

ISABEL 2009: Programme at a Glance

24.11. Tuesday	<i>Smart</i>	<i>Vision</i>	<i>Talent</i>	<i>Genius</i>
8:00-10:00	Registration			
10:00-10:10	Opening Ceremony (<i>Registration lounge</i>)			
10:10-12:10	Workshop - Advanced Ultra- Wideband Radio Technology I Chair: <i>Jung</i> (6)	Heterogenous wireless networks, Chair: <i>Gavrilovska</i> (5)	Biomaterials and Biosensors, Chair: <i>Labuda</i> (5)	Self-Organization in Wireless Networks, Chair: <i>Tyrrell</i> (5)
12:10-13:15	Lunch			
13:15-14:30	Keynote 1 – Brain on a Chip: Can We Build One? <i>Bruce Wheeler (Smart)</i>			
14:30-14:45	Coffee break			
14:45-16:25	Workshop - Advanced Ultra- Wideband Radio Technology II Chair: <i>Jung</i> (5)	ICT Solutions for Medical and Healthcare Applications I, Chair: <i>Li</i> (5)	Challenges in Ubiquitous Personal Healthcare and Ambient Assisted Living, Chair: <i>Bernardos</i> (4)	General track Chair: <i>Maňka</i> (5)
16:25-16:35	Coffee break			
16:35-17:35	Meet the Editors prof. Bruce Wheeler, <i>Editor-in-Chief, IEEE Trans. on Biomedical Eng.</i> prof. Y. T. Zhang, <i>Editor-in-Chief, IEEE Trans. on Information Tech. in Biomedicine</i> (<i>Smart</i>)			
17:35-19:00	Poster session (<i>Registration lounge</i>)			
19:00-21:00	Welcome reception (<i>Conference venue hotel</i>) Speeches by <i>Fedor Lehocki</i> General Chairman <i>Pavol Tarina</i> Government Plenipotentiary for Information Society, Slovakia			
25.11. Wednesday	<i>Executive Lounge</i>	<i>Vision</i>	<i>Talent</i>	<i>Genius</i>
9:00-10:30	Workshop - Impact of Devices using Electromag. Fields on Human Body I, Chair: <i>Simunic</i> (4)	Tutorial 1a Basics of MIMO Communicat., <i>Constantinos B. Papadias</i>	Tutorial 2 Writing Scientific Articles, <i>Bruce Wheeler</i>	Tutorial 3 Emerging technologies in Biomedical Engineering and eHealth, <i>IBM</i>
10:30-10:45	Coffee break			

10:45-12:15	Workshop - Impact of Devices using Electromag. Fields on Human Body II Chair: <i>Simunic</i> (4)	Tutorial 1b Basics of MIMO Communicat., <i>Constantinos B. Papadias</i>	Tutorial 4 Signal Processing in Patient Diagnosis and Care, <i>Robert Allen</i>	
12:15-13:30	Lunch			
13:30-14:45	Keynote 2 - Cardiovascular Variability Signals : A Probe to Assess the Complexity of Autonomic Controlling Systems <i>Sergio Cerutti (Vision)</i>			
14:45-15:00	Coffee break			
15:00-16:15	Keynote 3 - Body Area Network - Standardization and Technology <i>Huang Bang Li (Vision)</i>			
16:15-16:25	Coffee break			
16:25-17:40	Keynote 4 - Antenna Arrays with Parasitic Elements: a Technology for Compact MIMO Systems, <i>Constantinos B. Papadias (Vision)</i>			
20:00-24:00	Gala dinner (<i>Conference venue hotel</i>) Speeches by <i>Adam Hochel</i> General Director of Section of Health, Ministry of Health, Slovakia <i>Simone Frattasi</i> Co-Founder and TPC Co-Chairman <i>Announcement of the best paper awards</i>			
26.11. Thursday	<i>Executive Lounge</i>	<i>Vision</i>	<i>Talent</i>	<i>Genius</i>
9:00-10:15	Keynote 5 - Docitive Radios - A Step Beyond Cognition <i>Mischa Dohler (Vision)</i>			
10:15-10:30	Coffee break			
10:30-12:10	Medical Image Detection, Acquisition, Analysis and Processing , Chair: <i>Doellinger</i> (5)	ICT Solutions for Medical and Healthcare Applications II, Chair: <i>Li</i> (5)	Mathematics Applied to Information and Communication Theory and Technology I, Chair: <i>Marchetti</i> (5)	General track Chair: <i>Tyšler</i> (5)
12:10-13:30	Lunch			
13:30-14:45	Keynote 6 - Opportunities and Challenges in Cardiovascular Health Informatics, <i>Yuan-Ting Zhang (Vision)</i>			
14:45-15:00	Coffee break			
15:00-17:00	Bioelectronics and Signal Processing for Prostheses and Wearable Med. Devices, Chair: <i>Turicchia</i> (6)	Communication Networks for Sustainability, Chair: <i>Pedersen</i> (3)	Mathematics Applied to Information and Communication Theory and Technology II, Chair: <i>Marchetti</i> (5)	General track Chair: <i>Lehocki</i> (6)

27.11. Friday	<i>Smart</i>	<i>Vision</i>	<i>Talent</i>	<i>Genius</i>
9:00-10:15	Keynote 7 –Bio-inspired Methods of Visualization and Analysis for Traffic of Communication Networks and Face Biometrics <i>Milos Oravec (Smart)</i>			
10:15-10:30	Coffee break			
10:30-12:10	Biosignals: detection, acquisition and processing, Chair: <i>Cianca, Saggio</i> (4)	Bionic devices for handicapped and novel diagnostics, Chair: <i>Roska</i> (5)	Delivery of integrated ICT services for elderly with mild dementia for independent living and enhanced quality of life, Chair: <i>Kyriazakos</i> (5)	General track Chair: <i>Drozda</i> (5)
12:10-12:20	Closing session (Registration lounge)			

ISABEL 2009: Technical Programme

Tuesday, November 24, 2009

Workshop - Advanced Ultra-Wideband Radio Technology - part 1
Peter Jung, Lehrstuhl für KommunikationsTechnik, Universität Duisburg-Essen, Germany.

Room: Smart; Time: 10:10-12:10

10:10-10:30 *Michael Horvat, Cecilia Carbonelli, Zijian Bai and Peter Jung.* Analytic Performance Evaluation of an LTE SFBC System with Wiener Channel Estimation (INVITED)

10:30-10:50 *Christoph Spiegel, Sebastian Rickers, Guido Bruck, Peter Jung, Woojin Shim, Rami Lee and Jaehwang Yu.* Low Power Networks – The ZigBee Competition (INVITED)

10:50-11:10 *Alexander Viessmann, Andreas Waadt, Christoph Spiegel, Christian Kocks, Admir Burnic, Guido H. Bruck, Peter Jung, Euntaek Lim and Hyeon Woo Lee.* A Novel Threshold Selection for Hypotheses Tests in Cognitive Radios (INVITED)

11:10-11:30 *Andreas Waadt, Guido H. Bruck and Peter Jung.* An overview of positioning systems and technologies (INVITED)

11:30-11:50 *Alexander Viessmann, Andreas Waadt, Christoph Spiegel, Christian Kocks, Admir Burnic, Peter Jung, Guido Bruck, Euntaek Lim and Hyeon Woo Lee.* Log-likelihood Ratio Based Signal Sensing Strategy for Cognitive Radios (INVITED)

11:50-12:10 *Christian Kocks, Ernest Scheiber, Xu Dong, Alexander Viessmann, Shangbo Wang, Guido H. Bruck and Peter Jung.* A Localization and Tracking Application for UWB (INVITED)

Keynote 1 - Brain on a Chip: Can We Build One?

Prof. Bruce Wheeler, University of Florida, USA

Room: Smart; Time: 13:15 – 14:30

Workshop - Advanced Ultra-Wideband Radio Technology - part 2
Peter Jung, Lehrstuhl für KommunikationsTechnik, Universität Duisburg-
Essen, Germany.

Room: Smart; Time: 14:45 – 16:25

- 14:45-15:05 *Xu Dong, Zijian Bai, Andreas Waadt, Guido H. Bruck and Peter Jung. MIMO with Network Coding in Relay Networks: A Combination of Multiplexing and Diversity (INVITED)*
- 15:05-15:25 *Alexander Viessmann, Christian Kocks, Andreas Waadt, Christoph Spiegel, Admir Burnic, Guido H. Bruck, Peter Jung, Jerry Kim, Julie Lim and Hyeon Woo Lee. A Software Defined Radio Realization of a Multimedia HDTV Receiver (INVITED)*
- 15:25-15:45 *Alexander Viessmann, Christian Kocks, Andreas Waadt, Christoph Spiegel, Admir Burnic, Guido Bruck, Peter Jung, Jerry Kim, Julie Lim and Hyeon Woo Lee. An Implementation-friendly Synchronization Algorithm for Multimedia HDTV Receivers (INVITED)*
- 15:45-16:05 *Admir Burnic, Xu Dong, Mohammed A. A Olofi, Andreas Waadt, Alexander Viessmann, Peter Jung, Wolfgang Fischer, Erhard Bassow and Martin Schirmacher. UWB Coverage in Public Transport Scenarios (INVITED)*
- 16:05-16:25 *Shangbo Wang, Andreas Waadt, Sebastian Rickers, Christian Kocks, Xu Dong, Alexander Viessmann, Guido H. Bruck and Peter Jung. Java implementation of localization and tracking application based on HDR-UWB platform (INVITED)*

Meet the Editors - prof. Bruce Wheeler, prof. Yuan-Ting Zhang

Room: Smart; Time: 16:35 – 17:35

Special session - Heterogenous wireless networks

Liljana Gavrilovska, Faculty of Electrical Engineering and Information Technologies, Skopje, R. Macedonia

Room: Vision; Time: 10:10 – 11:50

- 10:10-10:30 *Ognen Ognenoski, Vladimir Atanasovski, Pero Latkoski, Liljana Gavrilovska. Resource Management Aspects in Future Wireless Systems: RIWCoS Approach (INVITED)*

- 10:30-10:50 *Pero Latkoski, Valentin Rakovic, Ognjen Ognenoski, Liljana Gavrilovska.* Modeling and Simulation of Wireless Heterogeneous Networks (INVITED)
- 10:50-11:10 *Valentin Rakovic, Vladimir Atanasovski, Liljana Gavrilovska.* Velocity Aware Vertical Handovers (INVITED)
- 11:10-11:30 *Eduard C. Popovici Eduard, Valentin Andrei Valentin and Octavian Fratu Octavian.* Real-time Monitoring Design of a Wireless Network Device for Vertical Handover on Multimod Terminals (INVITED)
- 11:30-11:50 *Eduard C. Popovici Eduard, Adrian Ciocoiu Ady and Octavian Fratu Octavian.* SIP-based Application Level Mobility for Reconfigurable Hybrid Wireless Systems (INVITED)

Special session - ICT Solutions for Medical and Healthcare Applications - part 1

Huan-Bang Li, National Institute of Information and Communications Technology (NICT), Japan.

Room: Vision; Time: 14:45 – 16:25

- 14:45-15:05 *Takehiko Kobayashi.* Recent Progress of Ultra Wideband Radio Propagation Studies for Body Area Network (INVITED)
- 15:05-15:25 *Wen-Bin Yang, Kamran Sayrafian-Pour, John Hagedorn, Judith Terrill, Kamyra Yekeh Yazdandoost.* Simulation Study of Body Surface RF Propagation for UWB Wearable Medical Sensors (INVITED)
- 15:25-15:45 *Jianqing Wang and Qiong Wang.* Channel Modeling and BER Performance of an Implant UWB Body Area Link (INVITED)
- 15:45-16:05 *Harri Viittala, Matti Hämäläinen, Jari Iinatti, Attaphongse Taparugssanagorn.* Different experimental WBAN channel models and IEEE802.15.6 models: comparison and effects (INVITED)
- 16:05-16:25 *Pedro Antonio Moreno, Maria Elena Hernando, Enrique J. Gomez, Ruth Pallares, Oscar Blanco, Antoine De Poorter, Alberto Hernandez and Francisco Gonzalez.* Teleconsulting: A Medical Application Based on IP Multimedia Subsystem Technology for Ambient Assisted Living

Special session - Biomaterials and Biosensors

Ján Labuda, Faculty of Chemical and Food Technology, Slovak University of Technology in Bratislava, Slovakia

Room: Talent; Time: 10:10 – 11:50

- 10:10-10:30 *Jana Šefcovičová, Peter Tomčík, Jaroslav Filip, Peter Gemeiner and Jan Tkac.* A mediatorless electrochemical detection of NADH on a biopolymer dispersed carbon nanotube layer (INVITED)
- 10:30-10:50 *Stella Girousi and Vasiliki Kinigopoulou.* Detection of Short Oligonucleotide Sequences Using an Electrochemical DNA Hybridization Biosensor (INVITED)
- 10:50-11:10 *Erik Vavrinsky, Sona Flickyngerova, Pavol Gaspierik, Jaroslava Skriniarova, Ivan Novotny, Viera Stopjakova, Radovan Viglasky, Vladimír Tvarozek and Pavol Sutta.* Micro- / Nano- structuralized interfaces of conductive and transparent thin-film microelectrodes
- 11:10-11:30 *Ján Labuda.* Concepts and terms at electrochemical nucleic acidbased biosensors (INVITED)
- 11:30-11:50 *Gabriela Lutišanová, Eva Kuzielová, Martin T. Palou, Jana Kozánková and Ján Labuda.* Preliminary comparison static and dynamic in vitro test of bioactivity of glass-ceramics

Special session - Challenges in Ubiquitous Personal Healthcare and Ambient Assisted Living

Ana M. Bernardos, Signal Processing and Simulation Group, Telecommunications School, Universidad Politécnica de Madrid, Spain

Room: Talent; Time: 14:45 – 16:05

- 14:45-15:05 *Minna Isomursu, Mari Ervasti and Vili Törmänen.* Medication Management Support for Vision Impaired Elderly - Scenarios and Technological Possibilities
- 15:05-15:25 *Rodrigo Cilla, Miguel Angel Patricio, Antonio Berlanga and Jose M. Molina.* Non-supervised Discovering of User Activities in Visual Sensor Networks for Ambient Intelligence applications
- 15:25-15:45 *Henar Martín, Ana M. Bernardos, Luca Bergesio and Paula Tarrío.* Analysis of key aspects to manage Wireless Sensor Networks in Ambient Assisted Living environments

15:45-16:05 *Ines Frederix*. A cardiac patient training companion

Special session - Self-Organization in Wireless Networks

Alexander Tyrrell, DOCOMO Euro-Labs, Munich, Germany.

Room: Genius; Time: 10:10 – 11:50

10:10-10:30 *B. Ghimire, S. Sinanovic, H. Haas and G. Auer*. Self-Organized Interference Mitigation in Wireless Networks Using Busy Bursts (INVITED)

10:30-10:50 *Johannes Klinglmayr, Christian Bettstetter and Marc Timme*. Globally Stable Synchronization by Inhibitory Pulse Coupling (INVITED)

10:50-11:10 *Abdalkarim Awad, Reinhard German and Falko Dressler*. Data-Centric Cooperative Storage in Wireless Sensor Network (INVITED)

11:10-11:30 *Ehssan Sakhaee, Kenji Leibnitz, Naoki Wakamiya and Masayuki Murata*. Bio-inspired Layered Clustering Scheme for Self-adaptive Control in Wireless Sensor Networks (INVITED)

11:30-11:50 *Philipp Sommer*. Clock Synchronization in Wireless Sensor Networks: Local vs. Global (INVITED)

General track

Ján Maňka, Institute of Measurement Science, Slovak Academy of Sciences, Slovakia

Room: Genius; Time: 14:45 – 16:25

14:45-15:05 *Pierce Brady, Martin Hill, Joe Connell, John Barrett and Derry O'Hare*. The Identification of Bone Regions for the Assistance of Temporal Bone Surgery through Analysis of the Drill Acoustics

15:05-15:25 *Laura Zimmermann, Markus Guttmann, Andreas Guber and Volker Saile*. A novel fabrication method to integrate super hydrophobic nanostructures into microfluidic systems

15:25-15:45 *Sangwook Sohn, Youngbin Lim, HyeonDeok Bae and Hun Choi*. Blind MIMO Equalization using Subband Affine Projection Algorithm with IIR FilterBank

15:45-16:05 *Dany Obeid, Sawsan Sadek, Gheorghe Zaharia, Ghais El Zein*.

Touch-less Heartbeat Detection and Cardiopulmonary Modeling

16:05-16:25 *Stig Støa, Ilangko Balasingham*. A decentralized MAC layer protocol with periodic channel access evaluated with presence of interference

Poster session

Room: Registration lounge; Time: 17:35 – 19:00

Nikolay Chumerin, Agostino Gibaldi, Silvio Sabatini and Marc Van Hulle. Convolutional Network for Vergence Control

Vidas Raudonis, Rimvydas Simutis and Gintautas Narvydas. Discrete Eye Tracking for Medical Applications

Gintare Kersulyte - Raudone, Alfonsas Vainoras, Zenonas Navickas and Liudas Gargasas. Clinical decision support method based on coherence and complexity of cardiac signals

Guanghe Zhang, Carmen Poon and Yuan-Ting Zhang. A Biometrics Based Security Solution for Encryption and Authentication in Tele-Healthcare Systems

Huixue Song, Tan Chen and Baoyue Zhang. An Integrated Microfluidic Cell Array for High-throughput and High-content Drug Screening

Rezaul Hasan and Nazmul Ula. A Micro-sequenced Circuit Model for Phagocytic Bio-chemical Pathway

Michael Walsh, Brendan O'Flynn, John Barton and Cian O'Mathuna. An Energy Efficient Power Controller Switching Methodology for an Ambient Healthcare Network

Yifan Ma, Dongmei Zhou, Xiaofang Xie, Bohan Dong, Yan Zhuang and Mingbin Zheng. A novel low-toxic liposomal adjuvant: different liposome compositions regulate monocyte activation and viability

Konstantin Gurevich, Ekaterina Fabrikant, Pavel Salmanov and Alexander Airapetov. Development of distance learning for health promotion

Dagmar Faktorová. Couplet Numerical - Experimental Method for Frequency and Temperature Dependences of Biological Materials Dielectric Properties Investigation at Microwave Frequencies

Michal Teplan and Anna Krakovská. EEG features of psycho-physiological relaxation

Ranjan Pal, Bharat Gupta and Ramjee Prasad. An Efficient Information Processing Technique for Ultra-Low Power Wireless Networks

Bharat Gupta, Ernestina Cianca, Marina Ruggieri and Ramjee Prasad. A novel FM-UWB system for Vital Sign Monitoring and its comparison with IR-UWB

Darina Šimková and Ján Labuda. Electrochemical flow-through system with DNA biosensor for biomedical and food technology applications

Seyed Reza Mirfayzi. Signal detection of Neural Activity

Maged N. Kamel Boulos and eCAALYX Project Consortium. An Enhanced Ambient Assisted Living Experiment for Older People with Multiple Chronic Conditions

Neda Baheri, Mohammadhossein Miranbaygi and Rasoul Malekfar. Improved Skin Xerosis Detection by Combining Extracted Features from Raman Spectra

Wednesday, November 25, 2009

Workshop - Impact of Devices using Electromagnetic Fields on Human Body - part 1

Dina Simunic, University of Zagreb, Croatia

Room: Executive Lounge; Time: 9:00 – 10:20

- 9:00-9:20 *Jolanta Karpowicz and Dina Simunic*. Mechanisms of Interaction of EMF with Human Body (INVITED)
- 9:20-9:40 *Jolanta Karpowicz*. State-of-art of Human Body Effects related to EMF Exposure (INVITED)
- 9:40-10:00 *Damijan Miklavcic*. Electroporation in Cancer Treatment (INVITED)
- 10:00-10:20 *Jolanta Karpowicz*. Assessment of induced currents hazards among health care workers operating magnetic resonance scanners - towards new standardization approach (INVITED)

Workshop - Impact of Devices using Electromagnetic Fields on Human Body - part 2

Dina Simunic, University of Zagreb, Croatia

Room: Executive Lounge; Time: 10:45 – 12:05

- 10:45-11:05 *Dana Dabala*. Health Risk Assessment in Occupational EMF Exposure (INVITED)
- 11:05-11:25 *Krzysztof Gryz*. Magnetic field related to transient currents of electric transportation systems - assessment of human's exposure in metro cars (INVITED)
- 11:25-11:45 *Dina Simunic*. EMF Standardization World-wide (INVITED)
- 11:45-12:05 *Ally Yahaya Simba, Soichi Watanabe, Takashi Hikage and Toshio Nojima*. Effect of Passive RF Exposure From Mobile Phones on Passengers Inside an Elevator:-Comparison Between adult and child passengers

Tutorial 1a, 1b - Basics of MIMO Communications

Prof. Constantinos B. Papadias, Athens Information Technology, Greece
Carnegie Mellon University, USA (adjunct professor)
Room: Vision; Time: 9:00 – 12:15

Tutorial 2 - Writing Scientific Articles

Prof. Bruce Wheeler, University of Florida, USA
Room: Talent; Time: 9:00 – 10:30

Tutorial 3 – Emerging Technologies in Biomedical Engineering and eHealth

IBM lecturers, Austria, Germany
Room: Genius; Time: 9:00 – 10.30

Tutorial 4 - Signal Processing in Patient Diagnosis and Care

Prof. Robert Allen, University of Southampton, UK
Room: Talent; Time: 10:45 – 12:15

Keynote 2 - Cardiovascular Variability Signals : A Probe to Assess the Complexity of Autonomic Controlling Systems

Prof. Sergio Cerutti, Politecnico di Milano, Italy
Room: Vision; Time: 13:30 – 14:45

Keynote 3 - Body Area Network - Standardization and Technology

Prof. Huang Bang Li, National Institute of Information and communications Technology (NICT), Japan
Room: Vision; Time: 15:00 – 16:15

Keynote 4 - Antenna Arrays with Parasitic Elements: a Technology for Compact MIMO Systems

Prof. Constantinos B. Papadias, Athens Information Technology, Greece
Carnegie Mellon University, USA (adjunct professor)
Room: Vision; Time: 16:25 – 17:40

Thursday, November 26, 2009

Keynote 5 - Docitive Radios - A Step Beyond Cognition

Dr. Mischa Dohler, Centre de Tecnologic de Telecomunicacions de Catalunya, Spain

Room: Vision; Time: 9:00 – 10:15

Special session - Medical Image Detection, Acquisition, Analysis and Processing

Michael Doellinger, Laboratory for Computational Medicine, Department for Phoniatics and Pediatric Audiology, University Hospital Erlangen, Germany

Room: Executive Lounge; Time: 10:30 – 12:10

10:30-10:50 *Bohr C, Bumm K, Wurm J, Iro H.* Comparison analysis of registration techniques for opto-electric Computernavigationsystems in ENT-surgery (INVITED)

10:50-11:10 *Gebhard A., Maier S., Steidl M., Scibor R., Handschu M., Stürmer J., Penne M., Schuster Elmar Nöth.* Telemedical Approach for Multimodal Analysis of Facial Paresis (INVITED)

11:10-11:30 *Jörg Lohscheller.* Towards evidence based Diagnosis of Voice Disorders using Phonovibrograms (INVITED)

11:30-11:50 *Muhammad Mobeen Movania, Feng Zhao, Lee Sing Cheong, Feng Lin, Kemao Qian and Hock Soon Seah.* GPU-based Surface Oriented Interslice Directional Interpolation for Volume Visualization

11:50-12:10 *Syed Muhammad Monir and Mohammed Yakoob Siyal.* A region homogeneity approach to overcome the ill-balanced data problem in functional MRI clustering analysis

Keynote 6 - Opportunities and Challenges in Cardiovascular Health Informatics

Prof. Yuan-Ting Zhang, The Chinese University of Hong Kong, People's Republic of China

Room: Vision; Time: 13:30 – 14:45

Special session - Bioelectronics and Signal Processing for Prostheses and Wearable Medical Devices

Lorenzo Turicchia, Department of Electrical Engineering and Computer Science, Massachusetts Institute of Technology (MIT), USA.

Room: Executive Lounge; Time: 15:00 – 17:00

- 15:00-15:20 *Doug Kim and Philip Loizou*. On the Design of a Flexible Stimulator for Animal Studies in Auditory Prostheses (INVITED)
- 15:20-15:40 *Shawn Kelly, Douglas Shire, Jinghua Chen, Patrick Doyle, Marcus Gingerich, William Drohan, Luke Theogarajan, Stuart Cogan, John Wyatt and Joseph Rizzo*. The Boston Retinal Prosthesis: A 15-Channel Hermetic Wireless Neural Stimulator (INVITED)
- 15:40-16:00 *Sourabh Ravindran and Randy Cole*. Low Complexity Algorithms for Heart Rate and Epileptic Seizure Detection (INVITED)
- 16:00-16:20 *Elio Guidetti*. Remote Patient Monitoring and Ultra Low Power Medical Platforms (INVITED)
- 16:20-16:40 *Keng Hoong Wee*. Articulatory Speech Synthesis With A Silicon Vocal Tract (INVITED)
- 16:40-17:00 *Cyril Lahuec, Matthieu Arzel, Gouriou Manuel and François Gallée*. A ligament laxity telemetry system architecture for a knee replacement prosthesis

Special session - ICT Solutions for Medical and Healthcare Applications - part 2

Huan-Bang Li, National Institute of Information and Communications Technology (NICT), Japan.

Room: Vision; Time: 10:30 – 12:10

- 10:30-10:50 *Nobuo Nakajima*. Short-Range Wireless Network and Wearable Bio-Sensors for Healthcare Applications (INVITED)
- 10:50-11:10 *Kimio Oguchi, Dai Hanawa, Shingo Yamakawa, Taisuke Koide and Shohei Terada*. Vital Information Transfer and Supporting Technology in a Home Environment (INVITED)
- 11:10-11:30 *John Farserotu*. Performance of an FM-UWB based Medical BAN (INVITED)

- 11:30-11:50 *Wei Chen, Son Tung Nguyen, Roland Coops, Sidarto Bambang Oetomo and Loe Feijs.* Wireless Transmission Design for Health Monitoring at Neonatal Intensive Care Units
- 11:50-12:10 *Zhibo Pang.* A Pervasive and Preventive Healthcare Solution for Medication Noncompliance and Daily Monitoring

Special session - Communication Networks for Sustainability

Jens Myrup Pedersen, Networking and Security section NetSec at Department of Electronic Systems, Aalborg University, Denmark

Room: Vision; Time: 15:00 – 16:00

- 15:00-15:20 *Jens Myrup Pedersen, M. Tahir Riaz.* Bringing Fiber To The Home to Rural Areas in Denmark (INVITED)
- 15:20-15:40 *Muhammed Tahir Riaz, José Gutierrez.* Strategies for planning next generation green ICT infrastructure (INVITED)
- 15:40-16:00 *Jose Gutierrez, Tahir Riaz, Jens Pedersen and Ole B. Madsen.* A Survey On Environmental Backbone Design and Implementation

Special session - Mathematics Applied to Information and Communication Theory and Technology - part 1

Nicola Marchetti, Aalborg University, Denmark

Room: Talent; Time: 10:30 – 12:10

- 10:30-10:50 *Natasa Zivic.* Estimation of the Number of Reliability Values needed for Correction of Long Soft Input Decryption Blocks (INVITED)
- 10:50-11:10 *Tobias Mirco Koch.* Is the Assumption of Perfect Channel-State Information in Fading Channels a Good Assumption? (INVITED)
- 11:10-11:30 *Mark F. Flanagan and Enrico Paolini.* On the Weight and Stopping Set Size Distributions of LDPC Codes and their Generalizations (INVITED)
- 11:30-11:50 *Juan J. Sánchez-Sánchez, Unai Fernández-Plazaola, M.C. Aguayo-Torres and J.T. Entrambasaguas.* On the Bivariate Pearson type VII and its application to the BER analysis for SC-FDMA (INVITED)

11:50-12:10 *Mostafa Afgani, Sinan Sinanovic and Harald Haas.* Hardware Implementation of a Kullback-Leibler Divergence Based Signal Anomaly Detector (INVITED)

Special session - Mathematics Applied to Information and Communication Theory and Technology - part 2

Nicola Marchetti, Aalborg University, Denmark

Room: Talent; Time: 15:00 – 16:40

15:00-15:20 *Maxime Guillaud and Mérouane Debbah.* Soft Channel Information for Wireless Communications (INVITED)

15:20-15:40 *Abdellatif Zaidi and Luc Vandendorpe.* On Cooperative Encoding with Partially Known Non-Causal Interference (INVITED)

15:40-16:00 *Jerzy Konorski.* Ad Hoc WLAN with Selfish, Secretive, and Short-Sighted Stations (INVITED)

16:00-16:20 *Gordhan Das Menghwar and Christoph F. Mecklenbraeuer.* Block-Markov Encoding Implementation with Network Coding for Cooperative Communications: A Diversity-Multiplexing Tradeoff Perspective

16:20-16:40 *Robert K. A Owusu.* Robust Algorithms for Filtering and Parameter Optimization in Inverse Problems (INVITED)

General track

Milan Tyšler, Institute of Measurement Science, Slovak Academy of Sciences, Slovakia

Room: Genius; Time: 10:30 – 12:10

10:30-10:50 *Ioan Buciu and Alexandru Gacsadi.* Gabor Wavelet Based Features for Medical Image Analysis and Classification

10:50-11:10 *Danjun Yang, Yihua Dou and Baobao Wang.* Polyp Detection in Digestive Endoscopic Images Based on Ellipse Fitting

11:10-11:30 *Sara Lioba Volpi, Michela Antonelli, Beatrice Lazzerini, Francesco Marcelloni and Dan C. Stefanescu.* Segmentation and reconstruction of the lung and the mediastinum volumes in CT images

11:30-11:50 *Dobrea Dan Marius and Dobrea Monica Claudia.* Optimisation

of a BCI system using the GA technique

11:50-12:10 *Dobrea Monica Claudia and Dobrea Dan Marius*. The selection of proper discriminative cognitive tasks – a necessary prerequisite in high-quality BCI applications

General track

Fedor Lehocki, Slovak University of Technology in Bratislava, Slovakia

Room: Genius; Time: 15:00 – 17:00

15:00-15:20 *Erik Vavrinsky, Viera Stopjakova and Libor Majer*. Electrical Biomonitoring towards Mobile Diagnostics of Human Stress Influence

15:20-15:40 *Qing Liu, Chung-Yan Poon, Yee-Man Wong and Yuan-ting Zhang*. Time-frequency Analysis of Variabilities of Heart Rate, Systolic Blood Pressure and Pulse Transit Time on Normotensive Subjects after Exercise

15:40-16:00 *Femke Ongenaes, Thomas Dupont, Wannas Kerckhove, Wouter Haerick, Kristof Taveirne, Filip De Turck and Johan Decruyenaere*. Design of ICU medical decision support applications by integrating service oriented applications with a Rule-based system

16:00-16:20 *Branislav Bosansky and Lenka Lhotska*. Agent-Based Process-Critiquing Decision Support System

16:20-16:40 *Faisal Al-kamali*. A New DCT-Based SC-FDMA System For Future Uplink Communications

16:40-17:00 *G.Pagana, E.Lepore, B.Penna, N.Pugno, G.Vecchi*. Microwave Imaging applied to hard and soft tissues analysis:a preliminary study (INVITED)

Friday, November 27, 2009

Keynote 7 - Bio-inspired Methods of Visualization and Analysis for Traffic of Communication Networks and Face Biometrics

Prof. Miloš Oravec, Slovak University of Technology in Bratislava, Slovakia

Room: Smart; Time: 9:00 – 10:15

Special session - Biosignals: detection, acquisition and processing

Ernestina Cianca, Giovanni Saggio, CTIF-Italy, University of Rome Tor Vergata

Room: Smart; Time: 10:30 – 11:50

10:30-10:50 *Raúl Chávez-Santiago, Ali Khaleghi, Ilangko Balasingham, and Tor A. Ramstad.* Architecture of an Ultra Wideband Wireless Body Area Network for Medical Applications

10:50-11:10 *Luigi Bianchi, Saber Samid, Arjan Hillebrandd, Lucia Rita Quitadamo, Stefano Seri.* Introducing the NPXLab BCI facilities: a set of tools for the analysis and optimization of P300 based Brain-Computer Interfaces

11:10-11:30 *Enrico M. Staderini, Graziano Varotto.* Vertebral traction assessment system

11:30-11:50 *Giovanni Saggio, Stefano Bocchetti, Carlo Alberto Pinto, Giancarlo Orengo and Franco Giannini.* A novel application method for wearable bend sensors

Special session - Bionic devices for handicapped and novel diagnostics

Tamás Roska, Hungarian Academy of Sciences and the Pazmany P. Catholic University, Budapest.

Room: Vision; Time: 10:30 – 12:10

10:30-10:50 *Attila Kis, Gábor Vásárhelyi.* Event Detection with 3D Tactile Sensors (INVITED)

10:50-11:10 *Kristóf Karacs, Mihály Radványi, Márton Görög, Ákos Kusnyerik, Tamás Roska, Mihály Szuhaj.* A Mobile Visual Navigation Device: New Algorithms for Crosswalk and Pictogram Recognition (INVITED)

- 11:10-11:30 *József Laczkó, Tamás Pilissy, Róbert Tibold.* Neuro-mechanical Modeling of Human Limb Movements for Controlling Neuroprostheses of Spinal Cord Injured Patients (INVITED)
- 11:30-11:50 *Gergely Feldhoffer and Balázs Oroszi.* An Efficient Voice Driven Face Animation Method For Cyber Telepresence Applications (INVITED)
- 11:50-12:10 *Adam Tamas Balogh and Ferenc Kovacs.* Application of Heart Sound Analysis in Preterm Neonates with Patent Ductus Arteriosus (INVITED)

Special session - Delivery of integrated ICT services for elderly with mild dementia for independent living and enhanced quality of life
Sofoklis Kyriazakos, Aalborg University, Denmark

Room: Talent; Time: 10:30 – 12:10

- 10:30-10:50 *Sofoklis Kyriazakos, Anelia Mitseva, Antony Litke, Neeli Prasad and Ramjee Prasad.* Independent living for elderly with dementia based on ICT - The ISISEMD initiative (INVITED)
- 10:50-11:10 *Carrie Peterson, Anelia Mitseva, Alben Mihovska, Neeli Prasad and Ramjee Prasad.* The phenomenological experience of mild dementia and user interface development (INVITED)
- 11:10-11:30 *Anelia Mitseva.* Technology services for care for elderly with mild dementia, seen from the end-user point of view - the ISISEMD perspective (INVITED)
- 11:30-11:50 *Antony Litke, Nikolaos Papadakis.* Integrating services and systems (INVITED)
- 11:50-12:10 *Anne Abildgaard, Carrie Peterson, Neeli Prasad.* Evaluating the increase of Quality of Life of a pilot (INVITED)

General track

Martin Drozda, Leibniz Universität Hannover, Germany

Room: Genius; Time: 10:30 – 12:10

- 10:30-10:50 *Ali Khosrozadeh, Abolfazle Akbari and Naser Lasemi.* Clustering algorithms in Ad Hoc Networks

- 10:50-11:10 *Stanislav Marcek, Martin Drozda, Gabriel Juhas and Fedor Lehocki.* Network Intrusion Detection in High Dimensional Space (INVITED)
- 11:10-11:30 *Martin Drozda and Sven Schaust.* Costimulation and Priming: Can it Help Protect Ad Hoc Wireless Networks? (INVITED)
- 11:30-11:50 *Mi Zhang and Alexander Sawchuk.* A Customizable Framework of Body Area Sensor Network for Rehabilitation
- 11:50-12:10 *Marco Hernandez.* Ultra Low Power UWB Transceiver Design for Body Area Networks