

IFMBE International Conference on Health Informatics

Integrating Information and Communication Technologies with Biomedicine for Global Health

7-9 November, 2013

Vilamoura, Portugal

Program

Thursday, November 7

Opening Session 08:45 - 09:00 Room Tejo

Yuan-Ting Zhang ◦ Chinese University of Hong Kong and The Key Lab for Health Informatics of Chinese Academy of Sciences, **Ratko Magjarevic** ◦ University of Zagreb, **Paulo de Carvalho** ◦ University of Coimbra
Welcome and Opening Remarks

Plenary Session by Roderic Pettigrew

09:00 - 10:00 Room: Tejo

Chair: Yuan-Ting Zhang ◦ Chinese University of Hong Kong and The Key Lab for Health Informatics of Chinese Academy of Sciences

Roderic Pettigrew Director, National Institute of Biomedical Imaging and Bioengineering, Bethesda, USA

Coffee Break 10:00 - 10:15 Tejo Foyer / Blue Lagoon Patio

Mini Symposium

Advanced Solutions for Supporting Cardiac Patients in Rehabilitation

ThMo1 10:15 - 11:30 Room Tejo

Chairs Juan Pablo Lázaro ◦ TSB Tecnologías para la Salud y el Bienestar
Paulo de Carvalho ◦ University of Coimbra

10:15 - 10:30 HeartWays solution for exercise based cardiac rehabilitation

Juan Pablo Lázaro Ramos*, **Sergio Guillén Barrionuevo**, **Teresa Meneu Barreira** and **Alvaro Martínez Romero**

10:30 - 10:45 Wearable sensor for real-time monitoring of exercise routines

Antonio Zanesco, **Angel Blanch**, **Ratko Magjarevic** and **Francesco Sacerdoti***

10:45 - 11:00 Cardiovascular risk prediction during cardiac rehabilitation

Paulo de Carvalho*, **Jorge Henriques**, **Simao Paredes**, **Teresa Rocha** and **João Ramos**

11:00 - 11:15 Management tools for medical professionals for prescription and follow-up of cardiac rehabilitation based on physical exercise therapies

Alvaro Martinez-Romero*, **Siniša Drobnjak**, **Teresa Meneu Barreira** and **Riccardo Serafin**

11:15 - 11:30 Expanding the scope of electronic nursing documentation

Sinisa Drobnjak*

Oral Session

Public Health Informatics and Other Application

ThMo2 10:15 - 11:30 Room Lima

Chairs Cecilia Vera Munoz ◦ UPM - Universidad Politécnica de Madrid, **Anne Karki** ◦ Satakunta University of Applied Sciences - Finland

10:15 - 10:30 Recip-e: the electronic prescription system for ambulatory care in Belgium

Marc Nyssen*, Theo Putzeys and Luc Baert

10:30 - 10:45 Medication Incompliance and Vital Signs in Heart Failure Patients

Ioanna Chouvarda*, Thato Mabote, Azam Torabi, Jennifer Caffarel, Mark van Gils, John Cleland and Nicos Maglaveras

10:45 - 11:00 Prototype of respiratory sounds monitoring system based on compressive sampling

Dinko Oletic*, Mateja Skrapec and Vedran Bilas

11:00 - 11:15 Ethicted - Evaluation process model to improve personalised ICT services for independent living and active ageing; Future Scenario Model

Anne Kärki*, Jaana Sävel, Merja Sallinen and Jere Kuusinen

11:15 - 11:30 A software tool to support the Health Technology Assessment (HTA) and the user need elicitation of medical devices via the Analytic Hierarchy Process (AHP)

Leandro Pecchia*, Filippo Crispino and Stephen P Morgan

Mini Symposium

Privacy and Network Security

ThMo3 ■ **11:30 - 12:30** *Room* ■ **Lima**

Chairs ■ **Gouenou Coatrieux** ◦ TELECOM Bretagne, France

Shudi Bao ◦ School of Electronic and Information Engineering at Ningbo University of Technology

Yang Xiao ◦ University of Alabama, Department of Computer Science

11:30 - 11:45 Efficient Fuzzy Vault Application in Node Recognition for Securing Body Sensor Networks

Yang Lu and Shudi Bao*

11:45 - 12:00 To be defined

Anne Kärki*

12:00 - 12:15 To be defined

Peter Pharrow*

12:15 - 12:30 Medical data protection by means of watermarking

Gouenou Coatrieux*

Oral Session

Informatics in Biological Systems

ThMo4 ■ **11:30 - 12:30** *Room* ■ **Tejo**

Chairs ■ **Fernanda Barbosa** ◦ University of Aveiro (IEETA) and Instituto Politécnico de Coimbra

Nicos Maglaveras ◦ Aristotle University of Thessaloniki

11:30 - 11:45 Computational Analysis of Pathways Enrichment in DNA Methylation Array Data

Andigoni Malousi*, Nikos Papakonstantinou, Maria Tsagiopoulou, Kostas Stamatopoulos and Nicos Maglaveras

11:45 - 12:00 Weighted Gene Co-expression Network Analysis Applied to Head and Neck Squamous Cell Carcinoma Data

Fernanda Correia Barbosa*, Joel Arrais and José Luis Oliveira

12:00 - 12:15 A Cytoscape-based web tool for representing protein networks

Renato Rodrigues*, Joel Arrais, Edgar Coelho and José Oliveira

12:15 - 12:30 PHARM - Association Rule Mining for Predictive Health

Chih-Wen Cheng, Greg S. Martin, Po-Yen Wu and May D. Wang*

Lunch ■ **12:30 - 14:00** ■

Plenary Session

Plenary Session by Joerg Habetha

14:00 - 15:00 ■ *Room:* Tejo

■ **Chair:** Nicos Maglaveras ◦ Aristotle University of Thessaloniki

Joerg Habetha, Senior Director, Philips Research, Netherlands
Healthcare Systems

Poster session I

ThPo ▪ 15:00 - 16:30 Room ▪ Tejo Foyer

Chairs ▪ Ye Li ◦ Shenzhen Institute of Advanced Technology - Chinese Academy of Science

Joana Dias ◦ University of Coimbra

15:00 - 16:30 A novel method for identifying continuity of care in hospital discharge summaries

Lucas Emanuel Silva E Oliveira, Andréia Cristina de Souza, Percy Nohama and Cláudia Maria Moro Barra

15:00 - 16:30 Respiratory Monitoring Based on Video Processing

Zhoucheng Li* and Feng Wang

15:00 - 16:30 Design of a Clinical Decision Support System for Assisting in Empiric Antibiotic Treatments

Jorge Calvillo-Arbizu* and Laura M. Roa-Romero

15:00 - 16:30 An Ontology Based Intelligent Telehealth System for Long-term Management of Hypertension

Jiayu Zhu, Chao Min and Feng Wang*

15:00 - 16:30 Time-Varying Under-sampling Trajectory Design for Compressed Sensing Based DCE-MRI

Duanduan Liu*, Dong Liang, Na Zhang, Xin Liu and Yuan-Ting Zhang

15:00 - 16:30 A numerical study of the hemodynamics in common carotid artery affected by different shapes of carotid atherosclerotic plaque

Xin Liu*, Zhenzhou Li, Lina Pu, Heye Zhang and Yuan-Ting Zhang

15:00 - 16:30 A Heart sound transmission and reception system based on NFC and Bluetooth

Zhidong Zhao and Shengkang He*

15:00 - 16:30 Amplitude index for the quality assessment of pulsatile signals in noise

Wenxuan Dai, Xiaorong Ding, Yali Zheng and Y.T. Zhang*

15:00 - 16:30 Telemedicine Network for Early Diagnosis and Care of Heart Malformations

Alessandro Taddei*, Andrea Gori, Emiliano Rocca, Tiziano Carducci, Giacomo Piccini, Giuseppe Augiero, Pierluigi Festa, Nadia Assanta, Giorgio Ricci and Bruno Murzi

Mini Symposium

Monitoring and Screening of Vulnerable Patients with Acute Cardiovascular Diseases

ThAf1 ▪ 15:00 - 16:00 Room ▪ Tejo

Chairs ▪ Mingxi Wan ◦ Xian JiaoTong University, May Wang ◦ Georgia Institute of Technology, Ben-Sheng Qiu ◦ University of Science and Technology of China/University of Washington

15:00 - 15:15 PS model-based dynamic cardiac MRI with compressed sensing

Xiaoyong Zhang*, Guoxi Xie and Bensheng Qiu

15:15 - 15:30 Noninvasive Strain Imaging and Hemodynamic Evaluation of Atherosclerosis

Jinjin Wan*, Yujin Zong, Mimi Hu and Mingxi Wan

15:30 - 15:45 Cavitation endothelium damage of large artery vessel: a potential application to animal model of atherosclerosis

Yujin Zong*, Jinjin Wan, Yangzi Qiao, Wusong Li, Xinru Zou and Mingxi Wan

15:45 - 16:00 Next Generation Sequencing Technology to Identify Biomarkers for Congenital Heart Disease

May Wang*

Oral Session

Cardiovascular Health Informatics I

ThAf2 ▪ 15:00 - 16:00 Room ▪ Lima

Chairs ▪ Jorge Henriques ◦ University of Coimbra, Luka Celic ◦ University of Zagreb

15:00 - 15:15 Reconstruction of Central Blood Pressure Using an Individualized Two-Segment Transmission Line Model

Hongxia Ding*, Ping Yang and Yuan-Ting Zhang

15:15 - 15:30 Hypertension Risk Assessment based on a Trend Prediction Methodology

Teresa Rocha, Simão Paredes, Paulo Carvalho and Jorge Henriques*

15:30 - 15:45 The Relationship between the 24-h Blood Pressure Variability and Carotid Intima-Media Thickness: A Preliminary Study

Dan Wu*, Huahua Xiong, Xiaohong Tian, Wan-Hua Lin, Chunyue Li, Heye Zhang and Yuan-Ting Zhang

15:45 - 16:00 Quantifying Effect of Blood Pressure on Stress Distribution in Atherosclerotic Plaque

Lina Pu*, Huahua Xiong, Xin Liu, Heye Zhang and Yuanting Zhang

Coffee Break 16:00 - 16:30

Oral Session

Information Processing I

ThAf3 16:30 - 18:00 Room Tejo

Chairs Maria Graça Ruano ◦ Universidade do Algarve, Jerome Foussier ◦ University of Aachen

16:30 - 16:45 Flexible Linear Discriminant Wavelet Networks for Rapid Physiological Signal Interpretation

Bing Nan Li*, Ning An and Mang I Vai

16:45 - 17:00 Corneal Nerve Morphometry for Diabetic Peripheral Neuropathy Assessment

Susana Silva*, Iulian Otel, Sofia Gouveia, Leonor Gomes, Luís Negrão, Maria João Quadrado, Nuno Gonçalves, João Pedro Barreto and António Miguel Morgado

17:00 - 17:15 Specific EEG/ERP responses to dynamic facial expressions in virtual reality environments

Marco Simões*, Carlos Amaral, Paulo Carvalho and Miguel Castelo-Branco

17:15 - 17:30 Quantification and modulation of tremor in rapid upper limb movements

Paula Faria*, Adriana Leal, António Freire, Cristina Januário, Miguel Patrício and Miguel Castelo-Branco

17:30 - 17:45 On the Relationship of Arousals and Artifacts in Respiratory Effort Signals

Jerome Foussier*, Xi Long, Pedro Fonseca, Berno Misgeld and Steffen Leonhardt

17:45 - 18:00 Personalizing Breast Cancer Patients with Heterogeneous Data

Pedro Henriques Abreu*, Hugo Amaro, Daniel Castro Silva, Penousal Machado and Miguel Henriques Abreu

Oral Session

Cardiovascular Health Informatics II

ThAf4 16:30 - 18:00 Room Lima

Chairs Leandro Pecchia ◦ University of Warwick, Igor Lackovic ◦ University of Zagreb

16:30 - 16:45 Approximate entropy for short-term Heart Rate Variability analysis. Is the Threshold Value computed by Chon's formula appropriate?

Paolo Melillo*, Paolo Scala, Diego Santoro, Michele Vadursi and Leandro Pecchia

16:45 - 17:00 Assessment of the pulse wave variability for a new non-invasive device

Vânia Almeida*, Helena Catarina Pereira, Tânia Pereira, Luís Requicha Ferreira, Carlos Correia and João Cardoso

17:00 - 17:15 Towards a Dependable Cardiovascular Surveillance System

Cristina C. Oliveira* and José Machado Da Silva

17:15 - 17:30 Principal Component Analysis of Differential Electrocardiographic Leads – a Contribution to the Synthesis of ECGs

Ivan Tomasic, Roman Trobec and Ratko Magjarević*

17:30 - 17:45 Decomposing of Cardiac and Respiratory Signals from Electrical Bio-impedance Data using Filtering Method

Yar Muhammad*

17:45 - 18:00 Personalization based on Grouping Strategies for Short-Term Cardiovascular Event Risk Assessment

Tânia Marques*, Jorge Henriques, Simão Paredes and Paulo Carvalho

Welcome Reception ▪19:00 - 20:00▪Tejo Foyer / Blue Lagoon Patio

Friday, November 8

Plenary Session

Plenary Session by Zhi-Pei Liang

08:30 - 09:15 ▪Room: Tejo

▪Chair: Ratko Magjarevic ◦ University of Zagreb

Zhi-Pei Liang

Professor, Beckman Bioimaging Science and Technology group, University of Illinois, USA

Fast Imaging with Sparse Sampling

Plenary Session

Plenary Session by Niilo Saranummi

09:15 - 10:00 ▪Room: Tejo

▪Chair: Mario Secca ◦ Universidade Nova de Lisboa

Niilo Saranummi

Research Professor, Dr. Tech. , VTT Technical Research Centre of Finland, Finland

Telemedicine and e-Health : Applications, Challenges and Opportunities

Coffee Break ▪10:00 - 10:15▪Tejo Foyer / Blue Lagoon Patio

Oral Session

Information Acquisition and Transmission

FrMo1 ▪ 10:15 - 11:45 Room ▪ Tejo

Chairs ▪ Marc Nyssen ◦ Vrije Universiteit Brussel, Paulo Mendes ◦ Universidade do Minho

10:15 - 10:30 Physical Layer Network Coding with Feedback for One Simple Body Area Wireless Sensor Network

Peter Farkas* and Eugen Ruzicky

10:30 - 10:45 End-to-End Quality of Service-Based Admission Control via Virtual Sensor Nodes

Carlos Abreu* and Paulo Mendes

10:45 - 11:00 Energy Efficient Techniques for Implanted Nodes in Body Sensor Networks

Dengyu Qiao, Ye Li* and Honggang Li

11:00 - 11:15 The Design and Implementation of IEEE 802.15.6 base on FPGA

Yunping Liang*, Yu Zhou and Ye Li

11:15 - 11:30 Distributed system for acquisition and processing the sEMG signal

Joana Ferreira* and Carlos Lima

11:30 - 11:45 Performance Analysis of Optimal and Rectangular Template-Based MRC Receive Diversity for UWB-Based Off-Body WBANs in Presence of Timing-Jitter

Heba Shaban* and Mohamad Abou El-Nasr

Oral Session

Information Processing II

FrMo2 ▪ 10:15 - 11:45 Room ▪ Lima

Chairs ▪ Nicos Maglaveras ◦ Aristotle University of Thessaloniki, Cesar Teixeira ◦ University of Coimbra

10:15 - 10:30 Exploration of Data Dimensionality Reduction Methods for Improving Classification Performance of Voluntary Movements

Yanjuan Geng, Xing Kuang, Mingxing Zhu, Yi Zhang, Guanglin Li and Yuan-Ting Zhang*

10:30 - 10:45 Detection of motion artifacts in photoplethysmographic signals: Algorithms comparison

Ricardo Couceiro*, Paulo Carvalho, Rui Paiva, Jorge Henriques, Jens Muehlsteff and Isabel Quintal

10:45 - 11:00 Predicting the Ineffective Efforts in ICU Assisted Ventilation via Multiparametric Models

Ioanna Chouvarda*, D. Babalis, Vasilios Papaioannou, Nicos Maglaveras and D Georgopoulos

11:00 - 11:15 A Novel Method for Pulse Onset Detection on Photoplethysmogram Using Changes of Waveform Trend

He Zhu, Zhimin Zhang, Luyang Zhang, Xiongwei He and Ling Wang

11:15 - 11:30 An interpolation-free and fitting-less sub-sample time-delay estimation algorithm

César Teixeira*, Maria Da Graça Ruano and Wagner Pereira

**11:30 - 11:45 Time-spatial Ultrasound Induced Temperature Evaluation on Perfused Phantoms
Helder Duarte* and Maria Ruano**

Mini Symposium

Photo-acoustic Imaging and its Applications

FrMo3 ▪ 11:45 - 12:30 Room ▪Tejo

Chairs ▪ Liang Song ◦ PA and Molecular Imaging Lab at the SIAT (Shenzen Institutes of Advance Technology), Chulhong Kim ◦ PA Lab at the POSTECH, Da Xin ◦ Institute of Bio-Photonics at South China Normal University

11:45 - 12:00 Listening to shiny body: in vivo photoacoustic tomography

Chulhong Kim*

12:00 - 12:15 Optical-resolution photoacoustic microscopy, endoscopy, and compued tomography for biomedical applications

Liang Song*

Mini Symposium

Towards Unobtrusive and Wearable Blood Pressure Measurements

FrMo4 ▪ 11:45 - 12:30 Room ▪Lima

Chairs ▪ Yuan-Ting Zhang ◦ The Chinese University of Hong Kong and HICAS at SIAT in Shenzhen

Quan Zhang ◦ Harvard Medical School -Massachusetts General Hospital

11:45 - 12:00 Is unobtrusive monitoring becoming popular?

Toshiyo Tamura*

12:00 - 12:15 Novel methods toward an unobtrusive multi-modality blood pressure measurement and monitoring

Quan Zhang*

**12:15 - 12:30 Wearable sensing and unobtrusive systems for continuos blood pressure measurement
Yuan-Ting Zhang***

Lunch ▪12:30 - 14:00▪

Plenary Session by Shankhar Krishnan

14:00 - 15:00 ▪Room: Tejo

▪Chair: Maria Graça Ruano ◦ Universidade do Algarve

Shankhar Krishnan

H.C. Lord Chair Professor

Wentworth Institute of Technology, Boston, USA

pHealth – personal, personalized, predictive, participatory, pre-emptive or pervasive or all these

Mini Symposium

Public Health Informartics and Telemedicine

FrAfl ▪ 15:00 - 16:15 Room ▪Tejo

Chairs ▪ Luis Kun ◦ Center for Hemispheric Defense Studies (CHDS) - National Defense University

Fedor Lohitski ◦ National Centre of Telemedicine Services, Slovak University of Technology in Bratislava

15:00 - 15:15 Multidisciplinary, holistic and patient specific approach to follow up elderly adults

Ricardo Armentano*

15:15 - 15:30 Interpretation of Long-Term Clinical Diabetes Data and Prediction of Glycemic Control Based on Data Mining Techniques

Eleni Georga*, Vasilios Protopappas, Christos Bellos, Dimitrios Makriyiannis and Dimitrios Fotiadis

15:30 - 15:45 Use of Science & Technology for Surveillance and Mitigation of

Luis Kun*

15:45 - 16:00 Process Definition on Information Systems for Epidemiology and Public Health

Victoria Ramos*

16:00 - 16:15 Clinical, Epidemiological and Genetic Data Integration for Prevention

Francesco Sicurello*

Mini Symposium

Tele-healthcare Systems and Applications

FRAf2 ▪ **15:00 - 16:00** Room ▪Lima

Chairs ▪ **David Feng** ◦ University of Sydney, Australia , **Christian Roux** ◦ TELECOM Bretagne, France, **Jinman Kim** ◦ University of Sydney, Australia

15:00 - 15:15 A Telehealth Framework for Mobile Nursing: Improving Patient Medical Record Management and Staff Communications

Daiki Haraguchi, Jinman Kim*, Christopher Lemon, Archana Sud, James Branley and Mohamed Khadra

15:15 - 15:30 Maintaining Continuity of Care in a Multidisciplinary Health Service By Using M-Health Technologies to Develop Patient Medical Records

Christopher Lemon*, Jinman Kim, Daiki Haraguchi, Archana Sud, James Branley and Mohamed Khadra

15:30 - 15:45 Smartphone based remote monitoring of heart failure

Ricardo Belchior Teles Lagido*, Carla Margarida Castanheira de Sousa Gonçalves, Sérgio Lopes Mariano Machado Leite, Liliana Da Silva Ferreira and José Carlos Magalhães Silva Cardoso

15:45 - 16:00 A Full Custom Fully Integrated ECG Measurement IC For Healthcare Applications

Yayu Cheng and Ye Li*

Coffee Break ▪16:00 - 16:30▪Tejo Foyer / Blue Lagoon Patio

Poster session II

FrPo ▪ **16:30 - 18:00** Room ▪Tejo Foyer

Chairs ▪ **Jiang Liu** ◦ Institute for Infocomm Resrach A*STAR, Singapore, **Peter Farkas** ◦ Slovak University of Technology

16:30 - 18:00 Pattern detection in vital signals daily collected by means of a tele-monitoring application

Teresa Rocha, Simão Paredes, João Morais, Paulo Carvalho and Jorge Henriques*

16:30 - 18:00 Directional Dual-Tree Complex Wavelet Packet Transform Implementation using Band-Limited Synthetic Signals

Gorkem Serbes, Nizamettin Aydin* and Halil Ozcan Gulcur

16:30 - 18:00 Innovative immunosensors for early stage cancer diagnosis and therapy monitoring

Cecilia Cristea, Anca Florea, Ramona Galatus, Ede Bodoki, Robert Sandulescu, Daniel Moga* and Dorin Petreus

16:30 - 18:00 Battery-Friendly Packet Transmission Strategies for Wireless Capsule Endoscopy

Student Sodhro and Li Ye*

16:30 - 18:00 Design of a Smart Cup– A Tele-medical system for Behavioral Intervention Through Interactive Materiality

Idowu Ayoola*, Kimmy Ansems, Wei Chen and Loe Feijs

16:30 - 18:00 **SportsMBAN: Sports and Tele-Healthcare Wireless Medical Body Area Network for Real-Time Activity Monitoring and Fall Detection**

Heba Shaban*, Mohamad Abou El-Nasr, Bassem Helal and Moustafa Hamoud

16:30 - 18:00 **A short report on the relation between the mRNA sequence and the encoded protein structure**

Xiaojuan Shen, Yi Zhang and Guanglin Li*

16:30 - 18:00 **Capillary electrophoresis microchip for DNA amperometric detection featuring Agarose gel**

Mohd Abdullah* and Motasem Ghanim

16:30 - 18:00 **A Rod-Like Acoustic Radiation Force in Ultrasound-Based Elastography: A Simulation Study**

Min Guo, Minhua Lu*, Heye Zhang, Huafeng Liu and Yuan-Ting Zhang

16:30 - 18:00 **Changes in Blood Pressure with Different Postures while Swallowing**

Xiaorong Ding, Yali Zheng, Wenxuan Dai and Y.T. Zhang*

16:30 - 18:00 **An a priori and a posteriori protection by means of data hiding of encrypted images: application to ultrasound images**

Dalel Bouslimi*, Gouenou Coatrieux, Michel Cozic and Christian Roux

16:30 - 18:00 **Comparison of Heart Rate Variability from PPG with That from ECG**

Wan-Hua Lin, Dan Wu*, Chunyue Li, Heye Zhang and Yuan-Ting Zhang

16:30 - 18:00 **Quantitative and qualitative assessment of assisted strength exercising**

Tomislav Pozaic, Dominik Dzaja, Matija Varga, Luka Celic, Igor Lackovic and Ratko Magjarevic*

Mini Symposium

RFID & Wireless Sensors for Ubiquitous Healthcare & Internet-of-Things

FrAf3 ▪ 16:30 - 18:00 *Room* ▪ Tejo

Chair ▪ Li-Rong Zheng ◦ School of Information and Communication Technology Electrum

16:30 - 16:45 **Energy Efficient Internet-of-Things Platform for Pervasive Healthcare**

Lirong Zheng*

16:45 - 17:00 **Towards Software-Defined Wireless Sensors for Healthcare**

Yajie Qin*

17:00 - 17:15 **Intelligent Medical Box with Wireless Bio-Patches for Homecare**

Geng Yang*

17:15 - 17:30 **Embedded RFID with Bio-Sensors**

Junyu Wan*

17:30 - 17:45 **Wireless wearable sensors**

To be defined

Oral Session

Biomedical Imaging

FrAf4 ▪ 16:30 - 18:00 *Room* ▪ Lima

Chairs ▪ Rui Bernardes ◦ University of Coimbra, Daniela Campos ◦ Universidade do Porto

16:30 - 16:45 **IMRT Beam Angle Optimization using Dynamically Dimensioned Search**

Joana Dias*, Humberto Rocha, Brígida Ferreira and Maria Do Carmo Lopes

16:45 - 17:00 **Multiple Modality Fusion for Glaucoma Diagnosis**

Jiang Liu*, Yanwu Xu, Jun Cheng, Zhuo Zhang, Damon Wing Kee Wong, Fengshou Yin and Tien Yin Wong

17:00 - 17:15 **Feature-based Supervised Lung Nodule Segmentation**

Daniela Campos*, André Simões, Isabel Ramos and Aurélio Campilho

17:15 - 17:30 **Automatic Detection of Calcified Plaque with Acoustic Shadowing**

Zhifan Gao*, William Kongto Hau, Heye Zhang and Yuan-Ting Zhang

17:30 - 17:45 **A High-Resolution Tile-Based Approach for Classifying Biological Regions in Whole-Slide Histopathological Images**

Ryan Hoffman*, Sonal Kothari, John Phan and May Wang

17:45 - 18:00 **Fully-Automatic Multimodal Co-Registration of Retinal Fundus Images**

Rui Bernardes*, Pedro Guimarães, Pedro Rodrigues and Pedro Serranho

Conference Dinner 20:00 - 23:00

Saturday, November 9

Plenary Session by José Principe

08:30 - 09:15 ▪Room: Tejo

▪Chair: Jorge Henriques ◦ University of Coimbra

José Principe, Distinguished Professor of Electrical Engineering University of Florida, USA

Spike Signal Processing for Ultra Low Power Physiologic Monitoring

Plenary Session by Bruce Wheeler

09:15 - 10:00 ▪Room: Tejo

▪Chair: Shankhar Krishnan ◦ Wentworth Institute of Technology, Boston

Bruce Wheeler, Professor and Acting Chair J. Crayton Pruitt Family Department of Biomedical Engineering, University of Florida, USA

Biomedical and Health Informatics: Prospects for the Future and the Future of Our Students

Coffee Break ▪10:00 - 10:15▪Tejo Foyer / Blue Lagoon Patio

Mini Symposium

Body Sensor Networks for Emerging Health Informatics

SaMo1 ▪ 10:15 - 11:45 Room ▪ Tejo

Chairs ▪ Wang Lei ◦ SIAT (Shenzen Institutes of Advance Technology)

Benny Lo ◦ Institute of Global Health Innovation, Imperial College London

10:15 - 10:30 IPANEMA BSN: Towards closed-up supervision and decision support in rehabilitation robotics

Berno Misgeld*

10:30 - 10:45 Wearable devices for physiological data acquisition

Paulo Mendes*

10:45 - 11:00 Bio-inspired Body Sensor Networks

Benny Lo*

11:00 - 11:15 The need of making sense of all the data

Pedro Brandão*

11:15 - 11:30 The application of Body Sensor Networks for remotely monitoring patients

Rui Sarmiento e Castro*

11:30 - 11:45 Multiple-lead Electrocardiogram data acquisition and customized analogue front-end ASICs

Lei Wang*, Jinyong Zhang, Zedong Nie, Liangliang Sheng, Changjiang Duan, Gao Linping, Jinhe Cai, Leilei Du, Nikolas Gaio, Lie Tang, Maohua Ren

Oral Session

Neural Informatics

SaMo2 ▪ 10:15 - 11:45 Room ▪ Lima

Chairs ▪ Paulo Menezes ◦ University of Coimbra, Cecilia Vera Munoz ◦ UPM - Universidad Politécnica de Madrid

10:15 - 10:30 Effective Current Dipole Model of CA1 Hippocampus Pyramidal Neurons in Rat
Seyyed Mehdi Bagherimofidi*, Majid Pouladian, Seyyed Behnamoddin Jameie and Ali Abbaspour Tehrani-Fard

10:30 - 10:45 State of the art on games for health focus on Parkinson's disease rehabilitation

Jorge Cancela*, Matteo Pastorino, Maria Teresa Arredondo and Cecilia Vera-Muñoz

10:45 - 11:00 Advanced Tools for Clinical Diagnosis of Autism Spectrum Disorders

Silvia Orlandi, Claudia Manfredi, Andrea Guzzetta, Vittorio Belmonti, Salvatore Davide Barbagallo and Maria Luisa Scattoni

11:00 - 11:15 Sensor-based Detection of Alzheimer's Disease-related Behaviours

Samuel Pedro, João Quintas and Paulo Menezes*

11:15 - 11:30 Sub-band mean phase coherence for automated epileptic seizure detection

Mojtaba Bandarabadi*, Jalil Rasekhi, César Teixeira and Antonio Dourado

11:30 - 11:45 Influence of circadian rhythms on epileptic seizure predictors based on machine learning methods

Bruno Leitao*, César Alexandre Teixeira, Francisco Sales, Miguel Castelo-Branco and António Dourado

Plenary Session

Plenary Session by Guang-Zhong Yang

11:45 - 12:30 ▪Room: Tejo

▪Chair: Marc Nyssen ◦ Vrije Universiteit Brussel

Guang-Zhong Yang

Fellow of Royal Academy of Engineering

Imperial College London and Journal on Biomedical Health Informatics EiC, London, UK

BSN and Sensor Informatics

Closing Ceremony ▪12:30 - 13:00▪Tejo Room: Tejo

▪Chairs: Yuan-Ting Zhang, Chinese University of Hong Kong and The Key Lab for Health Informatics of Chinese Academy of Sciences, Paulo de Carvalho University of Coimbra ◦

Presentation of IFMBE Young Investigator Competition finalists

Presentation of YIC Awards

Welcome to IFMBE ICHI 2015