzerland); Hendrik Kohlhof (Inselspital, University Hospital Bern, Switzerland); Maximilian Hartel (Inselspital, University Hospital Bern, Switzerland); Stefan Egli (Inselspital, University Hospital Bern, Switzerland)

eMed- Computerized Prescription Order Entry

Jennifer Kajahn (Inselspital, University Hospital Bern, Switzerland); Hendrik Kohlhof (Inselspital, University Hospital Bern, Switzerland); Maximilian Hartel (Inselspital, University Hospital Bern, Switzerland); Nikola Jejina (Inselspital, University Hospital Bern, Switzerland); Stefan Egli (Inselspital, University Hospital Bern, Switzerland)

Algebraic Reconstruction Methods vs. Statistical Reconstruction Methods in CT

Yulia Levakhina (University of Luebeck, Germany); Thorsten Buzug (University of Luebeck, Germany)

Installation of an International Online Study Program for Medical Physics in Chile

Simone Barthold-Beß (German Cancer Research Center, Germany); Ina Niedermaier (German cancer research center, Germany); Günther H. Hartmann (German Cancer Research Center, Germany); Oliver Jäkel (Heidelberg Ion Beam Therapy Center (HIT); German Cancer Research Center, Germany); Christian Karger (German Cancer Research Center (DKFZ), Germany); Simeon Nill (German Cancer

Research Center, Germany); Uwe Oelfke (DKFZ, Germany); Frederik Giesel (German cancer research center, Germany); Marc Münter (University Hospital Germany, Germany); Thomas Hetz (University Heidelberg, Germany); Jürgen Debus (University Hospital of Heidelberg, Germany); Wolfgang Schlegel (Deutsches Krebsforschungszentrum, Germany)

Preliminary study for transplantation-assist device of the myocardial cell sheets with hydrogel

Kentaro Nakajima (Tokyo University of Technology, Japan); Kiyoshi Naemura (Tokyo University of Technology, Japan); Ryoichi Nakamura (Graduate School of Engineering, Chiba University, Japan); Tatsuya Shimizu (Tokyo Women's Medical University, Japan); Teruo Okano (Tokyo Women's Medical University, Japan)

In-house designed system for automatic dosage and injection of radiopharmaceuticals

Emil Kolar (University Medical Centre Ljubljana, Slovenia); Mitja Suhadolnik (University Medical Centre Ljubljana, Slovenia); Petra Tomse (University Medical Centre Ljubljana, Slovenia)

Blood Vessel Image Registration of Microcirculation Image for Flow Analysis on Nude Mice

Chih-Chieh Wu (Chung-Yuan University, Taiwan, Taiwan); Po-Sheng Chang (Chung-Yuan University, Taiwan, Taiwan); Wen-Chen Lin (Chung-Yuan University, Taiwan, Taiwan); Tzung-Chi Huang (China Medical University, Taiwan); Ren-Shyan Liu (National Yang-Ming University, Taiwan, Taiwan); Kang-Ping Lin (Chung-Yuan University, Taiwan, Taiwan)

Evaluation of dosimetric parameters in CT-based prostate medium for I-125 brachytherapy seed

Takashi Hanada (Tokyo Medical Center, National Hospital Organization, Japan); Kazuhiro Nomura (Graduate School of Medical Science, Kitasato University, Japan); Atsunori Yorozu (Tokyo Medical Center, National Hospital Organization, Japan); Koichi Maruyama (School of Allied Health Sciences, Kitasato University, Japan)

Risk of ionizing radiation in cardiac imaging: Estimated radiation dose

Francisco Torrens (Universitat de Valencia, Spain); Gloria Castellano (Universidad Católica de Valencia San Vicente Mártir, Spain)

Ultra-wideband Detection System for Water Accumulations in the Human Body

Johannes Schmid (Karlsruhe Institute of Technology, Germany); Elena Pancera (University of Karlsruhe, Germany); Xuyang Li (University of Karlsruhe, Germany); Lukasz Niestoruk (Karlsruhe Institute of Technology, Germany); Stefan Lamparth (University of Karlsruhe, Germany); Wilhelm Stork (University of Karlsruhe, Germany, Greece); Thomas Zwick (Universität Karlsruhe (TH), Germany)

Measurement of the Entrance Skin Dose (ESD) due to imaging the neonate in ICU units of several hospitals in Iran

Simin Mehdizadeh (radiation research center, School of Engineering, Shiraz University, Iran); Reza Faghihi (Shiraz University, Iran); Sedigheh Sina (radiation research center, School of Engineering, Shiraz University, Iran); Fatemeh Noroozalizadeh (radiation research center, School of Engineering, Shiraz University, Iran); B Zeinali (ray medical engineering department, Shiraz University, Shiraz, Iran, Iran); Hossein Khorramdel (radiation research center, School of Engineering, Shiraz University, Iran); Sadaf Aghevlian (ray medical engineering department, Shiraz University, Shiraz, Iran, Iran); Gh Kamyab (ray medical engineering department, Shiraz University, Shiraz, Iran, Iran); Kourosh Mansouri (Radiation research center, School of engineering, Shiraz University, Iran); H Khorramdel (ray medical engineering department, Shiraz University, Shiraz, Iran, Iran); Sedigheh Sina (radiation research center, School of Engineering, Shiraz University, Iran)

Bringing computational heart models into the hospital: mesh personalization and clinical interface

Pablo Lamata (University of Oxford, United Kingdom); Steven Niederer (University of Oxford, United Kingdom); Aldo Rinaldi (Guy's and St Thomas' NHS Foundation Trust, United Kingdom); David Barber (University of Sheffield, United Kingdom); Matthew Ginks (King's College London & Guy's and St Thomas' NHS Foundation Trust, United Kingdom); Rod Hose (University of Sheffield, United Kingdom); Reza Razavi (King's College London, United Kingdom); Nicolas Smith (University of Oxford, United Kingdom)

Inhibition of fibrotic encapsulation of implants using biomaterial siRNA nanoparticles

Hanna Hartmann (NMI Natural and Medical Sciences Institute at the University of Tübingen, Germany); Ursula Mitnacht (NMI Natural and Medical Sciences Institute at the University of Tübingen, Germany); Hugo Oliveira (INEB – Instituto de Engenharia Biomédica, Portugal); Ana Paula Pego (INEB - Instituto de Engenharia Biomédica, Portugal); Burkhard Schlosshauer (NMI Naturwissenschaftliches und Medizinisches Institut, Germany)

Comparison of Image Quality for two C-arms with Cone-Beam CT-option

Markus Buchgeister (Universitätsklinikum Tübingen, Germany); Andreas Seethaler (Universitätsklinikum Tübingen, Germany); Michael Erb (Section Experimental MR of the CNS, Germany); Martin Heuschmid (Universitätsklinikum Tübingen, Germany); Thomas Shiozawa (Universitätsklinikum Tübingen, Germany); Fabian Stuby (BG Unfallklinik Tübingen, Germany); Jürgen Hoffmann (Universitätsklinikum Tübingen, Germany)

Dosimetry of stereotactic uveal melanoma irradiations

Markus Buchgeister (Universitätsklinikum Tübingen, Germany); Philipp Jäggle (Universitätsklinikum Tübingen, Germany); Mariusz Klosowski (University of Krakow, Poland); Oliver Dohm (Universitätsklinikum

Tübingen, Germany); Markus Alber (University of Tuebingen, Germany); Frank Paulsen (Universitätsklinikum Tübingen, Germany)

Technical Medicine- A modern approach to education in medicine

Knut Moeller (Furtwangen University, Germany); Thomas Jechle (Hochschule Furtwangen, Germany); Josef Guttman (Universitätsklinikum Freiburg, Germany)

The effect of vibratory stimulation on supporting leg during one-legged standing in the elderly

Mi Yu (Chonbuk National University, Korea); Dong-wook Kim (Chonbuk National University, Korea); Nam-gyun Kim (Chonbuk National University, Korea)

Estimation of Respiratory Tracking System in Cyberknife Synchrony System

Jae-hyuk Seo (Wooridul Spine Hospital, Korea); Young Nam Kang (The Catholic University of Korea, Korea); Jisun Jang (Seoul St. Mary's Hospital, The Catholic University of Korea, Korea); Hun-joo Shin (Wooridul Hospital, Korea); ihl Bohng Choi (Wooridul Spine Hospital, Korea); Dong Joon Lee (Ilsan Beak Hospital, Korea); Soo-il Kwon (The Kyunggi University, Korea)

Texture-based visualization of blood flow using the optical flow constraint equation

Stéphan Muth (CRCHUM, University of Montreal Hospital, Canada); Damien Garcia (CRCHUM, University of Montreal Hospital, Canada)

Extracting Morphometric Features from Histopathologic Images of Liver

Masanobu Takahashi (Shibaura Institute of Technology, Japan); Yasuaki Tanimoto (Shibaura Institute of Technology, Japan); Masayuki Nakano (Tokyo Women's Medical University, Japan)

Computer-Assisted Infusions for Circulatory Management of Intensive Care Patients

David Mason (University of Queensland, Australia); Jayne Bancroft (Prince Charles Hospital, Brisbane, Queensland, Australia); John Fraser (Prince Charles Hospital, Brisbane, Queensland, Australia)

Radionuclide activity calibrator correction factors for Lu-177 and I-123 solutions

Petra Tomse (University Medical Centre Ljubljana, Slovenia); Petra Kolenc Peitl (University Medical Centre Ljubljana, Slovenia); Ajda Bicek (University Medical Centre Ljubljana, Slovenia); Marko Kroselj (University Medical Centre Ljubljana, Slovenia); Aljaz Socan (University Medical Centre Ljubljana, Slovenia); Mojca Zitko Krhin (University Medical Centre Ljubljana, Slovenia); Tanja Gmeiner Stopar (University Medical Centre Ljubljana, Slovenia)

Optimizing theMagnification in a VRX CT Scanner

Hosein Arabi (Shahid Beheshti University, Iran); Alireza Kamali-Asl (University of Shahid Beheshti, Iran)

Comparison of SYMBIA T2 SPECT/CT image quality resulting from different reconstruction methods

Jasna Njenjic (University of Ljubljana, Slovenia); Petra Tomse (University Medical Centre Ljubljana, Slovenia); Emil Kolar (University Medical Centre Ljubljana, Slovenia)

The medical physics specialization system in Poland

Wojciech Bulski (M. Skłodowska-Curie Memorial Cancer Center and Institute of Oncology, Poland)

Electrospun micro and nanofibrous scaffold for tissue-engineering applications.

Liliana Liverani (CIR - Center of Integrated Research, University Campus Bio-Medico of Rome, Italy); Alberto Rainer (CIR - Center of Integrated Research, University Campus Bio-Medico of Rome, Italy); Matteo Centola (CIR - Center of Integrated Research, University Campus Bio-Medico of Rome, Italy); Sara Maria Giannitelli (CIR - Center of Integrated Research, University Campus Bio-Medico of Rome, Italy); Franca Abbruzzese (CIR - Center of Integrated Research, University Campus Bio-Medico of Rome, Italy); Marcella Trombetta (CIR - Center of Integrated Research, University Campus Bio-Medico of Rome, Italy)

Investigation of electrical non-lethal effects on persons

Yulia Aronshtam (Ludwig-Maximilian Universität, Germany); Hans-Rolf Tränkler (University of the Bundeswehr Munich, 85577 Neubiberg, Germany, Germany)

Equivalent Circuit Simulation of the Induced Artifacts Resulted from TMS on EEG

Yoshinori Katayama (Kyushu University, Japan); Keiji Iramina (Kyushu University, Japan)

Developing a Biomedical Consultation Service: Practical Ideas and Lessons Learned from an Engineering Review of Bronchial Thermal Ablation.

Jayson Potts (McMaster University, Canada)

Signal Enhancement for Background Noise Reduction in Hearing-Aid Systems Using Approximate KLT and TDC Optimization

Jia-Ching Wang (National Central University, Taiwan); Chung-Hsien Yang (National Cheng Kung University, Taiwan); Chang Hong Lin (National Central University, Taiwan)

ASIC Hardware for Measuring Cough Occurring Frequency

Jia-Ching Wang (National Central University, Taiwan); Chang Hong Lin (National Central University, Taiwan)

First experience in Hungary with Image Guided Radiation Therapy performed with megavoltage cone beam CT

Tibor Major (National Institute of Oncology, Budapest, Hungary)

Evaluation of Astronautic Muscle Training Systems in Parabolic Flights by Electroencephalographical, Electromyographical and Biomechanical Measurements

Matthias Lochmann (University of Erlangen-Nuremberg, Germany);
Fritz Bodem (University of Mainz, Germany)

Detection of anesthesia induced loss of consciousness and return of consciousness by EEG-parameters

Denis Jordan (Technische Universität München, Germany); Gudrun Stockmanns (Universität Duisburg-Essen, Campus Duisburg, Ingenieurwissenschaften, Germany); Matthias Kreuzer (Technische Universität München, Germany); Stefanie Pilge (Technische Universität München, Germany); Eberhard Kochs (Technische Universität Munich, Germany); Gerhard Schneider (Technische Universität München, Germany)

Geant4 Simulation of Background from the Electron Linac for Irradiated Area Measurements using Produced Positrons in External Photon Therapy

Kazuhiro Nomura (Graduate School of Medical Science, Kitasato University, Japan); Takashi Hanada (Tokyo Medical Center, National Hospital Organization, Japan); Tetsuya Watanabe (Graduate School of Medical Science, Kitasato University, Japan); Keisuke Usui (Department of Radiology, Tokai University, Japan); Shigeharu Takenaka (Graduate School of Medical Science, Kitasato University, Japan); Koichi Maruyama (School of Allied Health Sciences, Kitasato University, Japan)

Physiological Control of Rotary Artificial Hearts

David Mason (University of Queensland, Australia); Nicholas Greatrex (Queensland University of Technology, Australia)

Assist of Isokinetic Strength of the Plantarflexor in Elderly with the Active Ankle-Foot Orthosis during the Treadmill Walking

Kyung Kim (Chonbuk national university, Korea); Min Heo (Chonbuk national university, Korea); Seung-Rok Kang (Chonbuk national university, Korea); Nam-gyun Kim (Chonbuk National University, Korea); Tae-Kyu Kwon (Chonbuk national university, Korea)

Comparison of the Isokinetic Strength of the Lower Limbs Joint of the Elderly on the Postural Training

Kyung Kim (Chonbuk national university, Korea); Ga-Young Oh (Chonbuk national university, Korea); Yong-Jun Piao (Chonbuk national university, Korea); Jung-Ja Kim (Chonbuk national university, Korea); Nam-gyun Kim (Chonbuk National University, Korea); Tae-Kyu Kwon (Chonbuk national university, Korea)

Active triple-optics for the restoration of the accommodative ability of the human eye

Thomas Martin (Forschungszentrum Karlsruhe GmbH, Germany); Tobias Pinner (Forschungszentrum Karlsruhe GmbH, Germany); Ulrich Gengenbach (Forschungszentrum Karlsruhe, Germany); Helmut Guth

(Forschungszentrum Karlsruhe GmbH, Germany); Ingo Sieber (Forschungszentrum Karlsruhe, Germany); Georg Bretthauer (Universität Karlsruhe, Germany)

Dynamic monitoring of mitochondrial redox state in heart by the ratio of FAD/NADH fluorescence intensity

Katsuya Hasegawa (Japan Aerospace Exploration Agency, Japan); Yasuo Ogasawara (Kawasaki Medical School, Japan)

Radiotherapeutic Dose Prescription Accuracy

Sven Beiersdorf (Krankenhaus Buchholz, Germany)

A phantom design toolbox to generate simulated data suitable for the evaluation of segmentation algorithms

Omar Hamo (Research Center Juelich, Germany); Georg Nelles (Research Center Juelich, Germany); Gudrun Wagenknecht (Research Center Juelich, Germany)

Remote Severity Assessment of Sleep Apnoea in Children

David Mason (University of Queensland, Australia); Sadasivam Suresh (Mater Childrens Hospital, Australia); Stephen Wilson (The University of Queensland, Australia)

MR compatible robot for prostate brachytherapy, using tapping action for needle insertion.

Leonard van Schelven (University Medical Center Utrecht, The Netherlands); Peter Dijkstra (University Medical Center Utrecht, The Netherlands); Michiel van den Bosch (University Medical Center Utrecht, The Netherlands); Rien Moerland (University Medical Center Utrecht, The Netherlands); Ed Duiveman (University Medical Center Utrecht, The Netherlands)

Fully Automated Derivation of Respiratory Signal from Raw PET Data: A Comparison of Sinogram Based and Image Based Algorithms

Adam Kesner (International Atomic Energy Agency, Austria)

Comparative evaluation of the performance of x-ray tomographic IGRT systems

David Thwaites (University of Leeds, United Kingdom); Jonathan Sykes (St James's Institute of Oncology, Leeds, United Kingdom); Rebecca Lindsay (St James's Institute of Oncology, Leeds, United Kingdom); Rob Dickinson (Imperial College London, United Kingdom)

Treatment Planning System and Dose Delivery Accuracy in Extracranial Stereotactic Radiotherapy with the Elekta Stereotactic Body Frame

Tamer Dawod (Mansoura University, Fac. of Medicine,, Egypt); Michael Bremer (Medizinische Hochschule Hannover, Germany); Johann Karstens (Medizinische Hochschule Hannover, Germany); Martin Werner (Medizinische Hochschule Hannover, Germany)

Blood Selenium levels in normal subjects and hypertensive population of Punjab (Pakistan)

Anwar Chaudhri (Klinikum-Nuernberg, Germany)

Medical device for measurement cardiac flow in the body extremities using bioimpedance

Calin Corciova ("Gr.T.Popa" University of Medicine and Pharmacy, Iasi, Romania, Romania); Radu Ciorap (Gr.T.Popa University of Medicine and Pharmacy, Iasi, Romania, Romania); Dan Zaharia (Gr.T.Popa University of Medicine and Pharmacy, Iasi, Romania, Romania)

Multiresolution analysis based investigation of the defensive airway reflexes

Juliana Knociková (University of Žilina, Slovakia)

Monte Carlo modelling for small stereotactic fields and for IMRT and VMAT dosimetry

David Thwaites (University of Leeds, United Kingdom); Chris Evans (University of Leeds, United Kingdom); Gavin Cranmer-Sargison (Saskatoon Cancer Centre, Canada); Kerry Babcock (University of Saskatchewan, Canada); Vivian Cosgrove (St James's Institute of Oncology, Leeds, United Kingdom)

Measurement of Uranium in the blood (plasma) of Bavarian females

Anwar Chaudhri (Klinikum-Nuernberg, Germany)

Monte Carlo simulation of ⁶⁰Co Tomotherapy Dose Distributions using MAGIC-f polymer gel

Leandro Gonçalves (University of São Paulo, Brazil); Mirko Alva (University of Sao Paulo, Brazil); Tatiana Marques (University of São Paulo, Brazil); Thatiane Pianoschi (University of São Paulo, Brazil); Oswaldo Baffa (Universidade de Sao Paulo, Brazil); Patrícia Nicolucci (University of São Paulo, Brazil)

A Study on Control Method for a Bedsore Preventive Mattress System

Shahriar Ahmed (Niigata Sangyo University, Japan); Funakubo Akio (Tokyo Denki University, Japan); Fukui Yasuhiro (Tokyo Denki University, Japan); Takeyoshi Dohi (The University of Tokyo, Japan)

Computational Model of Dorsal Cochlear Nucleus (DCN) Response Maps (RMs)

Xiaohan Zheng (Boston University, USA); Herbert Voigt (Boston University, USA)

A modified flow profil reduces biofilm formation in central venous catheters

Ina Koban (Ernst Moritz Arndt University Greifswald, Germany); Nils-Olaf Hübner (Ernst Moritz Arndt University Greifswald, Germany); Tilman von Blumenthal (Dräger Lübeck, Germany); Axel Kramer (Ernst Moritz Arndt University Greifswald, Germany)

Parameters Choice to Compare Electronic implementations of Source Separation Algorithms to estimate the FECCG

Maria Elena (University of Seville, Spain); Susana Hornillo-Mellado (University of Sevilla, Spain); Isabel Román (University of Seville, Spain); Ruben Martin-Clemente (University of Sevilla, Spain)

Can current modeling approaches of atrial ablation capture in – vivo and in – vitro experimental observations accurately?

Matthias Reumann (IBM TJ Watson Research Center, USA); Carolina Vasquez (New York University School of Medicine, USA); Scott Bernstein (New York University School of Medicine, USA); James Kneller (Columbia University, USA); John Rice (IBM T. J. Watson Research Center, USA); Gregory Morley (New York University School of Medicine, USA)

Multiparametric EEG analysis for the identification of sleepiness during driving

Emmanouil Michail (Aristotle University of Thessaloniki, Greece); Ioanna Chouvarda (The Medical School, Aristotle University, Greece); Nicos Maglaveras (Aristotle University of Thessaloniki, Greece); Athina Kokonozi (Aristotle University of Thessaloniki, Greece)

Absolute Thermometry by using the MR-Spectroscopy

Stefan Bauchowitz (University Erlangen, Germany); Reinhold Mueller (University Erlangen-Nuernberg, Germany)

Development of an imaging fluorescence system applied on HPV condyloma treatment by photodynamic therapy

Mardoqueu Costa (University of São Paulo, Brazil); Natalia Inada (University of São Paulo, Brazil); Cristina Kurachi (University of São Paulo, Brazil); Vanderlei Bagnato (University of São Paulo, Brazil); Liliane Ventura (University of Sao Paulo, Brazil)

Nutrient penetration into cell compartment of bioreactors for bone TE by tracer experiments.

Ilaria De Napoli (University of Calabria, Italy); Daniel Molinaro (University of Calabria, Italy); Ermes Giuzio (University of Calabria, Italy); Gerardo Catapano (University of Calabria, Italy)

Treatment of dental biofilms with nonthermal plasma induced by dielectric barrier discharge and hf-plasma pen

Ina Koban (Ernst Moritz Arndt University Greifswald, Germany); Careen Springmann (Ernst Moritz Arndt University Greifswald, Germany); Nils-Olaf Hübner (Ernst Moritz Arndt University Greifswald, Germany); Rutger Matthes (Ernst Moritz Arndt University Greifswald, Germany); Tina Dornquast (Ernst Moritz Arndt University Greifswald, Germany); Axel Kramer (Ernst Moritz Arndt University Greifswald, Germany); Thomas Kocher (Ernst Moritz Arndt University Greifswald, Germany)

ALARM: Telemedical concepts and innovative IT solutions to support emergency workers and services during responses to large-scale emergencies: Identification of problems and areas for ICT-based solutions

Martin Schultz (Charité - Universitätsmedizin Berlin, Germany);
Christine Carius-Düssel (Charité University Medicine, Germany)

Neuromotor Modeling of Spasmodic Dysphonia

Rick Roark (New York Medical College, USA); Michael Pitman (The New York Eye and Ear Infirmary, USA); Jennifer Thomas (New York Medical College, USA); Mario Manto (FNRS ULB, Belgium)

Concept of Multimodality Image Guided Diagnostic and Therapy for Cancer

Andreas Melzer (University of Dundee, United Kingdom)

MRI/CT guided robotic Systems for interventions

Andreas Melzer (University of Dundee, United Kingdom); Erwin Immel (University of Dundee, United Kingdom)

Technology for MRI guided Endoscopic Surgery

Andreas Melzer (University of Dundee, United Kingdom); Erwin Immel (University of Dundee, United Kingdom)

Development of multimodal image registration system with USB cameras

Michiaki Iwata (Nara Institute of Science and Technology, Japan); Hiroshi Watabe (National Cardiovascular Center Research Institute, Japan); Kazuhiro Koshino (National Cardiovascular Center Research Institute, Japan); Kotaro Minato (Nara Institute of Science and Technology, Japan); Hidehiro Iida (National Cardiovascular Center Research Institute, Japan)

Phantom based evaluation of the precision of the repositioning process of an Image Guided Radiation Therapy system using fiducial markers

Nadia Octave (University of Laval, Canada); Luc Beaulieu (University of Laval, Canada); Isabelle Berry (University Paul sabatier, France)

The Evolving Role of Clinicians and Biomedical Engineers in Medical Innovation – An Argument and Plan for Improving Interdisciplinary Communication

Jayson Potts (McMaster University, Canada)

Theoretical sensor design strategy for noninvasive arterial hematocrit measurement method

Masamichi Nogawa (Kanazawa University, Japan); Mitsuhiro Ogawa (yu.sys Corp., Japan); Kosuke Motoi (Graduate School of Natural Science and Technology, Kanazawa University, Japan); Takehiro Yamakoshi (Kanazawa University, Japan); Shinobu Tanaka (Kanazawa University, Japan); Ken-ichi Yamakoshi (Kanazawa University, Japan)

Th. 07: Poster Session: Track 06: Dialysis & Apheresis Systems

Pilot Procedure for Reuse Filter in Hemodialysis Treatment

G Martinez (Military Hospital Center, Mexico)

Measuring of uremic substances in dialysate by visible ultraviolet spectroscopy

Koichi Umimoto (Osaka Electro-Communication University, Japan); Yusuke Kanaya (Osaka Electro-Communication University, Japan); Hideaki Kawnishi (Osaka electro communication univarsity, Japan); Nobuaki Kawai (Osaka Electro-Communication University, Japan)

Internal filtration induces severe concentration of blood cells inside hollow-fiber dialysis membrane at the start of postdilution hemodiafiltration

Hiroshi Tsukao (Kitasato University School of Allied Health Sciences, Japan); Kenichi Kokubo (Kitasato University School of Allied Health Sciences, Japan); Toshihiro Shinbo (Kitasato University School of Allied Health Sciences, Japan); Minoru Hirose (Kitasato University School of Allied Health Sciences, Japan); Hirosuke Kobayashi (Kitasato University School of Allied Health Sciences, Japan)

An analysis of frequency components of shunt murmur for diagnosing shunt stenoses in hemodialysis

Yoshi Nishitani (University of Hyogo, Japan)

Design studies for a blood sedimentation chamber based on gravity

Ulrike Ruppig (University of Rostock, Germany); Heiner Martin (Universität Rostock, Germany); Philipp Lubinus (Lubinus Clinicum, Germany); Mathias Freund (University of Rostock, Germany); Klaus-Peter Schmitz (Universität Rostock, Germany)

On line phosphate monitoring to employ in the hemodialysis treatment, experince in the military hospital center, mexico

G Martinez (Military Hospital Center, Mexico)

Cold Dialysate Regeneration System (CDRS) for Home Hemodialysis – in vivo

Ji Hyun Kim (bioengineering, Seoul National University, Korea); Jeong Chul Kim (Seoul National University, Korea); Eungtaek Kang (Chung-ang university of hospital, Korea); Ronco Claudio (St. bortolo hospital, Italy); Hee-Chan Kim (Seoul National University, Korea)

Analysis of Blood and Dialysate Flow in a Hemodialyzer by Perfusion Computed Tomography

Jeong Chul Kim (Seoul National University, Korea); Ji Hyun Kim (bioengineering, Seoul National University, Korea); Hyo-Cheol Kim (Seoul National University Hospital, Korea); Eungtaek Kang (Chung-ang university of hospital, Korea); Ronco Claudio (St. bortolo hospital, Italy); Hee-Chan Kim (Seoul National University, Korea)

Intra- and extracorporeal clearance of glucose following an intra-dialytic glucose load

Daniel Schneditz (Medical University of Graz, Austria); Hildegard Hafner-Giessauf (Medical University of Graz, Austria); Herwig Holzer (Medical University of Graz, Austria); Karl Thomaseth (Italian National Research Council, Italy)

Evaluation of a newly developed continuous protein separation system based on a difference in the isoelectric points of the proteins

Tomihiko Sonobe (Kitasato University School of Allied Health Sciences, Japan); Kenichi Kokubo (Kitasato University School of Allied Health Sciences, Japan); Hiroshi Tsukao (Kitasato University School of Allied Health Sciences, Japan); Toshihiro Shinbo (Kitasato University School of Allied Health Sciences, Japan); Minoru Hirose (Kitasato University School of Allied Health Sciences, Japan); Hirosuke Kobayashi (Kitasato University School of Allied Health Sciences, Japan)

Chronic Arteriovenous Extracorporeal Therapy

Arnold Landé (VITOR, USA)

Th. 08: Poster Session: Track 01: Active Implants

Development of a Patient Controlled, Telemetric Bolus System for an Implantable Infusion Pump

Anja Knopp (University of Applied Sciences Luebeck, Germany); Stephan Klein (Fachhochschule Lübeck, Germany); Bodo Nestler (Fachhochschule Lübeck, Germany); Karl-Heinz Otto (Tricumed Medizintechnik, Germany)

Basic Concepts for Active Implantable Valve Development

Oliver Scholz (Fraunhofer Institute for Biomedical Engineering, Germany); Margit Biehl (Fraunhofer Institut für Biomedizinische Technik (IBMT), Germany)

Design and Performance of an improved active subretinal chip

Steffen Kibbel (Retina Implant AG, Germany); Alex Harscher (Retina Implant, Germany); Walter-G. Wrobel (Retina Implant AG, Germany); Eberhart Zrenner (University of Tübingen, Germany); Albrecht Rothermel (University of Ulm, Germany)

An intelligent implant system for monitoring and biofeedback therapy of snoring

Dan Hofsøy (TU München, Germany); Johannes Clauss (Technische Universität München, Germany); Bernhard Wolf (Technische Universität München, Germany)

Implantable sensor system for the monitoring of bone healing

Martin Sattler (Technische Universität München, Germany); Johannes Clauss (Technische Universität München, Germany); Michael Schmidhuber (Technische Universität München, Germany); Jaroslav Belsky (NetPensum GmbH, Austria); Bernhard Wolf (Technische Universität München, Germany)

Stent-based Plasmid gene delivery into porcine coronary artery

Cunxian Song (Institute of Biomedical Engineering, P.R. China); Linhua Zhang (Institute of Biomedical Engineering, P.R. China)

Are Defibrillation Thresholds Ruled by a Hyperbolic Strength-Duration Relationship?

Werner Irnich (Justus-Liebig-University, Germany)

Th. 07: Poster Session: Track 01: Anaesthesia Systems

Monitoring of Propofol Boli in Breathing Gas using Ion Molecule Reaction Mass Spectrometry

Balamurugan Varadarajan (University of Luebeck, Germany); Martin Grossherr (University of Luebeck, Germany); Jörg-Uwe Meyer (Richard Wolf GmbH, Germany); Leif Dibbelt (University of Lübeck, Germany); Hartmut Gehring (University of Luebeck, Germany); Andreas Hengstenberg (Research Unit, Draegerwerk AG, Lübeck, Germany)

Changes of FRC during noninvasive ventilation in spontaneous breathing subjects can be determined by the oxygen washin/washout method

Angela Schindler (University of Lübeck, Germany); Wolfgang Eichler (University of Luebeck, Germany); Torsten Meier (University of Lübeck, Germany); Jan Karsten (University of Luebeck, Germany); Matthias Heringlake (University of Luebeck, Germany); Hermann Heinze (University of Lübeck, Germany)

Anesthesiological management in a non accessible environment - Anesthesiological care flow during diagnostic and therapeutic interventions in the field of magnetic resonance imaging (MRI)

Soehnke Boye (University of Luebeck, Germany); Hartmut Gehring (University of Luebeck, Germany)

Th. 11: Poster Session: Track 01: Audiology I: Cochlear (Dys)Function and its Consequences for Diagnostics& Rehabilitation/ Audiology II: Central Auditory (Dys)Function as revealed by the Auditory Profile and Auditory Models

Neuromagnetic Responses Elicited by Tones and Chords of Different Intensities and Frequency Components

Asuka Otsuka (Hokkaido University, Japan); Daisuke Seki (Hokkaido University, Japan); Shinya Kuriki (Hokkaido University, Japan)

The Auditory Reaction Perimeter ARP: Sound localization and auditory interference in space in tinnitus patients

Fritz Schmielau (University of Lübeck, Germany)

Th. 03: Poster Session: Track 01: Dosimetric Techniques and Phantoms for Radiation Protection

Is the MOSFET dosimeter feasible at diagnostic X-ray energies for interventional radiology?

Koichi Chida (Tohoku University, Japan); Y Inaba (Tohoku University Hospital, Japan)

Considering Dose Rate in Routine X-ray Examination by Thermoluminescent Dosimetry (TLD) in Radiology units of Mazandaran Hospitals

seyed Ali Rahimi (Mazandaran University of Medical Sciences, Iran)

"Simulation of human eye for ophthalmic brachytherapy dosimetry using MCNP-4C code"

Somaye Asadi (K. N. Toosi University of Technology, Iran); Farhad Masoudi (Khaje Nassir-Al-Deen Toosi University of Technology, Iran); Majid Shahriari (Shahid Beheshti University, Iran)

Precise Mapping of Skin Dose to Avoid Further Radiation-induced Epilation

Mikito Hayakawa (Toranomon Hospital, Japan); Takashi Moritake (University of Tsukuba, Japan); Fumikatsu Kataoka (Toranomon Hospital, Japan); Tomoji Takigawa (Toranomon Hospital, Japan); Yasuhiro Koguchi (Chiyoda Technol Corporation, Japan); Yuka Miyamoto (Chiyoda Technol Corporation, Japan); Yuji Matsumaru (Toranomon Hospital, Japan)

Compensator for advanced radiation field homogeneity

Karl-Joachim Dörner (Allgemeines Krankenhaus Celle, Germany)

Calibration of semiconductor detectors for dosimetry in diagnostic radiology

Anna Petri (Pontifícia Universidade Católica de São Paulo, Brazil); Ricardo Terini (Pontifícia Universidade Católica de São Paulo, Brazil); Marco Aurélio Pereira (Universidade de São Paulo, Brazil)

TL Response Study at Dosimetry of $^{106}\text{Ru}/\text{Rh}$ Ophthalmic Applicator

Daniela Figueiredo (Federal University of São Paulo, Brazil); Kellen Daros (Federal University of São Paulo, Brazil); Regina Medeiros (Federal University of São Paulo, Brazil)

Reducing Non-uniformity Error of Radiochromic Film in The Diagnostic Range by Ultraviolet Exposure: Preliminary Study

Toshizo Katsuda (Himeji Dokkyo University, Japan); Rumi Gotanda (Ibaraki Prefectural University of Health Sciences, Japan); Tatsuhiro Gotanda (Okayama University, Japan); Akihiko Tabuchi (Okayama University, Japan); Kenyu Yamamoto (Okayama University, Japan); Hidetoshi Yatake (Okayama University, Japan); Kazuyuki Kashiama (Okayama University, Japan); Tadao Kuwano (Okayama University, Japan)

Investigation of acceptance criteria for the gamma-index in scanned carbon ion radiotherapy

Sonja Lahrmann (German Cancer Research Center, Germany); Oliver Jäkel (Heidelberg Ion Beam Therapy Center (HIT); German Cancer Research Center, Germany); Christian Karger (German Cancer Research Center (DKFZ), Germany)

The lower detection limit of GR-200A and MCP-100D thermoluminescence dosimeters at different readout and annealing temperatures

Tehnja Stock (University of Veterinary Medicine, Hannover, Germany); Matthias Lüpke (University of Veterinary Medicine Hannover, Germany)

Use of a Standard Ionization Chamber at Different Distances in Diagnostic Radiology Beams

Maíra Yoshizumi (Instituto de Pesquisas Energéticas e Nucleares, Brazil); Luciana Afonso (Helmholtz Zentrum München, Germany); Linda Caldas (Instituto de Pesquisas Energéticas e Nucleares, Brazil)

Approved Personal Dosimetry for Medical Personnel using Direct Ion Storage Dosimeters

Magnus Gårdestig (County Council of Östergötland, Sweden); Håkan Pettersson (Linköping University, Sweden)

Implementation on methodology for TLD postal dosimetry audit of radiotherapy photon beams in non-reference conditions in Cuba

Gutiérrez Lores Stefan (Center for Radiation Protection and Hygiene (CPHR), Cuba); Gonzalo Walwyn Salas (Center for Radiation Protection and Hygiene (CPHR), Cuba)

A tissue-equivalent radioluminescent fiberoptic probe for in-vivo dosimetry based on Mn-doped lithium tetraborate

Martin Santiago (Universidad del Centro, Argentina); Mirjana Prokic (Institute of Nuclear Sciences, Serbia); Pablo Molina (Universidad del Centro, Argentina); Julian Marcazzo (Universidad del Centro, Argentina); Eduardo Caselli (Universidad del Centro, Argentina)

Applicability of imaging plates for individual monitoring

Matthias Greiter (Helmholtz Zentrum München, Germany); Dieter Regulla (Helmholtz Zentrum München, Germany); Christoph Hoeschen (Helmholtz Zentrum München - German Research Center for Environmental Health, Germany)

Evaluation of radiation doses inside a phantom of mammography utilizing Compton spectrometry

José Neres de Almeida Junior (Pontifícia Universidade Católica - PUC-SP, Brazil); Ricardo Terini (Pontifícia Universidade Católica de São Paulo, Brazil); Silvio Herdade (Universidade de São Paulo, Brazil); Tania Furquim (Universidade de São Paulo, Brazil)

Validating methodologies for dose evaluation in patients submitted to chest x-ray examinations

Paulo Marcio Oliveira (Post-graduation course PCTN-UFMG, Brazil); Peterson Squair (Development Centre of Nuclear Technology CDTN/CNEN, Brazil); Vania Lucia Oliveira (Post- Graduation Course - PCTN-UFMG, Brazil); Marcos Eugênio Abrantes (Centro de Desenvolvimento da Tecnologia Nuclear (CDTN), Brazil); Thêssa Alonso (Development Centre of Nuclear Technology CDTN/CNEN, Brazil); Teogenes Da Silva (CNEN - Brazilian Commission of Nuclear Energy, Brazil)

Performance testing of Computed Tomography Systems – critical analysis of various national and international standards and guidelines

Ana Silva (Faculty of Engineering, Catholic University of Portugal, Portugal); Ana Pascoal (Faculty of Engineering, Catholic University of Portugal, Portugal)

Measurements and EGSnrc Monte Carlo Simulations for Thimble Ion Chambers with Various Metal Caps at 60Co Beams

André Toussaint (University of Applied Sciences Giessen-Friedberg, Germany); Jörg Wulff (University of Applied Sciences Giessen-Friedberg, Germany); Klemens Zink (University of Applied Sciences Gießen, Germany)

Monte Carlo calculations of the perturbation factor p_{cav} for various air cavities and guard ring widths in clinical electron beams

Florian Rosam (University of Applied Sciences Giessen-Friedberg, Germany); Jörg Wulff (University of Applied Sciences Giessen-Friedberg, Germany); Klemens Zink (University of Applied Sciences Gießen, Germany)

Three Dimensional Dose Verification of Intensity Modulated Radiosurgery Using Polymer-Gel Dosimetry

Dong-Joon Lee (Inje University College of Medicine, Korea); Hyun-Tai Chung (Seoul National University College of Medicine, Korea); Moon-Jun Sohn (Inje University College of Medicine, Korea)

RADEM - recombination ambient dose equivalent meter for neutron dosimetry around medical accelerators

Natalia Golnik (Warsaw University of Technology, Poland); Piotr Tulik (Institute of Atomic Energy, Poland); Wojciech Bulski (M. Skłodowska-Curie Memorial Cancer Center and Institute of Oncology, Poland)

Fetal Dose Evaluation in X-Ray Radiotherapy in Cases of Advanced Gestation

Danielle Filipov (Federal University of Technology - Parana, Brazil); Hugo Schelin (Federal University of Technology - Parana, Brazil); Mafra Karina (Federal University of Technology - Parana, Brazil); Danyel Soboll (Federal University of Technology - Parana, Brazil)

Calculation of Radiation Dose from a Cloud of Radioactive Iodine using Voxel Phantoms and Monte Carlo Methods

Salima Natouh (Renewabl Energies and Water Desalination Research Center, Libya)

A simple temperature measuring device for a calorimeter system for adsorbed dose measurement

Börje Blad (Lund University Hospital, Sweden)

Convenient Method of Thermal Neutron Measurement using Imaging Plates in Proton Therapy

Toshioh Fujibuchi (Ibaraki Prefectural University of Health Science, Japan); Yu Tanabe (University of Tsukuba, Japan); Tomonori Isobe (University of Tsukuba, Japan); Hiraku Kawamuar (University of Tsukuba, Japan); Toshiyuki Terunuma (University of Tsukuba, Japan);

Kiyoshi Yasuoka (University of Tsukuba, Japan); Tetsuro Matsumoto (National Institute of Advanced Industrial Science and Technology, Japan); Jun Nishiyama (National Institute of Advanced Industrial Science and Technology, Japan); Hildeki Harano (National Institute of Advanced Industrial Science and Technology, Japan); Takeji Sakae (University of Tsukuba, Japan)

Dosimetric Evaluation of Movement of Tumor Target using Intensity Modulation Radiation Therapy (IMRT) for Lung Cancer Patients

Kim Sungkyu (Yeungnam University, Korea)

Indoor Radon Concentration in the City of Sharjah, United Arab Emirates

Hussein Elmehdi (Sharjah University, UAE); Bassam Rashed (University of Sharjah, UAE)

Identification of neutron-induced isotopes in Varian LINAC system

Keunyeong Kim (Asan Medical Center, Korea); Jungwon Kwak (Asan Medical Center, Korea); Sung Ho Park (University of Ulsan, Korea); Eun Kyung Choi (Asan Medical Center, University of Ulsan, Korea); Jong Hoon Kim (Asan Medical Center, University of Ulsan, Korea); Sang-wook Lee (Asan Medical Center, University of Ulsan, Korea); Si Yeol Song (Asan Medical Center, University of Ulsan, Korea); Sang Min Yoon (Asan Medical Center, University of Ulsan, Korea); Seung Do Ahn (Asan Medical Center, University of Ulsan, Korea)

Digital image quality indexes for CIRS SP01 and CDMAM 3.4 mammographic phantoms.

Patricia Mayo (1Nuclear and Chemical Department, Polytechnical University of Valencia, Spain)

Measurement of Orthovoltage X-Ray Intensity with a Lithium Niobate Transducer

Aparecido de Carvalho (São Paulo State University - UNESP, Brazil); Wesley Pontes (São Paulo State University - UNESP, Brazil); Marcelo Sanches (São Paulo State University - UNESP, Brazil); Ricardo Freitas (São Paulo State University - UNESP, Brazil); Mauro de Paula (Federal University of Mato Grosso do Sul, Brazil); Walter Sakamoto (São Paulo State University – UNESP, Brazil)

Study of surface skin dose in veterinary radiology

Glauco Veneziani (Universidade Estadual Paulista, Brazil); Luciana Matsushima (Universidade de Sao Paulo, Brazil); Letícia Rodrigues (University of Sao Paulo, Brazil); Roberto Fernandez (Universidade Estadual Paulista, Brazil)

Th. 12: Poster Session: Track 01: Education and Training

Status and Perspectives of Qualification in Radiation Oncology Physics in Bangladesh

Günther H. Hartmann (German Cancer Research Center, Germany); Golam Zakaria (Kreiskrankenhaus Gummersbach, Germany, Germany)

Bioethics and Empowerment in health management

Gabriela Marinescu (University of Medicine and Pharmacy Iasi, Romania)

Effective and Efficient Teleteaching of Medical Physics

Perry Sprawls (Sprawls Educational Foundation, USA); Slavik Tabakov (King's College Hospital London, United Kingdom)

17:00 Medical Physics Education and Training: Regional and International Challenges

Bashar Issa (UAE University, UAE)

Education and Training of Medical Physicists in Europe and the countries of North America: similarities-differences-general guidelines

Antonis Stefanoyiannis (University General Hospital of Athens "Attikon", Athens, Greece, Greece); Costas Psichis (Department of Medical Physics, Navy Hospital of Athens, Athens, Greece, Greece); Ioannis Gerogiannis (Department of Medical Physics, Nicosia General Hospital, Nicosia, Cyprus, Cyprus); Stelios Christofides (Nicosia General Hospital, Cyprus); Prodromos Kaplanis (Nicosia General Hospital, Cyprus); Xenia Geronikola-Trapali (University General Hospital of Athens "Attikon", Athens, Greece, Greece); Sofia Chatziioannou (University General Hospital of Athens "Attikon", Athens, Greece, Greece); Ioannis Armeniakos (University General Hospital of Athens "Attikon", Athens, Greece, Greece); Andreas Prentakis (University General Hospital of Athens "Attikon", Athens, Greece, Greece)

Educational Development of Biomedical Engineering in China

Xiaohong Weng (Chinese Society of Biomedical Engineering, P.R. China); Yubo Fan (Beihang University, P.R. China)

Text mining for automatic lexical analysis of layman text of biomedical argument

Dario Defilippi (University of Genova, Italy); Susanna Pivetti (University of Genova, Italy); Mauro Giacomini (University of Genova, Italy)

Implementation of the 3R- strategy in the case of the development of a novel active lung model

Katharina Stiglbrunner (University of Applied Sciences Technikum Vienna, Austria); Michaela Weingant (University of Applied Sciences Technikum Vienna, Austria); Andreas Drauschke (University of Applied Sciences Technikum Wien, Austria); Peter Kroesl (University of Applied Sciences Technikum Wien, Austria)

Medical Process Management – An Innovative Master of Science Program Addressing the Challenges Faced by Health Care Systems

Harald Mang (University of Erlangen-Nuremberg, Germany); Hans-Ulrich Prokosch (University of Erlangen-Nuremberg, Germany); Jürgen Schüttler (University of Erlangen-Nuremberg, Germany)

A simple laboratory method for teaching how electrocardiogram is generated

Rafael Ricardo (University of Campinas - UNICAMP, Brazil); Rosana Bassani (University of Campinas - UNICAMP, Brazil); Jose Bassani (University of Campinas - UNICAMP, Brazil)

Cooperative Installation of the Medical Physics Online Study Program - "Master of Advanced Physical Methods in Radiotherapy"

Simone Barthold-Beß (German Cancer Research Center, Germany); Ina Niedermaier (German cancer research center, Germany); Günther H. Hartmann (German Cancer Research Center, Germany); Oliver Jäkel (Heidelberg Ion Beam Therapy Center (HIT); German Cancer Research Center, Germany); Christian Karger (German Cancer Research Center (DKFZ), Germany); Simeon Nill (German Cancer Research Center, Germany); Uwe Oelfke (DKFZ, Germany); Frederik Giesel (German cancer research center, Germany); Marc Münter (University Hospital Germany, Germany); Thomas Hetz (University Heidelberg, Germany); Holger Meeh (College of Education, Heidelberg, Germany); Jürgen Debus (University Hospital of Heidelberg, Germany); Wolfgang Schlegel (Deutsches Krebsforschungszentrum, Germany)

Global courseware for visualization and processing biosignals

Tomáš Peterek (VSB-Technical university of Ostrava, Czech Republic); Petr Zurek (VSB-Technical university of Ostrava, Czech Republic); Martin Augustynek (VSB-Technical university of Ostrava, Czech Republic); Marek Penhaker (VSB-Technical university of Ostrava, Czech Republic)

Th. 04: Poster Session: Track 01: Image Analysis and Visual Computing

Selection of Optimal Hemodynamic Response Function for FMRI Analysis on Acute Stroke Patients

Silvia Storti (University of Verona, Italy); Emanuela Formaggio (University of Verona, University of Padova, Italy); Alessandra Bertoldo (University of Padova, Italy); Paolo Manganotti (University of Verona, Italy); Antonio Fiaschi (University of Verona, Italy); Gianna Maria Toffolo (University of Padova, Italy); Elisa Sartori (University of Padova, Italy)

Post-reconstruction Partial Volume Correction of PET images using iterative deconvolution algorithm and anatomical priors

Daniela D'Ambrosio (S.Orsola-Malpighi Hospital, Italy); Mario Marengo (S.Orsola-Malpighi Hospital, Italy); Stefano Boschi (S.Orsola-Malpighi Hospital, Italy); Stefano Fanti (S.Orsola-Malpighi Hospital, Italy); Antonello Spinelli (S.Orsola-Malpighi Hospital, Italy)

Analysis of Cardiac Torsion with Strain Tensor

Hideyuki Horio (Graduate School of Engineering Science Osaka University, Japan); Yoshihiro Kuroda (Osaka University, Japan); Tomohiro Kuroda (Osaka University, Japan); Osamu Oshiro (Osaka University, Japan); Shigeo Wada (Osaka University, Japan); Ryo

Haraguchi (National Cardiovascular Center,, Japan); Kazuo Nakazawa (National Cardiovascular Center, Japan)

Software phantoms for texture analysis

Minna Lahtinen (Tampere University of Technology, Finland); Kirsi Holli (Tampere University of Technology, Finland); Lara Harrison (University of Tampere, Finland); Prasun Dastidar (Tampere University Hospital, Finland); Seppo Soimakallio (Tampere University Hospital, Finland); Hannu Eskola (Technical University of Tampere, Finland)

Neural Adaptive Restoration of Computed Radiography Images

Elisabetta Binaghi (Unioversity of Insubria, Italy); Vittoria Colli (Fisica Sanitaria, Ospedale di Circolo e Fondazione Macchi, Italy); Ignazio Gallo (University of Insubria, Italy)

Analysis of renal calculi structure with the use of X-ray microtomography

Grzegorz Taton (Jagiellonian University Medical College, Poland)

The Effect of Background Images Combined with Face Images Expressing Disgust

Takamasa Shimada (Tokyo Denki University, Japan)

Research on Stereo Matching Algorithms

Du Hehui (Shenzhen Institute of Asvance Technology Chinese Academy of Sciences, P.R. China)

A new method of image processing for high-contrast medical infrared imaging of the horse

Carsten Siewert (University of Veterinary Medicine Hannover, Germany)

Calculation of reliability maps with respect to inaccuracy in fMRI data

Michal Miki (Masaryk University, Czech Republic); Aleš Drastich (Brno University of Technology, Czech Republic); Milan Brázdil (Masaryk University, Czech Republic)

Denoising for Diffusion Tensor Imaging of the Human Brain with High Spatial Resolution

Klaus Hahn (Institute of Biomathematics & Biometry, Germany)

Enhancement of Breast Images by Noise Reduction and MTF Compensation to Improve Microcalcifications Detection

Larissa Romualdo (University of Sao Paulo, Brazil); Marcelo Vieira (University of São Paulo, Brazil); Homero Schiabel (University of São Paulo, Brazil)

Detection of Lesions in Colonoscopic Images: A Review

Stefan Ameling (University Koblenz, Germany); Stephan Wirth (University Koblenz, Germany); Nikita Shevchenko (Fraunhofer IIS, Germany); Thomas Wittenberg (Fraunhofer Institute for Integrated Circuits IIS, Germany); Dietrich Paulus (Universität Koblenz-Landau, Germany); Christian Muenzenmayer (Fraunhofer IIS, Germany)

Classification of trabecular patterns in the proximal femur using the vector representation algorithm: its correlation to the degree of osteoporosis

Mario Pecelis (Centro de Diagnostico por Imagenes, Argentina); Jose Massa (Universidad del Centro, Argentina); Leonardo Favro Velo (Universidad del Centro, Argentina); Martin Santiago (Universidad del Centro, Argentina); Eduardo Caselli (Universidad del Centro, Argentina)

An automated real time system for FRET based protein-protein interaction analysis

Andre Bernardini (Institute of Physiology, University of Duisburg-Essen, Germany); Christoph Wotzlaw (Institute of Physiology, University of Duisburg-Essen, Germany); Hans-Gerd Lipinski (University of Applied Sciences, Dortmund, Germany); Joachim Fandrey (Institute of Physiology, University of Duisburg-Essen, Germany)

New Feature for Histopathologic Diagnosis of Early Hepatocellular Carcinoma - Degree of Nuclear Concentration -

Yasuaki Tanimoto (Shibaura Institute of Technology, Japan); Masanobu Takahashi (Shibaura Institute of Technology, Japan); Kengo Oguruma (Shibaura Institute of Technology, Japan); Masayuki Nakano (Tokyo Women's Medical University, Japan)

Eye-blink artifact detection in the EEG

Branko Babušiak (VSB-Technical University of Ostrava, , Ostrava, Czech Republic, Czech Republic); Jitka Mohylová (VSB-Technical University of Ostrava, Ostrava, Czech Republic, Czech Republic)

Determination of focal spot size and the modulation transfer function of mammographic equipment without previous alignment

Paulo Domingues de Oliveira Junior (University of São Paulo, Brazil); Marcelo Vieira (University of São Paulo, Brazil); Homero Schiabel (University of São Paulo, Brazil)

A Software Tool to automatically evaluate and quantify Diffusion Weighted Images

Dirk Simon (German Cancer Research Center, Germany); Jan Klein (Fraunhofer MEVIS Bremen, Germany); Jan Rexilius (Fraunhofer MEVIS Bremen, Germany); Thomas Re (German Cancer Research Center, Germany); Andreas Lemke (University of Heidelberg, Faculty of Medicine, Mannheim, Germany); Frederik Laun (German Cancer Research Center, Germany); Bram Stieltjes (German Cancer Research Center, Germany)

A Fuzzy System for Classification of Breast Masses

Patricia Ribeiro (University of São Paulo, Brazil); Roseli Romero (University of São Paulo, Brazil); Homero Schiabel (University of São Paulo, Brazil)

Content based Medical Image Retrieval: use of Generalized Gaussian Density to model BEMD's IMF.

Said Jai-Andaloussi (Institut Telecom/Telecom Bretagne/France - Faculté des Sciences/fès-Morocco, France); Mathieu Lamard (Universite de Bretagne Occidentale/UEB, France); Guy Cazuguel (Institut Telecom - Telecom Bretagne, France); Hamid Tairi (Faculty of Science - Fez, Morocco); Mohamed Mekkassi (Faculty of Science - Fez, Morocco); Béatrice Cochener (Faculty of Medecine/UBO- Brest University Hospital, France); Christian ROUX (, ?)

A multi-scale comparison of texture descriptors extracted from the Wavelet and Curvelet domains for small bowel tumor detection in Capsule Endoscopy exams

Daniel Barbosa (University of Minho, Portugal); José Correia (University of Minho, Portugal); Jaime Ramos (Hospital dos Capuchos, Portugal); Carlos Lima (University of Minho, Portugal)

Changes of Regional Activation to a Spatial Cognition Task with Aging: An fMRI Study

Soo-Jeong Lee (Dept. of Biomedical Engineering, Konkuk University, Korea); Mi-Hyun Choi (Konkuk University, Korea); Jin-Seung Choi (Konkuk University, Korea); Gye-Rae Tack (Konkuk University, Korea); Soon-Cheol Chung (Konkuk University, Korea)

Development of an algorithm for reducing scatter distribution in fluorescence reflectance images

Marjaneh Hejazi (Tehran university of Medical sciences, Iran); Ebrahim Najafzadeh (Tehran University of Medical Sciences, Iran)

Fractal Dimension Analysis of Magnetic Resonance Image in Patients with Alzheimer's Disease

Lei Wang (Capital Medical University, P.R. China); Longzheng Tong (Capital Medical University, P.R. China)

Study of Correlation Between Hippocampus's Texture and Morphological Features in Alzheimer's Disease Patients Based on MR Image

Guilian Jiang (Capital Medical University, P.R. China); Longzheng Tong (Capital Medical University, P.R. China)

Quantification of actin filament organization by estimating graph structures in confocal microscopic images

Harald Birkholz (University of Rostock, Germany); Claudia Matschegewski (Biomedical Res. Center, University of Rostock, Germany); Barbara Nebe (Biomedical Res. Center, University of Rostock, Germany); Konrad Engel (University of Rostock, Germany)

Texture Research on MRI in Patients with Multiple Sclerosis Based on Synthesized Gray Level Co-occurrence Matrix

Liu Weifang (Capital Medical University, P.R. China); Longzheng Tong (Capital Medical University, P.R. China)

Computerized detection of metastatic brain tumors on contrast-enhanced 3D MR images by using a selective enhancement filter

Takahiro Sugimoto (Kumamoto university graduate school, Japan)

Automated diagnosis of Barrett's esophagus with endoscopic images

Purnima Rajan (Johns Hopkins University, USA); Marcia Canto (Johns Hopkins University, USA); Emmanuel Gorospe (Johns Hopkins University, USA); Antonio Almario (Johns Hopkins University, USA); Andreas Kage (Fraunhofer IIS, Germany); Christian Winter (Fraunhofer IIS, Germany); Gregory Hager (Johns Hopkins University, USA); Thomas Wittenberg (Fraunhofer Institute for Integrated Circuits IIS, Germany); Christian Muenzenmayer (Fraunhofer IIS, Germany)

The Anatomical Evaluation of the Dental Arches Using Cone Beam Computed Tomography – A Pilot Investigation of the Availability of Bone for Placement of Mini-implants in Class I Patients

Feng Pan (University of Texas Health Science Center at Houston, USA); Chung Kau (University of Texas -Houston, USA)

17:00 *Medial Axis Detection from Dental Micro-CT Records*

Laszlo Szilagyi (Sapientia - Hungarian Science University of Transylvania, Romania); Balázs Benyó (Budapest University of Technology and Economics, Hungary); Csaba Dobo-Nagy (Semmelweis University Budapest, Hungary)

Design and Implementation of Liver Hyperthermia Treatment Planning System

Hongjian Gao (Beijing University of Technology, P.R. China); Wu Shuicai (University, P.R. China); Chunlan Yang (Beijing University of Technology, P.R. China); Lei Zhao (Beijing University of Technology, P.R. China); Haiming Ai (Beijing University of Technology, P.R. China); Zhigang Cheng (General Hospital of People Librate Army, Beijing 100853, P.R. China); Ping Liang (General Hospital of People Librate Army, Beijing 100853, P.R. China)

Categorization of HE Stained Breast Tissue Samples at Low Magnification by Nuclear Aggregations

Atsushi Marugame (NEC Corporation, Japan)

Th. 06: Poster Session: Track 01: Image Guided Interventions

Touch- and marker-free interaction with medical software

Till Kippshagen (University of Lübeck, Germany); Mathis Graw (University of Lübeck, Germany); Volker Tronnier (University Hospital Schleswig-Holstein (UKSH), Campus Luebeck, Luebeck, Germany); Matteo Bonsanto (University Hospital Schleswig-Holstein (UKSH), Campus Luebeck, Germany); Ulrich Hofmann (University of Luebeck, Germany)

Th. 05: Poster Session: Track 01: Image Processing, Display and Visualization

Functional Magnetic Resonance Imaging Data Manipulation – A new approach

José Soares (University of Minho, Portugal)

Architecture of Mobile and Desktop Stations for Noninvasive Continuous Blood Pressure Measurement

Ondrej Krejcar (Technical University of Ostrava, Czech Republic);
Dalibor Janckulik (Technical University of Ostrava, Czech Republic);
Leona Motalova (VSB TU Ostrava, Czech Republic)

Image Processing-Based Eyelid State Detection

Tomas Fernandes (UTFPR, Brazil); Alexandre Henzel (KORP, Brazil);
Aurelio Charao (UTFPR, Brazil); Fabio Schneider (Federal University of
Technology - Paraná, Brazil); Humberto Gamba (UTFPR, Brazil);
Pedro Gewehr (UTFPR, Brazil)

A solution method for enlarging the reconstruct width of the IGRT-used cone-beam CT by image concatenating

Jian Zhu (Shandong Tumor Hospital, P.R. China); Min Liu (ShanDong
Tumor Hospital, P.R. China); Yong Yin (Shandong Tumor Hospital,
P.R. China)

Fast alternative contrast enhance of mammographic mass image by a partial quoit filter

Hideaki Kubota (Suzuka University of Medical Science, Japan)

An Investigation of Computer-Generated Visual Feedback for the Support of Low Back Pain Therapy

Dominique Brodbeck (University of Applied Sciences Northwestern
Switzerland, Switzerland); Markus Degen (University of Applied
Sciences Northwestern Switzerland, Switzerland)

Visualization of Orientation Distribution Functions (ODFs) with MATLAB

Christian Ros (Jena University Hospital, Germany); Daniel Güllmar
(Jena University Hospital, Germany); Marcel Klatt (Jena University
Hospital, Germany); Jürgen Reichenbach (Jena University Hospital,
Germany)

Diagnostic quality of high resolution JPEG 2000 compressed CT and MR brain images

Juan Paz (Universidad Central "Marta Abreu" de las Villas, Cuba);
Marlen Perez Diaz (Universidad Central "Marta Abreu" de las Villas,,
Cuba); Iroel Miranda (Universidad Central "Marta Abreu" de las Villas,
Cuba); Marlen Perez Diaz (Central University of Las Villas, Cuba)

Use of Analytic image Concept in MR Parallel Imaging

Josiane Yankam Njiwa (ETH/University of Zurich, Switzerland); Christof
Baltes (ETH/University of Zurich, Switzerland); Markus Rudin
(ETH/University of Zurich, Switzerland)

Th. 01: Poster Session: Track 01: Immobilisation, Positioning, Stereotaxy

Quality assurance program for Radiosurgery at Clinicas Hospital: results of implementation

Laura Rodrigues (Instituto Pesquisas Energeticas Nucleares, Brazil);
Gisela Menegussi (Clinicas Hospital, Brazil); Marco Silva (Clinicas

Hospital, Brazil); Rodrigo Rubo (Clinicas Hospital, Brazil); Laura Furnari (Clinicas Hospital, Brazil); Camila Sales (Clinias Hospital, Brazil); Gabriela Santos (Clinicas Hospital, Brazil)

Verification of the accuracy in patient alignment using a laser-optical 3D-surface imaging system

Torsten Moser (German Cancer Research Center, Germany); Sarah Fleischhacker (German Cancer Research Center, Germany); Kai Schubert (University Hospital of Heidelberg, Germany); Gabriele Sroka-Perez (University Hospital of Heidelberg, Germany); Matthias Uhl (University Hospital of Heidelberg, Germany); Klaus Herfarth (University Hospital of Heidelberg, Germany); Jürgen Debus (University Hospital of Heidelberg, Germany); Christian Karger (German Cancer Research Center (DKFZ), Germany)

Reconstruction of portal images from IMRT fields for patient setup verification

Peter Haering (DKFZ, Germany); Andrea Schwahofer (DKFZ, Germany); Clemens Lang (DKFZ, Germany); Bernhard Rhein (DKFZ, Germany)

PDD and dose profile for narrow beams of a cobalt-60 therapy unit to be used in stereotactic radiosurgery

Luiz Antonio da Rosa (Comissão Nacional de Energia Nuclear, Brazil)

Different simple Models for Optimizing Convergent Beam Multiple Field Irradiation for Stereotactic Treatment Techniques

Norbert Hodapp (University Clinics Freiburg, Germany); Rolf Wiehle (University Clinics Freiburg, Germany)

How Much Target Average Positions in Thorax Region Change Daily?

Lu Wang (Fox Chase Cancer Center, USA); Steve Feigenberg (Fox Chase Cancer Center, USA); Jiajin Fan (Fox Chase Cancer Center, USA); Lihui Jin (Fox Chase Cancer Center, USA); Lili Chen (Fox Chase Cancer Center, USA); C-M Charlie Ma (Fox Chase Cancer Center, USA)

Introduction of a Breath Gating System in a Clinical Environment

Heiko Haack (Carl von Ossietzky University Oldenburg, Germany); Wolfgang Kunth (Pius-Hospital Oldenburg, Germany); Ralf Kollhoff (Pius-Hospital Oldenburg, Germany); Antje Rühmann (Pius-Hospital Oldenburg, Germany); Björn Poppe (Carl von Ossietzky University Oldenburg, Germany); Kay Willborn (Pius-Hospital Oldenburg, Germany)

A Method for Evaluation of Target Point Correction in Fractionated Radiotherapy

Kristina Giske (German Cancer Research Center, Heidelberg, Germany); Armin Stoll (German Cancer Research Center, Germany); Eva Stoiber (University Clinic, Heidelberg, Germany); Rolf Bendl (University of Applied Sciences Heilbronn, Germany)

A preliminary study on development of QA system for stereotactic head frame and its reliability and accuracy

Seungjong Oh (Catholic University of Korea, Korea); Jin-Young Kim (The Catholic University of Korea, Korea); Tae-Suk Suh (The Catholic University of Korea, Korea); Ju-Young Hong (Seoul St. Mary's Hospital, Korea); Siyong Kim (Mayo Clinic, Jacksonville, USA)

Th. 09: Poster Session : Track 01: Innovative Orthotics and Prostheses for amputees

Design of a new prosthetic mechanical system used in human ankle joint disarticulation

Petre Copilusi (University of Craiova, Romania)

Artificial Prehension and the Detection of Object Slip

Siti Ahmad (University of Southampton, United Kingdom); Paul Chappell (University of Southampton, United Kingdom)

The effect of clearance upon friction of large diameter hip resurfacing prostheses using blood, clotted blood and bovine serum as lubricants

Saeed Afshinjavid (University of Bradford, United Kingdom)

Medium-Cost Electronic Prosthetic Knee for Transfemoral Amputees: A Medical Solution for Developing Countries

Rafael Torrealba (Simón Bolívar University, Venezuela); Lilibeth Zambrano M. (Simón Bolívar University, Venezuela); Eliane Andara (Simón Bolívar University, Venezuela); Juan Grieco (Simón Bolívar University, Venezuela); Gerardo Fernández-López (Simón Bolívar University, Venezuela)

Trial Study of a Power Presentation Method for Upper-Limb Orthoses

Chikamune Wada (Kyushu Institute of Technology, Japan); Futoshi Wada (University of Occupational and Environmental Health, Japan); Hirotaka Iwata (ARIZONO ORTHOPEDIC SUPPLIES Co.,Ltd, Japan); Kenji Hachisuka (University of Occupational and Environmental Health, Japan)

Optimization of Sensomotoric Insoles

Jörg Subke (Fachhochschule Friedberg-Gießen, Germany)

Superimposition of 2D Pressure Data and 3D Surface Data to Optimize Seat Shells in Rehabilitation

Jörg Subke (Fachhochschule Friedberg-Gießen, Germany)

Th. 02: Poster Session: Track 01: X-ray Imaging/Mammography

Observation of edge-enhancement in digital images obtained with a clinical mammography unit

Maria-Ester Brandan (Universidad Nacional Autonoma de Mexico, Mexico); Margarita Chevalier (Universidad Complutense, Spain); Eduardo Guibelalde (Universidad Complutense, Spain); Jose Rodrigo (CSIC, Spain); Tatiana Alieva (Universidad Complutense, Spain)

Quality Assurance of Diagnostic Monitors

Antonia Savva (University of Cyprus, Cyprus); Stelios Christofides (Nicosia General Hospital, Cyprus); Prodromos Kaplanis (Nicosia General Hospital, Cyprus); Georgios Menikou (Nicosia General Hospital, Cyprus); Demetris Kaolis (Nicosia General Hospital, Cyprus); Haralambos Tsertos (University of Cyprus, Cyprus)

Survey of Radiation Dose, Image Quality and Equipment Performance of Mammography Units in Taiwan

Ho-Ling Anthony Liu (Chang Gung University, Taiwan)

Radiation risk for women in screening mammography examinations in Poland in 2007

Ewa Fabiszewska (Centre of Oncology, Poland); Katarzyna Jankowska (Centre of Oncology, Poland); Iwona Grabska (Center of Oncology, Poland); Wojciech Bulski (M. Skłodowska-Curie Memorial Cancer Center and Institute of Oncology, Poland)

Computer simulation in evaluating the attenuation coefficients influence on mammography images contrast

Luciana Guimarães (Universidade de São Paulo, Brazil); Homero Schiabel (University of São Paulo, Brazil); Débora Stemberg (University of São Paulo, Brazil)

Contrast-medium-enhanced digital mammography: Comparison of standard vs high-energy spectra for dual-energy temporal subtraction

Iván Rosado-Méndez (Universidad Nacional Autónoma de México, México); Yolanda Villaseñor (Instituto Nacional de Cancerología, México); Luis Benitez-Bribiesca (Instituto Mexicano del Seguro Social, México); Maria-Ester Brandan (Universidad Nacional Autónoma de México, México)

HgI2 Flat Panel Radiation Detectors for Medical Imaging Acquisition

Kyungmin Oh (University of Inje, Korea)

Evaluation of the parameters of the quality of radiographic image obtained with REX simulator.

Luis Alexandre Magalhaes (Universidade do Estado do Rio de Janeiro, Brazil); Gunter Drexler (Universidade do Estado do Rio de Janeiro, Brazil); Carlos Eduardo de Almeida (Universidade do Estado do Rio de Janeiro, Brazil)

Dose and quality of the image in mammography in the state of Minas Gerais, Brazil

Maria Nogueira Tavares (Comissão Nacional de Energia Nuclear/CDTN, Brazil); João Peixoto (Radiology Department, UFRJ-Rio de Janeiro, Brazil); Maurício de Oliveira (Superintendência Estadual de Vigilância Sanitária, Brazil); Maurício de Andrade (Superintendência Estadual de Vigilância Sanitária, Brazil); Georgia Joana (Superintendência Estadual de Vigilância Sanitária, Brazil)

Medical X-ray tube

Anton Yaskolko (University of Testing, Russia)

Efficiency of Gd₂O₂S:Eu Powder Phosphor as X-ray to Light Converter under Radiographic Imaging Conditions

Christos Michail (Department of Medical Physics, Medical School, University of Patras, Greece); Ioannis Valais (Medical School, University of Patras, Greece); Andrianos Toutountzis (Medical School, University of Patras, Greece); Ioannis Seferis (Technological Educational Institution of Athens, Greece); Michalis Georgousis (Technological Educational Institution of Athens, Greece); George Fountos (Technological Educational Institute (TEI) of Athens, Greece); Alexandros Samartzis (Evangelismos General Hospital, Greece); Panagiotis Liaparinos (Technological Educational Institution of Athens, Greece); Ioannis Kandarakis (Technological Educational Institute (TEI) of Athens, Greece); George Panayiotakis (Medical School, University of Patras, Hong Kong)

Examination of energy subtraction method by using diffracted monochromatic x rays

Taku Kuramoto (National Kyushu Medical Center, Japan)

For the Quality Control of Mammography, Interpretation of Mammographic Test Results by Using The HVL-kVp Relation

Mana Sezdi (University of Istanbul, Turkey)

Radial Digital Breast Tomosynthesis Using a Shift-and-Add Algorithm

Daisuke Shimao (Ibaraki Prefectural University of Health Sciences, Japan); Shu Ichihara (Nagoya Medical Center, Japan); Hiroshi Sugiyama (High Energy Accelerator Research Organization, Japan); Masami Ando (Tokyo University of Science, Japan)

Can Anti-Scatter Grids Improve Image Quality in Breast CT

Stephen Glick (University of Massachusetts Medical School, USA); Clay Didier (University of Massachusetts Lowell, USA)

Detection for demineralization of dental hard tissues using index sequences

Dong Hyun Park (Kyung Hee University, Korea); Young-Ho Park (School of Medicine, Kyung Hee University, Korea); Kyungsook Kim (Kyung Hee University, Korea); Gija Lee (Kyung Hee University, Korea); Jeonghoon Park (Kyung Hee University, Korea); Samjin Choi (Kyung Hee University, Korea); Hunkuk Park (Kyung Hee University, Korea)

Study of pediatric CR dose reduction using noise addition simulations tools

Belén Juste (Polytechnic University of Valencia, Spain)

A study of DQE dependence with beam quality, GE Senographe Essential detector for mammography

Rafa García-Mollá (Hospital Universitario Gregorio Marañón, Spain); Rafael Linares (Hospital General Universitario "Gregorio Marañón",

Spain); Rafael Ayala (Hospital General Universitario Gregorio Marañón, Spain)

Quantum X-ray imaging with the 2D – Micro Hole and Strip Plate

Andrea Gouvea (University of Aveiro, Portugal); Hugo Natal da Luz (University of Aveiro, Portugal); Carlos Santos (University of Aveiro, Portugal); Carlos Oliveira (University of Aveiro, Portugal); Ana Silva (University of Aveiro, Portugal); Carlos Azevedo (University of Aveiro, Portugal); Joaquim Santos (University of Coimbra, Portugal); Joao Veloso (University of Aveiro, Portugal)

Dual Energy Subtraction Angiography: a Simulation Study using the Three Material Approach

Andrianos Toutountzis (Medical School, University of Patras, Greece); George Fountos (Technological Educational Institute (TEI) of Athens, Greece); Christos Michail (Department of Medical Physics, Medical School, University of Patras, Greece); Alexandros Samartzis (Evangelismos General Hospital, Greece); Ioannis Kandarakis (Technological Educational Institute (TEI) of Athens, Greece); George Nikiforids (University of Patras, Medical School, Greece)

Automatic Detection of Breast Masses Using Two-View Mammography

Danilo Pereira (Federal University of ABC, Brazil); Marcelo Zanchetta do Nascimento (Federal University of ABC, Brazil); Rodrigo Ramos (UNIVASF - Universidade Federal do Vale do São Francisco, Brazil); Rogério Dantas (UFABC - Universidade Federal do ABC, Brazil)

High Concentration Barium Sulfate Used in Gastric Cancer Screening–Viscosity Change Dependent on the Volume of Artificial Gastric Juice–

Kenyu Yamamoto (Okayama University, Japan); Yoshihiro Takeda (Okayama University, Japan); Chikazumi Kuroda (Osaka Cancer Prevention and Detection Center, Japan); Tsugio Kubo (Osaka Cancer Prevention and Detection Center, Japan); Tadao Kuwano (Okayama University, Japan); Koichi Yabunaka (Katsuragi Hospital, Japan); Hidetoshi Yatake (Okayama University, Japan); Akihiko Tabuchi (Okayama University, Japan); Tatsuhiro Gotanda (Okayama University, Japan); Mitsunari Ikemiyagi (Osaka Cancer Prevention and Detection Center, Japan); Hideo Yamazaki (Osaka Cancer Prevention and Detection Center, Japan); Toshizo Katsuda (Himeji Dokkyo University, Japan); Masami Azuma (Osaka Kyoiku University, Japan)

Optimization of screening programmes for breast cancer

Cristina Forastero (Hospital universitario san Cecilio, Spain); Luis Zamora (Hospital universitario san cecilio, Spain); Damian Guirado (Hospital universitario san cecilio, Spain); Antonio Miguel Lallena (Universidad de Granada, Spain)

Estimation of semi automatic versus automatic choice methods on breast dose

Vesna Gershan (The University Clinic of Radiology, Macedonia)

Imaging Properties of Digital Magnification Mammography

Nobukazu Tanaka (Kyushu University, Japan); Kentaro Naka (Kyushu University, Japan); Seiji Kumazawa (Kyushu University, Japan); Junji Morishita (Kyushu University, Japan); Hidetaka Arimura (Kyushu University, Japan); Fukai Toyofuku (Kyushu University, Japan); Masafumi Ohki (Kyushu University, Japan); Yoshiharu Higashida (Kyushu University, Japan)

RGB-colored material discrimination for radiography by multi-monochromatic spectroscopy

Koji Maeda (Hiroshima International University, Japan)

Evaluation of energy-subtraction CT images

Hideki Sakakibara (Hiroshima International University, Japan)

Development of a Breast Statistical Phantom Prototype for Mammographic Image Qualification

Débora Stemberg (University of São Paulo, Brazil); Homero Schiabel (University of São Paulo, Brazil); Luciana Guimarães (Universidade de São Paulo, Brazil)

Investigations on film digitizers systems by a study of image quality in mammography

Renata Góes (University of São Paulo, Brazil); Homero Schiabel (University of São Paulo, Brazil); Maria Zucareli (UFSCAR, Brazil)

Optimising coherence properties for phase contrast x-ray imaging (PCXI) to reveal airways surface liquid (ASL) as an airway health measure

Kaye Morgan (Monash University, Australia); David Paganin (Monash University, Australia); David Parsons (Women's and Children's Hospital, Adelaide, Australia); Martin Donnelley (Women's and Children's Hospital, Adelaide, Australia); Naoto Yagi (JASRI, Japan); Kentaro Uesugi (JASRI, Japan); Yoshio Suzuki (JASRI, Japan); Akihisa Takeuchi (JASRI, Japan); Karen Siu (Monash University, Australia)

Investigation of optimum grid for digital radiography

Kentaro Naka (Kyushu University, Japan); Nobukazu Tanaka (Kyushu University, Japan); Seiji Kumazawa (Kyushu University, Japan); Junji Morishita (Kyushu University, Japan); Hidetaka Arimura (Kyushu University, Japan); Fukai Toyofuku (Kyushu University, Japan); Masafumi Ohki (Kyushu University, Japan); Yoshiharu Higashida (Kyushu University, Japan)

Material Identification from X-ray Images Made by Energy-Differentiation Type X-ray Line Sensor

Masao Matsumoto (Osaka University, Japan)

Computational Analysis of Simulated Images Generated in Public Health Centers in São Paulo - Brazil

Ana Claudia Patrocínio (Federal University of São Paulo, Brazil); Eny Ruberti Filha (Federal University of São Paulo, Brazil); Michele Angelo

(State University of Feira de Santana, Brazil); Homero Schiabel (University of São Paulo, Brazil); Regina Medeiros (Federal University of São Paulo, Brazil)

Pedagogic Tool for Learn-Teaching on Digital Mammography Using Dedicated Software

Simone Elias (Federal University of São Paulo, Brazil); Silvio Pires (Federal University of São Paulo, Brazil); Ana Claudia Patrocínio (Federal University of São Paulo, Brazil); Regina Medeiros (Federal University of São Paulo, Brazil)

Comparison of the performance of FCR-Profect system with different mammographic equipment

Kellen Daros (Federal University of São Paulo, Brazil); Livia Magnani (Federal University of São Paulo, Brazil); Regina Medeiros (Federal University of São Paulo, Brazil)

Reconstruction of mammography x-ray spectrum by using Rayleigh and Compton scattering corrections

Souichiro Kawaguchi (Kyushu University, Japan); Yoshiki Yamaguchi (Kyushu university, Japan); Hidetaka Arimura (Kyushu University, Japan); Junji Morishita (Kyushu University, Japan); Masafumi Ohki (Kyushu University, Japan); Yoshinori Uno (Kyushu university, Japan); Tadamitsu Ideguchi (Kumamoto medical center, Japan); Yoshiharu Higashida (Kyushu University, Japan); Fukai Toyofuku (Kyushu University, Japan)

Rayleigh and Compton scattering analysis for PMMA in the mammography energy range

Yoshiki Yamaguchi (Kyushu university, Japan); Souichiro Kawaguchi (Kyushu University, Japan); Hidetaka Arimura (Kyushu University, Japan); Junji Morishita (Kyushu University, Japan); Masafumi Ohki (Kyushu University, Japan); Yoshinori Uno (Kyushu university, Japan); Tadamitsu Ideguchi (Kumamoto medical center, Japan); Yoshiharu Higashida (Kyushu University, Japan); Fukai Toyofuku (Kyushu University, Japan)

Optimization of Exposure Factors and Image Quality for Computed Radiography

Thekiso Khotle (iThemba LABS, South Africa); Hendrik de Vos (Netcare Limited, South Africa); Charles Herbst (University of the Free State, South Africa); William Rae (University of the Free State, South Africa)

Th. 10: Poster Session: Track 02: Active and Passive Biomechanics of Cells

Infiltration/Accumulation of Low Density Lipoproteins in Endothelial/Smooth Muscle Cell Co-Culture Preparations with Different Modes

Xiaoyan Deng (Beihang University, P.R. China)

Optical Measurement System for pH of Medium Adjacent to Contracting Cultured Myotube in Vitro

Shigehiro Hashimoto (Osaka Institute of Technology, Japan); Shuichi Mochizuki (Osaka Institute of Technology, Japan); Eiji Yamada (Osaka Institute of Technology, Japan); Kousuke Kida (Osaka Institute of Technology, Japan); Kazutomo Nishimura (Osaka Institute of Technology, Japan); Daisuke Inoue (Osaka Institute of Technology, Japan)

Membrane loads in a compressed skeletal muscle cell computed using a cell-specific finite element model

Noa Slomka (Tel-Aviv University, Israel); Amit Gefen (Tel Aviv University, Israel)

The Effects of MGF on the Physiological Behaviors of Osteoblasts

Liling Tang (Chongqing University, P.R. China)

Cyclic mechanical cells stimulation of myoblasts in skeletal muscle tissue engineering: a preliminary study.

Giulia Silvani (University of Pavia, Italy); Leonardo Portella (University of Pavia, Italy); Lorenzo Fassina (University of Pavia, Italy); Laura Benedetti (University of Pavia, Italy); Giovanni Magenes (University of Pavia, Italy); Maria Gabriella Cusella De Angelis (University of Pavia, Italy)

The development of a combined electrical & mechanical stimulation bioreactor to improve tissue engineered muscle function

Jan Vorstius (University of Dundee, United Kingdom); Robert Keatch (University of Dundee, United Kingdom); Kenneth Donnelly (University of Dundee, United Kingdom); Paul Maher (University of Dundee, United Kingdom)

Development and characterization of high volume producible micro structured surfaces for tissue engineering applications

Frank Pretzsch (Fraunhofer Institute for Production Technology, Germany)

Gene expression modulation in stretched muscle cells

Giulia Silvani (University of Pavia, Italy); Lorenzo Fassina (University of Pavia, Italy); Laura Benedetti (University of Pavia, Italy); Giovanni Magenes (University of Pavia, Italy); Maria Gabriella Cusella De Angelis (University of Pavia, Italy)

Influence of Ascorbic acid(AsA) concentration in culture medium on mechanical property of regenerated cartilage

S. Omata (Kyushu University, Japan); Yoshinori Sawae (Kyushu University, Japan); Teruo Murakami (Kyushu University, Japan)

Electrically Functionalized Hydroxyapatite and Calcium Phosphate Surfaces to Enhance Immobilization and Proliferation of Osteoblasts In Vitro and Modulate Osteogenesis In Vivo

Yuri Dekhtyar (Riga Technical University, Latvia); Marina Dvornichenko (Tomsk Branch of the Russian Ilizarov Scientific Centre, Russia); Anatoly Karlov (Tomsk Abteilung des Russische Ilisarov Wissenschaftliche Zentrum, Russia); Igor Khlusov (Tomsk Branch of the Russian Ilizarov Scientific Centre, Russia); Natalia Polyaka (Riga Technical University, Latvia); Rachel Sammons (University of Birmingham, United Kingdom); Konstantin Zaytsev (Tomsk Branch of the Russian Ilizarov Scientific Centre, Russia)

Disruption and Re-polymerization Kinetics of f-actin Cytoskeleton in Bone Cells Subjected to Dynamic Mechanical Stimulus

Sterling Nesbitt (University of Connecticut, USA); James Macione (University of Connecticut, USA); Matthew Eschbach (University of Connecticut, USA); Yamalia Roberts (University of Connecticut, USA); Abhijit Debroy (University of Connecticut, USA); Shiva Kotha (University of Connecticut, USA)

Th. 11: Poster Session: Track 02: Audiology II: Central Auditory (Dys) Functions as Revealed by the Auditory Profile and Auditory Models

Th. 07: Poster Session: Track 02: Bioelectric & Biomagnetic Signals

Antimicrobial activity of Beta-Thujaplicin(Hinokitiol) on heterotrophic bacteria isolated from Reverse Osmosis water using for the preparation of Hemodialysis fluids

XiPeng Zhao (Graduate School of Hokkaido Institute of Technology, Japan)

Measurement System for Surface Electromyogram and Handgrip Force

Dong-Mei Hao (Beijing University of Technology, P.R. China)

Development of MR active contrast agents via Parahydrogen Induced Polarization

Kerstin Muennemann (Johannes Gutenberg University Medical Center, Germany); Meike Roth (Max Planck Institute for Polymer Research, Germany); Falk Dechent (Johannes Gutenberg University Medical Center, Germany); Dirk Graafen (Johannes Gutenberg University Medical Center, Germany); Joachim Bargon (University of Bonn, Germany); Hans Spiess (Max Planck Institute for Polymer Research, Germany); Laura Schreiber (Johannes Gutenberg University Medical Center, Germany)

Universal software for electrophysiological recordings using lowcost digitalization cards

Monika Martinkova (Faculty of Electrical Engineering, Czech Technical University in Prague, Czech Republic); Eva Krajcovicova (Faculty of Electrical Engineering, Czech Technical University in Prague, Czech Republic); Renata Konopkova (Institute of Physiology, Academy of Sciences of the Czech Republic, v.v.i., Czech Republic); Jakub Otahal (Institute of Physiology, Academy of Sciences of the Czech Republic, v.v.i., Czech Republic)

A magnetically quasi-transparent tool for ankle passive mobilization in investigations on cortical involvement using MEG

Stefano Viscuso (Italian National Research Council, Italy); Simone Pittaccio (Italian National Research Council, Italy); Filippo Zappasodi (Università di Chieti G. D'Annunzio, Italy); Franca Tecchio (Italian National Research Council, Italy)

A complex installation for biomagnetism studies

Octavian Baltag ("Gr. T. Popa" University of Medicine and Pharmacy, Romania)

Effects of pulsed electromagnetic fields on the cartilage joint thickness of distal femoral metaphysis in the rat

Fernando Sotelo (Universidad de Guanajuato, Mexico); Sergio Marquez-Gamiño (Universidad de Guanajuato, Mexico); Modesto Sosa (Universidad de Guanajuato, Mexico); Cipriana Caudillo-Cisneros (Universidad de Guanajuato, Mexico); Gilberto Perea-Olmos (Universidad de Guanajuato, Mexico); Laura Castellano (Universidad de Guanajuato, Mexico)

Determination of bidirectional electric anisotropy of muscles ex vivo using three electrode configurations

John Alexander Gomez Sanchez (Universidad Nacional de Tucuman, Argentina); Carmelo Jose Felice (Universidad Nacional ed Tucuman, Argentina)

Effect of distance between monitor & patient in recording visual evoked potential using pattern reversal checker board stimulation.

Pegah Valiollahi (Medical science of Tehran University, Iran)

Development of a Low Noise Active Electrode for High-Resolution EEG
Sari Ahokas (Tampere University of Technology, Finland)

Anesthesia with propofol effects on atrial fibrillation wavefront delays

Raquel Cervigon (Universidad de Castilla-La Mancha, Spain); Javier Moreno (Hospital Clínico San Carlos, Spain); José Millet (Universidad Politécnica de Valencia, Spain); Francisco Castells (Universidad Politecnica de Valencia, Spain)

Th. 02: Poster Session: Track 02: Computed Tomography

Detection of the Optimal Reconstruction Window for Respiratory-Gated Micro-CT Imaging

Dirk Ertel (University of Erlangen-Nuremberg, Germany); Yiannis Kyriakou (Universität Erlangen-Nürnberg, Germany); Willi Kalender (Universität Erlangen-Nürnberg, Germany)

On Limitations of 1D Interpolation-Based Metal Artefact Reduction Approaches. A Comparison of FBP versus MLEM

Baerbel Kratz (University of Luebeck, Germany); May Oehler (University of Luebeck, Germany); Thorsten Buzug (University of Luebeck, Germany)

Development and experimental implementation of new approaches to measure MTF and NPS

Claudia Brunner (Helmholtz Zentrum München, Germany); Alexander Schegerer (Helmholtz Zentrum München, Germany); Bernhard Renger (Klinikum rechts der Isar, Germany); Christoph Hoeschen (Helmholtz Zentrum München - German Research Center for Environmental Health, Germany)

Comparison of few-view CT image reconstruction algorithms by constrained total-variation minimization based on different sampling bases

Haoyu Wang (Peking University, P.R. China); Yaoqin Xie (Peking University, P.R. China); Shanglian Bao (Peking University, P.R. China); Lei Li (National Digital Switching System Engineering & Technology Research Center, P.R. China); Bin Yan (National Digital Switching System Engineering & Technology Research Center, P.R. China)

Monte Carlo simulation of x-ray tube spectra with PENELOPE

Pengxiang Jia (Peking University, P.R. China); Yaoqin Xie (Peking University, P.R. China); Shanglian Bao (Peking University, P.R. China)

A laboratory scanner for Cone Beam Breast Computed Tomography

Paolo Russo (Università di Napoli "Federico II" & INFN Napoli, Italy); Giovanni Mettivier (Università di Napoli Federico II & INFN Napoli, Italy); Adele Lauria (Università di Napoli Federico II & INFN Napoli, Italy); Maria Cristina Montesi (Università di Napoli Federico II & INFN Napoli, Italy)

Efficient data acquisition in CT: dual optimal reading

Hugo de las Heras (US Food and Drug Administration, USA); Oleg Tischenko (Helmholtz Zentrum München, Germany); Yuan Xu (University of Oregon, USA); Helmut Schlattl (Helmholtz Zentrum Muenchen, Germany); Christoph Hoeschen (Helmholtz Zentrum München - German Research Center for Environmental Health, Germany)

CT with Dual Optimal Reading: compatibility of the two data sets and interpolation issues

Hugo de las Heras (US Food and Drug Administration, USA); Rick Beatson (University of Canterbury, New Zealand); Wolfgang zu Castell (Helmholtz Zentrum Muenchen, Germany); Oleg Tischenko (Helmholtz Zentrum München, Germany); Yuan Xu (University of Oregon, USA); Christoph Hoeschen (Helmholtz Zentrum München - German Research Center for Environmental Health, Germany)

An Image Quality Study of Medipix2 Single Photon Counting Detector Based on Two Kinds of Flat Field Corrections for Breast Computed Tomography Application

Paola Frallicciardi (Istituto Nazionale di Fisica Nucleare sezione di Napoli (Italy), Italy); Giovanni Mettivier (Università di Napoli Federico II & INFN Napoli, Italy); Maria Cristina Montesi (Università di Napoli

Federico II & INFN Napoli, Italy); Paolo Russo (Università di Napoli "Federico II" & INFN Napoli, Italy)

Refinement of Exponents for the Photoelectric Absorption in Dual-Energy CT Applications

Jan Müller (University of Luebeck, Germany); Thorsten Buzug (University of Luebeck, Germany)

The phantom for quality evaluations of the nonlinear noise reduction filter in multi-detector row computed tomography

Ryutaro Matsuura (Central Division of Radiology, Okayama University Hospital, Japan); Kenichirou Fuji (Okayama University, Japan); Sachiko Goto (Okayama University, Japan); Yoshiharu Azuma (Okayama University, Japan); Keiji Inamura (Okayama University Hospital, Japan)

Adaptive scanning control for cardiac CT image reconstruction

Jie Liu (Beijing jiaotong university, P.R. China)

Accurate determination of CT PSF with high precision

Akihiro Kayugawa (Niigata University, Japan); Shinichi Wada (Niigata University, Japan); Masaki Ohkubo (Niigata University, Japan); Toru Matsumoto (Kensei Clinic, Japan); Kohei Murao (Fujitsu Ltd, Japan)

Performance Analysis of Quantitative Bone Measurement with Spiral CT

Thomas Hangartner (Wright State University, USA); Shruti Gupta (Wright State University, USA); David Short (Wright State University, USA)

Study Lung Tool: A Way to Understand HRTC Lung Parenchyma

Verónica Vasconcelos (Instituto Superior de Engenharia de Coimbra, Portugal)

SR μ CT and MRX analyses of ferrofluid agglomeration in bovine arteries-a step further in the understanding of Magnetic Drug Targeting

Helene Rahn (TU Dresden, Germany); Stefan Lyer (University Hospital Erlangen, Germany); Heike Richter (Physikalisch-Technische Bundesanstalt, Germany); Inmaculada Gomez-Morilla (TU Dresden, Germany); Christoph Alexiou (University Hospital Erlangen, Germany); Dietmar Eberbeck (Physikalisch-Technische Bundesanstalt, Germany); Frank Wiekhorst (Physikalisch-Technische Bundesanstalt, Germany); Lutz Trahms (Physikalisch-Technische Bundesanstalt, Germany); Felix Beckmann (GKSS-Research Center, Germany); Stefan Odenbach (TU Dresden, Germany)

Dosimetric and image quality comparison of different 64-slice CT scanners

Vittoria Colli (Fisica Sanitaria, Ospedale di Circolo e Fondazione Macchi, Italy); Sabina Strocchi (Ospedale di Circolo di Varese e Fond. Macchi, Italy); Cristina Vite (Ospedale di Circolo di Varese e Fond. Macchi, Italy)

Modeling of multiple technical factors effect on noise in Computed Tomography

Rafael Alejandro Miller-Clemente (Centro de Biofísica Médica, Cuba); Marlen Perez Diaz (Universidad Central “Marta Abreu” de las Villas,, Cuba); Minorka Arias-Garlobo (Hospital Infantil Sur, Cuba)

Automatic Exposure Control systems and current modulations: comparison of different 64-slice CT scanners

Vittoria Colli (Fisica Sanitaria, Ospedale di Circolo e Fondazione Macchi, Italy); Sabina Strocchi (Ospedale di Circolo di Varese e Fond. Macchi, Italy); Cristina Vite (Ospedale di Circolo di Varese e Fond. Macchi, Italy)

Minute pigment epithelial detachment : Observations in leakage spot of Central Serous Chorioretinopathy by Fluorescein Angiography and Spectral Domain Optical Coherence Tomography Simultaneous Examination

Bei Tian (Capital medical University, P.R. China); Xueqian Guo (Capital medical University, P.R. China)

Comparison of clinical protocols of multi-slice CT systems

Denise Nersissian (University of Sao Paulo, Brazil)

Th. 05: Poster Session: Track 02: Computer Aided Diagnosis

Philips Astonish image processing software phantom evaluation used on planar mode acquisition images

Joao Santos (Instituto Portugues de Oncologia Francisco Gentil EPE, Portugal); Anabela Dias (Instituto Portugues de Oncologia Francisco Gentil EPE, Portugal)

Tumoral mass classification by specialists and the CAD scheme

Ana Claudia Patrocinio (Federal University of São Paulo, Brazil); Michele Angelo (State University of Feira de Santana, Brazil); Simone Elias (Federal University of São Paulo, Brazil); Leandro Freitas (University of São Paulo, Brazil); Homero Schiabel (University of São Paulo, Brazil); Regina Medeiros (Federal University of São Paulo, Brazil)

Pattern recognition techniques in recognition of neoplastic changes in images of cell nuclei

Annamonika Dulewicz (Institute of Biocybernetics and Biomedical Engineering, Poland); Paweł Jaszczak (Institute of Biocybernetics and Biomedical Engineering PAS, Poland); Bogusław Pietka (Institute of Biocybernetics and Biomedical Engineering PAS, Poland)

The Development of Heart Rate Variability Analysis Software for Detection of Individual Autonomic Response on Music and Quran Recitation

Muhammad Reza (Institute of Technology Bandung, Indonesia); Tati Mengko (Institut Teknologi Bandung, Indonesia); Jofizal Jannis (Faculty of Medicine University of Indonesia, Indonesia)

Data mining for floral distribution pattern detection

Susanna Pivetti (University of Genova, Italy); Mauro Giacomini (University of Genova, Italy); Gabriele Casazza (University of Genova, Italy); Luigi Minuto (University of Genova, Italy)

Classification of spectroscopic images in the DIROlab environment

Frederik Kaster (Deutsches Krebsforschungszentrum, Germany); Michael Kelm (Siemens, USA); Christian Zechmann (Deutsches Krebsforschungszentrum, Germany); Marc-André Weber (University of Heidelberg, Germany); Fred Hamprecht (University of Heidelberg, Germany); Oliver Nix (German Cancer Research Center, Germany)

Texture classification of images from Endoscopic Capsule by using MLP and SVM- A comparative approach

Carlos Lima (University of Minho, Portugal); José Correia (University of Minho, Portugal); Jaime Ramos (Hospital dos Capuchos, Portugal); Daniel Barbosa (University of Minho, Portugal)

Radiation Effects Quantification in Breast Radiotherapy by Mammography Image Processing

Marios Sotiropoulos (University of Athens, Greece); Anna Zygogianni (M.D., Greece); Nefeli Lagopati (Radiation Physics, Greece); Maria Lyra (University of Athens, Greece)

The Design of an Efficient CAD System for Capsule Endoscope

Jenn-Lung Su (Chung Yuan Christian University, Taiwan)

IVITool. A scalable platform for medical data integration

Pablo Cerro (University of Seville, Spain); José Antonio Cabo Valdés (Virgen del Rocío Children's Hospital, Department of Pediatric Surgery, Spain); Maria Elena (University of Seville, Spain); Silvia Blasco (University of Seville, Spain); Juan Uceda (University of Seville, Spain); Maria José Moya Jiménez (Virgen del Rocío Children's Hospital, Department of Pediatric Surgery, Spain); Rocío Granero Cendón (Virgen del Rocío Children's Hospital, Department of Pediatric Surgery, Spain); Jorge Chavez Orzaez (Universidad de Sevilla, Spain); Manuel López Alonso (Virgen del Rocío Children's Hospital, Department of Pediatric Surgery, Spain)

Decision Support System on Hypertension Treatment

Daniel Bottino (State University of Rio de Janeiro, Brazil)

Th. 08: Poster Session: Track 02: Drug Delivery

Simulation of Drug Release for the Development of Drug-Eluting Stents – Influence of Design and Manufacturing Parameters on Drug Release Kinetics

Niels Grabow (University of Rostock, Germany)

Study to trap fluid microcapsules in artificial blood vessel by producing local acoustic radiation force

Kohji Masuda (Tokyo Univ of A&T, Japan); Ryusuke Nakamoto (Tokyo Univ of A&T, Japan); Yusuke Muramatsu (Tokyo Univ of A&T, Japan); Yoshitaka Miyamoto (Nagoya Univ, Japan); Keri Kim (National Center for Child Health and Development, Japan); Toshio Chiba (National Center for Child Health and Development, Japan)

The role of microrheological red blood cell properties in efficiency of drug transport and their delivery to cellular targets

Alexei Muravyov (University of Yaroslavl, Russia)

Dual phosphatidylglyceroglycerol-based thermosensitive liposomes for MR-guided chemothermotherapy

Tungte Wang (University of Munich, Germany); Martin Hossann (Max Planck Innovation GmbH, Munich, Germany); Michael Peller (Ludwig Maximilian University Munich, Campus Grosshadern, Germany); Herbert Reinl (University Hospitals Munich, Germany); Maximilian Reiser (Ludwig-Maximilians-University Munich, Germany, Germany); Rolf Issels (Department of Internal Medicine III, University Hospital, Grosshadern, Munich, Germany); Lars Lindner (Ludwig-Maximilians University of Munich, University Hospital, Germany)

Disruption of Microvessels by Focused Ultrasound with Microbubbles to Cause the Extravasation of Macromolecules and Observed by Two-photon Fluorescence Microscopy

Kuo-Wei Lu (National Taiwan University, Taiwan); Chi-Hsun Huang (National Taiwan University, Taiwan); Chun-Chin Wang (National Taiwan University, Taiwan); Win-Li Lin (National Taiwan University, Taiwan)

Th. 04: Poster Session: Track 02: Image Segmentation and Registration

Development of a Deformable Lung Phantom for the Evaluation of Deformable Registration

Jina Chang (The Catholic University of Korea, Korea); Tae-Suk Suh (The Catholic University of Korea, Korea); Dong-Soo Lee (Seoul National University Hospital, Korea)

A Software Assistant for the Manual Acquisition of Landmark Data in Medical Images

Hermann Prüm (German Cancer Research Center, Germany); Ralf Floca (German Cancer Research Center, Germany)

Isocenter Verification in Radiotherapy based on Automatic Image Registration

Vasiliki Markaki (National Technical University of Athens, Greece); Pantelis Asvestas (Technological Educational Institute of Athens, Greece); George Matsopoulos (National Technical University of Athens, Greece); Vasilios Kouloulis (University of Athens, Greece)

B-spline registration versus demons algorithm – a quantitative comparison of accuracy and invertibility based on artificially created test cases for the lung

Martina Hub (German Cancer Research Center (DKFZ), Germany); Marc Kessler (University of Michigan, USA); Christian Karger (German Cancer Research Center (DKFZ), Germany)

An improved method for ring artifacts removing

Francesco Brun (University of Trieste, Italy); Georgios Kourousias (Sincrotrone Trieste S.C.p.A, Italy); Dreossi Diego (Sincrotrone Trieste S.C.p.A., Italy); Lucia Mancini (Sincrotrone Trieste S.C.p.A., Italy)

Registration of Ultrasound Contrast Images for Perfusion Analysis

Vratislav Harabis (Brno University of Technology, Czech Republic); Michal Bartoš (Brno University of technology, Czech Republic); Radim Kolar (Brno University of Technology, Czech Republic)

Automatic Registration of DCE-MRI Prostate Images for Follow-up Comparison

Dörte van Straaten (Fraunhofer MEVIS, Germany); Patrik Zamecnik (DKFZ, Germany); Tobias Böhler (Fraunhofer MEVIS, Germany); Hendrik Laue (Fraunhofer MEVIS, Germany); Stefan Wirtz (Fraunhofer MEVIS, Germany); Horst Hahn (Fraunhofer MEVIS, Institute for Medical Image Computing, Germany)

Landmark location in x-ray images using active appearance models

Murray Long (University of Cape Town, South Africa); Andre Mouton (University of Cape Town, South Africa); Tania Douglas (University of Cape Town, South Africa)

Application of a LMD Based Segmentation Method to Retinal Image Segmentation

Andreas Kuleschow (Fraunhofer IIS, Germany)

Research on Glioma's MR Image Segmentation

Zhen Zhou (Capital Medical University China, P.R. China); Ma Bin Rong (Capital Medical University China, P.R. China)

Evaluation and Comparison of Force Terms for the Estimation of Lung Motion by Non-linear Registration of 4D-CT Image Data

Alexander Schmidt-Richberg (University Medical Center Hamburg-Eppendorf, Germany); Jan Ehrhardt (University Medical Center Hamburg-Eppendorf, Germany); René Werner (University Medical Center Hamburg-Eppendorf, Germany); Heinz Handels (Universität Hamburg, Germany)

Improving an SVM-based Liver Segmentation Strategy by the F-score Feature Selection Method

Yang Xu (University of Science & Technique, P.R. China)

DTI-Based Thalamus Segmentation – A Group Study

Sarah Mang (University of Tübingen, Germany); Susanne Reiterer (University of Tübingen, Germany); Wolfgang Grodd (Section Experimental MR of the CNS, Germany); Uwe Klose (University Hospital of Tuebingen, Germany)

Th. 13: Poster Session: Track 02: IOMP Symposium: Research in Medical Physics

Intramuscular fat content estimation in the loin muscle of pig carcasses by ultrasound spectral parameter analysis

Sannachi Lakshmanan (Martin Luther University of Halle-Wittenberg, Germany); Tim Koch (Georg August University Göttingen, Germany); Daniel Mörlein (Martin Luther University of Halle-Wittenberg, Germany); Sebastian Brand (University of Halle, Germany); Kay Raum (Charité-Universitätsmedizin Berlin, Germany)

Sound velocity and attenuation of porcine loin muscle, backfat and skin

Sannachi Lakshmanan (Martin Luther University of Halle-Wittenberg, Germany); Tim Koch (Georg August University Göttingen, Germany); Kay Raum (Charité-Universitätsmedizin Berlin, Germany); Michael Wicke (Georg August Universität Göttingen, Germany); Daniel Mörlein (Martin Luther University of Halle-Wittenberg, Germany); Sebastian Brand (University of Halle, Germany)

Th. 03: Poster Session: Track 02: Radiation Protection of Patients and Personnel

Doses to patients from photo-neutrons emitted in a medical linear accelerator

Mohammed Saeed (Radiation and Isotopes Center Khartoum, Sudan); Osman Moustafa (Radiation and Isotopes Center Khartoum, Sudan); Claudio Tuniz (International Centre for Theoretical Physics, Sudan); Osama Yasin (Alneelain University, Sudan)

Radiation protection in cardiac catheterization laboratories: Non-shielded parts

Heiner von Boetticher (Klinikum Links der Weser, Germany); Jörn Lachmund (ATLAS Elektronik, Germany); Wolfgang Hoffmann (University of Greifswald, Germany)

Extremity and eye lens doses of the staff during interventional radiology procedures – First results

Christina Koukorava (Greek Atomic Energy Commission, Greece); Eleftheria Carinou (Greek Atomic Energy Commission, Greece); Joanna Domienik (Nofer Institute of Occupational Medicine, Poland); Jerzy Jankowski (Nofer Institute of Occupational Medicine, Poland); Sabah Krim (Belgian Nuclear Research Centre, Belgium); Denisa Nikodemova (Slovak Medical University, Slovakia); Lara Struelens (Belgian Nuclear Research Centre, Belgium); Filip Vanhavere (Belgian Nuclear Research Centre, Belgium)

Indoor Radon Measurement in some Apartments of Mashhad City (Iran)

Alireza Binesh (Payam Nour University, Iran)

Radon measurement in drinking water samples of Mashhad city in Iran

Alireza Binesh (Payam Nour University, Iran)

Protection of human health and the environment by means of predisposal management of medical solid radioactive waste

Antonis Stefanoyiannis (University General Hospital of Athens "Attikon", Athens, Greece, Greece); Ioannis Gerogiannis (Department of Medical Physics, Nicosia General Hospital, Nicosia, Cyprus, Cyprus); Stelios Christofides (Nicosia General Hospital, Cyprus); George Koutroumpis (Department of Radiology, Highest Technological Educational Institution of Athens, Greece); Xenia Geronikola-Trapali (University General Hospital of Athens "Attikon", Athens, Greece, Greece); Sofia Chatziioannou (University General Hospital of Athens "Attikon", Athens, Greece, Greece); Athanassios Bakas (Department of Radiology, Highest Technological Educational Institution of Athens, Greece); Ioannis Armeniakos (University General Hospital of Athens "Attikon", Athens, Greece, Greece); Andreas Prentakis (University General Hospital of Athens "Attikon", Athens, Greece, Greece); Sotiris Bakalis (University General Hospital of Athens "Attikon", Athens, Greece, Greece)

Characterization of barite and crystal glass as Attenuators in x-ray and gamma radiation Shielding

Airton Tavares de Almeida Junior (Fundacentro, Brazil); Marcus Aurélio Pereira dos Santos (Comissão Nacional de Energia Nuclear/CRCN, Brazil); Maria Nogueira Tavares (Comissão Nacional de Energia Nuclear/CDTN, Brazil); João Filho (Universidade Federal de Pernambuco/DEN, Brazil)

Study on local maximum skin doses to patients undergoing cardiac procedures

Joanna Domienik (Nofer Institute of Occupational Medicine, Poland); Sylwia Papierz (Nofer Institute of Occupational Medicine, Poland); Marcin Brodecki (Nofer Institute of Occupational Medicine, Poland); Maja Tybor (Nofer Institute of Occupational Medicine, Poland); Jerzy Jankowski (Nofer Institute of Occupational Medicine, Poland); Andrzej Korejwo (University of Lodz, Poland)

Measurement of entrance skin dose due the imaging systems for treatment planning of Stereotactic Radiosurgery of arteriovenous malformations

Olga Galván De la Cruz (Instituto Nacional de Neurología y Neurocirugía, Mexico); Olivia Garcia Garduño (Instituto Nacional de Neurología y Neurocirugía, Mexico); Jose Larraga Gutierrez (Instituto Nacional de Neurología y Neurocirugía, Mexico)

The Research of Scattering Digital Filter Template in Digital X-ray Radiography

Guifang Zhang (Shandong Tumor Hospital, P.R. China)

Assessment of the self-developing films usefulness in interventional radiology

Agata Werduch (University of Lodz, Poland); Marcin Brodecki (Nofer Institute of Occupational Medicine, Poland); Jerzy Jankowski (Nofer

Institute of Occupational Medicine, Poland); Andrzej Korejwo (University of Lodz, Poland)

Low cost alternative to lead glass shielding in PET/CT control/scanner room window

Joao Santos (Instituto Portugues de Oncologia Francisco Gentil EPE, Portugal); Joana Silva (Instituto Português de Oncologia do Porto Francisco Gentil, Portugal)

Exploring the techniques for radiation leakage measurements of a telegamma machine

Ghanshyam Sahani (Atomic Energy Regulatory Board, India)

Regulatory Aspects in Industrial Gamma Radiography in IRAN

Mohammad Reza Deevband (National Radiation Protection Department, Iran); Mohammad Reza Kardan (Nuclear Science and Technology Institute, Iran); Bijan Samimi (National Radiation Protection Department, Iran); Mehdi Hormozi (National Radiation Protection Department, Iran); Hamid Reza Khosravi (Nuclear Science and Technology Institute, Iran); Hossein Kairimi Ashtiani (National Radiation Protection Department, Iran); Gholamhossein Heravi (National Radiation Protection Department, Iran)

Survey of Image Quality and Patient Dose in Simple Radiographic Examinations in Madagascar: Initial results

Marie Jeanne Ramanandraibe (Institut National des Sciences et Techniques Nucléaires, Madagascar); Raelina Andriambololona (Institut National des Sciences et Techniques Nucléaires, Madagascar); Eloïm Rakotoson (Centre de Soins et de Santé, Service de radiologie, Antananarivo, Madagascar); Virginia Tsapaki (Konstantopoulou Hospital, Greece); Hans Gfinter (Graf Tiemo Str. 16, D-94127 Neuburg, Germany); Madan Rehani (I.A.E.A., Austria)

Optimization of radiation protection in mammography in Lithuania

Julius Ziliukas (Radiation Protection Centre, Lithuania); Ruta Briediene (Oncology institute of Vilnius University, Lithuania); Egle Jonaitiene (Kaunas Medical University Hospital, Lithuania); Virginia Tsapaki (Konstantopoulou Hospital, Greece)

Dosimetric impact of accidental irradiations on radiotherapy facility workers and considerations on personal monitoring

Damian Fondevila (Vidt Centro Medico, Argentina); Sergio Rivera (Vidt Centro Medico, Argentina); Rosana Sansogne (Vidt Centro Medico, Argentina); Victor Suarez (Vidt Centro Medico, Argentina); Rodolfo Barrientos (Instituto de Radiaciones Salta, Argentina); Julio Vita (Centro de Oncologia y Radioterapia de Mar del Plata, Argentina); Silvia Pereira Duarte (Centro de Oncologia y Radioterapia de Mar del Plata, Argentina); Maria Luisa Filomia (Vidt Centro Medico, Argentina); Luisa Rafailovici (Vidt Centro Medico, Argentina)

Evaluation of patient doses from verification techniques in image-guided radiotherapy (IGRT)

Vladimír Dufek (National Radiation Protection Institute, Czech Republic)

Residual Radiation of Medical Linear Accelerators: Special Radiation Protection Aspects

József Kóbor (University of Pécs, Hungary)

Th. 09: Poster Session : Track 02: Rehabilitation Robotics

Study on a High Performance Shoes by using Silicon Rubber Elements with Human Compatibility

Yasuhiro Hayakawa (Nara National College of Technology, Japan)

Estimation and Evaluation of Upper Limb Endpoint Stiffness and Joint Torques for Post-stroke Rehabilitation

Pei-Rong Wang (Industrial Technology Research Institute - South, Taiwan, R.O.C., Taiwan); Yu-Hsien Chiu (Industrial Technology Research Institute - South, Taiwan, R.O.C., Taiwan); Ming-Shih Tsai (Taiwan Provincial Potz General Hospital, Taiwan); Kao-Chi Chung (National Cheng Kung University, Taiwan)

Virtual Reality and Robotics for neuro-motor rehabilitation of ischemic stroke patients

Martin Steinisch (University G. d'Annunzio, Italy); Bianca Maria Guarnieri (Institute for Clinical Research Villa Serena, Italy); Jens Hauelsen (Ilmenau University of Technology, Germany); Antonio Serio (Institute for Clinical Research Villa Serena, Italy); Silvia Comani (University of Chieti (Italy), Italy)

Design and Development of Acrylic Die for Hip Bone Joint Casting

Md. Haque (International Islamic University Malaysia (IIUM), Malaysia)

Using virtual reality for an autonomous navigation with electric wheelchairs

Iadaloharivola Randria (University of Antananarivo, Madagascar); Patrick Abellard (Université du Sud Toulon Var, France); Pascal Ramanantsizehena (University of Antananarivo, Madagascar); Mohamed Moncef Ben Khelifa (Université du Sud Toulon Var, France); Alexandre Abellard (Université du Sud Toulon Var, France)

A Preliminary Study of a Power Assist System for Toe Exercise using a Metal Hydride Actuator

Shuichi Ino (National Institute of Advanced Industrial Science and Technology, Japan); Minako Hosono (The University of Tokyo, Japan); Mitsuru Sato (Showa University, Japan); Sawako Nakajima (Keio University, Japan); Kazuhiko Yamashita (Tokyo Healthcare University, Japan); Takashi Izumi (Tokai University, Japan)

Comparison of sensor systems for gait phase detection in hemiplegic gait

Sunwoo Park (Yonsei University, Korea); RyangHee Sohn (Yonsei University, Korea); Seonhong Hwang (Yonsei University, Korea); Young-Ho Kim (Yonsei University, Korea)

Design and Modeling of an Upper Extremity Exoskeleton

Salam Moubarak (INSA Lyon, France); Minh Tu Pham (INSA Lyon, France); Tanneguy Redarce (INSA de Lyon, France)

Th. 01: Poster Session: Track 02: Therapy Planning

Evaluation of dosimetric characteristics of a grid block fabricated for Mega-voltage grid therapy purposes

Karim Ghazi-khanlou Sani (Hamadan University of Medical Sciences, Iran, Iran)

Application of MRI normoxic polymer gel dosimetry for the evaluation of radiation dose distribution in external beam radiotherapy

Bahreyni Toossi (Mashhad university of medical sciences, Iran); Mohammad Hossein Bahreyni Toossi (Mashhad university of medical sciences, Iran); Ghorban Safaeian (Mashhad university of medical sciences, Iran); Shahram Bayani Roudi (Mashhad University of Medical Sciences, Iran)

Effect of the same plan on doses to patients during radiotherapy with nasopharyngeal carcinoma

Jie Lu (Shandong Tumor Hospital, Jinan, China, P.R. China); Yong Yin (Shandong Tumor Hospital, P.R. China); Tong Bai (Shandong Tumor Hospital, P.R. China)

Dosimetrical aspect of CT simulation role in radiation therapy planning

Seied Rabi Mahdavi (Iran University of Medical Sciences, Iran)

Development of IMRT Treatment Planning System

Jeong-Hoon Park (The Catholic University of Korea, Korea); Woong Cho (The Catholic University of Korea, Korea); Kwang-Ho Cheong (Hallym University Sacred Heart Hospital, Korea); Won-Gyun Jung (Catholic University of Korea, Korea); Tae-Suk Suh (The Catholic University of Korea, Korea)

Comparison of IMRT and photon-electron-mix technique in radiotherapy treatment planning of ablatio mammae

Karin Weidner (University-Hospital of Regensburg, Germany)

Comparison of IMRT and photon-electron-mix technique in radiotherapy planning of ablatio mammae

Karin Weidner (University-Hospital of Regensburg, Germany); Ludwig Bogner (University of Regensburg, Germany)

Neutron Therapy at the FRMII - Calculation of Dose inside a Voxel Phantom

Sylvia Garny (Helmholtz Zentrum München, Germany); Werner Rühm (Helmholtz Zentrum München, Germany); Franz Wagner (Technische

Universität München, Germany); Herwig Paretzke (Helmholtz Zentrum München, Germany)

Imaging motion with a 4-row CT scanner (GE Light Speed RT)

Christine Kornhuber (Martin-Luther University Halle-Wittenberg, Germany); Anne Mehnert (Martin-Luther University Halle-Wittenberg, Germany); Dirk Vordermark (Martin-Luther University Halle-Wittenberg, Germany)

E-IMRT: a web platform for the verification and optimization of radiation treatment plans.

Javier Pena (Universidad de Santiago de Compostela, Spain); Diego González-Castaño (Universidad de Santiago de Compostela, Spain); Faustino Gómez (Universidad de Santiago de Compostela, Spain); Araceli Gago-Arias (Universidad de Santiago de Compostela, Spain); Francisco González-Castaño (Universidad de Vigo, Spain); Daniel Rodríguez-Silva (University Vigo, Spain); David González (Universidad de Vigo, Spain); Andrés Gómez (CESGA, Spain); J. Carlos Mouriño (CESGA, Spain); Miguel Pombar (Hospital Clínico Universitario de Santiago, Santiago de Compostela, Spain); Manuel Sanchez (Hospital Clínico Universitario de Santiago, Santiago de Compostela, Spain); Breixo Portas (Hospital Clínico Universitario de Santiago, Santiago de Compostela, Spain)

Improvement in dose homogeneity in a patient with sinonasal cancer

SoAh Park (Hallym University College of Medicine, Korea); Kang (Hallym Univ, Korea); Kwang-Ho Cheong (Hallym University Sacred Heart Hospital, Korea); Taejin Hwang (Hallym University College of Medicine, Korea); Kyoung-Joo Kim (Hallym University College of Medicine, Korea); Hoonsik Bae (Hallym University Sacred Heart Hospital, Korea)

Dose Evaluation in Medulloblastoma Cancer

Ebrahimi Tazehmahalleh (Carl von Ossietzky University, Germany); Björn Poppe (Carl von Ossietzky University Oldenburg, Germany); Antje Ruehmann (Pius-Hospital Oldenburg, Germany); Jutta Welzel (Pius Hospital, Germany); Wieland Horn (Pius Hospital, Germany); Matthias Raub (Pius Hospital, Germany); Kay Willborn (Pius-Hospital Oldenburg, Germany)

Electron beam dosimetry in heterogeneous phantoms using MAGIC normoxic polymer gel

Bahram Bolouri (Iran University of Medical Sciences, Iran)

Evaluation of 3-D treatment plans using physical and motorised enhanced dynamic wedges

Sathiyam Saminathan (Kidwai Memorial Institute of Oncology, India); Manickam Ravikumar (Kidwai Memorial Institute of Oncology, India)

Integral dose in three-dimensional conformal radiotherapy, intensity-modulated radiotherapy, and helical tomotherapy

Ruijie Yang (Peking University Third Hospital, P.R. China); Shouping Xu (The General Hospital of the Peoples' Liberation Army, P.R. China); Junjie Wang (Peking University Third Hospital, P.R. China)

Simulation Study on Coverage of Tumor Motion Accordance with the Scanning Time in Slow-Scan CT

Chun Joo Park (Ulsan University, Korea); Sung Ho Park (University of Ulsan, Korea); Jungwon Kwak (Asan Medical Center, Korea); Eun Kyung Choi (Asan Medical Center, University of Ulsan, Korea); Jong Hoon Kim (Asan Medical Center, University of Ulsan, Korea); Sang-wook Lee (Asan Medical Center, University of Ulsan, Korea); Si Yeol Song (Asan Medical Center, University of Ulsan, Korea); Sang Min Yoon (Asan Medical Center, University of Ulsan, Korea); Seung Do Ahn (Asan Medical Center, University of Ulsan, Korea)

Comparison of Two different Methods for describing the geometry of a Voxelized Anthropomorphic Phantom in Radiotherapy Treatment Plans

Vicente Abella (Politechnical University of Valencia, Spain); R Miro (Universidad Polit cnica de Val ncia, Spain); Bel n Juste (Polytechnic University of Valencia, Spain)

Dose distribution depending on the number of control points in forward-planned intensity-modulated radiation therapy for breast cancer

Taejin Hwang (Hallym University College of Medicine, Korea); Kang (Hallym Univ, Korea); SoAh Park (Hallym University College of Medicine, Korea); Kwang-Ho Cheong (Hallym University Sacred Heart Hospital, Korea); MeYeon Lee (Hallym University Sacred Heart Hospital, Korea); Kyoung-Joo Kim (Hallym University College of Medicine, Korea); Do-Hoon Oh (Hallym University College of Medicine, Korea); Hoonsik Bae (Hallym University Sacred Heart Hospital, Korea); Tae-Suk Suh (The Catholic University of Korea, Korea)

Design of a protocol for irradiation in decubitus prone position for pendulous breast. Measures of in vivo dosimetry with MOSFET detectors and measures with 2D array

Yulmaris Zambrano (Fisica Medica c.a., Venezuela); Jesus Davila (Radiotherapy Gurve, Venezuela)

eLearning Therapy Planning in Radiation Oncology

Shih-Tsang Tang (Ming Chuan University, Taiwan); Tsung-Chieh Lee (Yuanpei University, Taiwan); Jiun-Hung Lin (Kun Shan University, Taiwan); Chia-Hung Hsiao (Tzu Chi University, Taiwan)

Inductively Coupled Plasma Mass Spectrometry (ICP-MS) and its applications in the study of concentrations and spatial distributions of elements /isotopes in biomedical samples

Anwar Chaudhri (Klinikum-Nuernberg, Germany)

Th. 11: Poster Session: Track 03: Audiology III: Cochlear Implants

Design of an Artificial Cochlea Based on an Array of Resonators

Daniel Dusek (Brno University of Technology, Czech Republic)

Development of Fitting Program for Fully Implantable Middle Ear Hearing Device

Seung Hyun Lee (DGIST, Korea)

Th. 07: Poster Session: Track 03: Bioimpedance

Using an Electrical Bio-Impedance Method to Detect and Evaluate Gastric Motility of Erosive Gastritis Patients

Zhangyong Li (Chongqing University of Posts and Telecommunications, P.R. China); Na Hu (Chongqing University of Posts and Telecommunications, Chongqing, China, P.R. China); Qiming Ran (Chongqing University of Posts and Telecommunications, P.R. China)

A tool for establishing dry weight in hemodialysis patients. All patients?

Joelle Cridlig (University of Medicine, France)

FPGA-Based derivative module for bioimpedance signal

Sofienne Mansouri (Biophysics Research unit (Medical school of Tunis), Tunisia)

Study on Detecting Phase Deviation in Brain MIT System

Wei Zhou (The Fourth Military Medical University, P.R. China)

Modeling of the bioelectrical impedance of blood by synthesis of the equivalent elec-trical circuits

Sergey Akulov (Samara State Aerospace university, Russia); Lev Kalakutskiy (Samara state aerospace university, Russia)

Development of a multi-frequency and dual channel bio-impedance system for respiration monitoring with reduced movement artifacts

Niranjan Khambete (Sree Chitra Tirunal Institute for Medical Sciences and Technology, India)

Analysis and manipulation using EIS for characteristic parameters of biological tissues in vitro

Ji-Jer Huang (Southern Taiwan University, Taiwan)

The pilot study of the assessment of regional ischemia by electric impedance

Jian-Guo Bau (Hungkuang University, Taiwan)

Body Impedance Analysis

Jan Hlubik (Faculty of Electrical Engineering CTU Prague, Czech Republic); Lenka Lhotska (Czech Technical University in Prague, Czech Republic)

Portable 4 wire Bioimpedance Meter with Bluetooth Link

Anton Guimerà (Instituto de Microelectrónica de Barcelona, Spain); Gemma Gabriel (Instituto de Microelectrónica de Barcelona, Spain); Damià Parramon (Instituto de Microelectrónica de Barcelona, Spain);

Enric Calderon (i2m Design, Spain); Rosa Villa (Instituto de Microelectrónica de Barcelona, Spain)

Portable Device for Microelectrode Array Bio-Impedance Measurements

Enric Calderon (i2m Design, Spain); Anton Guimerà (Instituto de Microelectrónica de Barcelona, Spain)

Th. 12: Poster Session: Track 03: Career Development in Biomedical Engineering and Physics

Developed and applications of a novel ceramic-controlled piezoelectric due to an implant of Pt-wire into the body of single disk of BaTiO₃ ceramic

Ernesto Suaste (Cinvestav-IPN, Mexico)

Th. 06: Poster Session: Track 03: Endoscopy and Endoscopic Interventions

Spectroscopic in vitro studies on joint cartilage

Martin Hoffmann (Forschungszentrum für Medizintechnik und Biotechnologie, Germany)

Autofluorescence endoscopy of upper aerodigestive tract malignancies – our experience in 158 patients

Christian Betz (Ludwig Maximilian University Munich, Germany); Thomas Makriniotis (Ludwig Maximilian University Munich, Germany); Herbert Stepp (Ludwig Maximilian University Munich, Germany); Colin Hopper (University College London Hospital, Germany); Andreas Leunig (Ludwig Maximilian University Munich, Germany)

Prospective, diagnostic feasibility study on endoscopic perfusion measurements of free flaps in the head and neck region using Indocyanine Green

Christian Betz (Ludwig Maximilian University Munich, Germany); Sven Zhorzel (Ludwig Maximilian University Munich, Germany); Herbert Stepp (Ludwig Maximilian University Munich, Germany); Hilmar Schachenmayr (Ludwig Maximilian University Munich, Germany); Colin Hopper (University College London Hospital, Germany); Uli Harréus (Ludwig Maximilian University Munich, Germany)

Development of a New Vascular Endoscopic System for Observing Inner Wall of Aorta Using Intermittent Saline Jet

Shinobu Tanaka (Kanazawa University, Japan); Kazuya Tokugi (Kanazawa University, Japan); Mitsuhiro Ogawa (yu.sys Corp., Japan); Kosuke Motoi (Graduate School of Natural Science and Technology, Kanazawa University, Japan); Masamichi Nogawa (Kanazawa University, Japan); Hiroshi Ohtake (Kanazawa University, Japan); Go Watanabe (Kanazawa University, Japan); Ken-ichi Yamakoshi (Kanazawa University, Japan)

Endoscope system with plasma flushing and separator for off-pump cardiac surgery

Tetsuya Horiuchi (Graduate School of Information Science and Technology, The University of Tokyo, Japan); Ken Masamune (The University of Tokyo, Japan); Hiromasa Yamashita (The University of Tokyo, Japan); Hiroyuki Tsukihara (The University of Tokyo, Japan); Shinichi Takamoto (The University of Tokyo, Japan); Takeyoshi Dohi (The University of Tokyo, Japan)

Th. 02: Poster Session: Track 03: Magnetic Resonance Tomography

Manual Segmentation of Brain Tissue and Multiple Sclerosis Lesions for Texture Analysis

Lara Harrison (University of Tampere, Finland); Prasun Dastidar (Tampere University Hospital, Finland); Kirsi Holli (Tampere University of Technology, Finland); Sami Savio (Tampere University of Technology, Finland); Antti Autere (University of Tampere, Finland); Antti Oinonen (University of Tampere, Finland); Virpi Pylkki (University of Tampere, Finland); Seppo Soimakallio (Tampere University Hospital, Finland); Hannu Eskola (Technical University of Tampere, Finland)

Effect of visual image features on neural activities: An fMRI study

Kazuo Kato (Tohoku Gakuin University, Japan); Osamu Miura (Tohoku Gakuin University, Japan); Arimitsu Shikoda (Tohoku Gakuin University, Japan); Ken Sugawara (Tohoku Gakuin University, Japan); Tomohiro Kuroki (Takenaka Corporation, Japan); Atsuo Ishikawa (Takenaka Corporation, Japan); Tetsuo Kobayashi (Kyoto University, Japan)

Computerized method for classification between dementia with Lewy bodies and Alzheimer's disease by use of texture analysis on brain MRI

Naoki Kodama (Takasaki University of Health and Welfare, Japan); Yasuhiro Kawase (Kawase Neurology Clinic, Japan)

Assessment of Iron Concentration by Direct Saturation Imaging (DSI) in a Two-Pool Model of Brain Tissue

Christian Langkammer (Medical University of Graz, Austria); Thomas Seifert-Held (Medical University of Graz, Austria); Michaela Soellinger (Medical University of Graz, Austria); Christian Enzinger (Medical University of Graz, Austria); Franz Fazekas (Medical University of Graz, Austria); Rudolf Stollberger (Graz University of Technology, Austria); Stefan Ropele (Medical University of Graz, Austria)

Diffusion-weighted MR imaging of advanced hepatocellular carcinoma treated with the oral multikinase inhibitor Sorafenib

Christina Schraml (University Hospital Tuebingen, Germany); Nina Schwenzer (University Hospital of Tuebingen, Germany); Petros Martirosian (University Hospital of Tuebingen, Germany); Fritz Schick (Eberhard-Karls-University of Tübingen, Germany); Hansjörg Rempff (Eberhard-Karls-University of Tübingen, Germany); Michael Bitzer (University Hospital of Tuebingen, Germany); Claus Claussen (Eberhard-Karls-University of Tübingen, Germany); Marius Horger (University Hospital of Tuebingen, Germany)

Proton Magnetic Resonance Spectroscopy at 3T – Evaluation of Metabolic Profile of Human Brain Lesions

Evanthia Kousi (University of Thessaly, Greece); Ioannis Tsougos (University of Thessaly, Greece); Kapsalaki Eftychia (University of Thessaly, Greece); Constantin Kappas (University of Thessaly, Greece); Kiki Theodorou (University of Thessaly, Greece)

Fiber Architecture Mapping of the Renal Medulla Using Respiratory Triggered Diffusion Tensor Imaging at 3 Tesla

Petros Martirosian (University Hospital of Tuebingen, Germany); Christina Schraml (University Hospital Tuebingen, Germany); Nina Schwenzer (University Hospital of Tuebingen, Germany); Günter Steidle (University Hospital of Tübingen, Germany); Cristina Rossi (University Hospital of Tübingen, Germany); Andreas Boss (Eberhard-Karls-University of Tübingen, Germany); Vinod Kumar (University Hospital of Tübingen, Germany); Michael Erb (Section Experimental MR of the CNS, Germany); Uwe Klose (University Hospital of Tuebingen, Germany); Thorsten Feiweier (Siemens Healthcare, Germany); Claus Claussen (Eberhard-Karls-University of Tübingen, Germany); Fritz Schick (Eberhard-Karls-University of Tübingen, Germany)

A semi-automatic method for SWI processing

Nicola Martini (University of Pisa, Italy); Luca Nocetti (University Hospital of Modena "Policlinico", Italy); Maria Filomena Santarelli (CNR - Institute of Clinical Physiology, Italy); Claudio Danielli (University Hospital of Modena "Policlinico", Italy); Luigi Landini (University of Pisa, Italy); Dante Chiappino ("G. Monasterio" Foundation, Italy)

Optimization of Combination of Voxel Size and Flip Angle by Visual Evaluation for Renal Magnetic Resonance Angiography without a Contrast Agent

Katsuhiko Kida (Japanese Red Cross Okayama Hospital, Japan); Sachiko Goto (Okayama University, Japan); Yoshiharu Azuma (Okayama University, Japan)

Non-invasive monitoring of cortical volume alterations in rat brains using a clinical 3T whole body MRI scanner

Karl-Heinz Herrmann (Jena University Hospital, Germany); Silvio Schmidt (Jena University Hospital, Germany); Martin Metzler (Jena University Hospital, Germany); Christian Gaser (Jena University Hospital, Germany); Otto Witte (Department of Neurology, Friedrich Schiller University, Jena, Germany); Jürgen Reichenbach (Jena University Hospital, Germany)

Optimizing dynamic breast MRI by utilizing the injection delay for fast scanning

Karl-Heinz Herrmann (Jena University Hospital, Germany); Pascal Baltzer (Jena University Hospital, Germany); Ines Krumbein (Jena University Hospital, Germany); Werner Kaiser (FSU Jena, Germany); Christian Geppert (Siemens AG, Germany); Jürgen Reichenbach (Jena University Hospital, Germany)

Absolute quantitation of brain metabolites with respect to the CSF fraction in 1H-MR spectroscopic volumes

Alexander Gussew (Jena University Hospital, Germany); Marco Erdtel (Jena University Hospital, Germany); Reinhard Rzanny (Jena University Hospital, Germany); Jürgen Reichenbach (Jena University Hospital, Germany)

In vivo 1H-MRS of the rat brain with a clinical 3 T whole-body MR scanner: Estimation of absolute metabolic concentrations and T2 values

Alexander Gussew (Jena University Hospital, Germany); Reinhard Rzanny (Jena University Hospital, Germany); Karl-Heinz Herrmann (Jena University Hospital, Germany); Silvio Schmidt (Jena University Hospital, Germany); Otto Witte (Department of Neurology, Friedrich Schiller University, Jena, Germany); Jürgen Reichenbach (Jena University Hospital, Germany)

Development of a Polarizer and Biocompatible Polarizing Agents for Use in Dynamic Nuclear Polarization (DNP)-Enhanced NMR and MRI

Dariusz Hinderberger (Max-Planck-Institut für Polymerforschung, Germany); Kerstin Muennemann (Johannes Gutenberg University Medical Center, Germany); Hans Spiess (Max Planck Institute for Polymer Research, Germany); Laura Schreiber (Johannes Gutenberg University Medical Center, Germany); Christian Bauer (Max-Planck-Institut für Polymerforschung, Germany); Björn Dollmann (Max-Planck-Institut für Polymerforschung, Germany); Lasse Jagschies (Max-Planck-Institut für Polymerforschung, Germany); Andrej Kleschyov (Institute of Pharmacology, Johannes Gutenberg University Mainz, Germany, Germany)

Evaluation strategies for determination of left ventricular indices: Pros and Cons of model vs. non-model based quantification software

Hermann Körperich (Heart and Diabetes Center NRW, Germany); Jan Körfer (Heart and Diabetes Center Northrhine-Westfalia, Germany); Peter Barth (Heart and Diabetes Center Northrhine-Westfalia, Germany); Wolfgang Burchert (Heart and Diabetes Center Northrhine-Westfalia, Germany); Kai Laser (Heart and Diabetes Center Northrhine-Westfalia, Germany)

Quantification of Myocardial Blood Flow Using Magnetic Resonance Imaging with Different accelerated Pulse Sequences

Stefan Weber (Johannes Gutenberg University Medical Center, Germany); Karl-Friedrich Kreitner (Johannes Gutenberg University Medical Center, Germany); Laura Schreiber (Johannes Gutenberg University Medical Center, Germany)

Methodological issues on the estimation of the MRI-induced SAR in tissues in contact with implanted thin metallic structures

Eugenio Mattei (Dept. Technology and Health, ISS, Italy); Giovanni Calcagnini (dept. technology and Health, ISS, Italy); Federica Censi (Dept. Technologies and Health, Italy); Michele Triventi (Dept. Technology and Health, ISS, Italy); Pietro Bartolini (Dept. Technology and Health, ISS, Italy)

Diffusion Weighted ZOOM Imaging in the Lumbar Spine Based on Single-Shot STEAM

Patrick Hiepe (Jena University Hospital, Germany); Christian Ros (Jena University Hospital, Germany); Jürgen Reichenbach (Jena University Hospital, Germany); Karl-Heinz Herrmann (Jena University Hospital, Germany)

Quantification of uterine peristalsis in cine-MR images by block matching and optical flow

Thet Htar Nwe (University of Lübeck, Germany); Alexandru Condurache (University of Luebeck, Germany); Martin Simon (University Medical Center Schleswig-Holstein, Germany); Alfred Mertins (Institute for Signal and Image Processing, University of Luebeck, Germany); Ulrich Hofmann (University of Luebeck, Germany)

Gradient coil design method for handy MRI

Takeshi Hirasawa (Nagaoka University of Technology, Japan); Yasutoshi Ishihara (Nagaoka University of Technology, Japan)

Network Analysis for Investigating Functional Connectivity in Major Depression Disorder: A Functional Magnetic Images (fMRI) Study

Shin Teng (National Yang-Ming University, Taiwan); Po-Shan Wang (Taipei Municipal Gan-Dau Hospital, Taiwan); Yuan-Lin Liao (National Cheng-Kung University, Taiwan); Tzu-Chen Yeh (Veterans General Hospital, Taiwan); Jen-Chuen Hsieh (National Yang-Ming University, Taiwan); Yu-Te Wu (National Yang-Ming University, Taiwan)

Hemodynamics Segregation Using Expectation-Maximization Algorithm Initialized by Hierarchical Clustering on MR Dynamic Images from Patients with Unilateral Internal Carotid Artery Stenosis

Yu-Te Wu (National Yang-Ming University, Taiwan); Chia-Feng Lu (National Yang-Ming University, Taiwan); Shang-Ran Huang (National Yang-Ming University, Taiwan); Feng-Chi Chang (Veterans General Hospital, Taiwan); Wan-Yuo Guo (Veterans General Hospital, Taiwan)

Quantifying Brain Atrophy of Multiple System Atrophy of the Cerebellar Type (MSA-C) Using Fractal Dimension Analysis

Zun-Yun Wang (National Yang-Ming University, Taiwan); Bing-Wen Soong (National Yang-Ming University, Taiwan); Po-Shan Wang (Taipei Municipal Gan-Dau Hospital, Taiwan); Chii-Wen Jao (Chin Min Institute of Technology, Taiwan); Kuo-Kai Shyu (National Central University, Taiwan); Yu-Te Wu (National Yang-Ming University, Taiwan)

Limits of Accuracy in Assessing Vessel Permeabilities Using Permeability-Surface(PS)-Limited Two-Compartment Models

Guido Correia Carreira (Charité, Germany); Dirk Beyersdorff (Charité, Germany); Matthias Taupitz (Charité, Germany); Lutz Lüdemann (Charité, Germany)

A New Fast Magnetic Resonance Imaging Using Quadratic Phase Scrambling

Satoshi Ito (Utsunomiya University, Japan); Yoshifumi Yamada (Utsunomiya University, Japan)

Diffusion weighted Magnetic Resonance Imaging of the Human Kidney: “Best Regression” for the Determination of Diffusion Constants

Hans-Jörg Wittsack (University Hospital Düsseldorf, Germany); Rotem Lanzman (University Hospital Düsseldorf, Germany); Ulrich Mödder (University Hospital Düsseldorf, Germany); Dirk Blondin (University Hospital Düsseldorf, Germany)

Resolving temporal differences of hemodynamic response with event-related spin-echo BOLD fMRI at 3T: Comparing to gradient-echo BOLD

Mei-Yu Yeh (Chang Gung University, Taiwan)

Resolving anisotropic microstructures and connectivity by means of diffusion weighted MR imaging: towards clinical applicability

Claus Kiefer (University Hospital of Bern, Switzerland); Christoph Ozdoba (University Hospital of Bern, Switzerland); Marwan El-Koussy (University Hospital of Bern, Switzerland)

The availability of diffusion-weighted imaging with the fluid-attenuated inversion recovery method (FLAIR-DWI) with a low-performance MR unit in chronic ischemia disease

Akihiko Tabuchi (Okayama University, Japan); Toshizo Katsuda (Himeji Dokkyo University, Japan); Rumi Gotanda (Ibaraki Prefectural University of Health Sciences, Japan); Tatsuhiro Gotanda (Okayama University, Japan); Kenyu Yamamoto (Okayama University, Japan); Masahiko Mitani (Kawasaki Medical School, Kawasaki Hospital, Japan); Yoshihiro Takeda (Okayama University, Japan)

Th. 08: Poster Session: Track 03: Nanobiosensors

Iron oxide nanoparticles conjugated with trastuzumab as an immunospecific probe for detecting HER2 antigen

Samira Rasaneh (Tarbiat Modares University, Iran); Hossein Rajabi (Tarbiat Modarres University, Iran); Hossein Babaei (Atomic Energy Organization of Iran, Iran)

Miniaturized ATP biosensors: Towards the measurements of ATP release from H441 cells upon mechanical stimulation

Elena Hecht (University of Ulm, Germany); Oliver Wittekindt (University of Ulm, Germany); Shariq Usmani (University of Ulm, Germany); Paul Dietl (University of Ulm, Germany); Boris Mizaikoff (University of Ulm, Germany); Christine Kranz (University of Ulm, Germany)

Chemical Modification of Surfaces for Biochemical and Medical Sensor Applications

Carolina Ayala (Universität Freiburg, Germany)

Interfacing metallic ohmic contacts in biocompatible ceramic substrates with diamond surfaces for biosensing applications

Miguel Neto (University of Aveiro, Portugal); Eduardo Silva (University of Aveiro, Portugal); António Fernandes (University of Aveiro, Portugal); Filipe Oliveira (University of Aveiro, Portugal); Rui Silva (University of Aveiro, Portugal)

Determination of Tannic Acid Precipitated with Bovine Serum Albumin by Visible Light Scattering by a Flow-injection System

Tzong-Jih Cheng (National Taiwan University, Taiwan)

Th. 01: Poster Session: Track 03: Optimization in Treatment Planning

Conformity of brain lesions treated with radiosurgery and fractionated stereotactic radiotherapy

Maria do Carmo Lopes (Instituto Portugues de Oncologia de Coimbra, Portugal); Miguel Capela (Instituto Portugues de Oncologia de Coimbra, Portugal); Brigida Ferreira (I3N, Universidade de Aveiro, Portugal); Tiago Ventura (Instituto Portugues de Oncologia de Coimbra, Portugal)

Dosimetric advantages of Stereotactic IMRT of brain lesions delivered with a micro-multileaf collimator

Brigida Ferreira (I3N, Universidade de Aveiro, Portugal); Maria do Carmo Lopes (Instituto Portugues de Oncologia de Coimbra, Portugal); Miguel Capela (Instituto Portugues de Oncologia de Coimbra, Portugal)

The investigation of dosimetric reduction on organs at risk in nasopharyngeal carcinoma for static IMRT planning

Jian Zhu (Shandong Tumor Hospital, P.R. China); Min Liu (ShanDong Tumor Hospital, P.R. China); Yong Yin (Shandong Tumor Hospital, P.R. China)

Sparing of critical organs in radiotherapy of mediastinal lymphoma

Severin Kampfer (Klinikum rechts der Isar, Germany); Sabine Schill (Klinikum rechts der Isar, Germany)

How regular motion pattern and patient individual respiration curves affect contour and volume of geometric structures in a 4D CT

Andreas Block (Klinikum Dortmund, Germany)

Simplified Geometrical Model for Treatment Margins Evaluation in Brain Radiosurgery

Paola Ballesteros-Zebadúa (Instituto Nacional de Neurología y Neurocirugía, Mexico); Jose Lárraga-Gutierrez (Instituto Nacional de Neurología y Neurocirugía, Mexico); Olivia Garcia Garduño (Instituto Nacional de Neurología y Neurocirugía, Mexico); Axayacalt Gutierrez (Instituto Nacional de Neurología y Neurocirugía, Mexico); Sergio Moreno-Jiménez (Instituto Nacional de Neurología y Neurocirugía, Mexico); Miguel Celis (Instituto Nacional de Neurología y Neurocirugía, Mexico)

Single & Multibeam Dose Distribution for Treatment Planning of Cancer

Muhammad Afzal (The Islamia University of Bahawalpur, Pakistan., Pakistan); Rukhsana Jabeen (The Islamia University of Bahawalpur, Pakistan., Pakistan)

F-MRI: a method to assess therapy-induced cognitive impairment?"

Brigitte Walter (LMU Munich, Germany)

On the use of a light ion kernel for biological optimized adaptive inverse treatment planning

Johanna Kempe (Divison of Medical Radiation Physics, Karolinska Institutet, Stockholm, Sweden, Sweden)

Sequential Optimization Scripts to Facilitate Treatment Planning for Robotic Radiosurgery Clinical Studies for Prostate and Lung Cancers

Etienne Lessard (Accuray Inc., USA); Warren Kilby (Accuray Inc., USA); John Dooley (Accuray Inc., USA); Colin Sims (Accuray Inc., USA); Alexander Schlaefer (University of Luebeck, Germany); Oliver Blanck (University of Luebeck, Germany); Calvin Maurer (Accuray Incorporated, USA)

Th. 03: Poster Session: Track 03: Patient Exposures and Reference Levels in Diagnostic Imaging

Iranian doctor's knowledge about received dose by patients in diagnostic radiology

Karim Ghazi-khanlou Sani (Hamadan University of Medical Sciences, Iran, Iran)

Patient dosimetry and image quality in conventional diagnostic radiology: a practical optimization experience from a Serbian hospital

Olivera Ciraj-Bjelac (Vinca Institute f Nuclear Sciences, Yugoslavia (defunct)); Danijela Arandjic (Vinca Institute f Nuclear Sciences, Yugoslavia (defunct)); Dusko Kosutic (Vinca Institute f Nuclear Sciences, Yugoslavia (defunct)); Milojko Kovacevic (Vinca Institute f Nuclear Sciences, Yugoslavia (defunct))

Radiation Exposure to Critical Organs in Orthopantomography

Bahreyni Toossi (Mashhad university of medical sciences, Iran); Fateme Akbari (Mashhad university of medical sciences, Iran); Shahram Bayani Roudi (Mashhad University of Medical Sciences, Iran); Azam Jafari (Mashhad university of medical sciences, Iran); Malakeh Malekzadeh (Mashhad university of medical sciences, Iran)

A study of maternal and foetal doses arising from V/Q and CTPA scanning during pregnancy

Katy Fleckney (Kent Oncology Centre, United Kingdom); Leah Hunt (Kent Oncology Centre, United Kingdom); Paul Igotus (Maidstone and Tunbridge Wells NHS Trust, United Kingdom)

Doses to patients for computed tomography in Sarajevo

Adnan Beganovic (Clinical Centre of Sarajevo University, Bosnia and Herzegovina); Amra Skopljak-Beganovic (Clinical Centre of Sarajevo University, Bosnia and Herzegovina)

Patient radiation doses during cardiac angiography and implantations of cardiac resynchronization devices. Derivation of local DRLs.

Theofilos Topaltzikis (University of Thessalia, Greece); Nafsika Papageorgiou (University Hospital of Larissa, P.O.Box 1425, Larissa 41110, Hellas, Greece); Ioannis Skoularigis (University of Thessalia, Greece); Fillipos Triposkiadis (University of Thessalia, Greece); Constantin Kappas (University of Thessalia, Greece); Kiki Theodorou (University of Thessalia, Greece)

Exploring the use of the Tarmed coding system for establishing the annual frequency of medical x-ray examinations in Switzerland

Abbas Aroua (CHUV and University of Lausanne, Switzerland); François Bochud (CHUV and University of Lausanne, Switzerland); Régis Le Coultre (High School of Health of the Vaud Canto, Switzerland); Eleni Samara (CHUV and University of Lausanne, Switzerland); Anja Stuessi (Federal Office of Public Health, Switzerland); Reto Treier (Federal Office of Public Health, Switzerland); Philipp Trueb (Federal Office of Public Health, Switzerland); John-Paul Vader (CHUV and University of Lausanne, Switzerland); Francis Verdun (CHUV and University of Lausanne, Switzerland); Werner Zeller (Federal Office of Public Health, Switzerland)

Paediatric organ and effective doses in dental cone beam computed tomography

Chrysoula Theodorakou (University of Manchester, United Kingdom); Keith Horner (University of Manchester, United Kingdom); Katie Howard (The Christie NHS Foundation trust, United Kingdom); Anne Walker (The Christie NHS Foundation Trust, United Kingdom)

Air kerma-area product in pediatric x-ray examinations of paranasal sinuses: an indirect method of assessment

Marco Aurelio Lacerda (CNEN, Brazil); Teogenes Da Silva (CNEN - Brazilian Commission of Nuclear Energy, Brazil); Helen Jamil Khoury (Universidade Federal de Pernambuco, Brazil)

Validation of a MC code to assess patient doses from cone beam CT in dentistry

Juan Jose Morant (Universitat Rovira i Virgili, Spain)

Average glandular doses in digital mammography from patient samples and PMMA phantoms

Pilar Morán (Universidad Complutense de Madrid, Spain); Margarita Chevalier (Universidad Complutense, Spain)

Database MAMOLIT for mammography screening patients in Lithuania

Diana Adliene (Kaunas University of Technology, Lithuania); Marius Laurikaitis (Kaunas Medical University, Lithuania); Jurgita Laurikaitiene (Kaunas University of Technology, Lithuania); Inga Cibulskaitė (Kaunas University of Technology, Lithuania)

University of Technology, Lithuania); Ausra Urboniene (Radiation Protection Centre, Lithuania)

Patient individual equivalent dose calculations for CT examinations

Ralph Schmidt (University of Applied Sciences Giessen-Friedberg, Germany); Jörg Wulff (University of Applied Sciences Giessen-Friedberg, Germany); Björn Kästner (University of Marburg, Germany); David Jany (University of Applied Sciences Giessen-Friedberg, Germany); Johannes Heverhagen (University of Marburg, Germany); Martin Fiebich (University of Applied Sciences Giessen-Friedberg, Germany); Klemens Zink (University of Applied Sciences Gießen, Germany)

Quality and Radiation Doses in Mammograms: Brazil Sampling Data

Regina Medeiros (Federal University of São Paulo, Brazil); Hugo Schelin (Federal University of Technology - Parana, Brazil); Tania Furquim (Universidade de São Paulo, Brazil); Paulo Costa (University of Sao Paulo, Brazil); Simone Dias (CNEN, Brazil); Izabela Brasileiro (Universidade Federal de Pernambuco, Brazil); Maria Nogueira Tavares (Comissão Nacional de Energia Nuclear/CDTN, Brazil); Kodlulovich SImone (Instituto de Radioproteção e Dosimetria-CNEN, Brazil); Fernando Mecca (Instituto Nacional do Cancer, Brazil); Teogenes Da Silva (CNEN - Brazilian Commission of Nuclear Energy, Brazil); Helen Jamil Khoury (Universidade Federal de Pernambuco, Brazil); Eutropio Vieira (Centro Federal de Educação Tecnológica-CEFET– Piauí, Brazil, Brazil)

Patient dose versus image quality in digital mammography at Instituto Português de Oncologia de Coimbra (IPOC) – Portugal

Agnes Fausto (Universidade Estadual de Santa Cruz, Brazil); Ana Roda (Instituto Português de Oncologia de Coimbra Francisco Gentil, Portugal); Maria do Carmo Lopes (Instituto Portugues de Oncologia de Coimbra, Portugal); Sabina Neves (Instituto Portugues de Oncologia de Coimbra, Portugal); Sara Pereira (Instituto Portugues de Oncologia de Coimbra, Portugal); Maria Carmen de Sousa (Instituto Portugues de Oncologia de Coimbra, Portugal); Helen Jamil Khoury (Universidade Federal de Pernambuco, Brazil)

Uranium and radon in the Italian Western Alps

Luca Gentile (Helth local agency" ASL CN1, Italy)

Investigation of Image Quality and Patient Doses in X-ray diagnostic Radiology in Zimbabwe

Godfrey Mukwada (IOMP, Bahamas); Virginia Tsapaki (Konstantopoulio Hospital, Greece); Madan Rehani (I.A.E.A., Austria); Walter Nyakodzwe (Parirenyatwa Group of Hospitals, Zimbabwe)

Th. 04: Poster Session: Track 03: Virtual Reality in Medicine

Induction of Auditory Hallucination Experience for Patient with Schizophrenia Using Virtual Auditory Hallucination Exposure System: A Preliminary Study

Young Seok Shin (Hanyang University, Korea); Jeonghun Ku (Hanyang University, Korea); Kiwan Han (Hanyang University, Korea); Hyeongrae Lee (Hanyang University, Korea); Jinsick Park (Hanyang University, Korea); In Young Kim (Hanyang University, Korea); Jae-Jin Kim (Yonsei University Severance Mental Health Hospital, Korea); Seon-Il Kim (Hanyang University, Korea)

FIVIS – A Bicycle Simulation System

Rainer Herpers (Bonn-Rhein-Sieg University of Applied Sciences, Germany); David Scherfgen (Bonn-Rhein-Sieg University of Applied Sciences, Germany); Michael Kutz (Bonn-Rhein-Sieg University of Applied Sciences, Germany); Ulrich Hartmann (Koblenz University of Applied Sciences, Germany); Oliver Schulzyk (Koblenz University of Applied Sciences, Germany); Dietmar Reinert (German Social Accident Insurance (DGUV), Germany); Holger Steiner (Bonn-Rhein-Sieg University of Applied Sciences, Germany)

Th. 09: Poster Session : Track 03: Vision Prostheses*

Spatiotemporal pixelization method based on vertical sub-sampling to improve reading ability for visual prosthesis

Hyun Seok Kim (Seoul National University, Korea); Jae Hyuk Shin (Seoul National University, Korea); Kwang-Suk Park (Seoul National University, Korea)

Th. 03: Poster Session: Track 04: Biological Effects of Ionizing Radiation – Low Level and Imaging

Genotoxicity effects of ^{99m}Tc -MIBI in human peripheral blood lymphocytes

Seyed Jalal Hosseinimehr (Mazandaran University of Medical Sciences, Iran); Amirhossein Ahmadi (Faculty of Pharmacy, Mazandaran University of Medical Sciences, Sari, Iran); Davood Beiki (Research Institute for Nuclear Medicine, Tehran, Iran); Aziz Mahmoudzadeh (Novin Medical Radiation Institute, Tehran, Iran, Iran); Mohammad Babei (Tehran, Iran); Emran Habibi (Mazandaran University of Medical Sciences, Iran)

Evaluation of the radiological risk for premenopausal women in a breast cancer early detection program

Ricardo Tortosa (La Fe University Hospital, Valencia, Spain, Spain)

Comparison of dose distribution of ionizing radiation in a water phantom with frequency of cytogenetic damage in a human bronchial cells

Maria Konopacka (Comprehensive Cancer Centre, Maria Skłodowska-Curie Memorial Institute, Poland); Jacek Rogoliński (Comprehensive Cancer Centre, Maria Skłodowska-Curie Memorial Institute, Poland); Krzysztof Ślosarek (Comprehensive Cancer Centre, Maria Skłodowska-Curie Memorial Institute, Poland)

Scattering medium depth and cell monolayer positioning with respect to beam field affect cell viability

Jacek Rogoliński (Comprehensive Cancer Centre, Maria Skłodowska-Curie Memorial Institute, Poland); Maria Konopacka (Comprehensive Cancer Centre, Maria Skłodowska-Curie Memorial Institute, Poland); Aleksander Sochanik (Comprehensive Cancer Centre, Maria Skłodowska-Curie Memorial Institute, Poland); Krzysztof Ślosarek (Comprehensive Cancer Centre, Maria Skłodowska-Curie Memorial Institute, Poland)

Th. 04: Poster Session: Track 04: Biosignal Processing

Functional correlates of fractal behavior of HRV in COPD patients

Gianni D'Addio (S.Maugeri Foundation, Italy); Agostino Accardo (University of Trieste, Italy); GraziaMaria Corbi (University of Molise, Italy); Nicola Ferrara (University of Molise, Italy); Franco Rengo (University Federico II of Naples, Italy)

Application of RBF neural networks for predicting low birth weight using features extracted from fetal monitoring signals

Michał Jezewski (Silesian University of Technology, Poland)

Spatio-Temporal Filtering for Fetal QRS Enhancement

Janusz Jezewski (Institute of Medical Technology and Equipment ITAM, Poland)

Influence of the set size and probe item affiliation in the Sternberg memory task on auditory event-related potentials

Magdalena Krbot (University of Zagreb, Croatia); Ana Branka Sefer (University of Zagreb, Croatia); Velimir Isgum (University Hospital Rebro, Croatia); Mario Cifrek (University of Zagreb, Croatia)

An Empirical Methodology for the Definition of Frequency Bands for Spectral Analysis of Heart Rate Variability in Animals: Application to Sprague-Dawley Rats

Miguel Ángel García-González (Technical University of Catalonia (UPC), Spain); Mireya Fernández-Chimeno (Technical University of Catalonia (UPC), Spain); Rosa Maria Escorihuela (Autonomous University of Barcelona, Spain); Lluís Capdevila (Autonomous University of Barcelona, Spain); Juan Ramos-Castro (Technical University of Catalonia (UPC), Spain)

Monitoring training-induced metabolic adaptations in the M. gastrocnemius of volleyball players by 31P-MRS

Reinhard Rzanny (Jena University Hospital, Germany); Norman Stutzig (FSU Jena, Germany); Alexander Gussev (Jena University Hospital, Germany); Hartmut Burmeister (Jena University Hospital, Germany); Werner Kaiser (FSU Jena, Germany); Hans-Alexander Thorhauer (FSU Jena, Germany); Jürgen Reichenbach (Jena University Hospital, Germany)

Evaluation of Benchmark Indexes to Determine the Best Performance of a Binary Neural Classifier

Miguel Sovierzoski (Federal University of Technology - Parana, Brazil); Leandro Schwarz (CEFET-SC, Brazil); Fernando Azevedo (Federal University of Santa Catarina, Brazil)

Sleep Stage Diagnosis using Neural Network of Elman-type Feedback SOM

Takamasa Shimada (Tokyo Denki University, Japan)

Labeling GLUT4 with quantum dots for 3D tracking in live L6 cells

Feng Qu (Huazhong University of Science and Technology, P.R. China); Xiaoxuan Wang (Huazhong University of Science and Technology, P.R. China); Zubin Chen (Huazhong University of Science and Technology, P.R. China); Tao Liang (Huazhong University of Science and Technology, P.R. China); Anlian Qu (Huazhong University of Science and Technology, P.R. China)

Sequential Recognition of EMG Signals Using Bayes-Optimal Feature Extraction – Application to the Control of Bio-Prosthetic Hand

Marek Kurzynski (Wroclaw University of Technology, Poland)

A Study on EEG based Concentration Power Index Transmission and Brain Computer Interface Application

Chung-heon Lee (Tong-Myong, Korea); Dong-hoon Lee (TongMyong University, Korea); Jun-eui Hong (TongMyong University, Korea); Jang-Woo Kwon (Tongmyong University of Information Technology, Korea)

Classification of Seizures in EEG Using Wavelet-Chaos Methodology and Genetic Algorithm

Kai-Cheng Hsu (National Chung Cheng University, Taiwan); Sung-Nien Yu (National Chung Cheng University, Taiwan)

Complexity Analysis on 24h Heart Rate Variability

Xia Li (Capital Medical University, China, P.R. China)

Obstructive Sleep Apnea Screening using Nonlinear Characteristics of Overnight Pulse Oximetry Recordings

Eckhard Schmittendorf (Fachhochschule Oldenburg/Ostfriesland/Wilhelmshaven, Germany); Birgit Schultheiß (Fachhochschule Oldenburg/Ostfriesland/Wilhelmshaven, Germany); Markus Goffart (FH Oldenburg/Ostfriesland/Wilhelmshaven, Germany); Nikolaus Böhning (iDoc Institut für med. Fachinformation und Diagnostik, Potsdam, Germany)

Rheocardiography method and ways to increase its accuracy of hemodynamic parameters estimation

Sergey Shchukin (Bauman Moscow State Technical University, Russia); Alexander Kobelev (Bauman Moscow State Technical University, Russia); Oleg Medvedev (Bauman Moscow State Technical University, Russia)

Analysis of heart rate variability dynamics during propofol anesthesia

Mika Tarvainen (University of Kuopio, Finland); Stefanos Georgiadis (University of Kuopio, Finland); Jukka Lipponen (University of Kuopio, Finland); Timo Laitio (Turku University Hospital, Finland); Kimmo Kaskinoro (Turku University Hospital, Finland); Harry Scheinin (Turku PET Centre, Finland); Pasi Karjalainen (University of Kuopio, Finland)

Estimation of T-wave morphology using Gaussian functions

Jukka Lipponen (University of Kuopio, Finland); Mika Tarvainen (University of Kuopio, Finland); Tiina Lyyra-Laitinen (Kuopio University Hospital, Finland); Tomi Laitinen (Kuopio University Hospital, Finland); Pasi Karjalainen (University of Kuopio, Finland)

A transportable camera based motion analysis system with application to monitoring of rehabilitation of hand

Timo Bragge (University of Kuopio, Finland); Marko Hakkarainen (Department of Physics, Finland); Mika Tarvainen (University of Kuopio, Finland); Ina Tarkka (Brain Research and Rehabilitation Center Neuron, Kuopio, Finland); Pasi Karjalainen (University of Kuopio, Finland)

Comparison of software developed for FHR extraction from PCG signals

Mariano Ruffo (University of Naples "Federico II", Italy); Maria Romano (University of Naples "Federico II", Italy); Mario Cesarelli (University of Naples "Federico II", Italy); Paolo Bifulco ("Federico II" University of Naples, Italy); Antonio Fratini (University of Naples "Federico II", Italy); Giulio Pasquariello (University of Naples "Federico II", Italy); Mariano Iaccarino (Gynecology private practice "Iaccarino", Italy); Stefania Iaccarino (Gynecology private practice "Iaccarino", Italy)

Principal component approach for mapping functional connectivity in event-related fMRI

Eini Niskanen (University of Kuopio, Finland); Mika Tarvainen (University of Kuopio, Finland); Juha-Pekka Niskanen (University of Kuopio, Finland); Perttu Ranta-aho (University of Kuopio, Finland); Mervi Könönen (Kuopio University Hospital, Finland); Soininen Hilikka (Kuopio University Hospital, Finland); Pasi Karjalainen (University of Kuopio, Finland)

Empirical Mode Decomposition (EMD) – Based Spatiotemporal Approach for Single-Trial Extraction of Post-Movement MEG Beta Synchronization

Po-Lei Lee (National Central University, Taiwan)

Implementation of EMD Algorithm for ECG Noise Reduction

Kao-Kai Shyu (National Central University, Taiwan); Po-Lei Lee (National Central University, Taiwan)

Gradient Artifact Removal in Co-registration EEG/fMRI

Elisa Sartori (University of Padova, Italy); Emanuela Formaggio (University of Verona, University of Padova, Italy); Silvia Storti (University of Verona, Italy); Alessandra Bertoldo (University of Padova, Italy); Paolo Manganotti (University of Verona, Italy); Antonio

Fiaschi (University of Verona, Italy); Gianna Maria Toffolo (University of Padova, Italy)

A New Trunk Subdivision Model for Segmental Bioelectrical Impedance Analysis

Shu Zhao (Institute of Biomedical Engineering, P.R. China); Hong Sha (Institute of Biomedical Engineering, P.R. China)

A Method for Robustly Determining the Relative Orientation of Vectorcardiographic Loop Structures

Kai Noponen (University of Oulu, Finland); Mari Karsikas (University of Oulu, Finland); Tapio Seppänen (University of Oulu, Finland)

Detection of K-complex in the EEG signal

Michal Gála (VSB - Technical University of Ostrava, Czech Republic); Jitka Mohylová (VSB-Technical University of Ostrava, Ostrava, Czech Republic, Czech Republic)

Phase-space Reconstruction of Electrocardiogram for Heartbeat Classification

Hsiao-Lung Chan (Chang Gung University, Taiwan); Pei-Kuang Chao (Chang Gung University, Taiwan)

Trends on wavelet-based functional MRI for activation detection

Yodchanan Wongsawat (Mahidol University, Thailand)

An Intelligent Classifier for Heart Health– Based on Radial Myocardial Strain and Electrocardiogram

Pei-Kuang Chao (Chang Gung University, Taiwan); Hsiao-Lung Chan (Chang Gung University, Taiwan)

Classification of pathological human brain lesions using Magnetic Resonance Spectroscopy at 3T.

Ioannis Dimou (Technical University of Crete, Greece); Ioannis Tsougos (University of Thessaly, Greece); Evaggelia Tsolaki (University of Thessaly, Greece); Kiki Theodorou (University of Thessalia, Greece)

Coherence analysis of frontal midline theta rhythm in EEG during 3-D maze task

Keta Tanaka (Tokyo Denki University, Japan); Yasuaki Uehara (Tokyo Denki University, Japan); Yoshinori Uchikawa (Tokyo Denki University, Japan)

Methodology for Automatic Classification of Adventitious Lung Sounds

Rodrigo Riella (Instituto de Tecnologia para o Desenvolvimento, Brazil); Percy Nohama (Universidade Tecnológica Federal do Paraná, Brazil); Joaquim Maia (Universidade Tecnológica Federal do Paraná, Brazil)

Digital Auscultation and Processing of Abdominal Sounds

André Delfini (University of São Paulo, Brazil); Luiz Ernesto Troncon (University of São Paulo, Brazil); Oswaldo Baffa (Universidade de Sao

Paulo, Brazil); Ricardo Oliveira (University of São Paulo, Brazil); Eder Moraes (University of São Paulo, Brazil)

Evaluation of basic techniques for Seizure identification

Marcelo Chulek (Federal University of Technology - Paraná, Brazil)

Triaxial mechanomyography of the biceps brachii muscle during sustained submaximal isometric contractions

Guilherme Nogueira-Neto (State University of Campinas, Brazil); Eduardo Scheeren (Universidade Tecnológica Federal do Paraná, Brazil); Percy Nohama (Universidade Tecnológica Federal do Paraná, Brazil); Vera Button (State University of Campinas, Brazil)

Analysis of the relation between complexity and multifractality in cardiac inter-beat intervals time series

Alejandro Muñoz Diosdado (Instituto Politecnico Nacional de Mexico, Mexico)

Specification and simplified analyzing data from MS/MS spectrometry

Martin Valla (Brno University of Technology, Czech Republic); Martin Plichút (ANF Data, Siemens, Czech Republic); Ivo Provaznik (Brno University of Technology, Czech Republic)

Neural Network as a Tool for Medical Signals Filtering, Diagnosis Aid, Therapy Assistance and Forecasting Improving

Ryszard Tadeusiewicz (AGH University of Science and Technology, Poland)

Comparison between ultrasonic muscle strain and electromyography during an isometric ramp contraction

Gabriel Granåsen (Dep. of Biomedical Engineering & Informatics, Umea University Hospital, Sweden)

Simulation of the effect of conductivity changes due to tumors, ischemia and edema in the human brain on the EEG

Thomas Jochmann (Jena University Hospital, Germany); Daniel Güllmar (Jena University Hospital, Germany); Jens Haueisen (Ilmenau University of Technology, Germany); Jürgen Reichenbach (Jena University Hospital, Germany)

Dynamic Electrical Impedance Tomography Image Reconstruction of Neonate Lung Function based on Linear Kalman Filter techniques

Hussein El Dib (Middlesex University, London, United Kingdom); Andrew Tizzard (Middlesex University, United Kingdom); Bayford Richard (, United Kingdom)

PPG signal processing for pulse delay computing by using adaptive comb filter

Kristjan Pilt (Tallinn University of Technology, Estonia); Kalju Meigas (Tallinn University of Technology, Estonia); Deniss Karai (Tallinn University of Technology, Estonia); Jüri Kaik (Tallinn University of Technology, Estonia)

Global Field Power and Averaging in Measuring Somatosensory Evoked Potentials Under Anesthesia

Atte Joutsen (Tampere University of Technology, Finland); Leo-Pekka Lyytikäinen (Tampere University Hospital, Finland); Olli Pajulo (Tampere University Hospital, Finland); Aira Etelämäki (Tampere University Hospital, Finland); Ville Jäntti (Tampere University Hospital, Finland); Hannu Eskola (Technical University of Tampere, Finland)

An Investigation of Transcranial Magnetic Stimulation Effects in Auditory Attention

Arief Ruhullah Harris (Saarland University Hospital, Germany); Yin Fen Low (Saarland University Hospital, Germany); Karsten Schwerdtfeger (Saarland University Hospital, Germany); Daniel Strauss (HTW Saarland, Germany)

LDA-based Vapor Recognition Using Image-Formed Array Sensor Response for Portable Electronic Nose

Yoonseok Yang (Chonbuk National University, Korea)

Behavior of Linear Ligament Biostructure under Action of Different External Forces of Constant Intensity

Natasa Janjic (Ass. Dr, Faculty of Medicine, Serbia); Milan Stankovic (Doc. dr, Serbia); Dragan Savic (Prof. dr, Serbia); Bratislav Tosic (Prof. dr, Serbia)

Parallel implementation of temporal decorrelation independent component analysis

Tilman Sander-Thoemmes (Physikal.-Technische Bundesanstalt, Germany)

Development of a system for capturing Sleep Predictor Signals during wakefulness

Tsutomu Kamei (European University Viadrina Frankfurt (Oder), Japan); Kohji Murata (Shimane Institute of Health Science, Japan)

Detection of the Third Heart Sound Using Hilbert-Huang Transform

Yi-Li Tseng (Institute of Biomedical Engineering, National Taiwan University, Taiwan); Keng-Sheng Lin (Department of Electrical Engineering, National Taiwan University, Taiwan); Pin-Yu Ko (Department of Electrical Engineering, National Taiwan University, Taiwan); Fu-Shan Jaw (Institute of Biomedical Engineering, National Taiwan University, Taiwan)

Influence by Simultaneous Stimulation of Sound and Electricity for Recalling Experiment

Yoshio Kaji (Tokushima Bunri University, Japan); Kenta Mukai (The University of Tokushima, Japan); Masatake Akutagawa (The University of Tokushima, Japan); Fumio Shichijo (Suzue Hospital, Japan); Yohsuke Kinouchi (The University of Tokushima, Japan); Hirofumi Nagashino (The University of Tokushima, Japan)

Some reasons to build a new laser Doppler flowmeter to monitor microvascular blood flow

Edite Figueiras (Centro de Instrumentação, Portugal); Anne Humeau (Groupe ESAIP, France); Luís Filipe Requicha Ferreira (Centro de Instrumentação, Portugal); Vera Mónica Correia Loureiro (Centro de Instrumentação, Portugal)

Measurement and Evaluation of QT Interval Prolongation Based on Simulated Electrocardiogram Using Continuous Wavelet Transform

Xiaolin Zhou (University of Aizu, Japan); Wei Daming (, Japan)

Cytometric Distributions and Wavelet Spectra of Immunofluorescence Noise in Medical Diagnostics

Nikolay Galich (St.Petersburg State Polytechnical University, Russia)

Assessment of Baroreflex Using Cross-Correlation Function in Diabetic Autonomic Neuropathy

Ben-Yi Liau (Hung Kuang University, Taiwan)

Computationally designed Interleukin-like peptide as a candidate for cancer treatment

Elena Pirogova (RMIT University, Australia)

Improvement of SNR by Equilibrating Power-line Noise Amplitude and Its Application to Capacitive ECG Measurement

Yoshihisa Mikami (Tokyo Denki University, Japan); Akinori Ueno (Tokyo Denki University, Japan)

Bandwidth Extension Method for Capacitive ECG Sensing Using a Two-stage Analog Forward Filter and a Single-stage Digital Inverse Filter

Daisuke Kowada (Tokyo Denki University, Japan)

The EEG Correlates of the Allocentric and the Egocentric Spatial Reference Frames Processing

Michal Vavrecka (Czech Technical University, Czech Republic); Lenka Lhotska (Czech Technical University in Prague, Czech Republic)

Slow Stimulus Artifact Removal through Peak-Valley Detection of Neuronal Signals Recorded from Somatosensory Cortex by High Resolution Brain-Chip Interface

Mufti Mahmud (University of Padova, Italy); Stefano Girardi (University of Padova, Italy); Marta Maschietto (University of Padova, Italy); Mohammed Mostafizur Rahman (University of Padova, Italy); Alessandra Bertoldo (University of Padova, Italy); Stefano Vassanelli (University of Padova, Italy)

Using frequency analysis of vibration for detection of epileptic seizure

Zuzana Vasickova (VSB-Technical University of Ostrava, Czech Republic); Marek Penhaker (VSB-Technical university of Ostrava, Czech Republic); Martin Augustynek (VSB-Technical university of Ostrava, Czech Republic)

Movement related potentials in Parkinson's disease patients and healthy controls

Ana Branka Sefer (University of Zagreb, Croatia); Magdalena Krbot (University of Zagreb, Croatia); Velimir Isgum (University Hospital Rebro, Croatia); Mario Cifrek (University of Zagreb, Croatia)

EEG Evaluation Method Using Nonlinear Modeling

Masatake Akutagawa (The University of Tokushima, Japan); Toshihiro Murata (The University of Tokushima, Japan); Takahiro Emoto (The University of Tokushima, Japan); Yoshio Kaji (Tokushima Bunri University, Japan); Fumio Shichijo (Suzue Hospital, Japan); Hirofumi Nagashino (The University of Tokushima, Japan); Yohsuke Kinouchi (The University of Tokushima, Japan)

ECG beat classification using feature extraction from wavelet packets of QRS complex

Michal Huptych (Czech Technical University in Prague, Czech Republic); Lenka Lhotska (Czech Technical University in Prague, Czech Republic)

Feature Selection Based on Time-Frequency Analysis in SVM classifier with Rules Extraction Stage

Paweł Kostka (Silesian University of Technology, Institute of Electronics, Poland); Ewaryst Tkacz (Silesian University of Technology, Institute of Electronics, Poland)

Development of a Panic Disorder Portable System for Physiological Signal Acquisition, Analysis, and Transmission

Ching-Shuen Chen (University of Ming Chuan, Taiwan); Mu-Hui Sun (University of Ming Chuan, Taiwan); Jiun-Hung Lin (Kun Shan University, Taiwan); Shih-Tsang Tang (Ming Chuan University, Taiwan)

Dimensionality reduction based classification of proton magnetic resonance in vivo spectra from the normal human brain

Agnieszka Polnik (Maria Skłodowska Curie Cancer Center and Institute of Oncology, Poland); Magdalena Wicher (Helimed Diagnostic Imaging, Poland); Tomasz Banasik (Helimed Diagnostic Imaging, Poland); Aleksandra Kiełtyka (Helimed Diagnostic Imaging, Poland); Marek Konopka (Helimed Diagnostic Imaging, Poland); Maria Sokół (Comprehensive Cancer Centre, MSC Memorial Institute, Branch Gliwice, Poland); Ewa Jamroz (Silesian Medical University, Poland); Justyna Paprocka (Silesian Medical University, Poland)

Petri nets in mutual interactions on epilepsy

Abel Kinie (Univrsité de Rennes1, France)

Evaluation of Functional Network Connectivity in Event-related FMRI Data Based on ICA and Time-frequency Granger Causality

Martin Havlicek (Brno University of Technology, Czech Republic); Jiri Jan (Brno University of Technology, Czech Republic); Vince Calhoun (University of New Mexico, USA); Milan Brázdil (Masaryk University, Czech Republic); Michal Mikl (Masaryk University, Czech Republic)

EEG based time points for longitudinal MRI studies in neonates with hypoxia-ischemia

Ward Jennekens (Maxima Medical Center, The Netherlands); Jan Buijs (Maxima Medical Center, The Netherlands); Charlotte Lommen (Maxima Medical Center, The Netherlands); Carola van Pul (Maxima Medical Center, The Netherlands); Hendrik Niemarkt (Maxima Medical Center, The Netherlands); Pieter Wijn (Maxima Medical Center, The Netherlands)

Autonomic cardiovascular regulation during pregnancy – Interactions and Complexity

Andrea Seeck (University of Applied Sciences Jena, Germany); Mathias Baumert (The University of Adelaide, Australia); Andreas Voss (University of Applied Sciences Jena, Germany)

Frequency domain HRV analysis of ischemia manifestation at isolated rabbit hearts

Oto Janousek (Brno University of Technology, Czech Republic); Jana Kolarova (Brno University of Technology, Czech Republic); Marie Novakova (Masaryk University, Czech Republic); Ivo Provaznik (Brno University of Technology, Czech Republic); Katerina Fialova (Masaryk University, Czech Republic)

Is it possible to distinguish different types of ECG-holter beats based solely on features obtained from windowed QRS complex?

Václav Chudáček (Czech Technical University in Prague, Czech Republic); Lenka Lhotska (Czech Technical University in Prague, Czech Republic); George Georgoulas (TEI of Epirus, Greece); Chrysostomos Stylios (TEI of Epirus, Greece)

Evaluating Cervical Electromyography with Entropy

Jerneja Vrhovec (University of Ljubljana, Slovenia)

Discrimination of fatigue in walking patterns

Silvia Orlandi (University of Florence, Italy); Leonardo Bocchi (University of Florence, Italy)

A Wavelet Based Detection of Abnormal Intra-QRS Potentials

Jiri Sekora (Brno University of Technology, Czech Republic); Ivo Provaznik (Brno University of Technology, Czech Republic); Jana Kolarova (Brno University of Technology, Czech Republic); Marie Novakova (Masaryk University, Czech Republic)

Study of the gastric motility using bio-conductivity

Anastasia Giouvanoudi (Technological Educational Institute of Thessaloniki, Greece)

Ultrafast Detection of Chirp- and Click-Evoked Auditory Brainstem Responses

Farah Corona-Strauss (CDB-Unit, Germany); Wolfgang Delb (CDB-Unit, Germany); Dr. Bernhard Schick (Saarland University Hospital, Germany); Daniel Strauss (HTW Saarland, Germany)

Extraction of Feature Information in EEG Signal by Virtual EEG Instrument with the Functions of Time-Frequency Analysis

Zhong Ji (Chongqing University, P.R. China); Chenglin Peng (ChongQing University, P.R. China)

Automatic Detection of Myocardial Ischemia Using Adaptive Optimal Kernel Time Frequency Analysis of HRV and KNN Classifier

Arezoo Zakeri (Iran University of Science and Technology, Iran); Abbas Erfanian (Iran University of Science and Technology, Iran)

Development of Non-Restrictive Body Movement Measurement Method during Sleep for Children Using Difference Images

Shima Okada (Ritsumeikan University, Japan)

Development of QT measurement algorithm for Comparison between Intrauterine growth retarded and Normal children at 10 years old

Taher Biala (University of Leicester, United Kingdom); Fernando Schindwein (University of Leicester, United Kingdom); Michael Wailoo (University of Leicester, United Kingdom)

On the Self-Affinity of the Electroencephalogram: Evaluation of a Whole Spectrum of Scale Coefficients by Detrended Fluctuations Analysis

Paolo Castiglioni (Fondazione Don C. Gnocchi, Milan, Italy); Luigi Pugnetti (Fondazione Don C. Gnocchi, Italy); Massimo Garegnani (Fondazione Don C. Gnocchi, Italy); Enrico Mailland (Ospeale S. Carlo Borromeo, Milan (I), Italy); Roberta Carabalona (Fondazione Don Gnocchi, Italy)

Baseline removal from near infrared spectroscopy measurements for lactate concentration estimation

Jukka Lipponen (University of Kuopio, Finland); Kalle Blomberg von der Geest (University of Oulu, Measurement and sensor laboratory, Kajaani, Finland, Finland); Mika Tarvainen (University of Kuopio, Finland); Asta Leinonen (University of Oulu, Finland); Mari Lahtinen (University of Oulu, Finland); Pasi Karjalainen (University of Kuopio, Finland)

Digital Processing For The Study Of Atrial Arrhythmias

Anita Ahmad (University of Leicester, United Kingdom); Fernando Schindwein (University of Leicester, United Kingdom); J H Tuan (University of Leicester, United Kingdom); G Andre Ng (University of Leicester, United Kingdom)

The extraction of olfactory evoked potentials in human brain using Independent Component Analysis – based Approach

Po-Lei Lee (National Central University, Taiwan); Chi-Hung Shu (Taipei Veterans General Hospital, Taiwan)

Assessing time- and phase-locked changes in the EEG during sensory stimulation by means of spectral techniques

Antonio Mauricio Miranda de Sá (Federal University of Rio de Janeiro, Brazil); Humberto Thiengo (Federal University of Rio de Janeiro,

Brazil); Ingrid Antunes (Federal University of Rio de Janeiro, Brazil); David Simpson (University of Southampton, United Kingdom)

Developing computational detection of individual respiratory cycle phases from tracheal sound signal during sleep

Antti Kulkas (Medical Imaging Centre, Pirkanmaa Hospital District, Tampere, Finland, Finland)

A Wavelet-Based ECG Delineation in Multilead ECG Signals: Evaluation on the CSE Database

Martin Vitek (Brno University of Technology, Czech Republic); Jan Hrubeš (Brno University of Technology, Czech Republic); Jiří Kozumplík (Brno University of Technology, Czech Republic)

Th. 09: Poster Session : Track 04: Brain Computer Interfaces

Automobile, which can Control an Autonomic nervous system

Tomoyuki Yambe (Tohoku University, Japan)

Using a P300 Brain Computer Interface for Smart Home Control

Clemens Holzner (Guger Technologies OEG, Austria); Stefan Schaffelhofer (Guger technologies OEG, Austria); Christoph Guger (Guger Technologies OEG, Austria); Christoph Grönegress (Universitat Politècnica de Catalunya, Spain); Günter Edlinger (Guger Technologies, Austria); Mel Slater (University College London, United Kingdom)

Instantaneous Gaze-Target Detection by Empirical Mode Decomposition: Application to Brain Computer Interface

Po-Lei Lee (National Central University, Taiwan)

Improving BCI performance by modified common spatial patterns with robustly averaged covariance matrices

Motoaki Kawanabe (Fraunhofer Institute FIRST, Germany); Carmen Vidaurre (Berlin Institute of Technology, Germany)

Repositioning precision of EEG-Caps – a preliminary study

Michael de Wild (University of Applied Sciences Northwestern Switzerland, Switzerland); Simone Hemm-Ode (University of Applied Sciences Northwestern Switzerland, Switzerland)

Detection of Steady-State Visual Evoked Potentials for Brain-Computer Interfaces Using PCA and High-Order Statistics

Saeed Pouryazdian (Iran University of science and technology, Iran); Abbas Erfanian (Iran University of Science and Technology, Iran)

Optimizing Visual Cues for Brain-Computer Interfaces

Luis Jacinto (University of Minho, Portugal); Nuno Dias (University of Minho, Portugal); José Correia (University of Minho, Portugal)

Recognition of Arm-Movement Electroencephalography (EEG) Using Motor-Related Intrinsic Mode Functions Filtering and Cross Mutual Information

Chia-Feng Lu (National Yang-Ming University, Taiwan); Chih-Yi Hung (National Yang-Ming University, Taiwan); Po-Jung Tseng (National Yang-Ming University, Taiwan); Liang-Ta Lin (National Yang-Ming University, Taiwan); Zun-Yun Wang (National Yang-Ming University, Taiwan); Yu-Te Wu (National Yang-Ming University, Taiwan)

Th. 07: Poster Session: Track 04: Cardiovascular Systems

Exercise ECG mapping employing an electrode array sheet

Sadahito Uto (Osaka Institute of Technology, Japan)

Screening of heart diseases with multivariate short-term heart rate variability analysis

Andreas Heitmann (University of Applied Sciences Jena, Germany); Thomas Hübner (University for Health Sciences, Medical Informatics and Technology (UMIT) Hall, Austria); Rico Schroeder (University of Applied Sciences Jena, Germany); Siegfried Perz (GSF- Research Center for Environment and Health, Germany); Andreas Voss (University of Applied Sciences Jena, Germany)

Micro-Computerized System to Investigate the Neurocardiogenic Syncope

Joao Baggio (Federal University of Santa Catarina, Brazil); Helcio Nascimento (Sinuscordis, SOS Córdio, Brazil); Raimes Moraes (Federal University of Santa Catarina, Brazil)

Patient-specific modelling of the cardiovascular system – application to septic shock with a minimal data set

Thomas Desaive (University of Liege, Belgium); Geoff Chase (Univ of Canterbury, New Zealand); Christina Starfinger (University of Canterbury, New Zealand); Bernard Lambermont (University of Liege, Belgium); Alexandre Ghuysen (University of Liege, Belgium); Philippe Kolh (University of Liege, Belgium); Pierre Dauby (University of Liege, Belgium); Geoffrey Shaw (Christchurch Hospital, New Zealand); Christopher Hann (University of Canterbury, New Zealand)

Monitoring of blood pulsation using non-contact technique

Renars Erts (University of Latvia, Latvia)

Influence of Respiration on Variability of Peak Systolic Blood Flow Velocity in Common Carotid Artery: Preliminary study

Yoshiki Utsunomiya (The University of Tokushima, Japan); Yohsuke Kinouchi (The University of Tokushima, Japan); Masatake Akutagawa (The University of Tokushima, Japan); Shigeru Obara (The University of Tokushima, Japan); Hiroyuki Tanaka (The University of Tokushima, Japan); Takahiro Emoto (The University of Tokushima, Japan); Kazuo Yoshizaki (The University of Tokushima, Japan); Azran Azhim (Tokyo Denki University, Japan); Asato Suzuki (The University of Tokushima, Japan)

Th. 10: Poster Session: Track 04: Current Advances in Stem Cell Biology

Preosteoblasts Enhance the Proliferation and Osteogenesis of Embryonic Stem Cells via Cell—Cell Contact and Osteogenic Supplements

Ming-Tzu Tsai (Hungkuang University, Taiwan); Show-Ting Lin (Chung Yuan Christian University, Taiwan); Walter H. Chang (Chung Yuan Christian University, Taiwan)

Differentiation of side population cells isolated from human amniotic mesenchymal cells into vascular endothelial cells

Naoko Maruyama (Kitasato University School of Allied Health Sciences, Japan); Kenichi Kokubo (Kitasato University School of Allied Health Sciences, Japan); Minoru Hirose (Kitasato University School of Allied Health Sciences, Japan); Toshihiro Shinbo (Kitasato University School of Allied Health Sciences, Japan); Mamoru Kobayashi (Bioresource Application Institute Co., Ltd., Japan); Norio Sakuragawa (Bioresource Application Institute Co., Ltd., Japan); Hirosuke Kobayashi (Kitasato University School of Allied Health Sciences, Japan)

Methods for encapsulation and storage of human stem cells in three dimensional alginate aggregates

Julia Schulz (Fraunhofer Institute for Biomedical Engineering, Germany); Florian Groeber (Fraunhofer Institute for Biomedical Engineering, Germany); Axel Beier (Fraunhofer Institute for Biomedical Engineering, Germany); Ina Meiser (Fraunhofer Institute for Biomedical Engineering, Germany); Friederike Ehrhart (Fraunhofer Institute for Biomedical Engineering, Germany); Ulrich Zimmermann (University Würzburg, Germany); Heiko Zimmermann (Fraunhofer Institute for Biomedical Engineering, Germany)

Th. 12: Poster Session: Track 04: Health Technology and Patient Safety

Evaluation of safety observance in using of Intravenous Contrast media In Iran

Maryam Mojiri (Hamadan university of medical science, Iran); Karim Ghazi khanloo sani (Hamadan University of medical science, Iran)

More Attention to Risk Class I Medical Devices, Navigation Arm Systems and Equipment Trolleys

Jutta Ruhrmann-Faxel (BfArM Federal Institute for Drugs and Medical Devices, Germany)

Evaluating the Safety of Potassium Level in Stored Blood Units After Being Irradiated with Gamma Irradiation

May Raouf (University, UAE)

Cleaning Evaluation and Cross-Contamination in Drug Repackaging Systems

Christian Damiani (Fachhochschule Lübeck, Germany); Stephan Klein (Fachhochschule Lübeck, Germany)

An analysis for electrical noise of electric bulb shaped fluorescent tube to maintain security level of medical use RFID tag

Ryosuke Hosaka (Shonan Institute of Technology, Japan)

Vibration stimuli to planta pedis is effective to fall prevention

Masaki Yoshida (Osaka Electro-Communication University, Japan)

Development and application of new storage-technologies for effective and secure cryobanking

Julia Schulz (Fraunhofer Institute for Biomedical Engineering, Germany); Frank Ihmig (Fraunhofer-Institute for Biomedical Engineering, Germany); Stephen Shirley (Fraunhofer Institute for Biomedical Engineering, Germany); Christopher Durst (Fraunhofer-Institute for Biomedical Engineering, Germany); Anja Germann (Fraunhofer Institute for Biomedical Engineering, Germany); Hagen von Briesen (Fraunhofer Institute for Biomedical Engineering, Germany); Heiko Zimmermann (Fraunhofer Institute for Biomedical Engineering, Germany)

The enhancement of the radiotherapy resources in Osaka, Japan; based on the Japanese structure surveys in 2003 and 2005

Yuko Mochimaru (Osaka University Graduate School, Japan)

Ultra Small Disposable Incontinence Sensor with RFID tag

Kenji Yamada (Osaka University, Japan)

Analysis of transient heating effect developed in electrical strain gauges used in medical monitoring measurements

Tarek Elsarnagawy (King saud university, Saudi Arabia); Mohamed Wakad (King saud university, Saudi Arabia)

Th. 01: Poster Session: Track 04: IGRT*/Adaptive Radiotherapy

Motion detection system with three USB cameras and an active search algorithm for stereotactic radiosurgery

Koichi Ogawa (Hosei University, Japan); Go Mamiya (Hosei University, Japan); Hitoshi Iyatomi (Hosei University, Japan); Yohei Oku (Keio University, Japan); Etsuo Kunieda (Keio University, Japan)

An Investigation of the concomitant doses from Cone Beam CT and CT simulation in Radiotherapy

Roxanne Potts (Kent Oncology Centre, United Kingdom); Mary Oatey (Kent Oncology Centre, United Kingdom)

The realization and application on image pasting for Cone-beam Computed Tomography

Yong Yin (Shandong Tumor Hospital, P.R. China); Jian Zhu (Shandong Tumor Hospital, P.R. China); Jie Lu (Shandong Tumor Hospital, Jinan, China, P.R. China)

Quantitative Evaluation of Gating Radiotherapy System and Dynamic Tumor Tracking Radiotherapy System Developed at KIRAMS

Seungwoo Park (Korea Institute of Radiological and Medical Sciences, Korea); Haijo Jung (Korea Institute of Radiological and Medical Sciences, Korea); Kum Bae Kim (Korea Institute of Radiological and Medical Sciences, Korea); Young Hoon Ji (Korea Institute of Radiological and Medical Sciences, Korea)

Prognostic Analysis of Three-Dimensional Conformal Radiotherapy of Regional Lymph Node Metastasis of the Surgical Esophageal Carcinoma Patients After Resection

Min Gao (Shandong Cancer Hospital, P.R. China)

Four-Dimensional Computerized Tomography (4D-CT) Reconstruction Without an External Breath Surrogate

Shuxu Zhang (Guangzhou Medical College, P.R. China); Linhong Zhou (Southern Medical University, P.R. China)

Respiratory Training and guiding System using HMD device to improve the resularity of breathing

Youngyih Han (Samsung Medical Center, Korea); Eunhyuk Shin (Samsung Medical Center, Korea); Hee-Chul Park (Samsung Medical Center, Korea); Jungsuk Shin (Smasung Medical Center, Korea); Sang Gyu Ju (Samsung Medical Center, Korea); JaiKi Lee (Hanyang University, Korea); Young Chan Ahn (Samsung Mediactal Center, Korea)

Extracting breathing traces from any cone-beam image-set

Anthony Kavanagh (Institute of Cancer Research and Royal Marsden Hospital, United Kingdom)

Initial application of a geometric QA tool for integrated MV and kV imaging systems on Trilogy, Synergy, and Vero

Weihua Mao (University of Texas Southwestern Medical Center at Dallas, USA); Michael Speiser (University of Texas Southwestern Medical Center at Dallas, USA); Paul Medin (University of Texas, Southwestern Medical Center, USA); Lech Papiez (University of Texas, Southwestern Medical Center, USA); Timothy Solberg (University of Texas, Southwestern Medical Center, USA); Xing Lei (Stanford University, USA)

Guided radiotherapy by an in-vivo dosimetry for lung tumors

Savino Cilla (Catholic University, Italy); Andrea Fidanzio (Università Cattolica S.C., Italy); Francesca Greco (Università Cattolica del Sacro Cuore, Italy); Luca Grimaldi (Università Cattolica del Sacro Cuore, Italy); Guido D'Onofrio (Università Cattolica del Sacro Cuore, Italy); Domenico Sabatino (Università Cattolica del Sacro Cuore, Italy); Angelo Piermattei (Università Cattolica del Sacro Cuore, Italy)

Suggestion for an extended quality assurance in 4D CT and its function in gated radiotherapy using a motion phantom

Andreas Block (Klinikum Dortmund, Germany)

4D-CT reconstruction based on body volume change

Shuxu Zhang (Guangzhou Medical College, P.R. China)

Interfractional Variations of Shape and Impact on Dose of Organs at Risk in Head and Neck Cancer Patients during Helical Tomotherapy

Marciana Nona Duma (Klinikum rechts der Isar, Germany); Severin Kampfer (Klinikum rechts der Isar, Germany); Vesna Jacob (Klinikum rechts der Isar der TU München, Germany); Jan Wilkens (Technische Universität München, Germany); Tibor Schuster (Klinikum rechts der Isar, Germany); Michael Molls (Klinikum rechts der Isar, Germany); Hans Geinitz (Klinikum rechts der Isar, Germany)

The feasibility of goggle monitor for respiratory biofeedback of patient to reduce correlation error using real-time tumor tracking system.

Hyun Do Huh (university of Inha, Korea)

Development of an image-guided radiation therapy device for precise irradiation of small animal tumors

Prasad Thute (OncoRay - Center for Radiation Research in Oncology, Germany); Wolfgang Enghardt (Technische Universität Dresden, Germany); Arian Khaless (OncoRay - Center for Radiation Research in Oncology, Germany); Volker Hietschold (OncoRay - Center for Radiation Research in Oncology, Germany)

Combination of external/image-based detection of respiratory induced motion and adaption with a gating mechanism

Michael Schwarz (German Cancer Research Center, Germany); Simeon Nill (German Cancer Research Center, Germany); Rolf Bendl (University of Applied Sciences Heilbronn, Germany)

DIRART – A Software Suite for Deformable Image Registration and Adaptive Radiotherapy Research

Deshan Yang (Washington University in Saint Louis, USA); Issam El Naqa (Washington University in St. Louis, USA); Aditya Apte (Washington University in St. Louis, USA); Yu Wu (Washington University in Saint Louis, USA); Sreekrishna Goddu (Washington University in Saint Louis, USA); Mutic Sasa (, USA); Deasy Joseph (, USA); Daniel Low (Washington University School of Medicine, USA)

Virtual Spirometry: Utilizing an abdominal bellows system for quantitatively gating in 4D CT acquisition

René Werner (University Medical Center Hamburg-Eppendorf, Germany); Benjamin White (Washington University School of Medicine, USA); Michael Schwenke (University Medical Center Hamburg-Eppendorf, Germany); Heinz Handels (Universität Hamburg, Germany); Wei Lu (University, USA); Daniel Low (Washington University School of Medicine, USA)

Setup Variations and Tumor Margins using the ExacTrac X-ray 6D in Prostate Radiotherapy

Joo Young Kim (CHA University, Korea)

SURE-LET and BLS-GSM wavelet-based denoising algorithms versus linear Local Wiener Estimator in Radiotherapy portal image denoising

Antonio González-López (Hospital Universitario Virgen de la Arrixaca, Spain); Juan Morales-Sánchez (Universidad Politécnica de Cartagena, Spain); Rafael Verdú Monedero (Universidad Politécnica de Cartagena, Spain); Jorge Larrey-Ruiz (Universidad Politécnica de Cartagena, Spain); José-Luis Sancho-Gómez (Universidad Politécnica de Cartagena, Spain); Bonifacio Tobarra-González (Hospital Universitario Virgen de la Arrixaca, Spain)

Assessment of image guidance using kV orthogonal images and cone beam CT for liver stereotactic radiosurgery

Dong-wook Park (Asan Medical Center, Korea); Jungwon Kwak (Asan Medical Center, Korea); Sung Ho Park (University of Ulsan, Korea); Eun Kyung Choi (Asan Medical Center, University of Ulsan, Korea); Jong Hoon Kim (Asan Medical Center, University of Ulsan, Korea); Sang-wook Lee (Asan Medical Center, University of Ulsan, Korea); Si Yeol Song (Asan Medical Center, University of Ulsan, Korea); Sang Min Yoon (Asan Medical Center, University of Ulsan, Korea); Seung Do Ahn (Asan Medical Center, University of Ulsan, Korea)

Th. 08: Poster Session: Track 04: Nanoparticles/Nanotheranostics

Particle-Size Distribution of Dextran- and Carboxydextran-Coated Superparamagnetic Nanoparticles for Magnetic Particle Imaging

Kerstin Lüdtke-Buzug (University of Luebeck, Germany); Sven Biederer (University of Luebeck, Germany); Timo Sattel (University of Luebeck, Germany); Tobias Knopp (University of Luebeck, Germany); Thorsten Buzug (University of Luebeck, Germany)

Preparation of functional magnetic cationic polymeric liposomes via a simple process

Jin Chang (Tianjin University, P.R. China); Hanjie Wang (Tianjin University, P.R. China)

Size depended electrical properties of Hydroxyapatite nanoparticles

Vladimir Bystrov (Institute of Mathematical Problem of Biology RAS, Russia); Yuri Dekhtyar (Riga Technical University /BENI, Latvia); Natalia Bystrova (Institute of Theoretical and Experimental Biophysics RAS, Russia); Ekaterina Paramonova (The Institute of Mathematical Problems of Biology RAS (IMPB RAS), Russia); Anatoly Karlov (Tomsk Abteilung des Russische Ilisarov Wissenschaftliche Zentrum, Russia)

The interaction between charged macroions induced by nanoparticles

Klemen Bohinc (University of ljubljana, Slovenia)

Studies on the interaction of self-assembled dextrin nanoparticles with murine macrophages and blood clearance

Catarina Gonçalves (Universidade do Minho, Portugal); Egídio Torrado (Universidade do Minho, Portugal); Teresa Martins (Universidade do Minho, Portugal); Paula Pereira (Universidade do Minho, Portugal);

Jorge Pedrosa (Universidade do Minho, Portugal); Francisco Gama (Universidade do Minho, Portugal)

Th. 11: Poster Session: Track 04: Ophthalmology I: Artificial Vision and Neural Prosthesis in Ophthalmology*

Tissue-Engineered Corneal Stroma by Using Autologous Adipose Derived Stem Cell Tissue and Polylactidocoglycolic Acid

Jiaxu Hong (Eye & ENT Hospital, Fudan University, P.R. China); Jianjiang Xu (Eye & ENT Hospital of Fudan University, P.R. China); Xinghuai Sun (Eye & ENT Hospital, Fudan University, P.R. China)

Simulation system for epiretinal implants

Ulf Maeder (University of Applied Sciences Giessen-Friedberg, Germany); Martin Fiebich (University of Applied Sciences Giessen-Friedberg, Germany); Uwe Thomas (EpiRet GmbH, Germany); Peter Marten (EpiRet GmbH, Germany)

Long-term In vivo Biocompatibility Evaluation of MEMS Retinal Tack for Retinal Prosthesis

Sangmin Lee (Seoul National University, Korea); Kyo-In Koo (Seoul National University, Korea); Jae-Won Ban (Seoul National University, Korea); Hyo-Young Jeong (Seoul National University, Korea); Hosoo Park (Seoul National University, Korea); Jong-Mo Seo (Seoul National University, Korea); Hum Chung (Seoul National University, Korea); Dong-il Cho (Seoul National University, Korea)

Effect of an Eyesight Recovering Stereoscopic Movie System on Visual Acuity of middle-aged and Myopic Young People

Hiroki Takada (Gifu University of Medical Science, Japan); Tetsuya Yamamoto (Gifu University of Medical Science, Japan); Akihiro Sugiura (Gifu University of Medical Science, Japan); Masaru Miyao (Nagoya University, Japan)

Th. 06: Poster Session: Track 04: Robots and Manipulators in Therapy

Features in Telemanipulation for Heart Surgery: Haptic Tasks

Eva Braun (German Heart Center Munich, Germany); Christian Gaertner (German Heart Center Munich, Germany); Hermann Mayer (Technische Universität München, Germany); Christoph Staub (Technische Universität München, Germany); Alois Knoll (Technical University Munich, 85748 Garching, Germany); Rüdiger Lange (German Heart Center Munich, Germany); Robert Bauernschmitt (German Heart Center Munich, Germany)

Development of Master-slave System with Force-rate Control for Interventional Radiology

Masaru Ide (Shibaura Institute of Technology, Japan); Pierluigi Beomonte Zobel (University of L'Aquila, Italy); Paolo di Claudio (University of L'Aquila, Italy); Takashi Komeda (Shibaura Institute of Technology, Japan)

Th. 02: Poster Session: Track 04: Ultrasound Imaging

On evaluation of First Call 2000TM

Jan-Olof Johansson (Sahlgrenska University Hospital, Sweden); Benny Stenborg (Sahlgrenska University Hospital, Sweden); Wiebke Rosenberg (Sahlgrenska University Hospital, Sweden); Nasser Hosseini (Sahlgrenska University Hospital, Sweden)

Design and Construction of Transmission and Reception Circuits for Ultrasound Multi-element Transducers

João Salinet Júnior (State University of Campinas, Brazil); Eduardo Costa (UNICAMP, Brazil)

Comparison of techniques for speckle noise reduction in breast ultrasound images

Paula Alves (Universidade de São Paulo - USP, Brazil); Homero Schiabel (University of São Paulo, Brazil)

Pulsatile Flow Phantoms For Quality Control Of Doppler Ultrasound Imaging

Olivia Coiado (University of Campinas, Brazil); Eduardo Costa (UNICAMP, Brazil)

A rotating cylinder phantom for flow and tissue color Doppler testing

Andrew Walker (Linköping University, Sweden); Egil Henriksen (Central Hospital, Västerås, Sweden); Ivar Ringqvist (Central Hospital, Västerås, Sweden); Per Ask (Linköpings universite, Sweden)

State diagrams of the heart - a new window to describing cardiac mechanics

Matilda Larsson (School of Technology and Health, Royal Institute of Technology, Sweden); Anna Bjallmark (Royal Institute of Technology, Sweden)

Evaluation of wavelet-based methods for denoising ultrasonic echo signals

Shahrzad Shirzad (K. N. Toosi University of technology, Iran); Hamid Abrishami Moghaddam (K. N. Toosi University of technology, Iran); Mahmoud Alizadeh (Azad University of Damavand Unit, Iran)

Wave Intensity Wall Analysis – a novel non-invasive method to measure Wave Intensity in the Arterial wall

Anna Bjallmark (Royal Institute of Technology, Sweden); Matilda Larsson (School of Technology and Health, Royal Institute of Technology, Sweden)

Design and Characteristics of a metamaterial transmit/receive coil element for 7 Tesla MRI

Jochen Mosig (IMST GmbH, Germany); Achim Bahr (IMST GmbH, Germany); Thomas Bolz (IMST GmbH, Germany); Andre Rennings (University of Duisburg-Essen, Germany)

Th. 03: Poster Session: Track 05: Biological Effects of Ionizing Radiation – Therapy

Correlation between Radiation sensitivity and body weight

Syed Akber (Case Western Reserve University, USA); Than Kehwar (University of Pittsburgh Cancer Institute, USA); Kamlesh Passi (M. D. Oswal Cancer Treatment & Research Foundation, Ludhiana (Pb), India)

Dental treatment with fluoride at various stages of tumor therapeutic irradiation

Wolfgang Fränzel (Martin-Luther-University Halle-Wittenberg, Germany); Reinhard Gerlach (Martin-Luther-University Halle-Wittenberg, Germany)

Absorbed dose enhancement caused by gold particles in polymer gels

Luciana Afonso (Helmholtz Zentrum München, Germany); Felix Schoefer (Helmholtz Zentrum München - German Research Center for Environmental Health, Germany); Christoph Hoeschen (Helmholtz Zentrum München - German Research Center for Environmental Health, Germany)

Induction of DNA doublestrand-breaks along the tracks of low energy protons

Philipp Schrögel (University Erlangen-Nuremberg, Germany)

Th. 10: Poster Session: Track 05: Biomedical Imaging in TE/RM*

Multifunctional characterization of engineered cartilage using nano-pulsed laser

Miya Ishihara (National Defense Medical College, Japan); Isao Bansaku (National Defense Medical College, Japan)

Quantification of the time course of proliferation and scattering activity of cells in time lapse videos

Tobias Timmel (Charité - Universitätsmedizin Berlin, Germany)

Ultrasound biomicroscopy of healthy and repair cartilage tissue

Kolja Gelse (University Hospital Erlangen, Germany); A Olk (University Hospital Erlangen, Germany); Stefan Eichhorn (Technical University Munich, Germany); B Swoboda (University of Erlangen-Nuremberg, Germany); F Henning (University Hospital Erlangen, Germany); Martin Schöne (Martin Luther University of Halle-Wittenberg, Germany); Kay Raum (Charité-Universitätsmedizin Berlin, Germany)

Monitoring of cartilage synthesis in tissue-engineered scaffolds by ultrasound biomicroscopy

Nils Männicke (Martin Luther University of Halle-Wittenberg, Germany); Kay Raum (Charité-Universitätsmedizin Berlin, Germany); Wiltrud Richter (Orthopaedic University Hospital, Germany); Eric Steck (Orthopaedic University Hospital, Germany)

Revealing of medical and biological relevant cellular processes by automated time lapse microscopy

Michael Gepp (Fraunhofer Institute for Biomedical Engineering, Germany); Isabelle Sébastien (Fraunhofer Institute for Biomedical Engineering, Germany); Florian Groeber (Fraunhofer Institute for Biomedical Engineering, Germany); Julia Schulz (Fraunhofer Institute for Biomedical Engineering, Germany); Friederike Ehrhart (Fraunhofer Institute for Biomedical Engineering, Germany); Heiko Zimmermann (Fraunhofer Institute for Biomedical Engineering, Germany)

Th. 07: Poster Session: Track 05: Clinical Engineering

Development of Remote Monitoring System for Deep Freezer

Hee Ku Yun (Seoul Asan Medical Center, Korea); Dong Ik Shin (Asan Medical Center, Korea)

Parasitic capacitances in the installation of IT grounding systems for operation rooms, ICUs and hemodynamics centers

L. Spalding (Hospital São Vicente de Paulo, Brazil)

Checking electric safety in patient care vicinity

Ernesto Rodríguez-Denis (Universidad Autonoma de Occidente, Cuba); Fabiola Obando (IEEE, Colombia)

Study on Electric Field Environmental Design for Hospitals by Utilizing Electromagnetic Environment Simulation System

Takashi Kano (Saitama Medical University, Japan)

New storage method for pressure sensitive transplants

Grzegorz Sliwinski (TU Dresden, Germany); Armin Schneider (TU München, Germany); Stephanie Graf (TU Dresden, Germany); Aleksander Sieron (Silesian Medical University, Poland); Zbigniew Sliwinski (Humanistic and Nature University in Kielce, Poland); Michael Kasper (TU Dresden, Germany); Hubertus Feussner (Klinikum rechts der Isar, TU München, Germany); Rüdiger Poll (Technische Universität Dresden, Germany); Christine Thiele (TU Dresden, Germany)

Development of automatic controller for providing multi electrolyzed water

Koichi Umimoto (Osaka Electro-Communication University, Japan); Hideaki Kawinishi (Osaka electro communication univarsity, Japan); Yuichi Tachibana (Osaka Electro-Communication University, Japan); Nobuaki Kawai (Osaka Electro-Communication University, Japan); Shunji Nagata (Osaka Electro-Communication University, Japan); Junichiro Yanagida (Kobe Tokiwa University, Japan)

Some Design Consideration to upgrade the Function of Portable ECG Device

W Mohd Azhar Wan Ibrahim (University of Malaya, Malaysia); Kama Bistari Muhammad (University of Malaya, Malaysia)

Determination of post-mortem interval using in situ tissue optical fluorescence

E. Estracanhalli (Universidade de São Paulo, Brazil); V Bagnato (University of Sao Paulo, Brazil); C Kurachi (University of Sao Paulo, Brazil); P. Menezes (Universidade de São Paulo, Brazil); J. Vicente (Universidade de São Paulo, Brazil)

Effects of Power Line Communication System on Medical Equipments

Toshihiro Shinbo (Kitasato University School of Allied Health Sciences, Japan); Soma Miyazaki (Kitasato university, Japan); Minoru Hirose (Kitasato University School of Allied Health Sciences, Japan); Kenichi Kokubo (Kitasato University School of Allied Health Sciences, Japan); Hirosuke Kobayashi (Kitasato University School of Allied Health Sciences, Japan)

Electromagnetic Compatibility of WiFi Technology with Life-Supporting Medical Devices

Calcagnini Giovanni (Italian National Institute of Health, Italy); Eugenio Mattei (Dept. Technology and Health, ISS, Italy); Federica Censi (Dept. Technologies and Health, Italy); Michele Triventi (Dept. Technology and Health, ISS, Italy); Roberto Lo Sterzo (Italian Institute of Communications and Information Technology, Italy); Elia Marchetta (Italian Institute of Communications and Information Technology, Italy); Pietro Bartolini (Dept. Technology and Health, ISS, Italy)

Applying the HFMEA Technique to the General-Purpose Infusion Pump

Ryan Ferreira (UNICAMP, Brazil); Gerson Florence (UNICAMP, Brazil); Saide Calil (Campinas State University, Brazil)

A Comprehensive Framework for Post-market Electrical Safety Testing and Performance Assessment of Medical Equipment in Healthcare Facilities

Joao Carlos Langanke Pedroso (State University of Campinas - UNICAMP, Brazil)

Evidence-Based Maintenance For Medical Equipment

Abdelbaset Khalaf (Tshwane University of Technology, South Africa)

Th. 01: Poster Session: Track 05: Dose Calculation Algorithms/Monte-Carlo

Estimation of human absorbed dose of $^{67}\text{Ga-DTPA-ACTH}$ based on biodistribution rat data

Saeed Shanehsazzadeh (Medical physics Department, Tehran University of medical sciences, Iran); Hamid Reza Sadeqhi (Isfahan University of medical sciences, Iran); Amir Reza Jalilian (Radiolabeling Lab, Nuclear Medicine Group, (AMIRS), Karaj, Iran); Mahmoud Allahverdi (Medical physics Department, Tehran University of medical sciences, Iran)

Monte Carlo Investigation of Stereotactic Radiosurgery of Spinal Metastases

Jun Deng (Yale University, USA); Zhe Chen (Yale University, USA); Jonathan Knisely (Yale University, USA); Roy Decker (Yale University, USA); Veronica Chiang (Yale University, USA); Ravinder Nath (Yale University, USA)

Monte Carlo dosimetry with PENELOPE code of the VariSource VS2000 192Ir high dose rate brachytherapy source

Francisco Casado (Hospital Regional Universitario Carlos Haya, Spain); Beatriz Mateo (Hospital Regional Universitario Carlos Haya, Spain); Elena Cenizo (Hospital Regional Universitario Carlos Haya, Spain); Salvador Garcia-Pareja (Hospital Regional Universitario Carlos Haya, Spain); Pedro Galán (Hospital Regional Universitario Carlos Haya, Spain); Coral Bodineau (Hospital Regional Universitario Carlos Haya, Spain)

A Monte Carlo Study of the Particle Angular Distributions from the Electron Applicators of a Medical Linear Accelerator

Bijan Hashemi (Tarbiat Modares University, Iran); Nasrollah Jabbari (Urmia University of Medical Sciences, Iran)

Ant colony algorithm implementation in commissioning radiosurgery photon beams for Monte Carlo treatment planning

Salvador Garcia-Pareja (Hospital Regional Universitario Carlos Haya, Spain); Francisco Manzano (Hospital Xanit Internacional, Spain); Pedro Galán (Hospital Regional Universitario Carlos Haya, Spain); Antonio Miguel Lallena (Universidad de Granada, Spain); Lorenzo Brualla (Universitätsklinikum Essen, Germany)

An Investigation on the Internal Wedge Factor Estimation for an Elekta Linac using Monte Carlo Simulation

Bijan Hashemi (Tarbiat Modares University, Iran); Payman Hejazi (Semnan university of medical sciences, Iran); Majid Shahriari (Shahid beheshti university, Iran); Mohammad Taghi Eivazi (Kermanshah University of Medical Sciences, Iran); Anoshirvan Kazemnejad (Tarbiat Modares University, Iran)

Improving the performance of direct Monte-Carlo optimization for large tumor volumes

Judith Alvarez Moret (University of Regensburg, Germany); Marco Alt (University of Regensburg, Germany); Ludwig Bogner (University of Regensburg, Germany)

Monte Carlo based independent monitor unit calculation in IMRT

Olivier Pisaturo (CHUV and University Lausanne, Switzerland); Raphael Moeckli (University of Lausanne, Switzerland); François Bochud (CHUV and University Lausanne, Switzerland)

Dose calculations for clinical proton broad beams by GEANT4

Takashi Akagi (Hyogo Ion Beam Medical Center, Japan); Masao Murakami (Hyogo Ion Beam Medical Center, Japan)

Comparison of Monte Carlo Dose Calculation with Advanced Kernel Methods in External Photon Beam Treatment Planning

Irina Fotina (Medical University of Vienna, Austria); Bernhard Kroupa (General Hospital / Medical University of Vienna, Austria); Dietmar Georg (Medical University Vienna, Austria)

Backscatter Factors for a Clinical 6 MeV Electron Beam

Chang-Heon Choi (Seoul National University, Korea); Alvin Eufemio (Seoul National University, Korea); Sung-Joon Ye (Seoul National University, Korea); Prem Pareek (University Of Alabama at Birmingham, USA)

Monte Carlo Based Suggestion of the Best Choice for Material of a Multileaf Collimator (MLC) and the Required Thickness

Sanaz Hariri (Shahid Beheshti University, Iran); Majid Shahriari (Shahid beheshti university, Iran)

Head scatter factor calculation considering characteristics of scattered photon

Hisayuki Miyashita (The Fraternity Memorial Hospital, Japan); Shogo Hatanaka (Tokyo Metropolitan University, Japan); Yukio Fujita (Tokyo Metropolitan University, Japan); Atsushi Myojoyama (Tokyo Metropolitan University, Japan); Hidetoshi Saitoh (Tokyo Metropolitan University, Japan)

Monte Carlo Dose Calculation using GPU-Based parallel processing

Atsushi Myojoyama (Tokyo Metropolitan University, Japan); Hidetoshi Saitoh (Tokyo Metropolitan University, Japan)

Linear Accelerator Photon Beam Interaction with the Virtual Physiological Human

Nabil Maalej (King Fahd University of Petroleum and Minerals, Saudi Arabia); Umar Mwidu (King Fahd University of Petroleum and Minerals, Saudi Arabia); Bilal Jalal (Al-Bashir Hospital, Ministry of Health, Amman, Jordan, Jordan); Akhtar Naqvi (King Fahd University of Petroleum and Minerals, Saudi Arabia)

Comparison between Clinically used Irregular Fields shaped by Cerrobend blocks and by Multileaf collimator using a Clarkson Sector Integration Computer Program

Rhodesa Cruzet (Cebu Doctors' University Hospital, Philippines)

Extension of electron Monte Carlo dose calculation in Eclipse to Siemens linear accelerators

Michael Fix (Inselhospital, Bern University Hospital, and University of Bern, Switzerland); Eric Vandervoort (The Ottawa Hospital Cancer Centre, Canada); Heiko Karle (Clinical Center of the Johannes Gutenberg University of Mainz, Germany); Jakob Tretel (Clinical Center of the Johannes Gutenberg University of Mainz, Germany, Germany); Daniel Frei (University of Berne, Switzerland); Ernst Born (University of Berne, Switzerland); Werner Volken (University of Berne, Switzerland);

Joanna Cygler (Ottawa Hospital Cancer Centre, Carleton University, Canada); Peter Manser (University of Berne, Switzerland)

Monte Carlo Study of Depth Dose Calculation for Low Energy Clinical Electron Beams

Hamid Jafari (Shahid beheshti University, Iran)

evaluation of dose calculation engine of 3d radiotherapy treatment planning system

Johnny Burbano (Fundacion Santa Fe de Bogota, Colombia)

Algorithm Development of Designing a Patient-Specific Block for MC-Based Dose Calculation in Electron Beam Therapy for Breast Cancer

Sang Hoon Jung (Asan Medical Center, Korea); Sung Ho Park (University of Ulsan, Korea); Ik Soo Choi (Asan Medical Center, Korea); Geum Mun Baek (Asan Medical Center, Korea); Eun Kyung Choi (Asan Medical Center, University of Ulsan, Korea); Jong Hoon Kim (Asan Medical Center, University of Ulsan, Korea); Sang-wook Lee (Asan Medical Center, University of Ulsan, Korea); Si Yeol Song (Asan Medical Center, University of Ulsan, Korea); Seung Do Ahn (Asan Medical Center, University of Ulsan, Korea)

Determination of IMRT Beam Characteristics with Monte Carlo simulation

Yukio Fujita (Tokyo Metropolitan University, Japan); Naoki Tohyama (Chiba Cancer Center, Japan); Toru Kawachi (Chiba Cancer Center, Japan); Toru Kojima (Chiba Cancer Center, Japan); Atsushi Myojoyama (Tokyo Metropolitan University, Japan); Hidetoshi Saitoh (Tokyo Metropolitan University, Japan)

VMC++: Validation of the Monte Carlo code for low energies

Dario Terribilini (Inselspital Bern, Switzerland); Michael Fix (Inselspital, Bern University Hospital, and University of Bern, Switzerland); Daniel Frei (University of Berne, Switzerland); Werner Volken (University of Berne, Switzerland); Peter Manser (University of Berne, Switzerland)

Evaluation of Multileaf Collimator effect on the build-up dose region using different ionization chambers.

Miriam Zarza Moreno (New University of Lisbon, Portugal); Ana Souto (Centro Oncologico Dra. Natalia Chaves, Portugal); Nuno Teixeira (Escola Superior de Tecnologia da Saude de Lisboa, Portugal); Adelaide Jesus (Faculdade de Ciencias e Tecnologia da Universidade Nova de Lisboa, Portugal); Grisel Mora (Faculdade de Ciencias da Universidad de Lisboa, Portugal)

Th. 08: Poster Session: Track 05: Lab-on-Chip/Biochips

Automated assembly of dynamic micro-bead arrays using a multi-arm laser manipulator with computer vision

Yoshio Tanaka (AIST, Japan); Hiroyuki Kawada (Kagawa University, Japan); Shogo Tsutsui (Kagawa University, Japan); Mitsuru Ishikawa (AIST, Japan); Hiroyuki Kitajima (Kagawa University, Japan)

A Nano-porous Aerogel Biochip for Molecular Recognition of Nucleotide Acids

Jui-Chuang Wu (Chung Yuan Chairtian University, Taiwan); Yui Whei Chen-Yang (Chung Yuan Chairtian University, Taiwan)

Speeding up sensor response times by modifying the geometry of the fluidic channel of a disposable array compatible sensor housing for surface acoustic waves biosensors

Bastian Rapp (Forschungszentrum Karlsruhe, Germany); Friederike Gruhl (Forschungszentrum Karlsruhe, Germany); Kerstin Länge (Forschungszentrum Karlsruhe, Germany); Michael Rapp (Forschungszentrum Karlsruhe, Germany)

Surface Acoustic Wave (SAW) Biosensor Chip System - a Promising Alternative for Biomedical Applications

Bastian Rapp (Forschungszentrum Karlsruhe, Germany); Friederike Gruhl (Forschungszentrum Karlsruhe, Germany); Kerstin Länge (Forschungszentrum Karlsruhe, Germany); Michael Rapp (Forschungszentrum Karlsruhe, Germany)

Multiparametric NeuroLab with integrated MEA & life support

Florian Ilchmann (Technische Universität München, Germany); Jochen Meyer (Technische Universität München, Germany); Michael Schmidhuber (Technische Universität München, Germany); Marlies Zottmann (TU München, Germany); Bernhard Becker (Technische Universität München, Germany); Bernhard Wolf (Technische Universität München, Germany)

Mathematical methods for interpretation of metabolic signals from living cells on biohybrid sensor chips

Daniel Grundl (Technische Universität München, Germany); Thomas Flurschütz (Technische Universität München, Germany); Marlies Zottmann (TU München, Germany); Joachim Wiest (cellasys GmbH, Germany); Bernhard Wolf (Technische Universität München, Germany)

Fieldbus controlled live support system for cell-based biohybrid measuring systems

Franz Demmel (Technische Universität München, Germany); Daniel Grundl (Technische Universität München, Germany); Michael Schmidhuber (Technische Universität München, Germany); Joachim Wiest (cellasys GmbH, Germany); Bernhard Wolf (Technische Universität München, Germany)

Microscale Organization of Chondrocyte Array in Hydrogel by Dielectrophoresis

Shogo Miyata (Keio University, Japan); Yoshitaka Takeuchi (Keio University, Japan)

Magnetron Enhanced Plasma-Polymerization for Biocompatible Sensor Coatings and Membranes on Polymeric Based Materials

Fethi Olcaytug (University Freiburg, Germany); Loic Ledernez (IMTEK, Germany); Gregory Dame (University Freiburg, Germany); Peter Zahn

(University Freiburg, Germany); Hirotsugu Yasuda (University Missouri-Columbia, USA); Gerald Urban (University of Freiburg, Germany)

Monitoring adherent cell cultures in microtiter-plates by a wireless sensory system

Jürgen Wissenwasser (Austrian Research Centers GmbH - ARC, Austria)

PROTMINE: a web service based tool to interpreter clinical proteomic data

Mauro Giacomini (University of Genova, Italy); Silvia Ravaschio (University of Genova, Italy); Silvia De Nadai (University of Genova, Italy); Andrea Petretto (Giannina Gaslini Institute, Italy); Giovanni Melioli (Giannina Gaslini Institute, Italy)

Silicon Based Devices for Intracellular applications

Rodrigo Gómez-Martínez (Centro Nacional de Microelectrónica IMB-CNM (CSIC), Spain); Marta Duch (Centro Nacional de Microelectrónica, Spain); Ana Sanchez (Centro Nacional de Microelectrónica IMB-CNM (CSIC), Spain); Jose Plaza (Centro Nacional de Microelectrónica IMB-CNM (CSIC), Spain); Jaume Esteve (Centro Nacional de Microelectrónica IMB-CNM (CSIC), Spain)

**Th. 12: Poster Session: Track 05: Medical and Care Compunetics
ICMCC@WC2009**

Temporal distribution of atrial arrhythmic episodes

Federica Censi (Dept. Technologies and Health, Italy); Giovanni Calcagnini (dept. technology and Health, ISS, Italy); Eugenio Mattei (Dept. Technology and Health, ISS, Italy); Michele Triventi (Dept. Technology and Health, ISS, Italy); Pietro Bartolini (Dept. Technology and Health, ISS, Italy)

Th. 06: Poster Session: Track 05: Minimal Invasive Surgery and Instruments

Tactile Control: Fixation of Length for Artificial Chordae

Eva Braun (German Heart Center Munich, Germany); Bernhard Voss (German Heart Center Munich, Germany); Hermann Mayer (Technische Universität München, Germany); Alois Knoll (Technical University Munich, 85748 Garching, Germany); Robert Bauernschmitt (German Heart Center Munich, Germany); Rüdiger Lange (German Heart Center Munich, Germany)

Rotation resistance of new intramedullary nail made form shape memory alloy depends upon the bone diameter

Ulrich Wiebking (Medizinische Hochschule Hannover, Germany); Nikolai Stapel (Medizinische Hochschule Hannover, Germany); Christof Hurschler (Hannover Medical School, Germany); Thomas Gösling (Medizinische Hochschule Hannover, Germany)

Hyperthermia Control Using a Computer Microwave System in Cancer Therapy

Marius Roman (Technical University of Cluj-Napoca, Romania)

Surgical Microscope with Automated Focus Adaptation

Elisabeth Röhl (University of Lübeck, Germany); Thorsten Buzug (University of Luebeck, Germany)

Physical Organ Phantoms for Training in Minimal Invasive Surgery (MIS)

Grzegorz Sliwinski (TU Dresden, Germany); Armin Schneider (TU München, Germany); Markus Schulz (TU Dresden, Germany); Marit Wolf (Research Institute of Leather and Plastic Sheeting, Germany); Adam Fiolka (TU München, Germany); Michael Meyer (Research Institute of Leather and Plastic Sheeting, Germany); Hubertus Feussner (Klinikum rechts der Isar, TU München, Germany); Zbigniew Sliwinski (Humanistic and Nature University in Kielce, Poland); Rüdiger Poll (Technische Universität Dresden, Germany); Christine Thiele (TU Dresden, Germany)

Danger of Thermal Burns by Forceps at Video-assisted Electrosurgery during Spray Coagulation

Minoru Hirose (Kitasato University School of Allied Health Sciences, Japan); Masaki Matsuzuki (Kitasato University School of Allied Health Sciences, Japan); Toshihiro Shinbo (Kitasato University School of Allied Health Sciences, Japan); Kenichi Kokubo (Kitasato University School of Allied Health Sciences, Japan); Hirosuke Kobayashi (Kitasato University School of Allied Health Sciences, Japan)

Development of an assistance system for arthroscopic surgery

Dörte Freisberg (RWTH Aachen University, Germany); Jörg Eschweiler (RWTH Aachen, Germany); Wolfgang Lauer (Helmholtz-Institute, RWTH Aachen University, Germany); Klaus Radermacher (RWTH Aachen, Germany)

Three-dimensional left ventricular regional shape and wall stress alterations after surgical ventricular restoration

Liang Zhong (National Heart Centre Singapore, Singapore); Yi Su (Institute of High Performance Computing, A*Star, Singapore); Si Yong Yeo (School of Engineering, Swansea University, UK, United Kingdom); Dhanjoo Ghista (Parkway College, Singapore); Rusan Tan (National Heart Centre Singapore, Singapore)

Th. 04: Poster Session: Track 05: Modeling and Simulation

Sensitivity Comparisons of Cylindrical and Hemi-spherical Coil Setups for Magnetic Induction Tomography

Roland Eichardt (University of Technology Ilmenau, Germany); Claudia Igney (Philips Research Europe, Germany); Joachim Kahlert (Philips Technologie GmbH, Germany); Matthias Hamsch (Philips Technologie GmbH, Germany); Marko Vauhkonen (Philips Technologie GmbH, Germany); Jens Haueisen (Ilmenau University of Technology, Germany)

Simulation analysis of the inverse problem of the blood pressure scan

Jaak Talts (University of Tartu, Estonia); Rein Raamat (University of Tartu, Estonia); Jana Kivastik (University of Tartu, Estonia); Kersti Jagomagi (University of Tartu, Estonia)

Magnetic Field Design for efficient 3D-targeting of MNP Complexes

Alexandra Rüger (Technische Universität München, Germany);
Bernhard Gleich (Technische Universität München, Germany)

A Detailed Model for Knee Joint Acceleration Motions Obtained by Pendulum Test

Kazuaki Jikuya (Kawasaki University of Medical Welfare, Japan)

A Finite Element Model of Upper Cervical Vertebrae (C0-C3) and Biomechanical Analysis of the atlas

Yuan Guo (Taiyuan University of Technology, P.R. China); Xushu Zhang (Taiyuan University of Technology, P.R. China)

Computational Fluid Dynamics Analysis of Bolus Dispersion in Stenosed Coronary Arteries

Dirk Graafen (Johannes Gutenberg University Medical Center, Germany); Kerstin Muennemann (Johannes Gutenberg University Medical Center, Germany); Stefan Weber (Johannes Gutenberg University Medical Center, Germany); Laura Schreiber (Johannes Gutenberg University Medical Center, Germany)

Distributions of the potential and electric field of an electrode elliptic array used in tumor electrotherapy. Analytical and numerical solutions

Andrés Ramírez Aguilera (Centro de Biofísica Médica. Universidad de Oriente, Cuba); Luis Bergues Cabrales (centro Nacional de Electromagnetismo Aplicado. Universidad de Oriente, Cuba); H. Camué (Centro Nacional de Electromagnetismo Aplicado. Universidad de Oriente, Cuba); Yudelmis Soler Pérez (Universidad de Oriente, Cuba); Eduardo Eduardo Roca Oria (Universidad de Oriente, Cuba); Soraida Acosta Brooks (Hospital Saturnino Lora, Cuba); Tamara Rubio González (Dirección Municipal de Salud, Cuba)

Mathematical modeling of tumor growth in mice following

Luis Bergues Cabrales (centro Nacional de Electromagnetismo Aplicado. Universidad de Oriente, Cuba); Andrés Ramírez Aguilera (Centro de Biofísica Médica. Universidad de Oriente, Cuba); Rolando Placeres Jiménez (Universidad de Oriente, Cuba); Manuel Verdecia Jarque (Hospital Infantil Sur, Cuba); H. Camué (Centro Nacional de Electromagnetismo Aplicado. Universidad de Oriente, Cuba); Juan Bory Reyes (Universidad de Oriente, Cuba); Miguel O'Farril Mateus (Hospital Oncológico, Cuba); Fabiola Suárez Palencia (Hospital Oncológico, Cuba); Marisela González Ávila (Universidad de Pachuca, Mexico)

Dose Calculation of ^{166}Ho Therapy Using VARSKIN2 Code

Ali Asghar Mowlavi (Sabzevar University, Iran)

A Simple Modified Minimal Model

Lin Li (Capital Medical University, P.R. China); Wenxin Zheng (Capital Medical University, P.R. China); Liu Zhicheng (Capital Medical University, P.R. China)

Model study of dynamic behavior of the pulmonary epithelium during airway

Małgorzata Przytulska (IBBE, Poland)

Adaption of Generic Anatomic Organ Models on Patient Specific Data Sets

Matthias Grafmüller (Universität Karlsruhe (TH), Germany); Sebastian Seitz (Universitaet Karlsruhe (TH), Germany); Olaf Doessel (Universität Karlsruhe (TH), Germany)

Simulations of Magnetic Resonance phased array coils using FDTD algorithm

Giulio Giovannetti (Institute of Clinical Physiology, CNR, Pisa, Italy); Vittorio Viti (Esaote Biomedica s.p.a., Italy); Valentina Hartwig (Department of Electric System and Automation, University of Pisa, Italy, Italy); Francesca Frijia ("G. Monasterio" Foundation, Italy); Luigi Landini (University of Pisa, Italy)

The Finite Element Study of the Subsequent Injury in a MCL Deficient Knee

Jie Yao (Beihang University, P.R. China); Yubo Fan (Beihang University, P.R. China); Zhang (Polytechnic University, Hong Kong)

Modeling blood flow in pulmonary capillary networks

Sarah Weber (Charité-Universitätsmedizin Berlin, Germany); Kerstin Schirrmann (Charite - Universitätsmedizin Berlin, Germany); Ulrich Kertzscher (Charité - Universitätsmedizin Berlin, Germany); Klaus Affeld (Charité, Germany)

A Study of Virtual Reality in Mastology

Carolina Abreu (University of Brasilia, Brazil); Marina Parente (University of Brasilia, Brazil); Lourdes Brasil (University of Brasília (UnB), Brazil); Jairo Melo (University of Brasília (UnB), Brazil); Ana Paula Silva (Catholic University of Brasilia, Brazil); Glen Souza (Digimed Diagnosis, Brazil)

N-Methyl-D-aspartate receptor channels influence dendritic calcium signaling in nucleus accumbens medium spiny neurons - A computational study

Jessy John (Indian Institute of Technology Bombay, India); Rohit Manchanda (Indian Institute of Technology Bombay, India)

Reasoning and Risk Assessment based on Real-Time Physiological Simulations and Dependable Vital Parameter Monitoring

Ciamak Abkai (University of Heidelberg, Germany); Jürgen Hesser (University of Heidelberg, Germany)

Experimental simulation and computational modeling of the contact between femoral and tibial components in total knee arthroplasty

Lucian Gruionu (University of Craiova, Romania)

Dose calculation optimization in intracranial stereotactic radiotherapy using implicit surface modeling

Thomas Kilindris (University of Thessaly, Greece); Kiki Theodorou (University of Thessalia, Greece)

FE Simulation of Total Knee Endoprosthesis Loading during Stance

Lukas Zach (Faculty of Mechanical Engineering Czech Technical University in Prague, Czech Republic); Svatava Konvickova (Faculty of Mechanical Engineering Czech Technical University in Prague, Czech Republic); Pavel Ruzicka (Faculty of Mechanical Engineering Czech Technical University in Prague, Czech Republic)

Development of an experimental setup to investigate the effect of skull discontinuities on the EEG

Stephan Lau (Ilmenau University of Technology, Germany); Lars Flemming (Friedrich-Schiller-University Jena, Germany); Frank Gießler (Friedrich-Schiller-Universität Jena, Germany); Daniel Güllmar (Jena University Hospital, Germany); Jens Haueisen (Ilmenau University of Technology, Germany)

Simulation of the Different Respiratory Mechanics Effect upon the Efficiency of Artificial Lung Ventilation Using Mathematical Model of the Respiratory System

Martin Rozanek (Czech Technical University in Prague, Czech Republic)

Development of Computer-Aided Diagnostic System for Peritoneal Dialysis: NAVI Light

Hiroyuki Hamada (Kyushu University, Japan)

Calculation of the absorbed dose factors for Rhenium 186 in radiation synovectomy using Geant4 Monte Carlo simulation

Luis Carlos Lagares Casarrubia (Universidad Nacional de Colombia, Colombia); Stella Veloza (German Cancer Research Center, Germany)

Numerical simulation for synchronization of excitatory action between beating cells

Hiroyuki Hamada (Kyushu University, Japan)

Modelling of irregular breast lesions

Heidi Hintsala (University of Oulu, Finland)

Defined mass transport in monolayer cell cultures of hepatocytes

Tobias Timmel (Charité - Universitätsmedizin Berlin, Germany)

A consistent model for cardiac deformation estimation under abnormal ventricular muscle conditions

Ahmad Reza Baghaie (M.Sc candidate in Biomedical Engineering at K.N.Toosi University of Technology, Iran); Hamid Abrishami

Moghadam (Associate Professor in K.N.Toosi University of technology, Iran)

Normalization of Pulse Oximetry Signals for Sleep Apnea Screening

Sebastian Eilers (Fachhochschule Oldenburg/Ostfriesland/Wilhelmshaven, Germany); Birgit Schultheiß (Fachhochschule Oldenburg/Ostfriesland/Wilhelmshaven, Germany); Eckhard Schmittendorf (Fachhochschule Oldenburg/Ostfriesland/Wilhelmshaven, Germany)

DiVesselSim: CT-Angiography Simulator of Diseased Blood Vessel

Sara González (Universidad Simon Bolivar, Venezuela); Alexandra La Cruz (Universidad Simon Bolivar, Venezuela); Sara Wong (Universidad Simon Bolivar, Venezuela); Guillermo Villegas (Universidad Simon Bolivar, Venezuela); Joaquin Lira-Olivares (Centro de Ingeniería de Superficies, Venezuela)

Electrostimulation of bone defects in total hip revision in triple layered domains

Carsten Potratz (University of Rostock, Germany); Robert Souffrant (University of Rostock, Germany); Rainer Bader (Universität Rostock, Germany); Wolfram Mittelmeier (Universität Rostock, Germany); Ursula van Rienen (University of Rostock, Germany)

Head motion therapy after subarachnoid hemorrhage: Preliminary results of an in vitro study in a basal cistern model

Ulrich Kertzsch (Charité - Universitätsmedizin Berlin, Germany); Torsten Schneider (Charité - Universitätsmedizin Berlin, Germany); Leonid Goubergrits (Charité, Germany); Andreas Spuler (Helios Hospital Berlin-Buch, Germany); Klaus Affeld (Charité, Germany)

Numerical modelling of artificial bone material using crushable foam plasticity

Robert Souffrant (University of Rostock, Germany); Daniel Kluess (University of Rostock, Germany); Carmen Zietz (University of Rostock, Germany); Andreas Fritsche (University of Rostock, Germany); Wolfram Mittelmeier (Universität Rostock, Germany); Rainer Bader (Universität Rostock, Germany)

Hardware-in-the-Loop-Simulator for Testing of Knee Endoprostheses

Robert Souffrant (University of Rostock, Germany); Michael Kähler (University of Rostock, Germany); Steffen Dryba (University of Rostock, Germany); Daniel Kluess (University of Rostock, Germany); Rainer Bader (Universität Rostock, Germany); Christoph Woernle (University of Rostock, Germany)

A Cell-Based Approach in Dynamic QT-Correction

Baas Tobias (Universität Karlsruhe, Germany); Olaf Doessel (Universität Karlsruhe (TH), Germany); Ghazwan Butrous (University of Kent, United Kingdom)

Patient Specific Prediction of Drug Binding Affinities

Shunzhou Wan (University College London, United Kingdom); Peter Coveney (University College London, United Kingdom)

Respiratory motion influence on ECG-gated SPET: a simulation study

Ahmad Bitarafan-Rajabi (Rajaei Cardiovascular, Medical and Research Centre, Iran); Hossein Rajabi (Tarbiat Modarres University, Iran); Feridoon Rustgou (Rajaei Cardiovascular, Medical and Research Centre, Iran); Hasan Firoozabady (Rajaei Cardiovascular, Medical and Research Centre, Iran); Nahid Yaghoobi (Rajaei Cardiovascular, Medical and Research Centre, Iran); Hadi Malek (Rajaei Cardiovascular, Medical and Research Centre, Iran); Hassan Moladoust (Guilan University of Medical Science, Iran)

An experimental and numerical program to study the properties of thin biological membranes and Water filling process

James Ren (Liverpool John Moores University, United Kingdom)

Evaluation of Image Registration using a Mass-spring Model of the Breast

Tobias Böhler (Fraunhofer MEVIS, Germany); Heinz-Otto Peitgen (Fraunhofer MEVIS, Bremen, Germany)

Insight into the structure-function relationship of the bone lamellar unit through Finite Element modelling based on high-frequency SAM data

Kay Raum (Charité-Universitätsmedizin Berlin, Germany); Quentin Grimal (Université Paris 6, France); Alf Gerisch (Martin Luther University of Halle-Wittenberg, Germany)

Analysis of Internal Stress Relief Achieved by Functional Electrical Stimulation Application for Pressure Ulcer Prevention

Dohyung Lim (Korea Institute of Industrial Technology, Korea); Keyoung Jin Chun (Korea Institute of Industrial Technology, Korea); Byeong Hee Won (Korea Institute of Industrial Technology, Korea); Jong-In Youn (Catholic University of Daegu, Korea); Mohsen Makhsous (Northwestern University, USA)

Engineering analysis of a new foot-ankle adapter for Shape&Roll prosthetic feet

Lynne O'Hare (University of Strathclyde, United Kingdom); Emma Henderson (University of Strathclyde, United Kingdom); Andrew Hansen (Northwestern University, USA); Kerice Tucker (Northwestern University, USA); Margrit Meier (University of Strathclyde, United Kingdom)

Large Blood Vessel Effect on Thermal Ablation with a Water-Cooled Microwave Antenna

Qun Nan (Beijing University of Technology, P.R. China)

Stem Cell Therapy: Numerical simulation of In Vivo Nutrient Transport and Cells Growth

Claudio De Lazzari (National Research Council, Italy); Arianna Di Molfetta (University of "Tor Vergata", Italy); Libera Fresiello (National

Research Council, Italy); Nicola Alessandri (University of "La Sapienza", Italy)

Femoral stress shielding after hip arthroplasty

Bernd-Arno Behrens (Leibniz Universität Hannover, Germany); Christina Stukenborg-Colsman (Medizinische Hochschule Hannover, Germany); Ingo Nolte (Tierärztliche Hochschule Hannover, Germany); Patrick Wefstaedt (Tierärztliche Hochschule Hannover, Germany); Anas Bouguecha (Leibniz Universität Hannover, Germany)

Pilots' Tolerance to the Plus and Minus Gravitational Acceleration Changes

Jan Hanousek (Institute of Aviation Medicine, Czech Republic); Petr Dosel (Institute of Aviation Medicine, Czech Republic); Jan Petricek (Institute of Aviation Medicine, Czech Republic)

Th. 11: Poster Session: Track 05: Ophthalmology II: Advancement in Ophthalmic Instrumentation

Hybrid polymers as implant material for medical devices

Christine Schultze (University of Rostock, Germany); Anja Cordes (University of Rostock, Germany); Wolfram Schmidt (Universität Rostock, Germany); Katrin Sternberg (Universität Rostock, Germany); Detlef Behrend (Univ.-Rostock, Germany); Klaus-Peter Schmitz (Universität Rostock, Germany)

Zoom Slit Lamp Adapter for Ophthalmological Green Laser

Giuliano Rossi (Universidade de São Paulo, Brazil); Glauco Costal (Universidade de São Paulo, Brazil); Guilherme de Castro (USP - Universidade de Sao Paulo, Brazil); Tiago Ortega (Instituto de Física de São Carlos, Universidade de São Paulo, Brazil); Alessandro Mota (Universidade de Sao Paulo, Brazil); Fatima Yasuoka (University of Sao Paulo, Brazil)

Development of a High Performance Green Laser Cavity for Retinal Photocoagulation

Giuliano Rossi (Universidade de São Paulo, Brazil); Alessandro Mota (Universidade de Sao Paulo, Brazil); Tiago Ortega (Instituto de Física de São Carlos, Universidade de São Paulo, Brazil); Guilherme de Castro (USP - Universidade de Sao Paulo, Brazil); Liliane Ventura (University of Sao Paulo, Brazil)

Measuring UV System For "IN VITRO" Corneas

Victor Lincoln (University of São Paulo, Brazil); Liliane Ventura (University of Sao Paulo, Brazil); Sidney Faria e Sousa (University of São Paulo, Brazil); Nelson Rodrigues Junior (Universidade de São Paulo, Brazil); Homero Schiabel (University of São Paulo, Brazil)

Analysis of fibroblasts of the suprachoroidal space for development of a new glaucoma micro stent

Diana Buss (University of Rostock, Germany); Marian Löbler (Universität Rostock, Germany); Wolfram Schmidt (Universität Rostock,

Germany); Andreas Wree (University of Rostock, Germany); Oliver Stachs (University of Rostock, Germany); Rudolf Guthoff (Universitätsaugenklinik Rostock, Germany); Klaus-Peter Schmitz (Universität Rostock, Germany)

Fundus Controlled Silent Substitution Stimulation of the Human Eye

Sascha Klee (Ilmenau University of Technology, Germany); Dietmar Link (Ilmenau University of Technology, Germany); Patrick Bessler (Ilmenau University of Technology, Germany); Jens Haueisen (Ilmenau University of Technology, Germany)

System for Evaluating UV Radiation in Ophthalmic Lenses

Nelson Rodrigues Junior (Universidade de São Paulo, Brazil); Liliane Ventura (University of Sao Paulo, Brazil); Victor Lincoln (University of São Paulo, Brazil); Gunter Camilo Dablas de Oliveira (Universidade de São Paulo, Brazil); Homero Schiabel (University of São Paulo, Brazil)

Corneal Topography for Slit Lamps

Liliane Ventura (University of Sao Paulo, Brazil); Jean-Jacques Groote (Faculdades UNICOC, Brazil); Homero Schiabel (University of São Paulo, Brazil); Sidney Faria e Sousa (University of São Paulo, Brazil)

Th. 02: Poster Session: Track 05: SPECT* and PET**

The MediSPECT Small Animal CdTe Scanner

Maria Cristina Montesi (Università di Napoli Federico II & INFN Napoli, Italy); Giovanni Mettivier (Università di Napoli Federico II & INFN Napoli, Italy); Assunta Simona Curion (Università di Napoli Federico II & INFN Napoli, Italy); Adele Lauria (Università di Napoli Federico II & INFN Napoli, Italy); Paolo Russo (Università di Napoli "Federico II" & INFN Napoli, Italy)

Characterization of different types of silicon photomultipliers for PET: A study using optical photon tracking simulations and measurements

Melanie Hohberg (Klinikum rechts der Isar, Technische Universität München, Germany); Jozef Pulko (Klinikum rechts der Isar, Technische Universität München, Germany); Sebastian Fürst (Klinikum rechts der Isar, Technische Universität München, Germany); Sibylle Ziegler (Klinikum rechts der Isar der TU München, Germany)

Development of Pre-Clinical SPECT for MRI

Dirk Meier (Gamma Medica - Ideas, Norway); Douglas Wagenaar (Gamma Medica - Ideas, USA); Gunnar Maehlum (Gamma Medica - Ideas, Norway); Bjorn Sundal (Gamma Medica - Ideas, Norway); Bradley Patt (Gamma Medica - Ideas, USA); Si Chen (Johns Hopkins University, USA); Jingyan Xu (Johns Hopkins University, USA); Benjamin Tsui (Johns Hopkins University, USA); Mark Hamamura (University of California at Irvine, USA); Seunghoon Ha (University of California at Irvine, USA); W. W. Roeck (University of California at Irvine, USA); Orhan Nalcioglu (University of California at Irvine, USA)

Assessment of Image Quality in SPECT Systems via the Implementation of a Novel Flood Source Technique

George Fountos (Technological Educational Institute (TEI) of Athens, Greece); Adonios Zanglis (Pammakaristos General Hospital, Greece); Christos Michail (Department of Medical Physics, Medical School, University of Patras, Greece); Ioannis Kalatzis (Technological Educational Institute (TEI) of Athens, Greece); Donissis Cavouras (TEI, Greece); Alexandros Samartzis (Evangelismos General Hospital, Greece); Evaggelia Kounadi (Alexandra General Hospital, Greece); Pipitsa Valsamaki (Pammakaristos General Hospital, Greece); Sofia Gerali (Pammakaristos General Hospital, Greece); George Nikiforidis (University of Patras, Medical School, Greece); Ioannis Kandarakis (Technological Educational Institute (TEI) of Athens, Greece)

Modeling the Point Spread Function of Paired Angle Multiplicative Compounding in Ultrasound

James Macione (University of Connecticut, USA); Shiva Kotha (University of Connecticut, USA); Martin Fox (University of Connecticut, USA)

Challenges face implementing new PET/CT services program at Saudi hospitals

Ahmad Alhamwi (King Saud University, Saudi Arabia); Tarek Elsarnagawy (King Saud University, Saudi Arabia)

Reproducibility of dopamine and serotonin transporter binding measured with single-photon emission computed tomography

Arja Uusitalo (Helsinki University Hospital, Finland); Mikko Hakulinen (Kuopio University Hospital, Finland); Jyrki Kuikka (Kuopio University Hospital, Finland)

A Non-Local Means Approach for PET Image Denoising

Yong Yin (Shandong Tumor Hospital, P.R. China); Jie Lu (Shandong Tumor Hospital, Jinan, China, P.R. China)

Th. 05: Poster Session: Track 05: Standards: DICOM, ISO, IHE*****

A Novel Method to Study DICOM Tags and Definitions for Structured Report and Image Analysis Purposes

Ali Moein (Azad University, Science & Research Branch, Iran); Kaveh Youssefi (Mississippi State University, USA)

Building a Home Care System with the ISO/IEEE 11073 Standard

Jia-Rong Wu (Chung Yuan Christian University, Taiwan)

Th. 09: Poster Session : Track 05: Technologies for Neural Interfaces and Implants

Modular prosthesis of the larynx for application in laryngectomees - a theoretical approach

Fridun Nazaradeh (Katholische Kliniken Essen-Nord-West gGmbH, Germany); Claus Eckermann (Phonation and Psychoacoustics)

Dorsten, Germany); Marc Dupré (Fachhochschule Bochum, Germany); Denis Nazaradeh (TU Dortmund, Germany)

Position decoding of hippocampal place cells

Stefan Schaffelhofer (Guger technologies OEG, Austria); Christoph Guger (Guger Technologies OEG, Austria); Clemens Holzner (Guger Technologies OEG, Austria)

Polymer-Based Approaches to Improve the Long Term Performance of Intracortical Neural Interfaces

Christina Hassler (University of Freiburg, Germany); Thomas Stieglitz (University of Freiburg, Germany)

Silicon Microprobe Systems for Neural Drug Delivery: Experimental Characterization of Liquid Distribution

Sven Spieth (HSG-IMIT, Germany); Axel Schumacher (HSG-IMIT, Germany); Stefan van de Moosdijk (HSG-IMIT, Germany); Stefan Haeberle (HSG-IMIT, Germany); Roland Zengerle (Hahn-Schickard-Gesellschaft, Institut für Mikro- und Informationstechnik, Germany)

A measurement set-up to determine the charge injection capacity of neural microelectrodes

Wigand Poppendieck (Fraunhofer Institute for Biomedical Engineering, Germany); Klaus Peter Koch (University of Applied Sciences Trier, Germany); Siegfried Steltenkamp (Fraunhofer Institute for Biomedical Engineering, Germany); Klaus-Peter Hoffmann (IBMT, Germany)

Design and fabrication of an ultra-flexible electrode system for invasive continuous monitoring during surgery

Sina Krämer (RheinAhr Campus, Germany); Thomas Dörge (Fraunhofer Institute for Biomedical Engineering, Germany); Markus Hanauer (Fraunhofer Institute for Biomedical Engineering, Germany); Siegfried Steltenkamp (Fraunhofer Institute for Biomedical Engineering, Germany); Werner Kneist (University Medical Center of the Johannes Gutenberg University, Germany); Christoph Ulmer (Robert-Bosch-Hospital, Department of General, Visceral and Trauma Surgery, Germany); Klaus Hoffmann (Fraunhofer Institut für Biomedizinische Technik, Germany); Wolfram Lamadé (Robert-Bosch-Hospital, Department of General, Visceral and Trauma Surgery, Germany)

Realization of Constant Phase Element in Metallic Electrodes for Interference Reduction in Neural Recording Tripoles

Yannis Pachnis (University College London, United Kingdom); Andreas Demosthenous (University College London, United Kingdom); Nick Donaldson (University College London, United Kingdom)

Intraoperative Neural Electrode for continuous monitoring of nerve function

Klaus Peter Koch (University of Applied Sciences Trier, Germany); Wigand Poppendieck (Fraunhofer Institute for Biomedical Engineering, Germany); Christoph Ulmer (Robert-Bosch-Hospital, Department of General, Visceral and Trauma Surgery, Germany); Daniel Kauff

(University Medical Center of the Johannes Gutenberg University, Germany); Thomas Doerge (IBMT, Germany); Peter Osypka (Dr Osypka Gmbh Medizintechnik, Germany); Werner Kneist (University Medical Center of the Johannes Gutenberg University, Germany); Wolfram Lamadé (Robert-Bosch-Hospital, Department of General, Visceral and Trauma Surgery, Germany)

Implantable Wireless Cortical Recording Device for Primates

Arto Nurmikko (Brown University, USA); David Borton (Brown University, USA); Christopher Bull (Brown University, USA); William Patterson (Brown University, USA); Yoon-Kyu Song (Brown University, USA); Sunmee Park (Brown University, USA); Farah Laiwalla (Brown University, USA); John Donoghue (Brown University, USA)

Towards Circuit Integration on Parylene Substrates

Ke Wang (Philips Research Laboratories Eindhoven, The Netherlands); Marice van Deurzen (Philips Research Laboratories Eindhoven, The Netherlands); Thiru Kanagasabapathi (Philips Research Laboratories Eindhoven, The Netherlands); Nico Kooyman (Philips Research Laboratories Eindhoven, The Netherlands); Michel Decré (Philips Research Laboratories Eindhoven, The Netherlands)

Development of a Corrugated Polyimide-Based Electrode for Intrafascicular Use in Peripheral Nerves

Tim Boretius (University of Freiburg, Germany); Dominik Zimmermann (University of Freiburg, Germany); Thomas Stieglitz (University of Freiburg, Germany)

Diffusion Limited Tapered Coating with Parylene C

Rene von Metzen (University of Freiburg, Germany); Daniel Egert (University of Freiburg, Germany); Patrick Ruther (University of Freiburg, Germany); Thomas Stieglitz (University of Freiburg, Germany)

Electrical characterization of platinum, stainless steel and platinum/iridium as electrode materials for a new neural interface

Christian Henle (Universität Freiburg, Germany); Wolfgang Meier (Universität Freiburg, Germany); Martin Schuettler (University of Freiburg, Germany); Tim Boretius (University of Freiburg, Germany); Thomas Stieglitz (University of Freiburg, Germany)

Bioelectric Source Localization in the Rat Sciatic Nerve: Initial Assessment Using an Idealized Nerve Model

Jose Zariffa (University of Toronto, Canada); Mary Nagai (Toronto Rehabilitation Hospital Lyndhurst Site, Canada); Zafiris Daskalakis (University of Toronto, Canada); Milos Popovic (University of Toronto, Canada)

Peripheral Arm Nerve Injury Rehabilitation by means of “Virtual Sensibility”

Sebastian Amsüss (Ludwig Boltzmann Institute for Clinical and Experimental Traumatology, Austria)

Anatomy of the human cochlear nucleus in relation to auditory brainstem implants

Steffen Rosahl (HELIOS Kliniken, Germany, Germany); Sybille Rosahl (Helios Research Center, Germany)

Th. 01: Poster Session: Track 06: Advanced Beam Delivery

A new synchrotron radiotherapy technique with future clinical potential: Minibeams Radiation Therapy

Yolanda Prezado (European Synchrotron Radiation Facility, France); Michel Renier (European Synchrotron Radiation Facility, France); Alberto Bravin (European Synchrotron Radiation Facility, France)

Design and fabrication of the control part of a prototype multileaf collimator system

Bahreyni Toossi (Mashhad university of medical sciences, Iran); Abdolreza Hashemian (Mashhad University of Medical Sciences, Iran); Shahrokh Nasserri (Mashhad University of Medical Sciences, Iran)

Impact of beam alignment on leakage of the Siemens 160 MLC™

Sebastian Klüter (University Hospital of Heidelberg, Germany); Gabriele Sroka-Perez (University Hospital of Heidelberg, Germany); Kai Schubert (University Hospital of Heidelberg, Germany); Jürgen Debus (University Hospital of Heidelberg, Germany)

The Dosimetric Study of Static MLC Based Electronic Tissue Compensation Using In-house Leaf Sequencing Software

Iyadurai Rabi Raja Singh (Christian Medical College, India); J Shiju Annlin (Anna University, India); Godson Hentry Finlay Godson (Christian Medical College, India); Paul Ravindran (Christian Medical College, India)

New system for TBI with translation method at the Institute of Oncology Ljubljana

Bozidar Casar (Institute of Oncology Ljubljana, Slovenia)

Th. 03: Poster Session: Track 06: Biological Effects of Non-Ionizing Radiation

Influence on Erythropoiesis and Blood Catalase Activity Low Intensity Electromagnetic Millimeter Radiation

Vitaly Kalantaryan (Yerevan State University, Armenia); Tsovinar Adamyan (Yerevan State University, Armenia); Emma Gevorkyan (Yerevan State University, Armenia); Siranush Minasyan (Yerevan State University, Armenia); Hovhanisyan (Yerevan State University, Armenia); Arsen Hakhoumian (Yerevan State University, Armenia)

Investigation of the specific absorption rate for a 7 Tesla T/R body array

Thomas Bolz (IMST GmbH, Germany); Achim Bahr (IMST GmbH, Germany); Jochen Mosig (IMST GmbH, Germany); Andreas Bitz (Erwin L. Hahn Institute For Magnetic Resonance Imaging, Germany); Stephan Orzada (Erwin L. Hahn Institute For Magnetic Resonance Imaging, Germany)

The Exposure Assessment of Pulsed Magnetic Fields - A Comparison Between Physiological Backgrounds and Guidelines

Christian Rueckerl (HTWK Leipzig, Germany); Karl Eichhorn (HTWK Leipzig, Germany)

The Effect of Activated Water on Staphylococcal Infection in Vivo in Animal Model and in Vitro on Staphylococcus Aureus Culture

Vladimir Vysotskii (Kiev National Shevchenko University, Ukraine); Alla Kornilova (Moscow Lomonosov State University, Russia); Lydia Kholodna (Kiev National Shevchenko University, Ukraine)

Design of an experimental set up for MRI induced heating measurement on biomedical implants

Valentina Hartwig (Department of Electric System and Automation, University of Pisa, Italy, Italy); Gabriella Antonello (University of Pisa, Italy); Giulio Giovannetti (Institute of Clinical Physiology, CNR, Pisa, Italy); Nicola Vanello (University of Pisa, Italy); Maria Filomena Santarelli (CNR - Institute of Clinical Physiology, Italy); Luigi Landini (University of Pisa, Italy)

Effect of Modulated microwave exposure on spectral asymmetry of human EEG

Anna Suhhova (Tallinn University of Technology, Estonia); Hiie Hinrikus (Tallinn University of Technology, Estonia); Maie Bachmann (Tallinn University of Technology, Estonia); Jaanus Lass (Tallinn University of Technology, Estonia)

Simultaneous measurements of electrical and optical properties of radiochromic films exposed to UV radiation as a function of temperature

Hilda Mercado-Urbe (Cinvestav-Monterrey, Mexico)

Relation Between Childhood Leukemia and High Power Lines in Tehran – Iran

Navid Khaledi (Young Researchers Club of Islamic Azad University, Iran); Moloud Dabaghi (Islamic Azad University, Iran); Nima Khaledi (Sanandaj Azad University, Iran); Darush Sardari (Islamic Azad University, Iran)

A Placebo-Controlled Study of Far Infrared Ray Applied to ‘Phantom Limb’

Chi-Yu Huang (National Taiwan University, Taiwan); Rong-Sen Yang (College of Medicine, National Taiwan University, Taiwan); Te Son Kuo (National Taiwan University, Taiwan); Kai-Hsiung Hsu (National Ilan University, Taiwan)

Th. 04: Poster Session: Track 06: Computational Biology & Physiome

The effects of the exercise on reactive oxygen species and redox system in rats

Kosuke Endo (Kawasaki Medical School, Japan)

Cardiac Pacemaker Simulation using the MML Framework

David Chang (University of New South Wales, Australia); Socrates Dokos (University of New South Wales, Australia); Nigel Lovell (University of New South Wales, Australia)

Th. 09: Poster Session : Track 06: Deep Brain Stimulation

Role Of Complexity Of Visual System In Recording Of Visual Impulses Under Anaesthesia

Seyed Mohammad Mehdi Shushtarian (Iran University of Medical Science, Iran)

Th. 05: Poster Session: Track 06: Electronic Medical Record

Electronic case history for cardiological clinics

David Iosseliani (Moscow City Center of Interventional Cardioangiology, Russia); Evgueni Fainberg (Russian Scientific Center "Kurchatov Institute", Russia)

Introducing electronic prescriptions in Belgium

Marc Nyssen (Vrije Universiteit Brussel, Belgium); Theo Putzeys (Medical Discussion Forum, Belgium); Luc Baert (Medical Web Services, Belgium); Ronald Buyl (Vrije Universiteit Brussel, Belgium)

Database system for administration of heterogeneous medical studies

Andreas Häfner (University of Applied Sciences, Germany); Steffen Schulz (University of Applied Sciences Jena, Germany); Rico Schroeder (University of Applied Sciences Jena, Germany); Katharina Witt (University of Applied Sciences Jena, Germany); Andreas Voss (University of Applied Sciences Jena, Germany)

Th. 06: Poster Session: Track 06: Laser and Ultrasound Interventions

Bilateral-array focused ultrasound transducer with dual-frequency mode for blood-brain barrier opening in presence of microbubbles

Sheng-Kai Wu (National Taiwan University, Taiwan); Pei-Chi Lee (National Taiwan University, Taiwan); Yung-Shin Lee (National Taiwan University, Taiwan); Xin-Yu Wu (National Taiwan University, Taiwan); Wen-Mei Fu (National Taiwan University, Taiwan); Win-Li Lin (National Taiwan University, Taiwan)

System for laser osteotomy in surgery with the kuka lightweight robot – First experimental results

Holger Mönnich (University of Karlsruhe, Germany)

Th. 13: Poster Session: Track 06: Measurement of Tumor & Tissue Micro-Environment

Application of morphometric analysis for quantitative evaluation of liver biopsies in therapeutic trials

Ivan Tokin (St.-Petersburg State University, Russia); Ivan Tokin (St.-Petersburg State Medical Academy, Russia); Galina Filimonova (St.-Petersburg State Medical Academy, Russia); Piret Hussar (Estonian

University of Life Sciences, Estonia); Vladimir Bure (St.-Peterburg State University, Russia); Yulia Motusenko (St.-Petersburg State University, Russia)

Th. 02: Poster Session: Track 06: Molecular Imaging

Development of a T1 Contrast Agent for Magnetic Resonance Imaging using Gd2O3 Nanoparticles

Zhaleh Behrouzkia (Tehran University of Medical Sciences (TUMS), Iran); Nader Riyahi-Alam (Tehran University of Medical Sciences, Iran); Soheila Haghgoo Jahromi (Ministry of Health, Food & Drug Laboratory Research Center, Iran); Mohammad Hossein Moddaresi (Tehran University of Medical Sciences(TUMS), Iran); Alexander Seifalian (University College of London(UCL), United Kingdom); Mojtaba Saffari (Tehran University of Medical Sciences(TUMS), Iran); Morteza Bakhtiary (Tehran University of Medical Sciences, Iran)

The MediPROBE CdTe Based Compact Gamma Camera

Paolo Russo (Università di Napoli "Federico II" & INFN Napoli, Italy); Assunta Simona Curion (Università di Napoli Federico II & INFN Napoli, Italy); Giovanni Mettievier (Università di Napoli Federico II & INFN Napoli, Italy); Luigi Aloj (Istituto Nazionale per lo Studio e la Cura dei Tumori, Fondazione G. Pascale, Italy); Corradina Caracò (Istituto Nazionale per lo Studio e la Cura dei Tumori, Fondazione G. Pascale, Italy); Secondo Lastoria (Istituto Nazionale per lo Studio e la Cura dei Tumori, Fondazione G. Pascale, Italy)

Polymer-Nanoparticles for Multimodal Imaging and Targeted Therapy: Concept, Data, Perspectives

Ulrich Pison (Charité - Universitätsmedizin Berlin, Germany); Bernd Paulke (Fraunhofer Institute for Applied Polymer Research, Germany); Silvia Pietschmann (Charité - Universitätsmedizin Berlin, Germany); Lutz Kaufner (Charité - Universitätsmedizin Berlin, Germany); Harald Bruhn (Charité - Universitätsmedizin Berlin, Germany); Regis Cartier (Charité - Universitätsmedizin Berlin, Germany); Sören Schumacher (Charité - Universitätsmedizin Berlin, Germany)

Evaluation of Breast Tumor Targeting with Radiolabeled F(ab')₂ Fragment of a New Anti-MUC1 Monoclonal Antibody (PR81)

Mojtaba Salouti (Islamic Azad University, Zanjan Branch, Iran); Hossein Babaei (Atomic Energy Organization of Iran, Iran); Hossein Rajabi (Tarbiat Modarres University, Iran); Haleh Foroutan (Atomic Energy Organization of IRAN, Iran); Mohammad Javad Rasaei (Tarbiat Modarres University, Iran); Ahmad Bitarafan (Shahid Rajaei Hospital, Iran); Mohammad Shafiei (Atomic Energy Organization of Iran, Iran); Mohammad Mazidi (Atomic Energy Organization of Iran, Iran); Fariba Johari Daha (Atomic Energy Organization of Iran, Iran)

Th. 02: Poster Session: Track 07: Optical Imaging

The effects of irradiation of diode laser on cutaneous wound healing in rabbits

Changsheng Ma (Shandong Tumor Hospital&Institute, P.R. China)

Software Tool for Recording and Analysis of the Brain Intrinsic Optical Signals

Eva Krajcovicova (Faculty of Electrical Engineering, Czech Technical University in Prague, Czech Republic); Monika Martinkova (Faculty of Electrical Engineering, Czech Technical University in Prague, Czech Republic); Renata Konopkova (Institute of Physiology, Academy of Sciences of the Czech Republic, v.v.i., Czech Republic); Jakub Otahal (Institute of Physiology, Academy of Sciences of the Czech Republic, v.v.i., Czech Republic)

Application of time-gated, intensified CCD camera in the brain imaging system.

Piotr Sawosz (Institute of Biocybernetics and Biomedical Engineering PAS, Poland); Michal Kacprzak (Institute of Biocybernetics and Biomedical Engineering PAS, Poland); Norbert Zolek (Institute of Biocybernetics and Biomedical Engineering PAS, Poland); Roman Maniewski (Institute of Biocybernetics and Biomedical Engineering PAS, Poland); Adam Liebert (Institute of Biocybernetics and Biomedical Engineering PAS, Poland)

Automatic Histologic Grading for Lobular Carcinoma In Situ

Sujin Kim (University of Kentucky, USA); Hyekyung Jeong (Information and Communications University, Korea); Hyunjoo Choi (St. Vincent's Hospital, Korea); Desok Kim (KAIST, Korea)

Assembly, Calibration and Application of a Hyperspectral Image System for Biomedical Imaging

Emery Lins (Universidade de Sao Paulo, Brazil); S Pratavieira (University of Sao Paulo, Brazil); Willian Shigeyosi (Instituto de Física de Sao Carlos, Brazil); Maristela Dutra-Correa (Universidade de Sao Paulo, Brazil); V Bagnato (University of Sao Paulo, Brazil); C Kurachi (University of Sao Paulo, Brazil)

A Beamline for Medical Imaging and Radiation Therapy at SESAME Synchrotron in Jordan

Feras Afaneh (The Hashemite University, Jordan)

Analysis of rat colonic mucosal autofluorescence under excitation with UV/violet light

Keimei Nakano (Kyoto Prefectural University of Medicine, Japan); Yoshinori Harada (Kyoto Prefectural University of Medicine, Japan); Yoshihisa Yamaoka (Kyoto Prefectural University of Medicine, Japan); Kiichiro Miyawaki (Kyoto Prefectural University of Medicine, Japan); Naoki Wakabayashi (Kyoto Prefectural University of Medicine, Japan); Katsuichi Imaizumi (Olympus Medical Systems Corp., Japan); Hideyuki Takaoka (Olympus Corp., Japan); Masaya Nakaoka (Olympus Corp., Japan); Tetsuro Takamatsu (Kyoto Prefectural University of Medicine, Japan)

Confocal Microscopy Based on Injection of Reflected Irradiation

Yulia Levakhina (University of Luebeck, Germany)

Seeing the effect of laser hair removal with a hyper-spectral dermatoscope

Herke Jan Noordmans (University Medical Center Utrecht, The Netherlands); Ellen Kuijer (Hogeschool Utrecht, The Netherlands); Ilva de Groot (Hogeschool Utrecht, The Netherlands); Rowland de Roode (University Medical Center Utrecht, The Netherlands); Rudolf Verdaasdonk (University Medical Center Utrecht, The Netherlands)

Hyperspectral Imaging of Lipids using Near-infrared Super Continuum Light

Taisuke Ikawa (Osaka University, Japan); Katsunori Ishii (Osaka University, Japan); Kunio Awazu (Osaka University, Japan)

High-resolution Raman tissue imaging of rat myocardial infarction

Yoshinori Harada (Kyoto Prefectural University of Medicine, Japan); Mitsugu Ogawa (Kyoto Prefectural University of Medicine, Japan); Yoshihisa Yamaoka (Kyoto Prefectural University of Medicine, Japan); Hitoshi Yaku (Kyoto Prefectural University of Medicine, Japan); Tetsuro Takamatsu (Kyoto Prefectural University of Medicine, Japan)

Homodyne Frequency-Domain Diffuse Optical Tomography in Transmission Geometry

Jun Hui Ho (Nanyang Technological University, Singapore); Jing Dong (Nanyang Technological University, Singapore); Kijoon Lee (Nanyang Technological University, Singapore)

Development and characterization of a widefield imaging system combining fluorescence and reflectance modes for the detection of skin and oral cavity cancer.

S Pratavieira (University of Sao Paulo, Brazil); P Santos (University of Sao Paulo, Brazil); V Bagnato (University of Sao Paulo, Brazil); C Kurachi (University of Sao Paulo, Brazil)

The Research of the Medical Perspective Imaging of Intense Laser Proton Beam

Jianwei Zhang (Chengdu Medical College, P.R. China); Guangchang Wang (Chengdu Medical College, P.R. China)

The Diagnostic Accuracy of in vivo Confocal Laser Scanning Microscopy of Basal Cell Carcinoma: A Preliminary Study in Chinese Patients

Min Gao (Shandong Cancer Hospital, P.R. China)

Th. 08: Poster Session: Track 06: On-Chip Cell Analysis

Microchip-Integrated EOSCs (Electrolyte Oxide Semiconductor Capacitors) as Devices for High Efficiency and Selective Electroporation of Mammalian Cells

Marta Maschietto (University of Padova, Italy); Stefano Girardi (University of Padova, Italy); Marco Dal Maschio (University of Padova)

and Italian Institute of Technology (IIT), Italy); Stefano Vassanelli (University of Padova, Italy)

CH2-Symmetric/CH2-Antisymmetric Stretch Ratio Sensor for Cell Analysis

Sander van den Driesche (Vienna University of Technology, Austria); Wojciech Witarski (Slovak Academy of Sciences, Slovakia); Michael Vellekoop (Vienna University of Technology, Austria)

Finite Element Modelling of Microphysiometry on Cellular Specimen

Martin Brischwein (Technische Universität München, Germany)

Sensor chips for multiparametric real time monitoring of cell metabolism

Marlies Zottmann (TU München, Germany); Joachim Wiest (cellasys GmbH, Germany); Thomas Flurschütz (Technische Universität München, Germany); Michael Schmidhuber (Technische Universität München, Germany); Bernhard Wolf (Technische Universität München, Germany)

Automated 24 well neuro-screening system with life support

Florian Ilchmann (Technische Universität München, Germany); Bernhard Becker (Technische Universität München, Germany); Daniel Grundl (Technische Universität München, Germany); Jochen Meyer (Technische Universität München, Germany); Bernhard Wolf (Technische Universität München, Germany)

Manufacture of SU-8 Micro-grippers for Mechanical Characterization of Gut Epithelial Cells

Ruth Mackay (University of Dundee, United Kingdom); Huirong Le (University of Dundee, United Kingdom); Robert Keatch (University of Dundee, United Kingdom); Qi Zhao (University of Dundee, United Kingdom)

Concept of a Microfluidics and Tunneling Effect-based BioMEMS to Detect Cells

Shengbo Sang (Ilmenau University of Technology, Germany); Ulrike Fröber (Ilmenau University of Technology, Germany); Hartmut Witte (Technische Universität Ilmenau, Germany)

Development of a multifunctional microfluidic system for studies of nerve cell activity during hypoxic and anoxic conditions

Nazanin Bitaraf (Luleå University of Technology, Sweden); Ahmed Ahmed (Luleå University of Technology, Sweden); Michael Druzin (Umeå University, Sweden); Kerstin Ramser (Luleå University of Technology, Sweden)

MEA Neurosensor, the Tool for Synaptic Activity Detection: Acute Amyloid- β Oligomers Synaptotoxicity Study

Iryna Benilova (Center for Human Genetics, KU Leuven, Belgium)

Minimizing stress exposure to cells using novel microfluidic cell capture devices

Gregor Kijanka (Biomedical Diagnostics Institute, Dublin City University, Ireland); Ivan Dimov (Dublin City University, Ireland); Robert Burger (Dublin City University, Ireland); Jens Ducreé (Dublin City University, Ireland)

Automation of chemosensitivity testing - enabling personalized cancer therapy

Bernhard Becker (Technische Universität München, Germany); Daniel Grundl (Technische Universität München, Germany); Simona Eitzbach (Technische Universität München, Germany); Marlies Zottmann (TU München, Germany); Martin Brischwein (Technische Universität München, Germany); Bernhard Wolf (Technische Universität München, Germany)

Spontaneous Activity of Rat Embryonic Cardiac Myocytes

Danny Jans (IMEC vzw, Belgium); Dries Braeken (IMEC vzw, Belgium); Danielle Rand (IMEC vzw, Belgium); Carmen Bartic (IMEC, Belgium); Geert Callewaert (K.U.Leuven, Belgium)

Th. 11: Poster Session: Track 06: Ophthalmology III: Advancement in Ophthalmic Diagnostics

Effect Of Visual Spectrum On The Dynamic Pupillary In Subjects With Diabetes Mellitus On Poisoning On Lead Pb

Luis Armando Villamar Martinez (Centro de Investigaciones y de Estudios Avanzados del I.P.N., Mexico)

Th. 10: Poster Session: Track 06: TE/RM* from a Translational Research and Clinical Point of View

Corrosion behavior of some new implant biomaterials in biofluids

Mihai Popa (Institute of Physical Chemistry, Romania); Ecaterina Vasilescu (Institute of Physical Chemistry, Romania); Paula Drob (Institute of Physical Chemistry, Romania); Doina Raducanu (Politehnica University, Romania); Ioan Cincea (Politehnica University, Romania); Cora Vasilescu (Institute of Physical Chemistry, Romania)

Electrochemical stability of a new Ti base bioalloy in simulated human fluids

Mihai Popa (Institute of Physical Chemistry, Romania); Ecaterina Vasilescu (Institute of Physical Chemistry, Romania); Paula Drob (Institute of Physical Chemistry, Romania); Cora Vasilescu (Institute of Physical Chemistry, Romania)

Th. 04: Poster Session: Track 07: Biomechanics

Biomechanical analysis of various shapes and surface roughnesses of an immediately loaded implant_3D Finite element simulation

Heng-Li Huang (China Medical University, Taiwan); Lih-Jyh Fuh (China Medical University, Taiwan); Jui-Ting Hsu (China Medical University, Taiwan); Michael YC Chen (China Medical University Hospital, Taiwan)

The Relationship between the COP–COM Variable and the Horizontal Acceleration of the Body in Postural Sway, Falling and Walking

Hue seok Choi (Yonsei University, Korea); Young-Ho Kim (Yonsei University, Korea)

Characterisation of mechanical and neuromuscular response to multi-frequency Whole Body Vibration training

Nicola Toschi (Universita' degli Studi di Roma "Tor Vergata", Italy); Giuseppe Annino (Universita' degli Studi di Roma "Tor Vergata", Italy); Italo Vannucci (Universita' degli Studi di Roma "Tor Vergata", Italy); Marco Pallante (Universita' degli Studi di Roma "Tor Vergata", Italy); Stefano D'Ottavio (Universita' degli Studi di Roma "Tor Vergata", Italy); Maria Guerrisi (Universita' degli Studi di Roma "Tor Vergata", Italy)

The Coverage Characteristic of Tibial Component for Unicompartmental Knee Arthroplasty in Chinese Patients—a Morphological Analysis

Tsung-Wei Chang (National Yang Ming University, Taiwan)

Development of a prototype for measuring plantar forces

Elaine Cristina Teodoro (São Paulo State University, Brazil); José Tomazini (São Paulo State University, Brazil); Sandra Galera (São Paulo State University, Brazil); Luiz Nascimento (University of Taubaté, Brazil)

The Effect of Graft Strength on Knee Laxity and the In-Situ Forces of Grafts after Posterior Cruciate Ligament Reconstruction

Tsung-Wei Chang (National Yang Ming University, Taiwan)

Gait analysis in patients with Knee Osteoarthritis Walking at Normal Speed on the Flat Ground

Song-hua Yan (Capital Medical University, P.R. China)

An “in vivo” study of high frequency vibration on muscle development

Gabriele Ceccarelli (University of Pavia, Italy); Laura Benedetti (University of Pavia, Italy); Deborah Prè (University of Pavia, Italy); Giovanni Magenes (University of Pavia, Italy); Maria Gabriella Cusella De Angelis (University of Pavia, Italy)

A method for proper choice of hernia meshes based on their mechanical behavior

Miglena Kirilova (Institute of Mechanics, Bulgaria)

Experimental Study on the Biomechanical Properties of Pelvic Floor and Uterine Wall for the Rabbit

Hong Fang Song (Capital University of Medical Sciences, P.R. China); Le Ma (Affiliated Beijing Fuchan Hospital, Capital University of Medical Sciences, P.R. China)

Carotid Elastic Modulus in Vivo Estimation Using Ultrasonic Images and Comparison to in Vitro Measurement for Animal

Yasunari Yokota (Gifu University, Japan); Yoko Kawamura (Gifu University, Japan); Fumio Nogata (Gifu University, Japan); Hiroyuki

Morita (Gifu University, Japan); Yoshihiro Uno (Gifu University, Japan); Takahiko Kawamura (Chubu Rosai Hospital, Japan)

Influence of Low Density Lipoprotein on Migration of Vascular Endothelial Cells under Fluid Shear Stress

Jiahuan Jiang (Chongqing University, P.R. China); Gui-Xue Wang (Chongqing University, P.R. China)

Modeling the 3-Dimensional Center of Rotation of a Total Disc Arthroplasty at L4/5

Ivan Grubisic (Grosshadern Medical Center, Germany); Ulrich Schreiber (Technische Universität München, Germany); Alejandro Mendoza (Technische Universität München, Germany); Christof Birkenmaier (Grosshadern Medical Center, Germany)

Biomechanics of human gait simulation

Jan Culik (Czech Technical University in Prague, Czech Republic); Zoltan Szabo (Czech Technical University in Prague, Czech Republic); Radim Krupicka (Czech Technical University in Prague, Czech Republic)

Analysis of Biomechanical Interactions of Water with Mb and RNase Proteins through Thermostatistical Methods

Edwin Roza (Universidad Nacional de Colombia, Colombia); Oscar Garcia (Universidad Nacional de Colombia, Colombia); Diana Roldan (Universidad Nacional de Colombia, Colombia); Stella Veloza (German Cancer Research Center, Germany)

Microscopic Analysis of Bone in Growing Rats Under the Influence of Vitamin K2 and Mechanical Loading

Takeshi Matsumoto (Osaka University, Japan); Takushi Miyakawa (Osaka University, Japan); Hisashi Naito (Osaka University, Japan); Masao Tanaka (Osaka University, Japan)

Different Arterial Occlusion Protocols on the Radial Strain of Arterial Wall

Mehravar Rafati (Phd student, Iran); Manijhe Mokhtari-dizaji (University of Tarbiat Modarres, Iran); Hajir Saberi (Faculty member, Tehran Medical sciences University, Iran)

The Effects of Different Antiembolic Agents on The Crystallinity of Fractured Bones during The Healing Period

Burcu Tunc (Bogazici University, Turkey); Emin Aksoy (Istanbul Health Authority, Turkey); Metin Usta (Gebze Yuksek Teknoloji Enstitusu, Turkey); Isil Kutbay (Gebze Yuksek Teknoloji Enstitusu, Turkey); A. Hikmet Ucisik (Bogazici University, Turkey)

First steps in 4D-visualization of human foot during ankle joint flexion under strong muscles' tension based on MRI

Cornelia Kober (Hamburg University of Applied Sciences, Germany); Henning von der Kammer (HAW Hamburg, Germany); Jörg Rieger

(University of Frankfurt, Germany); Robert Sader (Univ. of Frankfurt, Germany); Martin Mack (University of Frankfurt, Germany)

Measurement Comparison about Lumbar Lordosis : Radiography and 3D Motion Capture

Seonhong Hwang (Yonsei University, Korea); Sunwoo Park (Yonsei University, Korea); Young-Ho Kim (Yonsei University, Korea)

Numerical Simulation of Lipoprotein Concentration Polarization in Bifurcation Artery

Gui-Xue Wang (Chongqing University, P.R. China); Hua Liu (Chongqing University, P.R. China); Chao-Jun Tang (Chongqing University, P.R. China); Xiaoyan Deng (Beihang University, P.R. China)

Development of a scanning needle microscopy for an elasticity distribution imaging of rat liver cirrhosis.

Yoshinobu Murayama (Nihon University, Japan)

Speed Effect on Lower Extremity Biomechanics during Shuttle Run

Szu-Ching Lu (National Cheng Kung University, Taiwan)

Assessing the Discriminatory Power of Noninvasive Quantification of Myocardial End-diastolic Wall Stress

Hassan Moladoust (Guilan University of Medical Science, Iran); Manijhe Mokhtari-dizaji (University of Tarbiat Modarres, Iran); Zahra Ojaghi-Haghighi (Rajaei Cardiovascular, Medical and Research Center, Iran); Feridoun Noohi (Rajaei Cardiovascular, Medical and Research Center, Iran); Ahmad Bitarafan (Shahid Rajaei Hospital, Iran); Amir Khajavi (Shaheed Rajaei Cardiovascular, Medical and Research Center, Iran)

Mechanical Behavior of Isolated Intervertebral Disc

Felipe Lemos (São Paulo State University, Brazil); José Tomazini (São Paulo State University, Brazil); Urbano Oliveira (São Paulo State University, Brazil)

Effect of Skin and Subcutaneous Tissue on X-ray Strain Measurement of Ti Implant

Kazuhiro Fujisaki (Hokkaido University, Japan); Shigeru Tadano (Hokkaido University, Japan); Masahiro Todoh (Hokkaido University, Japan); Bijay Giri (Hokkaido University, Japan)

Machining Processes of Degradable Implant Materials to adjust Surface and Subsurface Properties

Berend Denkena (Leibniz Universität Hannover, Germany); Luis de Leon (Leibniz Universität Hannover, Germany); Arne Lucas (Leibniz Universität Hannover, Germany)

Influence of geometric simplifications on stresses and strains in aneurysm model

Michal Děták (University of Technology Brno, Czech Republic); Jiri Bursa (Brno University of Technology, Faculty of Mechanical Engineering, Czech Republic)

A comparative proteomic analysis of low shear stress induced vascular remodeling: Regulation of lysyl oxidase and TGF-beta

Qi Yingxin (Shanghai Jiao Tong University, P.R. China); Wang Xiaodong (Shanghai Jiao Tong University, P.R. China); Jiang Jun (Shanghai Jiao Tong University, P.R. China); Jiang Xiaohua (Shanghai Jiao Tong University, P.R. China); Ji Suying (Shanghai Jiao Tong University, P.R. China); Long Dingkun (Shanghai Jiao Tong University, P.R. China); Jiang Zonglai (Shanghai Jiao Tong University, P.R. China)

Development of a method to produce an arterial artificial stenosis model

Stefan Pfeifer (Technische Universität München, Germany); Daniel Kießling (Technische Universität München, Germany); Erich Wintermantel (MedTech - Lehrstuhl für Medizintechnik, Germany)

Residual Stress around Outer Cortical Region in Bovine Femoral Diaphysis

Satoshi Yamada (Hokkaido University, Japan); Shigeru Tadano (Hokkaido University, Japan); Masahiro Todoh (Hokkaido University, Japan); Kazuhiro Fujisaki (Hokkaido University, Japan)

A 3D Kinematic Estimation of Knee Prosthesis from Fluoroscopy Images

Mohammad Hossain (PhD Student, Japan)

Notching In Anterior Femur – When Should Be Used Femoral Stems? - Experimental Study

Antonio Completo (University of Aveiro, Portugal); Jose Simoes (University of Aveiro, Portugal); Ilda Abe (University of Aveiro, Portugal)

Biomechanical analysis of funnel chest after correction of deformation

Bożena Gzik-Zroska (Silesian University of Technology, Poland); Dagmara Tejszerska (Silesian University of Technology, Poland); Wojciech Wolański (Silesian University of Technology, Poland); Marek Gzik (Silesian University of Technology, Poland)

System Identification of Mechanomyogram of Anterior Tibial Muscle Evoked by Electrical Stimulation

Takanori Uchiyama (Keio University, Japan); Takumasa Yamaguchi (Keio University, Japan); Tatsuya Higuchi (Keio University, Japan)

Precise Measurement System for Knee Joint Motions at Pendulum Test Using Accelerometer

Yoshitake Yamamoto (Himeji Dokkyo University, Japan)

Effects of eccentric screwing on the initial stability of the acetabular cup in bone of different qualities

Jui-Ting Hsu (China Medical University, Taiwan); Heng-Li Huang (China Medical University, Taiwan); Ming-Tzu Tsai (Hungkuang University, Taiwan)

Th. 06: Poster Session: Track 07: Catheter Interventions

Catheter and guidewire simulator for intravascular surgery (Comparison between simulation results and medical images)

Kazuto Takashima (RIKEN, Japan); Makoto Ohta (Tohoku University, Japan); Kiyoshi Yoshinaka (The University of Tokyo, Japan); Toshiharu MUKAI (Bio-Mimetic Control Research Center, Japan); Shinzo Oota (Oota Memorial Hospital, Japan)

Th. 01: Poster Session: Track 07: Hadron Therapy

Particle-beam radiation therapy for the tumor of pharyngeal region

Masao Murakami (Hyogo Ion Beam Medical Center, Japan); Yasue Niwa (Hyogo Ion Beam Medical Center, Japan); Yusuke Demizu (Hyogo Ion Beam Medical Center, Japan); Daisuke Miyawaki (Hyogo Ion Beam Medical Center, Japan); Kazuki Terashima (Hyogo Ion Beam Medical Center, Japan); Takeshi Arimura (Hyogo Ion Beam Medical Center, Japan); Yoshio Hishikawa (Hyogo Ion Beam Medical Center, Japan)

Editing range compensator for sparing normal tissue in treatment planning of carbon-ion radiotherapy

Manabu Mizota (National Institute of Radiological Sciences, Japan); Nobuyuki Kanematsu (National Institute of Radiological Sciences, Japan)

Pre-clinical experiments in the deep-seated tumor heavy-ion therapy terminal at HIRFL-CSR

Qiang Li (Institute of Modern Physics, P.R. China); Zhong-Ying Dai (Institute of Modern Physics, P.R. China); Xin-Guo Liu (Institute of Modern Physics, Chinese Academy of Sciences, P.R. China); Qing-Feng Wu (Institute of Modern Physics, Chinese Academy of Sciences, P.R. China); Ping Li (Institute of Modern Physics, Chinese Academy of Sciences, P.R. China); Jia-Jun Tao (Institute of Modern Physics, Chinese Academy of Sciences, P.R. China)

Determination of nuclear cross-sections of proton beams by the collective model and extended nuclear shell theory

Waldemar Ulmer (Varian International, Switzerland); Evangelos Matsinos (Varian International, Switzerland)

Revaluation for problem of clinical particle therapy in cell biological effects of proton and carbon-ion and X-ray at Hyogo Ion Beam Medical Center

Shinichi Nagayama (Hyogo Ion Beam Medical Center and Shin Nippon Biomedical Laboratories (SNBL), Japan); Masao Murakami (Hyogo Ion Beam Medical Center, Japan); Takuya Maeda (Hyogo Ion Beam Medical Center, Japan); Masashi Baba (Hyogo Ion Beam Medical Center and Shin Nippon Biomedical Laboratories (SNBL), Japan); Yusuke Demizu (Hyogo Ion Beam Medical Center, Japan); Yoshio Hishikawa (Hyogo Ion Beam Medical Center, Japan); Mitsuyuki Abe (Hyogo Ion Beam Medical Center, Japan)

Radiobiological Effectiveness of Neutron-Capture Therapy with Gadolinium

Sergey Akulinichev (Institute for Nuclear Research of RAS, Russia); Viktor Salyanov (Engelhardt Institute of Molecular Biology of the RAS, Russia); Vladimir Skorkin (Institute for Nuclear Research of RAS, Russia); Yuri Yevdokimov (Engelhardt Institute of Molecular Biology of the RAS, Russia)

A Feasibility Study on Multi Prompt-Gamma-Ray Telescope System for Boron Neutron Capture Therapy

Yoshinori Sakurai (Kyoto University, Japan)

Beam Angle Optimization in Particle Therapy with OptiC

Stefan Speer (Universitätsklinikum Erlangen, Germany); Jürgen Karg (Universitätsklinikum Erlangen, Germany)

The Monte Carlo Code MCPTV- Dose Calculation in Radiation Therapy with Carbon Ions

Jürgen Karg (Universitätsklinikum Erlangen, Germany); Stefan Speer (Universitätsklinikum Erlangen, Germany)

Secondary neutron production from patients during therapy with hadrons: are there potential risks

Anwar Chaudhri (Klinikum-Nuernberg, Germany)

Accelerator production of Ra-225 for generating Bi-213 for targeted Alpha Therapy

Anwar Chaudhri (Klinikum-Nuernberg, Germany)

Th. 12: Poster Session: Track 07: Health Technology Management in Developing Countries

Health Technology Utilisation In Tertiary Health Centres In Developing Countries : The Nigerian Experience

Abdulkadir Tabari (Aminu Kano Teaching Hospital (AKTH), Kano, Nigeria., Nigeria)

A Distribution Strategy for Imaging Centers in the Costa Rican Public Health System

Alfonso Rosales-Lopez (Universidad Autónoma Metropolitana - Iztapalapa, Mexico); Martha Ortiz-Posadas (Universidad Autónoma Metropolitana Iztapalapa, Mexico)

Online Courses in Medical Technology Application, Support and Management Improve Effectiveness and Patient Safety

Tobey Clark (University of Vermont, USA)

Forgotten Costs: - The Dilemma of Medical Equipment Economy in Developing Countries

Mohammad Samir Tuleimat (Assistant Professor, Saudi Arabia)

Th. 13: Poster Session: Track 07: Hyperthermia

Thermographic measurements of allergen-induced skin reaction

Eugeniusz Rokita (Jagiellonian University Medical College, Poland);
Tomasz Rok (Jagiellonian University Medical College, Poland)

Locoregional hyperthermia in combination with chemotherapy for metastatic breast cancer patients: The Mammatherm- trial

Julia Jueckstock (Klinikum Innenstadt Munich University, Germany);
Barbara Eberhardt (Kreiskrankenhaus Landshut-Achdorf, Germany);
Harald Sommer (Klinikum Innenstadt Munich University, Germany)

Automated Laboratory of Electromagnetic Radiation for the Study of Biological Effects and Oncologic Hyperthermia

Mario Cepeda (Cinvestav-IPN, Mexico); Arturo Vera (Centro de Investigación y de Estudios Avanzados del IPN, Mexico); Lorenzo LEija (Cinvestav IPN, Mexico)

Th. 09: Poster Session : Track 07: Modelling, Simulation and Control in Neural Engineering

A neuronal network model with plasticity for tinnitus management by sound therapy

Hirofumi Nagashino (The University of Tokushima, Japan); Yohsuke Kinouchi (The University of Tokushima, Japan); Ali Danesh (Florida Atlantic University, USA); Abhijit Pandya (Florida Atlantic University, USA)

Influence of Base Material of TRUCT Braille on Readability of TRUCT Braille

Kouki Doi (Tokyo Metropolitan University, Japan); Hiroshi Fujimoto (Waseda University, Japan); Tsutomu Wada (Japan Braille Library, Japan)

Research on the Perceptual Size of Tactile Dots and Bars

Wataru Toyoda (Waseda University, Japan); Tsutomu Wada (Japan Braille Library, Japan); Kouki Doi (Tokyo Metropolitan University, Japan); Hiroshi Fujimoto (Waseda University, Japan)

Regional absolute quantification in neurochemical profile of the canine brain: Investigation by 1H nuclear magnetic resonance spectroscopy and tissue extraction

Dong-Cheol Woo (The Catholic University of Korea, Korea); Chi-Bong Choi (Kyung-Hee University, Korea); Sung-Ho Lee (Kunkuk University of Korea, Korea); Eunjung Bang (Korea Basic Science Institute, Korea); Sang-Soo Kim (The Catholic University of Korea, Korea); Hyang-Shuk Rhim (The Catholic University of Korea, Korea); Sang-Young Kim (The Catholic University of Korea, Korea); Keun-Hyung Kim (The Catholic University of Korea, Korea); Bo-Young Choe (The Catholic University of Korea, Korea)

1H-MRS study of a depressive animal model for assessment of antidepressant effects

Sang-Young Kim (The Catholic University of Korea, Korea); Chi-Bong Choi (Kyung-Hee University, Korea); Sung-Ho Lee (Kunkuk University of Korea, Korea); Dong-Cheol Woo (The Catholic University of Korea, Korea); Bo-Young Choe (The Catholic University of Korea, Korea)

Functionality of neuronal networks derived from human embryonic stem cells

Teemu Heikkilä (Tampere University of Technology, Finland); Jarno Mikkonen (Regea - Institute for Regenerative Medicine, University of Tampere, Finland); Jarno Tanskanen (Tampere University of Technology, Finland); Laura Ylä-Outinen (Tampere University of Technology, Finland); Riikka Lappalainen (University of Tampere, Finland); Susanna Narkilahti (University of Tampere, Finland); Jari Hyttinen (Tampere University of Technology, Finland)

Electrical Network for Emulation of Saccadic Eye Movements

Omar Terán (Cinvestav - IPN, Mexico); Ernesto Suaste (Cinvestav-IPN, Mexico)

Effects of acupuncture in the ischemic model of diabetes mellitus rats

Samjin Choi (Kyung Hee University, Korea); Gija Lee (Kyung Hee University, Korea); Changshik Yin (Kyung Hee University, Korea); Seokkeun Choi (Kyung Hee University, Korea); Sungwook Kang (Kyung Hee University, Korea); Sujin Chae (Kyung Hee University, Korea); Jeonghoon Park (Kyung Hee University, Korea); Kyungsook Kim (Kyung Hee University, Korea); Youngho Park (Kyung Hee University, Korea); Hunkuk Park (Kyung Hee University, Korea)

PERFORM: Building and mining electronic records of neurological patients being monitored in the home

Reynold Greenlaw (Oxford Computer Consultants, United Kingdom)

Th. 10: Poster Session: Track 07: Nanotechnology in TE/RM*

Osteoblast culture on titanium base bioalloy and its corrosion resistance in physiological solutions

Mihai Popa (Institute of Physical Chemistry, Romania); Dana Iordachescu (University of Bucharest, Romania); Ecaterina Vasilescu (Institute of Physical Chemistry, Romania); Paula Drob (Institute of Physical Chemistry, Romania); Anisoara Cimpean (University of Bucharest, Romania); Cora Vasilescu (Institute of Physical Chemistry, Romania); Silviu Drob (University of Bucharest, Romania)

Investigation of Plasma Protein Adsorption, Platelets Adhesion and Partial Thromboplastin Time on Plasma SiCOH Nanocoating

Gui-Xue Wang (Chongqing University, P.R. China); Qin Zhang (Chongqing University, P.R. China); Yang Shen (Chongqing University, P.R. China); Li-Juan Wan (Chongqing University, P.R. China); Dong-Yu Jia (Chongqing University, P.R. China); Chao-Jun Tang (Chongqing University, P.R. China); Shu-Ping Ge (Chongqing University, P.R. China); Qingsong Yu (University of Missouri, USA)

Nanoscaled San-Huang-Xie-Xin-Tang Suppresses Liver Hepatic Stellate Cell Activation and Fibrosis by TGF- β 1

Sherry Huang (Chung Yuan Christian University, Taiwan); Miffy Yang (Chung Yuan Christian University, Taiwan); Jin Chen (Chung Yuan Christian University, Taiwan); Walter H. Chang (Chung Yuan Christian University, Taiwan)

Biodegradable Sirolimus-loaded Poly(lactide) Nanoparticles as Delivery Systems for the Prevention of Restenosis in Coronary Stent Application

Frank Luderer (University of Rostock, Germany); Katrin Sternberg (Universität Rostock, Germany); Henning Rohm (Universität Rostock, Germany); Marian Löbner (Universität Rostock, Germany); Kathleen Köck (University of Greifswald, Germany); Heyo K. Kroemer (University of Greifswald, Germany); Klaus-Peter Schmitz (Universität Rostock, Germany)

Cell cultures on nanoporous alumina membranes

Andreas Höß (Fraunhofer Institut für Werkstoffmechanik, Germany); Annika Thormann (Fraunhofer Institut für Werkstoffmechanik, Germany); Andrea Stäudte (Fraunhofer Institut für Werkstoffmechanik, Germany); Andreas Cismak (Fraunhofer Institut für Werkstoffmechanik, Germany); Hendryk Aurich (Martin-Luther-Universität Halle-Wittenberg, Germany); Andreas Heilmann (Fraunhofer Institut für Werkstoffmechanik, Germany)

Nano-Mechanics of Amyloid Fibrils

Gianluca Savini (University of Osaka, Japan); Yasushige Yonezawa (University of Osaka, Japan); Louise Serpell (University of Sussex, United Kingdom); Haruki Nakamura (University of Osaka, Japan)

Th. 11: Poster Session: Track 07: Ophthalmology IV: Physics and Electrophysiology for Ophthalmology

Parameterization and Classification of VEP after Selective Cone Excitation

Patrick Bessler (Ilmenau University of Technology, Germany); Jan Rieger (Czech Technical University in Prague, Czech Republic); Sascha Klee (Ilmenau University of Technology, Germany); Jens Hauelsen (Ilmenau University of Technology, Germany)

Th. 05: Poster Session: Track 07: Telemedicine

An Interactive Medical Support System for Dermatology in Rural Areas

Eisuke Hanada (Shimane University Hospital, Japan); Kenji Ikebuchi (Sanin Denko Co., Ltd., Japan); Mamoru Miyamoto (Sanin Denko Co., Ltd., Japan); Mitsuhiro Kitani (Masuda Red Cross Hospital, Japan); Shinji Yamaguchi (Masuda Red Cross Hospital, Japan); Itaru Dekio (Faculty of Medicine, Shimane University, Japan); Eishin Morita (Faculty of Medicine, Shimane University, Japan)

Telematic Medical Systems for Individualized and Personalized Assistance

Bernhard Wolf (Technische Universität München, Germany); Petra Friedrich (Technische Universität München, Germany); Johannes Clauss (Technische Universität München, Germany); Alexander Scholz (Technische Universität München, Germany)

Web services and msd-format for secure data management in medical applications

Horst Meier (Ruhr-Universität Bochum, Germany); Ines Alich (Ruhr-Universität Bochum, Germany); Holger Flick (Ruhr-Universität Bochum, Germany)

Telemedical application for centralized home care of high-risk pregnancy based on control sharing approach

Janusz Jezewski (Institute of Medical Technology and Equipment ITAM, Poland)

Posture and Motion Detection using Acceleration Data for Context Aware Sensing in Personal Healthcare Systems

Achim Volmer (Technical University of Berlin, Germany); Niels Torben Krüger (Berlin Institute of Technology, Germany); Reinhold Orglmeister (TU Berlin, Germany)

Compression of Vital Biosignals of Patient by Enhanced Set Partitioning in Hierarchical Trees Algorithm

Ershad Sharifahmadian (Tehran University of Medical Sciences, Iran)

Tambov State Technical University Telemedical Centre as the Main Part of the Regional Telemedical Net

Sergej Frolov (Tambov State Technical University, Russia)

The Mobile Implementation of HL7 API for u-Healthcare Devices

Dong Ik Shin (Asan Medical Center, Korea)

Complex Biomedical System with Mobile Clients

Ondrej Krejcar (Technical University of Ostrava, Czech Republic); Dalibor Janckulik (Technical University of Ostrava, Czech Republic); Leona Motalova (VSB TU Ostrava, Czech Republic)

Two Low-Cost Solutions for Cardiac Mobile Monitoring

R Gonzalez (Central Institute of Digital Research, Cuba)

The use of thesauri for cancer prevention in workplace

Mauro Giacomini (University of Genova, Italy); Roberta Gazzarata (University of Genova, Italy); Simona Bertolini (University of Genova, Italy); Fabio Rizzo (University of Genova, Italy); Daniela Vecchio (University of Genova, Italy)

Improvement in the Accuracy of RR Interval through R-wave Interpolation

Eunmi Lee (Chungbuk National University, Korea); Eun-Jong Cha (Chungbuk National University, Korea); Tae-Soo Lee (Chungbuk National University, Korea)

Design a NGN network to Telehealth using Wi-Fi technologies

Jose Pirrone (Universidad Catolica Andres Bello, Venezuela)

E-health System for Monitoring of Chronic Diseases

Radu Ciorap (Gr.T.Popa University of Medicine and Pharmacy, Iasi, Romania, Romania); Doru Andritoi (Gr.T.Popa University of Medicine and Pharmacy, Iasi, Romania, Romania); Valentina Pomazan (University Ovidius Constanta, Romania); Lucian Petcu (University Ovidius Constanța, Romania); Florina Ungureanu ("Gh. Asachi" Technical University, Iasi, Romania, Romania); Dan Zaharia (Gr.T.Popa University of Medicine and Pharmacy, Iasi, Romania, Romania)

A Mobile Device for Textile-integrated Long-term ECG Monitoring

Stefan Lamparth (University of Karlsruhe, Germany); Silvester Fuhrhop (University of Karlsruhe, Germany); Malte Kirst (FZI Forschungszentrum Informatik, Germany); Gero von Wagner (Metrax GmbH, Germany); Joerg Ottenbacher (University of Karlsruhe, Germany)

Wearable Respiratory Rate Monitoring using Piezo-resistive Fabric Sensor

Ji-Wook Jeing (ETRI, Korea); Yongwon Jang (ETRI, Korea); Inbum Lee (ETRI, Korea); Seung-Chul Shin (ETRI, Korea); Seunghwan Kim (ETRI, Korea)

Interactive teleradiology

Ivan Drnasin (Faculty of Electrical Engineering and Computing, University of Zagreb, Croatia)

A SMS-Based Platform for Cardiovascular Tele-monitoring

Michele Triventi (Dept. Technology and Health, ISS, Italy); Giovanni Calcagnini (dept. technology and Health, ISS, Italy); Federica Censi (Dept. Technologies and Health, Italy); Eugenio Mattei (Dept. Technology and Health, ISS, Italy); Pietro Bartolini (Dept. Technology and Health, ISS, Italy)

Ambulant ECG Recording with Wet and Dry Electrodes: A Direct Comparison of two Systems

Silvester Fuhrhop (University of Karlsruhe, Germany); Stefan Lamparth (University of Karlsruhe, Germany); Malte Kirst (FZI Forschungszentrum Informatik, Germany); Gero von Wagner (Metrax GmbH, Germany); Joerg Ottenbacher (University of Karlsruhe, Germany)

Wireless Internet Based Communication Robot for Healthcare Application

Kuo-Sheng Cheng (Kun Shan University, Taiwan); Ching-Lin Li (National Cheng Kung University, Taiwan); Shao-An Deng (National Cheng Kung University, Taiwan); Yen-Fen Ko (National Cheng Kung University, Taiwan); Hsin-Hua Li (National Cheng Kung University, Taiwan); Cheng-Chun Hsu (National Cheng Kung University, Taiwan)

The Development of Remote Monitoring System Using International Standard

Hironori Takeuchi (The University of Tokushima, Japan); Akinobu Kumabe (The University of Tokushima, Japan); Pu Zhang (Shenzhen Graduate School, Harbin Institute of Technology, P.R. China); Masatake Akutagawa (The University of Tokushima, Japan); Yuichi Kogure (The University of Tokushima, Japan); Yohsuke Kinouchi (The University of Tokushima, Japan); Qinyu Zhang (Shenzhen Graduate School, Harbin Institute of Technology, P.R. China)

Portable Intelligent Bioelectric Signals Acquisition System with an Adaptive Frontend Implemented using FPGA and FPAA

Pedro Mou (University of Macau, Macao); Chang Hao Chen (University of Macau, P.R. China); Sio Hang Pun (University of Macau, Macao); Mak PengUn (University of Macau, P.R. China); Vai MangI (University of Macau, P.R. China)

Movement Monitoring in the HomeCare System

Martin Cerny (VSB - Technical University of Ostrava, Czech Republic)

Th. 10: Poster Session: Track 08: Biomaterials & Controlled Drug Release in TE/RM*

Synthesis and characterization of a new generation of hydrogels for biomedical applications

Krystyna Pietrucha (Technical University of Lodz, Poland)

Animal Experiments on endotoxin absorption by hemoperfusion with HB-H-7 resin

Li Tao (Tianjin Third Central Hospital of China, P.R. China)

Valve-gear: A contribution to development of artificial cardiac valves

Heinrich Vielberg (Invalid, Germany)

In vitro degradation of chitosan under mechanical load

Ping Li (Beihang University, P.R. China); Xiaoliang Feng (Beihang University, P.R. China); Lu Jia (Beihang University, P.R. China); Jingwen Li (Beihang University, P.R. China); Chunqiu Zhang (Beihang University, P.R. China); Yubo Fan (Beihang University, P.R. China)

Viscoelastic Properties of Cross-linked Hyaluronic Acid Dermal Fillers and Impact on Distribution in the Dermis

Johannes Reinmüller (Clinic, Germany)

Akt1-Dependent Pathways Involved in the Regulation of Tumor Conditioned Medium -Induced Endothelial Cell Migration and Survival

Hanqin Wang (Yunyang Medical College, P.R. China)

Bio-Mechanical Evaluation of a 3D Printed Composite Material

Paul Maher (University of Dundee, United Kingdom); Robert Keatch (University of Dundee, United Kingdom); Kenneth Donnelly (University

of Dundee, United Kingdom); Jan Vorstius (University of Dundee, United Kingdom)

Comparison of composite polysaccharide-based materials

Francesco Brun (University of Trieste, Italy); Agostino Accardo (University of Trieste, Italy); Gianluca Turco (University of Trieste, Italy); Sergio Paoletti (University of Trieste, Italy)

A comparative study of two oxidation treatments to form bismuth-doped titanium surface

Yi-Chun Ko (China Medical University, Taiwan); Jheng You Chen (China Medical University, Taiwan); Heng-Li Huang (China Medical University, Taiwan); Dan Jae Lin (China Medical University, Taiwan)

Quantitative 3D High Speed Video Analysis of Capsule Formation during Encapsulation Processes

Ina Meiser (Fraunhofer Institute for Biomedical Engineering, Germany); Sabine Müller (Fraunhofer Institute for Biomedical Engineering, Germany); Heiko Zimmermann (Fraunhofer Institute for Biomedical Engineering, Germany); Friederike Ehrhart (Fraunhofer Institute for Biomedical Engineering, Germany)

Bioreactor and scaffold design for the mechanical stimulation of silk based anterior cruciate ligament grafts

Martin Hohlrieder (A.M.I. Agency for Medical Innovation, Austria); Klaus Cicha (TU Vienna, Austria); Andreas Teuschl (Ludwig Boltzmann Institute for Experimental and Clinical Traumatology, Austria); Martijn van Griensven (Ludwig Boltzmann Institute for Experimental and Clinical Traumatology, Austria); Heinz Redl (Ludwig Boltzmann Institute for Experimental and Clinical Traumatology, Austria); Jürgen Stampfl (TU Vienna, Austria)

In vitro Biocompatibility of Electrospinning Polyaniline Fibers

Wen-Tyng Li (Chung-Yuan Christian University, Taiwan)

Biological and Micromechanical Approaches to Single Osteon of Equine Tibia

Hidetake Yamamoto (Tohoku Gakuin University, Japan); Yu Araki (Tohoku Gakuin University, Japan); Yuta Takahashi (Tohoku Gakuin University, Japan)

Biopolymers from African Giant Snail Shells Waste: Isolation and Characterization.

Eileen Agoha (Abia State University, Umuahia, Nigeria); Emmanuel Mazi (Abia State University, Nigeria)

Studies On The Electric Field Distribution Using Different Electrode Shapes For Electrochemotherapy

Mamdouh Shawki (lecturer of bio-medical physics, Alexandria university, Egypt); Mohammed Elbelbesy (Lecturer of bio-medical physics, Alexandria university, Egypt); Thanaa Shalaby (professor of bio-medical physics, Alexandria university, Egypt); Metwali Kotb

(professor of bio-medical physics, Alexandria university, Egypt);
Youssef Youssef (professor of bio-medical physics, Alexandria
university, Egypt)

The inhibitory action of apoptosis of IGF-1 to high glucose induced in mice earlier period blastocysts cells in vitro

Xiong ChengKai (YunYang medical college. Shiyan,Hubei,PRC, P.R. China)

Effects of Shear Stress on the Binding of Atherosclerosis Targeting Nanoparticles to Activated Endothelial Cells

Kyehan Rhee (Myongji University, Korea); Jin Hee Na (KIST, Korea);
Gon Khang (Kyunghee University, Korea)

Seeding Human Mesenchymal Stem Cells into Fibrin-based Scaffolds - A Potential for a Future Angiogenic Therapy?

Eyal Lotan (Tel-Aviv University, Israel); Shmuel Einav (Tel-Aviv University, Israel)

Biomechanical stability and biological effect of titanium intramedullary implant in rabbit femur with the filler of fast-setting calcium phosphate cement

Dan Jae Lin (China Medical University, Taiwan); Jiin Huey ChernLin (National Cheng Kung University, Taiwan); Chien Ping Ju (National Cheng Kung University, Taiwan); Wen Cheng Chen (Kaohsiung Medical University, Taiwan); Shu Huei Huang (National Cheng Kung University, Taiwan); Yin Chun Tien (Kaohsiung Medical University Hospital, Taiwan)

Clinical study on severe jaundice treatment by plasma perfusion removing bilirubin with HB-H-6 resin

Li Tao (Tianjin Third Central Hospital of China, P.R. China)

An evaluation in microstructural properties of xenogeneic cancellous bone being scaffold subjected to mechanical strain in bone tissue engineering

Xiaoying Xu (Academy of Military Medical Science, P.R. China); Xi-zheng Zhang (Institute of Medical Equipment ,Academy of Military Medi-cal Science, P.R. China)

Effect of Crosslinkers on Physical Properties of Gelatin Hollow Tubes for Tissue Engineering Application

Ming-Fa Hsieh (Chung Yuan Christian University, Taiwan)

Th. 05: Poster Session: Track 08: Digital Operating Room

Sharing tracking data between different systems using an Open Surgical Communication Bus

Bastian Ibach (RWTH Aachen University, Germany); Julia Benzko (RWTH Aachen University, Germany); Armin Janß (RWTH Aachen University, Germany); Klaus Radermacher (RWTH Aachen, Germany)

A DPWS-based Architecture for Medical Device Interoperability

Stephan Pöhlisen (University of Lübeck, Germany); Stefan Schlichting (Drägerwerk AG & Co. KGaA, Germany); Markus Strähle (Dräger Medical AG, Germany); Frank Franz (Drägerwerk AG & Co. KGaA, Germany); Christian Werner (University of Luebeck, Germany)

Smart Sensors for Environmental BioSecurity Control at Operating Rooms

Juan Uceda (University of Seville, Spain); Cynthia Sanchez (University of Seville, Spain); Maria Elena (University of Seville, Spain); Silvia Blasco (University of Seville, Spain); Pablo Cerro (University of Seville, Spain)

Design of an integrated OR system based on open standards

Stefan Bohn (University of Leipzig, Germany); Michael Gessat (Universität Leipzig, Germany); Oliver Burgert (Universität Leipzig, Germany)

Th. 01: Poster Session: Track 08: Dosimetry and Q/A, Patient Safety**

In vivo dosimetry using MOSFET and TLD for Tomotherapy

Rajesh Kinshikar (Medical Physicist, India); Chandrashekhar Tambe (Tata Memorial Hospital, India); Dipak Dhote (Reader, India); Deepak Deshpande (Head, India)

Usefulness of GafChromic EBT film for dosimetry beyond 8.0 Gy

Hideki Aoyama (Okayama University Hospital, Japan); Shinsuke Tokura (Graduate School of Health Sciences, Okayama University, Japan); Yoshiharu Azuma (Okayama University, Japan); Sachiko Goto (Okayama University, Japan); Keiji Inamura (Okayama University Hospital, Japan)

Dose audit using a glass dosimeter for Radiation Therapy Facilities in East-Asian Countries

Hideyuki Mizuno (National Institute of Radiological Sciences, Japan); Yuzuru Nakamura (Clinic C4, Japan); Suoh Sakata (Association for Nuclear Technology in Medicine, Japan); Katsuyoshi Tabushi (Nagoya University School of Health Sciences, Japan); Yohsuke Kusano (Association for Nuclear Technology in Medicine, Japan); Ai Nagano (National Institute of Radiological Sciences, Japan); Akifumi Fukumura (National Institute of Radiological Sciences, Japan); Tatsuaki Kanai (National Institute of Radiological Sciences, Japan); Hirohiko Tsujii (National Institute of Radiological Sciences, Japan)

Energy dependence investigations of Gafchromic EBT films for pretreatment dosimetric verification of IMRT plans

Krzysztof Chelmiński (M. Skłodowska-Curie Memorial Cancer Center and Institute of Oncology, Poland); Wojciech Bulski (M. Skłodowska-Curie Memorial Cancer Center and Institute of Oncology, Poland); Dietmar Georg (Medical University Vienna, Austria); Dominika Bodzak (M. Skłodowska-Curie Memorial Cancer Center and Institute of Oncology, Poland); Zbigniew Maniakowski (M. Skłodowska-Curie

Memorial Cancer Center and Institute of Oncology, Poland); Oborska-Kumaszyńska Dominika (Lower Silesian Oncology Center, Poland)

Effect of respiration on the radiation dose distribution within target volume in radiotherapy

Fangfang He (Tianjin Medical University, P.R. China)

Density response characteristics of GafChromic EBT dosimetry film using ultraviolet light exposure

Shinsuke Tokura (Graduate School of Health Sciences, Okayama University, Japan); Yoshiharu Azuma (Okayama University, Japan); Hideki Aoyama (Okayama University Hospital, Japan); Sachiko Goto (Okayama University, Japan)

Comparison of Contra lateral Breast & Chest wall doses during Radiotherapy of Ca-Breast (with mastectomy) using Co-60 machine and 6 MV LINAC.

Mehnaz Khan (PIEAS, Pakistan); Muhammad Basim Kakakhail (PIEAS, Pakistan); Saeed ur Rehman (Hospital, Pakistan)

TLD Correction Factor for Dose Delivery Verification on Gamma Radiation Cobalt-60 on Clinical Treatment

Heru Prasetio (National Nuclear Energy Agency of Indonesia, Indonesia); Dian Milvita (University of Andalas, Indonesia); Djarwani Soejoko (University of Indonesia, Indonesia)

Radiobiological analysis of planned and delivered IMRT dose distributions

Panayiotis Mavroidis (Karolinska Institutet and Stockholm University, Sweden); Brigida Ferreira (I3N, Universidade de Aveiro, Portugal); Nikos Papanikolaou (Cancer Therapy and Research Center, 7979 Wurzbach Rd., MC 7889, San Antonio, USA); Roger Svensson (Karolinska Institutet and Stockholm University, Sweden); Bengt Lind (Karolinska Institutet and Stockholm University, Sweden); Anders Brahme (Karolinska Institutet, Sweden)

Relative peripheral dose at IMRT– A comparison between Siemens Oncor and Artisté

Andrea Schwahofer (DKFZ, Germany); Tilo Wiezorek (University Hospital Jena, Germany); Marvin Moeller (Siemens, Germany)

EPID calibration method for transit in-vivo dosimetry

Andrea Fidanzio (Università Cattolica S.C., Italy); Savino Cilla (Catholic University, Italy); Francesca Greco (Università Cattolica del Sacro Cuore, Italy); Luigi Azario (Università Cattolica S.C., Italy); Luca Grimaldi (Università Cattolica del Sacro Cuore, Italy); Domenico Sabatino (Università Cattolica del Sacro Cuore, Italy); Angelo Piermattei (Università Cattolica del Sacro Cuore, Italy)

Implementation of a complete IMRT QA program and clinical experience with the DAVID chamber for in-vivo verification of IMRT deliveries

Hui Khee Looe (Carl von Ossietzky University Oldenburg, Germany); Antje Ruehmann (Pius-Hospital Oldenburg, Germany); Ralf Kollhoff (Pius-Hospital Oldenburg, Germany); Wolfgang Kunth (Pius-Hospital Oldenburg, Germany); Ndimofor Chofor (Carl von Ossietzky University Oldenburg, Germany); Dietrich Harder (Georg-August University Göttingen, Germany); Kay Willborn (Pius-Hospital Oldenburg, Germany); Björn Poppe (Carl von Ossietzky University Oldenburg, Germany)

Enhancing the error detection capability of the DAVID system with the use of adaptive warning and alarm levels

Hui Khee Looe (Carl von Ossietzky University Oldenburg, Germany); Antje Ruehmann (Pius-Hospital Oldenburg, Germany); Dietrich Harder (Georg-August University Göttingen, Germany); Björn Poppe (Carl von Ossietzky University Oldenburg, Germany)

Dose QA Using EPID and a Dose Prediction Algorithm Independent of the Planning System

Johannes Berndt (TU München, Klinikum rechts der Isar, Poliklinik für Strahlentherapie, Germany); Martin Misslbeck (Klinik r.d. Isar, Germany); Peter Kneschaurek (Klinikum rechts der Isar, Germany)

IGRT and its Quality Assurance at the DKFZ

Clemens Lang (DKFZ, Germany); Peter Haering (DKFZ, Germany); Andrea Schwahofer (DKFZ, Germany); Bernhard Rhein (DKFZ, Germany)

Measurements of the signal-to-noise ratio with “EPID QC Phantom®” and “epidSoft 2.0” from PTW

Janett Liebich (Klinikum der Johann Wolfgang Goethe-Universität Frankfurt am Main, Germany); Jörg Licher (Klinikum der Johann Wolfgang Goethe-Universität Frankfurt am Main, Germany); Christian Scherf (Klinikum der Johann Wolfgang Goethe-Universität Frankfurt am Main, Germany); Jussi Moog (Klinikum der Johann Wolfgang Goethe-Universität Frankfurt am Main, Germany); Eugen Kara (Klinikum der Johann Wolfgang Goethe-Universität Frankfurt am Main, Germany); Ulla Ramm (Klinikum der Johann Wolfgang Goethe-Universität Frankfurt am Main, Germany)

Characterization of Silicon Semi-Conductor Detector type “EDP10” in a 6 MV energy from a VARIAN 2100C multi-leaf Linear Accelerator

Boughalia Assia Boughalia Assia (Nuclear Reseach of Algiers, Algeria)

Implementations and first measurements with Delta4 at the TomoTherapy

Severin Kampfer (Klinikum rechts der Isar, Germany); Sabine Schill (Klinikum rechts der Isar, Germany); Peter Kneschaurek (Klinikum rechts der Isar, Germany)

Output measurement for small field photon beams in a sandwiched phantom

Raju Srivastava (Ghent University Hospital, Belgium); Luiza Olteanu (Ghent University Hospital, Belgium); Carlos De Wagter (Ghent University Hospital, Belgium)

Casestudy: Verification of an IMRT-Head-Neck-Plan with Monte Carlo Simulation

Dagmar Schoenenberg (University of Regensburg, Germany); Mark Rickhey (University of Regensburg, Germany); Barbara Dobler (University of Regensburg, Germany); Thomas Goetzfried (University of Regensburg, Germany); Ludwig Bogner (University of Regensburg, Germany)

Dosimetric errors of TPS calculations without correction for heterogeneity- A study using CIRS Thorax phantom

Supriyanto Pawiro (University of Indonesia, Indonesia); Sugiyantari Soegijono (Persahabatan Hospital, Indonesia); Wahyu Wibowo (Adam Malik Hospital, Indonesia); Kin Yin Cheung (Prince of Wales Hospital, P.R. China); Djarwani Soejoko (University of Indonesia, Indonesia)

BANG-3® polymer gel dosimetry in Cyberknife

Young Nam Kang (The Catholic University of Korea, Korea); Jisun Jang (Seoul St. Mary's Hospital, The Catholic University of Korea, Korea); Byung Ok Choi (Catholic University, Korea); ihl Bohng Choi (Catholic University Medial college, Korea); Hong-suk Jang (The Catholic University of Korea, Korea); Jiyoung Jung (The Catholic University of Korea, Korea); Hun-joo Shin (Wooridul Hospital, Korea); Jae-hyuk Seo (Wooridul Spine Hospital, Korea); Dong-joon Lee (Injae University, Korea); Soo-il Kwon (The Kyunggi University, Korea)

Development of customized program to generate 2D dose map with high resolution for 120 Leaf MLC

Woong Cho (The Catholic University of Korea, Korea); Jin beom Chung (Seoul National University Bundang Hospital, Korea); Won-Gyun Jung (Catholic University of Korea, Korea); Jeong-Hoon Park (The Catholic University of Korea, Korea); Tae-Suk Suh (The Catholic University of Korea, Korea)

Evaluation of dosimetric accuracies of gated step-and-shoot IMRT using Dynalog data

Kwang-Ho Cheong (Hallym University Sacred Heart Hospital, Korea); Kang (Hallym Univ, Korea); Kyoung-Joo Kim (Hallym University College of Medicine, Korea); SoAh Park (Hallym University College of Medicine, Korea); Taejin Hwang (Hallym University College of Medicine, Korea); Hoonsik Bae (Hallym University Sacred Heart Hospital, Korea); MeYeon Lee (Hallym University Sacred Heart Hospital, Korea); Do-Hoon Oh (Hallym University College of Medicine, Korea); Tae-Suk Suh (The Catholic University of Korea, Korea)

Comparison of beam data using diode and ion chamber in small field of CyberKnife

Jisun Jang (Seoul St. Mary's Hospital, The Catholic University of Korea, Korea); Young Nam Kang (The Catholic University of Korea,

Korea); Hun-joo Shin (Wooridul Hospital, Korea); Jae-hyuk Seo (Wooridul Spine Hospital, Korea); Moon-Chan Kim (The Catholic University of Korea, Korea); Dong-joon Lee (Injae University, Korea); Soo-il Kwon (The Kyunggi University, Korea)

A comprehensive quality assurance Program for radiotherapy using TLD : The Algerian Experience

Mehenna Arib (Nuclear Research Centre of Algiers, Algeria); Toufik Medjadj (Centre de Recherche Nucléaire d'Alger, Algeria); Belkacem Hattali (Nuclear Research Centre of Algiers, Algeria); Fouzia Dari (Nuclear Research Centre of Algiers, Algeria); Saad Khoudri (Nuclear Research Centre of Algiers, Algeria); Mohamed Salah Bali (Radiotherapy Department, Constantine, Algeria); Aimad Yennoune (Radiotherapy Department, Algiers, Algeria)

A PMMA embedded extrapolation chamber for measuring absorbed dose to water in Co-60 gamma beams

Mehenna Arib (Nuclear Research Centre of Algiers, Algeria); Abdelkader Kouadri Mostefai (Faculté de Physique, Algeria); Toufik Medjadj (Centre de Recherche Nucléaire d'Alger, Algeria); Mohamed Tilmati (Nuclear Research Centre of Algiers, Algeria); Youcef Boudouma (Université des Sciences et de la Technologie Houari Boumediene, Algeria)

3 Years of Data Collection and Analysis of Film Flatness and Symmetry Using Vidar/RIT Software From Different Centers Nation Wide.

Allen Movahed (Accuray, Inc, USA)

In vivo dosimetry for patient specific quality assurance in aperture based IMRT

Rodolfo Alfonso (Institute of Oncology and Radiobiology, Cuba); Manuel Vega (Institute of Oncology and Radiobiology, Cuba)

Calibration of entrance dose measurement with QED™ detector series for in-vivo dosimetry in external beam radiotherapy

Nassima Sissaoui (Centre de recherches nucléaires d'Alger, Algeria); Abdelkader Toutaoui (Centre de Recherche Nucléaire d'Alger, Algeria)

MRI and CT Slice Thickness Evaluation by Computerized Dedicated Procedures

Giuseppe Vermiglio (University of Messina, Italy); Barbara Testagrossa (University of Messina, Italy); Giuseppe Acri (IRCCS, Centro Neurolesi "Bonino – Pulejo", Italy); Maria Giulia Tripepi (University of Messina, Italy); Silvia Marino (IRCCS, Centro Neurolesi "Bonino – Pulejo", Italy); Placido Bramanti (IRCCS, Centro Neurolesi "Bonino – Pulejo", Italy)

Single-pulse-resolved dosimetry with miniaturized detectors in teletherapy

Jens Illemann (Physikalisch-Technische Bundesanstalt, Germany)

Calibration of Therapy-level Dosimeters in Japan by Association for Nuclear Technology in Medicine (ANTM)

Suoh Sakata (Association for Nuclear Technology in Medicine, Japan); Yoshihisa Akiyama (Association for Nuclear Technology in Medicine, Japan); Yohsuke Kusano (Association for Nuclear Technology in Medicine, Japan); Eisuke Takase (Association for Nuclear Technology in Medicine, Japan); Kaori Yajima (Association for Nuclear Technology in Medicine, Japan); Saki Uesaka (Association for Nuclear Technology in Medicine, Japan); Hideyuki Mizuno (National Institute of Radiological Sciences, Japan); Akifumi Fukumura (National Institute of Radiological Sciences, Japan); Toshiaki Tanaka (Association for Nuclear Technology in Medicine, Japan)

Estimation of free electron fraction value p for a parallel-plate ionization chamber in high dose per pulse IORT electron beams

Raffaele Liuzzi (Consiglio Nazionale delle Ricerche, Italy); Marco Salvatore (Università "Federico II", Italy); Laura Cella (Consiglio Nazionale delle Ricerche, Italy)

Study of a CVD diamond detector for absorbed dose measurement in photon beams with small field sizes

Claudio Caporali (ENEA, Italy); Gennaro Conte ("Roma Tre" University, Italy); Antonio Stefano Guerra (ENEA, Italy); Raffaele Fedele Laitano (ENEA, Italy); Maria Pimpinella (ENEA, Italy)

Beam Characterization for Step-and-Shoot IMRT

Vera Batel (Hospital S. João, EPE, Portugal); Ana Rita Figueira (Hospital S. João, EPE, Portugal); Ana Luísa Carvalho (Hospital S. João, EPE, Portugal); Teresa Reis (Escola Superior de Tecnologias da Saúde do Porto, Portugal)

Clinac performance: watching the first seconds

Ana Rita Figueira (Hospital S. João, EPE, Portugal); Vera Batel (Hospital S. João, EPE, Portugal); Ana Luísa Carvalho (Hospital S. João, EPE, Portugal); Teresa Reis (Escola Superior de Tecnologias da Saúde do Porto, Portugal)

IMRT Patient specific QA using two commercially available 2D-Array devices

Ahmad Nobah (King Faisal Specialist Hospital & Research Centre, Saudi Arabia); Belal Mofteh (King Faisal Specialist Hospital & Research Centre, Saudi Arabia)

Dosimetric and mechanical quality assurance procedure for the RapidArc system

Ahmad Nobah (King Faisal Specialist Hospital & Research Centre, Saudi Arabia); Belal Mofteh (King Faisal Specialist Hospital & Research Centre, Saudi Arabia)

Dose verification of critical structures in Gamma Knife Radio surgery of Pituitary Adenoma

Anil Pendse (Gamma Knife Center, India)

Peripheral Inductive Stimulation: Physical Issues and Advanced Technological Solutions

Stefan Goetz (Technische Universität München, Germany); Thomas Weyh (Technische Universität München, Germany)

A novel method exploiting the nociceptive withdrawal reflexes in rehabilitation of hemiplegic gait

Jonas Emborg (Aalborg University, Denmark); Jan Bendtsen (Aalborg University, Denmark); Erika Spaich (Aalborg University, Denmark); Ole Andersen (Aalborg University, Denmark)

A Potable System for Foot-Drop Correction using Electrical Stimulation

RyangHee Sohn (Yonsei University, Korea); Sunwoo Park (Yonsei University, Korea); Seonhong Hwang (Yonsei University, Korea); A Ra Ko (Yonsei University Wonju College of Medicine, Korea); Young-Hee Lee (Yonsei University Wonju College of Medicine, Korea); Seunghyung Lee (HUREV Co., Ltd., Korea); Kihong Ryu (University of Testing, Korea); Young-Ho Kim (Yonsei University, Korea)

8-Channel Electrotactile Stimulation System for Auditory Information Substitution

Rodrigo Cendon (Universidade Tecnológica Federal do Paraná, Brazil); Percy Nohama (Universidade Tecnológica Federal do Paraná, Brazil)

Application of electrode matrix to locate stimulation sites for hand functions of SCI patients

Arna Óskarsdóttir (University of Reykjavik, Iceland); Thordur Helgason (Landspítali - University Hospital, Iceland)

ZigBee-based Wireless Neuro-Stimulator for Improving Stroke Recovery

Yoonseok Yang (Chonbuk National University, Korea)

Novel Control for Ambulation Function Restoration in a Non-invasive Functional Electrical Stimulation System

Yu-Luen Chen (National Taipei University of Education, Taiwan)

The Mechanism of Electro-acupuncture(EA) Treating Cerebral Ischemia:

Shaoxi Cai (Chongqing University, P.R. China); Sijia Chen (Chongqing University, P.R. China); Wenjuan Yu (Chongqing University, P.R. China); Ying Zhao (Chongqing Normal University, P.R. China)

Modulation of stimulation frequency of spinal cord afferents with unchanged intensity and electrode site can induce a variety of movements

Winfried Mayr (Medical University of Vienna, Austria)

Activation of brain function in a computer-based neuropsychological test estimated using fMRI

Miwa Tsuji (Chiba University, Japan); Yuji Higashi (Fujimoto Hayasuzu Hospital, Japan); Atsushi Kodabashi (Fujimoto Hayasuzu Hospital, Japan); Masaki Sekine (Chiba University, Japan); Toshiro Fujimoto

(Fujimoto Hayasuzu Hospital, Japan); Toshiyo Tamura (Chiba University, Japan); Yoshio Mitsuyama (Daigo Hospital, Japan)

Paraplegic Using a Reciprocating Gait Orthosis

Yu-Luen Chen (National Taipei University of Education, Taiwan)

Th. 04: Poster Session: Track 08: Flow in the Cardiovascular System

Effects of arterial wall thickness on pulse wave propagation

Fan He (Beijing University of Technology, P.R. China)

Lattice Boltzmann Simulation of Blood Flow in Cerebral Aneurysm

Xiaojun Zhang (Beijing University of Technology, P.R. China); Weihua Wang (Beijing University of Technology, P.R. China); Xiaoyang Li (Beijing University of Technology, P.R. China); Bainan Xu (The General Hospital of PLA, P.R. China)

Investigation on the distribution and expression of caveolin-1 in endothelial cells under disturbed shear stress by vertical-step flow chamber

Shaoxi Cai (Chongqing University, P.R. China); Dai (Chongqing University, P.R. China); Yan (Chongqing University, P.R. China); Liu (Chongqing University, P.R. China); Zhang (Chongqing University, P.R. China)

Influence of Coil Packing Rate and Configuration on Intracranial Aneurysm Hemodynamics

Hernán Morales (Universidad Pompeu Fabra, Spain); Minsuok Kim (Universitat Pompeu Fabra, Spain); María Cruz Villa (Universitat Pompeu Fabra, Spain); Elio Vivas (Hospital General de Catalunya, Spain); Alejandro Frangi (Universitat Pompeu Fabra, Spain)

Computational Study of Pulsatile Blood Flow in Aortic Arch: Effect of Blood Pressure

Paritosh Vasava (Lappeenranta University of Technology, Finland); Payman Jalali (Lappeenranta University of Technology, Finland); Mahsa Dabagh (Lappeenranta University of Technology, Finland)

Oxygen consumption by arteriolar wall during enhancement and inhibition of nitric oxide synthesis

Masahiro Shibata (Shibaura Institute of Technology, Japan)

Th. 02: Poster Session: Track 08: Imaging Bioimpedance and Bioelectric Sources

Visualization of the Skin Electrodynamical Landscape: Some Phenomenological Features in Norm and Oncopathology

Yuri Babich (Centre of Biomedical Electroengineering, Ukraine); Maya Nuzhdina (Centre of Biomedical Electroengineering, Ukraine)

Wide band frequency Fixed current source for BIT and BIA

Aoday Al-Rawi (University of Malaya, Malaysia); W Mohd Azhar Wan Ibrahim (University of Malaya, Malaysia); Mahmoud Moghavvemi (University of Malaya, Malaysia)

Research on Electrode Impedance Characteristic in Electrical Bioimpedance Measurement

Yan Wang (Institute of Biomedical Engineering, Chinese Academy of Medical Sciences, P.R. China); Chaoshi Ren (Institute of Biomedical Engineering, Chinese Academy of Medical Sciences, P.R. China); Hong Sha (Institute of Biomedical Engineering, Chinese Academy of Medical Sciences, P.R. China); Shu Zhao (Institute of Biomedical Engineering, P.R. China)

Anisotropic Conductivity Imaging with MREIT Using J-substitution and Hybrid J-substitution Algorithms

Evren Değirmenci (Middle East Technical University, Turkey); Behcet Murat Eyuboglu (Middle East Technical University, Turkey)

Using Backprojection Algorithm for 3D Image Reconstruction in EIT

Alexander Karpov (Clinical Hospital No. 9, Russia); Michael Machin (SIM Technika PCF, Russia)

Preeclampsia Amplitude-time Characteristics for $\Delta Z/\Delta t$ Curve

Alexander Karpov (Clinical Hospital No. 9, Russia)

A New method to improve the accuracy in EIS diagnosis

Feng Fu (The Forth Military Medical University, P.R. China)

Improvement of the Measurement Quality of Radio Imaging Method for Biomedical Application

Ichiro Hieda (National Institute of Advanced Industrial Science & Technology, Japan); KiChang Nam (Korea Electrotechnology Research Institute(KERI), Korea)

A High Output Impedance Current Source for Wideband Bioimpedance Measurements

Hongwei Hong (University College London, United Kingdom); Bayford Richard (, United Kingdom); Andreas Demosthenous (University College London, United Kingdom)

Development of a Sensor Network for Dynamic Boundary Measurement in Neonatal Electrical Impedance Tomography (EIT)

Joo Moy Khor (Middlesex University, United Kingdom); Andrew Tizzard (Middlesex University, United Kingdom); Andreas Demosthenous (University College London, United Kingdom); Bayford Richard (, United Kingdom)

Th. 07: Poster Session: Track 08: Lasers in Medicine

From Experimental Investigations with Laser Bio-Photometry to Statistical Models Applied for the Normal and Pathological Tissue

Cristian Ravariu (Politehnica University of Bucharest, Romania)

Spectral Analysis of diffuse reflectance spectroscopic data of various skin conditions

Shanthi Prince (SRM University, India)

25 years of laser therapy application in clinics

Victor Ovsyannikov (Ioffe Phisico-Technical Institute of Russian Academy of Science, Russia)

Instrument for estimation of red blood cells speed distribution using laser-Doppler spectrum decomposition

Stanislaw Wojtkiewicz (Institute of Biocybernetics and Biomedical Engineering, Poland); Adam Liebert (Institute of Biocybernetics and Biomedical Engineering PAS, Poland); Roman Maniewski (Institute of Biocybernetics and Biomedical Engineering PAS, Poland)

Light scattering signal as an indicator of loss of tissue viability in brains: Experiments using rat hypoxia models

Satoko Kawauchi (National Defense Medical College, Japan); Shunichi Sato (National Defense Medical College Research Institute, Japan); Yoichi Uozumi (National Defense Medical College, Japan); Hiroshi Nawashiro (National Defense Medical College, Japan); Miya Ishihara (National Defense Medical College, Japan); Makoto Kikuchi (National Defense Medical College, Japan)

A new approach to characterize biological tissues using optical techniques for diagnosis purposes

Juan Miguel Hernandez (University of Seville, Spain); Antonio Méndez (MDU S.A., Spain); Maria Elena (University of Seville, Spain); Pablo Cerro (University of Seville, Spain); Silvia Blasco (University of Seville, Spain); Juan Uceda (University of Seville, Spain)

Th. 11: Poster Session: Track 08: Ophthalmology V: Retinal Image Analysis

Improvement of Vessel Segmentation by Matched Filtering in Colour Retinal Images

Jan Odstrcilik (Brno University of Technology, Czech Republic); Jiri Jan (Brno University of Technology, Czech Republic); Jiri Gazarek (Brno University of Technology, Czech Republic); Radim Kolar (Brno University of Technology, Czech Republic)

Automated measurement of retinal vessel diameters on digital fundus photographs

Hyun Sung Nam (Seoul National University, Korea); Jeong-Min Hwang (Seoul National University, Korea); Hum Chung (Seoul National University, Korea); Jong-Mo Seo (Seoul National University, Korea)

Computer estimation of the AVR parameter in diabetic retinopathy

Lara Tramontan (University of Padova, Italy); Alfredo Ruggeri (University of Padova, Italy)

Automatic Rigid Registration and Analysis of Colour Fundus Image in Patients with Diabetic Retinopathy

Radim Kolar (Brno University of Technology, Czech Republic);
Vratislav Harabis (Brno University of Technology, Czech Republic)

Utility of a Radial Basis Function Classifier in the Detection of Red Lesions in Retinal Images

María García Gadañón (University of Valladolid (CIF: Q4718001C), Spain); María López (Universidad de Valladolid. EST, Spain); Hornero Roberto (University of Valladolid, Spain); Ana Díez (Faculty of Medicine University of Valladolid, Spain); Jesús Poza (University of Valladolid, Spain)

The relation between eye movement and filling-in time

Masae Yokota (Nagoya Bunri University, Japan); Yasunari Yokota (Gifu University, Japan)

Th. 12: Poster Session: Track 08: Technology Enhanced Education

Investigation of Intraindividual Difference in Vigilance Index of Saccade Based on Rated Facial Sleepiness

Tomohide Nonomura (Tokyo Denki University, Japan)

Th. 12: Poster Session: Track 09: Biomedical Engineering in Preventive Healthcare & Public Health

The study of noise and air pollution in the shopping center of Roorkee

Dinesh Sharma (Manav Rachna College of Engineering, Faridabad, India)

A mobile biosensor using living cells for water quality analysis

Michael Schmidhuber (Technische Universität München, Germany); Joachim Wiest (cellasys GmbH, Germany); Bernhard Wolf (Technische Universität München, Germany)

Changes in the water content of the skin during the early neonatal period

Kiyoko Shirai (Graduate School of Health Sciences, Okayama University, Japan)

The effects of irradiation of diode laser on cutaneous wound healing in rabbits

Changsheng Ma (Shandong Tumor Hospital&Institute, P.R. China)

Estimation Accuracy of Human COG Trajectory Using Accelerometer

Kengo Komoto (Ritsumeikan University, Japan); Masaaki Makikawa (College of Science and Engineering, Ritsumeikan University, Japan)

Increasing Preload Reduced Actin-Myosin Interaction in Isolated Beating Rat Whole Heart Under Hypoxia

Yamato Tamura (Nara Medical university, Japan); Juichiro Shimizu (Nara Medical University, Japan); Takehiro Miyasaka (Himeji Dokkyo University, Japan); Daisuke Takeshita (Nara Medical university, Japan); Naoto Yagi (JASRI, Japan)

Classification of Cardiac Arrhythmias Using PNN Neural Network Based on ECG Feature Extraction

Amir Darouei (Iran University science & technology, Iran); Ahmad Ayatollahi (IUST, Iran)

Development of Portable Monitoring Device with an Accelerometer and GPS Receiver for Health Management

Naruhiro Shiozawa (Ritsumeikan University, Japan); Yusuke Sakaue (Ritsumeikan University, Japan); Tadao Isaka (Ritsumeikan University, Japan); Masaaki Makikawa (College of Science and Engineering, Ritsumeikan University, Japan)

A Microprocessor-based Biofeedback Emotion System

Yu Ting Chang (University of Ming Chuan, Taiwan); Chih-Yuan Wang (University of Ming Chuan, Taiwan); Jia-Ju Lau (University of Ming Chuan, Taiwan); Jiun-Hung Lin (Kun Shan University, Taiwan); Shih-Tsang Tang (Ming Chuan University, Taiwan)

Development of a Heart Rate Monitor Based on an Ear Phone

Kyung Ryul Chung (KITECH, Korea); Gyu Seog Hong (KITECH, Korea); Chunho Choi (KITECH, Korea); Hyo Jeong Yun (KITECH, Korea); Joonho Hyeong (KITECH, Korea); Sa Yup Kim (KITECH, Korea)

Evaluation of Mixed Reality Sickness by Changing the Time Lag between Real Images and Virtual Images in an Advanced Driver Assistance System

Sawako Nakajima (Keio University, Japan); Shuichi Ino (National Institute of Advanced Industrial Science and Technology, Japan); Kazuhiko Yamashita (Tokyo Healthcare University, Japan); Mitsuru Sato (Showa University, Japan); Akio Kimura (Keio University, Japan)

Th. 01: Poster Session: Track 09: Brachytherapy

Analysis of combined HDR Brachytherapy and external beam radiotherapy in the treatment of carcinoma of cervix.

Than Kehwar (University of Pittsburgh Cancer Institute, USA); Kamlesh Passi (M. D. Oswal Cancer Treatment & Research Foundation, Ludhiana (Pb), India); Rajesh Vashistha (M.D.Oswal Cancer Institute, India); Singh Bikramjit (M.D.Oswal Cancer Institute, India); Veena Jain (M.D.Oswal Cancer Treatment & Research Foundation, India); Sureshchandra Gupta (Vidylankar School of Information Technology, Mumbai, India, India)

In Vivo Evaluation of Photofrin II Radiosensitivity for the Treatment of Adenocarcinoma Tumors in Balb-C Mice using Brachytherapy

Bijan Hashemi (Tarbiat Modares University, Iran); Ali Moradi (Tarbiat Modares University, Iran); Zahir Hassan (Tarbiat Modares University, Iran)

LDR and HDR intracavitary brachytherapy of cancer cervix uterus- rectal doses and ERD comparison

Arun Chougule (SMS Medical College & hospital, India)

Applicator Positioning Discrepancies and Their Effect on Dose Distribution at OAR of Carcinoma Cervix Patients

Mohammad Rahman (Medical College & Hospital, Bangladesh)

Absorbed dose reference for LDR brachytherapy

Isabelle Aubineau-Laniece (CEA - Laboratoire National Henri Becquerel, France); Paz Aviles Lucas (CIEMAT, Spain); Jean-Marc Bordy (CEA, France); Bruno Chauvenet (CEA, France); Dominique Cutarella (CEA - Laboratoire National Henri Becquerel, France); Guilhem Douysset (CEA, France); Jean Gouriou (CEA, France); Johann Plagnard (CEA - Laboratoire National Henri Becquerel, France)

Standard of absorbed dose to water for HDR brachytherapy sources with Fricke dosimetry

Carlos Eduardo de Almeida (Universidade do Estado do Rio de Janeiro, Brazil); R Ochoa (UERJ, Brazil); Carlos Austerlitz Campos (ECU, USA); M Coelho (UERJ, Brazil); M Gazineu (UERJ, Brazil); Jose Guilherme Peixoto (CNEN, Brazil); Evandro Pres (UERJ, Brazil); Helveco Mota (East Carolina University, USA); Claudio Sibata (ECU, USA)

Th. 11: Poster Session: Track 09: Dental Medicine

Virtual 3D Prosthetic and Implant Planning using Cone Beam Imaging and CEREC

Lutz Ritter (University of Cologne, Germany); Jörg Neugebauer (University of Cologne, Germany); Daniel Rothamel (University of Cologne, Germany); Viktor Karapetian (University of Cologne, Germany); Robert Mischkowski (University of Cologne, Germany); Joachim Zöller (University of Cologne, Germany)

VEGF-induced Angiogenesis in Hyaluronic Acid Hydrogel Incorporated with Perlecan / Collagen I Fibrils Complex

Lihui Tang (The Fourth Military Medical University,, P.R. China)

Antimicrobial effects of Ag/TiO₂ compound coatings and ZnO films on titanium based surface

Wan-Chuen Liao (China Medical University, Taichung, Taiwan, R.O.C., Taiwan); Chi-Ho Lai (China Medical University, Taiwan); Yin-Yu Chang (Mingdao University, Taiwan); Heng-Li Huang (China Medical University, Taiwan); Jui-Ting Hsu (China Medical University, Taiwan)

Modeling of Craniofacial Soft and Hard Tissues for Prediction of Orthodontic Treatment

Qiguo Rong (Peking University, P.R. China); Hangdi Lou (Peking University, P.R. China); Si Chen (Peking University, P.R. China); Liang Guo (Peking University, P.R. China); Tianmin Xu (Peking University, P.R. China)

The calculation of teeth roots displacement which appears during orthodontical treatment

Kirill Yurkevich (Belarusian State University, Belarus); Sergey Bosiakov (Belarusian State University, Belarus)

Electromyographic evaluation of the temporal muscle after the use of interocclusal splints with a vibrating device in individuals with sleep bruxism.

Cristiane Gomes (University of the State of São Paulo/ UNESP, Brazil); Luiz Fernando Nascimento (UNITAU, Brazil); José Geraldo Brandão (University of the State of São Paulo/UNESP, Brazil)

Frictional Forces of Conventional and Improved Superelastic NiTi-Alloy Orthodontic Archwires in Stainless Steel and Plastic Brackets

Jui-Ting Hsu (China Medical University, Taiwan); Li-Chun Wu (China Medical University, Taiwan); Yin-Yu Chang (Mingdao University, Taiwan); Tzu-Ning Weng (China Medical University, Taiwan); Heng-Li Huang (China Medical University, Taiwan); Chein-Hung Yu (China Medical University, Taiwan)

Th. 09: Poster Session : Track 09: Human movement and posture analysis

Automated Identification of Peristaltic Pressure Waves in Oesophageal Manometry Investigations using the Rolling Correlation Technique

Steve Perring (Poole Hospital NHS Foundation Trust, United Kingdom)

Prototype Walker for children with cerebral palsy

Marek Gzik (Silesian University of Technology, Poland)

Analysis of Gait Rhythm Variability in Patients with Amyotrophic Lateral Sclerosis

Yunfeng Wu (Ryerson University, Canada); Sri Krishnan (Ryerson University, Canada)

Development of Unconstrained Rigidity Measurement System for Quantitative Diagnosis of Parkinson's Disease

Ryuhei Okuno (Setsunan University, Japan); Takuyuki Endo (Osaka University, Japan); Masaru Yokoe (Osaka University, Japan); Saburo Sakoda (Osaka University, Japan); Kenzo Akazawa (Osaka Institute of Technology, Japan)

Development of a New Wearable Monitoring System for Posture Changes and Activities and its Application to Rehabilitation

Kosuke Motoi (Graduate School of Natural Science and Technology, Kanazawa University, Japan); Yutaka Kuwae (Fujimoto Hayasuzu Hospital, Japan); Sayaka Taniguchi (Fujimoto Hayasuzu Hospital, Japan); Morikuni Wakugawa (Fujimoto Hayasuzu Hospital, Japan); Tadahiko Yuji (Fujimoto Hayasuzu Hospital, Japan); Yuji Higashi (Fujimoto Hayasuzu Hospital, Japan); Toshiro Fujimoto (Fujimoto Hayasuzu Hospital, Japan); Mitsuhiro Ogawa (yu.sys Corp., Japan); Shinobu Tanaka (Kanazawa University, Japan); Ken-ichi Yamakoshi (Kanazawa University, Japan)

Effect of passive stepping on the H-reflex in the wrist flexor

Taku Kitamura (Shibaura Institute of Technology, Japan)

Pupillary Responses during Learning of Inverted Tracking Tasks

Satoshi Kobori (Ryukoku University, Japan)

Development of system for estimating muscle force in real-time

Jongsang Son (Yonsei University, Korea); Young-Ho Kim (Yonsei University, Korea)

Calculation of Systemic Aerobic Capacity without Contact Using Pattern Light Projection

Hirooki Aoki (Tokyo University of Science, Japan)

Pneumatic test device for the accurate assessment of pressure sensors

Claudia Giacomozzi (Istituto Superiore di Sanità, Italy); Giorgio De Angelis (Istituto Superiore di Sanità, Italy); Mariano Paolizzi (Istituto Superiore di Sanità, Italy); Salvatore Silvestri (Istituto Superiore di Sanità, Italy); Velio Macellari (Istituto Superiore di Sanità, Italy)

Study toward a Motion Sickness Assessment with Biosignal indices on Tilting Train eXpress

Yongsoo Song (Korea Railroad Research Institute, Korea)

Kinematics Analysis of Chopsticks Manipulation

Shih-Wei Chen (National Cheng Kung University, Taiwan)

Analysis of Parkinson gait based on wavelet packet entropy

Yang Han (Capital Medical University, P.R. China)

A Test of Stride Length Measurement with an Accelerometer and a Gyroscope Attached on the Foot

Takashi Watanabe (Tohoku University, Japan)

Ankle and Knee Joint Angle Measurements during Gait with Wearable Sensor System for Rehabilitation

Hiroki Saito (Tohoku University, Japan); Takashi Watanabe (Tohoku University, Japan)

Movement of lower extremity – development of a portable system for movement analysis

Helena Grip (Umeå University Hospital, Sweden); Fredrik Öhberg (Umeå University Hospital, Sweden); Ola Gustavsson (Umeå University Hospital, Sweden); Urban Edström (Umeå University Hospital, Sweden); Ronnie Lundström (Umeå University Hospital, Sweden); Charlotte Häger-Ross (Umeå University, Sweden)

Measurement System of Hand Tapping Capacity for Quantitative Diagnosis of Parkinson's Disease

Sangkyong Kim (Seoul National University, Korea); Hyo Seon Jeon (Seoul National University, Korea); Jonghee Han (Seoul National University, Korea); Yoon Jae Choi (Seoul National University Hospital, Korea); Beom Seok Jeon (Seoul National University Hospital, Korea);

Won Jin Yi (Seoul National University, Korea); Kwang-Suk Park (Seoul National University, Korea)

Is the bottleneck in multitasking of cognitive origin? Tapping as an experimental assessment tool.

Mihai Tarata (University of Medicine and Pharmacy of Craiova, Romania); Khac Dung Cong (Universität der Bundeswehr München, EIT-1, Germany); Daniel Georgescu (University of Medicine and Pharmacy, Romania); Dragos Alexandru (University of Medicine and Pharmacy of Craiova, Romania); Gerhard Staude (University FAF Munich, Germany); Werner Wolf (Universität der Bundeswehr München, Germany)

Th. 02: Poster Session: Track 09: Miscellaneous Topics

Micro-lenses Fabrication by Solvent-Casting of Chalcogenide Glass

Eric Sanchez (The City College of New York, USA)

Shorted Waveguide Method for Biological Tissues Dielectric Properties Investigation

Dagmar Faktorova (University of Zilina, Slovakia)

Evaluation of Two Scatter Corrections Techniques for an Uncollimated Transmission Flood Source

Johan van Staden (University of the Free State, South Africa); Hanlie du Raan (University of the Free State, South Africa); Matthys Lötter (University of the Free State, South Africa); Charles Herbst (University of the Free State, South Africa); Andries van Aswegen (University of the Free State, South Africa); William Rae (University of the Free State, South Africa)

Bone density changes during adjuvant aromatase inhibitor treatment in breast cancer patients: single centre experience

Mohammad Almatari (ABM Univeristy Trust, United Kingdom); Maung Moe (ABM University Trust, United Kingdom); Parvaiz Ali (ABM Univeristy Trust, United Kingdom); Peter Willshaw (Swansea University, United Kingdom)

The passive infrared thermography as addition to diagnostics of diseases in the head region of the horse - First results

Birgit Krogbeumker (University of Veterinary Medicine Hannover, Germany)

Statistics of digital x-ray image brightness histograms

Lada Bumbure (Riga Technical University BENI, Latvia); Yuri Dekhtyar (Riga Technical University /BENI, Latvia); Tatjana Kirsanova (Riga Technical University /BENI, Latvia)

Computer Aided Diagnosis Tool for the Segmentation and Texture Analysis of Medical Images

Tomi Heinonen (Tampere University of Technology, Finland); Hannu Eskola (Technical University of Tampere, Finland)

Thermal imaging as an aid to the diagnosis of pain in horses

Carsten Siewert (University of Veterinary Medicine Hannover, Germany)

Improvement Thyroid Cancer Early Diagnosis by Using Fractal Dimension Analysis of IR Signature

Gheorghe Gavrioloaia (University of Pitesti, Romania); Anca Hurduc (Oncologic Institute of Bucharest, Romania); Adina Ghemigian (Endocrinologic Institute of Bucharest, Romania); Mariuca-Roxana Gavrioloaia (Medical and Pharmaceutical University of Bucharest, Romania)

Th. 04: Poster Session: Track 09: Modeling and Analysis of the Cardiovascular System

Creation of a Realistic Endocardial Stimulation Profile for the Visible Man Dataset

Raffi Kalayciyan (Universität Karlsruhe (TH), Germany); David Keller (Universität Karlsruhe (TH), Germany); Gunnar Seemann (University Karlsruhe (TH), Germany); Olaf Doessel (Universität Karlsruhe (TH), Germany)

Influence of ischemia on left ventricular depolarization in isolated rabbit hearts

Jana Kolarova (Brno University of Technology, Czech Republic); Oto Janousek (Brno University of Technology, Czech Republic); Marie Novakova (Masaryk University, Czech Republic); Katerina Fialova (Masaryk University, Czech Republic); Ivo Provaznik (Brno University of Technology, Czech Republic)

Computer-aided analysis of arterial wall architecture

Lukas Horny (Faculty of Mechanical Engineering Czech Technical University in Prague, Czech Republic); Martin Hulan (Faculty of Mechanical Engineering Czech Technical University in Prague, Czech Republic); Rudolf Zitny (Faculty of Mechanical Engineering Czech Technical University in Prague, Czech Republic); Hynek Chlup (Faculty of Mechanical Engineering Czech Technical University in Prague, Czech Republic); Svatava Konvickova (Faculty of Mechanical Engineering Czech Technical University in Prague, Czech Republic); Tomas Adamek (Third Faculty of Medicine Charles University in Prague, Czech Republic)

The Contribution of Core Muscle Fibers to the Surface Depolarization Signals on Cable-like Cardiac Tissue Preparations - A Computer Simulation Study

Fernando Campos (Medical University of Graz, Austria); Anton Prassl (Medical University Graz, Austria); Gernot Plank (Medical University Graz, Austria); Ernst Hofer (Medical University Graz, Austria)

Acquisition of Parameters for Noninvasive Continuous Blood Pressure Estimation - Review of the Literature and Clinical Trial

Christian Douniama (Fraunhofer Institute for Integrated Circuits, Germany); Christian Sauter (Fraunhofer Institute for Integrated Circuits, Germany); Robert Couronné (Fraunhofer Institut Integrierte Schaltungen, Germany)

A Hemodynamic Analysis of an Intra-Aorta Pump

Yu Chang (Beijing University of Technology, P.R. China); Bin Gao (Beijing University of Technology, P.R. China)

Constitutive behavior of coronary artery bypass graft

Lukas Horny (Faculty of Mechanical Engineering Czech Technical University in Prague, Czech Republic); Hynek Chlup (Faculty of Mechanical Engineering Czech Technical University in Prague, Czech Republic); Rudolf Zitny (Faculty of Mechanical Engineering Czech Technical University in Prague, Czech Republic); Svatava Konvickova (Faculty of Mechanical Engineering Czech Technical University in Prague, Czech Republic); Tomas Adamek (Third Faculty of Medicine Charles University in Prague, Czech Republic)

Th. 07: Poster Session: Track 09: Monitoring

Incubator Monitoring System using Zigbee Technology

Analene Montesines-Nagayo (De La Salle University - Manila, Philippines); Mary Grace Ann Cabanas (De La Salle University - Manila, Philippines); Guido Alphonse Chua (De La Salle University - Manila, Philippines); Richard Santiago (De La Salle University - Manila, Philippines); John Elvin Tan (De La Salle University - Manila, Philippines)

8-Patient ECG Telemetry System Intended For Cardiac Rehab

Gay Meissimilly (Cuban Bioengineering Society, Cuba)

Implementation of the multiprocessing in a Central Monitoring Station with 16 Patient Monitors

Irene Niubó-Jorge (Cuban Bioengineering Society, Cuba); Margarita Mulet-Cartaya (Cuban Bioengineering Society, Cuba)

SmartHEALTH: preliminary results of an electrochemical measurement using a microfluidic-based cancer diagnostic instrument

Mattia Bertschi (CSEM, Switzerland); Stephan Dasen (CSEM, Switzerland); Antonio De Sousa (CSEM, Switzerland); Livio Cognolato (Olivetti i-Jet/r&D Technologies, Italy); Alex Fragoso (URV, Spain); Daniel Latta (IMM, Germany); Victor Neuman (CSEM (wiss Center for Electronic and Microtechnology), Switzerland); Jens Krauss (CSEM (Swiss Center for Electronic and Microtechnology), Switzerland)

MOVISHOW: Telemetry Software to Process ECG Signals of Multiple Patients in Rehabilitation

Mary Cartaya López (ICID-Central Institute of Digital Research, Cuba)

Design Multiparameter Anaesthesia Depth Monitor

Qiming Ran (Chongqing University of Posts and Telecommunications, P.R. China); Wei Wang (Chongqing University of Posts and Telecommunications, P.R. China); Na Hu (Chongqing University of Posts and Telecommunications, Chongqing, China, P.R. China); Fangyong Guan (Biomedical Engineering Research Centre, P.R. China); Zhangyong Li (Chongqing University of Posts and Telecommunications, P.R. China)

Levels of Salivary Chromogranin-A Secreted During Simulated Monotonous Driving Stress

Takehiro Yamakoshi (Kanazawa University, Japan); Sang-Bum Park (Samsung Advanced Institute of Technology, Korea); Won-Cheoul Jang (Dankook University, Japan); Kyungho Kim (Dankook University, Korea); Yasuhiro Yamakoshi (yu.sys Corp., Japan); Hajime Hirose (Kinjo College, Japan)

Cancer detection probe combining Raman and resonance sensor technology - Experimental study on temperature dependence and effects of molding

Morgan Nyberg (Luleå University of Technology, Sweden); Kerstin Ramser (Luleå University of Technology, Sweden); Olof Lindahl (Luleå University of Technology, Sweden)

A simulator to test automated non-invasive sphygmomanometers

Stephan Mieke (Physikalisch Technische Bundesanstalt Berlin, Germany); Reiner Seemann (Physikalisch Technische Bundesanstalt Berlin, Germany); Wolfgang Riedel (Physikalisch-Technische Bundesanstalt, Germany); Alan Murray (Newcastle University, United Kingdom); John Amooore (Royal Infirmary of Edinburgh, United Kingdom)

Evaluating the use of a Raman fiberoptic probe in conjunction with a resonance sensor for measuring porcine tissue in vitro

Stefan Candefjord (Luleå University of Technology, Sweden); Morgan Nyberg (Luleå University of Technology, Sweden); Ville Jalkanen (Umea University, Sweden); Kerstin Ramser (Luleå University of Technology, Sweden); Olof Lindahl (Luleå University of Technology, Sweden)

Wireless Recording System for Long-Term Monitoring of Bone Fracture Healing

Christian Moß (Hamburg University of Technology, Germany); Nils Weinrich (Berufsgenossenschaftliches Unfallkrankenhaus Hamburg, Germany); Klaus Seide (Berufsgenossenschaftliches Unfallkrankenhaus Hamburg, Germany); Jörg Müller (TU Hamburg Harburg, Germany)

An attempt of new calibration method with support vector machines regression for pulse oximetry

Mitsuhiro Ogawa (yu.sys Corp., Japan); Yasuhiro Yamakoshi (yu.sys Corp., Japan); Masamichi Nogawa (Kanazawa University, Japan); Takehiro Yamakoshi (Kanazawa University, Japan); Kosuke Motoi

(Graduate School of Natural Science and Technology, Kanazawa University, Japan); Shinobu Tanaka (Kanazawa University, Japan); Ken-ichi Yamakoshi (Kanazawa University, Japan)

Multivariate Calibration Models to Classify Blood Glucose Levels Non-invasively Based on A New Optical Technique Named Pulse Glucometry

Yasuhiro Yamakoshi (yu.sys Corp., Japan); Mitsuhiro Ogawa (yu.sys Corp., Japan); Ken-ichi Yamakoshi (Kanazawa University, Japan); Takehiro Yamakoshi (Kanazawa University, Japan); Toshiyo Tamura (Chiba University, Japan)

Development of pathological evaluating system of tremor disease by a tablet PC and accelerometers

Yoshinobu Matsumoto (Nagaoka University of Technology, Japan); Ichiro Fukumoto (Nagaoka University of Technology, Japan)

Development of an innovative instrument for the online characterization of high-frequency percussive ventilators

Fabio Riscica (University of Trieste, Italy); Umberto Lucangelo (Cattinara Hospital, Trieste, Italy); Agostino Accardo (University of Trieste, Italy)

An Effective Developing Platform of Physiological Measurement Apparatus for Simplifying the Processes of Design and Verification in Customized Requirement

Chia-Hung Chien (Graduate Institute of Electrical Engineering, Taiwan); Chia-Chi Wu (Graduate Institute of Electronics Engineering, Taiwan); Chia-Ti Tsai (Department of Internal Medicine, Taiwan); Fok-Ching Chong (Graduate Institute of Electronics Engineering, Taiwan)

The possibility of the classification about Ht values using the AR model

Yoshinori Nitta (The University of Tokushima, Japan)

Non invasive monitoring of the cardio respiratory activity

Octavian Baltag ("Gr. T. Popa" University of Medicine and Pharmacy, Romania)

A Sensor for the Non-invasive Determination of Hemoglobin in Sampling Tubes

Alexander Opp (University of Luebeck, Germany); Ulrich Hofmann (University of Luebeck, Germany); Soehnke Boye (University of Luebeck, Germany); Leif Dibbelt (University of Lübeck, Germany); Hartmut Gehring (University of Luebeck, Germany)

The Thermal Comfort of Premature Newborn versus Water Vapour Pressure

Carlos Oldenburg Neto (Hospital do Trabalhador, Brazil); Mardson Amorim (Universidade Federal do Ceará, Brazil); Sandra Silva (Pontifical Catholic University of Paraná, Brazil); Munir Gariba (Pontifical Catholic University of Paraná, Brazil)

An electrophysiological recording system model with capacitively-coupled electrodes

Hideo Nakamura (Osaka Electro-Communication University, Japan)

Correlation of Noninvasive Cerebral Oxygenation with Mixed Venous Oxygen Saturation in Patients undergoing ECMO-Therapy – A Pilot Study

Heinrich Groesdonk (University of Lübeck, Germany); Hermann Heinze (University of Lübeck, Germany); Klaus Berger (University of Lübeck, Germany); Julika Schön (University of Lübeck, Germany); Beate Sedemund-Adib (University of Lübeck, Germany); Matthias Heringlake (University of Lübeck, Germany); Matthias Bechtel (University of Lübeck, Germany); Hauke Paarmann (University of Lübeck, Germany)

A pressure-controlled alarm and monitoring device for pressure ulcer prophylaxis in patients with traumatic spinal cord injury

Martin Eneling (Linköping University, Sweden); Bengt Ragnemalm (Linköping University, Sweden); Johan Wiman (Linköping University, Sweden); Karl Maack (Gothenburg University, Sweden); Aslak Felin (Gothenburg University, Sweden); Disa Lidman (Linköping University, Sweden); Johan Thorfinn (Stanford University Medical Center, USA)

Study of Kinetics and Distribution of Photogem® in Animal Liver Through Fluorescence Imaging

Emery Lins (Universidade de Sao Paulo, Brazil); Jose Vollet-Filho (Universidade de Sao Paulo, Brazil); S Pratavieira (University of Sao Paulo, Brazil); V Bagnato (University of Sao Paulo, Brazil); C Kurachi (University of Sao Paulo, Brazil)

Depth selective real-time evaluation of blood flow in the tissue using Laser-Doppler-Spectroscopy

Steffen Zahn (University of applied sciences Giessen-Friedberg, Germany); Matthäus Pilch (Medizininformatik, Germany); Lutz Ott (Medizininformatik, Germany); Erdmuthé Meyer zu Bexten (Medizininformatik, Germany); Volker Gross (University of applied sciences Giessen-Friedberg, Germany); Johannes Nolte (Philipps Universität Marburg, Germany); Ali Keywan Sohrabi (Philipps Universität Marburg, Germany)

Monitoring of bile-gastro-esophageal reflux and nocturnal respiratory symptoms

Philipp Lenniger (Philipps Universität Marburg, Germany); Steffen Kunsch (Philipps Universität Marburg, Germany); Ali Keywan Sohrabi (Philipps Universität Marburg, Germany); Christoph Nell (Philipps Universität Marburg, Germany); Johannes Nolte (Philipps Universität Marburg, Germany); Ulrich Koehler (Philipps-University Marburg, Germany); Volker Gross (University of applied sciences Giessen-Friedberg, Germany)

Multimode System for Integrated Quantitative Assessment of Heart Rate Variability

Christopher Druzgalski (California State University Long Beach, USA);
Ravindra Sheth (California State University Long Beach, USA);
Saravana Raman (California State University Long Beach, USA)

Hemodiafiltration Thermal Modalities Evaluation by indirect Calorimetry

Miguel Cadena (Universidad Autónoma Metropolitana-Iztapalapa,
Mexico)

Understanding Gas Exchange Variability in Indirect Calorimetry

Miguel Cadena (Universidad Autónoma Metropolitana-Iztapalapa,
Mexico)

Autonomous coordinator for intelligent sensor nodes enabling real time data fusion for monitoring and feedback application in neurological rehabilitation

Mario Schlösser (Forschungszentrum Jülich, Germany); Lukas Rzezniczek (Forschungszentrum Jülich, Germany); Ferhat Akgün (Forschungszentrum Jülich, Germany); Aylar Seyrafi (Forschungszentrum Jülich, Germany); Hong Ying (Forschungszentrum Jülich, Germany); Michael Schiek (Forschungszentrum Jülich, Germany)

Development of Wireless Urodynamic Study System

Hyoun-Joong Kong (Seoul National University, Korea)

The System Of Physiological Signal Collection Based-on Virtual Instrument

Zhang (Shanghai Medical Instrumentation College, Shanghai, China, P.R. China)

A Transfer Function Method for the Assessment of Oxygen Uptake Dynamics during Walking by Use of a Triaxial Accelerometer

Kyuichi Niizeki (Yamagata University, Japan)

Handheld resonance sensor instrumentation towards faster diagnosis of prostate cancer – Stiffness measurements on a soft tissue phantom

Ville Jalkanen (Umea University, Sweden)

Non-Obtrusive Monitoring of Narrow-Band Electrocardiogram with a Capacitive Electrode Unit during Sleep

Shinji Takahashi (Tokyo Denki University, Japan)

Effects of Transmitter Position and Receiver Ground Plane on Signal Transmission in Intrabody Wireless EMG Measurement System

Zeljka Lucev (University of Zagreb, Croatia); Igor Krois (University of Zagreb, Croatia); Mario Cifrek (University of Zagreb, Croatia); Hrvoje Dzapo (University of Zagreb, Croatia); Stanko Tonkovic (FER, Croatia)

Open system architecture for GERD pH and impedance measurement

José Antonio Cabo Valdés (Virgen del Rocío Children's Hospital, Department of Pediatric Surgery, Spain); Maria Elena (University of Seville, Spain); Pablo Cerro (University of Seville, Spain); Juan Uceda (University of Seville, Spain); Silvia Blasco (University of Seville,

Spain); Alfredo Perez Vega-Leal (University of Sevilla, Spain); Manuel López Alonso (Virgen del Rocío Children's Hospital, Department of Pediatric Surgery, Spain)

A Ubiquitous Real-Time Motion Artifact Rejection technique for Remote NIBP Monitoring of Hypertensive Patients

Mudaser Awan (Next Generation Intelligent Networks Research Center (nexGIN RC), Pakistan); Ali Hasnain (Next Generation Intelligent Networks Research Center (nexGIN RC), Pakistan); Muddassar Farooq (Next Generation Intelligent Networks Research Center (nexGIN RC), Pakistan)

An Alcohol Sensing System basing on HRV Analysis

Chang Feng-Shuo (Ming Chuan University, Taiwan); Tsung-Min Yu (University of Ming Chuan, Taiwan); Jiun-Hung Lin (Kun Shan University, Taiwan); Shih-Tsang Tang (Ming Chuan University, Taiwan)

Th. 13: Poster Session: Track 09: The Art of Scientific Visualization

Focus and Context - Visualization without the complexity

Thomas Fogal (SCI Institute, USA); Jens Krueger (SCI, USA)

Th. 05: Poster Session: Track 09: Workflow, Patient Specific Modeling

Prevalence prognosis of the end stage renal disease patients in Greece

Anastassia Rodina (University of Patras, Greece); Kristina Bliznakova (University of Patras, Greece)

Th. 01: Poster Session: Track 10: Biological Models in Radiation Therapy

Investigation of the Recovery Behaviour as Depending on Parotid Gland Irradiation Dose

Reinhard Gerlach (Martin-Luther-University Halle-Wittenberg, Germany); Markus Stock (Medical University Vienna, Austria); Susanne Koizar (Medical University of Vienna, Austria); Carmen Stromberger (Charité Virchow Klinikum, Germany); Dietmar Georg (Medical University Vienna, Austria); Martin Janich (Martin-Luther-University Halle, Germany)

Evaluation on Lung Cancer Patients' Four-dimensional Treatment Plans Utilizing Biologically Effective Uniform Dose

Fan-Chi Su (Cancer Therapy and Research Center, 7979 Wurzbach Rd., MC 7889, San Antonio, USA); Chengyu Shi (Cancer Therapy and Research Center, 7979 Wurzbach Rd., MC 7889, San Antonio, USA); Panayiotis Mavroidis (Karolinska Institutet and Stockholm University, Sweden); Virginia Goytia (Center for Radiation Oncology, 717 West Robertson St., Brandon, USA); Richard Crownover (Cancer Therapy and Research Center, USA); Prema Rassiah-Szegedi (University of Utah, 7 1950 Circle of Hope Drive, Salt Lake City, USA); Dimos Baltas (Klinikum Offenbach, Germany); Nikos Papanikolaou (Cancer Therapy and Research Center, 7979 Wurzbach Rd., MC 7889, San Antonio, USA)

Feasibility study of the use of artificial neural networks in predicting acute rectal and urinary bladder toxicity following prostate cancer radiotherapy

Andrea Pella (Politecnico di Milano, Italy); Raffaella Cambria (Istituto Europeo di Oncologia, Italy); Barbara Jereczek (Istituto Europeo di Oncologia, Italy); Dario Zerini (Istituto Europeo di Oncologia, Italy); Cristiana Fodor (Istituto Europeo di Oncologia, Italy); Flavia Serafini (Istituto Europeo di Oncologia, Italy); Guido Baroni (Politecnico di Milano, Italy); Marco Riboldi (Politecnico di Milano, Italy); Marco Ciceri (Politecnico di Milano, Italy); Maria Francesca Spadea (Università Magna Graecia di Catanzaro, Italy); Paolo Patete (Politecnico di Milano, Italy); Marta Peroni (Politecnico di Milano, Italy); Federica Cattani (Istituto Europeo di Oncologia, Italy); Cristina Garibaldi (Istituto Europeo di Oncologia, Italy); Guido Pedroli (Istituto Europeo di Oncologia, Italy); Antonio Pedotti (Politecnico di Milano, Italy); Roberto Orecchia (Istituto Europeo di Oncologia, Italy)

Efficacy of Cumulative Biological Doses at various points of Lymphatic Trapezoid using microselectron HDR

Kamlesh Passi (M. D. Oswal Cancer Treatment & Research Foundation, Ludhiana (Pb), India); Zakhmi J (Bhabha Atomic Research Centre, India); Rajesh Vashistha (M.D.Oswal Cancer Institute, India); Singh Bikramjit (M.D.Oswal Cancer Institute, India); Meenakshi Mittal (M.D.Oswal Cancer Institute, India); Meenakshi Mittal (M.D.Oswal Cancer Institute, India); Subhash Chander Gupta (Vidylankar School of Information Technology, Mumbai, India); Than Kehwar (University of Pittsburgh Cancer Institute, USA)

Tolerance of the Spinal Cord to Hypofractionated Radiotherapy Based on a Generalized Biological Effective Dose (gBED) Model

Lijun Ma (University of California San Francisco, USA); Arjun Sahgal (University of Toronto, Canada); David Larson (University of California San Francisco, USA)

Th. 12: Poster Session: Track 10: Biomedical Physics Education for the Medical and Healthcare Professions and the General Public

Biomedical Device Learning Needs of General Nurses in First Cycle Programmes in the Czech Republic

Vojtech Mornstein (Masaryk University, Czech Republic); Sarka Paclova (Faculty of Natural Sciences, Masaryk University, Brno, Czech Republic, Czech Republic); Carmel J. Caruana (Institute of Health Care, University of Malta, Malta)

Biomedical Physics Education for Healthcare Professions: a Lithuanian Contribution

Violeta Karenauskaite (Vilnius University, Lithuania); Ricardas Rotomskis (Vilnius University, Lithuania); Saulius Bagdonas (Vilnius University, Lithuania)

Th. 11: Poster Session: Track 10: Emergency

Control Method of a Cooling Unit for the Emergency of Head Injury

Shahriar Ahmed (Niigata Sangyo University, Japan); Funakubo Akio (Tokyo Denki University, Japan); Tetsuya Higami (Sapporo Medical university, Japan); Fukui Yasuhiro (Tokyo Denki University, Japan); Takeyoshi Dohi (The University of Tokyo, Japan)

Th. 07: Poster Session: Track 10: Pulmonary Systems

Implementation of a semi-digital automatic control loop for control of hot wire anemometers particularly for use in mobile spirometry

Murat Gül (Technische Universität München, Germany); Matthias Bachmeier (Technische Universität München, Germany); Alexander Scholz (Technische Universität München, Germany); Dieter Dill (Technische Universität München, Germany); Bernhard Wolf (Technische Universität München, Germany)

Oxygenation of blood by Photocatalysis: Optical Spectroscopy measurements

Aryasomayajulu Subrahmanyam (Indian Institute of Technology Madras,, India); Ramesh Thangaraj (Surgeon, India)

Th. 05: Poster Session: Track 10: Strategies for Biomarker Selection

Model-Based Patient Care with a Therapy Imaging & Model Management System

Heinz U. Lemke (Universität Leipzig, Germany)

Th. 01: Poster Session: Track 11: Biological/Functional Imaging in Radiation Therapy

Development of Treatment Planning System in Peking University

Shanglian Bao (Peking University, P.R. China); Yibao Zhang (Peking University, P.R. China); Feizeng Huang (Peking University, P.R. China)

The evaluation of therapeutic effect of trastuzumab labeled ^{177}Lu in breast cancer cell line

Samira Rasaneh (Tarbiat Modares University, Iran); Hossein Rajabi (Tarbiat Modarres University, Iran); Hossein Babaei (Atomic Energy Organization of Iran, Iran); Fariba Johari (Nuclear science and technology research institute, Iran)

Validation of the SUV values calculation in the iPlan 4.0 Treatment Planning System (BrainLAB)

Vesna Jacob (Klinikum rechts der Isar der TU München, Germany); Peter Kneschaurek (Klinikum rechts der Isar, Germany); Michael Souvatzoglou (Klinikum rechts der Isar, Germany); Sabrina Astner (Klinikum rechts der Isar, Germany); Ralph Bundschuh (Klinikum rechts der Isar der TU München, Germany); Raymonde Busch (Klinikum rechts der Isar der TU München, Germany); Anca Grosu (Universtitätsklinikum Freiburg, Germany)

Integration of PET, MRI and CT data for target volume delineation in radiotherapy

Marc Kessler (University of Michigan, USA)

Multi-modal Image registration, Marc Kessler, U Michigan, Ann Arbor, USA

Marc Kessler (University of Michigan, USA)

Th. 07: Poster Session: Track 11: Sleep

Nocturnal Acoustical Monitoring in Patients with Chronic Rhinosinusitis

Volker Gross (University of applied sciences Giessen-Friedberg, Germany); Ali Keywan Sohrabi (Philipps Universität Marburg, Germany); Frank Dette (Philipps-Universität Marburg, Germany); Ulrich Koehler (Philipps-University Marburg, Germany)

Comparing benign snores with apneic snores based on high frequency analysis

Takahiro Emoto (The University of Tokushima, Japan); Yohsuke Kinouchi (The University of Tokushima, Japan); Udantha Abeyratne (The University of Queensland, Australia); Masatake Akutagawa (The University of Tokushima, Japan)

Th. 13: Poster Session: Track 12: IOMP & EFOMP Symposium: Education & Training in Medical Physics

Medical Physics Status in the Middle East Countries

Ibrahim Duhaini (Rafik Hariri University Hospital, Lebanon)

Th. 13: Poster Session: Track 14: Electroporation

Numerical models of microneedle electrodes for gene electrotransfer in skin

Natasa Pavselj (University of Ljubljana, Slovenia); Damijan Miklavcic (University of Ljubljana, Slovenia)

Analysis of mechanisms involved in gene electrotransfer – theoretical and an in vitro study

Mojca Pavlin (University of Ljubljana, Slovenia); Maša Kandušer (University of Ljubljana, Slovenia); Damijan Miklavcic (University of Ljubljana, Slovenia)

Thursday, Sep 10

08:15 - 10:00

Th. 03/8.3: Dosimetry with Phantoms (2)

Room: Hall 13a **Chair:** Helmut Schlattl (Helmholtz Zentrum Muenchen, Germany) , Maria Zankl (Helmholtz Zentrum München - German Research Center for Environmental Health, Germany)

8:15 Dosimetry studies on a fetus model combining medical image information and synthetic woman body

Lazar Bibin (Télécom ParisTech, France); Jérémie Anquez (Télécom ParisTech, France); Abdelhamid Hadjem (France Telecom R&D, France); Elsa Angelini (Télécom ParisTech, France); Joe Wiart (France Telecom R&D, France); Isabelle Bloch (Télécom ParisTech, France)

8:30 Electron absorbed fractions in skeletal soft tissues based on red bone marrow segmentation at runtime in microCT images of human trabecular bone

Richard Kramer (Universidade Federal de Pernambuco, Brazil); Helen Jamil Khoury (Universidade Federal de Pernambuco, Brazil); José Wilson Vieira (Centro Federal de Educação Tecnológica de Pernambuco, Brazil); Kate Robson-Brown (University of Bristol, United Kingdom); Dirk Fuelle (Infineon Technologies AG, Germany)

8:45 Simulating mammographic absorption imaging and its radiation protection properties

Christoph Hoeschen (Helmholtz Zentrum München - German Research Center for Environmental Health, Germany); Helmut Schlattl (Helmholtz Zentrum Muenchen, Germany); Maria Zankl (Helmholtz Zentrum München - German Research Center for Environmental Health, Germany); Thorben Seggebrock (Ludwig-Maximillan-University, Germany); Lucas Clemente (Ludwig-Maximillan-University, Germany); Florian Grüner (Ludwig-Maximillan-University, Germany)

9:00 The comparative analysis of various methods of CT effective doses estimation

Sergey Kruchinin (Research and Practical Centre of Medical Radiology, Russia); Mikhail Zelikman (Research and Practical Centre of Medical Radiology, Russia)

9:15 Effective dose contribution of cone-beam CT acquisition during uterine artery embolisation: a phantom study

An De Crop (Ghent University, Belgium); Klaus Bacher (Ghent University, Belgium); Defreyne Luc (Ghent University Hospital, Belgium); Hubert Thierens (Ghent University, Belgium)

9:30 Evaluation of effective patient dose in paranasal sinus imaging: comparison of Cone Beam CT, Digital Tomosynthesis and multi slice CT

Klaus Bacher (Ghent University, Belgium); Koen Mermuys (A.Z. St.-Jan Hospital, Belgium); Jan Casselman (A.Z. St.-Jan Hospital, Belgium); Hubert Thierens (Ghent University, Belgium)

9:45 Dose Distribution in Pediatric CT Abdominal Examination: Phantom Study

Rumi Gotanda (Ibaraki Prefectural University of Health Sciences, Japan); Toshizo Katsuda (Himeji Dokkyo University, Japan); Tatsuhiro Gotanda (Okayama University, Japan); Akihiko Tabuchi (Okayama University, Japan); Hidetoshi Yatake (Okayama University, Japan); Yoshihiro Takeda (Okayama University, Japan)

Th. 12/8.18: Education and Training - General (2)

Room: Hall 22b Chair: Golam Zakaria (Kreiskrankenhaus Gummersbach, Germany, Germany) , Valery Kostylev (Univ. of Russia, Russia)

8:15 IOMP Model Curriculum for postgraduate (MSc-level) education programme on Medical Physics

Slavik Tabakov (King's College Hospital London, United Kingdom); Anchali Krisanachinda (Chulalongkorn University, Thailand); Perry Sprawls (Sprawls Educational Foundation, USA); Ervin Podgorsak (McGill University, Montréal, Canada, Canada); Cornelius Lewis (King's College Hospital, London, United Kingdom)

8:30 Present status of Medical radiological physics in Bulgaria

Jenia Vassileva (National Centre of Radiobiology and Radiation Protection, Bulgaria)

8:45 Planning of Medical Physicists Education for Radiotherapy in Russia

Valeriy Kostylev (Association of Medical Physicists in Russia, Russia)

9:00 Medical Physics Education in Bangladesh and Cooperation with Germany

Hasin Anupama (Teacher, Bangladesh); Golam Zakaria (Kreiskrankenhaus Gummersbach, Germany, Germany); Günther H. Hartmann (German Cancer Research Center, Germany)

9:15 Treatment Planning in Radiation Oncology: A 'learning-by-doing approach'

Bernadette Hartmann (University of Canterbury, New Zealand); Juergen Meyer (University of Canterbury, New Zealand); Ira Kalet (University of Washington, USA)

9:30 Radiation protection in medicine: medical practitioner's knowledge and patient awareness level

Ana Pascoal (Faculty of Engineering, Catholic University of Portugal, Portugal); Sara Carrasqueiro (Faculty of Engineering, Catholic University of Portugal, Portugal); Filipa Vale (Faculdade de Engenharia, Universidade Católica Portuguesa, Portugal); Matthaïos Koutalonis (Barts and the London NHS Trust - Queen Mary University of London, United Kingdom)

Th. 04/8.7: Focus Session: Visualization in Oncology (1)

Room: Hall 05 Chair: Cornelia Kober (Hamburg University of Applied Sciences, Germany) , Heinrich Overhoff (University of Applied Sciences Gelsenkirchen, Germany)

8:15 Invited: Image guided brachytherapy – interventional radiation therapy: Demands from physician point of view.

Vratislav Strnad (University Hospital Erlangen, Germany)

8:30 *Sophisticated surgical skull base therapy - a multidisciplinary challenge.*

Stefan Zimmerer (University of Basel, Switzerland); Katja Schwenzer-Zimmerer (University of Basel, Switzerland); Isabelle Berg (University of Basel, Switzerland); Ruth Köppl (University of Basel, Switzerland); Philipp Jürgens (Univ.-Hosp. Basel, Switzerland); Zdzislaw Kroll (University of Basel, Switzerland); Cornelia Kober (Hamburg University of Applied Sciences, Germany); Ralf Schumacher (University of Applied Sciences Northwestern Switzerland, Switzerland); Luigi Mariani (University of Basel, Switzerland); Hans-Florian Zeilhofer (Univ.-Hosp. Basel, Switzerland)

8:45 *Invited: Non-rigid Registration Techniques and Applications in High-Precision Radiotherapy*

Mischa Hoogeman (Erasmus MC - Daniel den Hoed Cancer Center, The Netherlands); Eliana Vásquez Osorio (Erasmus MC - Daniel den Hoed Cancer Center, The Netherlands); Luiza Bondar (Erasmus MC - Daniel den Hoed Cancer Center, The Netherlands); Xiao Han (CMS, Inc, USA); Peter Levendag (Erasmus MC - Daniel den Hoed Cancer Center, The Netherlands); Ben Heijmen (Erasmus MC - Daniel den Hoed Cancer Center, The Netherlands)

9:15 *Invited: High Precision Radiotherapy and Image Guided Procedures - Demands on Standards, Interoperability and Workflow Integration*

Fred Röhner (Uniklinik Freiburg, Germany)

9:45 *Invited: Three-Dimensional Visualization in Plastic and Reconstructive Surgery after Oncologic Procedures/Interventions*

Laszlo Kovacs (Technische Universität München, Germany, Germany)

10:00 *Invited: Interactive visualization of ultrasound image volumes for oncologic diagnostics*

Heinrich Overhoff (University of Applied Sciences Gelsenkirchen, Germany); Martin Rauberger (University of Applied Sciences Gelsenkirchen, Germany); Christian Sobotta (University of Applied Sciences Gelsenkirchen, Germany); Dennis Sandkühler (University of Applied Sciences Gelsenkirchen, Germany)

10:30 *Multimodal visualization of craniofacial tumors of large dimensions*

Cornelia Kober (Hamburg University of Applied Sciences, Germany); Britt-Isabelle Berg (University Hospital Basel, Switzerland); Andreas Mueller (University Hospital Basel, Switzerland); Philipp Jürgens (Univ.-Hosp. Basel, Switzerland); Hans-Florian Zeilhofer (Univ.-Hosp. Basel, Switzerland); Stephan Zimmerer (University Hospital Basel, Switzerland); Katja Schwenzer-Zimmerer (University Hospital Basel, Switzerland)

Th. 06/8.1: MRI Compatible Robots

Room: Hall 01 Chair: Walter Kucharczyk (University of Toronto, Canada)

8:15 Keynote: Robotic surgery; achieving cost-effectiveness

Brian Davies (Imperial College affiliation, United Kingdom)

8:45 Invited: Robotic Systems for MR-guided Interventions

Michael Bock (German Cancer Research Center (DKFZ), Germany); Axel Krafft (German Cancer Research Center (DKFZ), Germany); Florian Maier (German Cancer Research Center, Germany); Reiner Umathum (German Cancer Research Center, Germany); Ann-Kathrin Homagk (German Cancer Research Center, Germany); Stefan Alt (German Cancer Research Center, Germany); Ke Zhang (German Cancer Research Center, Germany); Celine Pitsaer (German Cancer Research Center, Germany); Jürgen Jenne (German Cancer Research Center, Germany); Wolfhard Semmler (German Cancer Research Center, Germany)

9:15 Software-assisted Monitoring of MR-guided RFA of Malignant Liver Tumors: Initial Clinical Results

Diethard Schmidt (University of Tübingen, Germany)

9:30 A New Piezo Actuator Drive for Magnetic Resonance Imaging

Markus Vogl (Technische Universität München, Germany); Tobias Kraus (Technische Universität München, Germany); Roland Zeichfuß (Siemens AG, Germany); Carsten Wallenhauer (Siemens AG, Germany); Bernhard Gottlieb (Siemens AG, Germany); Andreas Kappel (Siemens AG, Germany); Michael Peller (Ludwig Maximilian University Munich, Campus Grosshadern, Germany); Tim Lueth (Technical University of Munich, Dept. MIMED, Germany)

9:45 Temperature mapping for MR-guided radiofrequency ablation – how accurate can cell necrosis be monitored?

Hansjörg Rempp (Eberhard-Karls-University of Tübingen, Germany); Stephan Clasen (Eberhard-Karls-University of Tübingen, Germany); Andreas Boss (Eberhard-Karls-University of Tübingen, Germany); Claus Claussen (Eberhard-Karls-University of Tübingen, Germany); Philippe Pereira (Eberhard-Karls-University of Tübingen, Germany); Fritz Schick (Eberhard-Karls-University of Tübingen, Germany)

Th. 05/8.16: Image Processing and Visualization

Room: Hall 21b Chair: Daniel Güllmar (Jena University Hospital, Germany)

8:15 Deterministic tracking of contrast enhanced MR-Angiography (CE-MRA) data by using established methods of Diffusion-Tensor-Imaging (DTI)

Daniel Güllmar (Jena University Hospital, Germany); Andreas Deistung (Friedrich-Schiller Universität Jena, Germany); Jürgen Reichenbach (Jena University Hospital, Germany)

8:30 Virtual Chameleon– A System to Provide Different Views to Both Eyes

Fumio Mizuno (Tohoku Institute of Technology, Japan); Tomoaki Hayasaka (Tohoku University, Japan); Takami Yamaguchi (Tohoku University, Japan)

8:45 GPU-based Fast 3D Ultrasound-Endoscope Image Fusion for Complex-Shaped Objects

Hongen Liao (The University of Tokyo, Japan)

9:00 ECCA – Endoscopic Capsule Capview cAtaloguer

Sérgio Lima (University of Aveiro, Portugal); Joao Silva Cunha (University of Aveiro, Portugal); Miguel Coimbra (University of Porto, Portugal); José Soares (Hospital Pedro Hispano, Portugal)

9:15 Visual Enhancement Of Fascia Facilitates Laparoscopic Preparation

Hamed Esnaashari (Campus Luebeck, University of Schleswig-Holstein, Germany); Tilmann Laubert (Campus Luebeck, University of Schleswig-Holstein, Germany); Robert Keller (Segeberger Kliniken, Germany); Thomas Jungbluth (Campus Luebeck, University of Schleswig-Holstein, Germany); Thomas Stehle (RWTH Aachen University, Germany); Hans-Peter Bruch (University of Luebeck, Germany)

9:30 A Video-based Algorithm for Elderly Fall Detection

Jared Willems (De Nayer Instituut, Lessius university college, Belgium); Glen Debar (MOBILAB, Katholieke Hogeschool Kempen, Belgium); Bart Vanrumste (MOBILAB, Katholieke Hogeschool Kempen, Belgium); Toon Goedemé (De Nayer Instituut, Lessius university college, Belgium)

9:45 Targeted Image Reconstruction in Positron Emission Mammography

Gonçalo Picado (Universidade de Lisboa, Faculdade de Ciências, Portugal); Nuno Matela (Universidade de Lisboa, Faculdade de Ciências, Portugal); Nuno Oliveira (Universidade de Lisboa, Faculdade de Ciências, Portugal); Pedro Almeida (Universidade de Lisboa, Faculdade de Ciências, Portugal)

Th. 04/8.14: Focus Session: Evaluation on Image Segmentation

Room: Hall 12b Chair: Heimann Tobias (INRIA Sophia Antipolis, France) , Hans Lamecker (INRIA Sophia Antipolis, France)

8:15 Invited: Medical Image Processing Competition in Japan

Akinobu Shimizu (Tokyo University of Agriculture and Technology, Japan); Shigeru Nawano (International University of Health and Welfare, Japan); Kenji Shinozaki (National Kyusyu Cancer Center, Japan); Yukio Tateno (National Institute of Radiological Sciences, Japan)

8:45 Invited: On the Evaluation of Coronary Artery Centerline Extraction Algorithms - A Standardized Methodology and Reference Database

Michiel Schaap (Erasmus MC, Rotterdam, The Netherlands); Coert Metz (Erasmus MC, Rotterdam, The Netherlands); Theo van Walsum (Erasmus MC, Rotterdam, The Netherlands); Alina van der Giessen (Erasmus MC, Rotterdam, The Netherlands); Annick Weustink (Erasmus MC, Rotterdam, The Netherlands); Nico Mollet (Erasmus MC, Rotterdam, The Netherlands); Gabriel Krestin (Erasmus MC, Rotterdam, The Netherlands); Wiro Niessen (Erasmus MC, Rotterdam, The Netherlands)

9:15 *Towards a quantitative assessment of dural ectasia in patients with Marfan syndrome*

Maria Ida Iacono (Politecnico di Milano, Italy); Katia Passera (Politecnico di Milano, Italy); Lorenzo Magrassi (Fondazione IRCCS Policlinico S. Matteo, Italy); Roberto Dore (Fondazione IRCCS Policlinico S. Matteo, Italy); Paolo Lago (Ingegneria Clinica Policlinico San Matteo, Italy); Eloisa Arbustini (Fondazione IRCCS Policlinico S. Matteo, Italy); Luca Mainardi (Polytechnic University of Milan, Italy)

9:30 *Comparison of the methods of microscopic image segmentation*

Anna Korzynska (Institute of Biocybernetics and Biomedical Engineering, Poland); Marcin Iwanowski (Warsaw University of Technology, Poland); Urszula Neuman (Institute of Biocybernetics and Biomedical Engineering, Poland); Edyta Dobrowolska (Institute of Biocybernetics and Biomedical Engineering, Poland); Pawel Hoser (Institute of Biocybernetics and Biomedical Engineering PAS, Poland)

9:45 *A New and Efficient Method for Automatic Optic Disc Detection Using Geometrical Features*

Alauddin Bhuiyan (University of Melbourne, Australia)

10:00 *Evaluation of an Integrated Tool for Automated Visualization of Subdural Electrodes*

Julia Kuß (Technische Universität Dresden, Germany); Stefan Wagner (Technische Universität Dresden, Germany); Tobias Meyer (Technische Universität Dresden, Germany); Matthias Kirsch (Universitätsklinikum Dresden, Germany); Ute Morgenstern (Technische Universität Dresden, Germany)

Th. 09/8.17: Rehabilitation and Robotics: The Patient is the Master, the Robot is the Tool

Room: Hall 22a **Chair:** Robert Riener (ETH and University of Zurich, Switzerland), Heike Vallery (ETH Zürich, Switzerland)

8:15 *Invited: Feasibility of selective robotic support of foot clearance with continuously adapting impedance levels*

Edwin van Asseldonk (University of Twente, The Netherlands); Bram Koopman (University of Twente, The Netherlands); Corien Simons (Roessingh Research and Development, The Netherlands); Jaap Buurke (Roessingh Research and Development, The Netherlands); Herman van der Kooij (University of Twente, The Netherlands)

8:45 Invited: Robot-amplified manual exploration improves load identification

Felix Huang (Rehabilitation Institute of Chicago, USA); Patton Jim (RIC, USA); Ferdinando Mussa-Ivliadi (Northwestern University, USA)

9:15 Invited: On the Efficacy of Haptic Guidance Schemes for Human Motor Learning

Volkan Patoglu (Sabanci University, Turkey); Yanfang Li (Rice University, USA); Marcia O'Malley (Rice University, USA)

9:30 Invited: Patient-Cooperative Control: Providing Safe Support without Restricting Movement

Heike Vallery (ETH Zürich, Switzerland); Marco Guidali (ETH & Uni Zurich, Switzerland); Alexander Duschau-Wicke (ETH Zurich, Switzerland); Robert Riener (ETH and University of Zurich, Switzerland)

9:45 Invited: Patient-Cooperative Control: Adapting Robotic Interventions to Individual Human Capabilities

Alexander Duschau-Wicke (ETH Zurich, Switzerland); Thomas Brunsch (Technical University Berlin, Germany); Simon Felsenstein (ETH Zurich, Switzerland); Heike Vallery (ETH Zürich, Switzerland); Robert Riener (ETH and University of Zurich, Switzerland)

Th. 07/8.13: Bioimpedance Instrumentation

Room: Hall 11b Chair: Robert Patterson (University of Minnesota, USA) , Mart Min (Tallinn University of Technology, Estonia)

8:15 Comparison of Rectangular Wave Excitations in Broad Band Impedance Spectroscopy for Microfluidic Applications

Mart Min (Tallinn University of Technology, Estonia); Athanasios Giannitsis (Institute for Bioprocessing and Analytical Measurement Techniques, Germany); Raul Land (Tallinn University of Technology, Estonia); Brian Cahill (Institute for Bioprocessing and Analytical Measurement Techniques, Germany); Uwe Pliquett (Institute for Bioprocessing and Analytical Measurement Techniques, Germany); Thomas Nacke (Institute for Bioprocessing and Analytical Measurement Techniques, Germany); Frense Dieter (Institute for Bioprocessing and Analytical Measurement Techniques, Germany); Gunter Gastrock (Institute for Bioprocessing and Analytical Measurement Techniques, Germany); Dieter Beckmann (Institute for Bioprocessing and Analytical Measurement Techniques, Germany)

8:30 Respiration monitoring with a defibrillator

Sverre Grimnes (Rikshospitalet University Hospital, Norway); Ørjan Martinsen (University of Oslo, Norway); Helge Fossan (Laerdal Medical AS, Norway)

8:45 An improved right sided electrical impedance method to monitor pulmonary edema

Robert Patterson (University of Minnesota, USA); Fei Yang (University of Minnesota, USA); Andres Belalcazar (University of Minnesota, USA)

9:00 Development of a Portable Impedance Tomography System (PITS)

Jérôme Foussier (RWTH Aachen, Germany); Axel Cordes (RWTH Aachen, Germany); Steffen Leonhardt (RWTH Aachen University, Germany)

9:15 Multichannel bipolar current source used in electrical impedance spectroscopy: preliminary results

Pedro Bertemes-Filho (Santa Catarina State University, Brazil); Rogerio Pereira (State University of Santa Catarina, Brazil); Aleksander Paterno (Santa Catarina State University, Brazil)

9:30 Design of a Microcontroller Based Cole-Cole Impedance Meter For Testing Biological Tissues

Yekta Ülgen (Bogazici University, Turkey); Hakan Solmaz (Bogazici University, Turkey); Murat Tümer (Bogazici University, Turkey)

9:45 Hematocrit Measurement – A high precision on-line measurement system based on impedance spectroscopy for use in hemodialysis machines

Dennis Trebbels (HSG-IMIT, Germany)

Th. 04/8.6: Focus Session: Methodological Aspects of Sleep Related Disorders (2)

Room: Hall 14c Chair: Christoph Maier (Heilbronn University, Germany) , Dagmar Krefting (Charité - Universitätsmedizin Berlin, Germany)

8:15 A New Approach for Parameterizing the ECG for Sleep Stage Classification

Halil Oezer (Christian-Albrechts-University of Kiel, Germany); Ulrich Heute (Universitaet Kiel, Germany)

8:30 Invited: Cardiovascular Physics: Model-based synchronization analysis during sleep

Niels Wessel (Humboldt-Universität zu Berlin, Germany); Maik Riedl (University of Potsdam, Germany); Alexander Suhrbier (Forschungszentrum Karlsruhe GmbH, Germany); Hagen Malberg (FZK, Germany); Georg Bretthauer (Universität Karlsruhe, Germany); Thomas Penzel (Charité - Universitätsmedizin Berlin, Germany); Juergen Kurths (Humboldt University, Germany)

9:00 Pitch/Airway-Response and Cepstral Analysis of Snore Sounds for the Non-Contact Screening of Sleep Apnea

Asela Karunajeewa (The University of Queensland, Australia); Udantha Abeyratne (The University of Queensland, Australia); Craig Craig (Princess Alexandra Hospital and The University of Queensland, Australia)

9:15 *Effect of Background Sound and Impact of Snore Episode Length Normalization on Snore-Based Apnea Diagnosis*

Shaminda de Silva (The University of Queensland, Australia); Udantha Abeyratne (The University of Queensland, Australia); Asela Karunajeewa (The University of Queensland, Australia)

9:30 *Intra-Subject Variability of Fatigue Estimation Based on Driving Variables*

Martin Golz (University of Applied Sciences Schmalkalden, Germany)

9:45 *Multi criteria evaluation of sleep and anesthesia by Neural Networks, Fuzzy rules, Evolutionary algorithms and Support vector machines*

Rudolf Baumgart-Schmitt (University of Applied Sciences Schmalkalden, Germany)

Th. 01/8.9: Image Guided Radiation Therapy - Motions and Margins

Room: Hall 04b Chair: Steve Webb (University of London, United Kingdom) , Uwe Oelfke (DKFZ, Germany)

8:15 *Finite element-based biomechanical modeling of the bladder for image guided radiotherapy*

Xiangfei Chai (The Academic Medical Center of the University of Amsterdam, The Netherlands); Jeroen van de Kamer (The Academic Medical Center of the University of Amsterdam, The Netherlands); Marcel van Herk (The Netherlands Cancer Institute, The Netherlands); Remeijer Peter (, The Netherlands); Maarten Hulshof (The Academic Medical Center of the University of Amsterdam, The Netherlands); Floris Pos (The Netherlands Cancer Institute, The Netherlands); Heidi Lotz (The Academic Medical Center of the University of Amsterdam, The Netherlands); Arjan Bel (The Academic Medical Center of the University of Amsterdam, The Netherlands)

8:30 *Measurement of Inter-fraction Changes in Bladder Volume Using Ultrasound Image Guidance for Gynecological Radiotherapy*

Hayeon Kim (University of Pittsburgh, USA); Sushil Beriwal (University of Pittsburgh, USA); M. Saiful Huq (University of Pittsburgh, USA)

8:45 *Obtaining information on intra-fraction prostate displacement in radiotherapy determined from pre- and post-treatment kV imaging*

Tomas Kron (Peter MacCallum Cancer Centre, Australia); Jessica Thomas (Peter MacCallum Cancer Centre, Australia); Chris Fox (Peter MacCallum Cancer Centre, Australia); Ann Thompson (Peter MacCallum Cancer Centre, Australia); Rebecca Owen (Peter MacCallum Cancer Centre, Australia); Alan Herschtal (Peter MacCallum Cancer Centre, Australia); Annette Haworth (Peter MacCallum Cancer Centre, Australia); Keen-Hun Tai (Peter MacCallum Cancer Centre, Australia); Farshad Foroudi (Peter MacCallum Cancer Centre, Australia)

9:00 Performance of patient specific margins derived using a Bayesian statistical method

Marcel van Herk (The Netherlands Cancer Institute, The Netherlands);
Marnix Witte (The Netherlands Cancer Institute, The Netherlands);
Remeijer Peter (, The Netherlands)

9:15 Comparison of Daily Online Ultrasound and MV-CBCT Localization Data for Post Prostatectomy Cancer Patients and Implications for PTV Margin Expansion

Moyed Miften (University of Colorado Denver, USA); Olivier Gayou (Allegheny General Hospital, USA)

9:30 Analysis of Dose Shifts induced by Organ Movements during Treatment with TomoTherapy using a Motion Phantom and GafChromic EBT Films

Carsten Grohmann (University of Hamburg, Germany); René Werner (University Medical Center Hamburg-Eppendorf, Germany); Dirk Albers (University Medical Center Hamburg-Eppendorf, Germany); Florian Cremers (University-Medical Center Hamburg, Germany)

9:45 Imaging QA Program for Image Guided RadioTherapy (IGRT)

Kai Schubert (University Hospital of Heidelberg, Germany); Katja Wagenknecht (University Hospital Heidelberg, Germany); Steffen Lissner (University Hospital Heidelberg, Germany); Gabriele Sroka-Perez (University Hospital Heidelberg, Germany); Juergen Debus (University Hospital Heidelberg, Germany)

Th. 02/8.2: Focus Session: Ultrasonic Contrast Agents, Flow and Perfusion Imaging, Molecular Imaging

Room: Hall 14b Chair: Helmut Ermert (Ruhr-University Bochum, Germany) ,
Krzysztof Kaluzynski (Warsaw University of Technology, Poland)

8:15 Keynote: Innovation in Therapy and Diagnosis by Ultrasound Technology

Georg Schmitz (Ruhr-University Bochum, Germany)

8:45 Multispectral Photoacoustic Coded Excitation using Orthogonal Unipolar Golay Codes

Martin Mienkina (Ruhr-University Bochum, Germany); Claus-Stefan Friedrich (Ruhr-University Bochum, Germany); Nils Gerhardt (Ruhr-University Bochum, Germany); Martin Hofmann (Ruhr-University Bochum, Germany); Georg Schmitz (Ruhr-University Bochum, Germany)

9:00 Application of Volterra Series to the Detection of Ultrasound Contrast Agents

Martin Schiffner (Ruhr-University Bochum, Germany); Michal Mleczo (Ruhr-Universität Bochum, Germany); Georg Schmitz (Ruhr-University Bochum, Germany)

9:15 High frequency photoacoustic microscopy for high resolution imaging

Wolfgang Bost (Fraunhofer Institut für biomedizinische Technik IBMT, Germany); Frank Stracke (Fraunhofer Institut für biomedizinische Technik IBMT, Germany); Yvonne Kohl (Fraunhofer Institut für biomedizinische Technik IBMT, Germany); Marc Fournelle (Fraunhofer Institute Biomedizinische Technik, Germany); Robert Lemor (Fraunhofer IBMT, Germany)

9:30 High-contrast real-time optoacoustic imaging of subcutaneous blood vessels

Marc Fournelle (Fraunhofer Institute Biomedizinische Technik, Germany); Hans Joachim Welsch (Fraunhofer IBMT, Germany); Heinrich Fonfara (Fraunhofer IBMT, Germany); Holger Hewener (Fraunhofer IBMT, Germany); Christian Günther (Fraunhofer IBMT, Germany); Wolfgang Bost (Fraunhofer Institut für biomedizinische Technik IBMT, Germany); Robert Lemor (Fraunhofer IBMT, Germany)

9:45 Comparison of Cardiac MR and 3D Echocardiography Left Ventricular Analysis

Job Gutteling (Máxima Medical Center, The Netherlands)

Th. 04/8.5: Modeling and Simulation for Oncology

Room: Hall 14a Chair: Georgios Stamatakos (Institute of Communication and Computer Systems, Natl Tech University of Athens, Greece)

8:15 Cervical soft tissue motion measurement by optical coherence tomography

Michael Dämgen (University of Hannover, Germany); Thomas Lenarz (University of Hannover, Germany); Burkard Schwab (University of Hannover, Germany); Martin Leinung (University of Hannover, Germany)

8:30 A QCT Based Nonlinear Finite Element Method Proposed for Predicting Failure Initiation Load and Location in Vertebrae Affected by Tumors

Bijan Hashemi (Tarbiat Modares University, Iran); Ahad Zeinali (Urmia University of Medical Sciences, Iran)

8:45 Modeling radioimmunotherapy with anti-CD20 antibody – Optimal preload depending on lymphoma transcapillary solute exchange

Peter Kletting (Universität Ulm, Germany); Sven Reske (Universität Ulm, Germany); Gerhard Glatting (Universität Ulm, Germany)

9:00 Computer Simulation of Spheroid Response to Irradiation

Christine Harting (German Cancer Research Center, Germany); Peter Peschke (German Cancer Research Center (DKFZ), Germany); Christian Karger (German Cancer Research Center (DKFZ), Germany)

9:15 Towards a Simulation of Temperature Induced Blood Clotting in Hepatic RF Ablation

Tim Kröger (Fraunhofer MEVIS, Germany); Tobias Preusser (Fraunhofer MEVIS, Germany)

9:30 Computational simulations of magnetic particle capture in simplified and realistic arterial flows: towards optimized Magnetic Drug Targeting

Sasa Kenjeres (Delft University of Technology, The Netherlands); Diemer Cohen Stuart (Delft University of Technology, The Netherlands)

9:45 kV beam model for flat panel imaging system with bow tie filter

Manuel Blessing (University of Heidelberg, Germany); Mandar Bhagwat (Brigham and Women's Hospital, Harvard Medical School, USA); Yulia Lyatskaya (Brigham and Women's Hospital, Harvard Medical School, USA); Jennifer Bellon (Brigham and Women's Hospital, Harvard Medical School, USA); Piotr Zygmanski (Brigham and Women's Hospital and Harvard Medical School, USA)

Th. 04/8.8: Experimental Musculo-Skeletal Biomechanics

Room: **Hall 04a** Chair: Klaus Radermacher (RWTH Aachen, Germany)

8:15 Retrieval of new characteristic features for description of cartilage tissue properties using blunt impact testing approach

Ferdinand Varga (2nd Faculty of Medicine, Charles University in Prague, Czech Republic); Václav Chudáček (Czech Technical University in Prague, Czech Republic); Petr Kos (Orthopedic Clinic, University Hospital Motol, Charles University in Prague, Czech Republic); M Držík (International Laser Center, Bratislava, Slovakia); Milan Handl (Orthopedic Clinic, University Hospital Motol, Charles University in Prague, Czech Republic); Ctibor Povýšil (Institute of Pathology 1st Faculty of Medicine, Charles University in Prague, Czech Republic); Lenka Lhotska (Czech Technical University in Prague, Czech Republic); Tomáš Trč (Orthopedic Clinic, University Hospital Motol, Charles University in Prague, Czech Republic); Evžen Amler (2nd Faculty of Medicine, Charles University in Prague, Czech Republic)

8:30 Resonant acoustic sensor for estimating elastic properties of muscular tissues

Hugues Blasco (University of Montpellier 2, France); Jean-Yves Ferrandis (ph.D. Research Engineer, France)

8:45 Verification of the Pontos Motion analysis System - A new optical measurement system for biomechanical analysis

Stefan Doebele (Technical University Munich, Germany); Casten Horn (TU München, Germany); Stefan Eichhorn (Technical University Munich, Germany); Ulrich Stöckle (TU München, Germany); Martin Lucke (TU München, Germany)

9:00 A novel setup for investigations of reflexive and reactive motor responses in biceps

Gerhard Staude (University FAF Munich, Germany); Marcus Rabe (Universität der Bundeswehr München, Germany); Werner Wolf (Universität der Bundeswehr München, Germany); Andon Kossev (Bulgarian Academy of Sciences, Bulgaria); Gerhard Bauch (Universitaet der Bundeswehr Munich, Germany)

9:15 *Analysis of neck muscles influence on cervical spine loading conditions during daily activity*

Marek Gzik (Silesian University of Technology, Poland)

9:30 *Osteoarthritic cancellous bone seems to orientate its structure to compensate for tissue degeneration.*

Caroline Ohman (Istituti Ortopedici Rizzoli, Italy); Simone Tassani (Istituto Ortopedico Rizzoli, Italy); Egon Perilli (SA Pathology, Australia); Fabio Baruffaldi (Istituto Ortopedico Rizzoli, Italy); Massimiliano Baleani (Istituto Ortopedico Rizzoli, Italy); Marco Viceconti (Istituto Ortopedico Rizzoli, Italy)

Th. 01/8.4: Dosimeter Calibration

Room: Hall 13b Chair: David Burns (Bureau International des Poids et Mesures, France) , Klaus Derikum (Physikalisch-Technische Bundesanstalt, Germany)

8:15 *A Dedicated Irradiation Facility for Radiotherapy Dosimetry*

Klaus Derikum (Physikalisch-Technische Bundesanstalt, Germany)

8:30 *On the performance of monitor chambers to measure the output of medical linear accelerators for high-precision dosimetric investigations*

Ralf-Peter Kapsch (Physikalisch-Technische Bundesanstalt, Germany); Achim Krauss (Physikalisch-Technische Bundesanstalt, Germany)

8:45 *Establishment of national standard in I-125 air kerm strength and traceability chain in Japan*

Akira Ito (Japanese Foundation for Cancer Research, Japan); Yutaka Takahashi (Osaka University, Japan)

9:00 *Determination of the quality index (Q) for photon beams at arbitrary field sizes*

Otto Sauer (Universitätsklinikum Würzburg, Germany); Mania Aspradakis (Kantonsspital Graubünden, Switzerland)

9:15 *Measurement of Absorbed Dose to Water of a Gamma Knife Type C*

Hyun-Tai Chung (Seoul National University College of Medicine, Korea); Young Ho Park (Chonnam University, Korea); Sang Il Hyun (Korea Institute of Ceramic Engineering and Technology, Korea); Yongsoo Choi (Hankyong University, Korea); Gi-Hong Kim (Yonsei University, Korea); Kook Jin Chun (Korea Research Institute of Standards and Science, Korea)

Th. 10/8.15: Cellular Scale Biomechanics and Mechanobiology

Room: Hall 21a Chair: Dieter Liepsch (University of Applied Sciences Munich & Institut f. Biotechnik, e.V., Germany)

8:15 Invited: Particle Method Simulation of Red Blood Cells Infected by Malaria

Takami Yamaguchi (Tohoku University, Japan); Young Ho Kang (Tohoku University, Japan); Hitoshi Kondo (Tohoku University, Japan); Yohsuke Imai (Tohoku University, Japan); Takuji Ishikawa (Tohoku University, Japan)

8:30 Recruitment of Smooth Muscle Cells and Intercellular Calcium Waves during Arterial Vasomotion

Dominique Seppey (Ecole Polytechnique Fédérale de Lausanne, Switzerland); Michele Koenigsberger (Ecole Polytechnique Fédérale de Lausanne, Switzerland); Roger Sauser (Ecole Polytechnique Fédérale de Lausanne, Switzerland); Mathieu Lamboley (Ecole Polytechnique Fédérale de Lausanne, Switzerland); Jean-Louis Bény (University of Geneva, Switzerland); Jean-Jacques Meister (Ecole Polytechnique Fédérale de Lausanne, Switzerland)

8:45 Intracellular Memory of Stress Fiber Orientation: Focal Adhesions Store It and Microtubules Erase It During Disassembly-Reassembly Process of Stress Fibers

Yunfeng Yang (Nagoya Institute of Technology, Japan); Kazuaki Nagayama (Nagoya Institute of Technology, Japan); Takeo Matsumoto (Nagoya Institute of Technology, Japan)

9:00 High Wall Shear Stress Gradient Suppress Morphological Responses of Endothelial Cells to Fluid Flow

Masaaki Sato (Tohoku University, Japan); Naoki Saito (Tohoku University, Japan); Naoya Sakamoto (Tohoku University, Japan); Toshiro Ohashi (Tohoku University, Japan)

9:15 Invited: Biomechanistic insights into the pathophysiology of an infectious disease

Chwee Teck Lim (National University of Singapore, Singapore)

9:30 Single-cell real-time imaging of flow-induced hemolysis using high-speed microfluidic technology

Takanobu Yagi (Waseda University, Japan)

Th. 07/8.12: Laser Applications in Medicine

Room: Hall 11a Chair: Serge Mordon (Inserm U 703 & Lille University Hospital, France), Hans-Dieter Reidenbach (Cologne University of Applied Sciences, Germany)

8:15 Photosensitization Reaction-Induced Electrophysiological Response of Myocardial Cells Dependent on Subcellular Photosensitizer Distribution

Arisa Ito (Keio University, Japan); Hiroki Matsuo (Keio University, Japan); Tsukasa Suenari (Keio University, Japan); Takehiro Kimura

(Keio University School of Medicine, Japan); Shunichiro Miyoshi (Keio University School of Medicine, Japan); Satoshi Ogawa (Keio University School of Medicine, Japan); Tsunenori Arai (Keio University, Japan)

8:30 Development of Novel Short-term Heating Angioplasty: Assessment of Artery Collagen/Elastin Ratio and Its Contribution to Artery Dilatation characteristic

Natsumi Shimazaki (KEIO University, Japan); Hisako Tokunaga (KEIO University, Japan); Tsunenori Arai (Keio University, Japan)

8:45 In-vitro Study of Novel Less-invasive Laser Angioplasty using the Pulsed Laser with a Wavelength of 5.75 μm

Katsunori Ishii (Osaka University, Japan); Hideki Tsukimoto (Osaka University, Japan); Hisanao Hazama (Osaka University, Japan); Kunio Awazu (Osaka University, Japan)

9:00 Disinfection of Surgical Materials Using Photo-Activated Tolonium Chloride

Gareth Thomson (Aston University, United Kingdom); Ruth Mackay (University of Dundee, United Kingdom); Mark Pridham (University of Dundee, United Kingdom); Yunli Liu (MacDermid UK, United Kingdom)

9:15 Detecting Narcotic Usage Using Surface-Enhanced Raman Spectroscopy on Saliva Samples

Chen Anyu (Capital University of Medical Sciences, Beijing, P.R. China)

9:30 Low Level Laser Stimulation of K1 Acupoint Induced Precuneus Activations

Chang-Wei Hsieh (Asia University, Taiwan)

9:45 Photothermal cancer therapy using Gold nanorods

Eugene Fourkal (Fox Chase Cancer Center, USA); Iavor Veltchev (Fox Chase Cancer Center, USA); Alain Tafo (Fox Chase Cancer Center, USA); C-M Charlie Ma (Fox Chase Cancer Center, USA); Vladimir Khazak (Fox Chase Cancer Center, USA); Nataliya Skobeleva (Fox Chase Cancer Center, USA)

Th. 05/8.11: Workflow, Patient Modelling and Standards

Room: Hall 03 Chair: Jannin Pierre (, France) , Heinz U. Lemke (Universität Leipzig, Germany)

8:15 Characterizing the Patient Flow Pathway during Chest pain Diagnosis in an Emergency Department

Dorian Dixon (Univeristy of Ulster, United Kingdom); Julie Eatock (Brunel University, United Kingdom)

8:30 Implementation of a standard service of repository for cardiological unit

Sara De Faveri (University of Genova, Italy); Mauro Giacomini (University of Genova, Italy); Silvia De Nadai (University of Genova, Italy); Franco Greco (ASL 4 Chiavarese, Italy)

8:45 DICOM in Surgery - Requirements for Digital Data Exchange in the Perioperative Surgical Workflow

Michael Gessat (Universität Leipzig, Germany); Thomas Treichel (Universität Leipzig, Germany); Heinz Lemke (University of Southern California, USA); Oliver Burgert (Universität Leipzig, Germany)

9:00 Overall Sigma Level of an Imaging Department through Process Innovation

Julieta Garcia-Porres (Universidad Autónoma Metropolitana-Iztapalapa, Mexico); Martha Ortiz-Posadas (Universidad Autónoma Metropolitana Iztapalapa, Mexico)

9:15 Radiotherapy software for department management and workflow organisation

Maxime Coevoet (Cliniques Universitaires St-Luc, Belgium)

9:30 Patient-specific hemodynamics prediction and virtual endovascular intervention using MediGRID and free software

Kamen Beronov (Leibnitz Rechenzentrum Muenchen, Germany); Olga Dzhimova (Universität Erlangen-Nürnberg, Germany); Dagmar Krefting (Charité - Universitätsmedizin Berlin, Germany)

9:45 Automating patient dose audit and clinical audit using RIS data

Ryan Wilde (Integrated Radiological Services Ltd, United Kingdom); Stephen Baily (The Walton Centre, United Kingdom); Carol Baker (University Hospitals, Aintree, United Kingdom); Paul Charnock (Integrated Radiological Services Ltd, United Kingdom); David McCreavy (Liverpool Heart and Chest Hospital, United Kingdom); Michael Moores (Integrated Radiological Services Ltd, United Kingdom)

Th. 13/8.10: IOMP & EFOMP Workshop: Nanoparticles in Cancer Therapy

Room: Hall 02 Chair: Alberto Torresin (Azienda Ospedale Niguarda, Italy) , Yao-Xiong Huang (Ji Nan University, P.R. China)

8:15 Invited: Nanoparticle-mediated radionuclide-gene therapy of liver cancer

Yao-Xiong Huang (Ji Nan University, P.R. China)

8:45 Invited: Nano-medicine in cancer therapy

Dag Olsen (Institute for Cancer Research, Oslo University Hospital, Norway)

9:15 Invited: Cell Tracking and Single Cell Imaging by MRI

Brian Rutt (Stanford University, USA)

9:45 Xenon Biosensors for Multi-Purpose Molecular Imaging

Leif Schröder (Lawrence Berkeley National Lab, USA)

10:30 - 11:00

Th. 11/9.2: Keynote Audiology

Room: Hall 14b Chair: Birger Kollmeier (HörTech gGmbH, Germany)

10:30 Keynote: *Optical stimulation of neural tissue: is this the future for neural interfaces?*

Claus-Peter Richter (Northwestern University, USA)

9.10: Innovation Award (2)

Room: Hall 02

Th. 03/9.3: Dosimetric Methods and Applications

Room: Hall 13a Chair: Christoph Hoeschen (Helmholtz Zentrum München - German Research Center for Environmental Health, Germany) , Felix Schoefer (Helmholtz Zentrum München - German Research Center for Environmental Health, Germany)

10:30 Award of EFOMP Medal to Professor Dietrich Harder'

10:45 Invited: *Biological Dosimetry*

Dietrich Harder (Georg-August University Göttingen, Germany)

11:15 Invited: *Magnetic-Resonance-Imaging based Polymer Gel Dosimetry: Methodology, Spatial Resolution, Applications*

Andreas Berg (Medizinische Universität Wien, Austria)

11:30 Invited: *Dosimetry and quality control in medical imaging applications*

Michael Moores (Integrated Radiological Services Ltd, United Kingdom)

11:45 *Alanine dosimetry – a versatile dosimetric tool*

Dieter Regulla (Helmholtz Zentrum München, Germany)

Th. 04/9.7: Focus Session: Visualization in Oncology (2)

Room: Hall 05 Chair: Heinrich Overhoff (University of Applied Sciences Gelsenkirchen, Germany) , Cornelia Kober (Hamburg University of Applied Sciences, Germany)

10:30 *DIROlab – A software tool for visualization and evaluation of data from diagnostic imaging and radiotherapy*

Oliver Nix (German Cancer Research Center, Germany); Alexander Köhn (Fraunhofer MEVIS, Institute for Medical Image Computing, Germany); Uwe Siems (MeVis Medical Solutions AG, Germany); Horst Hahn (Fraunhofer MEVIS, Institute for Medical Image Computing,

Germany); Christian Thieke (German Cancer Research Center, Germany)

10:45 An Adaptive Landmark Scheme for Modeling Brain Deformation in Diffusion-Based Tumor Growth

Stefan Becker (University of Lübeck, Germany); Jan Jungmann (University of Luebeck, Germany); Andreas Mang (University of Luebeck, Germany); Thorsten Buzug (University of Luebeck, Germany)

11:00 Analysis of stochastic properties in medical images

Hartwig Hetzheim (German Aerospace Center, Germany)

11:15 Joint Histogram-Based Intensity Standardization of Diffusion-Weighted MRI Images

Florencio Rusty Punzalan (Nara Institute of Science and Technology, Japan); Tetsuo Sato (Nara Institute of Science and Technology, Japan); Tomohisa Okada (Kyoto University Hospital, Japan); Shigehide Kuhara (Toshiba Medical Systems Corporation, Japan); Kaori Togashi (Kyoto University Hospital, Japan); Kotaro Minato (Nara Institute of Science and Technology, Japan)

11:30 automatic system for the analysis and the discrimination of breast nodules in ultrasound imaging

Leonardo Favilli (University of Florence, Italy); Jacopo Nori (AOU Careggi, Italy); Claudia Manfredi (University of Florence, Italy); Leonardo Bocchi (University of Florence, Italy)

11:45 Detection and Classification of Suspicious Areas in Autofluorescence Bronchoscopy

Panagiotis Bountris (National Technical University of Athens, Greece); Maria Haritou (Institute of Communication & Computer Systems, Greece); Elisavet Passalidou (Sismanoglio General Hospital of Attica, Greece); Nikos Apostolou (National Technical University of Athens, Greece); Dimitrios Koutsouris (National Technical University of Athens, Greece)

Th. 06/9.1: Image-Guided Neurologic Interventions

Room: Hall 01 Chair: Brian Davies (Imperial College affiliation, United Kingdom)

10:30 Medical Keynote: Technical Aspects of Minimally Invasive Surgery - Current Developments and Needs for Technical Progress

Hans-Peter Bruch (University of Luebeck, Germany)

11:00 Invited: Advanced neuronavigation and image guided interventions in neurosurgery

Volker Seifert (Universitätsklinikum Johann Wolfgang Goethe-Universität, Germany)

11:30 Development of radiolucent headholder pins for intraoperative CT-imaging

Christian Radina (Technische Universität München, Germany); Erhard Krampe (Technische Universität München, Germany); Martin Edlauer (BrainLAB AG, Germany); Peter Winkler (Ludwig-Maximilians-University of Munich, Germany); Erich Wintermantel (MedTech - Lehrstuhl für Medizintechnik, Germany)

11:45 *A System for Intraoperative Optical Imaging in Clinical Routine and 3D Visualization*

Tobias Meyer (Technische Universität Dresden, Germany); Stephan Sobottka (Faculty of Medicine Carl Gustav Carus, Dresden University of Technology, Germany); Ralf Steinmeier (Klinikum Chemnitz gGmbH, Germany); Edmund Koch (Technische Universität Dresden, Germany); Gabriele Schackert (Faculty of Medicine Carl Gustav Carus, Dresden University of Technology, Germany); Ute Morgenstern (Technische Universität Dresden, Germany)

12:00 *Integrated Software for Fusion of CT- and Rotational Angiography for Image Guided Neurosurgery on Cerebral Aneurysms*

Roland Metzner (University of Heidelberg, Germany); Jan Rueppell (University of Heidelberg, Germany); Sven Haase (University of Heidelberg, Germany); Ralf Floca (German Cancer Research Center, Germany); Urs Eisenmann (University of Heidelberg, Germany); Marius Hartmann (University of Heidelberg, Germany); Christian Rainer Wirtz (Univeristy Hospital Ulm, Germany); Hartmut Dickhaus (University of Heidelberg, Germany)

12:15 *New Video Component for the Image Guided Surgery Toolkit IGSTK*

Özgür Güler (Innsbruck Medical University, Austria); Kevin Cleary (ISIS Center, Georgetown DC, USA); Ziv Yaniv (ISIS Center, Georgetown DC, USA); Wolfgang Freysinger (Innsbruck Medical University, Austria)

Th. 09/9.17: Rehabilitation and Robotics: Mechanics and Mechanisms to Improve Therapy Outcome

Room: Hall 22a Chair: David A. Brown (Northwestern University, USA) , Etienne Burdet (Imperial College London, United Kingdom)

10:30 *Invited: Using Robotics to Test Novel Interventions for Impaired Balance Post-Stroke*

David A. Brown (Northwestern University, USA)

10:45 *Development of the Gait Training System Controlled by Pressure Feed-back*

Yoshiyuki Shibata (Shibaura Institute of Technology, Japan)

11:00 *Compact assistive rehabilitation devices– Concept and preliminary function test*

Oleg Ivlev (University of Bremen, Germany); David Baiden (FWBI Friedrich-Wilhelm-Bessel-Institute Research Company, Germany)

11:15 *Investigation of the Adaptation to Artificial Damping in Cerebellar Ataxia using the Myohaptic Technology*

Mario Manto (FNRS ULB, Belgium); Niels van der Braber (Moog, The Netherlands); Jos Meuleman (Moog, The Netherlands); Piet Lammertse (Moog, The Netherlands); Giuliana Grimaldi (ULB, Belgium)

11:30 *Pick to Place Trajectories in Human Arm Training Environment*

Jaka Zihel (University of Ljubljana, Slovenia); Marko Munih (University of Ljubljana, Slovenia)

11:45 *Modeling the dynamics of recovery in robot-assisted rehabilitation*

Vittorio Sanguineti (University of Genoa, Italy); Maura Casadio (University of Genoa, Italy); Morasso Pietro (DIST, Italy)

Th. 01/9.9: Advances in Radiation Therapy Planning

Room: Hall 04b Chair: Simeon Nill (German Cancer Research Center, Germany) , Pat Cadman (Saskatoon Cancer Centre, Canada)

10:30 *Developments in MRI-based radiation treatment planning*

Teodor Stanescu (Cross Cancer Institute, Canada); Charles Kirkby (Cross Cancer Institute, Canada); Keith Wachowich (Cross Cancer Institute, Canada); Gino Fallone (Cross Cancer Institute, Canada)

10:45 *Investigation of the dose distribution quality achievable with arc-modulated cone beam therapy*

Silke Ulrich (German Cancer Research Center, Germany); Florian Sterzing (University of Heidelberg, Germany); Simeon Nill (German Cancer Research Center, Germany); Kai Schubert (University Hospital of Heidelberg, Germany); Klaus Herfarth (University Hospital of Heidelberg, Germany); Jürgen Debus (University Hospital of Heidelberg, Germany); Uwe Oelfke (DKFZ, Germany)

11:00 *Dosimetric comparison between helical tomotherapy and biologically based IMRT treatment planning system for selected cases*

Nicolas Ploquin (The Ottawa Hospital Cancer Centre, Canada); Jason Bélec (The Ottawa Hospital Cancer Centre, Canada); Brenda Clark (The Ottawa Hospital Cancer Centre, Canada)

11:15 *Useful Techniques for Tomotherapy Treatment Planning*

Victor Gurvich (Radiological Institute of The Villages, USA); Vladimir Feygelman (Moffitt Cancer Center, USA)

11:30 *Clinically Viable Treatment Times with Dual-slice Co-60 Tomotherapy*

Pat Cadman (Saskatoon Cancer Centre, Canada)

11:45 *Influence of the CT slice thickness on the dose calculation for stereotactic treatment planing*

Vesna Jacob (Klinikum rechts der Isar der TU München, Germany); Peter Kneschaurek (Klinikum rechts der Isar, Germany)

12:00 *Electron arc planning on the commercial radiation treatment planning system*

Kang (Hallym Univ, Korea)

Th. 07/9.13: Cell and Tissue Impedance

Room: Hall 11b Chair: Sverre Grimnes (Rikshospitalet University Hospital, Norway) , Heinz-Georg Jahnke (University of Leipzig, Germany)

10:30 *Memristive properties of electro-osmosis in human sweat ducts*

Sverre Grimnes (Rikshospitalet University Hospital, Norway); Carsten Lütken (University of Oslo, Norway); Ørjan Martinsen (University of Oslo, Norway)

11:00 *A novel impedimetric based screening system for label free detection of tau hyperphosphorylation in human cells*

Heinz-Georg Jahnke (University of Leipzig, Germany); Randy Kurz (Universität Leipzig, Germany); Oliver Pänke (University of Leipzig, Germany); Andrea Robitzki (Universität Leipzig, Germany)

11:15 *Impedimetric Detection of Transient Receptor Potential (TRP) Channel Activity*

Oliver Pänke (University of Leipzig, Germany); Andrea Robitzki (Universität Leipzig, Germany)

11:30 *Label-free detection of ischemic effects on the cardiomyocytes by impedance spectroscopy*

Dana Krinke (University of Leipzig, Germany); Heinz-Georg Jahnke (University of Leipzig, Germany); Oliver Pänke (University of Leipzig, Germany); Andrea Robitzki (Universität Leipzig, Germany)

11:45 *Transoesophageal electrical bioimpedance measurements of the heart in humans*

Giuseppe Giovinazzo (Dept. of Electronic Eng., UPC, Barcelona, Spain, Spain); Silvia Raga (Dept. of Electronic Eng., UPC, Barcelona, Spain, Spain); Nuria Ribas (Hospital de la Santa Creu i Sant Pau, UAB, Barcelona, Spain, Spain); Antoni Bayes-Genis (Hospital de la Santa Creu i Sant Pau, UAB, Barcelona, Spain, Spain); Juan Cinca (Hospital de la Santa Creu i Sant Pau, UAB, Barcelona, Spain, Spain); Javier Rosell-Ferrer (Universitat Politècnica de Catalunya, Spain)

12:00 *Phase/magnitude retrieval algorithms in electrical bioimpedance spectroscopy*

Aleksander Paterno (Santa Catarina State University, Brazil); Rodrigo Stiz (Santa Catarina State University, Brazil); Pedro Bertemes-Filho (Santa Catarina State University, Brazil)

Th. 04/9.12: Personalised & Integrated Cardiac Care (euHeart): Cardiovascular Modeling and Simulation

Room: Hall 11a Chair: Olivier Ecabert (Philips Research, Germany) , Gunnar Seemann (University Karlsruhe (TH), Germany)

10:30 Automatic Multi-modal Image Segmentation for Applications in Cardiac Computational Physiology

Olivier Ecabert (Philips Research, Germany); Jochen Peters (Philips Research Europe, Germany); Carsten Meyer (Philips Research, Germany); Reinhard Kneser (Philips Research, Germany); Helko Lehmann (Philips Research, Germany); Alexandra Groth (Philips Research, Germany); Jürgen Weese (Philips, Germany)

10:45 Cardiac Modelling for Pathophysiology Research and Clinical Applications. The need for an automated Pipeline

Rafael Sebastian (Universitat Pompeu Fabra, Spain); Viviana Zimmerman (Universitat Pompeu Fabra, Spain); Federico Sukno (Universitat Pompeu Fabra, Spain); Bart Bijmens (Catalan Institution for Research and Advanced Studies, Spain); Alejandro Frangi (Universitat Pompeu Fabra, Spain)

11:00 Imaging the coronary vascular tree for development of multiscale perfusion models of the heart.

Jeroen van den Wijngaard (University of Amsterdam, The Netherlands); Pepijn van Horssen (University of Amsterdam, The Netherlands); Maria Siebes (University of Amsterdam, The Netherlands); Jos Spaan (University of Amsterdam, The Netherlands)

11:15 Fluid-mechanics Simulations of Ventricular Function under LVAD Support

Matthew McCormick (University of Oxford, United Kingdom); David Nordsletten (University of Oxford, United Kingdom); Adelaide de Vecchi (University of Oxford, United Kingdom); David Kay (University of Oxford, United Kingdom); Nicolas Smith (University of Oxford, United Kingdom)

11:30 CellML Implementation of a Numerical Model for the Cardiovascular System under VAD Support

Yubing Shi (University of Sheffield, United Kingdom); Pat Lawford (University of Sheffield, United Kingdom); Rod Hose (University of Sheffield, United Kingdom)

11:45 First clinical validations of a physical personalization approach in cardiac modeling, with perspectives in diagnosis assistance

Philippe Moireau (INRIA, France); Radomir Chabiniok (INRIA, France); Dominique Chapelle (INRIA, France)

12:00 euHeart and Atrial Fibrillation - Modeling, Personalization and Planning of Ablation

Olaf Doessel (Universität Karlsruhe (TH), Germany); Gunnar Seemann (University Karlsruhe (TH), Germany); Frank Weber (Universität Karlsruhe (TH), Germany); Martin Krueger (Universität Karlsruhe (TH), Germany)

Th. 04/9.6: Biosignal Analysis Miscellaneous (2)

Room: Hall 14c Chair: Gerhard Staude (University FAF Munich, Germany) , Pedro Rivera Farina (Fundación CARTIF, Spain)

10:30 *The use of EIT in the detection of regional lung dysfunction in prematurely born neonates*

Ali Zifan (City University, United Kingdom); Panos Liatsis (City University, United Kingdom); Bayford Richard (, United Kingdom)

10:45 *Study of the skin conductance response during the Valsalva manoeuvre applied to autonomic neuropathy detection in diabetic patients*

Pedro Rivera Farina (Fundación CARTIF, Spain); Javier Pérez Turiel (Fundación CARTIF, Spain); Enrique González Sarmiento (Hospital clínico universitario de Valladolid, Spain); Alberto Herreros López (Universidad de Valladolid, Spain); Sara Higuero (Hospital clínico universitario de Valladolid, Spain)

11:00 *Separation of Para- and Sympathetic Activities with No-Load Ergometer*

Masa Ishijima (Tokyo City University, Japan)

11:15 *Laser Doppler flowmetry: multifractal spectra of signals recorded in hand of young healthy subjects before and after local heating*

Benjamin Buard (Groupe ESAIP, France); Guillaume Mahé (Centre Hospitalier Universitaire d'Angers, France); François Chapeau-Blondeau (University of Angers, France); David Rousseau (University of Angers, France); Pierre Abraham (Centre Hospitalier Universitaire d'Angers, France); Anne Humeau (Groupe ESAIP, France)

11:30 *Speaker-Independent Malay Vowel Recognition of Children using Neural Networks*

Hua Nong Ting (Universiti Malaya, Malaysia); Yee Ming Lam (University of Malaya, Malaysia)

11:45 *Relationship between Physiological Responses and Feelings Change induced by Mental Workload*

Chie Soga (Kyushu Institute of Technology, Japan); Shinji Miyake (University of Occupational and Environmental Health, Japan, Japan); Chikamune Wada (Kyushu Institute of Technology, Japan)

12:00 *Optimization of Recursive Algorithms for Respiratory Mechanics Monitoring During Artificial Ventilation*

Adam Polak (Wroclaw University of Technology, Poland)

Th. 02/9.11: Focus Session: Ultrasonic Imaging Methods, Systems and Components

Room: Hall 03 Chair: Georg Schmitz (Ruhr-University Bochum, Germany) , Krzysztof Kaluzynski (Warsaw University of Technology, Poland)

10:30 *Ultrasound Angular Scatter Imaging: Beam Forming Method*

Jihad Al-Sadah (King Fahad University of Petroleum and Minerals, Saudi Arabia); James Zagzebski (University of Wisconsin - Madison, USA)

10:45 *New Approaches in Ultrasonic Compound Imaging*

Helmut Ermert (Ruhr-University Bochum, Germany); Mohammad Ashfaq (Ruhr-University Bochum, Germany); Christian Hansen (Ruhr-University Bochum, Germany); Lothar Heuser (Ruhr-University Bochum, Germany); Markus Hollenhorst (Ruhr-University Bochum, Germany); Joern Opretzka (Ruhr-University Bochum, Germany); Gernot Schulte-Altdorneburg (Ruhr-University Bochum, Germany); Michael Vogt (Ruhr-University Bochum, Germany)

11:00 *Computer Assisted Characterization of Lymph Nodes using Spectral Ultrasound Backscatter and Attenuation Measures*

Stefan Siebers (Ruhr-University Bochum, Germany); Alessandro Bozzato (Friedrich-Alexander University Erlangen-Nuremberg, Germany); Nils Klintworth (Friedrich-Alexander University Erlangen-Nuremberg, Germany); Johannes Zenk (Friedrich-Alexander University Erlangen-Nuremberg, Germany); Heinrich Iro (Friedrich-Alexander University Erlangen-Nuremberg, Germany); Helmut Ermert (Ruhr-University Bochum, Germany)

11:15 *Evaluation of the local speed-of-sound estimation for the correction of ultrasound compound imaging by speckle analysis*

Karin Hensel (Ruhr-University Bochum, Germany); Guyu Li (Ruhr-University Bochum, Germany); Georg Schmitz (Ruhr-University Bochum, Germany)

11:30 *Elucidation of intersection distribution in motion vectors from successive echocardiograms and its application for heart disease recognition*

Kohji Masuda (Tokyo Univ of A&T, Japan); Rui Takahashi (Tokyo Univ of A&T, Japan); Takashi Yoshinaga (Tokyo Univ of A&T, Japan); Shun Uchibori (Tokyo Univ of A&T, Japan)

11:45 *Following Scoliosis Progression in the Spine using Ultrasound Imaging*

Bart Verkerke (University Medical Center Groningen, The Netherlands)

12:00 *A highly customizable ultrasound research platform for clinical use with a software architecture for 2d-/3d-reconstruction and processing including closed-loop control*

Holger Hewener (Fraunhofer IBMT, Germany); Hans Joachim Welsch (Fraunhofer IBMT, Germany); Christian Günther (Fraunhofer IBMT, Germany); Heinrich Fonfara (Fraunhofer IBMT, Germany); Steffen Tretbar (Fraunhofer IBMT, Germany); Robert Lemor (Fraunhofer IBMT, Germany)

Th. 12/9.15: ICMCC - Ontology

Room: Hall 21a Chair: Lodewijk Bos (International Council on Medical & Care Compunetics, The Netherlands) , Bernd Blobel (eHealth Competence Center, Germany)

10:30 Invited: What is Needed to Finally Achieve Semantic Interoperability?

Bernd Blobel (eHealth Competence Center, Germany); Frank Oemig (Agfa Healthcare, Germany)

11:00 Invited: Incremental Semantic Enrichment of Narrative Content in Electronic Health Records

Stefan Schulz (Freiburg University Medical Center, Germany)

11:15 Invited: Patient Empowerment By Ontology-Based Multi-lingual Systems

Mathias Brochhausen (IFOMIS, Saarland University, Germany); Laura Slaughter (NTNU, Trondheim, Norway)

11:30 Research on trusted personal health and wellness information in ubiquitous health information space

Pirkko Nykänen (University of Tampere, Finland)

11:45 Invited: An Ontology Architecture for HL7 V3: Pitfalls and Outcomes

Frank Oemig (Agfa HealthCare GmbH, Germany); Bernd Blobel (eHealth Competence Center, Germany)

12:00 Standard development and management across domains - what is DIMDI's contribution

Sylvia Thun (Deutsches Institut für Medizinische Dokumentation und Information (DIMDI), Germany)

12:15 EHR access rights and the role of the patient

Björn Bergh (University Hospital Heidelberg, Germany); Nana Bach (University Hospital Heidelberg, Germany); Antje Brandner (University Hospital Heidelberg, Germany); Oliver Heinze (University Hospital Heidelberg, Germany)

Th. 04/9.5: Focus Session: The ContraCancrum Project

Room: Hall 14a Chair: Tobias Preusser (Fraunhofer MEVIS, Germany) , Panayiotis Mavroidis (Karolinska Institutet and Stockholm University, Sweden)

10:30 Invited: In silico oncology: a top-down multiscale simulator of cancer dynamics. Studying the effect of symmetric stem cell division on the cellular constitution of a tumour.

Georgios Stamatakos (Institute of Communication and Computer Systems, Natl Tech University of Athens, Greece)

11:00 A spatially adaptive active contour method for improving semi-automatic medical image annotation

Cristina Farmaki (FORTH / University of Crete, Greece); Kostantinos Marias (FORTH, Greece); Vangelis Sakkalis (Institute of Computer Science, Foundation for Research and Technology, Greece); Norbert Graf (University of the Saarland, Germany)

11:15 *ContraCancrum: Segmentation of different tissue types in lung tumors from PET/CT follow-up scans*

Roland Opfer (Philips GmbH Forschungslaboratorien, Germany); Jörg Sabczynski (Philips Technologie GmbH Forschungslaboratorien, Germany); Steffen Renisch (Philips Technologie GmbH Forschungslaboratorien, Germany); Sven Kabus (Philips Technologie GmbH Forschungslaboratorien, Germany); Ingwer Carlsen (Philips Technologie GmbH Forschungslaboratorien, Germany)

11:30 *Clinically Oriented Translational Cancer Multilevel Modeling: The ContraCancrum project*

Kostantinos Marias (FORTH, Greece); Vangelis Sakkalis (Institute of Computer Science, Foundation for Research and Technology, Greece); Alexandros Roniotis (Institute of Computer Science, Foundation for Research and Technology, Greece); Cristina Farmaki (FORTH / University of Crete, Greece); Georgios Stamatakos (Institute of Communication and Computer Systems, Natl Tech University of Athens, Greece); Dimitra Dionysiou (ICCS, Greece); Norbert Graf (University of the Saarland, Germany); Rainer Bohle (University of the Saarland, Germany); Eckart Meese (University of the Saarland, Germany); Peter Coveney (University College London, United Kingdom); Steven Manos (University College London, United Kingdom); Shunzhou Wan (University College London, United Kingdom); Amos Folarin (University College London, United Kingdom); Sylvia Nagl (University College London, United Kingdom); Philippe Büchler (University of Bern, Switzerland); Thibaut Bardyn (University of Bern, Switzerland); Mauricio Reyes (University of Bern, Switzerland); Gordon Clapworthy (University of Bedfordshire, United Kingdom); Tomas Bily (Charles University in Prague, Faculty of Mathematics and Physics, Czech Republic); Jörg Sabczynski (Philips Technologie GmbH Forschungslaboratorien, Germany)

11:45 *Automatic finite element mesh generation and correction from 3D image data*

Thibaut Bardyn (University of Bern, Switzerland); Mauricio Reyes (University of Bern, Switzerland); Steven Boyd (University of Calgary, Canada); Philippe Büchler (University of Bern, Switzerland)

12:00 *Microscopic tumor growth module for ContraCancrum project*

Tomas Bily (Charles University in Prague, Faculty of Mathematics and Physics, Czech Republic); Martin Balek (Charles University, Faculty of Mathematics and Physics, Czech Republic); Michal Karasek (Charles University in Prague, Faculty of Mathematics and Physics, Czech Republic); Vojtech Bednar (Charles University in Prague, Faculty of Mathematics and Physics, Czech Republic)

Th. 05/9.16: Electronic Medical Records

Room: Hall 21b Chair: Peter Waegemann (mHealth Initiative, USA)

10:30 A web service based tool to support general practitioners in a first level diagnosis of melanoma

Alessio Bellodi (University of Genova, Italy); Viola Parodi (University of Genova, Italy); Mauro Giacomini (University of Genova, Italy)

10:45 A Review of the OpenEHR Implementation in Indonesian National Health Information System: Integrated Health Post

Agung Setiawan (Bandung Institute of Technology, Indonesia); Astri Handayani (Bandung Institute of Technology, Indonesia); Antonius Setiawan (Bandung Institute of Technology, Indonesia); Putri Saptawati (Bandung Institute of Technology, Indonesia); Andriyan Suksmono (Bandung Institute of Technology, Indonesia); Tati Mengko (Institut Teknologi Bandung, Indonesia)

11:00 Implementation of a miniaturised activity monitor to support convalescence

Dieter Dill (Technische Universität München, Germany); Murat Guel (Technische Universitaet Muenchen, Germany); Alexander Scholz (Technische Universität München, Germany); Sven Becker (Technische Universitaet Muenchen, Germany); Bernhard Wolf (Technische Universität München, Germany); Matthias Bachmeier (Technische Universität München, Germany)

11:15 WEB Based Tool for the Organization of Knowledge in Neurology

Mauro Giacomini (University of Genova, Italy); Marisabel Cafferata (University of Genova, Italy)

11:30 A Systematic Approach to Analyze the Optimization Potential for ICT-Tools Supporting Collaborative Work Processes in Healthcare

Daniela Fuchs (Technical University of Berlin, Germany)

11:45 An automated Approach to Semantic Interoperability in eHealth

Weir Ying (University of New South Wales, Australia); Pradeep Ray (University of New South Wales, Australia)

12:00 Structured electronic message exchange for physiotherapists

Ronald Buyt (Vrije Universiteit Brussel, Belgium); Marc Nyssen (Vrije Universiteit Brussel, Belgium)

Th. 10/9.14: Innovative Technologies in Tissue Engineering

Room: Hall 12b Chair: Michael Sittinger (Charité University Medicine & Tissue Engineering Laboratory, Germany), Jan-Thorsten Schantz (Technical University of Munich, Germany)

10:30 Invited: Influence of Reuse Procedure and the Hemodialysis Environment on the High Flux Polyamide Type Hollow Fiber Membranes

Neslihan Sarica (Middle East Technical University, Turkey); Emin Aksoy (Istanbul Health Authority, Turkey); Metin Usta (Gebze Yuksek

Teknoloji Enstitüsü, Turkey); A. Hikmet Ucisik (Bogazici University, Turkey)

10:45 Bioimpedance measurement setup for the assessment of viability and number of human adipose stem cells cultured as monolayers

Leena Jaatinen (Tampere University of Technology, Finland); Laura Sippola (Tampere University of Technology, Finland); Minna Kellomäki (Tampere University of Technology, Finland); Susanna Miettinen (University of Tampere, Finland); Riitta Suuronen (Regea - Institute for Regenerative Medicine, Finland); Jari Hyttinen (Tampere University of Technology, Finland)

11:00 Numerical assessment on the metabolic response of chondrocytes after cyclic loading: The influence of stress rate and magnitude

Arzu Tasci (University of Bern, Switzerland); Stephen Ferguson (University of Bern, Switzerland); Philippe Büchler (University of Bern, Switzerland)

11:15 Application of a microcellular injection molding process (MuCell®) to produce an implant with porous structure

Hongbin Wu (Technische Universität München, Germany); Erhard Krampe (Technische Universität München, Germany); Henning Schlicht (Medi-Globe GmbH, Germany); Erich Wintermantel (MedTech - Lehrstuhl für Medizintechnik, Germany)

11:30 Biomimetic hydrogels as three-dimensional culture models for cancer cells in vitro

Daniela Loessner (Queensland University of Technology, Australia)

11:45 Development of Unified Transcutaneous Transformer for Energy and Information Transmission for a Totally-Implantable Artificial Heart

Takahiko Yamamoto (Tokyo University of Science, Japan)

12:00 Bone Marrow Concentrate: a novel tool for bone repair!

Marcus Jäger (University Hospital Düsseldorf, Germany); Monika Herten (University Hospital Düsseldorf, Germany); Eva Jelinek (University Hospital Düsseldorf, Germany); Ulrike Fochtmann (University Hospital Düsseldorf, Germany); Rüdiger Krauspe (University Hospital Düsseldorf, Germany)

Th. 04/9.8: Passive Implants

Room: Hall 04a Chair: Klaus-Peter Schmitz (Universität Rostock, Germany)

10:30 Biotribology of alternativ bearing materials for knee arthroplasty

Thomas Grupp (Aesculap AG Research & Development Tuttlingen, Germany, Germany); Sandra Utzschneider (Ludwig Maximilian University, Grosshadern Medical Center Munich, Germany, Germany); Jens Schwiesau (Aesculap AG, Germany, Tuttlingen, Germany); Bernhard Fritz (Aesculap AG, Germany, Tuttlingen, Germany); Wilhelm Bloemer (Aesculap AG, Germany, Tuttlingen, Germany); Volkmar

Jansson (Ludwig Maximilian University, Grosshadern Medical Center Munich, Germany, Germany)

10:45 Development of a Passive Knee Motion Simulator to Evaluate Deep Knee Flexion of Total Knee Prosthesis

Yasuju Takano (Saga University, Japan); Masaru Ueno (Japan Medical Materials Corporation, Japan); Kazuo Kiguchi (Saga University, Japan); Jun Itou (Saga University, Japan); Masaaki Mawatari (Saga University, Japan); Takao Hotokebuchi (Saga University, Japan)

11:00 Invited: Numerical study of shear wavelength observed in MRE experiments with FEM

Hamed Ajabi Naeeni (Azad University Khomeinishahr Branch, Iran)

11:15 In-vitro Flexibility Characteristics of Dynamic Pedicle Screw Systems

Christoph Schilling (Aesculap AG, Research & Development, Germany)

11:30 Stronger Implant does not cause Stress-Shielding in the Fixation of Hip Fractures – Validated Finite Element Analysis and Cadaver Tests

Sebastian Eberle (Trauma Center Murnau, Germany)

11:45 DLC-coated CoCrMo steel for use in medical implants – wear and corrosion resistance influence of different surface finishing techniques

Harald Holeczek (Fraunhofer-Institute for Manufacturing Engineering and Automation, Germany); Claudia Santos (Fraunhofer-Institute for Manufacturing Engineering and Automation, Germany); Lars Haubold (Fraunhofer-Center for Coatings and Laser Applications, USA); Martin Metzner (Fraunhofer-Institute for Manufacturing Engineering and Automation, Germany)

12:00 Belt Machining and Testing of Ceramic Knee Implants

Berend Denkena (Leibniz Universität Hannover, Germany); Luis de Leon (Leibniz Universität Hannover, Germany); Anke Turger (Leibniz Universität Hannover, Germany); Arne Lucas (Leibniz Universität Hannover, Germany); Berna Richter (Medical School of Hannover, Germany, Germany); Christof Hurschler (Hannover Medical School, Germany)

Th. 01/9.4: Dosimeter Characteristics

Room: Hall 13b Chair: Francisco Sánchez-Doblado (University of Sevilla, Spain) , Paul Ravindran (Christian Medical College, India)

10:30 An Air Core Scintillation Dosimeter for Megavoltage External Beam Dosimetry: Experimental Results

Natalka Suchowerska (Royal Prince Alfred Hospital, Australia); Jamil Lambert (The University of Sydney, Australia); Yong Bai Yin (The University of Sydney, Australia); David McKenzie (The University of Sydney, Australia); Anna Ralston (Royal Prince Alfred Hospital, Australia)

10:45 *An Air Core Cerenkov Free Scintillation Dosimeter: Monte Carlo Simulation for External Beam Radiation Therapy*

Pourandokht Naseri (The University of Sydney, Australia); Jamil Lambert (The University of Sydney, Australia); David McKenzie (The University of Sydney, Australia); Natalka Suchowerska (Royal Prince Alfred Hospital, Australia)

11:00 *Implantable in vivo dosimetric probe based on GaN radioluminescence*

Anas Ismail (University Joseph Fourier, France); Patrick Pittet (University of Lyon, France); Guo-Neng Lu (University of Lyon, France); Jean-Marc Galvan (University of Lyon, France); Jean Yves Giraud (University Hospital of Grenoble, France); Jacques Balosso (University Joseph Fourier, France)

11:15 *Accuracy of GafChromic EBT film as dose meter in Radiotherapy QA*

Leo van Battum (VU University Medical Center, The Netherlands); Daan Hoffmans (VU University Medical Center, The Netherlands); Stefan Kwa (MCA, The Netherlands); Stan Heukelom (VU University Medical Center, The Netherlands)

11:30 *Characterization and Monte Carlo simulation of low- and high-perturbation in-vivo diode dosimeters for 9 MV x-rays*

Mohammad Mosleh-Shirazi (Shiraz University of Medical Sciences, Iran); Darioush Shahbazi-Gahrouei (Isfahan University of Medical Sciences, Iran); Sareh Karbasi (Isfahan University of Medical Sciences, Iran); Shahram Monadi (Isfahan University of Medical Sciences, Iran)

11:45 *Small Photon Field Dosimetry using Gel*

Paul Ravindran (Christian Medical College, India)

Th. 11/9.18: Emergency Care

Room: Hall 22b Chair: Armin Bolz (University of Karlsruhe, Germany)

10:30 *Development of a breath alcohol analyzer for use on patients in emergency care*

Annika Jonsson (Hök Instrument AB, Sweden); Bertil Hök (Hök Instrument AB, Sweden); Mikael Ekström (Mälardalen University, Sweden)

10:45 *Architecture Proposal for an Automated Biphasic External Defibrillator*

Alejandro Portela (ICID-Central Institute for Digital Research, Cuba); Jose Folgueras (ICID - Central Institute for Digital Research, Cuba)

11:00 *An Improved Biphasic Defibrillator for First Aid Pediatric Applications*

Jose Folgueras (ICID - Central Institute for Digital Research, Cuba); Alejandro Portela (ICID-Central Institute for Digital Research, Cuba)

11:15 *Medical Management for emergencies through the Helicopter 118 Service in Calabria and Medical Devices*

Manuela Stroili (Azienda Ospedaliero - Universitaria OR di Trieste, Italy)

Innovation Award

Room: Hall 02 Chair: Olaf Doessel (Universität Karlsruhe (TH), Germany) , Wolfgang Schlegel (Deutsches Krebsforschungszentrum, Germany)

10:30 *Single-Sided Coil Configuration for Magnetic Particle Imaging.*

Timo Sattel (University of Luebeck, Germany); Sven Biederer (University of Luebeck, Germany); Tobias Knopp (University of Luebeck, Germany); Kerstin Lüdtke-Buzug (University of Luebeck, Germany); Bernhard Gleich (Philips Research Europe, Germany); Juergen Weizenecker (Philips Research Europe, Germany); Joern Borgert (Philips Research Europe, Germany); Thorsten Buzug (University of Luebeck, Germany)

10:55 *An Adaptive Landmark Scheme for Modeling Brain Deformation in Diffusion-Based Tumor Growth.*

Stefan Becker (University of Lübeck, Germany)

11:20 *Microfabrication of biomimetic hydrogels: bio-inspiration to recreate neural networks or physiological environments onto a novel smart material*

Gabriel Lino Dos Reis (University of Milan, Italy)

11:00 - 12:15

Th. 13/9.2: Medical Physics Research Programs and Initiatives in Europe

Room: Hall 14b Chair: Cari Borrás (Universidade Federal de Pernambuco, Brazil) , Stelios Christofides (Nicosia General Hospital, Cyprus)

11:00 *Awarding of EFOMP honorary membership to Prof. Alberto del Guerra*

11:15 *Molecular Imaging – the European perspective, Alberto del Guerra*

11:30 *Medical physics research in radiation oncology - the European perspective*

Dag Olsen (Institute for Cancer Research, Oslo University Hospital, Norway)

11:45 *An initial EFOMP Position on the Tuning Process for Masters Programs in Medical Physics in Europe*

Stelios Christofides (Nicosia General Hospital, Cyprus); Wolfgang Schlegel (Deutsches Krebsforschungszentrum, Germany); Renato Padovani (SO di Fisica Sanitaria, Italy); Peter Sharp (University of Aberdeen & Grampian Hospitals NHS Trust, United Kingdom); Alberto Torresin (Azienda Ospedale Niguarda, Italy); Marta Wasilewska-

Radwanska (AGH University of Science and Technology, Poland); Wil van der Putten (University Hospital Galway, Ireland); Eduardo Guibelalde (Universidad Complutense, Spain); Kay-Uwe Kasch (University of Applied Sciences (TFH), Germany); Carmel J. Caruana (Institute of Health Care, University of Malta, Malta)

12:00 *Empowering biomedical engineering Small-Medium Enterprises (SMEs) to participate in EU research*

Yoram Lev-Yehudi (Beacon Tech Ltd., Israel)

12:15 *The future of the research in Magnetic Resonance (in cooperation with ESMRMB)*

12:30 *The EU guideline and future prospective in Medical Physics*

Philippe Jehenson (European Commission, Belgium)

12:15 - 13:30

Th. 12/: Special Panel on Biomedical Engineering in Preventive Healthcare & Public Health

The overall purpose of the session is to "educate" biomedical engineers and medical physicists in particular about the new opportunities created by technology that will help transform the "current medical paradigm" (of diagnosis, treating and curing) to one based on prevention. GIS / Remote Sensing, Data Mining, Intelligent Agents, Modeling and Simulation and other technologies will be presented in a holistic way first. This will be followed by presentations from several panelists.

Dr. Luis Kun - USA Chair and Moderator- Introduction to Biomedical Engineering in Preventive Health Care & Public Health
Dr. Jose Luis Monteagudo - Spain - Ubiquitous Homecare: Ambient Assisted Living for Health and Wellness

Dr. Pradeep Ray - Australia - Semantic Interoperability of Public Health Information Systems

Dr. Giovanni Rum - Italy - Health, Environment and GEOSS - not confirmed yet

Dr. Bryan Manning - UK- DNA as a Universal Identifier?!

This special session will be technically co-sponsored by a number of societies including:

1. International Federation of Medical and Biological Engineering (IFMBE) - Global Citizen Safety and Security
2. American Institute of Medical and Biological Engineering (AIMBE)
3. IEEE- Communications Society (COM) - eHealth Subcommittee
4. IEEE- Committee on Earth Observations (ICEO)

Room: B0 (Forum) Chair: Luis Kun (National Defense University, USA)

13:30 - 14:30

Plenary 3

Room: Hall 01

13:30 *Microscale Environments for Understanding Cell Biology*

David Beebe (University of Wisconsin, USA)

14:00 *Plenary: Open Source Software as Enabler of Science*

Ron Kikinis (Brigham and Women's Hospital and Harvard Medical School, USA)

14:45 - 16:30

Th. 06/10.1: Special Keynote Session

Room: Hall 01 Chair: Olaf Doessel (Universität Karlsruhe (TH), Germany)

14:45 Keynote: *The Liver as Role Model for Safer Surgery and Interventions*

Heinz-Otto Peitgen (Fraunhofer MEVIS, Bremen, Germany)

15:15 Keynote: *Biomedical Innovation in Health Care*

Eric Silfen (Philips Healthcare, USA)

15:45 Keynote: *20 years of OCT in ophthalmology - an example of successful innovation management between research, clinics and industry*

Michael Kaschke (Carl Zeiss AG, Germany)

Th. 03/10.2: Radiation Protection in Medical Radiology (1)

Room: Hall 14b Chair: Ferid Shannoun (World Health Organization, Switzerland) ,
Anna Benini (Rigshospitalet, Denmark)

14:45 Keynote: *Population exposures from medical X-rays in Europe – too high or too low?*

Barry Wall (Health Protection Agency, United Kingdom)

15:15 *Doses to Patients in Interventional Cardiology*

Anna Benini (Rigshospitalet, Denmark); Frants Pedersen (Rigshospitalet, Denmark); Erik Jorgensen (Rigshospitalet, Denmark)

15:30 *Dose-Area-Product to Effective Dose in Interventional Cardiology and Radiology*

Lara Struelens (Belgian Nuclear Research Centre, Belgium); Klaus Bacher (Ghent University, Belgium); Maria Zankl (Helmholtz Zentrum München - German Research Center for Environmental Health, Germany)

15:45 *Monitoring Patient Peak Skin Doses in interventional cardiology by means of XR-RV2 Gafchromic films*

Azza Habra (Dubai Hospital, UAE); Sheeba Jimmy (Dubai Hospital, UAE); Syed Asim Gilani (Dubai Hospital, UAE); Hamid Habibi (Dubai Hospital, UAE); Talib Majwal (Dubai Hospital, UAE); Abderrachid Zitouni (Dubai Hospital, UAE); Jamila AlSuwaidi (Dubai Hospital, UAE); Abderrachid Zitouni (Dubai Hospital, UAE)

16:00 *Radiology workload analysis – role and relevance in radiation protection in diagnostic radiology*

Paul Charnock (Integrated Radiological Services Ltd, United Kingdom); Stephen Baily (The Walton Centre, United Kingdom); Carol Baker (University Hospitals, Aintree, United Kingdom); J Fazakerley (Integrated Radiological Services, United Kingdom); Ryan Jones (Integrated Radiological Services Ltd, United Kingdom); Michael

Moore (Integrated Radiological Services Ltd, United Kingdom); Ryan Wilde (Integrated Radiological Services Ltd, United Kingdom)

16:15 *Spectra determination for a Cone Beam Computed Tomography system*

Vasileios Spyropoulos (Technological Education Institute of Athens, Greece); Georgios Manousaridis (Greek Atomic Energy Commission (GAEC), Athens, Greece, Greece); Michael Varvatos (Technological Educational Institute (TEI) of Athens, Athens, Greece, Greece); Konstantinos Tsiklakis (Dental School of the University of Athens, Greece)

Th. 09/10.17: Challenges and Trends to Transfer Robotic Rehabilitation from Clinical to Outpatient or Domestic Environments

Room: Hall 22a Chair: Thierry Keller (Institute for Biorobotics, Spain) , Zlatko Matjacic (Institute for rehabilitation, Slovenia)

14:45 *Invited: Rehabilitation Robotics for Outpatient Clinical and Domestic Use*

Thierry Keller (Institute for Biorobotics, Spain); Joel Perry (Fatronik Foundation, Spain)

15:00 *Invited: Walkaround® Assisted Walking of Stroke Patients*

Milica Djuric Jovicic (University of Belgrade, Serbia); Ivana Milovanovic (University of Belgrade, Serbia); Nenad Jovicic (University of Belgrade, Serbia); Dejan Popović (Aalborg University, Denmark)

15:30 *Invited: ARMassist: A low-cost device for telerehabilitation of post-stroke arm deficits*

Joel Perry (Fatronik Foundation, Spain); Haritz Zabaleta (Fatronik Foundation, Spain); Aitor Belloso (Fatronik Foundation, Spain); Thierry Keller (Institute for Biorobotics, Spain)

15:45 *Invited: Haptic robot for arm and wrist rehabilitation*

Jakob Oblak (Institute for rehabilitation, Slovenia); Imre Cikajlo (Institute for rehabilitation, Slovenia); Zlatko Matjacic (Institute for rehabilitation, Slovenia)

16:00 *The Use of Radio Frequency Identification System For Wheelchair Security System*

W Mohd Azhar Wan Ibrahim (University of Malaya, Malaysia); Mohd Shuhaibul Fadly Mansor (University of Malaya, Malaysia)

Th. 01/10.9: Evaluation and Adaptation of Treatment Plans

Room: Hall 04b Chair: Benedick Fraass (University of Michigan, USA) , Mark Gainey (University of Würzburg, Germany)

14:45 *Optimized Spinal Cord Contour Propagation for Fractionated Radiation Therapy Planning*

Armin Stoll (German Cancer Research Center, Germany); Kristina Giske (German Cancer Research Center, Heidelberg, Germany); Eva Stoiber (University Clinic, Heidelberg, Germany); Rolf Bendl (University of Applied Sciences Heilbronn, Germany)

15:05 Application of 2 Step IMRT to spinal tumors: a preliminary retrospective planning study comparison with classical IMRT

Mark Gainey (University of Würzburg, Germany); Klaus Bratengeier (University of Würzburg, Germany); Michael Flentje (University of Würzburg, Germany)

15:25 Re-planning for compensator-based IMRT with original compensators

Geoffrey Zhang (Moffitt Cancer Center, USA); Vladimir Feygelman (Moffitt Cancer Center, USA); Craig Stevens (Moffitt Cancer Center, USA); Weiqi Li (Moffitt Cancer Center, USA); Susan Leuthold (Moffitt Cancer Center, USA); Gregory Springett (Moffitt Cancer Center, USA); Sarah Hoffe (Moffitt Cancer Center, USA)

15:45 Breast Cancer: 3D versus IMRT

Mary Fitzpatrick (Saad Specialist Hospital, Saudi Arabia)

16:00 Implications of Histogram Analysis in Radiation Therapy (HART) Software

Anil Pyakuryal (University of Illinois at Chicago, Northwestern Memorial Hospital, USA)

16:15 Motion-Weighted Dose-Volume Histograms – A Novel Approach to 4D Treatment Planning

Geoffrey Zhang (Moffitt Cancer Center, USA); Vladimir Feygelman (Moffitt Cancer Center, USA); Craig Stevens (Moffitt Cancer Center, USA); Weiqi Li (Moffitt Cancer Center, USA); Thomas Dilling (Moffitt Cancer Center, USA)

Th. 08/10.12: Biosensors and Materials

Room: Hall 11a Chair: Gerald Urban (University of Freiburg, Germany) , Christine Kranz (University of Ulm, Germany)

14:45 On-surface amplification of L-glutamate using a patterned bi-enzymatic system

Danielle Rand (IMEC vzw, Belgium); Dries Braeken (IMEC vzw, Belgium); Yusuf Mulla (IMEC vzw, Belgium); Gustaaf Borghs (IMEC vzw, Belgium); Carmen Bartic (IMEC, Belgium)

15:00 Amperometric Microbiosensors based on PQQ-dependent Glucose Dehydrogenase towards the Development of an ATP Biosensor for in vitro Analysis

Cornelia Weber (University of Ulm, Germany); Elena Hecht (University of Ulm, Germany); Boris Mizaikoff (University of Ulm, Germany); Christine Kranz (University of Ulm, Germany); Estelle Gauda (Johns Hopkins Hospital, USA)

15:15 *Sensors for Healthcare Monitoring – Proteins, Viruses and Blood-Group-Typing*

Franz Dickert (University of Vienna, Austria)

15:30 *Combined AFM-SECM: Towards a novel platform for imaging microbiosensors*

Christine Kranz (University of Ulm, Germany)

15:45 *Nanomaterial based electrochemical transducing platforms for biomedical applications*

Alfredo de la Escosura-Muñiz (Institut Català de Nanotecnologia, Spain); Marisa Maltez (Institut Català de Nanotecnologia, Spain)

16:00 *Bio-inspired and Microfabricated Poly-amidoamine Hydrogel: a Novel Smart Material Interfacing Living Systems*

Gabriel Lino Dos Reis (University of Milan, Italy); Fabio Fenili (University of Milan, Italy); Antonella Gianfelice (University of Milan, Italy); Cristina Lenardi (University of Milan, Italy); Elisabetta Ranucci (University of Milan, Italy); Paolo Ferruti (University of Milan, Italy); Paolo Milani (University of Milan, Italy)

Th. 04/10.6: Focus Session: PCA/ICA in Biomedical Signal Processing (1)

Room: Hall 14c Chair: Luca Mainardi (Polytechnic University of Milan, Italy) , Vicente Zarzoso (Université de Nice - Sophia Antipolis, France)

14:45 *Invited: Neuronal communication, uncertainty and brain responses to natural stimulation*

Ricardo Vigário (Helsinki University of Technology, Finland)

15:15 *Improved Biocompatibility of ePTFE by Ion Beam Implantation*

Hiroshi Ujiie (Tokyo Women's Medical University, Japan)

15:30 *Comparison of two eigenvalue decomposition techniques to detect T Wave Alternans in the ECG*

Violeta Monasterio (University of Zaragoza, Spain); Juan Pablo Martínez (University of Zaragoza, Spain)

15:45 *Evaluation of Parallel FFT Implementations on GPU and Multi-core PCs for Magnetic Induction Tomography*

Yasheng Maimaitijiang (Philips Research Europe - Aachen, Germany); Hoe Cher Wee (University of Glamorgan, United Kingdom); Mohammed Roula (University of Glamorgan, United Kingdom); Stuart Watson (University of Glamorgan, United Kingdom); Ralf Patz (University of Glamorgan, United Kingdom); Richard William (University of Glamorgan, United Kingdom)

16:00 *Time-varying multivariate correlation analysis of EEG during low dose propofol anesthesia*

Stefanos Georgiadis (University of Kuopio, Finland); Mika Tarvainen (University of Kuopio, Finland); Juha-Pekka Niskanen (University of Kuopio, Finland); Kimmo Kaskinoro (Turku University Hospital,

Finland); Anu Maksimow (Turku University Hospital, Finland); Satu Jääskeläinen (Turku University Hospital, Finland); Harry Scheinin (Turku PET Centre, Finland); Pasi Karjalainen (University of Kuopio, Finland)

Th. 02/10.11: Ultrasound: General Interest

Room: Hall 03 Chair: Kohji Masuda (Tokyo Univ of A&T, Japan) , Helmut Ermert (Ruhr-University Bochum, Germany)

14:45 *Ultrasound backscattering outperforms the clinically used ultrasound parameter in discrimination of osteoporotic-like human trabecular bone samples*

Janne Karjalainen (University of Kuopio, Finland); Juha Töyräs (University of Kuopio, Finland); Ossi Riekkinen (University of Kuopio, Finland); Mikko Hakulinen (Kuopio University Hospital, Finland)

15:00 *Toward Early Detection and Differentiation of Arthritic diseases: Quantification of Haemodynamics Changes in Small Joints*

Enrico Grisan (University of Padova, Italy); Luca Ciprian (University of Padova, Italy); Elena Scagliori (University of Padova, Italy); Roberto Stramare (University of Padova, Italy); Ugo Fiocco (University of Padova, Italy)

15:15 *2D-Ultrasound Lacks Accuracy for the Prediction of Radionuclide Ventriculography Ejection Fraction Examinations*

Homme-Auke Kooistra (Laurentius Hospital Roermond, The Netherlands)

15:30 *Development of a Novel Ultrasound System for Evaluating Endothelial Function Based on Simultaneous Measurements of Flow-Mediated Dilatation and Shear Stress*

Naotaka Nitta (National Institute of Advanced Industrial Science and Technology (AIST), Japan); Hiroshi Masuda (UNEX Corporation, Japan); Hidenori Suzuki (UNEX Corporation, Japan); Hitoshi Hirano (UNEX Corporation, Japan)

15:45 *A new string phantom with four independent variables for evaluation of doppler ultrasonography instruments*

Faraj Tabeie (Shaheed Beheshti University of medical sciences, Iran)

16:00 *Segmental strain and strain rate in homogenous and non-homogenous PVA cardiac phantom*

Beata Lesniak-Plewinska (Warsaw University of Technology, Poland); Szymon Cygan (Warsaw University of Technology, Poland); Krzysztof Kaluzynski (Warsaw University of Technology, Poland); Jan D'hooge (Cardiac Imaging Research, Belgium); Jakub Zmigrodzki (Warsaw University of Technology, Poland); Mirosław Kowalski (Institute of Cardiology, Poland); Ewa Kowalik (Institute of Cardiology, Poland)

Th. 04/10.5: Modeling and Simulation for Neurology (1)

Room: Hall 14a Chair: Rafik Ouared (University of Geneva, Switzerland)

14:45 Modeling of Platelet Aggregation in Cerebrovascular Bifurcation Aneurysms

Kenjiro Shimano (Tokyo City University, Japan); Hiroshi Ujiie (Tokyo Women's Medical University, Japan); Yoshiteru Enomoto (Tokyo City University, Japan)

15:00 Stochastic modeling for actin responses in chemotactic cells to external signal

Weiping Zhu (Shanghai University, P.R. China)

15:15 Computational Investigation of Role of Active Conductances in Information Processing in Striatal Medium Spiny Neurons

Vaishali Parab (Indian Institute of Technology Bombay, India); Rohit Manchanda (Indian Institute of Technology Bombay, India)

15:30 The effects of different brain material properties, FE mesh size and hourglass modes on the results of FE head impact analyses

Katrien Baeck (Katholieke Universiteit Leuven, Belgium); Jos Vander Sloten (Katholieke Universiteit Leuven, Belgium); Jan Goffin (Katholieke Universiteit Leuven, Belgium)

15:45 Reconstruction And Application Of Digital Brain Model On Chinese Visible Human (CVH)

Li QiYu (Third military medical university, P.R. China)

16:00 Development of a Flow Phantom to Verify the Evaluation of Cerebral Blood Flow by ICG-Fluorescence Video Analysis

Claudia Weichelt (Technische Universität Dresden, Germany)

16:15 Three Dimensional Poroelastic Simulation of Brain Edema: Initial Studies on Intracranial Pressure

Xiaogai Li (Royal Institute of Technology, Sweden); Hans Holst (Royal Institute of Technology, Sweden); Johnson Ho (Royal Institute of Technology, Sweden); Svein Kleiven (Royal Institute of Technology, Sweden)

Th. 02/10.15: Molecular Imaging Technologies

Room: Hall 21a Chair: N.N. (TBA, Germany)

14:45 Micro-CT performance testing

Liesbeth Eloot (UZ Brussel, Belgium); Nico Buls (UZ Brussel, Belgium); Inneke Willekens (UZ Brussel, Belgium); Tony Lahoutte (UZ Brussel, Belgium); Johan de Mey (UZ Brussel, Belgium)

15:00 A Monte Carlo Tool for Micro-CT Dose Assessment

Paul Deak (University of Erlangen-Nuremberg, Germany); Willi Kalender (Universität Erlangen-Nürnberg, Germany)

15:15 *Non-invasive skin oxygenation imaging using a multi-spectral imaging system, Effectiveness of different concentration algorithms applied on human skin*

John Klaessens (University Medical Center Utrecht, The Netherlands); Herke Jan Noordmans (University Medical Center Utrecht, The Netherlands); Rudolf Verdaasdonk (University Medical Center Utrecht, The Netherlands)

15:30 *FMT-XCT: Fluorescence Molecular Tomography & X-ray CT reconstruction using a priori information.*

Angelique Ale (Technische Universität München and Helmholtz Zentrum München, Germany); Eric Söhngen (Technische Universität München and Helmholtz Zentrum München, Germany); Ralf Schulz (Helmholtz Zentrum München, Germany); Vasilis Ntziachristos (Technische Universität München, Germany)

15:45 *Bar and point test patterns generated by dry-etching for measurement of high spatial resolution in micro-CT*

Oliver Langner (University of Erlangen-Nuremberg, Germany); Marek Karolczak (University of Erlangen-Nuremberg, Germany); Gudrun Rattmann (Fraunhofer Institute of Integrated Systems and Device Technology, Germany); Willi Kalender (Universität Erlangen-Nürnberg, Germany)

16:00 *Small angle x-ray scattering signatures for breast cancer detection: Direct comparison of synchrotron and laboratory x-ray sources*

Karen Siu (Monash University, Australia); Sabeena Sidhu (Monash University, Australia); Gregory Falzon (University of New England, Australia); Simon Nazaretian (Royal Women's Hospital, Australia); Stewart Hart (Monash Medical Centre, Australia); Jane Fox (Monash Medical Centre, Australia); Robert Lewis (Monash University, Australia)

Th. 04/10.8: Modeling and Simulation of Bone and Muscle

Room: Hall 04a

14:45 *Electrical Stimulation on denervated muscle: bone structural changes and correlation between muscle contraction and bone growth*

Paolo Gargiulo (University Hospital of Iceland Landspítali, Iceland); Thordur Helgason (Landspítali - University Hospital, Iceland); Brynjar Vatnsdal (Landspítali-University Hospital, Iceland)

15:00 *An Inverse Approach to Determine the Elastic Modulus of Bone Tissue by the Indentation Tests*

Xiu Qing Qian (Capital University of Medical Sciences, P.R. China)

15:15 *Spatial distribution of tissue mineralization and anisotropic tissue elastic constants in human femoral cortical bone*

Kay Raum (Charité-Universitätsmedizin Berlin, Germany); Daniel Rohrbach (Martin Luther University of Halle-Wittenberg, Germany);

Sannachi Lakshmanan (Martin Luther University of Halle-Wittenberg, Germany); Francoise Peyrin (Universite de Lyon; INSA Lyon, France)

15:30 Estimation of Passive Knee Stiffness and Viscosity in Paraplegic: A Dynamic Leg Model Using Visual Nastran

Rozita Jailani (University of Sheffield, United Kingdom); M. Tokhi (University of Sheffield, United Kingdom); Zakaria Hussain (University of Sheffield, United Kingdom); Samad Gharooni (University of Sheffield, United Kingdom)

15:45 Biological tissue remodeling using poroelastic Gurson's model

Giulia Argento (Politecnico di Milano, Italy); Massimiliano Fraldi (University of Napoli Federico II, Italy)

16:00 Simulating in-vivo knee kinetics and kinematics of tibio-femoral articulation

Vickie Shim (Auckland Bioengineering Institute, University of Auckland, New Zealand); Kumar Mithraratne (University of Auckland, New Zealand); Iain Anderson (University of Auckland, New Zealand); Peter Hunter (University of Auckland, New Zealand)

Th. 05/10.16: Telemedicine (1)

Room: **Hall 21b** Chair: Ulrich Hofmann (University of Luebeck, Germany)

14:45 Authentication of persons using acceleration sensors in a telemedicine setting

Sven Becker (Technische Universitaet Muenchen, Germany); Alexander Scholz (Technische Universität München, Germany); Dieter Dill (Technische Universität München, Germany); Murat Guel (Technische Universitaet Muenchen, Germany); Bernhard Wolf (Technische Universität München, Germany)

15:00 Body Area Networks: Applications, Architectures and Challenges

Arie Reichman (Ruppin Academic Center, Israel)

15:15 Ride Comfort Analysis using Physiological Parameters for e-Health Train

Youngbum Lee (Yonsei university, Korea); Myoung-Ho Lee (Graduate School of Yonsei University, Korea)

15:30 TELEMON – A Complex System for Real Time Medical Telemonitoring

Hariton Costin ("Gr.T. Popa" University of Medicine and Pharmacy, Iasi, Romania, Romania)

15:45 Quasi-Static Field Modeling of Human Limb for Intra-Body Communication

Sio Hang Pun (University of Macau, Macao); Yue-ming Gao (Fu zhou University, P.R. China); Mak PengUn (University of Macau, P.R. China); Min Du (Fu zhou University, P.R. China); Vai Mangl (University of Macau, P.R. China)

16:00 *Personalized Pain Diary on a Handheld Device*

Ulrich Hofmann (University of Luebeck, Germany); Thomas Michalski (ISIP, Germany); Volker Tronnier (University Hospital Schleswig-Holstein (UKSH), Campus Luebeck, Luebeck, Germany); Matteo Bonsanto (University Hospital Schleswig-Holstein (UKSH), Campus Luebeck, Germany)

Th. 01/10.4: QA of Treatment Delivery Systems

Room: Hall 13b Chair: Ben J. Mijnheer (The Netherlands Cancer Institute, The Netherlands) , Florian Cremers (University-Medical Center Hamburg & Center for Oncology, Germany)

14:45 *Comparison of different evaluation programs for the verification of patient irradiations with tomotherapy*

Florian Cremers (University-Medical Center Hamburg, Germany); Simone Glessmer (University-Medical Center Hamburg, Germany); Dirk Albers (University Medical Center Hamburg-Eppendorf, Germany); Anja Bartels (University-Medical Center Hamburg, Germany); Eckart Thom (University-Medical Center Hamburg, Germany); Thies Schönborn (University-Medical Center Hamburg, Germany); Manuel Todorovic (University-Medical Center Hamburg, Germany)

15:00 *Validation of a biplanar diode array dosimeter for helical tomotherapy delivery QA*

Vladimir Feygelman (Moffitt Cancer Center, USA); Daniel Opp (Moffitt Cancer Center and University of South Florida, USA); Khosrow Javedan (Moffitt Cancer Center, USA); Amarjit Saini (Moffitt Cancer Center, USA); Geoffrey Zhang (Moffitt Cancer Center, USA)

15:15 *Tomotherapy Quality Assurance (TQA): a fast and comprehensive software tool.*

Maxime Coevoet (Cliniques Universitaires St-Luc, Belgium); Jean-Marc Denis (Cliniques Universitaires St-Luc, Belgium); Bob Cravens (Tomotherapy inc., USA); Ted Krumbach (Tomotherapy inc., USA); Jason Figueredo (Tomotherapy inc., USA); Gustavo Olivera (Tomotherapy inc., USA); Stefaan Vynckier (Cliniques Universitaires St-Luc, Belgium)

15:30 *Quality assurance of a robotic, image guided radiosurgery system*

Christian Drexler (European Cyberknife Center Munich, Germany); Christoph Fürweger (European Cyberknife Center Munich, Germany)

15:45 *Three Dimensional Gamma-Index Analysis and Considerations of the Reference Level Definition for Dosimetric IMRT Plan Verification with 2D Ionisation Chamber Arrays*

Björn Poppe (Carl von Ossietzky University Oldenburg, Germany); Antje Ruehmann (Pius-Hospital Oldenburg, Germany); Kay Willborn (Pius-Hospital Oldenburg, Germany); Bernd Allgaier (PTW-Freiburg, Germany); Dietrich Harder (Georg-August University Göttingen, Germany)

16:00 *A quality assurance tool based on kV- and MV-image analysis for a linear accelerator including an integrated IGRT system*

Peter Winkler (University Hospital Graz, Austria); Rudolf Stollberger (Graz University of Technology, Austria)

Th. 04/10.14: Mathematical Models and Rheology

Room: Hall 12b Chair: Giovanni Pallotti (University of Bologna, Italy)

14:45 *The Bononiensis Control Parameter: theoretical discussion and clinical effects*

Giovanni Pallotti (University of Bologna, Italy); Slavomirski Mariusz (University of Krakow, Poland); Mauro Ursino (University of Bologna, Italy); Luigi Coli (AOSP, Italy); Michele Nichelatti (Niguarda Ca' Granda Hospital, Italy)

15:00 *Comparison of different clinical models of cerebral autoregulation in time and frequency domain*

Jan Kozusko (TU Dresden, Germany); Frank Noack (Technical University of Dresden, Germany); Melanie Christ (TU Dresden, Germany); Ute Morgenstern (Technische Universität Dresden, Germany)

15:15 *Effect of Aortic Arch Geometry on Pulsatile Blood Flow: Flow Pattern and Wall Shear Stress*

Paritosh Vasava (Lappeenranta University of Technology, Finland); Mahsa Dabagh (Lappeenranta University of Technology, Finland); Payman Jalali (Lappeenranta University of Technology, Finland)

15:30 *Can The DPD Numerical Method Simulate Blood Flow ?*

Isaac Salib (Technion-Israel Institute of Technology, Israel); Akira Tsuda (Harvard School of Public Health, USA); Shimon Haber (Technion-Israel Institute of Technology, Israel)

15:45 *A Novel Approach to the Correlation of Fluid Dynamics and Thromboembolism Associated with Cardiovascular Prosthetic Devices*

Benjamin Cooper (Temple University, USA); George Long (The Pennsylvania State University, USA); Linda Knight (Temple University, USA); Keefe Manning (The Pennsylvania State University, USA)

Th. 02/10.18: Imaging of Bioelectric Sources of the Heart and Brain (1)

Room: Hall 22b Chair: Rob MacLeod (University of Utah & UofU/SCI/CVRTI, USA), Yuan Jiang (Universitaet Karlsruhe (TH), Germany)

14:45 *Clinical Applications of Bioelectric Source Imaging: How Close to Useful?*

Rob MacLeod (University of Utah, USA); Brooks Dana H. (Northeastern University, USA); Seok Lew (MGH Hospital, USA); Carsten Wolters (Institute for Biomagnetism and Biosignalanalysis, Germany)

15:15 *Mathematical Based Imaging of Regional Ischemia*

Marius Lysaker (Simula Research Laboratory, Norway); Bjørn Fredrik Nielsen (Simula Research Laboratory, Norway); Per Grøttum (Simula Research Laboratory, Norway); Kristina Haugaa (Rikshospitalet University Hospital HF, Norway); Jan Gunnar Fjeld (Rikshospitalet University Hospital HF, Norway); Andreas Abildgaard (Rikshospitalet University Hospital HF, Norway)

15:30 *Anisotropic dynamical modeling of the mechanisms of ST and TQ segment changes during subendocardial ischemia*

Simone Scacchi (University of Milan, Italy); Luca Pavarino (University of Milan, Italy); Piero Colli Franzone (University of Pavia, Italy)

15:45 *Heterogeneity of Micro- and Macro-conduction in Atrial Pectinate Muscles studied with Cardiac Near Field Measurements and Computer Simulation*

Ernst Hofer (Medical University Graz, Austria); Thomas Wiener (Medical University Graz, Austria); Robert Arnold (Medical University Graz, Austria); Fernando Campos (Medical University of Graz, Austria); Anton Prassl (Medical University Graz, Austria); Damian Sanchez-Quintana (Universidad Extremadura, Spain); Vicente Climent (Universidad of Extremadura, Spain); Gernot Plank (Medical University Graz, Austria)

16:00 *Finite Element Discretization Strategies for the Inverse Electrocardiographic (ECG) Problem*

Dafang Wang (University of Utah, USA); Mike Kirby (University of Utah, USA); Chris Johnson (University of Utah, USA)

16:15 *Solving the Inverse Problem of Electrocardiography in a Realistic Environment Using a Spatio-Temporal LSQR-Tikhonov Hybrid Regularization Method*

Yuan Jiang (Universitaet Karlsruhe (TH), Germany); Wei Hong (Universitaet Karlsruhe (TH), Germany); Dmytro Farina (Universität Karlsruhe (TH), Germany); Olaf Doessel (Universität Karlsruhe (TH), Germany)

Th. 04/10.10: Hemodynamical Modeling and Analysis

Room: Hall 02 Chair: Torsten Schenkel (Universität Karlsruhe (TH), Germany) , Ofer Barnea (Tel Aviv University, Israel)

14:45 *Influence of hydrodynamic and functional nonlinearities of blood flow in the cerebral vasculature on autoregulation pressure reserve*

Adam Piechna (Warsaw University of Technology, Poland); Krzysztof Cieśllicki (Warsaw University of Technology, Poland)

15:00 *Model-based estimation of the hemodynamic status of the growth-restricted fetus*

Oded Luria (Tel-Aviv University, Israel); Jacob Bar (Edith Wolfson Medical Center, Israel); Michal Kovo (Edith Wolfson Medical Center, Israel); Ofer Barnea (Tel Aviv University, Israel)

15:15 Programmable test bench for hemodynamic studies

Helena Pereira (University of Coimbra, Portugal); Joao Cardoso (University of Coimbra, Portugal); Vânia Almeida (University of Coimbra, Portugal); Tânia Pereira (University of Coimbra, Portugal); Elisabeth Borges (University of Coimbra, Portugal); Edite Figueiras (Centro de Instrumentação, Portugal); Luís Filipe Requicha Ferreira (Centro de Instrumentação, Portugal); Jose Simoes (University of Coimbra, Portugal); Carlos Correia (University of Coimbra, Portugal)

15:30 Aortic blood flow characteristics of different extracorporeal circulation techniques during cardiac surgery – a computational fluid dynamics study

Alexander Assmann (University Hospital Duesseldorf, Germany); Ali Cemal Benim (Duesseldorf University of Applied Sciences, Germany); Dominique Schubert (University Hospital Duesseldorf, Germany); Emmeran Gams (University Hospital Duesseldorf, Germany); Peter Feindt (University Hospital Duesseldorf, Germany)

15:45 The interactions between arterial and capillary flow. Cellular automaton simulations of qualitative peculiarities

Gennadii Knyshov (National M. Amosov Institute of Cardiovascular Surgery, Ukraine); Yevgen Nastenکو (National M. Amosov Institute of Cardiovascular Surgery, Ukraine)

16:00 New technique of characteristic impedance determination Within the arterial system: Part II

Khaled Ben Abdessalem (UR of Biophysics, Tunisia); Sofianne Mansouri (University, Tunisia)

Th. 07/10.3: Non-Invasive Monitoring

Room: Hall 13a Chair: Christian Wrede (Helios Hospital Berlin-Buch & University of Regensburg, Germany) , Olaf Such (Philips Research Europe, Germany)

14:45 Keynote: New Trends in Respiratory Instrumentation

Steffen Leonhardt (RWTH Aachen University, Germany)

15:15 Noninvasive cardiovascular monitoring - clinical needs

Christian Wrede (Helios Hospital Berlin-Buch, Germany)

15:30 Non-invasive cardiovascular monitoring

Michael Reng (Kreisklinik Bogen, Germany)

15:45 Fully implantable blood pressure system: implantation experiences

Ute Urban (RWTH Aachen, Germany); Roderick Ballan (RWTH Aachen, Germany); Holger Fassbender (RWTH Aachen University, Germany); Peter Fuerst (Fraunhofer Institut für Mikroelektronische Schaltungen und Systeme, Germany); Thorsten Goettsche (Dr Osypka GmbH Medizintechnik, Germany); Bernhard Bender (Bytec Medizintechnik GmbH, Germany); Ruediger Becker (Medizinische Klinik (Kreihl-Klinik), Abt. für Kardiologie, Germany); Wilfried Mokwa

(RWTH Aachen, Germany); Hoc Khiem Trieu (Fraunhofer Institut Mikroelektronische Schaltungen und Systeme, Germany); Peter Osypka (Dr Osypka GmbH Medizintechnik, Germany); Raymond Glocker (MHM GmbH Medizintechnik, Germany); Ulrich Steinseifer (RWTH Aachen, Germany); Thomas Schmitz-Rode (RWTH Aachen, Germany)

16:00 *The Role of Technology for Non-Invasive Cardiovascular Monitoring in the Future Exemplified*

Muehlsteff Jens (Philips Research, Germany); Olaf Such (Philips Research Europe, Germany); Richard Willmann (Philips Research Laboratories Aachen, Germany)

16:15 *Needs and Future Clinical Applications in Cardiovascular Monitoring*

Olaf Such (Philips Research Europe, Germany); Muehlsteff Jens (Philips Research, Germany)

15:15 - 16:30

Th. 07/10.13: Hydration Monitoring

Room: Hall 11b Chair: Javier Rosell-Ferrer (Universitat Politècnica de Catalunya, Spain) , Lisa Beckmann (RWTH Aachen University, Germany)

15:15 *Continuous Hand-to-Foot and segmental Bioimpedance Spectroscopy Measurements within a period of five days*

Guillermo Medrano (RWTH Aachen University, Germany); Lisa Beckmann (RWTH Aachen University, Germany); Monika Gube (RWTH Aachen University, Germany); Rana Kasim (RWTH Aachen University, Germany); Saim Kim (RWTH Aachen University, Germany); Thomas Kraus (University Hospital Aachen, Germany); Steffen Leonhardt (RWTH Aachen University, Germany)

15:30 *Skin AC conductance levels and responses in axillary hyperhidrosis patients*

Christian Tronstad (Rikshospitalet University Hospital, Norway); Anne-Lene Krogstad (Rikshospitalet University Hospital, Norway); Håvard Kalvøy (Rikshospitalet University Hospital, Norway); Sverre Grimnes (Rikshospitalet University Hospital, Norway); Ørjan Martinsen (University of Oslo, Norway)

15:45 *Monitoring of body fluid in patients with chronic heart failure using Bioimpedance-Spectroscopy*

Lisa Beckmann (RWTH Aachen University, Germany); Axel Cordes (RWTH Aachen University, Germany); Erol Saygili (RWTH University Hospital Aachen, Germany); Anke Schmeink (RWTH Aachen University, Germany); Patrick Schauerte (RWTH Aachen University, Germany); Marian Walter (RWTH Aachen University, Germany); Steffen Leonhardt (RWTH Aachen University, Germany)

16:00 *Total Body Water Changes Using Segmental Bioimpedance in Healthy Population with Similar Anthropometry*

Javier Rosell-Ferrer (Universitat Politècnica de Catalunya, Spain); Lexa Nescolarde (Universitat Politècnica de Catalunya, Spain); Jordi Elvira (KJ Industries, Spain)

16:15 *Quality of reporting of bioelectrical impedance analysis (BIA) studies evaluating body fluid volumes: the need for standardization*

Leonardo Barrera-Ariza (University of Caldas, Colombia); Clara González-Correa (University of Caldas, Colombia); Carlos González-Correa (University of Caldas, Colombia)

17:00 - 18:45

11.11: FhG: Extracorporeal Immunomodulation

Room: Hall 03 Chair: Steffen Mitzner (University of Rostock, Germany) , Jens Altrichter (Leukocare AG, Germany)

17:00 *Extracorporeal Immunomodulation in Patients with Septic Shock*

Martin Sauer (University of Rostock, Germany)

17:15 *Enabling the terminal sterilization and long lime storage of biologic-device combination products by stabilizing nanocoating technology*

Jens Altrichter (Leukocare AG, Germany); Stefan Margraf (Leukocare AG, Germany); Martin Scholz (University Duesseldorf, Germany)

17:30 *Clinical results of extracorporeal leukocyte inhibition during cardiac surgery with cardio-pulmonary bypass*

Martin Scholz (University Duesseldorf, Germany)

17:45 *Extracorporeal Immune Therapy with Immobilized Agonistic Anti-Fas Antibodies Leads to Transient Reduction of Circulating Neutrophil Numbers and Limits Tissue Damage after Hemorrhagic Shock/Resuscitation (T. Lögters)*

18:00 *Extracorporeal Immunomodulation in Patients with Inflammatory Bowel Disease*

Jörg Emmrich (University of Rostock, Germany); Grit Waitz (University of Rostock, Germany)

Th. 08/11.3: Active Implants (1) : Devices in Cardiology, Monitoring, Fluid Management

Room: Hall 13a Chair: Hans-Jürgen Wildau (Biotronik GmbH & Co. KG, Germany) , Hoc Khiem Trieu (Fraunhofer IMS, Germany)

17:00 *Keynote: Active Implants: Remote Management of Local Therapy Delivery*

Hans-Jürgen Wildau (Biotronik GmbH & Co. KG, Germany)

17:30 Invited: Economic feasibility studies in the field of Active Implants and Biosensors over Simulations: A methodology for structured and valid results

Christian Elsner (Leipzig Graduate School of Management, Germany);
Dennis Häckl (Leipzig Graduate School of Management, Germany);
Hans Wiesmeth (Leipzig Graduate School of Management, Germany)

17:45 Hemodynamic response with an artificial myocardial assistance in chronic animal examination

Yasuyuki Shiraishi (Tohoku University, Japan)

18:00 In-vitro characterization of an implantable thermal flow sensor for hydrocephalus

Juergen Burger (Codman Neuro Sciences sàrl, Switzerland)

18:15 The Use of Body Motion for Powering Biomedical Devices

Edwar Romero (Michigan Technological University, USA); Robert Warrington (Michigan Technological University, USA); Michael Neuman (Michigan Technological University, USA)

18:30 The study of micro liter Insulin injection system by Osmotic pressure

Toshiaki Nagakura (Osaka Electro-Communication University, Japan); Kazuki Inada (Osaka Electro-Communication University, Japan); Yuuto Susuki (Osaka Electro-Communication University, Japan); Naohiro Yoshida (Osaka Electro-Communication University, Japan); Akira Yamada (Okayama University, Japan); Masashi Ikeuchi (Nagaoya University, Japan); Koji Ikuta (Nagaoya University, Japan)

Th. 04/11.7: Cardiovascular Imaging

Room: Hall 05 , Nils Daniel Forkert (University Medical Center Hamburg-Eppendorf, Germany)

17:00 Comparison of Bolus Arrival Time Determination Methods for the Analysis of Cerebral Hemodynamics by Estimating the Impact of Temporal Resolution of 4D MRA Imaging

Nils Daniel Forkert (University Medical Center Hamburg-Eppendorf, Germany); Dennis Säring (University Medical Center Hamburg-Eppendorf, Germany); Till Illies (University Medical Center Hamburg-Eppendorf, Germany); Jens Fiehler (University Medical Center Hamburg-Eppendorf, Germany); Heinz Handels (Universität Hamburg, Germany)

17:15 Spatio-Temporal Modelling of First-Pass Perfusion Cardiovascular MRI

Volker Schmid (Ludwig-Maximilians-University Munich, Germany); Guang-Zhong Yang (Imperial College London, United Kingdom)

17:30 Contactless measurement of dermal oxygen saturation with spatial resolution

Markus Herzog (RWTH Aachen University, Germany); Vladimir Blazek (RWTH Aachen University, Germany); Markus Hülbusch (Institut für Hochfrequenztechnik der RWTH Aachen, Germany)

17:45 *An all-in-one algorithm for post-processing of PIV data: application to the study of left intracardiac vortical structures in a pulsed mock circulatory system*

Damien Garcia (CRCHUM, University of Montreal Hospital, Canada); David Tanné (Université de la Méditerranée (Aix-Marseille II), France); Éric Bertrand (Université de la Méditerranée (Aix-Marseille II), France); Régis Rieu (Université de la Méditerranée (Aix-Marseille II), France)

18:00 *A Technique for Estimating Sclerosis of Carotid Artery with Ultrasonic Echo*

Fumio Nogata (Gifu University, Japan); Yasunari Yokota (Gifu University, Japan); Yoko Kawamura (Gifu University, Japan); William Walsh (New South Wales University, Australia); Hiroyuki Morita (Gifu University, Japan); Yoshihiro Uno (Gifu University, Japan); Takahiko Kawamura (Chubu Rosai Hospital, Japan)

Th. 09/11.17: Transition Scientific Concepts into Clinical Practice: Rehabilitation Robots for the Upper Extremities

Room: Hall 22a Chair: Nef Tobias (The Catholic University of America, USA) , Jules Dewald (Northwestern University & DL Rehab, LLC, USA)

17:00 *Invited: Studying Mechanisms Underlying Stroke Induced Movement Disorders Using 3-D Robotics*

Jules Dewald (Northwestern University, USA); Albert Chen (Northwestern University, USA); Jun Yao (Northwestern University, USA)

17:30 *Invited: Force field compensation can be learned without proprioceptive error*

Alejandro Melendez-Calderon (Imperial College London, United Kingdom); Lorenzo Masia (Italian Institute of Technology, Italy); Maura Casadio (University of Genoa, Italy); Etienne Burdet (Imperial College London, United Kingdom)

17:45 *Invited: Aspects of Weight-Support Mechanisms in Rehabilitation Robotics.*

Arno Stienen (Northwestern University, USA); Edsko Hekman (University of Twente, The Netherlands); Herman van der Kooij (University of Twente, The Netherlands); Michael Ellis (Northwestern University, USA); Jules Dewald (Northwestern University, USA)

18:00 *Invited: Machines to support motor rehabilitation after stroke*

Cordula Werner (Charité - University Medicine Berlin, Medical Park Berlin Humboldtmühle, Germany)

18:15 Invited: Application of the ACT3D Robot in the Evaluation of Functional Reaching Performance and the Administration of Experimental Interventions

Michael Ellis (Northwestern University, USA); Jules Dewald (Northwestern University, USA)

18:30 Invited: ARMin - Exoskeleton Robot for Stroke Rehabilitation

Nef Tobias (The Catholic University of America, USA); Marco Guidali (ETH & Uni Zurich, Switzerland); Verena Klamroth-Marganska (ETH & Uni Zurich, Switzerland); Robert Riener (ETH and University of Zurich, Switzerland)

Th. 07/11.13: Electrodes and Tissue Impedance

Room: Hall 11b Chair: Uwe Pliquet (Institute for Bioprocessing and Analytical Measurement Techniques, Germany) , Hermann Scharfetter (Graz University of Technology, Austria)

17:00 Evaluation of electrodes for impedance spectroscopy

Uwe Pliquet (Institute for Bioprocessing and Analytical Measurement Techniques, Germany); Thomas Nacke (Institute for Bioprocessing and Analytical Measurement Techniques, Germany); Frense Dieter (Institute for Bioprocessing and Analytical Measurement Techniques, Germany); Andreas Barthel (Institute for Bioprocessing and Analytical Measurement Techniques, Germany); Ursel Klingebiel (Institute for Bioprocessing and Analytical Measurement Techniques, Germany); Dieter Beckmann (Institute for Bioprocessing and Analytical Measurement Techniques, Germany)

17:15 Impedance properties of stainless steel needle electrodes

Håvard Kalvøy (Rikshospitalet University Hospital, Norway); Bernt Nordbotten (University of Oslo, Norway); Christian Tronstad (Rikshospitalet University Hospital, Norway); Ørjan Martinsen (University of Oslo, Norway); Sverre Grimnes (Rikshospitalet University Hospital, Norway)

17:30 Probe Pressure Optimization In Bio-impedance Spectroscopy

Ahmad Keshtkar (University Associate Professor,, Iran); Asghar Keshtkar (University Associate Professor, Iran)

17:45 Resistivities of the live monkey skulls

Chi Tang (Fourth Military Medical University, P.R. China); Fusheng You (Fourth Military Medical University, P.R. China); Guang Cheng (Fourth Military Medical University, P.R. China); Dakuan Gao (Fourth Military Medical University, P.R. China); Feng Fu (The Forth Military Medical University, P.R. China); Xiuzhen Dong (Fourth Military Medical University, P.R. China)

18:00 Single Dispersion Cole Parameters of Malignant and Benign Prostate

Ryan Halter (Dartmouth College, USA); Alan Schned (Dartmouth Hitchcock Medical Center, USA); John Heaney (Dartmouth Hitchcock

Medical Center, USA); Alex Hartov (Dartmouth College, USA); Paulsen Keith D. (, USA)

18:15 *Time frequency analysis of the experimental electrical impedance of pulsatile blood flowing through rigid tubes*

Richelle Gaw (Queensland University of Technology, Australia); Bruce Cornish (Queensland University of Technology, Australia); Brian Thomas (Queensland University of Technology, Australia)

18:30 *Decay properties of the experimental electrical impedance of pulsatile blood flowing through rigid tubes*

Richelle Gaw (Queensland University of Technology, Australia); Bruce Cornish (Queensland University of Technology, Australia); Brian Thomas (Queensland University of Technology, Australia)

Th. 06/11.15: Endoscopy and Endoscopic Interventions

Room: Hall 21a

17:00 *Invited: Virtual Reality and Augmented Reality Applied to Endoscopic and Notes Procedures*

Luc Soler (IRCAD, France)

17:30 *Live endoscopic augmented video streams for 3D-navigation.*

Florian Kral (Innsbruck Medical University, Austria); Özgür Güler (Innsbruck Medical University, Austria); Martina Bickel (Innsbruck Medical University, Austria); Elisabeth Puschban (Innsbruck Medical University, Austria); Wolfgang Freysinger (Innsbruck Medical University, Austria)

17:45 *Image focusing in Endoscopic Systems*

Heinz Lehr (Technical University Berlin, Germany); Robert Dreyer genannt Daweke (Technical University Berlin, Germany); Stephan Schrader (how to organize GmbH, Germany)

18:00 *Safety in Endo-Neurosurgery: Parameters of Ergonomics in Neuroendoscopy*

Klaus Resch (Klinikum München Bogenhausen, Germany)

18:15 *Concepts for Completely Absorbable Wound Closing Rivets and Prototype Manufacturing*

Heba Aguib (Technical University of Munich, Germany); Tim Lueth (Technical University of Munich, Dept. MIMED, Germany)

18:30 *Endoscopic assisted stone fragmentation*

Ronald Sroka (Ludwig Maximilians University, Germany); Volkmar Hecht (Ludwig Maximilians University, Germany); Markus Bader (Ludwig Maximilians University, Germany); Christian Stief (Ludwig Maximilians University, Germany); Vanessa Siedek (Ludwig Maximilians University, Germany); Andreas Leunig (Ludwig Maximilian University Munich, Germany)

18:45 *Semi-quantitative Fluorescence Endoscopy with use of ICG*

Hilmar Schachenmayr (Ludwig Maximilian University Munich, Germany); Sven Zhorzel (Ludwig Maximilian University Munich, Germany); Herbert Stepp (Ludwig Maximilian University Munich, Germany); Uli Harréus (Ludwig Maximilian University Munich, Germany); Christian Betz (Ludwig Maximilian University Munich, Germany)

Th. 01/11.9: Functional and Biological Optimization

Room: Hall 04b Chair: Bengt Lind (Karolinska Institutet and Stockholm University, Sweden) , Warren Kilby (Accuray Inc., USA)

17:00 *Invited: Biological Model-Based IMRT Plan Optimization*

Panayiotis Mavroidis (Karolinska Institutet and Stockholm University, Sweden)

17:30 *Therapy optimization based on non-linear uptake of PET tracers versus "linear dose painting"*

Iuliana Toma-Dasu (Stockholm University and Karolinska Institutet, Sweden); Johan Uhrdin (RaySearch Laboratories AB, Sweden); Alexandru Dasu (Umea University, Sweden); Anders Brahme (Karolinska Institutet, Sweden)

17:45 *Direct Monte-Carlo optimization (DMCO) with biological, physical and hybrid objective functions*

Thomas Dirscherl (University of Regensburg, Germany); Mark Rickhey (University of Regensburg, Germany); Ludwig Bogner (University of Regensburg, Germany)

18:00 *Dedicated treatment planning system for the evaluation of the doses delivered to the whole patient body during radiotherapy*

Ibrahima Diallo (INSERM, France); Iannis Alziar (INSERM, France); Nathalie Perret (INSERM, France); André Bridier (IGR, France); Guillaume Bonniaud (IGR, France); Jean Chavaudra (IGR, France); Jean Ruau (Dosisoft, France); Valérie Rousseau (Dosisoft, France); Hanna Kafrouni (Dosisoft, France); Dimiti Lefkopoulos (IGR, France); Florent de Vathaire (INSERM, France)

18:15 *A mathematical aid decision tool for RT planning*

Oscar Sotolongo-Grau (UNED, Spain); Daniel Rodriguez-Perez (UNED, Spain); Juan Antonio Santos (Hospital General Universitario Gregorio Marañón, Spain); María del Mar Desco (UNED, Spain); Oscar Sotolongo-Costa (Havana University, Cuba); José Carlos Antoranz (UNED, Spain)

18:30 *Evaluation of the Clinical Utility of an Iris Collimator Combined with a Sequential Optimization Algorithm for Robotic Radiosurgery*

Warren Kilby (Accuray Inc., USA); Alexander Schlaefer (University of Luebeck, Germany); John Dooley (Accuray Inc., USA); Oliver Blanck (University of Luebeck, Germany); Etienne Lessard (Accuray Inc., USA); Calvin Maurer (Accuray Incorporated, USA)

Th. 04/11.6: Focus Session: PCA/ICA in Biomedical Signal Processing (2)

Room: Hall 14c Chair: Violeta Monasterio (University of Zaragoza, Spain) , Ricardo Vigário (Helsinki University of Technology, Finland)

17:00 Invited: Automated Extraction of Atrial Fibrillation Activity from the Surface ECG Using Independent Component Analysis in the Frequency Domain

Vicente Zarzoso (Université de Nice - Sophia Antipolis, France); Pierre Comon (CNRS, University of Nice, France)

17:30 CPR artifact reduction in the human ECG using independent component analysis

Marcus Granegger (University of Applied Sciences Technikum Wien, Austria); Hermann Gilly (Med Univ Vienna, Austria)

17:45 Quantitative evaluation of ECG changes reflecting heart activity control during postural changes

Algimantas Krisciukaitis (Kaunas University of Medicine, Lithuania); Renata Simoliuniene (Kaunas University of Medicine, Lithuania); Viktoras Saferis (Kaunas University of Medicine, Lithuania); Felipe Falcão (Pontifícia Universidade Católica do Rio Grande do Sul, Brazil); Ricardo Cardoso (Pontifícia Universidade Católica do Rio Grande do Sul, Brazil); Frabricio Macagnan (Pontifícia Universidade Católica do Rio Grande do Sul, Brazil); Tania Lapa (Pontifícia Universidade Católica do Rio Grande do Sul, Brazil); Thais Russomano (Pontifícia Universidade Católica do Rio Grande do Sul, Brazil)

18:00 Detection of complex movement patterns in multivariate kinematic time series for diagnostics in pediatric neurology

Dominik Karch (University of Heidelberg, Germany); Katarzyna Wochner (University Hospital Heidelberg, Germany); Keun-Sun Kim (University Hospital Heidelberg, Germany); Heike Philippi (Center of Developmental Medicine, Frankfurt, Germany); Joachim Pietz (University Hospital Heidelberg, Germany); Hartmut Dickhaus (University of Heidelberg, Germany)

18:15 Non-contact Respiratory Monitoring based on Real-time IR-Thermography

Abbas Abbas (RWTH Aachen University, Germany)

18:30 Invited: One decade of biomedical problems using ICA: a full comparative study

Laurent Albera (INSERM, U642, Rennes, F-35000, France); Amar Kachenoura (INSERM, U642, Rennes, F-35000, France); Ahmad Karfoul (INSERM, U642, Rennes, F-35000, France); Pierre Comon (CNRS, University of Nice, France); Lotfi Senahdji (Univ. Rennes 1, France)

Th. 04/11.5: Modeling and Simulation for Neurology (2)

Room: Hall 14a Chair: Katrien Baeck (Katholieke Universiteit Leuven, Belgium)

17:00 Differentiation of water signal components in the human brain with EPI FID analysis at 3T

Benjamin Bender (University Hospital of Tuebingen, Germany); Thomas Nägele (University Hospital of Tuebingen, Germany); Ulrike Ernemann (University Hospital of Tuebingen, Germany); Uwe Klose (University Hospital of Tuebingen, Germany)

17:15 Simulation of the outflow pathway in the human eye

Sylvain Roy (Swiss Federal Institute of Technology Lausanne, Switzerland)

17:30 Thrombosis Engineering in Intracranial Aneurysms using a Lattice Boltzmann Numerical Method

Rafik Ouared (University of Geneva, Switzerland); Bastien Chopard (University of Geneva, Switzerland); Daniel Rufenacht (Hospital of Hirslanden, Switzerland); Karl Lovblad (Geneva University Hospital, Switzerland); Vitor Mendes Pereira (Geneva University Hospital, Switzerland)

17:45 Arterial-pulsation Driven Flow in Syringomyelia – A Lumped-parameter Model

Novak Elliott (Curtin University of Technology, Australia); Duncan Lockerby (University of Warwick, United Kingdom); Andrew Brodbelt (The Walton Centre for Neuroradiology and Neurosurgery NHS Trust, United Kingdom)

18:00 Modeling the Influence of the Hippocampal Comparator Function on Selective Attention According to Stimulus–Novelty

Lars Haab (Saarland University, Germany); Carlos Trenado (Saarland University, Germany); Daniel Strauss (HTW Saarland, Germany)

18:15 Functions of Impedance control and Model based control in Arm Reaching Movements in the Presence of Environmental Disturbances

Ali Falaki (Amirkabir University of Technology, Iran)

18:30 The influence of k-t BLAST on phase contrast velocity mapping in intracranial aneurysms

Pim van Ooij (Academic Medical Center Amsterdam, The Netherlands); Joppe Schneiders (Academic Medical Center, The Netherlands); Ed VanBavel (Academic Medical Center, The Netherlands); Charles Majoie (Promoter, The Netherlands); Aart Nederveen (Academic Medical Center, The Netherlands)

Th. 03/11.2: Electromagnetic Fields

Room: Hall 14b Chair: Valentina Hartwig (Department of Electric System and Automation, University of Pisa, Italy, Italy) , Thomas Bolz (IMST GmbH, Germany)

17:00 Keynote: Biological effects of magnetic fields

Rüdiger Matthes (Federal Office for Radiation Protection, Germany)

17:30 *The Effect of Spatially Nonuniform Electromagnetic Field and Antitumor Drug on Growth of Maglinant Tumor*

Valeriy Orel (National Cancer Institute, Ukraine); Nikolay Nikolov (National Cancer Institute, Ukraine); Andriy Romanov (National Cancer Institute, Ukraine); Irina Dzyatkovskaya (National Cancer Institute, Ukraine); Yuriy Melnik (National Cancer Institute, Ukraine)

17:45 *Evaluation of SAR in a Finite Element Human Body Model Imposed to Magnetic Fields Generated by a MRI Bird Cage Coil*

Sylvia Smajic-Peimann (University of Applied Sciences Gelsenkirchen, Germany); Waldemar Zylka (University of Applied Sciences Gelsenkirchen, Germany)

18:00 *Numerical Estimation of Peak/Average SAR Ratio for Different Thorax Models*

Valentina Hartwig (Department of Electric System and Automation, University of Pisa, Italy, Italy); Giulio Giovannetti (Institute of Clinical Physiology, CNR, Pisa, Italy); Nicola Vanello (University of Pisa, Italy); Maria Filomena Santarelli (CNR - Institute of Clinical Physiology, Italy); Luigi Landini (University of Pisa, Italy)

18:15 *Exposure to Non-ionizing Radiation in Physiotherapy*

Constantinos Koutsojannis (Technological Educational Institute of Patras, Greece)

18:30 *Effect of Modulated Microwave Radiation on Brain Electrical Oscillations*

Hiie Hinrikus (Tallinn University of Technology, Estonia); Maie Bachmann (Technomedicum of Tallinn University of Technology, Estonia); Jaanus Lass (Technomedicum of Tallinn University of Technology, Estonia); Anna Suhhova (Technomedicum of Tallinn University of Technology, Estonia); Viiu Tuulik (Technomedicum of Tallinn University of Technology, Estonia)

Th. 12/11.12: Health Technology Assessment and Economics

Room: Hall 11a Chair: Pradeep Ray (University of New South Wales, Australia) , Leandro Pecchia (University Federico II of Naples, Italy)

17:00 *Issues in E-Health Cost Impact Assessment*

Bernard Le Moullec (University of New South Wales, Australia); Pradeep Ray (University of New South Wales, Australia)

17:15 *E-Health Readiness Assessment Methodology (EHRAM)*

Junhua Li (University of New South Wales, Australia); Pradeep Ray (University of New South Wales, Australia)

17:30 *Improving the Methodological Approach to Evaluate the Use of Information and Communication Technologies in Primary Health Care in Cuba*

Susana Beatriz Llanusa Ruiz (National School of Public Health, Cuba); Nereida Rojo Pérez (Cuban Society of Public Health, Cuba); Magaly

Carabaloso Hernández (National School of Public Health, Cuba);
Pedro Andrés Urra González (National Center of Information in Medical
Sciences, Cuba)

**17:45 Health Technology Assessment for a Service Contract: a new
method for decisional tools.**

Leandro Pecchia (University Federico II of Naples, Italy); Luciano
Mirarchi (Siemens Healthcare, Italy); Roberto Doniacovo (Siemens
Healthcare, Italy); Nadia Paolino (University Federico II of Naples,
Italy); Marcello Bracale (University of Naples, Italy)

18:00 Strategy for Radiotherapy Development in Russia

Valeriy Kostylev (Association of Medical Physicists in Russia, Russia)

Th. 04/11.8: Therapy planning / CAS

Room: Hall 04a Chair: İbrahim Akçalı (Çukurova University & Mactimarum, Turkey)

17:00 Tactile Sensor for Robotic Applications

Ali TavakoliGolpaygani (Shiraz University, Iran)

17:15 A 3D Simulation System for Hip Joint Replacement Planning

Christian Dick (Technische Universität München, Germany); Joachim
Georgii (Technische Universität München, Germany); Rainer Burgkart
(Klinikum Rechts der Isar, Technical University of Munich, Germany);
Ruediger Westermann (Technische Universitaet Muenchen, Germany)

**17:30 A Mathematical Model in the Implementation of a Stewart-Gough
Platform as an External Fixator**

İbrahim Akçalı (Çukurova University, Turkey); Mehmet Şahlar
(Çukurova University, Turkey); Mustafa Ün (Çukurova University,
Turkey); Ahmet Aydın (Çukurova University, Turkey); Turgay İbrikci
(Çukurova University, Turkey); Ramazan Esen (Çukurova University,
Turkey); Mahir Gülşen (Ortopedia Hospital, Turkey); Hüseyin Bayram
(Çukurova University, Turkey)

**17:45 Experimental measurement of the impingement induced strain
distribution at the acetabular implant-bone interface**

Christian Voigt (University of Leipzig, Department of Orthopaedic
Surgery, Germany); Christoph Arndt (Mittweida University of Applied
Sciences, Germany); Wolfgang Schüler (Mittweida University of
Applied Sciences, Germany); Roger Scholz (University of Leipzig,
Department of Orthopaedic Surgery, Germany)

**18:00 A Semi-automated 3D Kinematic Estimation of Total Knee
Arthroplasty Using X-ray Fluoroscopic Images**

Takaharu Yamazaki (Osaka University, Japan); Masao Ogasawara
(Osaka University Graduate School of Medicine, Japan); Tetsu
Watanabe (Osaka University Graduate School of Medicine, Japan)

**18:15 Multi-Body-Simulation in the frame of computer-assisted planning
of navigated correction osteotomies**

Peter Belei (Helmholtz-Institute of Biomedical Engineering of the RWTH Aachen University, Germany); Torsten Mumme (Universitätsklinikum Aachen, Germany); Klaus Radermacher (RWTH Aachen, Germany)

18:30 Accuracy test for in-vitro micro-computed tomography

Rossella Stoico (Istituto Ortopedico Rizzoli, Italy); Simone Tassani (Istituto Ortopedico Rizzoli, Italy); Egon Perilli (SA Pathology, Australia); Fabio Baruffaldi (Istituto Ortopedico Rizzoli, Italy); Marco Viceconti (Istituto Ortopedico Rizzoli, Italy)

Th. 02/11.1: Optical Imaging Techniques and Applications

Room: Hall 01 Chair: Edgar Janunts (University of Erlangen-Nuremberg, Germany)

17:00 Keynote: Optical and multi-spectral optoacoustic tomography for post-genome biology and Medicine

Vasilis Ntziachristos (Technische Universität München, Germany)

17:30 Theoretical limitations of diffusion based optical fluorescence tomography

Manuel Freiberger (Graz University of Technology, Austria); Hermann Scharfetter (Graz University of Technology, Austria)

17:45 Development of an Optical Fluorescence Tomography System for Small Animal Imaging

Thomas Pöschinger (University of Erlangen-Nuremberg, Germany); Edgar Janunts (University of Erlangen-Nuremberg, Germany); Achim Langenbacher (Friedrich-Alexander-University Erlangen-Nuremberg, Germany)

18:00 Image reconstruction for Optical Fluorescence Tomography using a linear optimization method

Edgar Janunts (University of Erlangen-Nuremberg, Germany); Thomas Pöschinger (University of Erlangen-Nuremberg, Germany); Tomas Sauer (4Institute of Mathematics, Justus-Liebig-University of Gießen, Germany); Achim Langenbacher (Friedrich-Alexander-University Erlangen-Nuremberg, Germany)

18:15 Local Spectrum measurement system for 5-Aminolaevulinic acid Induced Protoporphyrin IX fluorescence

Takehiro Ando (The University of Tokyo, Japan); Masafumi Noguchi (The University of Tokyo, Japan); Etsuko Kobayashi (The University of Tokyo, Japan); Hongen Liao (The University of Tokyo, Japan); Takashi Maruyama (Tokyo Women's Medical University, Japan); Yoshihiro Muragaki (Tokyo Women's Medical University, Japan); Hiroshi Iseki (Tokyo Women's Medical University, Japan); Ichiro Sakuma (The University of Tokyo, Japan)

18:30 An intuitive vessel viewing system to facilitate blood withdrawal

Rudolf Verdaasdonk (University Medical Center Utrecht, The Netherlands); Natascha Cupper (University Medical Center Utrecht, The Netherlands)

Netherlands); Rowland de Roode (University Medical Center Utrecht, The Netherlands)

18:45 *Simultaneous imaging of absorption and scattering in dc diffuse optical tomography*

Bastian Harrach (University of Mainz, Germany, Germany)

Th. 05/11.16: Telemedicine (2)

Room: Hall 21b Chair: Heinz U. Lemke (Universität Leipzig, Germany)

17:00 *Interactive Voice Response System for home telemonitoring of heart failure patients*

Paolo Melillo (University of Naples "Federico II", Italy); Leandro Pecchia (University Federico II of Naples, Italy); Marcello Bracale (University of Naples, Italy)

17:15 *Invited: Barriers of Implementing Applicable Remote Health Care System In China*

Xirui Wang (Helsinki University of Technology, Finland); Timo Korhonen (Helsinki University of Technology, Finland)

17:30 *Application of A Mobile Telemedicine System with Multi Communication Links for Disaster Reliefs in Indonesia*

Ediana Sutjiredjeki (Institut Teknologi Bandung (ITB), Indonesia)

17:45 *Accelerometer based motion noise analysis of ECG signal*

Han Dong Kyoon (Chungbuk National University, Korea); Joo-Hyun Hong (Chungbuk National University, Korea); Ji-Yun Shin (Chungbuk National University, Korea); Tae-Soo Lee (Chungbuk National University, Korea)

18:00 *Satisfaction of patients and therapists with an upper limb tele-rehabilitation service*

Marco Rogante (Istituto Superiore di Sanità, Italy)

18:15 *A WEB tool for analysis of spectrophotometric data for the treatment of patients with HIV*

Simona Bertolini (University of Genova, Italy); Mauro Giacomini (University of Genova, Italy); Isabella Martini (University of Genova, Italy); Jennifer McDermott (University of Genova, Italy); Oliviero Varnier (University of Genova, School of Medicine, Italy)

Th. 01/11.4: QA of IMRT

Room: Hall 13b Chair: Kai Schubert (University Hospital of Heidelberg, Germany) , Hans Schiefer (Kantonsspital St.Gallen, Switzerland)

17:00 *The first national IMRT dosimetry intercomparison in Switzerland using a thorax phantom with inhomogeneities*

Hans Schiefer (Kantonsspital St.Gallen, Switzerland); Giorgia Nicolini (Oncology Institute of Southern Switzerland, Bellinzona, Switzerland);

Antonella Fogliata (Oncology Institute of Southern Switzerland, Bellinzona, Switzerland); Wolf Seelentag (Kantonsspital St.Gallen, Switzerland); Michael Fix (Inselspital, Bern University Hospital, and University of Bern, Switzerland)

17:15 *First experience with patient oriented Rapid Arc treatment plan verification*

Daniela Wagner (UMG Goettingen, Germany); Hilke Vorwerk (UMG Goettingen, Germany)

17:30 *Measuring system for testing the mechanical isocenter accuracy of medical linear accelerators*

Bozidar Casar (Institute of Oncology Ljubljana, Slovenia)

17:45 *The use of aSi EPID for in vivo dosimetry in photon beams: clinical experience*

Philippe Boissard (Institut Curie, France); Pascal François (Institut Curie, France); Alejandro Mazal (Institut Curie, France)

18:00 *Analysis of Error Detection in EPID-Based IMRT Pre-Treatment QA*

John Gordon (Virginia Commonwealth University, USA); Joseph Gardner (Virginia Commonwealth University, USA); Song Wang (Virginia Commonwealth University, USA); Jeffrey Siebers (Virginia Commonwealth University, USA)

18:15 *The routine use of EPID in vivo dosimetry at the Netherlands Cancer Institute*

Ben J. Mijnheer (The Netherlands Cancer Institute, The Netherlands)

Th. 04/11.14: Ultrasound in Cardiovascular Measurements

Room: Hall 12b Chair: Krzysztof Kaluzynski (Warsaw University of Technology, Poland)

17:00 *Invited: Comparison of Two Ultrasonic Methods of One-point Measurement of Pulse Wave Velocity—Where to Set the Echo-tracking Positions, in the Adventitia or Intima?*

Midori Tanaka (Himeji Dokkyo University, Japan); Motoaki Sugawara (Himeji Dokkyo University, Japan); Kiyomi Niki (Musashi Institute of Technology, Japan); Tadafumi Izumi (Himeji Dokkyo University, Japan); Ichirou Tarui (Himeji Dokkyo University, Japan); Hirohisa Kodera (Himeji Dokkyo University, Japan); Takashi Okada (Aloka Co. Ltd, Japan); Akimitsu Harada (Aloka Co. Ltd, Japan)

17:15 *Evaluation on Envelope Waveforms of Velocity in Common Carotid Artery: Age-, Gender- and Regular Exercise-related Effect*

Azran Azhim (Tokyo Denki University, Japan); Masatake Akutagawa (The University of Tokushima, Japan); Yohsuke Kinouchi (The University of Tokushima, Japan); Akinori Ueno (Tokyo Denki University, Japan); Masato Tanaka (Tokyo Denki University, Japan); Shigeru Obara (The University of Tokushima, Japan); Hiroyuki Tanaka

(The University of Tokushima, Japan); Yoshiki Utsunomiya (The University of Tokushima, Japan)

17:30 Embolus Size Estimator For Peripheral Blood Vessels – Theoretical Considerations

Jakub Zmigrodzki (Warsaw University of Technology, Poland);
Krzysztof Kaluzynski (Warsaw University of Technology, Poland)

17:45 Vector field reconstruction from echo-Doppler data using a DCT-based penalized least squares method

Sarah Dort (CRCHUM, University of Montreal Hospital, Canada); Gilles Soulez (CRCHUM, University of Montreal Hospital, Canada); Damien Garcia (CRCHUM, University of Montreal Hospital, Canada)

18:00 Invited: An automatic angle tracking procedure for repeatable blood velocity measurements

Tortoli Piero (University of Florence, Italy); Alessandro Dallai (University of Florence, Italy); Lorenzo Francalanci (University of Florence, Italy); Stefano Ricci (University of Florence, Italy)

Th. 02/11.18: Imaging of Bioelectric Sources of Heart and Brain (2)

Room: **Hall 22b** Chair: Rob MacLeod (University of Utah & UofU/SCI/CVRTI, USA) , Colli-Franzone Piero (, Italy)

17:00 Imaging of Cardiac Electrical Sources Using a Novel Spatio-Temporal MAP-based Regularization Method

Raghd Hanna (Universität Karlsruhe (TH), Germany); Yuan Jiang (Universitaet Karlsruhe (TH), Germany); Dmytro Farina (Universität Karlsruhe (TH), Germany); Olaf Doessel (Universität Karlsruhe (TH), Germany)

17:15 Comparison of Bayesian MAP Estimation and Kalman Filter Methods in the Solution of Spatio-Temporal Inverse ECG Problem

Ümit Aydın (Middle East Technical University, Turkey); Yeşim Serinağaoğlu (Middle East Technical University, Turkey)

17:30 A Kalman Filter with Integrated Tikhonov-Regularization to Solve the Inverse Problem of Electrocardiography

Walther Schulze (Universität Karlsruhe (TH), Germany); Dmytro Farina (Universität Karlsruhe (TH), Germany); Yuan Jiang (Universitaet Karlsruhe (TH), Germany); Olaf Doessel (Universität Karlsruhe (TH), Germany)

17:45 Invited: Decomposing Subspaces of EEG channel space into potentials of non-overlapping distributed sources

Guido Nolte (Fraunhofer Institute, Germany); Pedro Valdes Sosa (Cuban Neuroscience Center, Cuba)

18:15 Imaging alpha signal modulation using an ICA-based EEG inverse approach

Lin Yang (University of Minnesota, USA); Zhongming Liu (University of Minnesota, USA); Cristina Rios (University of Minnesota, USA); Bin He (University of Minnesota, USA)

Th. 07/11.10: Research Applications in Monitoring

Room: Hall 02 Chair: Olaf Such (Philips Research Europe, Germany) , Michael Imhoff (Ruhr-University Bochum, Germany)

17:00 Comparison of Respiration Rate Monitoring with a Low-cost Doppler-Radar Sensor and Inductive Thorax-Plethysmography

Muehlsteff Jens (Philips Research, Germany); Robert Pinter (Philips Research Europe, Germany); Geert Morren (Philips Research Europe, Germany)

17:15 Real-time Monitoring of Extracellular Glutamate Release on Repetitive Ischemic Injury in Global Ischemia Model

Gija Lee (Kyung Hee University, Korea); Seokkeun Choi (Kyung Hee University, Korea); Sungwook Kang (Kyung Hee University, Korea); Samjin Choi (Kyung Hee University, Korea); Jeonghoon Park (Kyung Hee University, Korea); Dong Hyun Park (Kyung Hee University, Korea); Youngho Park (Kyung Hee University, Korea); Kyungsook Kim (Kyung Hee University, Korea); Hunkuk Park (Kyung Hee University, Korea)

17:30 Instrument towards faster diagnosis and treatment of prostate cancer – Resonance sensor stiffness measurements on human prostate tissue in vitro

Ville Jalkanen (Umea University, Sweden); Britt Andersson (Umeå University, Sweden); Olof Lindahl (Luleå University of Technology, Sweden)

17:45 Impact of Precision on Long-Term Patient Monitoring during Osteoporosis Treatment

Athanas Slavchev (National Centre of Radiobiology and Radiation Protection, Bulgaria); Mihail Boyanov (Medical University, Bulgaria)

18:00 Optimised NDIR technology for 13CO2 breath tests of i.e. drug/drug-interactions or gastric emptying for intensive care patients: New diagnostic opportunities

Josef Vogt (University Hospital Ulm, Germany); Ninon Nahoussi (Fachhochschule Münster, Germany); Walter Fabinski (ABB Automation GmbH, Frankfurt, Germany); Jürgen Kappler (ABB Automation GmbH, Frankfurt, Germany); Michael Georgieff (University Hospital Ulm, Germany); Uvo M. Hölscher (Münster University of Applied Sciences, Germany)

18:15 New Estimation Approach for Total Hemoglobin Concentration Based on a Fuzzy Expert System

Kawther Abo Alam (Karlsruhe University, Germany); Omar Abdallah (University of Karlsruhe, Germany); Armin Bolz (Universität Karlsruhe, Germany)

18:30 *Continuous SvO2 monitoring is reliable after on-pump cardiac surgery*

Heinrich Groesdonk (University of Lübeck, Germany); Demyan Shpachenko (University of Lübeck, Germany); Thorsten Hanke (University of Lübeck, Germany); Hermann Heinze (University of Lübeck, Germany); Klaus Berger (University of Lübeck, Germany); Julika Schön (University of Lübeck, Germany); Matthias Heringlake (University of Lübeck, Germany); Savvas Eleftheriadis (University General Hospital of Alexandroupolis, Greece)

Friday, Sep 11

08:15 - 10:00

Th. 04/12.13: Hardware-Accelerated Image Processing

Room: Hall 11b Chair: Markus Kowarschik (Siemens AG, Germany)

8:15 *Invited: Hardware-Accelerated Image Reconstruction in Cone-Beam CT*

Markus Kowarschik (Siemens AG, Germany)

8:45 *Stereoscopic visualization of mammalian macrophages infected by pathogenic bacteria*

Michael Granseier (University of Applied Sciences, Dortmund, Germany); Heike Grassmé (University Duisburg-Essen, Essen, Germany); Erich Gulbins (University Duisburg-Essen, Essen, Germany); Hans-Gerd Lipinski (University of Applied Sciences, Dortmund, Germany)

9:00 *Discriminant System for Severity of Prostate Tumor*

Toshiyuki Tanaka (Keio University, Japan); Ayako Suzuki (Keio University, Japan)

9:15 *Analysis of Rotational Vertigo using Video and Image Processing*

Shunsuke Tominaga (Keio University, Japan); Toshiyuki Tanaka (Keio University, Japan)

9:30 *On-line Mouth Shape Recognition System*

Thuy Phung Thi Phuong (Southern Taiwan University, Taiwan); Shih-Chung Chen (Southern Taiwan University, Taiwan)

9:45 *Parallel Implementation for Cone Beam based 3D Computed Tomography (CT) Medical Image Reconstruction on Multi-core Processors*

Chang-Yuan Chu (Chang Gung University, Taiwan); Szi-Wen Chen (Chang Gung University, Taiwan)

Th. 05/12.1: Computer Aided Diagnosis for Detection and Classification

Room: Hall 01 Chair: Andreas Hoetker (Universitätsmedizin Mainz, Germany) , Peter Hult (University of Linköping, Sweden)

8:15 Keynote: Computer-Aided Diagnosis in Medical Imaging: Achievements and Challenges

Kunio Doi (University of Chicago Hospitals, USA)

8:45 Extracting the Inner and Outer Borders of Bladder Wall and Flattening the Extracted Wall for MR Cystography

Jerome Liang (Stony Brook University, USA); Chaijie Duan (Peking University, P.R. China); David Gu (Stony Brook University, USA); Fusheng You (Fourth Military Medical University, P.R. China); Hongbing Lu (Fourth Military Medical University, P.R. China)

9:00 Feature Extraction from Medical Images for an Oral Cancer Reoccurrence Prediction Environment

Sebastian Steger (Fraunhofer Institute for Computer Graphics Research, Germany); Marius Erdt (Fraunhofer Institute for Computer Graphics Research, Germany); Gianfranco Chiari (University Hospital of Parma, Italy); Georgios Sakas (Fraunhofer IGD, Darmstadt, Germany)

9:15 Fundamental examination of a self diagnostic system for the early stage of senile disure dementia

Eriko Okuyama (Seirei Christopher University, Japan); Nobue Suzuki (Kaneko Clinic, Japan); Syunichi Kaneko (Hamamatsu Research Laboratory for the Early Stage of Dementia, Japan); Mitsuo Kaneko (Kaneko Clinic, Japan); Satoru Yamada (Yushin Co.Ltd, Japan); Takaki Shimura (Hamamatsu Research Laboratory for the Early Stage of Dementia, Japan)

9:30 A platform for patient monitoring in home health care including an interpretation tool for heart failure patients

Peter Hult (University of Linköping, Sweden); Marcus Oscarsson (Linköpings Universitet, Sweden); Per Ask (Linköpings universite, Sweden); Linda Rattfält (Linköpings universitet, Sweden)

9:45 HLA haplotypes frequencies tool for support of search for unrelated stem cells donors

David Steiner (Czech Technical University, Czech Republic); Lenka Lhotska (Czech Technical University in Prague, Czech Republic)

Th. 03/12.14: Radiation Protection of Patients in Developing Countries (1)

Room: Hall 12b Chair: Madan Rehani (I.A.E.A., Austria) , Virginia Tsapaki (Konstantopoulou Hospital, Greece)

8:15 Invited: Status of radiation protection of patients in developing countries

Madan Rehani (I.A.E.A., Austria)

8:45 Invited: Patient doses in interventional procedures: comparison of developed and developing countries.

Virginia Tsapaki (Konstantopoulou Hospital, Greece)

9:00 Invited: Training of doctors using fluoroscopy

Madan Rehani (I.A.E.A., Austria)

9:15 Invited: How far old technology and practices are in use in radiology?

Olivera Ciraj-Bjelac (Vinca Institute of Nuclear Sciences, Yugoslavia (defunct)); Madan Rehani (I.A.E.A., Austria)

9:30 Invited: Patient doses in Latin American Countries

Helen Jamil Khoury (Universidade Federal de Pernambuco, Brazil); Patricia Mora (Universidade de Costa Rica, Costa Rica); Kodlulovich SImone (Instituto de Radioproteção e Dosimetria-CNEN, Brazil); Defaz Maria Yolanda (Comisión Ecuatoriana de Energía Atómica, Ecuador); Norma Roas (Universidad Nacional Autónoma de Nicaragua, Nicaragua); Blanco Susana (Consejo Nacional de Investigaciones Científicas y Técnicas, Argentina); Leyton Fernando (Instituto de Salud Pública de Chile, Chile); Blanco Daniel (Centro de Investigaciones Nucleares, Uruguay); Benavete Tony (Instituto Peruano de Energía Nuclear, Peru); Juan Cardenas (Centro de Protección e Higiene de las Radiaciones, Cuba); Raul Ramirez (International Atomic Energy Agency, Austria)

9:45 Survey of image quality and radiographic technique of pediatric chest examinations performed in Brazil

Helen Jamil Khoury (Universidade Federal de Pernambuco, Brazil); Vinícius Barros (Universidade Federal de Pernambuco, Brazil); Hugo Schelin (Federal University of Technology - Parana, Brazil); Lorena Porto (Universidade Tecnológica Federal do Parana, Brazil); Kodlulovich SImone (Instituto de Radioproteção e Dosimetria-CNEN, Brazil); Ana Azevedo (Escola Nacional de Saúde Pública, Brazil); Regina Medeiros (Federal University of São Paulo, Brazil)

Th. 07/12.11: Clinical Applications of Bioimpedance

Room: Hall 03 Chair: Steffen Leonhardt (RWTH Aachen University, Germany) , Kazimierz Peczkalski (Institute of Biocybernetics and Biomedical Engineering, Poland)

8:15 Evaluation of Distal Ureter Peristalsis by Multichannel Impedance Monitoring in Patients with Renal and Ureteral Stones

Oleg Apolikhin (M.D. Institute of Urology, director, Russia); Irina Mudraya (Institute of Urology, Russia); Lubov Khodyreva (M.D., Russia)

8:30 Evaluation of Glomerular Filtration Rate in End-Stage Renal Disease Patients: Old and New Prediction Formulas

Angeliki Kanaki (University of Pisa, Italy); Giulia Grassi (Università di Pisa, Italy); Carlo Donadio (University of Pisa, Italy)

8:45 Optimization of Atrioventricular Delay of Pacemaker by Impedance Cardiography and Plethysmography

Kazimierz Peczkalski (Institute of Biocybernetics and Biomedical Engineering, Poland); Dariusz Wojciechowski (Institute of

Biocybernetics and Biomedical Engineering, Poland); Piotr Sionek (Institute of Biocybernetics and Biomedical Engineering, Poland); Zbigniew Dunajski (Warsaw Technical University, Poland); Tadeusz Palko (Warsaw Technical University, Poland)

9:00 *The impedance methods in cardiology – own clinical results*

Kazimierz Peczalski (Institute of Biocybernetics and Biomedical Engineering, Poland); Dariusz Wojciechowski (Institute of Biocybernetics and Biomedical Engineering, Poland); Piotr Sionek (Institute of Biocybernetics and Biomedical Engineering, Poland); Zbigniew Dunajski (Warsaw Technical University, Poland); Tadeusz Palko (Warsaw Technical University, Poland)

9:15 *Nutritional Status and Risk of Death in Maintenance Haemodialysis Patients can be assessed by means of Electrical Body Impedance Analysis*

Carlo Donadio (University of Pisa, Italy)

9:30 *Bioelectrical impedance phase angle as a predictor of survival in patients with advanced cancer.*

Maurizio Marra (Federico II University of Naples, Italy)

9:45 *A new simple measurement system of visceral fat accumulation by bioelectrical impedance analysis*

Toshikazu Shiga (Omron Healthcare Co., Ltd., Japan)

Th. 01/12.9: Plan Optimization: New Advances and Clinical Applications

Room: Hall 04b **Chair:** Xing Lei (Stanford University, USA) , Alexander Schlaefer (University of Luebeck, Germany)

8:15 *Invited: Modelling radiotherapy outcomes in the context of multiobjective optimization*

Mark Phillips (University of Washington, USA)

8:45 *Optimization of dose distribution with multi-leaf collimator using field-in-field technique for radiotherapy of Hodgkin's lymphoma.*

Laura Cella (Consiglio Nazionale delle Ricerche, Italy); Raffaele Liuzzi (Consiglio Nazionale delle Ricerche, Italy); Mario Magliulo (Consiglio Nazionale delle Ricerche, Italy); Manuel Conson (Università "Federico II", Italy); Luigi Camera (Università "Federico II", Italy); Marco Salvatore (Università "Federico II", Italy); Roberto Pacelli (Consiglio Nazionale delle Ricerche, Italy)

9:00 *A linear implementation of dose-volume constraints for multi-criteria optimization*

Alexander Schlaefer (University of Luebeck, Germany); Dan Ruan (Stanford University, USA); Sonja Dieterich (Stanford University, USA); Warren Kilby (Accuray Inc., USA)

9:15 *Adjustable Prescription Dose: A New Strategy to Improve IMRT Treatment Planning*

Pavel Lougovski (Stanford School of Medicine, USA); Jordan LeNoach (Stanford University, USA); Lei Zhu (Stanford School of Medicine, USA); Yunzhi Ma (Stanford School of Medicine, USA); Xing Lei (Stanford University, USA)

9:30 *Fast dose calculations in radiation therapy with GPUs*

Philippe Després (Université de Montréal, Canada); Sami Hissoiny (École polytechnique de Montréal, Canada); Jean-Philippe Gariépy (Université de Montréal, Canada); Benoît Ozell (École polytechnique de Montréal, Canada)

9:45 *Fast optimization of non-coplanar beam angle sets for intensity modulated radiation therapy*

Mark Bangert (German Cancer Research Center, Germany); Uwe Oelfke (DKFZ, Germany)

Th. 04/12.3: Focus Session: Central Nervous System Disorders and their Influence on the Autonomic Nervous System (1)

Room: Hall 13a Chair: Andreas Voss (University of Applied Sciences Jena, Germany), Karl-Jürgen Bär (Department of Psychiatry, Friedrich-Schiller-University, Jena, Germany)

8:15 *Keynote: Information processing in biomedical signals: a probe to assess health and wellness conditions*

Sergio Cerutti (Politecnico di Milano, Italy)

8:45 *Invited: Blood pressure and heart rate fluctuations and baroreflex control: insights from data before and after brain death*

Marco Di Rienzo (Fondazione Don Carlo Gnocchi, Italy); Fabrizio Conci (Niguarda Hospital, Italy); Paolo Castiglioni (Fondazione Don C. Gnocchi, Milan, Italy)

9:00 *Invited: Heart Rate Variability Approaches to Cholinergic Alterations in Neuropsychiatric Disorders*

Dirk Hoyer (University Hospital, Biomagnetic Center, Friedrich Schiller University of Jena, Germany); Karl-Jürgen Bär (Department of Psychiatry, Friedrich-Schiller-University, Jena, Germany)

9:15 *Interaction Analysis with Enhanced Joint Symbolic Dynamics in Schizophrenia*

Nadine Tupaika (University of Applied Sciences Jena, Germany); Steffen Schulz (University of Applied Sciences Jena, Germany); Karl-Jürgen Bär (Department of Psychiatry, Friedrich-Schiller-University, Jena, Germany); Andreas Voss (University of Applied Sciences Jena, Germany)

9:30 *On the Classification of Acoustic Sequences for Intervention in Essential Hypertension*

Petra Friedrich (Technische Universität München, Germany); Tom Kohler (Technische Universität München, Germany); Bernhard Wolf (Technische Universität München, Germany)

9:45 *An overview on data formats for biomedical signals.*

Alois Schlögl (Graz University of Technology, Austria)

Th. 03/12.15: Biological Effects of Densely Ionizing Radiation

Room: Hall 21a Chair: Marco Durante (GSI, Germany) , Hooshang Nikjoo (Karolinska Institutet, Sweden)

8:15 *Invited: Biological Effects of Densely Ionizing Radiation*

Marco Durante (GSI, Germany)

8:45 *Invited: Track Structure and Biological Effects of Densely Ionizing Radiation*

Hooshang Nikjoo (Karolinska Institutet, Sweden)

9:00 *Invited: Radiation Response of Normal Tissues and Tumors to Carbon Ion Irradiation*

Christian Karger (German Cancer Research Center (DKFZ), Germany); Peter Peschke (German Cancer Research Center (DKFZ), Germany); Michael Scholz (Gesellschaft für Schwerionenforschung (GSI), Germany); Peter Huber (German Cancer Research Center, Germany); Jürgen Debus (University Hospital of Heidelberg, Germany)

9:15 *Evaluation of dose dependent structural changes in 3D brain microvasculature in response to heavy particle radiation exposure*

Christoph Hintermüller (Paul Scherrer Institute, Switzerland); Jaqueline Coats (Loma Linda University, USA); Andre Obenaus (Loma Linda University, USA); Thomas Krucker (Novartis Institutes for Biomedical Research, USA); Greg Nelson (Loma Linda University, USA); Marco Stampanoni (Paul Scherrer Institute, Switzerland)

9:30 *Inhibiting survivin expression increases the radiosensitivity of human hepatoma HepG2 cells to high-LET carbon ions*

Xiaodong Jin (Institute of Modern Physics, Chinese Academy of Sciences, P.R. China); Qiang Li (Institute of Modern Physics, P.R. China); Ping Li (Institute of Modern Physics, Chinese Academy of Sciences, P.R. China); Qing-Feng Wu (Institute of Modern Physics, Chinese Academy of Sciences, P.R. China); Zhong-Ying Dai (Institute of Modern Physics, P.R. China)

9:45 *Differences in gamma-H2AX foci formation after irradiation with continuous and pulsed proton beams*

Olga Zlobinskaya (Klinikum rechts der Isar, Germany); Thomas Schmid (Klinikum rechts der Isar, Germany); Günter Dollinger (Universität der Bundeswehr, Germany); Christoph Greubel (Universität der Bundeswehr, Germany); Volker Hable (Universität der Bundeswehr, Germany); Jan Wilkens (Technische Universität München, Germany); Dörte Michalski (Klinikum rechts der Isar, Germany); Guanghua Du (Technische Universität München, Germany); Michael Molls (Klinikum rechts der Isar, Germany); Barbara Röper (Klinikum rechts der Isar, Germany)

Th. 06/12.17: Minimally Invasive Surgery and Instruments (1)

Room: **Hall 22a** Chair: Hubertus Feussner (Klinikum rechts der Isar, TU München, Germany)

8:15 *A symmetry-based approach for non-invasive determination of the pelvic coordinate system using ultrasound with the patient in the lateral position*

Lorenz Fieten (RWTH Aachen University, Germany); Jörg Eschweiler (RWTH Aachen, Germany); Takehito Hananouchi (RWTH Aachen University, Germany); Koroush Kabir (University Hospital Bonn, Germany); Sascha Gravius (University Hospital Bonn, Germany); Stefan Heger (RWTH Aachen University, Germany); Dieter Christian Wirtz (Universitätsklinikum Bonn, Germany); Klaus Radermacher (RWTH Aachen, Germany)

8:30 *Calibration of the Magnetic Tracker for Acquisition of 3D Images to Guide Neurosurgeries*

Antonio Bosnjak (Universidad de Carabobo, Venezuela); Rafael Carmona (Universidad de Carabobo, Venezuela); Leonel Rios (Universidad de Carabobo, Venezuela); Guillermo Montilla (Universidad de Carabobo, Venezuela); Iván Jara (Hospital Metropolitano del Norte., Venezuela)

8:45 *Operational concept for a handheld laparoscopic telemanipulation system: design and animal experiment*

Sebastian Kassner (Technische Universität Darmstadt, Germany); Andreas Röse (Technische Universität Darmstadt, Germany); Roland Werthschützky (Technische Universität Darmstadt, Germany); Helmut Schlaak (Technische Universität Darmstadt, Germany)

9:00 *Laser Soldering of Rat Skin Using Controlled Feedback System*

Mohammad Sadegh Nourbakhsh (Amirkabir University of Technology, Iran); Mohamad Khosroshahi (Amirkabir University of Technology, Iran); Shahram Rabbani (Tehran Heart Center, , Tehran University of Medical Sciences, Iran); Sohrab Saremi (Amirkabir University of Technology, Iran); Amir Hooshyar (Amirkabir University of Technology, Iran); Farhad Tabatabai (Amirkabir University of Technology, Iran)

9:15 *Physiological Parameters Based Control Scheme For Automatic Intravascular Balloon Inflation*

Mauro Sette (Katholieke Universiteit Leuven, Belgium); Hugo Furtado (University Medical Center Ljubljana, Slovenia); Thomas Stüdeli (Delft University of Technology, The Netherlands); Terumasa Morita (Nakamura Hospital, Japan); Ole Elle (Rikshospitalet, Oslo University Hospital, Norway); Hendrik Van Brussel (Katholieke Universiteit Leuven, Belgium); Jos Vander Sloten (Katholieke Universiteit Leuven, Belgium)

9:30 *Ex Vivo Experiment of Bovine Liver using Cool-Tip™ Radiofrequency Ablation System*

Yik Hoay Mah (University of Malaya, Malaysia); Kwan Hoong Ng (University of Malaya, Malaysia); Basri Johan Abdullah (University of Malaya, Malaysia); Kuan Hiang Kwek (University of Malaya, Malaysia); Jeannie Hsiu Ding Wong (University of Malaya, Malaysia)

9:45 *Implementation of a programmable linear motor in a new minimal-invasive aortic valve resection tool*

Sebastian Stuehle (Universitaetsklinikum Essen, Germany)

Th. 04/12.5: Modeling and Simulation: Miscellaneous (1)

Room: Hall 14a Chair: Inga Altrogge (CeVis - University of Bremen, Germany) , Katrina Wendel (Tampere University of Technology, Finland)

8:15 *Quaternion Grassmann-Hamilton-Clifford algebras: new mathematical tools for classical and relativistic modeling*

Patrick Girard (University of Lyon, France)

8:30 *On the Observability of Hodgkin_Huxley based Cell Models*

S. Hojjat Sabzpoushan (Iran University of Science and Technology (IUST), Iran)

8:45 *Modelling of Eye-Hand Motions in a common 3D Coordinate System*

Ronald Dangel (RWTH Aachen University, Germany); Thomas Schmitz-Rode (RWTH Aachen, Germany); Catherine Disselhorst-Klug (PD Dr. rer. nat., Germany)

9:00 *Model selection in dynamic contrast-enhanced MRI: The Akaike Information Criterion*

Michael Ingrisich (Ludwig Maximilian University Munich, Campus Grosshadern, Germany); Steven Sourbron (Ludwig Maximilian University Munich, Campus Grosshadern, Germany); Maximilian Reiser (Ludwig-Maximilians-University Munich, Germany, Germany); Michael Peller (Ludwig Maximilian University Munich, Campus Grosshadern, Germany)

9:15 *Using image analysis and modeling to measure NO production in living cells*

C Dewey, Jr. (Massachusetts Institute of Technology, USA)

9:30 *The forward problem study of MAT-MI simulated by Comsol Multiphysics*

Zhipeng Liu (Chinese Academy of Medical Sciences & Peking Union Medical College, P.R. China); Tao Yin (Chinese Academy of Medical Sciences, Peking Union Medical College, P.R. China)

9:45 *Self-Organizing Maps for Categorical Data: Application to an ISO 9000 Accreditation Assessment*

Joao Carlos Costa (COPPE-Federal University of Rio de Janeiro, Brazil); Roberto Ichinose (COPPE-Federal University of Rio de Janeiro, Brazil); Antonio Fernando Infantsi (COPPE-Federal University of Rio

de Janeiro, Brazil); Renan Moritz Almeida (COPPE-Federal University of Rio de Janeiro, Brazil)

Th. 02/12.12: SPECT and PET: Image Reconstruction and Quantitative Imaging

Room: Hall 11a Chair: Sibylle Ziegler (Klinikum rechts der Isar der TU München, Germany) , Hans Herzog (Forschungszentrum Juelich, Germany)

8:15 *Challenges in Integrated PET-MR*

Volkmar Schulz (Philips, Germany); Bjoern Weissler (Philips, Germany); Pierre Gebhardt (Philips, Germany); Torsten Solf (Philips, Germany)

8:45 *Partial Volume Correction methods based on Measured Lesion-to-Background ratio in PET-CT oncological studies*

Francesca Gallivanone (University of Milan-Bicocca, Italy); Alessandro Stefano (LATO s.r.l., Italy); Maria Carla Gilardi (University Milan-Bicocca, H. San Raffaele, IBFM-CNR, Italy); Cristina Messa (University Milan-Bicocca, H. San Raffaele, IBFM-CNR, Italy); Carla Canevari (H San Raffaele, Italy); Isabella Castiglioni (IBFM-CNR, Italy)

9:00 *Comparison of advanced iterative reconstruction methods for SPECT/CT*

Peter Knoll (Dept. of Nuclear Medicine and PET Center, Austria); Daniela Kotalova (Charles University Prague, Czech Republic); Ladislav Zadrazil (Nemocnice Havlickuv Brod, Czech Republic); Ivan Kuzelka (Nemocnice Havlickuv Brod, Czech Republic); Siroos Mirzaei (Wilhelminenspital, Austria); Martin Samal (Charles University Prague, Czech Republic); Helmar Bergmann (Center for Biomedical Engineering, Austria)

9:15 *Local Motion Correction and Influence of Attenuation Correction in Combined Positron Emission and X-Ray Computed Tomography*

Ralph Bundschuh (Klinikum rechts der Isar der TU München, Germany); Axel Martínez-Möller (Klinikum rechts der Isar der TU München, Germany); Markus Essler (Klinikum rechts der Isar der TU München, Germany); Gaspar Delso (Klinikum rechts der Isar der TU München, Germany); Markus Schwaiger (Klinikum rechts der Isar der TU München, Germany); Sibylle Ziegler (Klinikum rechts der Isar der TU München, Germany)

9:30 *A novel method for the MTF determination in PET/CT scanners*

Alexandros Samartzis (Evangelismos General Hospital, Greece); George Fountos (Technological Educational Institute (TEI) of Athens, Greece); Ioannis Kalatzis (Technological Educational Institute (TEI) of Athens, Greece); Christos Michail (Department of Medical Physics, Medical School, University of Patras, Greece); Adonios Zanglis (Pammakaristos General Hospital, Greece); Donissis Cavouras (TEI, Greece); Ioannis Datseris (EVANGELISMOS General Hospital, Greece); Evaggelia Kounadi (Alexandra General Hospital, Greece); Dimitrios Vattis (Technological Educational Institute (TEI) of Athens, Greece); Ioannis Kandarakis (Technological Educational Institute (TEI)

of Athens, Greece); George Nikiforids (University of Patras, Medical School, Greece)

9:45 *Is there a necessity of Standard Uptake Value correction in liver reference level?*

Izabela Szopa (Maria Skłodowska-Curie Memorial Cancer Centre and Institute of Oncology, Poland); Kamil Gorczewski (Maria Skłodowska-Curie Memorial Cancer Centre and Institute of Oncology Poland, Poland); Andrea d'Amico (Maria Skłodowska-Curie Memorial Cancer Centre and Institute of Oncology, Poland); Barbara Jarzab (Maria Skłodowska-Curie Memorial Cancer Centre and Institute of Oncology, Poland)

Th. 04/12.6: Biologics & Nanobiomechanics

Room: Hall 14c

8:15 *Invited: Sound wave-induced differentially expression genes in Dendrobium candidum*

Wang Bochu (Chongqing University, P.R. China)

8:30 *Effect of weightlessness on micromechanical properties of rat bone*

Lian-wen Sun (Beihang University, P.R. China); Yu-bo Fan (Beihang University, P.R. China)

8:45 *Coarse-grained Molecular Dynamics of Inhibitors Binding into HIV-1 Protease*

Baohua Ji (Beijing Institute of Technology, P.R. China)

9:00 *Analyzing of Cladosporium as a biomaterial sample by semi-dynamic video microscopy under biaxial stretch*

Stephan Schließmann (University Medical Center of Freiburg, Germany); Gernot Zissel (University Medical Center of Freiburg, Germany); Josef Guttmann (Universitätsklinikum Freiburg, Germany)

9:15 *Role of NF- κ B in the injury induced MMP expression and activities in ACL*

Li Yang (Chongqing University, China, P.R. China); Ruyue Xue (Bioengineering College, Chongqing University, P.R. China)

9:30 *Invited: Clone-SA8, Regulated in Expression by Sound wave Stimulation in Dendrobium candidum*

Wang Bochu (Chongqing University, P.R. China)

Th. 01/12.4: QA of Treatment Planning Systems/Heavy Ion Therapy Physics

Room: Hall 13b Chair: Jeffrey Siebers (Virginia Commonwealth University, USA), Jan Unkelbach (IDSIA, Switzerland)

8:15 *Parameterisation of Small Photon Fields*

Björn Poppe (Carl von Ossietzky University Oldenburg, Germany); Julia Riediger (Carl von Ossietzky University Oldenburg, Germany);

Antje Ruehmann (Pius-Hospital Oldenburg, Germany); Armand Djouguela (Carl von Ossietzky University Oldenburg, Germany); Gaby Suft (Siemens AG, Germany); Dietrich Harder (Georg-August University Göttingen, Germany)

8:30 *Improving the accuracy of entrance dosimetry measurements for dose modeling*

Jeffrey Siebers (Virginia Commonwealth University, USA); James Ververs (Virginia Commonwealth University, USA); Malcolm McEwen (National Research Council, Canada)

8:45 *Fast range compensation inside the beam line for beam tracking in particle therapy*

Naved Chaudhri (GSI Helmholtzzentrum für Schwerionenforschung, Germany); Nami Saito (GSI Helmholtz Centre for Heavy Ion Research, Germany); Christoph Bert (GSI Helmholtzzentrum für Schwerionenforschung, Germany); Peter Steidl (GSI Helmholtzzentrum für Schwerionenforschung, Germany); Bernhard Franczak (GSI Helmholtzzentrum für Schwerionenforschung, Germany); Marco Durante (GSI, Germany); Eike Rietzel (Siemens Healthcare, Germany); Dieter Schardt (GSI Helmholtzzentrum für Schwerionenforschung, Germany)

9:00 *Dosimetric testing of a new release of 3D treatment planning system with the IAEA-TECDOC-1540*

Olive Modestine Makam Kom (Saarland University Hospital, Germany); Norbert Licht (Saarland University Hospital, Germany)

9:15 *4D calculation and biological dosimetry of the RBE-weighted dose for scanned carbon ion beam therapy*

Alexander Gemmel (GSI Helmholtzzentrum für Schwerionenforschung, Germany); Christoph Bert (GSI Helmholtzzentrum für Schwerionenforschung, Germany); Nami Saito (GSI Helmholtz Centre for Heavy Ion Research, Germany); Naved Chaudhri (GSI Helmholtzzentrum für Schwerionenforschung, Germany); Gheorghe Iancu (GSI Helmholtzzentrum für Schwerionenforschung, Germany); Cläre von Neubeck (GSI Helmholtzzentrum für Schwerionenforschung, Germany); Marco Durante (GSI, Germany); Eike Rietzel (Siemens Healthcare, Germany)

9:30 *Current status of the HIBMC, providing particle beam radiation therapy for more than 2,600 patients, and the prospects of laser-driven proton radiotherapy*

Masao Murakami (Hyogo Ion Beam Medical Center, Japan); Yusuke Demizu (Hyogo Ion Beam Medical Center, Japan); Yasue Niwa (Hyogo Ion Beam Medical Center, Japan); Shinichi Nagayama (Hyogo Ion Beam Medical Center and Shin Nippon Biomedical Laboratories (SNBL), Japan); Takuya Maeda (Hyogo Ion Beam Medical Center, Japan); Masashi Baba (Hyogo Ion Beam Medical Center and Shin Nippon Biomedical Laboratories (SNBL), Japan); Daisuke Miyawaki (Hyogo Ion Beam Medical Center, Japan); Kazuki Terashima (Hyogo Ion Beam Medical Center, Japan); Takeshi Arimura (Hyogo Ion Beam

Medical Center, Japan); Masayuki Mima (Hyogo Ion Beam Medical Center, Japan); Takashi Akagi (Hyogo Ion Beam Medical Center, Japan); Hiroyuki Daido (Japan Atomic Energy Agency, Japan); Yoshio Hishikawa (Hyogo Ion Beam Medical Center, Japan); Mitsuyuki Abe (Hyogo Ion Beam Medical Center, Japan)

9:45 Heavy Ion Radiotherapy for Shallow-Seated Tumors at IMP

Xin-Guo Liu (Institute of Modern Physics, Chinese Academy of Sciences, P.R. China); Qiang Li (Institute of Modern Physics, P.R. China); Zhong-Ying Dai (Institute of Modern Physics, P.R. China)

Th. 12/12.18: Technology Enhanced Education

Room: Hall 22b Chair: Malmivuo Jaakko (Tampere University of Technology, Finland)

8:15 Advantages and Disadvantages of Electronic Assessments in Biomedical Education.

Mazdak Karami (RWTH Aachen University, Germany); Nicole Heussen (RWTH Aachen University, Germany); Thomas Schmitz-Rode (RWTH Aachen, Germany); Martin Baumann (RWTH Aachen University, Germany)

8:30 Web 2.0 and Medical Physics

Marius Treutwein (Regensburg University Medical Center, Germany)

8:45 Biomedical Engineering Instrumentation Research Collaboration between Universiti Kuala Lumpur, deNuo Sdn. Bhd. and Flinders University, Australia

Shah Mukhtar (Universiti Kuala Lumpur, Malaysia); Noor Harun (Universiti Kuala Lumpur, Malaysia); Zulkifli Abdul Kadir Bakti (Universiti Kuala Lumpur, Malaysia); Rosmina Jaafar (Universiti Kuala Lumpur, Malaysia)

9:00 Technology behind Video Lectures for Biomedical Engineering

Asta Kybartaitė (Tampere University of Technology, Finland); Malmivuo Jaakko (Tampere University of Technology, Finland); Juha Nousiainen (Tampere University of Technology, Finland)

9:15 EVICAB - An Open Source Portal for Internet Education

Malmivuo Jaakko (Tampere University of Technology, Finland); Asta Kybartaitė (Tampere University of Technology, Finland); Juha Nousiainen (Tampere University of Technology, Finland)

9:30 An e-learning experience for medical education in Mediterranean countries

Claudia Brancaleone (University of Naples, Federico II, Italy); Riccardo Tranfaglia (University Federico II of Naples, Italy); Luciano Mirarchi (Siemens Healthcare, Italy); Marcello Bracale (University of Naples, Italy)

9:45 Invited: Development of an electronic device based on the concept of masked voice

Leopoldo Yabar Escribanel (Universidad Tecnologica Del Peru, Peru);
Daniel Garcia Romero (Universidad Tecnologica Del Peru, Peru)

Th. 07/12.10: Remote Patient Monitoring

Room: Hall 02 Chair: Michael Reng (Kreisklinik Bogen, Germany) , Michael Imhoff (Ruhr-University Bochum, Germany)

8:15 Biomedical Innovation in Health Care - Wireless, Remote Patient Monitoring

Eric Silfen (Philips Healthcare, USA)

8:30 Home Monitoring – Empowerment of patients for self- management

Martin Braecklein (Robert Bosch Healthcare GmbH, Georgia); Hans-Peter Klose (Robert Bosch GmbH, Germany); Sandra Nelles (Robert Bosch Healthcare GmbH, Germany)

8:45 A Body Sensor Network Based Support System for Automated Bioimpedance Spectroscopy Measurements

Saim Kim (RWTH Aachen University, Germany); Linda Cousin (Rwth Aachen University, Germany); Lisa Beckmann (RWTH Aachen University, Germany); Marian Walter (RWTH Aachen University, Germany); Steffen Leonhardt (RWTH Aachen University, Germany)

9:00 Wearable and Ultra Low Power Wireless System for Physiological Monitoring

Celso Figueiredo (University of Minho, Portugal); Josep Cardona (IBMT, Germany); Klaus-Peter Hoffmann (IBMT, Germany); Paulo Mendes (University of Minho, Portugal)

9:15 A new approach to improve the fall detection in elderly: monitoring of the autonomic nervous system activation

Ronald Nocua (Université Joseph Fourier, France); Norbert Noury (University of Lyon, France); Claudine Gehin (INL, France); Andre Dittmar (Insa Lyon, France); Eric McAdams (INL, France)

9:30 Remote Patient Monitoring

Michael Reng (Kreisklinik Bogen, Germany)

9:45 Remote Patient Monitoring – Return on Investment

Michael Imhoff (Ruhr-University Bochum, Germany)

08:45 - 10:00

Th. 09/12.2: Neural Interfaces (1): Chronic Use of Nerve Cuffs

Room: Hall 14b Chair: Thomas Stieglitz (Universität Freiburg, Germany) , Nick Donaldson (University College London, United Kingdom)

8:45 Keynote: Development of a neural interface for artificial limbs

Todd Kuiken (Rehabilitation Institute of Chicago and Northwestern University, Chicago, USA, USA)

9:15 *A self-sizing spiral cuff around the optic nerve, ten years later*

Jean Delbeke (Université Catholique de Louvain, Belgium)

9:35 *Influence of the number and location of recording contacts on nerve cuff selectivity*

Jose Zariffa (University of Toronto, Canada)

9:50 *Progress toward the design of an integrated multichannel velocity-selective recording system*

John Taylor (University of Bath, United Kingdom)

10:05 *Chronic Use of Nerve Cuffs: Is there a common opinion ?*

Nick Donaldson (University College London, United Kingdom)

Th. 05/12.16: Telemedicine (3)

Room: Hall 21b Chair: Heinrich Koertke (Herz- und Diabeteszentrum NRW, Germany)

8:45 *Wearable Biomedical Signal Measurement Terminal*

Joo-Hyun Hong (Chungbuk National University, Korea); Eun-Jong Cha (Chungbuk National University, Korea); Tae-Soo Lee (Chungbuk National University, Korea)

9:00 *Quality of Service Evaluation of Telemedicine Network Design with IEEE 802.11b Technology*

Andreina Zambrano (Simon Bolivar University, Venezuela); Monica Karel Huerta (Simon Bolivar University, Venezuela); Pedro Marchena (Simon Bolivar University, Venezuela); Marilet de Andrade (Universidad Politécnic de Catalunya, Spain); Miguel Diaz (Universidad Simon Bolivar, Venezuela)

9:15 *Wireless ECG Network*

Marcus Bergblomma (Mälardalen University, Sweden); Martin Ekström (Mälardalen University, Sweden); Mikael Ekström (Mälardalen University, Sweden); Maria Lindén (Mälardalen University, Sweden); Javier Castano (Mälardalen University/ Sweden Connectivity AB, Sweden); Mats Björkman (Mälardalen University, Sweden)

9:30 *Telemedical Thrombosis Service after Mechanical Heart Valve Replacement*

Heinrich Koertke (Herz- und Diabeteszentrum NRW, Germany)

9:45 *Computer-aided Fracture Diagnosis and Classification Package Embeded in the Integrated Electronic Patient Record System*

Dong-Yun Gu (Shanghai Jiaotong University, P.R. China); Ke-Rong Dai (Shanghai Jiaotong University, P.R. China); Song-Tao Ai (Shanghai Jiaotong University, P.R. China); Ya-Zhu Chen (Shanghai Jiaotong University, P.R. China)

10:00 *Technology of multiphasic intellectual screening of chronic diseases for children and adolescents*

Valentin Shapovalov (St. Petersburg Electrotechnical University, Russia); Anatoly Nemirko (Saint Petersburg Electrotechnical University, Russia)

Th. 04/12.7: Vessel-Wall Interaction

Room: Hall 05 **Chair:** Markus Hoenicka (University of Regensburg Medical Center, Germany)

8:45 *Metabolic Requirements of Blood Vessels in a Perfusion Bioreactor*

Markus Hoenicka (University of Regensburg Medical Center, Germany); Ludwig Wiedemann (Klinikum Landshut, Germany); Siegfried Schrammel (University of Applied Sciences, Germany); Christof Schmid (University of Regensburg Medical Center, Germany); Dietrich Birnbaum (University of Regensburg Medical Center, Germany)

9:00 *Microvascular cell depletion model*

Neil Bressloff (University of Southampton, United Kingdom); Mohamed Mansour (University of Southampton, United Kingdom); Cliff Shearman (University of Southampton, United Kingdom)

9:15 *A New Coronary Artery Bypass Graft (CABG) Distal Anastomosis Design*

Foad Kabinejadian (Nanyang Technological University, Singapore); Leok Poh Chua (Nanyang Technological University, Singapore); Dhanjoo Ghista (Parkway College, Singapore); Yong Seng Tan (Mount Elizabeth Hospital, Singapore)

Th. 04/12.8: Modeling and Analysis of the Cardiovascular System (1)

Room: Hall 04a **Chair:** Gunnar Seemann (University Karlsruhe (TH), Germany) , Nicolas Smith (University of Oxford, United Kingdom)

8:45 *Verification of Spectrum Analysis for Finger Plethysmography Based on Standing Wave and Harmonics*

Hang Sik Shin (Yonsei University, Korea); Chungkeun Lee (Yonsei University, Korea); Yong Hyeon Yun (Yonsei University, Korea); Youngbum Lee (Yonsei university, Korea); Myoung-Ho Lee (Graduate School of Yonsei University, Korea)

9:00 *Dynamic Multi-scale Model for the Influence of Water on Elastin*

Henry Haslach (University of Maryland, USA)

9:15 *A Model-Based Method to Estimate Pulse Wave Velocity*

Mande Leung (University of British Columbia, Canada); Guy Dumont (University of British Columbia, Canada); James Potts (British Columbia Children's Hospital, Canada); M Potts (British Columbia Children's Hospital, Canada); George Sandor (British Columbia Children's Hospital, Canada)

9:30 Fast creation of endocardial stimulation profiles for the realistic simulation of body surface ECGs

David Keller (Universität Karlsruhe (TH), Germany); Raffi Kalayciyan (Universität Karlsruhe (TH), Germany); Olaf Doessel (Universität Karlsruhe (TH), Germany); Gunnar Seemann (University Karlsruhe (TH), Germany)

9:45 Stress - Strain Simulations for Optimising the Design of Shape - Memory Polymer Based Annuloplasty Rings

Andres Diaz Lantada (Universidad Politecnica de Madrid, Spain)

10:00 Implicit Time Integration in a Volumetric Mass-Spring System for Modeling Myocardial Elastomechanics

Oussama Jarrousse (Universität Karlsruhe (TH), Germany); Thomas Fritz (Universität Karlsruhe (TH), Germany); Olaf Doessel (Universität Karlsruhe (TH), Germany)

10:30 - 11:00

Medical Keynote

Room: Hall 01

10:30 Keynote: Preservation and Recovery of Function in Modern Neurosurgery

Marcos Tatagiba (Eberhard Karls Universität Tübingen, Germany)

Coffee break 2

Th. 12/13.16: BME Education and Training - International

Room: Hall 21b Chair: John Enderle (University of Connecticut, USA) , Marta Wasilewska-Radwanska (AGH University of Science and Technology & EFOMP Company Limited by Guarantee in England and Wales Registered Number 6480149, Poland)

10:30 Intelligent Tutoring Systems Based on Ontologies and 3D Visualization Platforms in the Teaching of the Human Anatomy

Jairo Melo (University of Brasília (UnB), Brazil); Lourdes Brasil (University of Brasília (UnB), Brazil); Remis Balaniuk (Catholic University of Brasília (UCB),, Brazil); Edilson Ferneda (Catholic University of Brasília (UCB),, Brazil); Jader Melo (University of Brasília (UnB), Brazil)

10:45 The Beginnings of a Subject on the “Development of Medical Devices” within the “European Higher Education Area” Framework

Andres Diaz Lantada (Universidad Politecnica de Madrid, Spain)

11:00 Biomedical Engineering Education and Training in Nigeria

Kenneth Nkuma-Udah (Federal University of Technology, Owerri, Nigeria, Nigeria); Goddy Okoye (Federal University of Technology,

Nigeria); Gideon Ndubuka (Abia State University Teaching Hospital, Aba, Nigeria)

11:15 *Multidisciplinary School as a BME Teaching Option*

Marta Wasilewska-Radwanska (AGH University of Science and Technology, Poland); Piotr Augustyniak (AGH University of Science and Technology, Poland)

11:30 *Teaching and Learning of Medical Physics and Biomedical Engineering in Ukrainian Medical Universities*

Yaroslav Tsekhmister (National Medical University, Ukraine); Alexander Chalyi (National Medical University, Ukraine); Kyrylo Chalyy (National Medical Academy, Ukraine)

11:45 *Biomedical Engineering Education and Training in India – A Need for New Approach*

Niranjan Khambete (Sree Chitra Tirunal Institute for Medical Sciences and Technology, India)

12:00 *Collaborative Clinical Engineering Internship Program between an Academic Institution and a Teaching Hospital*

Shankar Krishnan (Wentworth Institute, USA)

Th. 04/13.13: New Aspects of Minimal-Invasive Surgery (NAMIS)

Room: Hall 11b **Chair:** Thomas Wittenberg (Fraunhofer Institute for Integrated Circuits IIS, Germany) , Jan Stallkamp (Fraunhofer Institut für Produktionstechnik und Automatisierung IPA, Germany)

10:30 *'MISS Heart': Assisting Systems for Minimal Invasive Smart Suturing in Cardiac Surgery - A Conceptually Closed-Loop Approach*

Thomas Wittenberg (Fraunhofer Institute for Integrated Circuits IIS, Germany); Klaus Drechsler (Fraunhofer Institute for Computer Graphics Research, Germany); Dominik Kaltenbacher (Fraunhofer IPA, Germany); Sven Friedl (Fraunhofer IIS, Germany); Christian Reis (Fraunhofer Institute for Manufacturing Engineering and Automation, Germany); Georgios Sakas (Fraunhofer IGD, Darmstadt, Germany); Jan Stallkamp (Fraunhofer Institut für Produktionstechnik und Automatisierung IPA, Germany); Markus Kondruweit (University Hospital Erlangen, Germany)

10:45 *Registration of Cardiac CT Data with Coronary Angiograms using Digitally Reconstructed Radiographs*

Klaus Drechsler (Fraunhofer Institute for Computer Graphics Research, Germany); Cristina Oyarzun Laura (Fraunhofer Institute for Computer Graphics Research, Germany)

11:00 *Interactive Registration and Visualization of Cardiac Video and Angiography*

Sven Friedl (Fraunhofer IIS, Germany); Thomas Wittenberg (Fraunhofer Institute for Integrated Circuits IIS, Germany); Markus Kondruweit (University Hospital Erlangen, Germany)

11:15 Invited: Development of new instruments for beating heart bypass anastomosis during mini-invasive procedures

Dominik Kaltenbacher (Fraunhofer IPA, Germany); Christine Rotinat-Libersa (CEA LIST, France); Christian Reis (Fraunhofer Institute for Manufacturing Engineering and Automation, Germany); Marie Di Betta (CEA LIST, France); Jan Stallkamp (Fraunhofer Institut für Produktionstechnik und Automatisierung IPA, Germany)

11:45 Implementation of quality control devices for intraoperative gamma probe Preliminary results of performance tests

Consuelo Varela Corona (Centro de Control Estatal de Equipos Médicos, Cuba)

12:00 Transanal rectosigmoid resection: A natural orifice transluminal endoscopic surgery technique

Hemanga Bhattacharjee (Eberhard Karls University, Germany, Germany); Gerhard Buess (University of Tuebingen, Germany); Fransisco Becera (Eberhard Karls University, Germany, Germany)

12:15 Liver Resection Using High Frequency Electromagnetic Thermotherapy

Sheng Chieh Huang (National Cheng Kung University, Taiwan); Hung Wen Tsai (National Cheng Kung University, Taiwan); Chih Hao Huang (National Cheng Kung University, Taiwan); Roberto Zuchini (National Cheng Kung University, Taiwan); Chong Jeh Lo (National Cheng Kung University, Taiwan); Xi Zhang Lin (National Cheng Kung University, Taiwan); Gwo Bin Lee (National Cheng Kung University, Taiwan)

Th 03 /13.15: Radiation Protection of Patients in Developing Countries (2)

Room: Hall 21a Chair: Madan Rehani (I.A.E.A., Austria) , Jenia Vassileva (National Centre of Radiobiology and Radiation Protection, Bulgaria)

10:30 Invited: Patient doses in CT and radiography in Africa

Wilbroad Muhogora (Tanzania Atomic Energy Commission, Tanzania); Madan Rehani (I.A.E.A., Austria)

10:45 Invited: Surveys of image quality and patients doses in simple radiographic examinations in Armenia

Karapet Stepanyan (Research Center of Radiation Medicine and Burns, Armenia); Ruzanna Mkrtychyan ("Santa Nerses Great" Hospital, Armenia)

11:00 Patient Dose and Image Quality Evaluation in Common Radiographic Examinations in Sudan

Nada Ahmed Mohammed (Sudan Atomic Energy Commission, Sudan); Ibrahim Suliman (Sudan Atomic Energy Commission, Sudan); Virginia Tsapaki (Konstantopoulou Hospital, Greece); Madan Rehani (I.A.E.A., Austria)

11:15 Towards higher level of patient safety and control of medical exposure in Bulgaria

Jenia Vassileva (National Centre of Radiobiology and Radiation Protection, Bulgaria)

11:30 Mammography Services In Malaysia: Review Of Patient Dose Surveys In Mammography

Pirunthavany Muthuvelu (Ministry of Health Malaysia, Malaysia); Bazli Sapiin (Ministry of Health Malaysia, Malaysia); Zunaide Kayun (Ministry of Health Malaysia, Malaysia)

11:45 Evaluation of Average Glandular Doses in UAE Hospitals

Najlaa Almazrouei (DHA, UAE); Jamila Alsuwaidi (DHA, UAE); Abderrachid Zitouni (DHA, UAE); Fatima Alkaabi (Tawam Hospital in Affiliation with Johns Hopkins Medicine, UAE); Jacek Janaczek (Tawam Hospital in Affiliation with Johns Hopkins Medicine, UAE); Syed Gilani (DHA, UAE); Shaikkha Alkalbani (DHA, UAE)

12:00 Survey of Computed Tomography doses in the United Arab Emirates (UAE).

Laila Al Balooshi (Dubai Hospital, UAE); Sara Buhumaid (Dubai Health Authority, UAE); Ali Rahanjam (Dubai Health Authority, UAE); Mohd EL hallag (Dubai Health Authority, UAE); Syed Gilani (DHA, UAE); Abderrachid Zitouni (DHA, UAE); Jamila Alsuwaidi (DHA, UAE)

Th. 01/13.9: Rotational Arc Therapy and SBRT

Room: Hall 04b Chair: James Bedford (Royal Marsden Hospital, United Kingdom) , Carl Rowbottom (The Christie, United Kingdom)

10:30 Invited: Pros & Cons of Dosimetric and Biological Models for Plan Optimization

Bengt Lind (Karolinska Institutet and Stockholm University, Sweden)

11:00 Treatment planning for volumetric modulated arc therapy (VMAT)

James Bedford (Royal Marsden Hospital, United Kingdom)

11:15 Implementing Volumetric Modulated Arc Therapy (VMAT): initial dosimetric results for retrospective patient study

Anne Richter (University of Würzburg, Germany); Jürgen Wilbert (University of Würzburg, Germany); Thomas Krieger (University of Würzburg, Germany); Matthias Guckenberger (University of Würzburg, Germany); Kurt Baier (University of Würzburg, Germany); Franz Schwab (University of Würzburg, Germany); Michael Flentje (University of Würzburg, Germany)

11:30 Can a commercially available TPS be used to develop VMAT solutions?

Carl Rowbottom (The Christie, United Kingdom); Christopher Boylan (The Christie, United Kingdom); Chris Golby (The Christie, United Kingdom); Shaun Atherton (The Christie, United Kingdom); Steve Smith (The Christie, United Kingdom); Ranald Mackay (The Christie, United Kingdom)

11:45 *Investigation into the Pinnacle SmartArc module for VMAT planning*

Carl Rowbottom (The Christie, United Kingdom); Chris Golby (The Christie, United Kingdom); Shaun Atherton (The Christie, United Kingdom); Randal Mackay (The Christie, United Kingdom)

12:00 *An Alternative Approach to Inverse Planning Optimization: Applying the Projection Theorem to Concave and Convex PTVs for VMAT Delivery*

Wolfgang Hoegele (Brigham and Women's Hospital, USA); Rainer Loeschel (University of Applied Sciences Regensburg, Germany); Piotr Zygmanski (Brigham and Women's Hospital and Harvard Medical School, USA)

Th. 04/13.14: Focus Session: Signal Processing of Atrial Fibrillation (1)

Room: Hall 12b Chair: Luca Mainardi (Polytechnic University of Milan, Italy) , Christopher Schilling (Universität Karlsruhe (TH), Germany)

10:30 *The Role of Atrial Modeling in the Development of ECG Processing Tools*

Vincent Jacquemet (Ecole Polytechnique Fédérale de Lausanne, Switzerland); Mathieu Lemay (EPFL, Switzerland); Laurent Uldry (EPFL, Switzerland); Cédric Duchêne (EPFL, Switzerland); Van Oosterom Adriaan (, Switzerland); Lukas Kappenberger (Centre Hospitalier Universitaire Vaudois, Switzerland); Jean-Marc Vesin (EPFL, Switzerland)

11:00 *Invited: Non invasive mapping of human atrial fibrillation*

Maria Salud Guillem (Universidad Politecnica de Valencia, Spain); Andreu Climent (Universidad Politecnica de Valencia, Spain); José Millet (Universidad Politécnica de Valencia, Spain); Daniela Husser (Herzzentrum Leipzig, Germany); Andreas Bollmann (Herzzentrum Leipzig, Germany); Francisco Castells (Universidad Politecnica de Valencia, Spain)

11:15 *Invited: Reproducibility and Similarity Measures of Waveform Morphology in Atrial Fibrillation*

Martin Stridh (Lund University, Sweden); Daniela Husser (Herzzentrum Leipzig, Germany); Andreas Bollmann (Herzzentrum Leipzig, Germany)

11:30 *Invited: LF component in systolic arterial pressure in patients with atrial fibrillation: detection and reliability*

Valentina Corino (Politecnico di Milano, Italy); Federico Lombardi (Cardiologia, Dipartimento di Medicina, Chirurgia e Odontoiatria, Osp. San Paolo, University of Milan, Italy); Sebastiano Belletti (Ospedale San Paolo, University of Milan, Italy); Luca Mainardi (Politecnico di Milano, Italy)

11:45 *Invited: Fusion of wave-similarity maps with 3D-CT atrial images for the investigation of atrial fibrillation mechanisms*

Flavia Ravelli (University of Trento, Italy); Michela Masè (University of Trento, Italy); Alessandro Cristoforetti (University of Trento, Italy); Maurizio Centonze (Santa Chiara Hospital, Trento, Italy); Maurizio Del Greco (Santa Chiara Hospital, Trento, Italy); Marcello Disertori (Santa Chiara Hospital, Trento, Italy)

12:00 A Screening method to detect atrial fibrillation with Symbolic Dynamics

Nikolas Lentz (Universität Karlsruhe, Germany); Nicole Kikillus (Universität Karlsruhe, Germany); Armin Bolz (Universität Karlsruhe, Germany)

Th. 04/13.3: Focus Session: Central Nervous System Disorders and their Influence on the Autonomic Nervous System (2)

Room: Hall 13a Chair: Karl-Jürgen Bär (Department of Psychiatry, Friedrich-Schiller-University, Jena, Germany) , Andreas Voss (University of Applied Sciences Jena, Germany)

10:30 Invited: Decreased Coupling between R-R and QT Intervals in Patients with Panic

Chaitra Ramachandraiah (Rajiv Gandhi University of Health Science, India); Karl Bar (Department of Psychiatry and Psychotherapy Jena, Germany, Germany); Pratap Chokka (University of Alberta, Edmonton, Canada); Andreas Voss (University of Applied Sciences Jena, Germany); Manny Tancer (Wayne State University School of Medicine, Detroit, USA); Vikram Yeragani (University of Alberta, Professor, Edmonton, Canada, Canada)

11:00 Invited: Effect of depressive symptoms on the diurnal rhythm of heart rate variability three days and six months after an acute coronary syndrome.

Soledad Ladron de Guevara (University of Buenos Aires, Argentina); Salvador Guinjoan (FLENI, Argentina)

11:30 Autonomic function in first-degree relatives of patients suffering from schizophrenia

Berger Sandy (University Hospital Jena, Germany); Maria Metzner (University Hospital Jena, Germany); Steffen Schulz (University of Applied Sciences Jena, Germany); Chaitra Ramachandraiah (Rajiv Gandhi University of Health Science, India); Michael Boettger (University Hospital Jena, Germany); Vikram Yeragani (University of Alberta, Professor, Edmonton, Canada, Canada); Andreas Voss (University of Applied Sciences Jena, Germany); Karl-Jürgen Bär (Department of Psychiatry, Friedrich-Schiller-University, Jena, Germany)

11:45 QT variability versus sympathetic cardiac activity in patients with major depression and patients with panic disorder

Mathias Baumert (The University of Adelaide, Australia)

12:00 *The influence of medical treatment on non-linear complexity measures of autonomic regulation of heart rate variability in patients with acute schizophrenia*

Steffen Schulz (University of Applied Sciences Jena, Germany); Karl-Jürgen Bär (Department of Psychiatry, Friedrich-Schiller-University, Jena, Germany); Andreas Voss (University of Applied Sciences Jena, Germany)

Th. 07/13.7: Focus Session: Control of Artificial Heart and Ventricular Assist Devices

Room: Hall 05 Chair: Yusuke Abe (The University of Tokyo, Japan) , Heinrich Schima (Allgemeines Krankenhaus Wien, Austria)

10:30 *System Structure and Control Properties of Cardiovascular Regulation: Significance for the Artificial Heart*

Jürgen Werner (Ruhr-Universität Bochum, Germany); Martin Hexamer (Ruhr-Universität Bochum, Germany)

10:45 *Invited: Clinical Evaluation of An Automatic Physiologically Responsive Control System for Rotary Blood Pumps*

Heinrich Schima (Allgemeines Krankenhaus Wien, Austria); Michael Vollkron (Medical University of Vienna, Austria); Michael Quittan (Med. University Vienna, Austria, Austria); Michael Hiesmayr (Med. University Vienna, Austria, Austria); Georg Wieselthaler (Medical University of Vienna, Austria)

11:15 *Controllability of 1/R control in non-pulsatile total artificial heart*

Yusuke Abe (The University of Tokyo, Japan)

11:30 *Development of the Natural Heartbeat Synchronize Control Method for the Undulation Pump Ventricular Assist Device Using the Inflow Pressure*

Yusuke Inoue (The University of Tokyo, Japan); Itsuro Saito (The University of Tokyo, Japan)

11:45 *Control of a rotary blood pump for defined ventricular unloading: A potential tool for ventricular recovery*

Francesco Moscato (Medical University of Vienna, Austria); Maurizio Arabia (University of Calabria, Italy); Phornphop Naiyanetr (Medical University of Vienna, Austria); Guido Danieli (University of Calabria, Italy); Heinrich Schima (Allgemeines Krankenhaus Wien, Austria)

12:00 *Physiological Control of a Rotary Left Ventricular Assist Device: Robust Control of Pressure Pulsatility with Suction Prevention and Suppression*

Andreas Arndt (Berlin Heart GmbH, Germany)

Th. 06/13.17: Minimally Invasive Surgery and Instruments (2)

Room: Hall 22a Chair: Hubertus Feussner (Klinikum rechts der Isar, TU München, Germany)

10:30 *Optimizing the setup configuration for manual and robotic assisted minimally invasive surgery*

Heinz Wörn (Universität Karlsruhe, Germany); Oliver Weede (Karlsruhe Institute of Technology (KIT), Germany)

10:45 *A Novel In Vitro Method for Assessing the Resistance to Distal Displacement of Endovascular Stent Grafts for Abdominal Aortic Aneurysm Repair*

Timothy Corbett (University of Limerick, Ireland); Anthony Callanan (University of Limerick, Ireland); Michael O'Donnell (University of Limerick, Ireland); Timothy McGloughlin (University of Limerick, Ireland)

11:00 *Tumor Treatment System with Alternate Cooling and Heating - Preliminary Results in an Animal Model*

Jianqi Sun (Med-X Research Institute, Shanghai Jiao Tong University, P.R. China); Cuicui Xu (Shanghai Jiao Tong University, P.R. China); Gonghua Wei (Renji Hospital, Shanghai Jiao Tong University, P.R. China); Xiaoguang Sun (Renji Hospital, Shanghai Jiao Tong University, P.R. China); Ping Liu (Med-X Research Institute, Shanghai Jiao Tong University, P.R. China); Aili Zhang (School of Life Science and Biotechnology, Shanghai Jiao Tong University, P.R. China); Lisa Xu (School of Life Science and Biotechnology, Shanghai Jiao Tong University, P.R. China)

11:15 *3D Observation of Expansion of Stent and Elastic Recoil using Micro-CT*

Futoshi Mori (Japan Advanced Institute of Science and Technology, Japan); Toshio Nakayama (Tohoku University, Japan); Teruo Matsuzawa (Japan Advanced Institute of Science and Technology, Japan); Makoto Ohta (Tohoku University, Japan)

11:30 *Performance Evaluation of a Multi-Purpose Input Device for Computer-Assisted Surgery*

Armin Janß (RWTH Aachen University, Germany); Bastian Ibach (RWTH Aachen University, Germany); Wolfgang Lauer (Helmholtz-Institute, RWTH Aachen University, Germany); Klaus Radermacher (RWTH Aachen, Germany)

11:45 *CQM - the Unknown Risk in Electrosurgery*

Norbert Nessler (Innsbruck University, Austria)

12:00 *A new Intra-Articular Load Measuring Device for Ligament Balancing and Prosthesis Alignment in Total Knee Arthroplasty*

Frauke Schmidt (RWTH Aachen University, Germany); Ulrich Nolten (Aachen University, Germany); Robert Elfring (RWTH Aachen University, Helmholtz-Institute, Germany); Franz-Peter Firmsbach (Aesculap AG, Germany); Wilfried Mokwa (RWTH Aachen, Germany); Klaus Radermacher (RWTH Aachen, Germany)

12:15 *New Materials for Magnetic Resonance Imaging (MRI) – Fiber-Reinforced Guide Wires and Catheters for Minimal Invasive Interventions*

Adrian Schuette (Fraunhofer-Institute for Production Technology IPT, Germany); Martin Steyer (Fraunhofer-Institute for Production Technology, Germany)

Th. 04/13.5: Modeling and Simulation: Miscellaneous (2)

Room: Hall 14a Chair: Stephan Zidowitz (Fraunhofer MEVIS, Germany) , Patrick Girard (University of Lyon, France)

10:30 *Simulation on the dynamics of Neural states transition*

Gilberto Perea-Olmos (Universidad de Guanajuato, Mexico); Sergio Marquez-Gamino (Universidad de Guanajuato, Mexico); Gerardo Moreno-Lopez (Universidad de Guanajuato, Mexico); Fernando Sotelo (Universidad de Guanajuato, Mexico)

10:45 *Incorporating Craniofacial Anthropometry into Realistically-Shaped Head Models*

Katrina Wendel (Tampere University of Technology, Finland); Michael Osadebey (Tampere University of Technology, Finland); Malmivuo Jaakko (Tampere University of Technology, Finland)

11:00 *Phenomenological Model of the Cardiac Propagation Process*

Lorena Gonzalez Sal (Fundación CARTIF, Spain); Javier Pérez Turiel (Fundación CARTIF, Spain); Juan Fraile Marinero (Fundación CARTIF, Spain)

11:15 *Optically isolated current source*

Elisabeth Borges (University of Coimbra, Portugal); Carlos Correia (University of Coimbra, Portugal); Helena Pereira (University of Coimbra, Portugal); Edite Figueiras (Centro de Instrumentação, Portugal); Luís Filipe Requicha Ferreira (Centro de Instrumentação, Portugal); Joao Cardoso (University of Coimbra, Portugal)

11:30 *MBS Model for the Estimation of Forces and Torques in the Human Lumbar Spine*

Sabine Juchem (University Koblenz-Landau, Germany); Karin Gruber (University Koblenz-Landau, Germany)

11:45 *The way of treatment the drug abuse patients by the computerized fragmentary images in the Internet*

Vladyslav Vlastopulo (Biomedical Engineering, Ukraine)

Th. 02/13.12: SPECT and PET: Imaging Instrumentation and Multimodality Imaging

Room: Hall 11a Chair: Sibylle Ziegler (Klinikum rechts der Isar der TU München, Germany) , Iuliana Toma-Dasu (Stockholm University and Karolinska Institutet, Sweden)

10:30 *Prospectus: Development of a Compton camera for medical imaging*

Laura Harkness (University of Liverpool, United Kingdom); Andrew Boston (University of Liverpool, United Kingdom); Helen Boston (University of Liverpool, United Kingdom); John Cresswell (University of Liverpool, United Kingdom); A Grint (University of Liverpool, United Kingdom); Daniel Judson (University of Liverpool, United Kingdom); Ian Lazarus (Daresbury, United Kingdom); Paul Nolan (University of Liverpool, United Kingdom); David Oxley (University of Liverpool, United Kingdom); David Scraggs (University of Liverpool, United Kingdom); John Simpson (STFC Daresbury, United Kingdom)

10:45 *Design of a new Compton Camera by Monte Carlo method and assessment its important parameters affecting image quality*

Alireza Karimian (University of Isfahan, Iran); Bijan Jia (Ferdowsi University of meshed, Iran); Gholamreza Raisali (Research group for medicine, Iran); Farhad (Mohammad) Rahimi (Ferdowsi University of mashhad, Iran)

11:00 *Performance characteristics of a BGO and a GSO PET/CT scanner for the non-pure positron emitter Cu-64*

Annalisa Pepe (University of Milan, Italy); Annarita Savi (Institute San Raffaele, Italy); Mario Matarrese (Institute of Molecular Imaging and Physiology CNR, Italy); Luigi Gianolli (Institute San Raffaele, Italy); Francesco Sudati (Institute San Raffaele, Italy); Maria Carla Gilardi (University Milan-Bicocca, H. San Raffaele, IBFM-CNR, Italy)

11:15 *Comparison of Three Approaches for Timing Optimization of a Dual Layer LSO-APD Small Animal PET*

Arne Tapfer (Klinikum rechts der Isar, TU Muenchen, Germany); Virginia Spanoudaki (Stanford University, Germany); Alexander Mann (TU Muenchen, Germany); Sibylle Ziegler (Technische Universität München, Germany)

11:30 *Performance Tests and Preliminary Results of the 3TMR-BrainPET Scanner Installed at the Forschungszentrum Jülich*

Hans Herzog (Forschungszentrum Juelich, Germany); Lutz Tellmann (Forschungszentrum Juelich, Germany); Benjamin Marx (Forschungszentrum Jülich, Germany); Elena Rota Kops (Forschungszentrum Juelich, Germany); Jürgen Scheins (Research Center Jülich, Germany); Christoph Weirich (Forschungszentrum Jülich, Germany); Jon Shah (Forschungszentrum Juelich, Germany)

11:45 *Mathematical Simulation and Experimental Study of Detecting System for PET on Base Silicon Photomultipliers*

Valeri Saveliev (Obninsk State University, Russia); Vladimir Belyaev (Moscow Engineering and Physics Institute, Russia); Alisa Savelyeva (Moscow Engineering and Physics Institute, Russia)

12:00 *2D/3D registration of freehand SPECT and planar scintigraphy for clinical evaluation of 3D thyroid scintigraphy*

Xinxing Feng (Technische Universität München, Germany); Katarzyna Szajkowska (Technische Universität München, Germany); Tobias Lasser (Technische Universität München, Germany); Sibylle Ziegler

(Technische Universität München, Germany); Nassir Navab
(Technische Universität München, Germany); Thomas Wendler
(Technische Universität München, Germany)

12:15 FMDIB: a software tool for fusion of MRI and DHC-SPECT images of Brain

Mohammad Hossein Choopan Dastjerdi (Amirkabir University of Technology, Iran); Alireza Karimian (University of Isfahan, Iran); Hossein Afarideh (Amirkabir University of Technology, Iran); Ahmad Mohammadzadeh (Nuclear Science & Technology Research Institute (NSTRI), Iran)

Th. 09/13.2: Neural Interfaces (2): Technologies and Applications

Room: Hall 14b Chair: Nick Donaldson (University College London, United Kingdom), Thomas Stieglitz (Universität Freiburg, Germany)

10:30 Neuroelectronic interfaces with the central nervous systems – ethical issues

Steffen Rosahl (HELIOS Kliniken, Germany, Germany)

10:45 A Novel Assembly Method for Silicon-Based Neural Devices

Sebastian Kisban (University of Freiburg, Germany); Johannes Kenntner (University of Freiburg, Germany); Peter Janssen (KU Leuven, Belgium); Rene von Metzen (University of Freiburg, Germany); Stanislav Herwik (University of Freiburg, Germany); Ulrich Bartsch (University of Freiburg, Germany); Thomas Stieglitz (University of Freiburg, Germany); Oliver Paul (IMTEK, Germany); Patrick Ruther (University of Freiburg, Germany)

11:00 Prototyping all-polymer bioelectrical signal transducers

Axel Blau (Italian Institute of Technology, Italy); Angelika Murr (University of Kaiserslautern, Germany); Stefan Trellenkamp (Nano+Bio Center at the University of Kaiserslautern, Germany); Christian Dautermann (Nano+Bio Center at the University of Kaiserslautern, Germany); Sandra Wolff (Nano+Bio Center at the University of Kaiserslautern, Germany); Marc Heuschkel (Ayanda Biosystems SA, Switzerland); Jens Wüsten (Institut für Mikrotechnik Mainz GmbH, Germany); Christiane Ziegler (University of Kaiserslautern, Germany); Fabio Benfenati (Italian Institute of Technology, Italy)

11:15 Implanted Myo-neural Interface for Upper Limb Prosthesis

Prabhav Reddy (Christian Medical College, Vellore, India); Suresh Devasahayam (Christian Medical College, Vellore, India); Rajdeep Ojha (Christian Medical College, Vellore, India)

11:30 Performance of novel dry electrode EEG cap for evoked potential and band-power activity detection.

Cristian Grozea (Fraunhofer FIRST, Germany); Guido Nolte (Fraunhofer Institute, Germany); Florin Popescu (Fraunhofer Institute, Germany)

11:45 *Enhanced perception for visually impaired people evaluated in a real time setting*

Knut Moeller (Furtwangen University, Germany); Jan Moeller (Marie-Curie Gymnasium, Germany); Josef Guttman (Universitätsklinikum Freiburg, Germany)

Th. 01/13.4: Patient Safety

Room: Hall 13b Chair: Natalka Suchowerska (Royal Prince Alfred Hospital & The University of Sydney, Australia) , Brenda Clark (The Ottawa Hospital Cancer Centre, Canada)

10:30 *Learning From Incidents in Radiation Treatment*

Brenda Clark (The Ottawa Hospital Cancer Centre, Canada); Robert Brown (The Ottawa Hospital Cancer Centre, Canada); Jodi Ploquin (The Ottawa Hospital, Canada); Anneke Kind (The Ottawa Hospital Cancer Centre, Canada); Laval Grimard (The Ottawa Hospital Cancer Centre, Canada)

10:45 *Radioiodine Biokinetics and Dosimetry in Patients with Differentiated Thyroid Carcinoma and Renal Insufficiency*

Stella Veloza (German Cancer Research Center, Germany); Leonardo Rojas (Medical Doctor MD, Colombia); Michael Stabin (Vanderbilt University, USA); Gloria Garavito (Medical Doctor MD, Colombia); Augusto Llamas (Medical Doctor MD, Colombia)

11:00 *Robotic Phantom to Simulate Patient Breathing Motion*

Nihal Daniel Thomas (Monash University, Melbourne, Australia); Paul Ravindran (Christian Medical College, India)

11:15 *Proposals for a ICRU-50/62 -consistent dose prescription*

Markus Oechsner (University of Würzburg, Germany); Klaus Bratengeier (University of Würzburg, Germany); Mark Gainey (University of Würzburg, Germany); Michael Flentje (University of Würzburg, Germany)

11:30 *Performance and Clinical Trial in vivo of a Scintillation Dosimeter in Brachytherapy*

Lucy Cartwright (The University of Sydney, Australia); Mayank Nagory (The University of Sydney, Australia); David McKenzie (The University of Sydney, Australia); Natalka Suchowerska (Royal Prince Alfred Hospital, Australia)

11:45 *On line neutron dose evaluation in patients under radiotherapy*

Francisco Sánchez-Doblado (University of Sevilla, Spain)

12:00 *Camera-based independent couch height verification in radiation oncology*

Martijn Kusters (Radboud University Nijmegen Medical Centre, The Netherlands); Rob Louwe (Radboud University Nijmegen Medical Centre, The Netherlands); Roy Claessen (Panasonic Electric Works Sales Western Europe, The Netherlands); Ronald Seters (Panasonic

Electric Works Sales Western Europe, The Netherlands); Henk Huizenga (Radboud University Nijmegen Medical Centre, The Netherlands)

Th. 02/13.6: Inductive and Microwave Impedance Tomography

Room: Hall 14c Chair: Steffen Leonhardt (RWTH Aachen University, Germany) , Behcet Murat Eyuboglu (Middle East Technical University, Turkey)

10:30 *The effect of receiver coil orientation on the system performance in magnetic induction tomography*

Hermann Scharfetter (Graz University of Technology, Austria); Doga Gursoy (Graz University of Technology, Austria)

10:45 *A comparison of two phase measurement techniques for Magnetic Impedance Tomography*

Alistair McEwan (The University of Sydney, Australia); Matthias Hamsch (Philips Technologie GmbH, Germany); Stuart Watson (University of Glamorgan, United Kingdom); Claudia Igney (Philips Research Europe, Germany); Joachim Kahlert (Philips Technologie GmbH, Germany)

11:00 *J-Substitution and Filtered Equipotential-Projection Based Hybrid MREIT Reconstruction Algorithm*

Rasim Boyacıoğlu (Middle East Technical University, Turkey); Behcet Murat Eyuboglu (Middle East Technical University, Turkey)

11:15 *Feasibility of Lung Imaging Using Magnetic Induction Tomography*

Doga Gursoy (Graz University of Technology, Austria); Hermann Scharfetter (Graz University of Technology, Austria)

11:30 *Tidal Volume Monitoring with Electrical Impedance Tomography (EIT) on COPD patients. Relationship between EIT and Diffusion Lung Transfer (DL,CO)*

Marco Balleza (Universitat Politecnica de Catalunya, Spain); Pere Casan (Hospital de la Santa Creu i Sant pau, Spain); Pere Riu (Universitat Politecnica de Catalunya, Spain)

11:45 *Microwave Tomographic Imaging System for Extremities Soft Tissues Imaging*

Serguei Semenov (Keele University, United Kingdom)

12:00 *A new linear algebra based mathematical technique for Electrical Impedance Spectroscopy guided biopsy*

Shlomi Luafer (Hebrew University Jerusalem, Israel, Israel); Stephen Solomon (Department of Radiology Memorial Sloan-Kettering Cancer Center, USA); Boris Rubinsky (Hebrew University Jerusalem, Israel, Israel)

Th. 12/13.18: Technology Enhanced Education - EMITEL

Room: Hall 22b Chair: Slavik Tabakov (King's College Hospital London, United Kingdom) , Peter Smith (Northern Ireland Regional Medical Physics Agency, United Kingdom)

10:30 EMITEL e-Encyclopaedia of Medical Physics with Multilingual Dictionary

Slavik Tabakov (King's College Hospital London, United Kingdom)

10:45 Magnetic Resonance Imaging and Ultrasound Experience from the EMIT and EMITEL e-Learning and e-Encyclopedia Projects

Andrew Simmons (King's College London, United Kingdom)

11:00 EMITEL e-Encyclopaedia links with EMERALD e-Learning modules

Franco Milano (University of Florence, Italy)

11:15 Web site Development for EMITEL e-Encyclopaedia and Multilingual Dictionary

Magdalena Stoeva (AM Studio, Bulgaria); Asen Cvetkov (AM Studio, Bulgaria); Slavik Tabakov (King's College Hospital London, United Kingdom)

Th. 04/13.8: Modeling and Analysis of the Cardiovascular System (2)

Room: Hall 04a Chair: Jari Hyttinen (Tampere University of Technology, Finland)

10:30 Generating Heart Rate Variability - Application to Hybrid Modeling of Cardiorespiratory System

Wlodzimierz Klonowski (Polish Academy of Sciences, Poland)

10:45 Software for Simulating and Studying Cardiac Activation

Zaida Cebrian Jimenez (Tampere University of Technology, Finland); Juho Väisänen (Tampere University of Technology, Finland); Jari Hyttinen (Tampere University of Technology, Finland)

11:00 Towards Run Time Visualization in Cardiac Modeling

Matthias Reumann (IBM TJ Watson Research Center, USA); Christopher Morris (IBM, USA); David Keller (Universität Karlsruhe (TH), Germany); Gunnar Seemann (University Karlsruhe (TH), Germany); Olaf Doessel (Universität Karlsruhe (TH), Germany); Gregory Abram (IBM T. J. Watson Research Center, USA); John Rice (IBM T. J. Watson Research Center, USA)

11:20 Feedback-Feedforward Model of the Cold Face Test Response

Michel Kana (Czech Technical University, Czech Republic); Jiri Holcik (Masaryk University Brno, Czech Republic)

11:35 Ballistocardiographic spectrum studies with a tilt table

Jarmo Alametsä (TTY, Finland); Jari Viik (Tampere University of Technology, Finland)

Th. 07/13.10: Focus Session: Successful R&D Cooperation between Clinicians, Engineers and Statisticians

Room: Hall 02 Chair: Gudrun Stockmanns (Fraunhofer IMS, Germany) , Michael Imhoff (Ruhr-University Bochum, Germany)

10:30 ECG - the clinician

Robert Bauernschmitt (German Heart Center Munich, Germany)

10:45 ECG- the engineer

Hagen Malberg (FZK, Germany); Niels Wessel (Humboldt-Universität zu Berlin, Germany); Robert Bauernschmitt (German Heart Center Munich, Germany)

11:00 Neurophysiological Monitoring - the Clinician

Gerhard Schneider (Technische Universität München, Germany); Gudrun Stockmanns (Fraunhofer IMS, Germany); Denis Jordan (Technische Universität München, Germany); Eberhard Kochs (Technische Universität Munich, Germany)

11:15 Neurophysiological Monitoring - the Engineer

Gudrun Stockmanns (Fraunhofer IMS, Germany); Denis Jordan (Technische Universität München, Germany); Gerhard Schneider (Technische Universität München, Germany); Eberhard Kochs (Technische Universität Munich, Germany)

11:30 Medical Device Alarms – The Clinician

Michael Imhoff (Ruhr-University Bochum, Germany)

11:45 Medical Device Alarms – The Statistician

Roland Fried (University of Dortmund, Germany)

12:00 Panel Discussion R&D

Michael Imhoff (Ruhr-University Bochum, Germany); Gudrun Stockmanns (Fraunhofer IMS, Germany)

Th. 07/13.11: Circadian Rhythms

Room: Hall 03 Chair: Diane B. Boivin (Mc Gill University, Canada) , Van Someren Eus J.W. (Netherlands Institute for Neuroscience and VU Medical Center, The Netherlands)

10:30 Invited: Ambulatory monitoring of human behavior, physiology and environment – A Research and Development agenda to go beyond actigraphy

Van Someren Eus J.W. (Netherlands Institute for Neuroscience and VU Medical Center, The Netherlands)

11:00 A New Sensory Device and Optimal Position for Monitoring HR/RR during Sleep

Wenxi Chen (University of Aizu, Japan); Xin Zhu (University of Aizu, Japan); Tetsu Nemoto (Kanazawa University, Japan)

11:15 Circadian Behavior of Cardiovascular Variability

Martin Glos (Charité-Universitätsmedizin Berlin, CCM, Germany); Ingo Fietze (Charité-Universitätsmedizin Berlin, Algeria); Kathrin Pusch

(Humboldt-Universität zu Berlin, Germany); Alexander Blau (Charité-Universitätsmedizin Berlin, Germany); Gert Baumann (Charité-Universitätsmedizin Berlin, Germany); Thomas Penzel (Charité - Universitätsmedizin Berlin, Germany)

11:30 *Interaction Between Circadian and Homeostatic Regulation of Heart Rate Variability*

Philippe Boudreau (McGill University, Canada); Guy Dumont (University of British Columbia, Canada); Diane B. Boivin (Mc Gill University, Canada)

11:45 *A Characterization of Sleep Spindles in EEG*

Beena Ahmed (Texas A&M University at Qatar, Qatar); Amira Redissi (Texas A&M University at Qatar, Qatar); Reza Tafreshi (Texas A&M University at Qatar, Qatar)

12:00 *Heart Rate Spectrum Analysis for the automated Classification of Sleep Stages*

Sebastian Canisius (Philipps-University Marburg - Faculty of Medicine, Germany); Thomas Ploch (Philipps-University Marburg - Faculty of Medicine, Germany); Thomas Penzel (Charité - Universitätsmedizin Berlin, Germany); Dagmar Krefting (Charité - Universitätsmedizin Berlin, Germany); Andreas Jerrentrup (Philipps-University Marburg - Faculty of Medicine, Germany); Karl Kesper (University of Marburg, Germany)

11:00 - 12:15

Th. 13/13.1: Workshop: Writing & Reviewing Scientific Publications

Room: Hall 01 Chair: Colin Orton (Wayne State University, USA) , Fridtjof Nüsslin (Technische Universität München, Germany)

11:00 *Invited: Concerns of Editors and Publishers: Plagiarism, Rights of Authors, Open Access, etc.*

Colin Orton (Wayne State University, USA)

11:20 *Writing and Reviewing Scientific Publications*

William Hendee (Medical College of Wisconsin, USA)

11:40 *Invited: Reviewing and Editing of Scientific Papers*

Fridtjof Nüsslin (Technische Universität München, Germany)

12:15 - 13:00

Th. 13/Lunch: Writing and Reviewing Scientific Publications in BME

Room: Hall 03

12:15 *Quality rating of Papers and Scientists applied to Biomedical Engineering: How to improve our papers*

Jos Spaan (University of Amsterdam, The Netherlands)

12:30 *Writing Scientific Articles in Biomedical Engineering*

Shankar Krishnan (Wentworth Institute, USA)

Th. 12/13.18b: Round Table EMITEL Network

Room: B0 (Forum) Chair: Slavik Tabakov (King's College Hospital London, United Kingdom) , Cornelius Lewis (King's College Hospital, London, United Kingdom)

12:15 *Open Round Table Discussion*

Slavik Tabakov (King's College Hospital London, United Kingdom); Cornelius Lewis (King's College Hospital, London, United Kingdom); Franco Milano (University of Florence, Italy); Peter Smith (Northern Ireland Regional Medical Physics Agency, United Kingdom); Inger-Lina Lamm (Lund University Hospital, Sweden); Sven-Erik Strand (Med Lu, Sweden); Bo-Anders Jonsson (Med Lu, Sweden); Andrew Simmons (King's College London, United Kingdom); Stephen Keevil (Guy's and St Thomas' NHS Foundation Trust, United Kingdom); George Frey (Medical University of South Carolina, USA); Vassilka Tabakova (King's College Hospital London, United Kingdom); Stelios Christofides (Nicosia General Hospital, Cyprus); Fridtjof Nüsslin (Technische Universität München, Germany); Marta Radwanska (FTJ, Poland); Anchali Krisanachinda (Chula, Switzerland)

12:30 - 13:30

Th. 12/13.7b: WHO Call for Innovative Technologies Addressing Global Health

A request will be launched to the scientific and business communities to submit proposals for innovative technologies that address global health concerns, particularly with respect to low- and middle-income countries.

A lunch-meeting.

Room: Hall 05

13:30 - 14:30

Plenary 4

Room: Hall 01

13:30 *Status and Future of EHRs and EMRs*

Peter Waegemann (mHealth Initiative, USA)

14:00 *Biomaterials, Cellular and Tissue, Engineering, Artificial Organs*

Peter Fratzl (Max Planck Institute of Colloids and Interfaces, Germany)

14:45 - 16:30

Th. 09/14.2: Focus Session: Intracortical Probes: How to get Probes and Neurons Together

Room: Hall 14b Chair: Patrick Ruther (University of Freiburg, Germany)

14:45 Keynote: Designing Neural Prostheses: Contrasting Emerging Needs with Established Methodologies

Phil Troyk (Illinois Institute of Technology, USA)

15:15 Intracortical Microelectrode Arrays in Neural Recording: Performance and Reliability

Arto Nurmikko (Brown University, USA)

15:30 Implantable microscale neural interfaces: Progress and strategies for chronic neural recording

Daryl Kipke (University of Michigan, USA)

15:45 Bringing neurons and devices together in vivo using mechanical depth control of implanted microprobes(Muthaswamy)

Jit Muthuswamy (Arizona State University, USA)

16:00 Electronic depth control of probes

Patrick Ruther (University of Freiburg, Germany)

16:15 Next generation wireless neural interfaces from benchtop to bedside

Florian Solzbacher (University of Utah, USA)

Th. 12/14.18: Accreditation and Certification in BME and Medical Physics

The session will immediately be followed by the roundtable on the classification of medical physicists and medical/clinical engineers.

Room: Hall 22b Chair: Klemens Zink (University of Applied Sciences Gießen, Germany) , Lenka Lhotska (Czech Technical University in Prague, Czech Republic)

14:45 Keynote: The International Classification ISCO-08

D Hunter (ILO, Switzerland)

15:00 Invited: The Regulation of the Clinical Engineering Profession as an Important Contribution to Quality Assurance in Health Care

Joachim Nagel (University of Stuttgart, Germany)

15:15 An analysis concerning the theoretical and practical training of medical physicists in Europe

Ferid Shannoun (World Health Organization, Switzerland); Klemens Zink (University of Applied Sciences Gießen, Germany)

15:30 Accreditation and Certification in Biomedical Engineering in the Czech Republic

Lenka Lhotska (Czech Technical University in Prague, Czech Republic); Jaromir Cmiral (Czech Society for Biomedical Engineering and Medical Informatics, Czech Republic)

15:45 Certification of Clinical Engineers in Sweden

Per Ask (Linköpings universite, Sweden); Nils-Erik Pettersson (University Hospital, Örebro, Sweden); Kjell Andersson (3Department of Biomedical Engineering, Kärnshuset, Skövde, Sweden)

16:00 Assessment & Development of Competency of Clinical Engineering Practitioners - SE Asian Experience

Ashok Shah (CAHTMA, Malaysia); Azman Hamid (CAHTMA, Malaysia)

16:15 Employees' Commitment for ISO 9000 Implantation in a Philanthropic General Hospital: A Case Study by Multiple Correspondence Analysis

Joao Carlos Costa (COPPE-Federal University of Rio de Janeiro, Brazil); Roberto Ichinose (COPPE-Federal University of Rio de Janeiro, Brazil); Renan Moritz Almeida (COPPE-Federal University of Rio de Janeiro, Brazil); Antonio Fernando Infantsi (COPPE-Federal University of Rio de Janeiro, Brazil)

Th. 05/14.16: Computer Aided Diagnosis for Detection of Lesions

Room: Hall 21b Chair: Peter Herzog (Ludwig-Maximilians-University Munich, Germany, Germany) , Yoshikazu Uchiyama (Gifu University, Japan)

14:45 A CAD System for Screening X-ray Chest Radiography

Gábor Horváth (Budapest University of Technology and Economics, Hungary); Gergely Orbán (Budapest University of Technology and Economics, Hungary); Áron Horváth (Budapest University of Technology and Economics, Hungary); Gábor Simkó (Budapest University of Technology and Economics, Hungary); Béla Pataki (Budapest University of Technology and Economics, Hungary); Péter Máday (Budapest University of Technology and Economics, Hungary); Sándor Juhász (Budapest University of Technology and Economics, Hungary); Ákos Horváth (Innomed Medical Inc., Hungary)

15:00 Computer Assisted Imaging for Nodule detection on a Multi-slice CT Image

Manju Singh (National Physical Laboratory, India); Hari Singh (National Physical Laboratory, India)

15:15 Use of a Computer Aided Diagnosis (CAD) system to detect pulmonary nodules on Multidetector-Row-CT (MDCT) integrated into an existing, multi-vendor PACS environment: a survey-based assessment

Peter Herzog (Ludwig-Maximilians-University Munich, Germany, Germany); Sonja Kirchhoff (Ludwig-Maximilians-University Munich, Germany mail@p Herzog.com Germany, Germany); Dennis O'Dell (Siemens Medical Solutions, Siemens AG, USA); Marcos Salganicoff (Siemens Medical Solutions, Siemens AG, USA); Konstantin Nikolaou (Ludwig-Maximilians-University Munich, Germany, Germany); Maximilian Reiser (Ludwig-Maximilians-University Munich, Germany, Germany)

15:30 Performance of an prototype computer aided diagnosis (CAD) tool for the detection of lymph nodes at multidetector-row CT

Peter Herzog (Ludwig-Maximilians-University Munich, Germany, Germany); Rene Korn (Definiens AG, Germany); Johann Kim (Definiens AG, Germany); Konstantin Nikolaou (Ludwig-Maximilians-University Munich, Germany, Germany); Gerd Binnig (Definiens AG,

Germany); Maximilian Reiser (Ludwig-Maximilians-University Munich, Germany, Germany)

15:45 Performance of an prototype computer aided diagnosis (CAD) tool for the volumetric assessment of lymph nodes at multidetector-row CT data

Peter Herzog (Ludwig-Maximilians-University Munich, Germany, Germany); Konstantin Nikolaou (Ludwig-Maximilians-University Munich, Germany, Germany); Johann Kim (Definiens AG, Germany); Markus Kietzmann (Definiens AG, Germany); Gerd Binnig (Definiens AG, Germany); Maximilian Reiser (Ludwig-Maximilians-University Munich, Germany, Germany)

16:00 Computer Aided Detection of Hepatic Nodules in DCE MR Images

Jing Fang (Peking University, P.R. China); Dong Jiao Lv (Peking University, P.R. China)

16:15 CAD Scheme for differential diagnosis of lacunar infarcts and normal Virchow-Robin spaces on brain MR images

Yoshikazu Uchiyama (Gifu University, Japan); Takahiko Asano (Gifu University, Japan); Takeshi Hara (Gifu University, Japan); Hiroshi Fujita (Gifu University, Japan); Hiroaki Hoshi (Gifu University, Japan); Toru Iwama (Gifu University, Japan); Yasutomi Kinoshita (Gifu University, Japan)

Th 03 /14.15: Criteria for Acceptability of Radiological (including Radiotherapy) and Nuclear Medicine Installations

Room: Hall 21a Chair: Keith Faulkner (Quality Assurance Reference Centre, Wallsend, Newcastle, United Kingdom) , Jim Malone (Trinity College, Ireland)

14:45 Criteria for Acceptability for Radiological, Nuclear Medicine and Radiotherapy Equipment - Part 1: Introduction and Methodology

Keith Faulkner (Quality Assurance Reference Centre, Wallsend, Newcastle, United Kingdom); Jim Malone (Trinity College, Ireland); Stelios Christofides (Nicosia General Hospital, Cyprus); Stephen Lillicrap (University of Bath, United Kingdom)

15:00 Criteria for Acceptability for Radiological, Nuclear Medicine and Radiotherapy Equipment - Part 2: Radiological Equipment

Jim Malone (Trinity College, Ireland); Alexandra Schreiner-Karousou (Ministry of Health, Luxemburg); Hans Zoetelief (Delft University of Technology, The Netherlands); Ian Mclean (International Atomic Energy Agency, Austria); Stephen Balter (Columbia University, USA); Eliseo Vano (Complutense University of Madrid, Spain); Hilde Bosmans (KU Leuven, Belgium); Norbert Bischof (IEC, Siemens Ltd, Germany); Remy Klausz (GE Healthcare, France); Annita Dowling (St. James's Hospital, Dublin, Ireland); Una O'Connor (St. James's Hospital, Dublin, Ireland); Colin Walsh (St James's Hospital, Dublin, Ireland); Aoife Gallagher (St. James's Hospital, Dublin, Ireland); Keith Faulkner (Quality Assurance Reference Centre, Wallsend, Newcastle, United Kingdom)

15:15 *Criteria for Acceptability for Radiological, Nuclear Medicine and Radiotherapy Equipment - Part 3: Radiotherapy Equipment*

Patrick Horton (QA Reference Centre, Wallsend, Newcastle, United Kingdom); Inger-Lina Lamm (Lund University Hospital, Sweden); Wolfgang Lechmann (University Hospital of Saarland, Germany); Stephen Lillicrap (University of Bath, United Kingdom)

15:30 *Criteria for Acceptability for Radiological, Nuclear Medicine and Radiotherapy Equipment - Part 4: Nuclear Medicine Equipment*

Stelios Christofides (Nicosia General Hospital, Cyprus); Lesley Malone (Formerly Beaumont Hospital, Ireland); Sören Mattsson (Lund University, Sweden); Patrick Horton (QA Reference Centre, Wallsend, Newcastle, United Kingdom)

15:45 *Comprehensive Evaluation of On-position Leakage from Source Head of Bhabhatron-II Telecobalt Unit*

Sunil Dutt Sharma (Bhabha Atomic Research Centre, India); Rajesh Kumar (Bhabha Atomic Research Centre, India); Dayal Kar (Bhabha Atomic Research Centre, India)

16:00 *Linear Accelerator Direct Shielded Doors – An Approach for Calculating the Specialized Shielding Required Adjacent to the Door*

Melissa Martin (Therapy Physics Inc., USA)

16:15 *New Materials for Radiation Protection Buildings Monte Carlo Simulations and Measurements for X-rays Protons and Carbon Ions*

Reinhold Mueller (University Erlangen-Nuernberg, Germany); Jan Forster (Forster Bau Ingenieurgesellschaft GmbH, Germany); Renate Forster (Forster Bau Ingenieurgesellschaft GmbH, Germany); Nils Achterberg (University Erlangen-Nuremberg, Germany); Jürgen Karg (Universitätsklinikum Erlangen, Germany); Otto Pravida (Pravida Bau GmbH, Germany)

Th. 06/14.12: Soft Tissue and Vessel Based Navigation

Room: Hall 11a Chair: Stefan Weber (University of Bern, Switzerland)

14:45 *Volume Rendering for Planning and Performing Neurosurgical Interventions*

Urs Eisenmann (University of Heidelberg, Germany); Andreas Freudling (University of Heidelberg, Germany); Roland Metzner (University of Heidelberg, Germany); Marius Hartmann (University of Heidelberg, Germany); Christian Rainer Wirtz (University Hospital Ulm, Germany); Hartmut Dickhaus (University of Heidelberg, Germany)

15:00 *Quaternion: An Alternate Approach to Medical Navigation*

Josef Kozak (Aesculap AG, Germany)

15:15 *Needle Insertion Test by Porcine Ligamentum Flavum*

Kiyoshi Naemura (Tokyo University of Technology, Japan)

15:30 *Multisensor Soft Tissue Navigation for the Controlled Guidance in Intra-Cardiac Microsurgery*

Melina Brell (OFFIS Institute for Information Technology, Germany)

Th. 04/14.3: Magnetic Particle Imaging

Room: Hall 13a Chair: Andreas Yonas (Institut Teknologi Bandung, Indonesia) , Elzbieta Olejarczyk (Institute of Biocybernetics and Biomedical Engineering PAS, Poland)

14:45 *Keynote: Magnetic Particle Imaging – Challenges and Promises of a new Modality*

Thorsten Buzug (University of Luebeck, Germany); Sven Biederer (University of Luebeck, Germany); Tobias Knopp (University of Luebeck, Germany); Timo Sattel (University of Luebeck, Germany); Kerstin Lüdtkke-Buzug (University of Luebeck, Germany)

15:15 *Magnetic Particle Imaging - Hardware and Results*

Ingo Schmale (Philips Technology GmbH Forschungslaborator, Germany)

15:30 *Single-Sided Coil Configuration for Magnetic Particle Imaging*

Timo Sattel (University of Luebeck, Germany); Sven Biederer (University of Luebeck, Germany); Tobias Knopp (University of Luebeck, Germany); Kerstin Lüdtkke-Buzug (University of Luebeck, Germany); Thorsten Buzug (University of Luebeck, Germany)

15:45 *Optimizing Coil Currents for reduced SAR in Magnetic Particle Imaging*

Julia Bohnert (Universität Karlsruhe (TH), Germany); Bernhard Gleich (Philips Research Europe, Germany); Juergen Weizenecker (Philips Research Europe, Germany); Joern Borgert (Philips Research Europe, Germany); Olaf Doessel (Universität Karlsruhe (TH), Germany)

16:00 *Assembly for One-dimensional Magnetic Particle Imaging*

Thilo Wawrzik (TU Braunschweig, Germany); Frank Ludwig (TU Braunschweig, Germany); Meinhard Schilling (Technische Universität Braunschweig, Germany)

Th. 07/14.7: Focus Session: Progress in Heart-Lung-Machines and Heart Assist Devices

Room: Hall 05 Chair: Thomas Schmitz-Rode (RWTH Aachen, Germany) , Martin Hexamer (Ruhr-Universität Bochum, Germany)

14:45 *Invited: Concepts for Simplifying Automatic Blood-Gas Control during Extracorporeal Circulation*

Martin Hexamer (Ruhr-Universität Bochum, Germany); Jürgen Werner (Ruhr-Universität Bochum, Germany); Berno Misgeld (Ruhr-Universität Bochum, Germany)

15:15 *In Vivo Validation of an Automatic Controlled Extracorporeal Membrane Oxygenator*

Tobias Wartzek (RWTH Aachen University, Germany); Marian Walter (RWTH Aachen University, Germany); Thomas Schmitz-Rode (RWTH Aachen, Germany); Stefan Kowalewski (RWTH Aachen University, Germany); Rolf Rossaint (Universitätsklinikum Aachen, Germany); Steffen Leonhardt (RWTH Aachen University, Germany)

15:30 *The Aachen MiniHLM – A Miniaturized Heart Lung Machine for Neonates with Congenital Heart Defect*

Jutta Arens (RWTH Aachen University, Germany); Heike Schnöring (University Hospital Aachen, RWTH Aachen University, Germany); Michael Pfennig (RWTH Aachen University, Germany); Ilona Mager (RWTH Aachen University, Germany); Jaime Vázquez-Jiménez (University Hospital Aachen, RWTH Aachen University, Germany); Thomas Schmitz-Rode (RWTH Aachen, Germany); Ulrich Steinseifer (RWTH Aachen, Germany)

15:45 *AutoMedic: Fuzzy-Control Development Platform for a Portable Heart-Lung Machine*

Alejandro Mendoza (Technische Universität München, Germany); Benedikt Baumgartner (Technischen Universität München, Germany); Ulrich Schreiber (Technische Universität München, Germany); Markus Krane (German Heart Center Munich, Germany); Alois Knoll (Technical University Munich, 85748 Garching, Germany); Robert Bauernschmitt (German Heart Center Munich, Germany)

16:00 *Cardiac Contractility Assessment in Rotary Blood Pump Recipients Derived from Pump Flow*

Phornphop Naiyanetr (Medical University of Vienna, Austria); Francesco Moscato (Medical University of Vienna, Austria); Michael Vollkron (Medical University of Vienna, Austria); Philipp Zrunek (Medical University of Vienna, Austria); Georg Wieselthaler (Medical University of Vienna, Austria); Heinrich Schima (Allgemeines Krankenhaus Wien, Austria)

16:15 *In-vitro and In-vivo testing of the BiVACOR Rotary BiVAD/TAH*

Daniel Timms (RWTH Aachen University, Germany); John Fraser (The Prince Charles Hospital, Australia); Bruce Thompson (The Prince Charles Hospital, Australia); Keith McNeil (The Prince Charles Hospital, Australia); Ulrich Steinseifer (RWTH Aachen, Germany)

Th. 01/14.4: Respiration and Tracking

Room: **Hall 13b** Chair: Di Yan (Beaumont, USA)

14:45 *Real-Time Compensation of Target Motion with a Dynamic Multileaf Collimator*

Martin Tacke (German Cancer Research Center, Germany); Simeon Nill (German Cancer Research Center, Germany); Uwe Oelfke (DKFZ, Germany)

15:00 *Segmented Deformable Registration for Improved Modeling of the Lungs*

Yaoqin Xie (Peking University, P.R. China); Wu Liu (Stanford University, USA); Ming Chao (Stanford University School of Medicine, USA); Shanglian Bao (Peking University, P.R. China); Xing Lei (Stanford University, USA)

15:15 *Quality assurance and application of a 4D in vivo dosimetry system using a deformable lung phantom*

Joanna Cygler (Ottawa Hospital Cancer Centre, Carleton University, Canada); Amanda Cherpak (Carleton University, Canada); Monica Serban (Maisonneuve-Rosemont Hospital, Canada); Jan Seuntjens (Maisonneuve-Rosemont Hospital, McGill University, Canada)

15:30 *Inter-fraction Respiratory Motion Pattern Variability of Pulmonary Lesions*

Sonke Jan-Jakob (Netherlands Cancer Institute - Antoni van Leeuwenhoek Hospital, The Netherlands)

Th. 07/14.11: Human Factors and Risk Management

Room: Hall 03 Chair: Uvo M. Hölscher (Münster University of Applied Sciences, Germany) , Tony Easty (University Health Network, Canada)

14:45 *Human Factors and Patient Safety*

Uvo M. Hölscher (Münster University of Applied Sciences, Germany)

15:00 *Improving Safety in Healthcare through the Establishment of a Healthcare Human Factors Team*

Tony Easty (University Health Network, Canada)

15:15 *Clinical Engineering Incorporating Human Factors Engineering into Risk Management*

Marcos Signori (Biomedical Engineering Institute, Brazil); Renato Garcia (IEB-UFSC, Brazil)

15:30 *Supporting Tool for Usability Specifications*

David Grosse-Wentrup (Münster University of Applied Sciences, Germany); Alexandra Stier (Muenster University of Applied Sciences, Germany); Uvo M. Hölscher (Münster University of Applied Sciences, Germany)

15:45 *Design-phase-specific Selection of User Research Methods*

Christina Wieczoreck (Muenster University of Applied Science, Germany); Uvo M. Hölscher (Münster University of Applied Sciences, Germany)

16:00 *Risks Involved With Medical Device Use in a Home Care Program*

Ciro Mestas (State University of Campinas, Brazil); Saide Calil (Campinas State University, Brazil)

16:15 *Hospital-Based HTA for medical software*

Fabrizio Dori (University of Florence, Italy); Ernesto Iadanza (Università degli Studi di Firenze, Italy); Roberto Miniati (University of Florence, Italy); Mario Fregonara Medici (AOU Careggi Hospital of Florence, Italy)

Th. 06/14.17: The Impact of NOTES

Room: Hall 22a Chair: Hubertus Feussner (Klinikum rechts der Isar, TU München, Germany)

14:45 Invited: Single Port Surgery and NOTES Activities in 29 years
Gerhard Buess (University of Tuebingen, Germany)

15:15 A novel instrumentation set for NOTES antireflux procedures
Armin Schneider (TU München, Germany); Dirk Wilhelm (TU München, Germany); Alexander Meining (TU München, Germany); Stefan v. Delius (TU München, Germany); Salman Can (TU München, Germany); Adam Fiolka (TU München, Germany); Hubert Kübler (TU München, Germany); Hubertus Feussner (Klinikum rechts der Isar, TU München, Germany)

15:30 Development and validation of a new ex vivo training unit for NOTES
Sonja Gillen (Klinikum Rechts der Isar, Germany); Stephanie Simka (Klinikum rechts der Isar, Germany); Adam Fiolka (TU München, Germany); Hubertus Feussner (Klinikum rechts der Isar, TU München, Germany)

15:45 Prospective Evaluation of a fluid driven electromagnetic support system for solo-surgery
Felix Härtl (TU München, Germany); Johannes Maifeld (TU München, Germany); Armin Schneider (TU München, Germany); Hubertus Feussner (Klinikum rechts der Isar, TU München, Germany)

16:00 A smart generic micro-drilling tool applied in Cochleostomy
Peter Brett (Aston University, United Kingdom)

16:15 A new partially autonomous camera control system
Marcin Polski (TU München, Germany); Adam Fiolka (TU München, Germany); Salman Can (TU München, Germany); Armin Schneider (TU München, Germany); Hubertus Feussner (Klinikum rechts der Isar, TU München, Germany)

Th. 05/14.1: New Developments in Telemedicine

Room: Hall 01 Chair: Heinz U. Lemke (Universität Leipzig, Germany)

14:45 A Software Architecture for a Telematic Rescue Assistance System
Michael Protogerakis (RWTH Aachen, Germany); Arno Gramatke (RWTH Aachen University, Germany); Klaus Henning (RWTH Aachen Germany, Germany)

15:00 *Innovation of homely rehab with help of telemedical services*

Alexander Mertens (RWTH Aachen University, Germany); Bernhard Kausch (RWTH Aachen University, Germany); Daniel Dünnebacke (RWTH Aachen University, Germany)

15:15 *Innovation Barriers for Telemonitoring*

Hans-Georg Gruber (Technische Universität München, Germany); Bernhard Wolf (Technische Universität München, Germany); Michael Reiher (Universität Bayreuth, Germany)

15:30 *Feasibility and Effectiveness of Home Care Telemedicine: Analysis of the disease management program Zertiva®*

Matthias Goernig (University Hospital of Jena, Germany); Anja Kwetkat (University Hospital of Jena, Germany); Bernhard Brehm (University Hospital of Jena, Germany); Fidorra Kai (PHTS Telemedicine, Germany); Arie Roth (Tel-Aviv Sourasky Medical Center, Israel); Hans Reiner Figulla (University of Jena, Germany); Uwe Leder (Department of Internal Medicine I, University Hospital Jena, Germany, Germany)

15:45 *Web 2.0 and social networking: perspectives of a healthcare web portal*

Michele Bava (Institute for Maternal and Child Health IRCCS "Burlo Garofolo", Italy); Antonio Zambon (Institute for Maternal and Child Health IRCCS "Burlo Garofolo", Italy); Liza Vecchi Brumatti (Institute for Maternal and Child Health IRCCS "Burlo Garofolo", Italy); Agostino Accardo (University of Trieste, Italy); Giorgio Tamburlini (Institute for Maternal and Child Health IRCCS "Burlo Garofolo", Italy)

16:00 *Development of a telemedical system for monitoring patients with chronic respiratory diseases*

Adam Polak (Wrocław University of Technology, Poland); Grzegorz Głomb (Wrocław University of Technology, Poland); Tomasz Guskowski (Wrocław University of Technology, Poland); Ireneusz Jabłoński (Wrocław University of Technology, Poland); Bogdan Kasprzak (Wrocław University of Technology, Poland); Janusz Pękala (Wrocław University of Technology, Poland); Andrzej Stępień (Wrocław University of Technology, Poland); Zbigniew Świerczyński (Wrocław University of Technology, Poland); Janusz Mroczka (Wrocław University of Technology, Poland)

16:15 *Telemedical control of a robotic external fixator*

Robert Wendlandt (University Hospital Schleswig-Holstein, Germany); Klaus Seide (Berufsgenossenschaftliches Unfallkrankenhaus Hamburg, Germany); Jörg Müller (TU Hamburg Harburg, Germany)

Th. 04/14.8: Bioelectric Data and Heart Rate Variability

Room: Hall 04a Chair: Luca Mainardi (Polytechnic University of Milan, Italy) , Bernhard Hensel (Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany)

14:45 *Non-stationary Langevin equation in cardiology*

Jens Kirchner (Biotronik GmbH & Co. KG, Germany); Bernhard Hensel (Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany); Wolfgang Meyer (Biotronik, Germany)

15:00 *Special Features of Impedance Precardiac Mapping*

Sergey Shchukin (Bauman Moscow State Technical University, Russia); Alexander Kobelev (Bauman Moscow State Technical University, Russia); Larisa Safonova (Bauman Moscow State Technical University, Russia); Yuri Gulyaev (Russian Academy of Sciences, Russia)

15:15 *Transfer Function Estimation of the Right Ventricle of Canine Heart*

Elnaz Shokrollahi (Ryerson University, Canada); Sri Krishnan (Ryerson University, Canada); Kumar Nanthakumar (University Health Network, Canada)

15:30 *A Study on Comparison PPG Variability with Heart Rate Variability in the Sitting Position During Paced Respiration*

Chungkeun Lee (Yonsei University, Korea); Hang Sik Shin (Yonsei University, Korea); Sedong Min (Yonsei University, Korea); Myoung-Ho Lee (Graduate School of Yonsei University, Korea)

15:45 *Autonomic heart rate control by multifractal tools*

Danuta Makowiec (University of Gdańsk, Poland)

16:00 *Isopotential ECG Imaging Correctly Identified Endocardial Ectopic Activation Site in the Case of Arrhythmia from Right Ventricular Outflow Tract*

Petr Stovicek (Charles University, Czech Republic); Stepan Havranek (Charles University, Czech Republic); Jan Simek (Charles University, Czech Republic); Martin Zbornik (Charles University, Czech Republic); Mikulas Mlcek (Charles University, Czech Republic); Otomar Kittnar (Charles University, Czech Republic)

16:15 *Hidden Markov Models for Classification of Heart Rate Variability in RR Time Series*

Torsten Lowitz (Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany); Manuel Ebert (Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany); Wolfgang Meyer (Biotronik, Germany); Bernhard Hensel (Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany)

Th. 01/14.9: Biomedical Imaging

Room: Hall 04b **Chair:** Robert Jeraj (University of Wisconsin, USA) , Ludwig Bogner (University of Regensburg, Germany)

14:45 *Imaging for the definition of biological targets by MR*

Andreas Boss (Eberhard-Karls-University of Tübingen, Germany)

15:00 *Imaging for the definition of biological targets by PET*

Xavier Geets (Université Catholique de Louvain, Belgium)

15:15 Quantitative functional imaging with MRI

Roberto Alonzi (Mount Vernon Hospital, United Kingdom)

15:30 Quantitative functional imaging by PET

Michael Mix (Uni. Klinik Freiburg, Germany)

15:45 Determination of Dose Escalation Region in Malignant Brain tumors for Radiation Treatment Planning Based on Apparent Diffusion Coefficient Map

Ji-Yeon Park (The Catholic University of Korea, Korea); Kook-Jin Ahn (Kangnam St. Mary's Hospital, Korea); Dong-Cheol Woo (The Catholic University of Korea, Korea); Jeong-Woo Lee (Konkuk University hospital, Korea); Jin-Young Kim (The Catholic University of Korea, Korea); Won-Kyun Chung (The Catholic University of Korea, Korea); Bo-Young Choe (The Catholic University of Korea, Korea); Tae-Suk Suh (The Catholic University of Korea, Korea)

16:00 Kinetic Modelling of dynamic biomolecular images

Ralph Buchert (UKE Hamburg, Germany)

16:15 In-hospital neutron autoradiography for Boron Neutron Capture Therapy applications

Andrea Mattera (University of Insubria, Italy); Davide Bolognini (University of Insubria, Italy); Said Hasan (Univesity of Insubria, Italy); Michela Prest (Univesity of Insubria, Italy); Erik Vallazza (INFN Trieste, Italy); Gianrossano Giannini (INFN Trieste, Italy); Pasquale Cappelletti (Azienda Ospedaliera S.Anna (Como), Italy); Milena Frigerio (Azienda Ospedaliera S.Anna (Como), Italy); Stefania Gelosa (Azienda Ospedaliera S.Anna (Como), Italy); Angelo Monti (Azienda Ospedaliera S.Anna (Como), Italy); Angelo Ostinelli (Azienda Ospedaliera S.Anna (Como), Italy); Pierluigi Mauri (CNR Milan - ITB, Italy); Fabrizio Basilico (CNR Milan - ITB, Italy); Alba Zanini (INFN Torino, Italy); Enrica Capelli (University of Pavia, Italy); Patrizia Chiari (University of Pavia, Italy); Piero Borasio (Azienda Universitaria Ospedaliera S. Luigi (Orbassano), Italy)

Th. 13/14.13: EFOMP Symposium: Education & Training in Medical Physics

Room: Hall 11b Chair: Stelios Christofides (Nicosia General Hospital, Cyprus) , Anchali Krisanachinda (Chulalongkorn University, Thailand)

14:45 Education, clinical training and professional recognition of medical physicists

Ahmed Meghzifene (Internatinal Atomic Energy Agency, Austria)

15:00 Education and Training of the Medical Physicist in Europe

Stelios Christofides (Nicosia General Hospital, Cyprus); Wolfgang Schlegel (Deutsches Krebsforschungszentrum, Germany); Renato Padovani (SO di Fisica Sanitaria, Italy); Peter Sharp (University of Aberdeen & Grampian Hospitals NHS Trust, United Kingdom); Alberto Torresin (Azienda Ospedale Niguarda, Italy); Marta Wasilewska-Radwanska (AGH University of Science and Technology, Poland); Wil

van der Putten (University Hospital Galway, Ireland); Eduardo Guibelalde (Universidad Complutense, Spain); Kay-Uwe Kasch (University of Applied Sciences (TFH), Germany)

15:15 *Medical Physics Education and Training in South East Asia*

Anchali Krisanachinda (Chulalongkorn University, Thailand); James Lee (National Cancer Centre, Singapore); Nguyen Hoa (Cho Ray Hospital, Vietnam); Djarwani Soejoko (University of Indonesia, Indonesia); Kwan Ng (University of Malaya, Malaysia); Toh Wong (National Cancer Centre, Singapore)

15:30 *Status of Education and Training in Africa: Focus on South Africa*

William Rae (University of the Free State, South Africa)

15:45 *AFOMP's Draft Policy #2: "Recommended Clinical Radiation Oncology Medical Physicist Staffing Levels in AFOMP Countries"*

Kwan Hoong Ng (University of Malaya, Malaysia); William Round (University of Waikato, New Zealand); Yak Tay (Gleneagles Hospital, Singapore)

16:00 *Medical Physics Degree: A mature choice for Greece*

Constantinos Koutsojannis (Technological Educational Institute of Patras, Greece)

16:15 *The Future of Medical Physics. The Role of Medical Physics in Research and Development. An Opinion*

Stelios Christofides (Nicosia General Hospital, Cyprus)

Th. 13/14.6: Fundamentals of Cell Electroporation

Room: Hall 14c Chair: Damijan Miklavcic (University of Ljubljana, Slovenia) , Lluís Mir (UMR 8121 CNRS-Institut Gustave-Roussy, France)

14:45 *Invited: Nanosecond-duration electric pulses open nanometer-size pores in cell plasma membrane*

Andrei Pakhomov (Old Dominion University, USA); Bennett Ibey (AFRL, USA); Angela Bowman (ODU, USA); Frank Andre (ODU, USA); Olga Pakhomova (UT Health Science Center, USA)

15:15 *Electroporation and Beyond: The Action of Nanosecond Pulsed Electric Field*

Uwe Pliquett (Institute for Bioprocessing and Analytical Measurement Techniques, Germany)

15:30 *Electric Field Redistribution due to Conductivity Changes during Tissue Electroporation: Experiments with a Simple Vegetal Model*

Antoni Ivorra (University of California at Berkeley, USA); Lluís Mir (UMR 8121 CNRS-Institut Gustave-Roussy, France); Boris Rubinsky (University of California at Berkeley, USA)

15:45 *Influence of anisotropic tissue electrical conductivity on electric field and temperature distribution during electroporation-based therapy*

Igor Lackovic (University of Zagreb, Croatia); Ratko Magjarevic (University of Zagreb, Croatia); Damijan Miklavcic (University of Ljubljana, Slovenia)

16:00 *The influence of intracellular connections on the electric field induced membrane voltage and electroporation of cells in clusters*

Gorazd Pucihar (University of Ljubljana, Slovenia); Damijan Miklavcic (University of Ljubljana, Slovenia)

16:15 *Method for treatment planning of tissue ablation by irreversible electroporation*

Anze Zupanic (University of Ljubljana, Slovenia); Damijan Miklavcic (University of Ljubljana, Slovenia)

15:15 - 16:30

Th. 04/14.14: Focus Session: Signal Processing in Atrial Fibrillation (2)

Room: Hall 12b Chair: Leif Sörnmo (Lund University, Sweden) , Flavia Ravelli (University of Trento, Italy)

15:15 *A new approach for automated location of active segments in intracardiac electrograms*

Minh Phuong Nguyen (Universität Karlsruhe (TH), Germany); Christopher Schilling (Universität Karlsruhe (TH), Germany); Olaf Doessel (Universität Karlsruhe (TH), Germany)

15:30 *Non-Linear Energy Operator for the Analysis of Intracardial Electrograms*

Christopher Schilling (Universität Karlsruhe (TH), Germany); Minh Phuong Nguyen (Universität Karlsruhe (TH), Germany); Armin Luik (Städtisches Klinikum Karlsruhe, Germany); Claus Schmitt (Städtisches Klinikum Karlsruhe, Germany); Olaf Doessel (Universität Karlsruhe (TH), Germany)

15:45 *Evaluation of Endocardial Electrograms Fractionation Complexity in Human Using Statistical Pattern Recognition*

Václav Křemen (Faculty of Electrical Engineering, Czech Technical University in Prague, Czech Republic); Lenka Lhotska (Czech Technical University in Prague, Czech Republic)

16:00 *Fast detection of Atrial Fibrillation using wavelet transform*

Peter Bakucz (GS Elektromedizinische Geräte GmbH, Germany); Stephan Willems (University of Hamburg, Heartcenter, Germany); Boris Hoffmann (University of Hamburg, Heartcenter, Germany)

16:15 *Velocity Field Analysis of Activation Maps in Atrial Fibrillation. A Simulation Study*

Michela Masè (University of Trento, Italy); Maurizio Del Greco (Santa Chiara Hospital, Trento, Italy); Massimiliano Marini (Santa Chiara Hospital, Trento, Italy); Flavia Ravelli (University of Trento, Italy)

16:30 *Development of New Cluster Descriptors for Image Analysis of Poincaré Plots*

Duong (Information and Communication University, Korea); Hyekyung Jeong (Information and Communications University, Korea); Chan-Hyun Youn (Information and Communications University, Korea); Desok Kim (KAIST, Korea)

Th. 04/14.5: Methods in Modeling and Simulation

Room: Hall 14a Chair: Katrin Lunze (RWTH Aachen, Germany)

15:15 *Mutual Information Preconditioning Improves Bayesian Networks Learning of Medical Databases*

Antonella Meloni (University of Pisa, Italy); Andrea Ripoli (G Monasterio Foundation, Pisa, Italy); Vincenzo Positano (G Monasterio Foundation, Pisa, Italy); Luigi Landini (University of Pisa, Italy)

15:30 *Improved Landmark Initialization for 3D Statistical Shape Model Generation*

Sebastian Gollmer (University of Luebeck, Germany); Thorsten Buzug (University of Luebeck, Germany)

15:45 *A System for Performing Automated Measurements on Large Bone Databases*

Heiko Gottschling (Technische Universität München, Germany); Rainer Burgkart (Klinikum Rechts der Isar, Technical University of Munich, Germany)

16:00 *Aquaporin -1 and Transendothelial Water Transport: A Possible Role in Atherosclerosis?*

Shripad Joshi (Graduate Student, USA); David Rumshitzki (Professor of Chemical Engineering, USA)

16:15 *Modeling biological systems in Laplace Domain for Synthetic Biology Design*

Chueh Loo Poh (Nanyang Technological University, Singapore); Lu Chao Cui (Nanyang Technological University, Singapore); Richard Kitney (Imperial College London, United Kingdom)

16:30 *Mathematical modeling of the push-pull effect: Effect of acceleration profiles*

Yang Liu (Fourth Military Medical University, P.R. China); Chun Jiao (Fourth Military Medical University, P.R. China); Hongbing Lu (Fourth Military Medical University, P.R. China); Li-fan Zhang (Fourth Military Medical University, P.R. China)

16:45 *Interactive Catalogue of Models in Biomedical Engineering*

Lenka Lhotska (Czech Technical University in Prague, Czech Republic); Vladimir Eck (Czech Technical University in Prague, Czech Republic)

Th. 04/14.10: Flow in Cerebral and Abdominal Aneurysms

Room: Hall 02 Chair: Hermann Berger (Technical University Munich, Germany)

15:15 Invited: Increased Blood Flow Induced Aneurysmal Initiation at the Bifurcation Apex

Hiroshi Ujiie (Tokyo Women's Medical University, Japan)

15:30 Cerebral Aneurysm Hemodynamics and a Length of Parent Vessel

Jens Pöthke (Charité - Universitätsmedizin Berlin, Germany); Andreas Spuler (Helios Hospital Berlin-Buch, Germany); Christoph Petz (Konrad Zuse Institute (ZIB), Germany); Hans-Christian Hege (Konrad Zuse Institute (ZIB), Germany); Leonid Goubergrits (Charité, Germany); Klaus Affeld (Charité, Germany); Ulrich Kertzscher (Charité - Universitätsmedizin Berlin, Germany)

15:45 Impact of model complexity on patient specific wall stress analyses of abdominal aortic aneurysms

Andreas Maier (Technische Universität München, Germany); Michael Gee (Technische Universität München, Germany); Christian Reeps (Technische Universität München, Germany); Hans-Henning Eckstein (Technische Universität München, Germany); Wolfgang Wall (Technische Universität München, Germany)

16:30 - 18:00

Th. 12/18.18: Roundtable on the Classification of Medical Physicists and Medical/Clinical Engineers

Panelists: Representatives of the International Labour Organization (ILO), the International Atomic Energy Agency (IAEA), the World Health Organization (WHO), IUPESM, IFMBE, IOMP, EFOMP, DGBMT and DGMP.

Panel discussion with audience.

Introductory presentations are given in the preceding session on accreditation and certification.

Room: B0 (Forum) Chair: Ferid Shannoun (World Health Organization, Switzerland) , Joachim Nagel (University of Stuttgart, Germany)

17:00 - 18:45

Th. 13/15.13: Novel Approaches in Biomedical Physics

Room: Hall 11b Chair: Barry Allen (St. George Hospital, Australia) , Fridtjof Nüsslin (Technische Universität München, Germany)

17:00 Plasma medicine - therapeutic application of physical plasmas

Thomas von Woedtke (INP Greifswald e.V., Germany)

17:15 Fundamentals and Medical Applications of Neutron and Light Spectroscopy of Confined Liquids

Kyrylo Chalyy (National Medical Academy, Ukraine); Leonid Bulavin (Kiev National University, Ukraine); Vasiliy Chekhun (Institute of Experimental Pathology, Oncology and Radiology, Ukraine); Alexander Chalyi (National Medical University, Ukraine); Yaroslav Tsekhmister (National Medical University, Ukraine); Liudmila Chernenko (Institute of Surface Chemistry, Ukraine)

17:30 *Design and Synthesis of A Novel Inhibitor of 5-Enolpyruvylshikimate-3-phosphate Synthase*

Jianhua Wang (Chongqing University, P.R. China)

17:45 *Experiences of in-field and remote monitoring of diagnostic radiological quality in Ghana using an equipment and patient dosimetry database.*

Matthew Ward (Integrated Radiological Services Ltd, United Kingdom); Eric Ofori (University of Liverpool, United Kingdom); Diane Scutt (University, United Kingdom); Michael Moores (Integrated Radiological Services Ltd, United Kingdom)

18:00 *Mapping the Brazilian Medical Device Innovation System: A Wide Field for Biomedical Engineering Development.*

Eduardo Jorge Oliveira (Brazilian Ministry of Health, Brazil); Vera Button (State University of Campinas, Brazil); Vivian Oliveira (Brazilian National Sanitary Surveillance Agency, Brazil)

Th. 08/15.16: Active Implants (2): Technology Platforms and Selected Indications

Room: Hall 21b Chair: Hoc Khiem Trieu (Fraunhofer IMS, Germany) , Hans-Jürgen Wildau (Biotronik GmbH & Co. KG, Germany)

17:00 *Artificial urinary bladder – focal technical challenges*

Matthias Roth (University of Luebeck, Germany); Daniel Kirchleitner (University of Luebeck, Germany)

17:15 *Artificial Urinary Diversion System – kinematic requirements on fixation*

Daniel Kirchleitner (University of Luebeck, Germany); Matthias Roth (University of Luebeck, Germany)

17:30 *Silicon Eye*

Vignesh Nair (Anna university, India); Sandeep Thuvvakkadan (Anna university, India)

17:45 *Esophageal flow control module for treatment of obesity*

Suélia Rodrigues Fleury Rosa (University of Brasilia (UnB), Brazil); José Carvalho Júnior (Universidade Federal de Goiás, Brazil); Lourdes Brasil (University of Brasília (UnB), Brazil); Adson Rocha (University of Brasilia (UnB), Brazil); José Carvalho (Universidade Federal de Goiás, Brazil)

18:00 *Precise deposition of electrospun nanofibers and electrospraying of nanoparticles as enabling techniques for biomedical engineering applications*

Sebastian Neubert (TU München, Germany); Markus Eblenkamp (Technische Universität München, Germany); Damian Pliszka (NUSNNI, Singapore); Sundarajan Subramanian (NUSNNI, Singapore); Seeram Ramakrishna (NUS Singapore, Singapore); Erich Wintermantel (MedTech - Lehrstuhl für Medizintechnik, Germany)

18:15 Femtosecond laser microstructuring and bioactivation of titanium surfaces for middle ear ossicular replacement prosthesis

Justus Ilgner (University of Aachen RWTH, Germany); Slavomir Biedron (RWTH Aachen University, Germany); Doris Klee (RWTH Aachen University and DWI at RWTH Aachen, Germany); Elena Fadeeva (Laser Zentrum Hannover e.V., Germany); Boris Chichkov (Laser Zentrum Hannover e.V., Germany); Martin Westhofen (University of Aachen RWTH, Germany)

18:30 Concepts and manufacturing technologies for the encapsulation of the Artificial Accommodation System

Liane Rheinschmitt (Forschungszentrum Karlsruhe, Germany); Gerd Bruszauskas (Forschungszentrum Karlsruhe, Germany); Ulrich Gengenbach (Forschungszentrum Karlsruhe, Germany); Georg Bretthauer (Universität Karlsruhe, Germany)

Th. 12/15.18: Education and Training - General (1)

Room: Hall 22b Chair: Paolo Lago (Ingegneria Clinica Policlinico San Matteo, Italy) , Nicolas Pallikarakis (University of Patras, Greece)

17:00 Problem Based Practical Courses (PBPC) Combine Student Motivation, Self-Structuring and Responsibility in Biomedical Education

Ioana Slabu (RWTH Aachen University, Germany); Thomas Schmitz-Rode (RWTH Aachen, Germany); Martin Baumann (RWTH Aachen University, Germany)

17:15 VERT: Virtual Environment for Radiotherapy Training

Andrew Beavis (Hull and East Yorkshire NHS Hospital Trust, United Kingdom); Lee Page (Vertual Ltd, United Kingdom); Roger Phillips (University of Hull, United Kingdom); James Ward (Unkversity of Hul, United Kingdom)

17:30 A Module for Virtual Training: Calibration of High Energy Photon and Electron Beams According the IAEA Code of Practice TRS 398

Günther H. Hartmann (German Cancer Research Center, Germany); Sebastian Becker (University of Cooperative Education, Germany); Arnd Brandes (University of Cooperative Education, Germany); Christoph Held (University of Cooperative Education, Germany); Marc Lehmann (University of Cooperative Education, Germany); Yvonne Weber (University of Cooperative Education, Germany); Daniela Kropp (University of Cooperative Education, Germany); Anja Mayer (University of Cooperative Education, Germany); Andreas Mahr (University of Cooperative Education, Germany)

17:45 Academic education in Biomedical Engineering and the profession of clinical/hospital engineer – critical analysis of the level of adequacy in Portugal

Sara Carrasqueiro (Faculty of Engineering, Catholic University of Portugal, Portugal); Ana Pascoal (Faculty of Engineering, Catholic University of Portugal, Portugal); Pedro Encarnação (Faculdade de Engenharia, Universidade católica Portuguesa, Portugal)

18:00 *Bioengineering Education in Romania*

Dan Zaharia (Gr.T.Popa University of Medicine and Pharmacy, Iasi, Romania, Romania); Radu Ciorap (Gr.T.Popa University of Medicine and Pharmacy, Iasi, Romania, Romania)

18:15 *Medical Natural Sciences: a new academic program to train biomedical researchers*

Jan Dekker (VU University Amsterdam, The Netherlands); Jan Meijer (VU University Medical Center, The Netherlands)

Th. 05/15.1: Computer Aided Diagnosis for Detection and Classification (2)

Room: Hall 01 Chair: Olga Golubnitschaja (University of Bonn, Germany)

17:00 *Keynote: Predictive, Preventive & Personalised Medicine: Novel Strategies in Healthcare*

Olga Golubnitschaja (University of Bonn, Germany)

17:30 *Software environment for fast DCE-MRI analysis*

Andreas Hoetker (Universitätsmedizin Mainz, Germany); Peter Mildenerger (University Medicine of the Johannes Gutenberg University of Mainz, Germany); Christoph Düber (Universitätsmedizin Mainz, Germany); Katja Oberholzer (Universitätsmedizin Mainz, Germany)

Th 03 /15.15: Radiation Protection in Medical Radiology (2)

Room: Hall 21a Chair: Barry Wall (Health Protection Agency, United Kingdom) , Filip Vanhavere (Belgian Nuclear Research Centre, Belgium)

17:00 *Invited: The ORAMED project: Optimisation of Radiation Protection for Medical Staff*

Filip Vanhavere (Belgian Nuclear Research Centre, Belgium); Eleftheria Carinou (Greek Atomic Energy Commission, Greece); Gianfranco Gualdrini (ENEA, Italy); Isabelle Clairand (Institute for Radiological Protection and Nuclear Safety (IRSN), France); Marta Sans Merce (CHUV, Switzerland); Merce Ginjaume (UPC, Spain)

17:15 *Use of active personal dosimeters in interventional radiology: a systematic study in laboratory conditions*

Isabelle Clairand (Institute for Radiological Protection and Nuclear Safety (IRSN), France)

17:30 *First Results of a Multi Centre Study about Reduction of X-ray Exposure due to Surgical Navigation for Pedicle Screw Placement in Spine Surgery*

Benjamin König (TU München, Germany); Aljoscha Schäffler (TU München, Germany); Ulrich Stöckle (TU München, Germany)

17:45 *Study and Analysis of Radiation Level at Different Hospitals in Nepal.*

Kanchan Adhikari (NAMS, Bir Hospital, Nepal); Pedro Montenegro (University of Malaga, Malaga, Spain, Spain)

18:00 A new method to measure shielding properties of protective clothing materials

Ludwig Büermann (Physikalisch-Technische Bundesanstalt, Germany)

18:15 Comparison of Lead-free and Conventional x-ray aprons for Diagnostic Radiology

Nicolaos Papadopoulos (Nicosia General Hospital, Cyprus); Christos Papaefstathiou (Nicosia General Hospital, Cyprus); Prodromos Kaplanis (Nicosia General Hospital, Cyprus); Georgios Menikou (Nicosia General Hospital, Cyprus); Georgiana Kokona (Nicosia General Hospital, Cyprus); Demetris Kaolis (Nicosia General Hospital, Cyprus); Charalambos Yiannakaras (Nicosia General Hospital, Cyprus); Stelios Christofides (Nicosia General Hospital, Cyprus)

Th. 06/15.12: Navigated Visceral Interventions

Room: Hall 11a Chair: Gerhard Buess (University of Tuebingen & Section for MIS, Germany)

17:00 Addressing shading-based laparoscopic registration

Pablo Lamata (University of Oxford, United Kingdom); Tangui Morvan (University of Oslo, Norway); Martin Reimers (University of Oslo, Norway); Eigil Samset (University of Oslo, Norway); Jerome Declerck (Siemens Molecular Imaging, United Kingdom)

17:15 Prototype of an online navigation system for laparoscopic radiofrequency ablation of liver tumors

Philipp Hildebrand (University of Schleswig-Holstein, Campus Luebeck, Germany); Markus Kleemann (University Hospital Schleswig-Holstein-Campus Lübeck, Germany); Stefan Schlichting (University Hospital of Lübeck, Germany); Armin Besirevic (University Hospital of Lübeck, Germany); Ume Roblick (University of Schleswig-Holstein, Campus Luebeck, Germany); Conny Bürk (University of Schleswig-Holstein, Campus Luebeck, Germany); Hans-Peter Bruch (University of Luebeck, Germany)

17:30 Software Assistance for Intra-Operative Guidance in Liver Surger

Stephan Zidowitz (Fraunhofer MEVIS, Germany); Christian Hansen (Fraunhofer MEVIS, Germany); Stefan Schlichting (Drägerwerk AG & Co. KGaA, Germany); Markus Kleemann (University Hospital Schleswig-Holstein-Campus Lübeck, Germany); Heinz-Otto Peitgen (Fraunhofer MEVIS, Bremen, Germany)

17:45 Vascular Electromagnetic Tracking: experiences in phantom and animal cadaveric models

Tobias Penzkofer (Aachen University, Germany); Philipp Bruners (University of Technology Aachen, Helmholtz-Institute, Germany); Peter Isfort (Aachen University, Germany); Robert Elfring (RWTH Aachen University, Helmholtz-Institute, Germany); Andreas Fritschi

(Aachen University, Germany); Frederik Van Roost (RWTH Aachen University, Germany); Marcus Hormes (RWTH Aachen University, Germany); Rolf Günther (University of Technology Aachen, University Hospital, Germany); Thomas Schmitz-Rode (RWTH Aachen, Germany); Andreas Horst Mahnken (University of Technology RWTH Aachen, Germany)

18:00 *An ultrasound based navigation system for laparoscopic liver resection*

Markus Kleemann (University Hospital Schleswig-Holstein-Campus Lübeck, Germany); Philipp Hildebrand (University of Schleswig-Holstein, Campus Luebeck, Germany); Volker Martens (University of Lübeck, Germany); Stefan Schlichting (University Hospital of Lübeck, Germany); Armin Besirevic (University Hospital of Lübeck, Germany); Achim Schweikard (Universität Lübeck, Germany); Hans-Peter Bruch (University of Luebeck, Germany)

Th. 04/15.14: Focus Session: Waves in the Cardiovascular System (1)

Room: Hall 12b Chair: Violeta Monasterio (University of Zaragoza, Spain) , Michele Baccianti (University of Florence, Italy)

17:00 *Characteristics of Pulse Wave Reflection from the Cerebral Circulation in Hypertension — Analysis Using Wave Intensity*

Kiyomi Niki (Musashi Institute of Technology, Japan); Motoaki Sugawara (Himeji Dokkyo University, Japan)

17:15 *Non Invasive Assessment of Carotid and Femoral Arterial Pressure: differences in calibration using measured and calculated mean brachial pressure*

Sebastián Graf (Favaloro University, Argentina)

17:30 *Interaction of biomechanics and metabolic activity in abdominal aortic aneurysm*

Christian Reeps (Technische Universität München, Germany); Michael Gee (Technische Universität München, Germany); Andreas Maier (Technische Universität München, Germany); Manuela Gurdan (Technische Universität München, Germany); Markus Essler (Technische Universität München, Germany); Hans-Henning Eckstein (Technische Universität München, Germany)

17:45 *QRS slopes for ischemia monitoring in PCI recordings*

Daniel Romero Perez (University of Zaragoza, Spain); Esther Pueyo (University of Zaragoza, Spain); Michael Ringborn (University of Lund, Sweden); Pablo Laguna (University of Zaragoza, Spain)

18:00 *Effect of Frequency Rhythmic Electrical Modulation System (FREMS) on 0.1 Hz microvascular skin blood flow in dysautonomic diabetic (type 2) neuropathy*

Michele Baccianti (University of Florence, Italy); Marco Capecci (University of Florence, Italy); Attilio Evangelisti (University of Florence, Italy); Massimo Barrella (Sacco Hospital, Milan, Italy); Maurizio

Bevilacqua (Sacco Hospital, Milan, Italy); Leonardo Bocchi (University of Florence, Italy)

18:15 *Interference cancellation for extraction of the transabdominal fetal ECG*

Dragos Taralunga (Politehnica University of Bucharest, Romania); Werner Wolf (Universität der Bundeswehr München, Germany); Rodica Strungaru (Department of Applied Electronics and Information Engineering, Politehnica University of Bucharest, Algeria); Ilinca Gussi (University of Medicine and Pharmacy Carol Davila, Romania); Camelia Dutescu (University of Medicine and Pharmacy Carol Davila, Romania); G. Mihaela Ungureanu (Politehnica University of Bucharest, Romania)

Th. 07/15.7: Techniques in Cardiosurgery

Room: Hall 05 Chair: Tomoyuki Yambe (Tohoku University, Japan) , Jürgen Werner (Ruhr-Universität Bochum, Germany)

17:00 *Invited: Nano technology for the development of Artificial Internal Organs*

Tomoyuki Yambe (Tohoku University, Japan)

17:30 *Phonocardiographic Classification of Mechanical Heart Valves Using Artificial Neural Networks*

Claudia Licciardello (University of Padova, Italy); Vincenzo Tarzia (University of Padova Medical School, Italy); Tomaso Bottio (University of Padova Medical School, Italy); Vittorio Pengo (University of Padova Medical School, Italy); Gino Gerosa (University of Padova Medical School, Italy); Andrea Bagno (University of Padova, Italy)

17:45 *Artificial heart valves, flow acceleration and shear stresses*

Ali A Sakhaeimanesh (University of Isfahan, Iran); Vahid Sakhaeimanesh (Isfahan University of Medical Science, Iran)

18:00 *Comparison of different cannulation approaches for Cardio Pulmonary Bypass*

Tim Kaufmann (RWTH Aachen University, Germany); Marcus Hormes (RWTH Aachen University, Germany); Marco Laumen (RWTH Aachen University, Germany); Daniel Timms (RWTH Aachen University, Germany); Torsten Linde (RWTH Aachen University, Germany); Thomas Schmitz-Rode (RWTH Aachen, Germany); Anton Moritz (J.W. Goethe University Hospital, Germany); Omer Dzemali (J.W. Goethe University Hospital, Germany); Ulrich Steinseifer (RWTH Aachen, Germany)

18:15 *First-in-man application of left ventricular augmentation for treatment of Dilated Cardiomyopathy*

Beatrice Retzlaff (German Heart Center Munich, Germany); Bernhard Voss (German Heart Center Munich, Germany); Albrecht Will (German Heart Center Munich, Germany); Rüdiger Lange (German Heart Center

Munich, Germany); Robert Bauernschmitt (German Heart Center Munich, Germany)

18:30 *The Impact of Hyperthermal Surfaces on Blood in Vitro - An Approach*

Kathrin Hamilton (RWTH Aachen University, Germany); Peter Schlanstein (RWTH Aachen University, Germany); Ilona Mager (RWTH Aachen University, Germany); Thomas Schmitz-Rode (RWTH Aachen, Germany); Ulrich Steinseifer (RWTH Aachen, Germany)

18:45 *Biomarker Enables Molecular Specific Optical Detection of Transplant Rejection*

Chang Chang (Drexel University, USA)

Th. 07/15.11: Clinical Engineering: Technology, Planning and Support

Room: Hall 03 Chair: Heikki Teriö (Karolinska University Hospital, Sweden) , Uvo M. Hölscher (Münster University of Applied Sciences, Germany)

17:00 *Technology Management for Optimal Use of Medical Equipment*

Heikki Teriö (Karolinska University Hospital, Sweden)

17:15 *Electromagnetic Interference with RFID Readers in Hospitals*

Yue Ying (Münster University of Applied Sciences, Germany); Dirk Fischer (Münster University of Applied Sciences, Germany); Uvo M. Hölscher (Münster University of Applied Sciences, Germany)

17:30 *Health Technology Management in Prehospital Care Using Radio Frequency Identification*

Willi Osaka (Biomedical Engineering Institute, Brazil); Priscila Avelar (Biomedical Engineering Institute, Brazil); Renato Garcia (IEB-UFSC, Brazil)

17:45 *Assessment of Medical Equipment in Respect to Their Down Time*

Walid Tarawneh (Ministry of Health & Jordanian Biomedical Engineering Society - JEA, Jordan); Sameh El-Sharo (Amman Al Ahlyia University, Jordan)

18:00 *A Method to Create Resource Consumption Profiles for Biomedical Equipment*

Leonardo Nascimento (University of Campinas, Brazil); Saide Calil (Campinas State University, Brazil)

18:15 *Supporting Decision Making Tool within the Process of Replacement and Incorporation of New Technologies to the Health Area*

Francisco Santos (Universidade Federal de Santa Catarina - UFSC, Brazil); Renato Garcia (IEB-UFSC, Brazil)

18:30 *Findings of the Latin America Clinical Engineering Survey conducted by the Clinical Engineering Division of International Federation for Medical and Biological Engineering*

Saide Calil (Campinas State University, Brazil); Leonardo Nascimento (University of Campinas, Brazil); Rafael Oliveira (University of Campinas, Brazil)

Th. 08/15.3: Lab on Chip (1)

Room: Hall 13a Chair: Andreas Manz (FRIAS, Freiburg University, Germany & MESA+, University of Twente, Netherlands, Germany) , Albert van den Berg (University of Twente, The Netherlands)

17:00 Keynote: 20 years of Lab on a Chip technology why bother?
Andreas Manz (FRIAS, Freiburg University, Germany, Germany)

17:30 Amperometric Monitoring of Substance-P Levels in Biological Fluids
Hüseyin Bakirci (Albert-Ludwigs-University Freiburg, Germany)

17:45 Miniaturisation, Automation and Integration of Nucleic Acid Analysis Based on Centrifugal Microfluidics
Daniel Mark (HSG-IMIT, Germany); Maximilian Focke (University of Freiburg - IMTEK, Germany); Sascha Lutz (HSG-IMIT, Germany); Bernd Faltin (University of Freiburg - IMTEK, Germany); Patrick Weber (IMTEK, Germany); Dominique Kosse (HSG-IMIT, Germany); Claas Müller (University of Freiburg, Germany); Günter Roth (Universität Freiburg – IMTEK, Germany); Roland Zengerle (Universität Freiburg - IMTEK, Germany); Felix von Stetten (Universität Freiburg - IMTEK, Germany)

18:00 Microfluidic platform for the initiation and investigation of cellular interactions on a single-cell level
Michael Kirschbaum (Fraunhofer Institute for Biomedical Engineering, Germany); Magnus Jaeger (Fraunhofer Institute for Biomedical Engineering, Germany); Claus Duschl (Fraunhofer Institute for Biomedical Engineering, Germany)

18:15 Sample Preparation on-chip: Accumulation, Lysis of and DNA Extraction from Bacteria
Meike Moschallski (NMI Natural and Medical Sciences Institute at the University of Tübingen, Germany); Christian Dorrer (Robert Bosch GmbH, Germany); Massimo Kubon (NMI Natural and Medical Sciences Institute at the University of Tübingen, Germany); Peter Rothacher (Robert Bosch GmbH, Germany); Jan Weile (Robert Bosch Hospital, Germany); Britta Hagmeyer (NMI Natural and Medical Sciences Institute, Germany); Kai Fuchsberger (NMI Natural and Medical Sciences Institute at the University of Tübingen, Germany); Karl-Heinz Boven (Multi Channel Systems MCS GmbH, Germany); Andreas Moeller (Multi Channel Systems, Germany); Rainer Mohrlök (Multi Channel Systems, Germany); Martin Stelzle (NMI Reutlingen, Germany)

18:30 Microfluidic Platform For Investigating Small Blood Vessels
Axel Guenther (University of Toronto, Canada)

Th. 04/15.5: Modeling and Simulation Surgery & Intervention

Room: Hall 14a Chair: Timothy McGloughlin (University of Limerick, Ireland) , Jinah Park (Korea Advanced Institute of Science & Technology, Korea)

17:00 Identification and Localization of Intramedullary Nail Holes For Orthopedic Procedures Using Cone Beam Reconstruction and Simulation techniques

Zacharias Kamarianakis (University of Patras, Greece)

17:15 Optimization & Fast Estimation of Vessel Cooling for RF Ablation

Inga Altrogge (CeVis - University of Bremen, Germany); Torben Pätz (Jacobs University Bremen, Germany); Tim Kröger (Fraunhofer MEVIS, Germany); Heinz-Otto Peitgen (Fraunhofer MEVIS, Bremen, Germany); Tobias Preusser (Fraunhofer MEVIS, Germany)

17:30 Simulation of Radiofrequency Ablation including Water Evaporation

Torben Pätz (Jacobs University Bremen, Germany); Tim Kröger (Fraunhofer MEVIS, Germany); Tobias Preusser (Fraunhofer MEVIS, Germany)

17:45 CT-based patient individual anatomical modeling of the lung and its impact on thoracic surgery

Christina Stoecker (Fraunhofer MEVIS, Germany); Lars Bornemann (Fraunhofer MEVIS, Germany); Volker Dicken (MeVis medical research, Bremen, Germany); Stefan Krass (MeVis medical research, Bremen, Germany); Jan-Martin Kuhnigk (Fraunhofer MEVIS, Germany); Stephan Zidowitz (Fraunhofer MEVIS, Germany); Heinz-Otto Peitgen (Fraunhofer MEVIS, Bremen, Germany)

18:00 Reliability and Robustness in Image Based Surgical Planning

Stephan Zidowitz (Fraunhofer MEVIS, Germany); Andrea Schenk (Fraunhofer MEVIS, Germany); Milo Hindennach (Fraunhofer MEVIS, Germany); Christian Hansen (Fraunhofer MEVIS, Germany); Horst Hahn (Fraunhofer MEVIS, Institute for Medical Image Computing, Germany); Heinz-Otto Peitgen (Fraunhofer MEVIS, Bremen, Germany)

18:15 Generic Visibility Simulation for Designing Optical Tracker in Image-Guided Surgery

Weichen Liu (BCMM, Germany)

18:30 Monte Carlo simulations of reflected light intensity for navigation in the brain

Johannes Johansson (Linköping University, Sweden); Ingemar Fredriksson (Linköping University, Sweden); Karin Wårdell (Linköping University, Sweden); Ola Eriksson (Linköping University, Sweden)

Th. 01/15.9: Treating Mobile and Small Targets with Radiation

Room: Hall 04b Chair: Christoph Bert (GSI Helmholtzzentrum für Schwerionenforschung, Germany)

17:00 *Considering marker visibility during leaf sequencing for segmental intensity-modulated radiation therapy*

Bo Zhao (Cancer Institute (Hospital), Chinese Academy of Medical Sciences, P.R. China); Jianrong Dai (Cancer Institute (Hospital), Chinese Academy of Medical Sciences, P.R. China)

17:15 *Investigating the reproducibility of motion for lung tumours treated with stereotactic body radiotherapy*

Anne Richter (University of Würzburg, Germany); Jürgen Wilbert (University of Würzburg, Germany); Kurt Baier (University of Würzburg, Germany); Matthias Guckenberger (University of Würzburg, Germany); Michael Flentje (University of Würzburg, Germany)

17:30 *Investigation of a stereoscopic camera system for gated radiotherapy*

Andres Vasquez (German Cancer Research Center (DKFZ), Germany); Torsten Moser (German Cancer Research Center, Germany); Gernot Echner (German Cancer Research Center (DKFZ), Germany); Gabriele Sroka-Perez (University Hospital of Heidelberg, Germany); Christian Karger (German Cancer Research Center (DKFZ), Germany)

17:45 *Fiducial-free spinal radiosurgery: Patient motion and targeting accuracy in 227 single fraction treatments with the Cyberknife*

Christoph Fürweger (European Cyberknife Center Munich, Germany); Markus Kufeld (European Cyberknife Center Munich, Germany); Alexander Schlaefer (University of Luebeck, Germany); Christian Drexler (European Cyberknife Center Munich, Germany)

18:00 *Monte Carlo simulation of novel procedures for highly conformal percutaneous radiation with keV-photons for tumor treatment in skin proximity*

Markus Petersheim (University of Heidelberg, University Medical Center Mannheim, Germany); Jürgen Hesser (University of Heidelberg, Germany); Frederik Wenz (University of Heidelberg, University Medical Center Mannheim, Germany)

18:15 *Geant4 Simulation of Endovascular Irradiation from Auger Electrons Created by External Beam Fluorescence*

Ke Huang (Thomas Jefferson University Hospital, USA); Yan Yu (Thomas Jefferson University, USA)

18:30 *A new electron IMRT technique for breast cancer: comparison to photon IMRT and conventional irradiation based on static and dynamic dose measurements*

Tobias Gauer (University Medical Center Hamburg-Eppendorf, Germany); Konrad Engel (University of Rostock, Germany); Antje Kiesel (University of Rostock, Germany); Dirk Albers (University Medical Center Hamburg-Eppendorf, Germany); Florian Cremers (University-Medical Center Hamburg, Germany)

Th. 06/15.17: Catheter Interventions

Room: Hall 22a Chair: Stefan Weber (University of Bern, Switzerland)

17:00 *Invited: Catheter and Needle Interventions in the Spine and Brain*
Murphy Kieran (University of Toronto, Canada)

17:30 *Biomechanical Aspects of Potential Stent Malapposition at Coronary Stent Implantation*

Wolfram Schmidt (Universität Rostock, Germany); Peter Behrens (Universität Rostock, Germany); Klaus-Peter Schmitz (Universität Rostock, Germany)

17:45 *HapCath: Highly Miniaturized Piezoresistive Force Sensors for Interior Palpation of Vessels during Angioplasty*

Thorsten Meiß (Technische Universität Darmstadt, Germany); Thorsten Kern (Technische Universität Darmstadt, Germany); Stephanie Sindlinger (Technische Universität Darmstadt, Germany); Roland Werthschützky (Technische Universität Darmstadt, Germany)

18:00 *An Active Intravascular MR-Device in Micro System Technology*

Stephan Fandrey (Hamburg University of Technology, Germany); Steffen Weiss (Philips Research Europe – Hamburg, Germany); Jörg Müller (TU Hamburg Harburg, Germany)

18:15 *On Testing the Effectivity of a Cryoablation System in vitro and in vivo*

Leonhard Wieser (AFreeze GmbH, Austria); Gerald Fischer (UMIT - University for Health Sciences, Medical Informatics and Technology, Austria); Martin Goll (AFreeze GmbH, Austria); Andreas Neurauter (AFreeze GmbH, Austria); Daniel Pehböck (Medical University Innsbruck, Austria); Rene Silye (State Neuropsychiatric Hospital Wagner-Jauregg, Linz, Austria); Florian Hintringer (Medical University Innsbruck, Austria)

18:30 *Automatic Intracardiac Mapping of the Left Atrium using Magnetic Navigation*

Ekrem Ücer (Krankenhaus Landshut Achdorf, Germany); Armin Luik (Städtisches Klinikum Karlsruhe, Germany); Tilko Reents (Deutsches Herzzentrum München, Germany); Jinjin Wu (Deutsches Herzzentrum München, Germany); Andreas Pflaumer (Deutsches Herzzentrum München, Germany); Gabriele Hessling (Deutsches Herzzentrum München, Germany); Claus Schmitt (Städtisches Klinikum Karlsruhe, Germany)

18:45 *Computer Assisted Transapical Aortic Valve Implantation*

Michael Gessat (Universität Leipzig, Germany); Mohamed Karar (Universität Leipzig, Germany); Thomas Walther (Universität Leipzig, Germany); Volkmar Falk (Heartsurgeon, Germany); Oliver Burgert (Universität Leipzig, Germany)

Th. 04/15.10: Measuring Methods: PIV, LDA, CT, MRI

Room: Hall 02 Chair: Dieter Liepsch (University of Applied Sciences Munich & Institut f. Biotechnik, e.V., Germany)

17:00 *Effects of aortic valve stenosis on coronary artery flow using an in-vitro flow model*

Emmanuel Gaillard (Institut de Recherches Cliniques de Montreal (IRCM), Canada); Damien Garcia (CRCHUM, University of Montreal Hospital, Canada); Lyes Kadem (Concordia University, Canada); Philippe Pibarot (Laval Hospital, Laval University, Canada); Louis-Gilles Durand (Institut de Recherches Cliniques de Montreal (IRCM), Canada)

17:15 *Flow Induced Turbulent Stress Accumulation Study of the Differently Designed Bi-leaflet Mitral valves using Dynamic PIV system*

Toshinosuke Akutsu (Kanto Gakuin University, Japan)

17:30 *Particle image velocimetry study of a new scaffold for aortic valve tissue engineering*

Bassil Akra (Ludwigs-Maximilians-University, Germany); Andrea Balasso (TUM, Germany); Stefan Moravec (FH-Munich, Germany); Dieter Liepsch (University of Applied Sciences Munich, Germany); Cornelia Fano (ITV-Denkendorf, Germany); Martin Dauner (ITV-Denkendorf, Germany); Bruno Meiser (Ludwigs-Maximilians-University, Germany); Bruno Reichart (Ludwigs-Maximilians-University, Germany)

17:45 *In-Vitro Investigation of three-dimensional Carotid Artery Haemodynamics by Tomographic Particle Image Velocimetry*

Nicolas Buchmann (University of Canterbury, New Zealand)

18:00 *In-vivo Visualisation of glomerular filtration by two-photon microscopy in a rat*

Hiroshi Nakamoto (Kawasaki Medical School, Japan); Yasuo Ogasawara (Kawasaki Medical School, Japan); Fumihiko Kajiya (Kawasaki Medical School, Japan)

18:15 *Varicose coiling, hemodynamic consequence of pulsatile Arterio Venous shunt flow on the endothelium studied by Scanning Electron Microscopy(SEM).*

Lars Schalin (Institution of Medical Cell Biologi, University of Uppsala, Sweden)

Th. 04/15.8: Predictive Electromechanical Models of the Heart

Room: Hall 04a Chair: Gunnar Seemann (University Karlsruhe (TH), Germany) , Fernando Campos (Medical University of Graz & Center for Physiological Medicine, Austria)

17:00 *Effect of the Drug Cisapride on Human Ventricular Cardiomyocytes: A Simulation Study*

Gunnar Seemann (University Karlsruhe (TH), Germany); Christian Rombach (Universität Karlsruhe, Germany); David Keller (Universität

Karlsruhe (TH), Germany); Olaf Doessel (Universität Karlsruhe (TH), Germany)

17:15 Calcium Dependent Release and Its Regulation in Cardiac Myocytes: Mathematical model of the RyR Channel

Jussi Koivumaki (University of Oulu, Finland)

17:30 Integrating Beta-Adrenergic Signaling into a Computational Model of Human Cardiac Electrophysiology

Carola Otto (Universität Karlsruhe (TH), Germany); David Keller (Universität Karlsruhe (TH), Germany); Gunnar Seemann (University Karlsruhe (TH), Germany); Olaf Doessel (Universität Karlsruhe (TH), Germany)

17:45 Localizing Ectopic Foci in the Pulmonary Veins from Intracardiac ECGs – A Simulation Study

Frank Weber (Universität Karlsruhe (TH), Germany); Christopher Schilling (Universität Karlsruhe (TH), Germany); Dorothee Straub (Universität Karlsruhe (TH), Germany); Gunnar Seemann (University Karlsruhe (TH), Germany); Cristian Lorenz (Philips Research Europe - Hamburg, Germany); Olaf Doessel (Universität Karlsruhe (TH), Germany)

18:00 How Do Tissue Conductivities Impact on Forward-calculated ECGs? An Efficient Prediction Based on Principal Component Analysis

Stefan Bauer (Universität Karlsruhe (TH), Germany); David Keller (Universität Karlsruhe (TH), Germany); Frank Weber (Universität Karlsruhe (TH), Germany); Gunnar Seemann (University Karlsruhe (TH), Germany); Olaf Doessel (Universität Karlsruhe (TH), Germany)

18:15 Modeling the Action Potential in Mouse Sinoatrial Node Myocytes

Fernando Campos (Medical University of Graz, Austria); Caroline Costa (Federal University of Juiz de Fora, Brazil); Rodrigo dos Santos (Universidade Federal de Juiz de Fora, Brazil); Anders Nygren (University of Calgary, Canada); Robert Clark (University of Calgary, Canada); Wayne Giles (University of Calgary, Canada)

18:30 Computer Model Optimization of Cardiac Resynchronization Therapy Using Body Surface Potential Map

Raz Miri (Universität Karlsruhe, Germany); Christian Wolpert (University hospital of Mannheim, Germany); Olaf Doessel (Universität Karlsruhe (TH), Germany)

Th. 01/15.4: Biological Models in RT

Room: Hall 13b Chair: Sabine Levegrün (University of Duisburg-Essen, Germany) , Michael Scholz (Gesellschaft für Schwerionenforschung (GSI), Germany)

17:00 Invited: Quantitative Analyses of Normal Tissue Effects in the Clinic (QUANTEC): Clinical Use

Randall Ten Haken (University of Michigan, USA); Lawrence Marks (University of North Carolina, USA); Sören Bentzen (University of

Wisconsin, USA); Louis Constine (University of Rochester, USA); Deasy Joseph (, USA); Avraham Eisbruch (University of Michigan, USA); Yorke Elleen (, USA); Andrew Jackson (Medical Physics Computer Serv., USA)

17:30 Invited: The Lessons of QUANTEC (Quantitative Analysis of Normal Tissue Effects in the Clinic): Recommendations for reporting and gathering data on dose-volume dependencies of treatment outcome.

Andrew Jackson (Medical Physics Computer Serv., USA); Randall Ten Haken (University of Michigan, USA)

18:00 Assessing correlations between the spatial distribution of dose to the rectal wall and late rectal toxicity after prostate radiotherapy

Florian Buettner (Institute of Cancer Research and Royal Marsden NHS Trust, United Kingdom); Sarah Gulliford (Institute of Cancer Research and Royal Marsden NHS Trust, United Kingdom); Mike Partridge (Institute of Cancer Research and Royal Marsden NHS Trust, United Kingdom); Matthew Sydes (MRC Clinical Trials Unit, United Kingdom); David Dearnaley (Institute of Cancer Research and Royal Marsden NHS Trust, United Kingdom); Steve Webb (Institute of Cancer Research and Royal Marsden Hospital, United Kingdom)

18:15 Cell Deformation by Dielectrophoretic Fields

Isabella Guido (Fraunhofer Institute for Biomedical Engineering, Germany); Magnus Jaeger (Fraunhofer Institute for Biomedical Engineering, Germany); Claus Duschl (Fraunhofer Institute for Biomedical Engineering, Germany)

Th. 13/15.6: Applications of Cell Electroporation : Electrochemotherapy and Gene Electrotransfer

Room: Hall 14c Chair: Damijan Miklavcic (University of Ljubljana, Slovenia) , Lluís Mir (UMR 8121 CNRS-Institut Gustave-Roussy, France)

17:00 Electroporation of Bone Tissue: Implications for Use in the Treatment of Bone Metastasis with Electrochemotherapy

Ruggero Cadossi (IGEA, Italy)

17:30 Treatment of Inoperable Intraluminal Cancers with Endoscopic Electrochemotherapy

Declan Soden (University College Cork, Ireland); Patrick Forde (University College Cork, Ireland); Mira Sadacharam (University College Cork, Ireland); Gerald O'Sullivan (University College Cork, Ireland)

17:45 Electrically Mediated Gene Delivery to the Skin

Richard Heller (Old Dominion University, USA); Bernadette Ferraro (University of South Florida, USA); Amy Donate (University of South Florida, USA); Loree Heller (Old Dominion University, USA); Richard Gilbert (University of South Florida, USA); Mark Jaroszeski (University of South Florida, USA)

18:00 *Vascular disrupting action of electrochemotherapy*

Gregor Sersa (Institute of Oncology Ljubljana, Slovenia); Maja Cemazar (Institute of Oncology Ljubljana, Slovenia); Marko Snoj (Institute of Oncology Ljubljana, Slovenia)

18:15 *Construction of EGFP expressing HepG2 cell line using electroporation*

Maja Cemazar (Institute of Oncology Ljubljana, Slovenia); Irena Hreljac (National Institute of Biology, Slovenia); Gregor Sersa (Institute of Oncology Ljubljana, Slovenia); Metka Filipic (National Institute of Biology, Slovenia)

17:30 - 18:45

Th. 09/15.2: Brain Computer Interfaces

Room: Hall 14b Chair: Milos Popovic (University of Toronto & Toronto Rehab, Canada) , Nils Birbaumer (University of Tübingen, Germany)

17:30 *Keynote: Toward Replacements Parts for the Brain: Biomimetic Microelectronics to Replace Cognition Lost to Damage or Disease*

Theodore Berger (University of Southern California, Germany)

18:00 *Invited: Implantable Wireless Cortical Recording Device for Non-Human Primates*

David Borton (Brown University, USA); Yoon-Kyu Song (Brown University, USA); Christopher Bull (Brown University, USA); William Patterson (Brown University, USA); Sunmee Park (Brown University, USA); Farah Laiwalla (Brown University, USA); John Donoghue (Brown University, USA); Arto Nurmikko (Brown University, USA)

18:15 *To feedback or not to feedback? Some open questions for Brain-Computer Interfaces use*

Roberta Carabalona (Fondazione Don Gnocchi, Italy); Paolo Castiglioni (Santa Maria Nascente Research Hospital, Don Gnocchi Foundation, Italy)

18:30 *Automated Vigilance Classification based on EOG signals: Preliminary Results*

Sten Hanke (Austrian Research Centers GmbH -ARC, Austria); Josef Zeitlhofer (Department of Neurology, Medical University of Vienna, Austria); Gerald Wiest (Department of Neurology, Medical University of Vienna, Austria); Winfried Mayr (Medical University of Vienna, Austria); Doris Moser (Department of Neurology, Medical University of Vienna, Austria)

18:45 *A Lexicon Driven P300 Speller*

Sercan Ahi (Tokyo Institute of Technology, Japan); Hiroyuki Kambara (Precision and Intelligence Laboratory, Tokyo Institute of Technology, Japan); Yasuharu Koike (Precision and Intelligence Laboratory, Tokyo Institute of Technology, Japan)

Saturday, Sep 12

08:15 - 10:00

16.11: FhG: New Diagnostics in Liver Failure, Renal Failure and Inflammation

Room: Hall 03 Chair: Sebastian Klammt (University of Rostock, Germany)

8:15 *Hepatocellular Biosensors for Monitoring of Patients with Liver Failure and Septic Shock*

Martin Sauer (University of Rostock, Germany)

8:30 *Immunocellular Biosensors for Monitoring of Inflammation*

Sebastian Koball (University of Rostock, Germany)

8:45 *Cell-free DNA - a new Marker of Neutrophil Activity in Inflammation*

Stefan Margraf (Leukocare AG, Germany)

9:00 *Diagnostic Value of Kynurenine and Tryptophan in Trauma Patients (Lögters)*

9:15 *Albumin Binding Capacity: Monitoring of Hepatic Failure*

Th. 12/16.18: Symposium: BME Education: Designing Curricula; Research and/or Profession Orientation

Room: Hall 22b Chair: Dick Slaaf (Eindhoven University of Technology, The Netherlands)

8:15 *The fully integrated BME program at Eindhoven University of Technology*

Dick Slaaf (Eindhoven University of Technology, The Netherlands);
Marcel van Genderen (Eindhoven University of technology, The Netherlands)

8:30 *Biomedical engineering degrees at K.U.Leuven: past and present (and future)*

Sabine Van Huffel (Katholieke Universiteit Leuven, Belgium);
Jos Vander Sloten (Katholieke Universiteit Leuven, Belgium)

8:45 *Invited: Biomedical Engineering as a Major within Electrical Engineering and Information Technology - pros and cons*

Olaf Doessel (Universität Karlsruhe (TH), Germany)

9:00 *Novel Approaches to teaching – how we do it: Design Centred Learning*

Dick Slaaf (Eindhoven University of Technology, The Netherlands);
Marcel van Genderen (Eindhoven University of technology, The Netherlands)

9:15 *Is there need for heterogeneity in BME programs?*

Timo Jämsä (University of Oulu, Finland)

9:30 *Distance learning, distributed learning, e-learning, and knowledge translation in BME*

Göran Salerud (Linköping University, Sweden)

9:45 *TEMPUS IV, CRH-BME – Curricula Reformation and Harmonisation in the field of Biomedical Engineering*

Zhivko Bliznakov (Institute of biomedical Technology, Greece); Kallirroï Stavrianou (University of Patras, Greece); Nicolas Pallikarakis (University of Patras, Greece)

Th. 04/16.13: Medical Augmented Reality

Room: Hall 11b Chair: Nassir Navab (Technische Universität München, Germany)

8:15 *Invited: Augmented Reality Systems for Medical Interventions: Current Limits*

Stephane Nicolau (IRCAD, France); Luc Soler (IRCAD, France); Jacques Marescaux (IRCAD, France)

8:35 *Patient Evaluation of a Mirrored Display for Viewing of Co-located Virtual Arms*

Kynan Eng (University of Zurich and ETH Zurich, Switzerland); Aniña Pescatore (ETH Zurich, Switzerland); Edith Chevrier (University of Zurich and ETH Zurich, Switzerland); Pawel Pyk (University of Zurich and ETH Zurich, Switzerland); Lisa Holper (University of Zurich and ETH Zurich, Switzerland); Corina Schuster (Reha Rheinfelden, Switzerland); Andrea Heinrichs (Reha Rheinfelden, Switzerland); Daniel Kiper (University of Zurich and ETH Zurich, Switzerland)

8:50 *Clinical application of CAMC – long bone X-ray image stitching*

Sandro-Michael Heining (Chirurgische Klinik und Poliklinik – Innenstadt, Germany)

9:10 *Registration of a Cardiac Motion Model to Video for Augmented Reality Image Guidance of Coronary Artery Bypass*

Michael Figl (Medical University of Vienna, Austria); Daniel Rueckert (Imperial College London, United Kingdom); Eddie Edwards (Imperial College London, United Kingdom)

9:30 *Invited: Color design for an AR-enhanced advice systems in surgery*

Norman Geissler (Universität Leipzig, Germany); Werner Korb (ICAAS Leipzig, Germany); Daniela Wellein (Universität Leipzig, Germany); Neophytos Neophytou (SBU, USA); Klaus Mueller (State University of New York, Stony Brook, USA); Dirk Bartz (Universität Leipzig, Germany)

9:45 *Invited: Illustration of Vascular Structures for Augmented Reality in Liver Surgery*

Christian Hansen (Fraunhofer MEVIS, Germany); Felix Ritter (Fraunhofer MEVIS, Bremen, Germany); Jan Wieferich (Fraunhofer MEVIS, Bremen, Germany); Heinz-Otto Peitgen (Fraunhofer MEVIS,

Bremen, Germany); Horst Hahn (Fraunhofer MEVIS, Institute for Medical Image Computing, Germany)

10:00 Hybrid Elastic Model for Volumetric Deformation in Multi-modal Virtual Reality Simulation

Jinah Park (Korea Advanced Institute of Science & Technology, Korea); Jaehwan Cho (Information and Communications University, Korea)

Th. 04/16.3: Focus Session: Processing of Biosignals for Human Machine Interfaces

Room: Hall 13a Chair: Elzbieta Olejarczyk (Institute of Biocybernetics and Biomedical Engineering PAS, Poland) , Alois Schlögl (Graz University of Technology & CNSystems Medizintechnik AG, Austria)

8:15 Spatial setting of visual attention and its appearance in head-movement

Masaaki Makikawa (College of Science and Engineering, Ritsumeikan University, Japan)

8:30 Role of Complexity of Visual System in Recording of Visual Impulses under Anaesthesia.

Seyed Mohammad Mehdi Shushtarian (Iran University of Medical Science, Iran); Seyed Mohammad Masoud Shushtarian (Tehran Medical Branch-Islamic Azad University, Iran)

8:45 Motor imagery analysis based on EEG signal processing

G. Mihaela Ungureanu (Politehnica University of Bucharest, Romania); Dragos Taralunga (Politehnica University of Bucharest, Romania); Rodica Strungaru (Department of Applied Electronics and Information Engineering, Politehnica University of Bucharest,, Algeria)

9:00 Time-Frequency Features Combination to Improve Single-Trial EEG Classification

Andreas Yonas (Institut Teknologi Bandung, Indonesia); Ary Prihatmanto (Institut Teknologi Bandung, Indonesia); Tati Mengko (Institut Teknologi Bandung, Indonesia)

9:15 Effects of volatile anaesthetics concentration on spectro-temporal pattern of EEG

Elzbieta Olejarczyk (Institute of Biocybernetics and Biomedical Engineering PAS, Poland); Robert Rudner (Medical University of Silesia, Poland); Radoslaw Marciniak (Medical University of Silesia, Poland); Magdalena Wartak (Medical University of Silesia, Poland); Michal Stasiowski (Medical University of Silesia, Poland); Przemyslaw Jalowiecki (Medical University of Silesia, Poland); Aleksander Sobieszek (Department of Neurology and Epileptology CMKP, Poland)

Th. 04/16.6: Focus Session: Nonlinear Methods in Biosignal Processing (1)

Room: Hall 14c Chair: Niels Wessel (Humboldt-Universität zu Berlin, Germany) , Hagen Malberg (FZ Karlsruhe, Germany)

8:15 Invited: Finding Hidden Information in Complex Physiologic Signals: The Wonderful World of Nonlinear Biomedicine

Ary Goldberger (Beth Israel Deaconess Medical Center, Harvard Medical School, USA)

8:45 Invited: Motion artifact removal in optical fluorescence imaging of cardiac action potentials

Stefan Luther (Max Planck Institute for Dynamics and Self-Organization, Germany)

9:00 Invited: A robust algorithm for automatic detection of atrial fibrillation

Ki Chon (State University of New York at Stony Brook, USA)

9:15 Invited: Controlling cardiac arrhythmias using far-field pacing

Ulrich Parlitz (Georg-August-University of Göttingen, Germany); Philip Bittihn (Georg-August-University of Göttingen, Germany); Stefan Luther (Max Planck Institute for Dynamics and Self-Organization, Germany); Valentin Krinsky (Max Planck Institute for Dynamics and Self-Organization, Germany); Eberhard Bodenschatz (Max Planck Institute for Dynamics and Self-Organization, Germany)

9:30 Invited: Scale-invariant aspects of physiologic dynamics: from heartbeats, to locomotion to sleep

Plamen Ivanov (Boston University, USA)

9:45 Invited: Nonlinear Dynamics Techniques for Multivariate Biosignal Analysis: From Synchronization to Recurrence

Juergen Kurths (Humboldt University, Germany); Robert Bauernschmitt (German Heart Center Munich, Germany); Hagen Malberg (FZ Karlsruhe, Germany); Maik Riedl (University of Potsdam, Germany); Norbert Marwan (University of Potsdam, Germany); Niels Wessel (Humboldt-Universität zu Berlin, Germany)

Th. 07/16.1: Cardiovascular Instrumentation and Sensors

Room: Hall 01 Chair: Per Ask (Linköpings universite, Sweden) , Ulrich Steinseifer (RWTH Aachen, Germany)

8:15 Keynote: Recent developments in cardiovascular instrumentation

Per Ask (Linköpings universite, Sweden)

8:45 Innovative Acoustic Biofeedback Interventions for Hypertension

Petra Friedrich (Technische Universität München, Germany); Dominik Maroun (Technische Universität München, Germany); Reinhard Weber (DRV BAYern-Süd Klinik Höhenried gGmbH, Germany); Philipp Martius (DRV Bayern-Süd Klinik Höhenried, Germany); Bernhard Wolf (Technische Universität München, Germany)

9:00 Radial Pulse Type Changed by the Applied Pressure in same Position

HeeJung Kang (DAEYOMEDI Co., Ltd., Korea); Yong Heum Lee (Yonsei University, Korea); Kyungchul Kim (Donggeui University, Korea)

9:15 Gas embolism in divers – non-invasive detection of gas bubbles in blood vessels

Adam Wolf (Czech Technical University in Prague, Czech Republic)

9:30 Optical Studies of the Capillary Refill Kinetics in Fingertips

Janis Spigulis (University of Latvia, Latvia)

9:45 High-Resolution Transesophageal Right Ventricular Far Field Potential and Left Ventricular Potential in Heart Failure Patients with Left Bundle Branch Block

Matthias Heinke (University of Jena, Germany); Bruno Ismer (University of Rostock, Germany); Ralf Surber (University of Jena, Germany); Dirk Prochnau (University of Jena, Germany); Daniela Eisentraeger (University of Jena, Germany); Tobias Heinke (Siemens AG Healthcare Sector, Rudolstadt, Germany); Martin Lorenz (University of Jena, Germany); Helmut Kuehnert (University of Jena, Germany); Gudrun Dannberg (University of Jena, Germany); Hans Reiner Figulla (University of Jena, Germany)

Th. 12/16.12: Health Technology and Patient Safety (2)

Room: Hall 11a Chair: Shankar Krishnan (Wentworth Institute, USA) , Marcello Bracale (University of Naples, Italy)

8:15 Incorporating interoperability functionality for increasing patient safety with PCA-included multiple infusion therapy

Shankar Krishnan (Wentworth Institute, USA)

8:30 Assessment on a Safe use of a Home Telemedicine System regarding Electromagnetic Compatibility

Noemí Carranza Herrezuelo (Health Institute Carlos III, Spain); Alejandro del Pozo (Health Institute Carlos III, Spain); Jorge Garcia (Health Institute Carlos III, Spain); Jose Luis Monteagudo (Health Institute Carlos III, Spain); Victoria Ramos (Institute of Health Carlos III, Spain)

8:45 Development and Evaluation of a Formal-Analytical Usability Analysing Tool for Medical Devices and Systems

Armin Janß (RWTH Aachen University, Germany); Wolfgang Lauer (Helmholtz-Institute, RWTH Aachen University, Germany); Klaus Radermacher (RWTH Aachen, Germany)

9:00 Medical Devices put to test - How safe and intuitive are blood sugar meters?

Maike Reichel (User Interface Design, Germany); Alexander Steffen (User Interface Design GmbH, Germany)

9:15 *RFId-based tracking and safety system*

Fabrizio Dori (University of Florence, Italy); Ernesto Iadanza (Università degli Studi di Firenze, Italy); Roberto Miniati (University of Florence, Italy); Guido Biffi Gentili (University of Florence, Italy)

9:30 *A setup for checking electromagnetic interference between implantable cardiac pacemaker and RFID UHF*

Riccardo Tranfaglia (University Federico II of Naples, Italy); Mario Sansone (University 'Federico II' of Naples, Italy); Alessandro Santise (University Federico II of Naples, Italy); Luciano Mirarchi (Siemens Healthcare, Italy); Marcello Bracale (University of Naples, Italy)

9:45 *Magnetic Resonance (MR) Safety and Compatibility – Survey of Methods and Standards for Testing and Marking Medical Devices*

Gregor Schaefer (MR:comp GmbH, Germany)

Th. 06/16.17: Robots and Manipulators in Therapy

Room: Hall 22a Chair: Brian Davies (Imperial College affiliation, United Kingdom)

8:15 *A new miniature manipulator for laparoscopic camera control*

Patrick Finlay (Prosurjics Ltd, United Kingdom)

8:30 *Feasibility and Medical Impact Assessment of Handheld-Mobile-Robot usage in Image Guided Craniotomy*

Gavin Kane (University of Heidelberg, Germany); Georg Eggers (University of Heidelberg, Germany); Horia Ionescu (University of Heidelberg, Germany); Vitor Vieira (University of Heidelberg, Germany); Robert Boesecke (University of Heidelberg, Germany); Jörg Raczowsky (University of Karlsruhe, Germany); Heinz Wörn (Universität Karlsruhe, Germany); Ruediger Marmulla (University of Heidelberg, Germany)

8:45 *A Handheld Robot for Orthopedic Surgery - ITD*

Markus Schwarz (Medical Faculty Mannheim, University Heidelberg, Germany); Achim Wagner (University of Heidelberg, Germany); Ahmed El-Shenawy (University of Heidelberg, Germany); Ralf Gundling (Medical Faculty Mannheim, University Heidelberg, Germany); Andreas Köpfle (University of Heidelberg, Germany); Holger Handel (University of Heidelberg, Germany); Essameddin Badreddin (University of Mannheim, Germany); Reinhard Männer (University of Mannheim, Germany); Hanns-Peter Scharf (Medical Faculty Mannheim, University Heidelberg, Germany); Marcus Götz (MRC Systems GmbH, Germany); Markus Schill (VRmagic GmbH, Germany); Peter Pott (Medical Faculty Mannheim, University Heidelberg, Germany)

9:00 *A hand guided Robotic Planning System for Laser Osteotomy in Surgery*

Holger Mönnich (University of Karlsruhe, Germany)

9:15 Haptic control System for a Robotic Medical System With application to surface acquisition for Joint Arthroplasty

Yoel Shapiro (Technion, Israel); Alon Wolf (Technion, Israel, Israel); Alon Wolf (Technion, Israel Institute of Technology, Israel); Ouriel Barzilay (Technion, Israel Institute of Technology, Israel)

9:30 Setup of a scientific research platform for robot-assisted minimally invasive heart surgery scenarios

Christoph Staub (Technische Universität München, Germany); Hermann Mayer (Technische Universität München, Germany); Takayuki Osa (University of Tokyo, Japan); Eva Braun (German Heart Center Munich, Germany); Alois Knoll (Technical University Munich, 85748 Garching, Germany); Robert Bauernschmitt (German Heart Center Munich, Germany)

9:45 Automated soft tissue manipulation with mechatronic assistance using endoscopic Doppler Guidance

Stephan Jacobs (Heartsurgeon, Germany); Volkmar Falk (Heartsurgeon, Germany)

Th 03 /16.15: Induction of Second Cancers after Radiotherapy

Room: Hall 21a Chair: Klaus Trott (University College London, United Kingdom) , Harald Paganetti (Massachusetts General Hospital & Harvard Medical School, USA)

8:15 Invited: The dependence of second cancer risk after radiotherapy on dose, volume and age

Klaus Trott (University College London, United Kingdom)

8:45 Invited: Molecular mechanisms of radiation-induced second cancers

Carsten Herskind (University of Heidelberg, Germany); Frederik Wenz (University of Heidelberg, University Medical Center Mannheim, Germany)

9:00 Invited: Simulating dose and cancer risk due to low-dose neutron background in proton therapy

Basit Athar (Massachusetts General Hospital, USA); Harald Paganetti (Massachusetts General Hospital, USA)

9:15 The risk for secondary cancers in patients treated for prostate carcinoma – an analysis with the competition dose response model

Alexandru Dasu (Umea University, Sweden); Iuliana Toma-Dasu (Stockholm University and Karolinska Institutet, Sweden); Lars Franzén (Umea University, Sweden); Anders Widmark (Umea University, Sweden); Per Nilsson (Umea University and Lund University Hospital, Sweden)

9:30 Roundtable Discussion

Carsten Herskind (University of Heidelberg, Germany)

Th. 01/16.4: Dose Calculation Algorithms

Room: Hall 13b Chair: Jeffrey Siebers (Virginia Commonwealth University, USA) , Harald Paganetti (Massachusetts General Hospital & Harvard Medical School, USA)

8:15 Invited: A comparison of dose and energy-based mapping methods for 4D Monte Carlo dose calculations in deforming anatomy

Emily Heath (German Cancer Research Center (DKFZ), Germany); Iwan Kawrakow (National Research Council of Canada, Canada); Frederic Tessier (National Research Council of Canada, Canada); Jeffrey Siebers (Virginia Commonwealth University, USA)

8:45 4D Monte Carlo Dose Calculations for Particle Therapy Combined with the Spring Network Model of Lung Motion

Kenichi Ishikawa (RIKEN, Japan); Shu Takagi (RIKEN, Japan); Koen Matthys (Brunel University, United Kingdom); Shigeo Wada (Osaka University, Japan)

9:00 Monte Carlo benchmarking of a CCC-based treatment planning system in case of irregularly shaped fields

Luiza Olteanu (Gent University Hospital, Belgium); Raju Srivastava (Ghent University Hospital, Belgium); Carlos De Wagter (Gent University Hospital, Belgium)

9:15 Development of an optimized pencil beam algorithm for radiation therapy

Martin Siggel (German Cancer Research Center (DKFZ), Germany); Simeon Nill (German Cancer Research Center, Germany); Uwe Oelfke (DKFZ, Germany)

9:30 Lorentz function convolution kernel of narrow photon beam profiles

Armand Djouguela (Carl von Ossietzky University Oldenburg, Germany); Dietrich Harder (Georg-August University Göttingen, Germany); Antje Ruehmann (Pius-Hospital Oldenburg, Germany); Kay Willborn (Pius-Hospital Oldenburg, Germany); Björn Poppe (Carl von Ossietzky University Oldenburg, Germany)

9:45 Updated Beam Parameters for Monte Carlo Simulation of Five Varian Megavoltage Photon Beams (4, 6, 10, 15 and 18 MV)

Omar Chibani (King Faisal Specialist Hospital & Research Center, Saudi Arabia); Belal Moftah (King Faisal Specialist Hospital & Research Center, Saudi Arabia); C-M Charlie Ma (Fox Chase Cancer Center, USA)

Th. 08/16.9: Lab on Chip (2)

Room: Hall 04b Chair: Andreas Manz (FRIAS, Freiburg University, Germany & MESA+, University of Twente, Netherlands, Germany) , Claus Duschl (Fraunhofer Institute for Biomedical Engineering, Germany)

8:15 Analysis of chemotactic activity of mammalian cells in a microfluidic device

Claus Duschl (Fraunhofer Institute for Biomedical Engineering, Germany); Andreas Lankenau (Fraunhofer Institute for Biomedical

Engineering, Germany); Armin Renner (Fraunhofer Institute for Biomedical Engineering, Germany)

8:30 *Traveling-wave electrohydrodynamics: a versatile method for collecting nanoscaled objects from fluids*

Michael Boettcher (Fraunhofer Institute for Biomedical Engineering, Germany); Magnus Jaeger (Fraunhofer Institute for Biomedical Engineering, Germany); Michael Stuke (Max-Planck-Institute for Biophysical Chemistry, Germany); Claus Duschl (Fraunhofer Institute for Biomedical Engineering, Germany)

8:45 *Integration of Micro Fluidic Bio-chip Design and Automatic Fluorescent Identification for Rapid Sperm Mobility Assessment*

Li-Chern Pan (Taipei Medical University, Taiwan); Fang-Chi Hsu (Taipei Medical University, Taiwan); Yun-Ying Wu (Taipei Medical University, Taiwan); Fan-Gang Tseng (Academia Sinica, Taipei, Taiwan); Da-Jeng Yao (National Tsing Hua University, Taiwan); Yieh-Loong Tsai (Shin Kong Hospital, Fu Jen Catholic University, Taiwan); Jiann-Loung Hwang (Shin Kong Hospital, Taiwan)

9:00 *Fully electronic cellular migration assays with field-effect transistor arrays*

Sven Ingebrandt (Fachhochschule Kaiserslautern, Germany); Susanne Schäfer (Forschungszentrum Jülich GmbH, Germany); Regina Stockmann (Forschungszentrum Jülich GmbH, Germany); Andreas Offenhäusser (Forschungszentrum Jülich, Germany)

9:15 *An Adjustable Optofluidic Micro Lens Enhancing Single Cell Analysis Systems*

Michael Rosenauer (Vienna University of Technology, Austria); Michael Vellekoop (Vienna University of Technology, Austria)

9:30 *A novel fabrication route to integrating label-free detection of DNA hybridization in microfluidic channel*

Jiahuan Jiang (Chongqing University, P.R. China)

Th. 04/16.5: Modeling and Simulation for Orthopedics

Room: Hall 14a Chair: Roberto Carretta (Swiss Federal Institute of Technology (ETH), Switzerland)

8:15 *The mechanical behavior of a new designed hip spacer*

Thomas Thielen (University of Luxembourg, Luxembourg); Stefan Maas (University of Luxembourg, Luxembourg); Arno Zuerbes (University of Luxembourg, Luxembourg); Danièle Waldmann (University of Luxembourg, Luxembourg); Konstantinos Anagnostakos (Saarland University Hospital, Germany); Jens Kelm (Saarland University Hospital, Germany)

8:30 *Determination of Hip Joint Forces by means of Multi-body Simulation*

Bernd-Arno Behrens (Leibniz Universität Hannover, Germany); Gabriele Helms (Leibniz Universität Hannover, Germany); Martin Stolorz (Leibniz Universität Hannover, Germany); Henning Windhagen (Hannover Medical School, Germany); Patrick Wefstaedt (Tierärztliche Hochschule Hannover, Germany); Ingo Nolte (Tierärztliche Hochschule Hannover, Germany)

8:45 Evaluation of Osteosynthesis Options and Fracture Healing Progress from Computed Tomography Based Finite Element Analysis

Julia Koerber (Institute of Biomechanics Murnau, Germany); Sebastian Eberle (Trauma Center Murnau, Germany); Peter Augat (Institute of Biomechanics Murnau, Germany)

9:00 Simulation of the effects of electric loadings on bone surface remodeling

Anahita Fathi Kazerooni (University of Isfahan, Iran); Mohammad Reza Yazdchi (University of Isfahan, Iran); Mohsen Rabbani (Amirkabir University of Technology, Iran); Mohsen Janmaleki (Shahid Beheshti University (M.C), Iran)

9:15 Determination of the Young's Modulus of Callus by Comparing Finite Element Simulations with Experiments

Silke Besdo (Leibniz University of Hannover, Germany); Nina von der Höh (University of Veterinary Medicine Hannover, Germany); Fritz Thorey (Hannover Medical School, Germany); Henning Windhagen (Hannover Medical School, Germany); Andrea Meyer-Lindenberg (University of Veterinary Medicine Hannover, Germany)

9:30 Finding Hip Forces in Healthy and Hip Replacement Subjects using Musculo-Skeletal Modeling

David O'Reilly (University of Limerick, Ireland); Maurice Donoghue (University of Limerick, Ireland); Timothy McGloughlin (University of Limerick, Ireland); Michael Walsh (University of Limerick, Ireland)

9:45 The influence of muscle forces on biomechanical fracture fixation simulations – from in-vivo forces to tissue strains.

Sebastian Dendorfer (AnyBody Technology, Denmark); Carsten Englert (University Regensburg, Medical Center, Germany)

Th. 09/16.14: Innovations in Deep Brain Stimulation: Practice

Room: Hall 12b Chair: Wolfgang Eberle (IMEC, Belgium) , Carmen Bartic (IMEC, Belgium)

8:15 Optical measurements for guidance during deep brain stimulation surgery

Karin Wårdell (Linköping University, Sweden); Johannes Johansson (Linköping University, Sweden); Johan Richter (Department of Neurosurgery, Sweden); Patric Blomstedt (University Hospital, Umeå, Sweden)

8:30 Patient-specific models and simulations of deep brain stimulation for postoperative follow-up

Mattias Astrom (Linköping University, Sweden); Elina Tripoliti (Institute of Neurology, Queen Square, University College London, United Kingdom); Irene Martinez-Torrez (Institute of Neurology, Queen Square, University College London, United Kingdom); Ludvic Zrinzo (Institute of Neurology, Queen Square, University College London, United Kingdom); Patricia Limousin (Institute of Neurology, Queen Square, University College London, United Kingdom); Marwan Hariz (Institute of Neurology, Queen Square, University College London, United Kingdom); Karin Wårdell (Linköping University, Sweden)

8:45 FEM-based investigation of spatial stimulation properties of a multi-electrode probe with micrometer-size electrodes for cortical and DBS applications

Wolfgang Eberle (IMEC, Belgium); Ashwin Mecheri (IMEC, Belgium); Silke Musa (IMEC, Belgium); Georges Gielen (Katholieke Universiteit Leuven, Belgium); Gustaaf Borghs (IMEC vzw, Belgium); Carmen Bartic (IMEC, Belgium)

9:00 Functional evaluation of a micro-fabricated planar multielectrode probe for in vivo neuronal recording

Dimiter Prodanov (IMEC, Belgium); Marleen Welkenhuysen (IMEC, Belgium); Silke Musa (IMEC, Belgium); Wolfgang Eberle (IMEC, Belgium); Uwe Himmelreich (Max Planck Institute, Germany); Carmen Bartic (IMEC, Belgium); Gustaaf Borghs (IMEC vzw, Belgium); Bart Nuttin (University of Leuven, Belgium)

9:15 Electrodeposition and characterization of iridium oxide as electrode material for neural recording and stimulation

Willyan Hasenkamp Carreira (Katholieke Universiteit Leuven, Belgium); Silke Musa (IMEC, Belgium); Alexandru Andrei (IMEC, Belgium); Wolfgang Eberle (IMEC, Belgium); Carmen Bartic (IMEC, Belgium)

9:30 In-vitro neuronal networks in PDMS-based closed-compartmented device

Thiru Kanagasabapathi (Philips Research Laboratories Eindhoven, The Netherlands); Ger Ramakers (Netherlands Institute for Neurosciences, The Netherlands); Michel Decré (Philips Research Laboratories Eindhoven, The Netherlands)

Th. 04/16.10: Stents in Vessels

Room: Hall 02, Dieter Liepsch (University of Applied Sciences Munich & Institut f. Biotechnik, e.V., Germany)

8:15 Evaluation of intraaneurysmal hemodynamics after stent placement in a pulsatile side wall model using laser Doppler anemometry

Franziska Dorn (Klinikum rechts der Isar, Technical University Munich, Germany); Franz Niedermeier (Klinikum rechts der Isar, Technical University Munich, Germany); Andrea Balasso (TUM, Germany); Thomas Liebig (Klinikum rechts der Isar, Technical University Munich,

Germany); Dieter Liepsch (University of Applied Sciences Munich, Germany)

8:30 Flow Evaluation of Stents in a 180° Curved Tube

Dieter Liepsch (University of Applied Sciences Munich, Germany); Hermann Berger (Technical University Munich, Germany); Atsushi Sakurai (NTT, Japan)

8:45 Experimental flow studies in carotid artery models using protecting systems e.g. stents and filters

Dieter Liepsch (University of Applied Sciences Munich, Germany); Hermann Berger (Technical University Munich, Germany); Atsushi Sakurai (NTT, Japan)

9:00 Effect of strut-connectors on hemodynamics of stented vessels: a comparison of pulsatile flow through two freshly deployed coronary stents

Sanjay Pant (University of Southampton, United Kingdom); Neil Bressloff (University of Southampton, United Kingdom)

9:15 Visualization of thrombus formation and CFD based prediction on shear flows

Masaaki Tamagawa (Kyushu Institute of Technology, Japan)

Th. 02/16.8: Impedance Tomography: MRI and Electrode Based Impedance Tomography

Room: Hall 04a Chair: Hermann Scharfetter (Graz University of Technology, Austria), Paulsen Keith D. (, USA)

8:15 Imaging electric conductivity with MRI

Tobias Voigt (Universität Karlsruhe (TH), Germany); Ulrich Katscher (Philips Research Europe-Hamburg, Germany); Christian Findekle (Philips Research Europe-Hamburg, Germany); Olaf Doessel (Universität Karlsruhe (TH), Germany)

8:30 Sensitivity Study of a 3D Electric Impedance Tomography Prostate Probe

Andrea Borsic (Dartmouth College, USA); Ryan Halter (Dartmouth College, USA); Alex Hartov (Dartmouth College, USA); Paulsen Keith D. (, USA)

8:45 In vivo Monitoring by EIT for the pig's bleeding after liver injury

Fusheng You (Fourth Military Medical University, P.R. China); Wanjun Shuai (The First Affiliated Hospital of General Hospital of PLA, P.R. China); Xuetao Shi (Fourth Military Medical University, P.R. China); Feng Fu (The Forth Military Medical University, P.R. China); Ruigang Liu (Fourth Military Medical University, P.R. China); Xiuzhen Dong (Fourth Military Medical University, P.R. China)

9:00 Electric Impedance Imaging of the Mammary Gland in Circumstances of Skin Abnormality or Damage

Alexander Karpov (Clinical Hospital No. 9, Russia); Marina Korotkova (Clinical Hospital #9, Russia)

9:15 *Experimental study on early detection of acute cerebral ischemic stroke using electrical impedance tomography method*

Xuetao Shi (Fourth Military Medical University, P.R. China); Fusheng You (Fourth Military Medical University, P.R. China); Canhua Xu (Fourth Military Medical University, P.R. China); Liang Wang (Fourth Military Medical University, P.R. China); Feng Fu (The Forth Military Medical University, P.R. China); Ruigang Liu (Fourth Military Medical University, P.R. China); Xiuzhen Dong (Fourth Military Medical University, P.R. China)

9:30 *Application of Ambulatory Impedance Cardiography for Analysis of Ventricular Extrasystole Beats*

Gerard Cybulski (Warsaw University of Technology, Warsaw, Poland, Poland); Sebastian Stec (Grochowski Hospital, Warsaw, Poland, Poland); Beata Zaborska (Grochowski Hospital, Warsaw, Poland, Poland); Wiktor Niewiadomski (Medical Research Centre, Poland); Anna Gašiorowska (Medical Research Centre, Poland); Anna Strasz (Medical Research Centre, Poland); Piotr Kułakowski (Grochowski Hospital, Warsaw, Poland, Poland); Tadeusz Palko (Warsaw Technical University, Poland)

9:45 *Studying the Boundary Data Profile of A Practical Phantom for Medical Electrical Impedance Tomography (EIT) with Different Electrode Geometries*

Tushar Bera (Indian Institute of Science, India)

Th. 04/16.7: Vessel Wall Modeling

Room: Hall 05 Chair: Boudewijn Lelieveldt (Leiden University Medical Center, The Netherlands)

8:15 *A Software Tool for Hemodynamics Modeling in Large Vasculatures*

Harvey Ho (University of Auckland, New Zealand); Kumar Mithraratne (University of Auckland, New Zealand); Thusitha Mabotuwana (University of Auckland, New Zealand); Peter Hunter (University of Auckland, New Zealand)

8:30 *Finite element model of abdominal aortic aneurysm*

Jiri Bursa (Brno University of Technology, Faculty of Mechanical Engineering, Czech Republic); Petr Mucha (Brno University of Technology, Faculty of Mechanical Engineering, Czech Republic); Pavel Skacel (Brno University of Technology, Faculty of Mechanical Engineering, Czech Republic)

8:45 *Mechanical properties of blood clots - a new test method-*

Hermann Monstadt (Phenox, Germany); Nikolaj Krasokha (Ruhr-Universität Bochum, Germany); Franziska Dorn (Klinikum rechts der Isar, Technical University Munich, Germany); Stefanie Reese (Technische Universität Braunschweig, Germany); Werner Theisen

(Ruhr Universitaet Bochum, Germany); Michela Mordasini (University Hospital of Bern, Switzerland); Caspar Brekenfeld (University Hospital of Bern, Switzerland); Jan Gralla (University Hospital of Bern, Switzerland); Johannes Slotboom (University Hospital and Inselspital, Switzerland); Thomas Liebig (Klinikum rechts der Isar, Technical University Munich, Germany); Gerhard Schroth (University Hospital of Bern, Switzerland)

9:00 Individualised Pressure Propagation Model for the Elastic Arteries
Ahmed Al-Jumaily (The Auckland University of Technology, New Zealand)

9:15 Structural and Hemodynamical analysis of Aortic Aneurysms from Computerized Tomography Angiography data
Christian Gasser (KTH, Sweden); Martin Auer (VASCOPS GmbH, Austria); Jacopo Biasetti (KTH, Sweden)

9:30 Influence of Asymmetry and Resulting Inflection on Peak Wall Stress in Abdominal Aortic Aneurysms
Barry Doyle (University of Limerick, Ireland); Anthony Callanan (University of Limerick, Ireland); Michael Walsh (University of Limerick, Ireland); Timothy McGloughlin (University of Limerick, Ireland)

9:45 Computation of the distribution of monocyte deposition in abdominal aortic aneurysm disease
David Hardman (University of Edinburgh, United Kingdom); Peter Hoskins (The University of Edinburgh, United Kingdom)

Th. 07/16.16: New Approaches to Cardiovascular Monitoring

Room: Hall 21b Chair: Jörg-Uwe Meyer (Richard Wolf GmbH, Germany) , Muehlsteff Jens (Philips Research, Germany)

8:15 Non invasive oscillometric assessment of pulse pressure variation – a feasibility study
Nicholas Kiefer (University of Bonn, Germany); Saskia Smolka (University of Bonn, Germany); Andreas Hoeft (Universitätsklinikum Bonn, Germany); Sven Zenker (University of Bonn, Germany)

8:30 Standardization of controlled vasoconstriction at the finger site for pulse oximeter performance assessment with respect to a perfusion index
Soehnke Boye (University of Luebeck, Germany); Alexander Opp (University of Luebeck, Germany); Hartmut Gehring (University of Luebeck, Germany)

8:45 Implementation of a capacitive ECG measurement system in clinical practice: an interim report
Benjamin Eilebrecht (RWTH Aachen University, Germany); Michael Czaplik (University Hospital Aachen, Germany); Marian Walter (RWTH Aachen University, Germany); Tobias Wartzek (RWTH Aachen

University, Germany); Rolf Rossaint (Universitätsklinikum Aachen, Germany); Steffen Leonhardt (RWTH Aachen University, Germany)

9:00 Lack of reliability of cardiac output measurements derived from arterial pressure waveform analysis in on-pump cardiac surgery patients

Savvas Eleftheriadis (University General Hospital of Alexandroupolis, Greece); Matthias Heringlake (University of Luebeck, Germany); Klaus Berger (University of Lübeck, Germany); Heinrich Groesdonk (University of Lübeck, Germany); Julika Schoen (University of Luebeck, Germany)

9:15 Ambulatory monitoring of skin blood flow: the μ Hematron device

Dareen Toumi (INL, France); Claudine Gehin (INL, France); George Delhomme (INL, France); Andre Dittmar (Insa Lyon, France); Eric McAdams (INL, France)

9:30 On using impedance cardiography for estimation of central blood pressure

Arnulf Heller (Graz University of Technology, Austria)

9:45 Pharmacodynamic modelling of changes in arterial blood pressure during propofol anesthesia in volunteers: comparison between invasive and continuous noninvasive measurements

Christian Jeleazcov (University of Erlangen-Nuremberg, Germany); Harald Ihmsen (University of Erlangen-Nuremberg, Germany); Helmut Schwilden (University of Erlangen-Nuremberg, Germany); Joerg Fechner (University of Erlangen-Nuremberg, Germany)

08:45 - 10:00

Th. 13/16.2: Laser Generated Photon & Particle Beams

Room: Hall 14b Chair: C-M Charlie Ma (Fox Chase Cancer Center, USA) , Dietrich Habs (LMU Munich & Max-Planck Institute for Quantum Optics, Germany)

8:45 Keynote: Ultra-thin diamond foils and ultra-short pulse lasers for particle acceleration

Dietrich Habs (LMU Munich, Germany)

9:15 Invited: Development of laser accelerated proton beams for radiation therapy

C-M Charlie Ma (Fox Chase Cancer Center, USA); Eugene Fourkal (Fox Chase Cancer Center, USA); Iavor Veltchev (Fox Chase Cancer Center, USA); Jinsheng Li (Fox Chase Cancer Center, USA); Jiajin Fan (Fox Chase Cancer Center, USA); Teh Lin (Fox Chase Cancer Center, USA); Alain Tafo (Fox Chase Cancer Center, USA)

9:45 Treatment planning methods for efficient dose delivery in radiation therapy using laser accelerated particle beams

Stefan Schell (TU München, Klinikum rechts der Isar, Germany); Jan Wilkens (Technische Universität München, Germany)

10:00 *Technology of Cancer Particle Radiation Therapy Based on Ultrafast Intense Laser Generated Proton- and Ion Beams*

Toshiki Tajima (Munich-Centre for Advanced Photonics, Germany)

10:15 *Laser-accelerated ion beams for future medical applications*

Stephan Kraft (Forschungszentrum Dresden-Rossendorf, Germany)

10:30 *Phase contrast imaging for medical diagnostics: towards clinical application with compact laser-based X-ray sources*

Paola Coan (European Synchrotron Radiation Facility, France); Paul Claude Diemoz (European Synchrotron Radiation Facility, France); Alberto Bravin (European Synchrotron Radiation Facility, France); Thomas Schlossbauer (Institute of Clinical Radiology, Klinikum Ludwig-Maximilians-Universität, Germany); Maximilian Reiser (Ludwig-Maximilians-University Munich, Germany, Germany); Dietrich Habs (LMU Munich, Germany); Tanja Schneider (Institute of Clinical Radiology, Klinikum Ludwig-Maximilians-Universität, Germany); Christian Glaser (Institute of Clinical Radiology, Klinikum Ludwig-Maximilians-Universität, Germany)

10:30 - 12:15

Th. 01/17.7: Medical Physics in Radiation Therapy

Room: Hall 05 Chair: Björn Poppe (Carl von Ossietzky University Oldenburg, Germany) , Bernhard Rhein (DKFZ, Germany)

10:30 *A beam model applicable to small fields: development and validation*

Paola Caprile (German Cancer Research Center, Germany); Günther H. Hartmann (German Cancer Research Center, Germany)

11:00 *a finger leaf design for dual layer MLCs*

Jianrong Dai (Cancer Institute (Hospital), Chinese Academy of Medical Sciences, P.R. China); Weijie Cui (Academy of Medical Sciences, P.R. China)

17.3: ESEM Symposium on Grand Challenges in Engineering Trauma Care Solutions

Session cancelled on short notice.

Room: Hall 13a

10:30 *Spine and Intervertebral Disk Injuries (J. Iatridis)*

10:45 *Orthopaedic Trauma, Regeneration and Healing (M- Knothe)*

11:00 *Engineering Blood Substitutes, Novel Pharmaceutical Approaches for Trauma Care (M.-P. Krafft)*

11:15 *Major Soft Tissue Trauma and Face Transplants (M. Siemienow)*

11:30 *Potential of Deep Brain Stimulation for Restoration of Function after Traumatic Brain Injury*

Peter A. Tass (Juelich Research Centre, Germany)

Th 03 /17.16: Topics in Radiation Protection and Dosimetry

Room: Hall 21b Chair: Werner Rühm (Helmholtz Zentrum München, Germany) ,
Jonathon Thwaites (University of Western Australia, Australia)

10:30 *Ionization Effects Produced by Neutron Interaction Products in BNCT Field*

Saeed Mohammadi (Payame Noor University, Iran)

10:45 *Neutron spectrometry and determination of neutron ambient doses in radiotherapy treatments under different exposure conditions*

Carles Domingo (Universitat Autònoma de Barcelona, Spain); María-José García-Fusté (Universitat Autònoma de Barcelona, Spain); Encarna Morales (Universitat Autònoma de Barcelona, Spain); Khalil Amgarou (Universitat Autònoma de Barcelona, Spain); Francisco Sánchez-Doblado (University of Sevilla, Spain)

11:00 *Optical enhancement of DNA-base radio-resistivity*

Ramin Abolfath (University of Texas, Southwestern Medical Center, USA); Lech Papiez (University of Texas, Southwestern Medical Center, USA); Strahinja Stojadinovic (University of Texas, Southwestern Medical Center, USA); Timothy Solberg (University of Texas, Southwestern Medical Center, USA)

11:15 *Prevention of Overexposure by Means of Active Protective Reactions and Magnitude of Temporary Blinding from Visible Laser Radiation*

Hans-Dieter Reidenbach (Cologne University of Applied Sciences, Germany)

11:30 *Effect of Different Ultrasonic Duty cycle and Exposure Duration on the Amyloid- β 25-35 Induced PC-12 Apoptosis*

Chun-Yi Chiu (Chung Yuan Christian University, Taiwan); Show-Huie Chen (Chung Yuan Christian University, Taiwan); Shyh-Hau Wang (Chung Yuan Christian University, Taiwan)

Th. 04/17.13: Virtual Reality & Clinical Applications

Room: Hall 11b Chair: Myeong-Hee Kim (Ewha University, Korea)

10:30 *Mesh Fusion based Neurosurgical Simulation with Force Feedback*

Yoshihiro Kuroda (Osaka University, Japan); Kyouzuke Kamada (The University of Tokyo, Japan); Yoshiyuki Kagiyama (Osaka University, Japan); Osamu Oshiro (Osaka University, Japan)

10:45 *Invited: Closed Loop: A Classification Framework for Interventional Procedures*

Georgios Sakas (Fraunhofer IGD, Darmstadt, Germany); Georgios Sakas (Fraunhofer IGD, Germany)

11:05 Efficient Hybrid Registration Method Using a Shell Volume for PET and High Resolution MR Brain Image Fusion

Ho Lee (Seoul National University, Korea)

11:20 Invited: The Future of Volume Graphics in Medical Virtual Reality

Judith Muehl (Technische Universitaet Graz, Austria); Bernhard Kainz (Technische Universitaet Graz, Austria); Alexander Bornik (Technische Universitaet Graz, Austria); Markus Grabner (Technische Universitaet Graz, Austria); Stefan Hauswiesner (Technische Universitaet Graz, Austria); Dieter Schmalstieg (Graz University of Technology, Austria)

11:40 An Adaptive Virtual Biofeedback System for Neuromuscular Rehabilitation

Ouriel Barzilay (Technion, Israel Institute of Technology, Israel); Alon Wolf (Technion, Israel Institute of Technology, Israel)

11:55 Error Reduction in 3D Gaze Point Estimation for Advanced Medical Annotations

Yoshihiro Kuroda (Osaka University, Japan); Yuta Morishita (Osaka University, Japan); Yasushi Masuda (Osaka University, Japan); Tomohiro Kuroda (Kyoto University, Japan); Osamu Oshiro (Osaka University, Japan)

12:10 Unfolding for Color Volume Datasets based on Segmented Contours

Byeong-Seok Shin (Inha University, Korea)

Th. 04/17.6: Focus Session: Nonlinear Methods in Biosignal Processing (2)

Room: Hall 14c **Chair:** Juergen Kurths (University of Potsdam, Germany) , Plamen Ivanov (Boston University, USA)

10:30 Voice Fundamental Frequency Extraction Algorithm Based on Ensemble Empirical Mode Decomposition and Entropies

Gaston Schlotthauer (Universidad Nacional de Entre Rios, Argentina); Maria Torres (Universidad Nacional de Entre Rios, Argentina); Hugo Rufiner (Universidad Nacional del Litoral, Argentina)

10:45 An arrhythmia classification method based on selected features of heart rate variability signal and support vector machine-based classifier

Farid Yaghouby (Iran University of Science and Technology (IUST), Iran); Ahmad Ayatollahi (IUST, Iran); Maryam Yaghouby (Faculty of engineering, Islamic Azad University of Mashhad, Iran)

11:00 Association Analysis of Biosignals using Self Organizing Maps

Mohammed Al-Rawi (University of Aveiro, Portugal); José Maria Fernandes (University of Aveiro, Portugal); Sérgio Tafula (IEETA - Instituto de Engenharia Electrónica e Telemática de Aveiro, Portugal); Joao Silva Cunha (University of Aveiro, Portugal)

11:15 Coherence and phase relationship analysis of the two main frequency components of EHG, as observed by complex wavelet transform

Mahmoud Hassan (Université de Technologie de Compiègne, France); Jeremy Terrien (Mr., France); Brynjar Karlsson (Reykjavik University, Iceland); Catherine Marque (Université de Technologie de Compiègne, France)

11:30 Enhancement of oscillometric index in non-invasive blood pressure measurements

Vojko Jazbinsek (Institute of Mathematics, Physics and Mechanics, Slovenia); Janko Luznik (Institute of Mathematics, Physics and Mechanics, Slovenia); Zvonko Trontelj (Institute of Mathematics, Physics and Mechanics, Slovenia)

11:45 Non-invasive assessment of pressure generated by respiratory muscles using the Kalman filter

Zhanqi Zhao (Furtwangen University, Germany); Knut Moeller (Furtwangen University, Germany); Josef Guttmann (Universitätsklinikum Freiburg, Germany)

12:00 Non-invasive Intracranial Pressure Measurement using Transcranial Doppler Sonography and Support Vector Machines

Mojtaba Golzan (Shahed University, Iran); Mohammad Mikaili (University of Shahed, Iran); Amir Saeed Sedighi (Shahid Beheshti Medical Science University, Iran); Alberto Avolio (Macquarie University, Australia); Mohammad Karimi (Milad hospital, Iran)

Th. 07/17.1: Techniques in Clinical Cardiology

Room: Hall 01 Chair: Hugo Katus (Universitätsklinik Heidelberg, Germany) , Sergio Cerutti (Politecnico di Milano, Italy)

10:30 Keynote: Challenges in Clinical Cardiology

Hugo Katus (Universitätsklinik Heidelberg, Germany)

11:00 Directed Transesophageal Left Atrial and Left Ventricular Electrocardiography in Evaluation of Interatrial and Interventricular Delay in Patients with Heart Failure

Matthias Heinke (University of Jena, Germany); Bruno Ismer (University of Rostock, Germany); Ralf Surber (University of Jena, Germany); Tobias Heinke (Siemens AG Healthcare Sector, Rudolstadt, Germany); Daniela Eisentraeger (University of Jena, Germany); Helmut Kuehnert (University of Jena, Germany); Gudrun Dannberg (University of Jena, Germany); Dirk Prochnau (University of Jena, Germany); Hans Reiner Figulla (University of Jena, Germany)

11:15 Cardiac Reserve Measurements Derived From Ejection Fractions Can Be Used for Patient-Specific Clinical Monitoring

Horst Kunig (Retired, USA); Mirka Krause (University of Leipzig, Germany); Paula Klinder (University of Leipzig, Germany); Lothar Engelmann (University of Leipzig, Germany)

11:30 *Determination of 6-minute walk test using accelerometer-based ambulatory monitoring device for the assessment of patient's progress in cardiac rehabilitation*

Mohanraj Karunanithi (CSIRO ICT Centre, Australia)

11:45 *Predicting Successful Transthoracic Cardioversion by Dominant Atrial Fibrillatory Frequency Analysis: the Effects of Bisoprolol*

Omar Escalona (University of Ulster, United Kingdom)

12:00 *New Bipolar ECG Electrode Locations in Differentiating Subjects with Left Ventricular Hypertrophy from Normal Subjects*

Juho Väisänen (Tampere University of Technology, Finland); Merja Puurtinen (Tampere University of Technology, Finland); Jari Viik (Tampere University of Technology, Finland); Jari Hyttinen (Tampere University of Technology, Finland)

Th. 12/17.8: Health Technology and Patient Safety (1)

Room: Hall 04a Chair: Andrei Issakov (Health Technology and Facilities Planning (TFP), Switzerland) , Saide Calil (Campinas State University, Brazil)

10:30 *Invited: Indicators for Evaluating and Measuring the Impact of Healthcare Infrastructure and Technology Management on Investments, Service Delivery and Quality of Care*

Joachim Nagel (University of Stuttgart, Germany); Monika Nagel (University of Stuttgart, Germany)

11:00 *Incident reports to BfArM support the importance of usability for patient safety*

Thomas Rölleke (BfArM, Germany)

11:15 *HTA (Health Technology Assessment): a means to reach governance goals and to guide health politics on the topic of clinical risk management*

Giovanni Improta (University of Naples, Federico II, Italy); Simone Tiziana (University of Naples, Federico II, Italy); Marcello Bracale (University of Naples, Italy)

11:30 *Risk Assessment in Radiotherapy. Lessons from Systems Engineering*

Enda Fallon (National University of Ireland, Galway, Ireland); Liam Chadwick (National University of Ireland, Galway, Ireland); Wil van der Putten (Galway University Hospitals, Ireland)

11:45 *The Importance of a Safety Culture in Healthcare Facilities for the Development of an Incident Investigation System*

Plinio Morita (Campinas State University, Brazil); Saide Calil (Campinas State University, Brazil)

12:00 *SEMIO: an expert system for monitoring critical hospital infrastructures*

Ernesto Iadanza (Università degli Studi di Firenze, Italy); Fabrizio Dori (University of Florence, Italy); Roberto Miniati (University of Florence, Italy); Eleonora Rossi (Università degli Studi di Firenze, Italy)

Th. 06/ 17.17: Robots and Mechatronic Assistants in the OR

Room: Hall 22a **Chair:** Brian Davies (Imperial College affiliation, United Kingdom)

10:30 *Design of Master Console of Surgical Robot for NOTES*

Sukhoon Park (KAIST, Korea); Kyeong Bin Lim (KAIST, Korea); Yong-san Yoon (KAIST, Korea)

10:45 *User-Interaction of a Semiautomatic Trepanation System*

Axel Follmann (RWTH Aachen, Germany); Armin Janß (RWTH Aachen University, Germany); Alexander Korff (RWTH Aachen, Germany); Kirsten Schmieder (Ruhr-Universität Bochum, Germany); Klaus Radermacher (RWTH Aachen, Germany)

11:00 *The kinematic design of the new endoscope manipulator system (EMS) for functional endoscopic sinus surgery and familiar techniques in ENT surgery*

Maximilian Krinninger (Technische Universität München, Germany); Gero Strauss (Universitätsklinik Leipzig, Germany); Mathias Markert (Technische Universität München, Germany); Tobias Kraus (Technische Universität München, Germany); Andreas Dietz (Universitätsklinik Leipzig, Germany); Tim Lueth (Technical University of Munich, Dept. MIMED, Germany)

11:15 *Tactile Feedback for Artery Detection in Minimally Invasive Robotic Surgery – Preliminary Results of a New Approach*

Bernhard Kuebler (Deutsches Zentrum für Luft- und Raumfahrt e.V., Germany); Robin Gruber (Deutsches Zentrum für Luft- und Raumfahrt e.V., Germany); Christoph Joppek (Universität Stuttgart, Germany); Johannes Port (Universität Stuttgart, Germany); Georg Passig (Deutsches Zentrum für Luft- und Raumfahrt e.V., Germany); Joachim Nagel (University of Stuttgart, Germany); Gerd Hirzinger (Deutsches Zentrum für Luft- und Raumfahrt e.V., Germany)

11:30 *Design Optimisation of a Biologically Inspired Multi-Part Probe for Soft Tissue Surgery*

Luca Frasson (Imperial College, United Kingdom); Saverio Reina (Imperial College London, United Kingdom); Brian Davies (Imperial College affiliation, United Kingdom); Ferdinando Rodriguez y Baena (Imperial College, United Kingdom)

11:45 *Designing a 6 Dof Assistant Robot for Arthroscopic Surgery*

Hadi Shirzad (Headquarter of Police Force Medicine, Iran); Farzad Falahati (Headquarter of Police Force Medicine, Iran); Ali Majidi (Headquarter of Police Force Medicine, Iran); Shahriar Bagheri (Headquarter of Police Force Medicine, Iran)

Th 03 /17.15: Biology of High Dose - High Precision Radiotherapy

Room: Hall 21a Chair: Carsten Herskind (University of Heidelberg, Germany) ,
Christian Kirisits (Medical University of Vienna, Austria)

10:30 Invited: Biological effect of single, very large dose fractions as used in intraoperative radiotherapy (IORT)

Carsten Herskind (University of Heidelberg, Germany); Lin Ma (University of Heidelberg, Germany); Qi Liu (University of Heidelberg, Germany); Frederik Wenz (University of Heidelberg, University Medical Center Mannheim, Germany)

11:00 Invited: Biology of high dose-high precision radiotherapy – experience from brachytherapy of cervix cancer

Christian Kirisits (Medical University of Vienna, Austria); Dietmar Georg (Medical University Vienna, Austria)

11:15 GafChromic® film measurements for Microbeam Radiation Therapy (MRT)

Elke Brauer-Krisch (European Synchrotron Radiation Facility, France)

11:30 Invited: Laser Particle Acceleration for Radiotherapy: A first radiobiological characterization of laser accelerated electrons

Jörg Pawelke (OncoRay - Center for Radiation Research in Oncology, Germany)

11:45 The use of radiobiological parameters and the evaluation of NTCP models. How do they affect the ability to estimate radiation induced complications?

Patricia Svolou (University of Thessaly, Greece, Greece); Ioannis Tsougos (University of Thessaly, Greece); Kiki Theodorou (University of Thessalia, Greece); Constantin Kappas (Univestiry of Thessali, Greece)

12:00 Accelerated Hypo-fractionation by biological equivalent DVH for patients affected by gastric carcinoma in postoperative concomitant Radiochemotherapy

P. Pedicini (I.R.C.C.S. Ospedale Oncologico Regionale C.R.O.B. Rionero in Vulture (PZ), Italy); M. Mazziotta (I.R.C.C.S. Ospedale Oncologico Regionale C.R.O.B. Rionero in Vulture (PZ), Italy); S. Clemente (I.R.C.C.S. Ospedale Oncologico Regionale C.R.O.B. Rionero in Vulture (PZ), Italy); M. Cozzolino (I.R.C.C.S. Ospedale Oncologico Regionale C.R.O.B. Rionero in Vulture (PZ), Italy); L. Caporaso (I.R.C.C.S. Casa Sollievo della Sofferenza S. Giovanni Rotondo (FG), Italy); P. Sanpaolo (I.R.C.C.S. Ospedale Oncologico Regionale C.R.O.B. Rionero in Vulture (PZ), Italy); V. Barbieri (I.R.C.C.S. Ospedale Oncologico Regionale C.R.O.B. Rionero in Vulture (PZ), Italy); L. Lapadula (I.R.C.C.S. Ospedale Oncologico Regionale C.R.O.B. Rionero in Vulture (PZ), Italy); G. Castaldo (I.R.C.C.S. Ospedale Oncologico Regionale C.R.O.B. Rionero in Vulture (PZ), Italy); V. Fusco (I.R.C.C.S. Ospedale Oncologico Regionale C.R.O.B. Rionero in Vulture (PZ), Italy)

Th. 07/17.11: Clinical Engineering: Neuroscience, Transplants and Tissue Engineering

Room: Hall 03 Chair: Tony Easty (University Health Network, Canada) , Heikki Teriö (Karolinska University Hospital, Sweden)

10:30 Performance improvement of a chromatic confocal distance sensor for coating thickness measurement on Drug-Eluting Stents

Christian Gocke (University of Rostock, Germany); Christine Schultze (University of Rostock, Germany); Wolfram Schmidt (Universität Rostock, Germany); Niels Grabow (University of Rostock, Germany); Klaus-Peter Schmitz (Universität Rostock, Germany)

10:45 Resection of Glioblastoma multiforme with a fiber-optic fluorescence spectroscopy system and ultrasound based neuronavigation

Johan Richter (Department of Neurosurgery, Sweden); Neda Haj-Hosseini (Department of Biomedical Engineering, Linköping University, Linköping/SE, Sweden); Stefan Andersson-Engels (Department of Physics, Lund University, Lund/SE, Sweden); Karin Wårdell (Linköping University, Sweden)

11:00 Validation of Vertebral Metrics: A Mechanical Instrument to Evaluate Posture of the Spinal Column

Claudia Quaresma (Faculty of Science and Technology, Portugal); Filipa João (Faculty of Human Kinetics, UTL, Portugal); Miguel Fonseca (Faculty of Science and Technology, UNL, Portugal); Mario Forjaz Secca (Faculty of Science and Technology, UNL, Portugal); Antonio Veloso (Faculty of Human Movement, UTL, Portugal); Joao Goyri O'Neill (Faculty of Medical Sciences, UNL, Portugal); Jorge Branco (Faculty of Medical Sciences, UNL, Portugal)

11:15 A study on oculogyration evaluating system for objective diagnosis

Ichiro Fukumoto (Nagaoka University of Technology, Japan)

11:30 A preliminary investigation of the sorption properties of the stratum corneum in vivo

Gorm Johnsen (University of Oslo, Norway); Ørjan Martinsen (University of Oslo, Norway); Sverre Grimnes (Rikshospitalet University Hospital, Norway)

11:45 Basic Air-cooling Fuzzy Control System for Brain Hypothermia

Hidetoshi Wakamatsu (Tokyo Medical and Dental University, Japan)

12:00 A low-noise front-end amplifier for biopotential recordings

Hamid Reza Marateb (Politecnico di Torino, Italy); Riccardo Introzzi (Politecnico di Torino, Italy); Roberto Merletti (Politecnico di Torino, Italy); Corrado Cescon (Politecnico di Torino, Italy)

Th. 01/17.4: Applications of Dose Algorithms

Room: Hall 13b Chair: Emily Heath (German Cancer Research Center (DKFZ), Germany) , Iwan Kawrakow (National Research Council of Canada, Canada)

10:30 Invited: Comparing pencil-beam generated and Monte Carlo generated dose-to-water and dose-to-tissue distributions for proton therapy patients

Harald Paganetti (Massachusetts General Hospital, USA)

11:00 Monte Carlo Dose Calculation for Radiotherapy Treatment Planning: Dose to Water or Dose to Medium

C-M Charlie Ma (Fox Chase Cancer Center, USA); Jinsheng Li (Fox Chase Cancer Center, USA)

11:15 Evaluation of the Twin Chamber Signal Ratio, a Physical Estimate of the Low-Energy Photon Contribution to Dose within Radiotherapy Fields

Ndimofor Chofor (Carl von Ossietzky University Oldenburg, Germany); Dietrich Harder (Georg-August University Göttingen, Germany); Kay Willborn (Pius-Hospital Oldenburg, Germany); Antje Rühmann (Pius-Hospital Oldenburg, Germany); Björn Poppe (Carl von Ossietzky University Oldenburg, Germany)

11:30 Monte Carlo calculation of beam quality correction factors and comparison with experimental measurements

Günther H. Hartmann (German Cancer Research Center, Germany); Diego González-Castaño (Universidad de Santiago de Compostela, Spain); Francisco Sánchez-Doblado (University of Sevilla, Spain); Faustino Gómez (Universidad de Santiago de Compostela, Spain); Ralf-Peter Kapsch (Physikalisch-Technische Bundesanstalt, Germany); Roberto Capote (IAEA, Austria); Javier Pena (Universidad de Santiago de Compostela, Spain)

11:45 Optimization of an external beam radiotherapy treatment using GAMOS/Geant4

Pedro Arce (CIEMAT, Spain); Juan Ignacio Lagares (CIEMAT, Spain); Daniel Perez-Astudillo (CIEMAT, Spain); John Apostolakis (CERN, Switzerland); Gabriele Cosmo (CERN, Switzerland)

12:00 Improved simulation of small electron fields for external beam radiation therapy

Tuathan O'Shea (National University of Ireland, Galway, Ireland); Bruce Faddegon (University of California San Francisco, USA); Daren Sawkey (University of California San Francisco, USA); Mark Foley (National University of Ireland, Galway, Ireland)

Th. 08/17.9: Lab on Chip (3)

Room: Hall 04b Chair: Andreas Manz (FRIAS, Freiburg University, Germany & MESA+, University of Twente, Netherlands, Germany) , Gerald Urban (University of Freiburg, Germany)

10:30 Concentration-dependent multi-parametric functional screening of CNS drugs with neuronal networks on microelectrode arrays

Olaf Schröder (NeuroProof GmbH, Germany); Alexandra Gramowski (University of Rostock, Germany); Konstantin Jügelt (NeuroProof GmbH, Germany); Dieter Weiss (University of Rostock, Germany)

10:45 Space saving Mixed Signal FPGAs for improving processing power and memory capacity as a replacement for μ Cs in portable biosensor devices

Michael Schmidhuber (Technische Universität München, Germany); Jonas Bähr (Technische Universität München, Germany); Florian Ilchmann (Technische Universität München, Germany); Joachim Wiest (cellasys GmbH, Germany); Bernhard Wolf (Technische Universität München, Germany)

11:00 Electric Field Characteristics of Bipolar Impedance Sensors

Panagiotis Kassanos (University College London, United Kingdom); Bayford Richard (, United Kingdom); Andreas Demosthenous (University College London, United Kingdom)

11:15 Silicon Based Multi Parametric Biohybrid Microsensor Chips

Yazay Eminaga (Technische Universität München, Germany); Joachim Wiest (cellasys GmbH, Germany); Margarete Remm (Technische Universität München, Germany); Martin Brischwein (Technische Universität München, Germany); Bernhard Wolf (Technische Universität München, Germany)

11:30 Development of a generic multiple frequency signal generator for BioMEMS

Nahrizul Adib Kadri (University of Surrey, United Kingdom, United Kingdom)

11:45 Application of Supported Phospholipids Bilayers for Biosensor based on Imaging Ellipsometry

Yanyan Chen (Institute of Nano-tech and Nano-bionics, Chinese Academy of Sciences, P.R. China)

12:00 Chitosan cushioned air stable single PEGylated phospholipid bilayers

Yanyan Chen (Institute of Nano-tech and Nano-bionics, Chinese Academy of Sciences, P.R. China)

Th. 09/17.14: Challenges in Deep Brain Stimulation: Clinical Practice and Technology

Room: Hall 12b Chair: Carmen Bartic (IMEC, Belgium) , Wolfgang Eberle (IMEC, Belgium)

10:30 Challenges for technology from clinical practice in DBS

Bart Nuttin (University of Leuven, Belgium)

11:00 Invited: Neuromodulation devices and therapies (Sarem-Aslami)

11:30 Invited: Long-lasting therapeutic effects of desynchronizing deep brain stimulation (Prof. Peter Tass)

Peter A. Tass (Juelich Research Centre, Germany)

12:00 Facing the non-technological factors in DBS R&D and deployment

Wolfgang Eberle (IMEC, Belgium)

Th. 06/ 17.2: Laser and Ultrasound Interventions

Room: Hall 14b Chair: Thomas Lenarz (University of Hannover, Germany)

10:30 Using microbubble contrast agent of different dosage to enhancing liver ablation induced by high-intensity focused ultrasound

Faqi Li (Chongqing Medical University, P.R. China); Fu Liyuan (Chongqing Medical University, P.R. China)

10:45 Laparosound (TM) –an ultrasonic method and device for tissue morcellation in laparoscopic surgery , utilizing high amplitude waveguides

Igor Malinowski (Warsaw University of Technology, Poland)

11:00 Navigated Ultrasound in Total Hip Arthroplasty

Ingrid Südhoff (Aesculap, Germany); Christian König (Julius Wolff Institut, Charité – Universitätsmedizin Berlin, Germany); Benoit Mollard (Aesculap, Germany); Alexey Sharenkov (Julius Wolff Institut, Charité – Universitätsmedizin Berlin, Germany); Olaf Hasart (Center for Musculoskeletal Surgery, Charité – Universitätsmedizin Berlin, Germany); Markus Heller (Julius Wolff Institut, Charité – Universitätsmedizin Berlin, Germany)

11:15 Minimal invasive surgery for maxillary transversal distraction osteogenesis with piezo-surgery device follows a 3D finite element analysis

Lars Bonitz (Klinikum Dortmund gGmbH, Germany); Stephan Weihe (Klinikum Dortmund gGmbH, Germany); Eric-Peter Franz (Klinikum Dortmund gGmbH, Germany); Arnulf Baumann (University of Vienna, Germany); Stefan Hassfeld (Klinikum Dortmund gGmbH, Germany)

11:30 Comparison of two cw Infrared Laser Systems emitting wavelengths at 1.92 μm and 2.01 μm for tissue dissection in liver surgery

Dirk Theisen-Kunde (University of Luebeck, Germany); Veit Danicke (University of Luebeck, Germany); Ralf Brinkmann (Medical Laser Centre Luebeck, Germany)

11:45 MR Guided Focused Ultrasound for High Risk and Recurrent Breast Cancer

C-M Charlie Ma (Fox Chase Cancer Center, USA); Lili Chen (Fox Chase Cancer Center, USA); Gary Freedman (Fox Chase Cancer Center, USA); Richard Bleicher (Fox Chase Cancer Center, USA)

12:00 Robotically Assisted Focal Spot Scanning MRgFUS: Initial in vivo Experiments

Axel Krafft (German Cancer Research Center (DKFZ), Germany); Florian Maier (German Cancer Research Center, Germany); Jürgen Jenne (German Cancer Research Center, Germany); Wolfhard Semmler (German Cancer Research Center, Germany); Roger Stafford (The University of Texas, M. D. Anderson Cancer Center, USA); Peter Huber (German Cancer Research Center, Germany); Michael Bock (German Cancer Research Center (DKFZ), Germany)

12:15 *Transendoscopic ultrasound for neurosurgery: actual clinical application*

Klaus Resch (Klinikum München Bogenhausen, Germany)

Th. 13/17.5: Cost effective technologies for developing countries

Room: Hall 14a Chair: Barry Allen (St. George Hospital, Australia) , Cari Borrás (Universidad Federal de Pernambuco, Brazil)

10:30 *Progress in the HTTTG initiative of the IUPESM*

Barry Allen (St. George Hospital, Australia)

10:45 *Telemedicine for developing countries*

Boris Rubinsky (Hebrew University Jerusalem, Israel, Israel)

11:00 *Review of medical imaging services in the Mekong Delta region of Vietnam*

Cari Borrás (Universidad Federal de Pernambuco, Brazil)

11:15 *Recommendations for palliative radiotherapy in developing countries*

Barry Allen (St. George Hospital, Australia)

11:30 *Experiences of in-field and remote monitoring of diagnostic radiological quality in Ghana using an equipment and patient dosimetry database*

Matthew Ward (Integrated Radiological Services Ltd, United Kingdom); Michael Moores (Integrated Radiological Services Ltd, United Kingdom)

11:45 *Participatory Health Revolution*

Peter Waegemann (Medical Record Institute, USA)

12:00 *Independent treatment time verification for 3D conformational radiotherapy with cobalt 60 beam data from TECDOC-1540*

Olive Modestine Makam Kom (Saarland University Hospital, Germany); Norbert Licht (Saarland University Hospital, Germany)

Th. 04/17.10: Focus Session: Waves in the Cardiovascular System (2)

Room: Hall 02 , John Tyberg (University of Calgary, Canada)

10:30 *Invited: Wave intensity has clinical usefulness in evaluating exercise capacity in heart disease patients.*

Yoichi Takaya (Okayama University Graduate School, Japan)

10:45 Invited: Post-meal Hyperglycemia induced Oxidative Stress impairs Cardiac and Vascular Function by increasing Myocardial Energy Demand in non-hypertensive Patients with Type 2 Diabetes – assessed by Wave Intensity

Helene von Bibra (Teaching Hospital Klinikum Bogenhausen of the Technical University of Munich, Germany); Alexander Illmann (Teaching Hospital Klinikum Bogenhausen of the Technical University of Munich, Germany); Catherine Avgeropoulou (Ippokration Hospital Athens, Greece)

11:00 Invited: Noninvasive Evaluation of the Inertia Force of Late Systolic Aortic Flow

Nobuyuki Ohte (Nagoya City University Graduate School of Medical Sciences, Japan); Kazuaki Wakami (Nagoya City University Graduate School of Medical Sciences, Japan); Motoaki Sugawara (Himeji Dokkyo University, Japan); Kiyomi Niki (Musashi Institute of Technology, Japan); Genjiro Kimura (Nagoya City University Graduate School of Medical Sciences, Japan)

11:15 Invited: Augmentation of coronary blood flow in systole by reflected waves in the proximal aorta

Justin Davies (Imperial College Healthcare NHS Trust, United Kingdom); Darrel Francis (Imperial College of Science and Medicine, London, UK, United Kingdom); Nearchos Hadjiloizou (Imperial College Healthcare NHS Trust, United Kingdom); Zachary Whinnett (Imperial College Healthcare NHS Trust, United Kingdom); Charlotte Manisty (Imperial College Healthcare NHS Trust, United Kingdom); Jazmin Aguado-Sierra (Imperial College London, United Kingdom); Iqbal Malik (Imperial College Healthcare NHS Trust, United Kingdom); Kim Parker (Imperial College London, United Kingdom); Alun Hughes (Imperial College Healthcare NHS Trust, United Kingdom); Jamil Mayet (Imperial College Healthcare NHS Trust, United Kingdom)

11:30 Invited: The reservoir-wave approach to arterial hemodynamics

John Tyberg (University of Calgary, Canada); Nigel Shrive (University of Calgary, Canada); Jiun-Jr Wang (University of Calgary, Canada)

11:45 Invited: Prognostic value of Wave Intensity in Patients Awaiting Heart Transplantation

Henryk Siniawski (Deutsches Herzzentrum Berlin, Germany); Hans Lehmkuhl (Deutsches Herzzentrum Berlin, Germany); Michael Dandel (Deutsches Herzzentrum Berlin, Germany); Yuguo Weng (Deutsches Herzzentrum Berlin, Germany); Roland Hetzer (Deutsches Herzzentrum Berlin, Germany)

Th. 12/17.12: Preventive Healthcare

Room: Hall 11a Chair: Peter Schneider (University Clinic Würzburg, Germany) , Victor Ovsyannikov (Ioffe Phisico-Technical Institute of Russian Academy of Science, Russia)

10:30 Assessment of neuromuscular function with a new ground reaction force platform using power spectrum analysis technique

Peter Schneider (University Clinic Würzburg, Germany); Heribert Hänscheid (University Clinic Würzburg, Germany); Michael Schwab (University of Würzburg, Germany); Franz Jakob (University of Würzburg, Germany)

10:45 Comparing the thoracic kyphosis and postural stiffness between the healthy old female and males

Mino Khalkhali Zavieh (Shahid Beheshti Medical University, Italy); Somaieh Mahmoodi (Shahid Beheshti Medical University, Iran); Mariam Noodehi (Shahid Beheshti Medical University, Iran)

11:00 Electromagnetic fields - a basic carcinogenic factor of Children oncology

Victor Ovsyannikov (Ioffe Physico-Technical Institute of Russian Academy of Science, Russia)

11:15 Abnormal Mass Detection in a Real Breast Model: A Computational Tactile Sensing Approach

Afsaneh Mojra (Amirkabir University of Technology (Tehran Polytechnic), Iran); Siamak Najarian (Amirkabir University of Technology, Iran); Sayeed Mohsen Hosseini (Amirkabir University of Technology, Iran); Seyyed Mohsen Towliat Kashani (Trauma Research Center, Baqiyatallah Medical Sciences University, Iran); Farzad Panahi (Trauma Research Center, Baqiyatallah Medical Sciences University, Iran)

11:30 Bioengineering assessment of acupuncture

Gerhard Litscher (Medical University of Graz, Austria)

11:45 A home-based care model of cardiac rehabilitation using digital technology

Mohanraj Karunanithi (CSIRO ICT Centre, Australia)

12:00 Infant Travel for Obtaining Medical Assistance: Factors Suggested by Multiple Correspondence Analysis and Associative Ellipsoid

Renan Almeida (Federal University of Rio de Janeiro, Brazil); Antonio Fernando Infantsi (COPPE-Federal University of Rio de Janeiro, Brazil); Joao Carlos Costa (COPPE-Federal University of Rio de Janeiro, Brazil)

13:30 - 14:30

Plenary 5

Room: Hall 01

13:30 Cancer, Trauma and Stroke: Imaging Biomarkers Are Changing Them All

Michael Vannier (University of Chicago, USA)

14:00 *Control of the Artificial Heart*

Yusuke Abe (The University of Tokyo, Japan)

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