2013 35th Annual International Conference of the IEEE Engineering in Medicine and Biology Society

(EMBC 2013)

Osaka, Japan
3 – 7 July 2013

Pages 1-534

IEEE Catalog Number: CFP13EMB-POD
ISBN: 978-1-4577-0215-0

Program in Chronological Order

* Following Paper Title – Paper not Available

Thursday, 4 July 2013

ThA01: 08:00-09:30 Conference Hall (12F)
1.1.1 Nonstationary Processing of Biomedical Signals I (Oral Session)
Chair: Yoshida, Hisashi *(Kinki Univ.)*

ThA02: 08:00-09:30 1202 (12F)
1.2.1 Biomedical Simulation involving Signal Processing I (Oral Session)
Chair: Yana, Kazuo *(Hosei Univ.)*
Co-Chair: de Chazal, Philip *(Univ. of Western Sydney)*

ThA03: 08:00-09:30 1203 (12F)
1.3.1 Nonlinear Analysis of Biomedical Signals (Oral Session)
Chair: Kameneva, Tatiana *(The Univ. of Melbourne; NICTA)*

ThA04: 08:00-09:30 1001 (10F)
2.1.1 Diffusion-tensor and Diffusion-spectrum Imaging I (Oral Session)
Chair: Homma, Kazuhiro *(National Inst. of Advanced Industrial Science and Tech. (AIST))*

ThA05: 08:00-09:30 1002 (10F)
2.2.1 Ultrasound Imaging I (Oral Session)
Chair: Saijo, Yoshifumi *(Tohoku Univ.)*
Co-Chair: Nenadic, Ivan *(Mayo Clinic Coll. of Medicine)*

ThA06: 08:00-09:30 1003 (10F)
2.3.1 Image-based Cytometry: Technology and Applications (Invited Session)
Chair: Rohde, Gustavo *(Carnegie Mellon Univ.)*
Co-Chair: Goda, Keisuke *(Univ. of Tokyo)*

ThA07: 08:00-09:30 1004 (10F)
3.1.1 Mechanical Sensors and Systems (Oral Session)
Chair: Konishi, Satoshi *(Ritsumeikan Univ.)*

ThA08: 08:00-09:30 1005 (10F)
3.2.1 Bioelectric Sensors and Systems I (Oral Session)
Chair: Nam, Yoonkey *(KAIST)*
Co-Chair: Etemadi, Mozziyar *(Univ. of California, San Francisco)*

ThA09: 08:00-09:30 1006 (10F)
4.4.1 Medical Decision Making (Oral Session)
Chair: Mohd Rijal, Omar *(Univ. of Malaya)*

ThA10: 08:00-09:30 1007 (10F)
5.1.1 Use of Reduced and Distributed Models for Assessment of Cardiovascular Function (Invited Session)
Chair: Avolio, Alberto P *(Macquarie Univ.)*
Co-Chair: Hughes, Alun D. *(Imperial Coll. London)*

ThA11: 08:00-09:30 1008 (10F)
6.1.1 Brain Stimulation (Oral Session)
Chair: Tanaka, Tetsu *(Tohoku Univ.)*

ThA14: 08:00-09:30 804 (8F)
7.4.2 Biological Sensors and Systems for Diagnostics (Invited Session)
Chair: Gurkan, Umut A. *(Case western Res. Univ.)*

ThA15: 08:00-09:30 — 1102 (11F)
8.1.1 Intelligent Orthosis and Wearable Robots for Healthcare I (Invited Session)
Chair: Koyanagi, Ken'ichi *(Toyama Prefectural Univ.)*
Co-Chair: Vitiello, Nicola *(Scuola Superiore Sant'Anna)*

ThA16: 08:00-09:30 — Small Hall (5F)
9.1.1 Clinical Engineering I (Oral Session)
Chair: Matsumura, Masafumi *(Osaka Electro-Communication Univ.)*
Co-Chair: Dellimore, Kiran *(Philips Res.)*

ThA17: 08:00-09:30 801+802 (8F)
9.5.1 Thermal Ablation (Oral Session)
Chair: Betrouni, Nacim *(INSERM)*
Co-Chair: Kobayashi, Yo *(Waseda Univ.)*

ThA22: 08:00-09:45 1201 (12F)
7.1.5 Engineered Biomaterials: Biomimetic Approaches and Tissue Engineering (Minisymposium))
Chair: Kidoaki, Satoru *(Inst. for Materials Chemistry and Engineering, Kyusyu Univ.)*

ThB01: 09:30-11:00 Event Hall-Area B (3F)
1.1.2 Nonstationary Processing of Biomedical Signals II (Poster Session)

ThB02: 09:30-11:00 Event Hall-Area B (3F)
5.5.3 Respiratory Modeling and Engineering (Poster Session)

ThB05: 09:30-11:00 Event Hall-Area A (3F)
3.2.3 Bioelectric Sensors (Poster Session)

ThB06: 09:30-11:00 Event Hall-Area A (3F)
4.1.2 Modeling of Gene/Epigene Regulatory Networks and Analysis of Microarray Data (Poster Session)

ThB07: 09:30-11:00 Event Hall-Area A (3F)
3.1.3 New Sensing Techniques II (Poster Session)

ThB10: 09:30-11:00 Event Hall-Area B (3F)
5.1.5 Cardiac Mechanics (Poster Session)

ThB11: 09:30-11:00 Event Hall-Area B (3F)
5.2.2 Vascular Mechanics (Poster Session)

ThB12: 09:30-11:00 Event Hall-Area B (3F)
5.2.3 Hemodynamics (Poster Session)

ThB13: 09:30-11:00 Event Hall-Area D (3F)
6.1.5 Neural Engineering II (Poster Session)

ThB14: 09:30-11:00 Event Hall-Area C (3F)
7.4.5 Cell and Tissue Mechanics (Poster Session)

ThB15: 09:30-11:00 Event Hall-Area C (3F)
8.3.1 Rehabilitation Robotics and Applications (Poster Session)

ThB16: 09:30-11:00 Event Hall-Area A (3F)
9.1.2 Clinical Engineering II (Poster Session)

ThB17: 09:30-11:00 Event Hall-Area A (3F)
9.3.2 Ambulatory Technologies II (Poster Session)

ThB19: 09:30-11:00 Event Hall-Area A (3F)
4.1.3 Neuronal Networks and Synapses (Poster Session)

ThB20: 09:30-11:00 Event Hall-Area C (3F)
2.1.4 MR Neuroimaging II (Poster Session)

ThB21: 09:30-11:00 Event Hall-Area C (3F)
2.1.7 MR Imaging Methods III (Poster Session)

09:30-11:00 ThB21.2
Mitigate B1+ Inhomogeneity by Nonlinear Gradients and RF Shimming 1085-1088
Hsu, Yi-Cheng National Taiwan University; Chu, Ying-Hua National Taiwan University; Chern, I-Liang National Taiwan University; Lattanzi,, Riccardo New York University Medical Center; Huang, Teng-Yi National Taiwan University of Science and Technology; Lin, Fa-Hsuan National Taiwan University

09:30-11:00 ThB21.3
A Fast Pulse Design for Parallel Excitation with Gridding and Conjugate Gradient 1089-1092
Feng, Shuo Texas A&M University; Ji, Jim Xiuquan Texas A&M University

09:30-11:00 ThB21.4
Synthesis and Proton NMR Spectroscopy of Intra-Vesicular Gamma-Aminobutyric Acid (GABA) 1093-1095
Wang, Luke Boston Children's Hospital; Tong, Rong MIT; Kohane, Daniel Harvard Medical School

09:30-11:00 ThB21.5
Nonlinear Coil Sensitivity Estimation for Parallel Magnetic Resonance Imaging Using Data-Adaptive Steering Kernel Regression Method 1096-1099
Fang, Sheng Tsinghua University; Guo, Hua Tsinghua University

09:30-11:00 ThB21.6
Assessment of Flow and Hemodynamics in the Carotid Artery Using a Reduced TE 4D Flow Spiral Phase-Contrast MRI 1100-1103
Kadbi, Mo university of louisville; Negahdar, MJ University of Louisville; Traughber, Melanie Philips healthcare; martin, peter Philips healthcare; Amini, Amir University of Louisville

09:30-11:00 ThB21.7
Noise Estimation in Magnetic Resonance SENSE Reconstructed Data 1104-1107
Aja-Fernandez, Santiago Universidad de Valladolid; Vegas-Sanchez-Ferrero, Gonzalo Universidad de Valladolid; de Luis-García, Rodrigo University of Valladolid; Tristan-Vega, Antonio Universidad de Valladolid

ThB22: 09:30-11:00 Event Hall-Area C (3F)
2.2.3 Ultrasound Imaging III (Poster Session)

09:30-11:00 ThB22.1
Preliminary Study of Non-Invasive Shock Wave Treatment of Capsular Contracture after Breast Implant: Animal Model 1108-1111
Wu, Yu-Chiuan Department of Electrical Engineering, I-Shou University; Jao, Jo-Chi Kaohsiung Medical University; Yang, Yu-Ting Department of Biomedical Engineering, I-Shou University; Wang, Hsiang-Sheng Department of Biomedical Engineering, I-Shou University; Wu, chun-hsien Center for General Education, I-Shou University; Chen, Po-Chou I-Shou University

09:30-11:00 ThB22.2
Relation between Morphology of Sebaceous Glands Inside Human Skin and Viscoelastic Properties 1112-1115
Nagaoka, Ryo Tohoku Univ.; Kobayashi, Kazuto Honda Electronics Co., Ltd.; Saijo, Yoshifumi Tohoku Univ.

09:30-11:00 ThB22.3
Ultrasonic and Photoacoustic Imaging of Knee Joints in Normal and Osteoarthritis Rats 1116-1119
Izumi, Takuya Tohoku University; Sato, Mika Tohoku University; Yabe, Yutaka Tohoku University; Hagiwara, Yoshihiro Tohoku University Graduate School of Medicine; Saijo, Yoshifumi Tohoku University

09:30-11:00 ThB22.4
Preliminary Study on the Effect of Stiffness on Lamb Wave Propagation in Bovine Corneas 1120-1123
Zhang, Xin-Yu Shenzhen University; Yin, Yin Shenzhen University; Guo, Yanrong Shenzhen University; Diao, Xianfen Zhejiang University; Chen, Xin Shenzhen University

09:30-11:00 ThB22.5
Evaluation of a 3D Technique for Quantifying Neovascularization within Plaques Imaged by Contrast Enhanced Ultrasound 1124-1127
Hoogi, Assaf Technion - Israel Institute of Technology; Zurakhov, Grigoriy Technion - Israel Institute of Technology; Adam, Dan Technion - Israel Institute of Technology

ThB23: 09:30-11:00 Event Hall-Area D (3F)
10.1.1 mHealth, Consumer Health (Poster Session)

ThB24: 09:30-11:00 Event Hall-Area D (3F)
10.2.2 Body Sensor Networks (Poster Session)

ThC01: 13:30-15:00 Conference Hall (12F)
1.1.3 Time-Frequency and Time-Scale Analysis of Biosignals I (Oral Session)
Chair: Reilly, Richard *(Trinity Coll. Dublin)*
Co-Chair: Iramina, Keiji *(Kyushu Univ. Japan)*

ThC02: 13:30-15:00 1202 (12F)
1.2.3 Principal Component and Independent Component Analyses (Oral Session)
Chair: Lin, Yuan-Pin *(Univ. of California, San Diego)*
Co-Chair: Ohsuga, Mieko *(Osaka Inst. of Tech.)*

ThC04: 13:30-15:00 1001 (10F)
2.1.3 MR Neuroimaging I (Oral Session)
Chair: Karmonik, Christof *(The Methodist Hospital Neurological Inst.)*
Co-Chair: Sekino, Masaki *(The Univ. of Tokyo)*

ThC05: 13:30-15:00 1002 (10F)
2.2.2 Ultrasound Imaging II (Oral Session)
Chair: Taki, Hirofumi *(Kyoto Univ.)*
Co-Chair: Forzoni, Leonardo *(Esaote S.p.A., Genova, Italy)*

ThC06: 13:30-15:00 1003 (10F)
2.3.2 Optical Imaging I (Oral Session)
Chair: Olivo-Marin, Jean-Christophe *(Inst. Pasteur)*
Co-Chair: Fotiadis, Dimitrios I. *(Univ. of Ioannina)*

ThC07: 13:30-15:15 1004 (10F)
3.1.2 New Sensing Techniques I (Oral Session)
Chair: Aceros, Juan *(Brown Univ.)*

ThC08: 13:30-15:00 1005 (10F)
3.2.2 Bioelectric Sensors and Systems II (Oral Session)
Chair: Poon, Carmen CY *(The Chinese Univ. of Hong Kong)*

ThC09: 13:30-15:00 1006 (10F)
4.5.1 Algorithms and Techniques for Systems Modeling (Oral Session)
Chair: Zhu, Fansan *(Renal Res. Inst.)*
Co-Chair: Gao, Jean *(Univ. of Texas)*

ThC10: 13:30-15:00 1007 (10F)
5.1.2 Electrophysiology Modeling of the Atria and Ventricles (Invited Session)
Chair: Trayanova, Natalia *(Johns Hopkins Univ.)*
Co-Chair: Shim, Eun Bo *(Kangwon National Univ.)*

ThC11: 13:30-15:00 1008 (10F)
6.1.2 Neural Engineering: Microelectrode Technology (Oral Session)
Chair: Takahashi, Hirokazu *(Univ. of Tokyo)*

14:30-14:45 ThC11.5
Time-Domain Finite Element Models of Electrochemistry in Intracochlear Electrodes 1554-1557
Sue, Andrian University of Sydney; Tran, Phillip The University of Sydney; Wong, Paul University of Sydney; Li, Qing The University of Sydney; Carter, Paul Michael University of Sydney

14:45-15:00 ThC11.6
A Laboratory Instrument for Characterizing Multiple Microelectrodes 1558-1561
Hu, Zhe Illinois Institute of Technology; Troyk, Philip Illinois Institute of Technology; DeMichele, Glenn Sigenics Inc.; Kerns, Douglas Sigenics Inc.; Bak, M Microbrobe

ThC12: 13:30-15:00 1009 (10F)
6.2.2 Brain-computer Interface: Clinical (Invited Session)
Chair: Sanchez, Justin C. *(Univ. of Miami)*
Co-Chair: Leeb, Robert *(Ec. Pol. Fédérale de Lausanne)*

13:30-13:45 ThC12.1
Brain-Machine Interfaces: Progress in Large Clinical Validation ..... *
Millán, José del R. Ecole Polytechnique Federale de Lausanne; Carlson, Tom EPFL (Ecole Polytechnique Fédérale de Lausanne); Tonin, Luca Swiss Federal Institute of Technology, Lausanne; Perdikis, Serafeim EPFL (École Polytechnique Fédérale de Lausanne); Biasiucci, Andrea École Polytechnique Fédérale de Lausanne; Leeb, Robert Ecole Polytechnique Fédérale de Lausanne

13:45-14:00 ThC12.2
Development of an EEG Based Reinforcement Learning Brain-Computer Interface System for Rehabilitation ..... N/A
Roset, Scott University of Miami; Gonzalez, Hernan University of Miami; Sanchez, Justin C. University of Miami

14:00-14:15 ThC12.3
Investigation of the Trade-Off between Time Window Length, Classifier Update Rate and Classification Accuracy for Restorative Brain-Computer Interfaces 1567-1570
Darvishi, Sam The University of Adelaide; Ridding, Michael Charles University of Adelaide; Abbott, Derek The University of Adelaide; Baumert, Mathias The University of Adelaide

14:15-14:30 ThC12.4
Improving the Performance of a Neural-Machine Interface for Prosthetic Legs Using Adaptive Pattern Classifiers 1571-1574
Du, Lin University of Rhode Island; Zhang, Fan University of Rhode Island; He, Haibo University of Rhode Island; Huang, He University of Rhode Island

14:30-14:45 ThC12.5
A Brain-Machine Interface for Control of Burst Suppression in Medical Coma 1575-1578
Shanechi, Maryam University of California, Berkeley; Chemali, Jessica Jean Carnegie Mellon University; Liberman, Max Brown University; Solt, Ken Massachusetts General Hospital; Brown, Emery MIT

14:45-15:00 ThC12.6
NeuroRex: A Clinical Neural Interface Roadmap for EEG-Based Brain Machine Interfaces to a Lower Body Robotic Exoskeleton 1579-1582
Contreras-Vidal, José University of Houston; Grossman, Robert The Methodist Hospital

ThC13: 13:30-15:00 1010 (10F)
6.3.2 Motor Neuroprostheses I (Oral Session)
Chair: Hargrove, Levi *(Rehabilitation Inst. of Chicago)*

13:30-13:45 ThC13.1
Online Adaptive Decoding of Intended Movements with a Hybrid Kinetic and Kinematic Brain Machine Interface 1583-1586
Suminski, Aaron University of Chicago; Fagg, Andrew University of Oklahoma; Willett, Francis University of Chicago; Bodenhamer, Matthew University of Oklahoma; Hatsopoulos, Nicholas University of Chicago

ThC14: 13:30-15:00 804 (8F)
7.4.1 Auto-Bio-Lab (ABL) Technologies (Invited Session)
Chair: Ghafar-Zadeh, Ebrahim *(York Univ.)*

14:45-15:00 ThC14.6

Electrical Stimulation Via a Biocompatible Conductive Polymer Directs Retinal Progenitor Cell Differentiation 1627-1631

Saigal, Rajiv Harvard-MIT Division of Health Sciences and Technology, Massachu; Cimetta, Elisa Columbia Univ., Dept. of Biomedical Engineering; Tandon, Nina Columbia Univ.; Zhou, Jing Harvard Univ.; Langer, Robert MIT; young, michael Schepens Eye Research Institute, Dept. of Ophthalmology, Ha; Vunjak-Novakovic, Gordana Columbia Univ.; Redenti, Stephen Lehman College, Molecular Cell and Developmental Biology

---

ThC16: 13:30-15:00 Small Hall (5F)

9.1.3 Computer Aided Diagnosis (Oral Session)

Chair: de Chazal, Philip *(Univ. of Western Sydney)*

13:30-13:45 ThC16.1

Sex Determination from Scapular Length Measurements by CT Scans Images in a Caucasian Population .. 1632-1635

Giurazza, Francesco Università Campus Bio-Medico di Roma; Schena, Emiliano University of Rome Campus Bio-Medico; del vescovo, Riccardo Università Campus Bio-Medico di Roma; cazzato, Roberto Luigi Università Campus Bio-Medico di Roma; Mortato, Luca Università Campus Bio-Medico di Roma; Saccomandi, Paola University Campus Bio-Medico of Rome; Paternostro, Ferdinando Università degli Studi di Firenze; Onofri, Leonardo Università Campus Bio-Medico di Roma; Beomonte Zobel, Bruno University CAMPUS Bio-Medico

13:45-14:00 ThC16.2

Correcting LCD luminance non-uniformity for threshold Saccadic Vector Optokinetic Perimetry (SVOP) 1636-1639

Perperidis, Antonios Univ. of Edinburgh; Murray, Ian Univ. of Edinburgh; Brash, Harry Melrose Univ. of Edinburgh; McTrutsy, Alice Univ. of Edinburgh, Glasgow Caledonian Univ.; Cameron, Lorraine Univ. of Edinburgh; Fleck, Brian William Univ. of Edinburgh; Minns, Robert Univ. of Edinburgh

14:00-14:15 ThC16.3

Comparison between Transmission and Scattering Spectrum Reconstruction Methods Based on EPID Images 1640-1643

Juste, Belen Polytechnic Univ. of Valencia; Miró, Rafael Polytechnic Univ. of Valencia; Jambrina, Ana Polytechnic Univ. of Valencia; Díez, Sergio Hospital Clínic de València; Campayo, Juan Manuel Hospital Clínic de València; Santos, Agustín Hospital Provincial de Castelló; Verdú, Gumersindo Polytechnic Univ. of Valencia

14:15-14:30 ThC16.4

Epilepsy Analytic System with Cloud Computing 1644-1647

Shen, Chia-Ping National Taiwan Univ.; Zhou, Weizhi National Taiwan Univ.; Lin, Feng-Sheng Academia Sinica of Taiwan; Sung, Hsiao-Ya National Taiwan Univ.; Lam, Yan-Yu Andy National Taiwan Univ.; Chen, Wei National Taiwan Univ.; Lin, Jeng-Wei Tunghai Univ.; Pan, Ming-Kai National Taiwan Univ. Hospital; Chiu, Ming-Jang Department of Nerology, National Taiwan Univ. Hospital, No.; Lai, Feipei National Taiwan Univ.

14:30-14:45 ThC16.5

Artificial Neural Networks As an Alternative to Traditional Fall Detection Methods 1648-1651

Isaza, Claudia Universidad de Antioquia; Vallejo, Marcela Universidad de Antioquia; Lopez, Jose David Universidad de Antioquia

14:45-15:00 ThC16.6

Automated Detection of Sleep Apnea in Infants Using Minimally Invasive Sensors 1652-1655

Cohen, Gregory University of Western Sydney; de Chazal, Philip University of Western Sydney

---

ThC17: 13:30-15:00 801+802 (8F)

10.2.1 Emerging BAN Technology and Healthcare M2M Services toward International Standardization (Invited Session)

Chair: Hara, Shinsuke *(Osaka City Univ.)*

Co-Chair: Ahmed, Ashir *(Associate Professor, Department of Advanced Information Tech.)*

13:30-13:45 ThC17.1

IEEE802.15.6 -based Multi-Accelerometer WBAN System for Monitoring Parkinson's Disease 1656-1659

Keränen, Niina Univ. of Oulu; Särestöniemi, Mariella Univ. of Oulu, Centre for Wireless Communications; Partala, Juha Univ. of Oulu; Hämäläinen, Matti Univ. of Oulu; Reponen, Jarmo Univ. of Oulu; Seppänen, Tapio Univ. of Oulu; Iinatti, Jari Univ. of Oulu; Jämsä, Timo Univ. of Oulu

ThD01: 15:00-16:30 Event Hall-Area B (3F)
1.2.4 Multivariate Biosignal Processing (Poster Session)

ThD02: 15:00-16:30 Event Hall-Area A (3F)
3.3.1 Biological Sensors (Poster Session)

15:00-16:30 ThD02.1
Polycarbazole-Based Organic Photodiodes for Highly Sensitive Chemiluminescent Immunoassays 1700-1703
Pires, Nuno M.M. Norwegian Centre of Expertise on Micro and NanoTechnology, IMST,; Dong, Tao Norwegian Centre of Expertise on Micro and NanoTechnology, Vestf

15:00-16:30 ThD02.2
Effects of LED-Backlit Computer Screen and Emotional Self-Regulation on Human Melatonin Production 1704-1707
Sroykham, Watchara Mahidol University; Wongsawat, Yodchanan Mahidol University

15:00-16:30 ThD02.3
A Household LOC Device for Online Monitoring Bacterial Pathogens in Drinking Water with Green Design Concept 1708-1711
Zhao, Xinyan Vestfold Univ. College; Dong, Tao 1.Vestfold Univ. College 2. Nanjing Univ. of Science and

15:00-16:30 ThD02.4
Concept for E.coli Detection Using Interdigitated Microelectrode Impedance Sensor 1712-1715
Settu, Kalpana National Central Univ.; Liu, Jen-Tsai Univ. of Chinese Academy of Sciences; Chen, Ching-Jung Univ. of Chinese Academy of Sciences; Tsai, Jang-Zern National Central Univ.; Chang, Shwu Jen I-Shou Univ.

15:00-16:30 ThD02.5
Fabrication of Polydimethylsiloxane (PDMS) - Based Multielectrode Array for Neural Interface 1716-1719
Kim, Jun-Min Seoul Univ.; Oh, Darong Seoul National Univ.; Sanchez, Joaquin Seoul National Univ.; Kim, Shang Hyub Seoul National Univ.; Seo, Jong Mo Seoul National Univ., School of Engineering

15:00-16:30 ThD02.6
Electromagnetic Levitation Platform for Wireless Study of Insect Flight Neurophysiology 1720-1723
Verderber, Alexander North Carolina State University; McKnight, Michael North Carolina State University; Bozkurt, Alper North Carolina State University

ThD03: 15:00-16:30 Event Hall-Area A (3F)
3.4.2 Physiological Monitoring II (Poster Session)

15:00-16:30 ThD03.1
Comparison Between Red, Green and Blue Light Reflection Photoplethysmography for Heart Rate Monitoring During Motion 1724-1727
Lee, jihyoung Kanazawa Univ.; Matsumura, Kenta Kanazawa Univ.; Yamakoshi, Ken-ichi Kanazawa Univ.; Rolfe, Peter Oxford BioHorizons Ltd; Tanaka, Shinobu Kanazawa Univ.; Yamakoshi, Takehiro Kanazawa Univ.

15:00-16:30 ThD03.2
Evaluation of a Combined Reflectance Photoplethysmography and Laser Doppler Flowmetry Surface Probe 1728-1731
Abdollahi, Zahra City Univ. London; Phillips, Justin City Univ. London; Kyriacou, Panayiotis City Univ. London

15:00-16:30 ThD03.3
Esophageal SpO2 Measurements from a Pediatric Burns-Patient: A Case Study 1732-1735
Kyriacou, Panayiotis City University London; May, James City University London

15:00-16:30 ThD03.4
Development of an Optical Probe to Investigate the Suitability of Measuring Photoplethysmographs and Blood Oxygen Saturation from the Human Auditory Canal 1736-1739
Budidha, Karthik City University; Kyriacou, Panayiotis City University London

15:00-16:30 ThD03.5
Low Cost MATLAB-Based Pulse Oximeter for Deployment in Research and Development Applications 1740-1743
Shokouhian, Mohsen University of Westminster; Kale, Izzet University of Westminster; Morling, Richard University of Westminster

ThD04: 15:00-16:30 Event Hall-Area C (3F)
2.3.5 Optical Imaging IV (Poster Session)

ThD05: 15:00-16:30 Event Hall-Area A (3F)
9.3.3 Cardiovascular Devices (Poster Session)

ThD06: 15:00-16:30 Event Hall-Area A (3F)
3.6.2 Body Sensor Networks II (Poster Session)

ThD07: 15:00-16:30 Event Hall-Area A (3F)
3.5.2 Implantable Sensors and Systems (Poster Session)

ThD08: 15:00-16:30 Event Hall-Area A (3F)
4.4.2 Models of Medical Devices and Medical Decision Making (Poster Session)

ThD09: 15:00-16:30 Event Hall-Area B (3F)
1.2.2 Biomedical Simulation involving Signal Processing II (Poster Session)

15:00-16:30 ThD09.8
Ultrasonic Guided Waves Dispersion Reversal for Long Bone Thickness Evaluation: A Simulation Study 1930-1933
Xu, Kailiang Fudan University; Liu, ChengCheng Fudan University; Ta, Dean Fudan University

15:00-16:30 ThD09.9
Temporal and Steady State Acoustic Field in a Cell Culture Well: Simulation 1934-1935
Choi, Min Joo Jeju National University; Kang, Gwan Suk Jeju National University; Kodama, Tetsuya Tohoku University; Coleman, Andrew J Guy's & St Thomas'Hospital NHS Foundation Trust

15:00-16:30 ThD09.10
Measuring Chest Circumference Change During Respiration with an Electromagnetic Biosensor 1936-1939
Padasdao, Bryson University of Hawaii at Manoa; Shahhaidar, Ehsaneh University of Hawaii at Manoa; Boric-Lubecke, Olga University of Hawaii Manoa

15:00-16:30 ThD09.11
Respiratory-Cycle Related Analysis of the EEG-Spectrum During Sleep: A Healthy Population Study 1940-1943
Garcia-Molina, Gary Nelson Philips Research North America; Bialas, Piotr Rafal Samsung Poland R&D Center

15:00-16:30 ThD09.12
A Pipeline VLSI Design of Fast Singular Value Decomposition Processor for Real-Time EEG System Based on On-Line Recursive Independent Component Analysis 1944-1947
Huang, Kuan Ju National Chiao Tung University; Shih, Wei-Yeh National Chiao Tung University; Chang, Jui-Chung National Chiao Tung University; Feng, Chih-Wei National Chiao Tung University; Fang, Wai-Chi National Chiao Tung University

15:00-16:30 ThD09.13
Microwave Technology for Localization of Traumatic Intracranial Bleedings- A Numerical Simulation Study 1948-1951
Candefjord, Stefan Chalmers University of Technology; Winges, Johan Chalmers University of Technology; Yu, Yinan Chalmers University of Technology; Rylander, Thomas Chalmers University of Technology; McKelvey, Tomas Chalmers University of Technology

ThD10: 15:00-16:30 Event Hall-Area B (3F)
1.2.8 Signal Processing in Physiological Systems IV (Poster Session)

15:00-16:30 ThD10.1
Automated Analgesic Drugs Delivery Guided by Vagal Tone Evaluation: Interest of the Analgesia Nociception Index (ANI) 1952-1955
De Jonckheere, Julien CHRU de Lille; Jeanne, Mathieu CHRU de Lille; Logier, Regis CHRU de Lille

15:00-16:30 ThD10.2
BioSigPlot: An opensource tool for the visualization of multi-channel biomedical signals with Matlab ... 1956-1959
Boudet, Samuel Faculté Libre de Médecine; Peyrodie, Laurent HEI; Gallois, Philippe Université Catholique de Lille; Houzé de l'Aulnoit, Denis GHICL; Cao, Hua Hautes Etudes d'Ingénieur; FORZY, Gerard Faculté Libre de Medecine

15:00-16:30 ThD10.3
Arterial Pressure Fractality Is Highly Dependent on Wave Reflection 1960-1963
Armentano, Ricardo Luis Favaloro University; Cymberknop, Leandro Javier Universidad Tecnológica Nacional; Legnani, Walter Universidad Tecnologica Nacional; Pessana, Franco FICEN, Favaloro University; Craiem, Damian Favaloro University; Graf, Sebastián Favaloro University; Barra, Juan Favaloro University

15:00-16:30 ThD10.4
A New Mechanical Index for Gauging the Human Bio-Effects of Low Frequency Ultrasound 1964-1967
Ahmadi, Farzaneh The Univ. of Sydney; McLoughlin, Ian Vince The Univ. of Science and Technology of China

15:00-16:30 ThD10.5
Effect of Using ECG Derived Respiration (EDR) Signal in Linear Parametric QT-RR Modeling 1968-1971
Imam, Hasan Univ. of Melbourne; Karmakar, Chandan K. The Univ. of Melbourne; Khandoker, Ahsan Habib Khalifa Univ. of Science, Technology and Research; Palaniswami, Marimuthu The Univ. of Melbourne

ThD11: 15:00-16:30 Event Hall-Area D (3F)
6.2.7 Brain-computer Interface V (Poster Session)

ThD12: 15:00-16:30 Event Hall-Area D (3F)
10.4.3 mHealth II (Poster Session)

ThD13: 15:00-16:30 Event Hall-Area B (3F)
5.7.3 Pulse Transit Time (Poster Session)

ThD14: 15:00-16:30 Event Hall-Area C (3F)
2.4.3 X-Ray Imaging III (Poster Session)

ThD15: 15:00-16:30 Event Hall-Area A (3F)
9.3.4 Imaging and Spectroscopy (Poster Session)

ThD16: 15:00-16:30 Event Hall-Area A (3F)
9.3.5 Monitoring (Poster Session)

ThD19: 15:00-16:30 Event Hall-Area C (3F)
2.4.4 PET Imaging (Poster Session)

ThD20: 15:00-16:30 Event Hall-Area C (3F)
8.4.1 Assistive and Cognitive Robotics in Aided Living (Poster Session)

ThD21: 15:00-16:30 Event Hall-Area C (3F)
11.1.1 Biomedical Engineering Education and Curricula (Poster Session)

ThE01: 16:30-18:00 Conference Hall (12F)
1.1.4 Time-Frequency and Time-Scale Analysis of Biosignals II (Oral Session)
Chair: Garcia, Maria *(Univ. of Valladolid, CIF: Q4718001C)*
Co-Chair: Garde, Ainara *(Univ. Pol. de Catalunya)*

ThE02: 16:30-18:00 1202 (12F)
1.2.5 Signal Processing in Physiological Systems I (Oral Session)
Chair: Porta, Alberto *(Univ. degli Studi di Milano)*

ThE03: 16:30-18:00 1203 (12F)
1.3.2 Nonlinear Dynamics in Biomedical Signals I (Oral Session)
Chair: Valenza, Gaetano *(Univ. of Pisa)*

ThE04: 16:30-18:00 1001 (10F)
2.1.5 MR Imaging Methods I (Oral Session)
Chair: Sugimoto, Naozo *(Kyoto Univ.)*
Co-Chair: Liang, Dong *(Shenzhen Inst. of Advanced Tech.)*

ThE06: 16:30-18:00 1003 (10F)
2.3.3 Optical Imaging II (Oral Session)
Chair: Tresadern, Phil *(Univ. of Manchester)*
Co-Chair: Kato, Yuji *(Hokkaido Univ.)*

16:30-16:45 ThE06.1
Comparison of Causality Analysis on Simultaneously Measured Fmri and NIRS Signals During Motor Tasks 2628-2631
Anwar, Abdul Rauf University of Kiel; Heute, Ulrich University of Kiel; Granert, Oliver University of Kiel; Galka, Andreas Christian-Albrechts-University of Kiel; Muthalib, Mark Queensland University of Technology; Perrey, Stéphane University of Montpellier 1; Wolff, Stephan University of Kiel; Muthuraman, Muthuraman Christian Albrechts University; Jan, Raethjen Department of Neurology; Gunther, Deuschl Department of Neurology

16:45-17:00 ThE06.2
Influences of Blood Flow Changes in Cerebrospinal Fluid and Skin Layers on Optical Mapping 2632-2635
WANG, SHUPING Electro-communication university; Hoshi, Yoko Tokyo Metropolitan Institute of Medical Science, Integrated Neur; Yamada, Yukio University of Electro-Communications

17:00-17:15 ThE06.3
Simulating Nailfold Capillaroscopy Sequences to Evaluate Algorithms for Blood Flow Estimation 2636-2639
Tresadern, Phil University of Manchester; Berks, Michael University of Manchester; Murray, Andrea University of Manchester; Dinsdale, Graham University of Manchester; Taylor, Chris University of Manchester; Herrick, Ariane University of Manchester

17:15-17:30 ThE06.4
Global Optimization of Optimal Angiographic Viewing Angles for Coronary Arteries with Multiple Segments 2640-2643
Wang, Xuehu Beijing Institute of Technology; Yang, Jian Beijing Institute of Technology; Yang, Tao Beijing Institute of Technology; Wang, Yongtian Beijing Institute of Technology

17:30-17:45 ThE06.5
Application of Fluorescent PSF for 3D Reconstruction of Absorbing Structure Using Slab Transillumination Images 2644-2647
Tran, Trung Nghia Hokkaido University; Namita, Takeshi Hokkaido University; Kato, Yuji Hokkaido University; Shimizu, Koichi Hokkaido University

17:45-18:00 ThE06.6
Depth Estimation and Image Improvement of Fluorescent Objects in Scattering Medium with Unknown Optical Parameters 2648-2651
Xia, Jiao Hokkaido University; Namita, Takeshi Hokkaido University; Kato, Yuji Hokkaido University; Shimizu, Koichi Hokkaido University

ThE07: 16:30-18:00 1004 (10F)
3.1.4 Optical and Photonic Sensors I (Oral Session)
Chair: Kyriacou, Panayiotis *(City Univ. London)*
Co-Chair: Shimizu, Koichi *(Hokkaido Univ.)*

16:30-16:45 ThE07.1
Theory of Dynamic Pulsatile Spectroscopy for Photoplethysmographic Signals Analysis 2652-2655
Rybynok, Victor City University, London; Kyriacou, Panayiotis City University London

16:45-17:00 ThE07.2
Pilot Investigation of Anterior Fontanelle Photoplethysmographic Signals and Their Suitability in Estimating Arterial Oxygen Saturation 2656-2659
May, James City University London; Kyriacou, Panayiotis City University London

ThE08: 16:30-18:00 1005 (10F)
4.6.2 Algorithms and Computational Tools for Proteomics (Oral Session)
Chair: Fotiadis, Dimitrios I. *(Univ. of Ioannina)*
Co-Chair: Zervakis, Michalis *(Tech. Univ. of Crete, Greece)*

ThE09: 16:30-18:00 1006 (10F)
4.5.3 Quantitative Biology (Invited Session)
Chair: Funahashi, Akira *(Keio Univ.)*

16:30-16:45 ThE09.1
Differential Network Biology Reveals a Positive Correlation between a Novel Protein-Protein Interaction and Cancer Cells Migration 2700-2703
Liu, Chia-Hung National Taiwan Univ.; Chen, Tzu-Chi National Yang-Ming Univ.; Chen, Chun-Houh Academia Sinica; Kao, Cheng-Yan National Taiwan Univ.; Huang, Chi-Ying F. National Yang-Ming Univ.

16:45-17:00 ThE09.2
Information Decoding in Microscopic Biological Processes 2704-2707
Kobayashi, Tetsuya J. The University of Tokyo

17:00-17:15 ThE09.3
The Dynamics of Cellular Energetics During Continuous Yeast Culture 2708-2711
Amariei, Cornelia Institute for Advanced Biosciences, Keio University; Machné, Rainer Institute for Theoretical Biochemistry, Vienna University; Sasidharan, Kalesh Biosciences, Exeter University; Gottstein, Willi Institute for Theoretical Biology, Humboldt University; Tomita, Masaru Institute for Advanced Biosciences, Keio University; Soga, Tomoyoshi Institute for Advanced Biosciences, Keio University; Lloyd, David Institute for Theoretical Biochemistry, Vienna University; Murray, Douglas B Keio University

17:15-17:30 ThE09.4
Robustness of Force and Stress Inference in an Epithelial Tissue 2712-2715
Sugimura, Kaoru Kyoto University; Bellaiche, Yohanns Institut CURIE Paris; Graner, François University Paris VII; Marcq, Philippe Institut Curie; Ishihara, Shuji The University of Tokyo

17:30-17:45 ThE09.5
In Vivo Oriented Modeling with Consideration of Intracellular Crowding 2716-2719
Hiroi, Noriko Keio Univ.; Iba, Keisuke Keio Univ., Department of Biosciences and Informatics; Tabira, Akito Keio Univ., Department of Biosciences and Informatics; Okuhara, Takahiro Keio Univ., Department of Biosciences and Informatics; Kubojima, Takeshi Keio Univ., Department of Biosciences and Informatics; Hiraiwa, Takumi Keio Univ., Department of Biosciences and Informatics; Kobayashi, Tetsuya J. The Univ. of Tokyo; Oka, Kotaro Keio Univ., Department of Biosciences and Informatics; Funahashi, Akira Keio Univ

ThE10: 16:30-18:00 1007 (10F)
5.1.3 Mechanical Cardiac Support I (Oral Session)
Chair: Abe, Yusuke *(The Univ. of Tokyo)*
Co-Chair: Yamane, Takashi *(Kobe Univ.)*

16:30-16:45 ThE10.1
The Helical Flow Total Artificial Heart: Implantation in Goats 2720-2723
Abe, Yusuke The Univ. of Tokyo; Ishii, Kohei The Univ. of Tokyo; Isoyama, Takashi The Univ. of Tokyo; Saito, Itsuro The Univ. of Tokyo; Inoue, Yusuke The Univ. of Tokyo; Sato, Masami The Univ. of Tokyo; hara, shintaro Graduate School of Medicine The Univ. of Tokyo; Hosoda, Kyohei Kitasato Univ.; ariyoshi, koki kitasato; Wu, Sheng Yuan The Univ. of Tokyo; Li, XinYang The Univ. of Tokyo; Nakagawa, Hidemoto The Univ. of Tokyo; Ono, Toshiya The Univ. of Tokyo; Fukazawa, Kyoko The Univ. of Tokyo; Ishihara, Kazuhiko The Univ. of Tokyo; Imachi, Kou The Univ. of Tokyo

16:45-17:00 ThE10.2
Pulsatile Driving of the Helical Flow Pump 2724-2727
Ishii, Kohei The Univ. of Tokyo; Hosoda, Kyohei Kitasato Univ.; Isoyama, Takashi The Univ. of Tokyo; Saito, Itsuro The Univ. of Tokyo; ariyoshi, koki kitasato; Inoue, Yusuke The Univ. of Tokyo; Sato, Masami The Univ. of Tokyo; hara, shintaro Graduate School of Medicine The Univ. of Tokyo; Li, XinYang The Univ. of Tokyo; Wu, Sheng Yuan The Univ. of Tokyo; Ono, Toshiya The Univ. of Tokyo; Nakagawa, Hidemoto The Univ. of Tokyo; Imachi, Kou The Univ. of Tokyo; Abe, Yusuke The Univ. of Tokyo

17:00-17:15 ThE10.3
Development of a Portable Bridge-To-Decision Blood Pump 2728-2731
Yamane, Takashi Kobe University; Kitamura, Keisuke Kobe University

ThE11: 16:30-18:00 1008 (10F)
6.1.3 Neural Engineering: Implantable Systems (Oral Session)
Chair: Suzuki, Takafumi *(National Inst. of Information and Communications Technology)*

ThE12: 16:30-18:00 1009 (10F)
6.2.3 Brain-computer Interface I (Oral Session)
Chair: Kanoh, Shin'ichiro *(Tohoku Inst. of Tech.)*

16:30-16:45 ThE12.1
Likelihood Gradient Ascent (LGA): A Closed-Loop Decoder Adaptation Algorithm for Brain-Machine Interfaces 2768-2771
Dangi, Siddharth University of California, Berkeley; Gowda, Suraj University of California, Berkeley; Carmena, Jose M. University of California, Berkeley

16:45-17:00 ThE12.2
Mechanical Vibrotactile Stimulation Effect in Motor Imagery Based Brain-Computer Interface 2772-2775
Yao, Lin Shanghai Jiao Tong Univ.; Sheng, Xinjun Shanghai Jiao Tong Univ.; Meng, Jianjun Shanghai Jiao Tong Univ.; Zhang, Dingguo Shanghai Jiao Tong Univ.; Zhu, XiangYang Shanghai Jiao Tong Univ.

17:00-17:15 ThE12.3
Hierarchical Codebook Visually Evoked Potentials for Fast and Flexible BCIs 2776-2779
Riechmann, Hannes Bielefeld University; Finke, Andrea Bielefeld University, Bielefeld, Germany; Ritter, Helge CITEC, CoR-Lab, Bielefeld University, Bielefeld, Germany

17:15-17:30 ThE12.4
Optimizing Low-Frequency Common Spatial Pattern Features for Multi-Class Classification of Hand Movement Directions 2780-2783
Ng, Andrew Keong Inst. for Infocomm Research (I2R), Agency for Science,Technol; Ang, Kai Keng Inst. for Infocomm Research; Tee, Keng Peng Inst. for Infocomm Research; Guan, Cuntai Inst. for Infocomm Research

17:30-17:45 ThE12.5
Phase Synchrony in Subject-Specific Reactive Band of EEG for Classification of Motor Imagery Tasks . 2784-2787
Gonuguntla, Venkateswarlu Kyungpook National University; Wang, Yubo Kyungpook National University; Veluvolu, Kalyana C. Kyungpook National University

17:45-18:00 ThE12.6
Semantic-Based Sound Retrieval by ERP in Rapid Serial Auditory Presentation Paradigm 2788-2791
Jiang, Lei Zhejiang University; Cai, Bangyu Zhejiang University; Xiao, Siyuan Zhejiang University; Wang, YiWen Zhejiang University; Chen, Weidong zhejiang university; Zheng, Xiaoxiang Zhejiang University

ThE13: 16:30-18:00 1010 (10F)
6.4.1 Neural Engineering in Speech and Hearing (Invited Session)
Chair: Stepp, Cara *(Boston Univ.)*

16:30-16:45 ThE13.1
Bayesian Inference in Auditory Scenes 2792-2795
Elhilali, Mounya Johns Hopkins University

16:45-17:00 ThE13.2
Multipolar current focusing increases spectral resolution in cochlear implants 2796-2799
Smith, Zachary M. Cochlear Limited; Parkinson, Wendy Sue Research & Technology Labs, Cochlear Limited; Long, Christopher Joseph Research & Technology Labs, Cochlear Limited

17:00-17:15 ThE13.3
The Effects of Attention and Visual Inputs on the Representation of Natural Speech in EEG 2800-2803
O'Sullivan, James Trinity College Dublin; Crosse, Michael Trinity College Dublin; Power, Alan Trinity Centre for Bioengineering; Lalor, Edmund Trinity College Dublin

17:15-17:30 ThE13.4
The Role of Augmentative Visual Training in Auditory Human-Machine-Interface Performance 2804-2807
Hands, Gabrielle L. Boston University; Larson, Eric University of Washington; Stepp, Cara Boston University

ThE17: 16:30-18:00 801+802 (8F)
10.2.3 Personal Health Technologies (Oral Session)
Chair: Eskofier, Bjoern M *(Univ. of Erlangen-Nuremberg)*
Co-Chair: Wang, Lei *(Shenzhen Inst. of Advanced Tech.)*

Friday, 5 July 2013

FrA01: 08:00-09:30 Conference Hall (12F)
1.1.5 Time-Frequency and Time-Scale Analysis of Biosignals III (Oral Session)
Chair: Stamoulis, Catherine *(Harvard Medical School)*

FrA02: 08:00-09:30 1202 (12F)
1.2.6 Signal Processing in Physiological Systems II (Oral Session)
Chair: Yadollahi, Azadeh *(Univ. of Toronto)*

FrA05**:** 08:00-09:30 1002 (10F)
2.7.1 Computational Anatomy for Computer-aided Diagnosis and Therapy (Invited Session)
Chair: Arimura, Hidetaka *(Kyushu Univ.)*
Co-Chair: Suzuki, Kenji *(Univ. of Chicago)*

FrA09: 08:00-09:30 1006 (10F)
4.6.3 Bringing Big Data to its Knees; Advances in Computational Discovery of Life-Saving Knowledge from Big Biomedical Data I (Invited Session)
Chair: Seker, Huseyin *(Bio-Health Informatics Res. Group)*
Co-Chair: Sugimoto, Masahiro *(Keio Univ.)*

FrA13**:** 08:00-09:30 1010 (10F)
6.4.2 Neural Prostheses for Exciting and Inhibiting Sensory Systems (Invited Session)
Chair: Weber, Douglas *(Univ. of Pittsburgh)*
Co-Chair: Mabuchi, Kunihiko *(The Univ. of Tokyo)*

FrA14: 08:00-09:30 804 (8F)
11.1.2 Building Human Resources for Research, Innovation and Development of Medical Devices in Academia (Invited Session)
Chair: Zequera Diaz, Martha Lucia *(Pontificia Univ. Javeriana - Ergosalud Ltda.)*
Co-Chair: Sakuma, Ichiro *(The Univ. of Tokyo)*

FrA15: 08:00-09:30 1102 (11F)
8.1.3 Modeling and Simulation in Biomechanics: Prosthetics (Oral Session)
Chair: Yu, Wenwei *(Univ. of Chiba)*
Co-Chair: Dermitzakis, Konstantinos *(Univ. of Zurich)*

FrA16: 08:00-09:30 Small Hall (5F)
9.2.1 Vision and Eye Sensing (Oral Session)
Chair: Yagi, Tetsuya *(Osaka Univ. Gard. Eng)*

FrA17: 08:00-09:30 801-802 (8F)
10.3.1 Computer Aided Decision Support and Data Mining (Oral Session)
Chair: Takemura, Tadamasa *(Univ. of Hyogo)*

08:00-08:15 FrA17.1
Prediction of 4-Year Risk for Coronary Artery Calcification Using Ensemble-Based Classification 3210-3213
Lee, Jihyun Samsung Advanced Institute of Technology (SAIT), Samsung Electron; Kam, Hye Jin SAIT, Samsung Electronics; Kim, Ha-Young Samsung Advanced Institute of Technology (SAIT); Yoo, Sanghyun Samsung Advanced Institute of Technology (SAIT), Samsung Electro; Woo, Kyoung-Gu Samsung Advanced Institute of Technology (SAIT), Samsung Electron; Choi, Yoon-Ho Center for Health Promotion, Samsung Medical Center, Sungkyunkwa; Park, Jeong Euy Division of Cardiology, Samsung Medical Center, Sungkyunkwan Uni; Cho, Soo Jin Center for Health Promotion, Samsung Medical Center, Sungkyunkwa

08:15-08:30 FrA17.2
Improving the Implementation of Clinical Decision Support Systems 3214-3217
Rüping, Stefan Fraunhofer IAIS; Anguita, Alberto Universidad Politécnica de Madrid; Bucur, Anca Philips Research Europe; Cirstea, Traian Cristian Philips; Jacobs, Björn Fraunhofer Institute for Intelligent Analysis and Information Sy; Torge, Antje UKSH

08:30-08:45 FrA17.3
A Temporal Model for Clinical Data Analytics Language 3218-3221
Safari, Leila University of sydney; Patrick, Jon University of sydney

08:45-09:00 FrA17.4
Multivariate Temporal Symptomatic Characterization of Cardiac Arrest 3222-3225
Park, Yubin The University of Texas at Austin; Ho, Joyce C. University of Texas at Austin; Ghosh, Joydeep Univ. of Texas at Austin

09:00-09:15 FrA17.5
Comparative study of probability distribution distances to define a metric for the stability of multi-source biomedical research data 3226-3229
Sáez, Carlos Universitat Politècnica de València; Robles, Montserrat Technical University of Valencia; Garcia-Gomez, Juan Miguel ITACA-IBIME, Universidad Politécnica de Valencia

09:15-09:30 FrA17.6
Random Forest for Automatic Assessment of Heart Failure Severity in a Telemonitoring Scenario 3230-3233
Guidi, Gabriele Department of Electronics and Telecommunications; Pettenati, Maria Chiara ICON Foundation; Miniati, Roberto Università di Firenze; Iadanza, Ernesto Università degli Studi di Firenze

FrB01: 09:30-11:00 Event Hall-Area A (3F)
3.7.2 Integrated Sensor Systems II (Poster Session)

09:30-11:00 FrB01.1
A Full Custom Analog Front-End for Long-Time ECG Monitoring 3234-3237
Wen, Meiying Shenzhen Institutes of Advanced Technology, Chinese Academy of S; Cheng, Yayu Shenzhen Institute of Advanced Techonology, Chinese Academy of S; Li, Ye Chinese Academy of Sciences

09:30-11:00 FrB01.2
The Non-Contact Heart Rate Measurement System for Monitoring HRV 3238-3241
Huang, Ji-Jer Southern Taiwan University of Science and Technology; Yu, Sheng-I Southern Taiwan University of Science and Technology; Syu, Hao-Yi Southern Taiwan University of Science and Technology; See, Aaron Raymond Southern Taiwan University of Science and Technology

09:30-11:00 FrB01.3
A 24 Vpp Compliant Biphasic Stimulator for Inductively Powered Animal Behavior Studies 3242-3245
Nag, Sudip National University of Singapore; Sharma, Dinesh Indian Institute of Technology Bombay; Thakor, Nitish Johns Hopkins University

FrB02: 09:30-11:00 Event Hall-Area B (3F)
1.3.3 Nonlinear Dynamics in Biomedical Signals II (Poster Session)

FrB03: 09:30-11:00 Event Hall-Area C (3F)
2.5.4 EIT and EEG Imaging (Poster Session)

09:30-11:00 FrB03.1
A Study on Validity of Cortical Alpha Connectivity for Schizophrenia 3286-3290
Peng, Hong Lanzhou University; Hu, Bin Lanzhou University; Li, Lanlan Lanzhou University; Ratcliffe, Martyn Birmingham City University; Zhai, Jingwei Lanzhou University; Zhao, Qinglin Lanzhou University; Shi, Qiuxia Lanzhou University; Li, Yunpeng Lanzhou University; Liu, Quanying Lanzhou University

09:30-11:00 FrB03.2
EEG Source Localization in Full-Term Newborns with Hypoxic-Ischemia 3291-3294
Jennekens, Ward Maasstad Hospital; Dankers, Frank Universitair Medisch Centrum St. Radboud; Blijham, Paul Maxima Medical Center; Cluitmans, Pierre J.M. Eindhoven University of Technology; van Pul, Carola Maxima Medical Center; Andriessen, Peter Maxima Medical Center

09:30-11:00 FrB03.3
Influence of Isotropic Skull Models on EEG Source Localization 3295-3298
Montes-Restrepo, Victoria Ghent University; van Mierlo, Pieter Ghent University - IBBT; Lopez, Jose David Universidad de Antioquia; Hallez, Hans J. Ghent University; Vandenberghe, Stefaan Ghent University

09:30-11:00 FrB03.4
Imaging and Estimation of Human Abdominal Fat by Electrical Impedance Tomography Using Multiple Voltage Measurement Patterns 3299-3302
Yamaguchi, Tohru Kao Corporation; katashima, mitsuhiro Kao Corporation; Wang, Li-qun Tokyo Denki University; Kuriki, Shinya Tokyo Denki University

09:30-11:00 FrB03.5
A Realistic Volume Conductor Model of the Neonatal Head: Methods, Challenges and Applications 3303-3306
Despotovic, Ivana Ghent University; Vansteenkiste, Ewout Ghent University; Philips, Wilfried Gent University

09:30-11:00 FrB03.6
Cortical Source Localization of Mouse Extracranial Electroencephalogram Using the Fieldtrip Toolbox 3307-3310
Lee, chungki KIST; Oostenveld, Robert University Nijmegen; Lee, Soo Hyun Korea Institute of Science and Technology; Kim, Laehyun Korea Institute of Science and Technology; Sung, Hokun Korea Advanced Nano Fab Center; Choi, Jee Hyun Korea Institute of Science and Technology

FrB04: 09:30-11:00 Event Hall-Area C (3F)
2.7.6 Image Segmentation IV (Poster Session)

09:30-11:00 FrB04.1
A Novel Aortic Valve Segmentation from Ultrasound Image Using Continuous Max-Flow Approach 3311-3314
Nie, Yuanyuan Shanghai Jiao Tong University; Luo, Zhe Shanghai Jiao Tong University; Cai, Junfeng Ruijin Hospital, Schoole of Medicine ,Shanghai Jiaotong Universi; Gu, Lixu Shanghai Jiaotong University

09:30-11:00 FrB04.2
A Robust Hair Segmentation and Removal Approach for Clinical Images of Skin Lesions 3315-3318
Huang, Adam National Central University; Kwan, Shun-Yuen National Central University; Chang, Wen-Yu I-Shou University; Liu, Min-Yin National Central University; Chi, Min-Hsiu National Central University; Chen, Gwo-Shing Kaohsiung Medical University Hospital

09:30-11:00 FrB04.3
Tubule Detection in Testis Images Using Boundary Weighting and Circular Shortest Path 3319-3322
Zhang, Chao University of New South Wales; Sun, Changming CSIRO; Davey, Rhonda CSIRO Animal, Food and Health Sciences, Locked Bag 1, Armidale,; Su, Ran The University of New South Wales and CSIROMathematics,Informati; Bischof, Leanne CSIRO Mathematics, Informatics and Statistics, Locked Bag 17, No; vallotton, pascal CSIRO; Lovell, David CSIRO Mathematics, Informatics and Statistics, GPO Box 664, Acto; Hope, Shelly CSIRO Animal, Food and Health Sciences, 306 Carmody Road, St. Lu; Lehnert, Sigrid CSIRO Animal, Food and Health Sciences, 306 Carmody Road, St. Lu; Pham, Tuan D. University of Aizu

FrB07: 09:30-11:00 Event Hall-Area A (3F)
3.7.4 Wearable Systems II (Poster Session)

FrB08: 09:30-11:00 Event Hall-Area A (3F)
4.6.1 Biomedical Data-driven Modeling (Poster Session)

FrB09: 09:30-11:00 Event Hall-Area A (3F)
9.4.2 Drug Delivery (Poster Session)

FrB10: 09:30-11:00 Event Hall-Area A (3F)
4.5.2 Algorithms and techniques for parameter estimation, systems modeling and proteomics (Poster Session)

FrB11: 09:30-11:00 Event Hall-Area D (3F)
6.4.4 Sensory Neuroprostheses II (Poster Session)

FrB15: 09:30-11:00 Event Hall-Area C (3F)
2.8.2 Image Classification II (Poster Session)

09:30-11:00 FrB15.9

Classification of Clinical Data Using Diffusion Maps: A Density Based Approach ..... **N/A**

Chen, Ko-Kung national Yang Ming university; Hung, CHih-I National Yang-MIng University; Soong, Bing-Wen National Yang-Ming University; Wu, Hsiu-Mei Taipei Veteran General Hospital; Wu, Yu-Te National Yang-Ming University; Wang, Po-Shan Taipei Municipal Gan-Dau Hospital

FrB16: 09:30-11:00 Event Hall-Area C (3F)

2.8.5 Image Feature Extraction III (Poster Session)

09:30-11:00 FrB16.1

Application of Fuzzy Skeletonization to Quantitatively Assess Trabecular Bone Micro-Architecture 3682-3685

Jin, Dakai University of Iowa; Liu, Yinxiao University of Iowa; Saha, Punam K. University of Iowa

09:30-11:00 FrB16.2

Quantitative Analysis of Lymphocytes Morphology and Motion in Intravital Microscopic Images 3686-3689

Huang, Yali Beijing Institute of Technology; Liu, Zhiwen Beijing Institute of Technology; Shi, Yonggang Beijing Institute of Technology; Li, Ning Beijing You'An Hospital; An, Xing Beijing Institute of Technology; Gou, Xiaoming Beijing Institute of Technology

09:30-11:00 FrB16.3

Smartphones As Image Processing Systems for Prosthetic Vision 3690-3693

Zapf, Marc Patrick Hans University of New South Wales; Matteucci, Paul Brendan University of New South Wales; Lovell, Nigel H. University of New South Wales; Suaning, Gregg The University of New South Wales

09:30-11:00 FrB16.4

A New Quantitative Approach for Estimating Bone Cell Connections from Nano-CT Images 3694-3697

Dong, Pei CREATIS, CNRS UMR 5220, Inserm 1044, INSA of Lyon; Pacureanu, Alexandra Centre for Image Analysis/SciLifeLab, Uppsala University; Zuluaga, Maria A. University College of London; Olivier, Cécile CREATIS; Frouin, Frederique INSERM; Grimal, Quentin Université PARIS 6, CNRS UMR 7623; Peyrin, Francoise CREATIS

09:30-11:00 FrB16.5

Automated Detection of Malaria in Giemsa-Stained Thin Blood Smears 3698-3701

Mushabe, Mark University of Cape Town; Dendere, Ronald University of Cape Town; Douglas, Tania S University of Cape Town

09:30-11:00 FrB16.6

Model-Based Segmentation of the Middle Phalanx in Digital Radiographic Images of the Hand 3702-3705

Dendere, Ronald Univ. of Cape Town; Kabelitz, Gordian Univ. of Lübeck; Douglas, Tania S Univ. of Cape Town

09:30-11:00 FrB16.7

Quantitative Measures of Facial Expression for Patients with Head and Neck Cancer 3706-3709

Lee, Juhun The Univ. of Texas at Austin; Fingeret, Michelle The Univ. of Texas MD Anderson Cancer Center; Teo, Irene MD Anderson Cancer Center; Hanasono, Matthew The Univ. of Texas MD Anderson Cancer Center; Skoracki, Roman UT MD Anderson Cancer Center; Markey, Mia The Univ. of Texas at Austin

09:30-11:00 FrB16.8

Vascular Pattern Localization Via Temporal Signature 3710-3713

Xu, Beilei Xerox Corporation; Liu, Yi Massachusetts Institute of Technology; Mestha, Lalit, K. Xerox Corporation; Loce, Robert Xerox Corporation

09:30-11:00 FrB16.9

Integral Scale Histogram Local Binary Patterns for Classification of Narrow-Band Gastroenterology Images 3714-3717

Riaz, Farhan Universidade do Porto; Dinis-Ribeiro, Mário Instituto Português de Oncologia - Porto; Pimentel-Nunes, Pedro Instituto Portugues de Oncologia; Coimbra, Miguel Instituto de Telecomunicações / Universidade do Porto

FrB17: 09:30-11:00 Event Hall-Area A (3F)

9.5.5 Thermal Therapies (Poster Session)

FrB18: 09:30-11:00 Event Hall-Area B (3F)
5.8.1 Cardiac Electrophysiology (Poster Session)

09:30-11:00 FrB18.7
Computing the Electrical Activity of the Heart with a Dynamic Inverse Monodomain Operator 3797-3800
Lopez-Rincon, Alejandro Institut National de Recherche en Informatique et en Automatique; Ainseba, Bedreddine Institut de Mathématiques de Bordeaux; Bendahmane Mostafa, Bendahmane Mostafa University Bordeaux Segalen, Bordeaux

09:30-11:00 FrB18.8
Cardiovascular Changes in Parabolic Flights Assessed by Ballistocardiography 3801-3804
Delière, Quentin Royal Military Academy; Migeotte, Pierre-François Royal Military Academy; Neyt, Xavier Royal Military Academy; Funtova, Irina I. IMBP Moscow, Russia; Baevsky, Roman M. IMBP Moscow, Russia; Tank, Jens Hannover Medical School; Pattyn, Nathalie Royal Military Academy, Brussels, Belgium

FrB19: 09:30-11:00 Event Hall-Area B (3F)
5.8.2 Baroreflex and Autonomic Nervous System (Poster Session)

09:30-11:00 FrB19.1
Effects of L-Type Ca2+ Channel Blocker Nifedipine on Dynamic Arterial Blood Pressure Control 3805-3808
Kawada, Toru Nat. Cerebral and Cardiovascular Center Res Inst; Yamamoto, Hiromi Kinki University School of Medicine; Shimizu, Shuji National Cerebral and Cardiovascular Center; Turner, Michael National Cerebral and Cardiovascular Center, Japan; Sugimachi, Masaru Natl Cardio Center Research Inst

09:30-11:00 FrB19.2
Differential Dynamic Control of Cardiac and Splanchnic Sympathetic Nerve Activity by the Arterial Baroreflex 3809-3812
Turner, Michael National Cerebral and Cardiovascular Center, Japan; Kawada, Toru Nat. Cerebral and Cardiovascular Center Res Inst; Sugimachi, Masaru Natl Cardio Center Research Inst

09:30-11:00 FrB19.3
A Novel Approach to the Design of an Artificial Bionic Baroreflex 3813-3816
Ataee, Pedram University of British Columbia; Dumont, Guy University of British Columbia; Ahmadi Noubari, Hossain 1- University of Tehran, and 2- University of British Columbia; Boyce, W. Thomas College for Interdisciplinary Studies and Faculty of Medicine, U; Ansermino, J. Mark British Columbia's Children's Hospital

09:30-11:00 FrB19.4
Microfabricated Device for Co-Culture of Sympathetic Neuron and Ips-Derived Cardiomyocytes 3817-3820
Takeuchi, Akimasa The University of Tokyo; Shimba, Kenta University of Tokyo; Takayama, Yuzo National Institute of Advanced Industrial Science and Technology; Kotani, Kiyoshi University of Tokyo; Lee, Jong-Kook Nagoya University; Noshiro, Makoto Kitasato University; Jimbo, Yasuhiko University of Tokyo

09:30-11:00 FrB19.5
Investigating the Beat by Beat Phase Synchronization between Maternal and Fetal Heart Rates 3821-3824
Wang, Qianqian The University of Melbourne; Khandoker, Ahsan Habib Khalifa University of Science, Technology and Research; Marzbanrad, Faezeh The University of Melbourne; Funamoto, Kiyoe Tohoku University; Sugibayashi, Rika Tohoku University; Endo, Miyuki Tohoku University; Kimura, Yoshitaka Tohoku Univ; Palaniswami, Marimuthu The University of Melbourne

09:30-11:00 FrB19.6
An Extended Model of Blood Pressure Variability: Incorporating the Respiratory Modulation of Vascular Resistance 3825-3828
Chalacheva, Patjanaporn University of Southern California; Khoo, Michael University of Southern California

FrB22: 09:30-11:00 Event Hall-Area B (3F)
5.10.2 Respiratory Monitoring II (Poster Session)

09:30-11:00 FrB22.1
Estimation of Respiratory Signal from Thoracic Impedance Cardiography in Low Electrical Current 3829-3832
Fernando, Jeffry Bonar Panasonic Corp.; Morikawa, Koji Panasonic Corp.; Ozawa, Jun Panasonic Corp.

FrB23: 09:30-11:00 Event Hall-Area B (3F)
5.11.1 Coronary Circulation (Poster Session)

FrC01: 13:30-15:00 Conference Hall (12F)
1.1.6 Time-Frequency and Time-Scale Analysis of Biosignals IV (Oral Session)
Chair: Laguna, Pablo *(Zaragoza Univ. and CIBER-BBN)*

FrC02: 13:30-15:00 1202 (12F)
1.2.7 Signal Processing in Physiological Systems III (Oral Session)
Chair: Voss, Andreas *(Univ. of Applied Sciences Jena)*
Co-Chair: Abry, Patrice *(ENS Lyon, CNRS)*

FrC05: 13:30-15:00 1002 (10F)
2.7.2 Image Registration (Oral Session)
Chair: Liu, Sheena Xin *(Philips Res. North America)*

FrC06: 13:30-15:00 1003 (10F)
2.6.1 Image Enhancement (Oral Session)
Chair: Wang, Lei *(Shenzhen Inst. of Advanced Tech.)*
Co-Chair: Dong, Di *(Chinese Acad. of Sciences)*

FrC07: 13:30-15:00 1004 (10F)
3.4.1 Physiological Monitoring I (Oral Session)
Chair: Cloete, Garth *(Stellenbosch Univ.)*

FrC09: 13:30-15:00 1006 (10F)
4.6.4 Bringing Big Data to its Knees; Advances in Computational Discovery of Life-Saving Knowledge from Big Biomedical Data II (Invited Session)
Chair: Seker, Huseyin *(Bio-Health Informatics Res. Group)*
Co-Chair: Kurnaz, Mehmet Nadir *(Nigde Univ.)*

FrC10: 13:30-15:00 1007 (10F)
5.2.1 Arterial Hemodynamics: Measurement and Modeling (Invited Session)
Chair: Mukkamala, Ramakrishna *(Michigan State Univ.)*
Co-Chair: Yamane, Takashi *(Kobe Univ.)*

FrC14**:** 13:30-15:00 804 (8F)
7.9.1 Electronic DNA Detection, Self-Assembled Biomaterials (Invited Session)
Chair: Ghafar-Zadeh, Ebrahim *(York Univ.)*
Co-Chair: Wang, Jin-Ye *(Shanghai Jiao Tong Univ.)*

FrC15: 13:30-15:00 1102 (11F)
8.4.3 Design and Development of Robots for Human-Robot Interaction (Oral Session)
Chair: Menon, Samir *(Stanford Univ.)*
Co-Chair: Okuno, Ryuhei *(Setsunan Univ.)*

13:30-13:45 FrC15.1
Modeling of Animal Movement by AR Process and Effect of Predictability of the Behavior on Perception of Animacy and Intentionality 4125-4128
Fukai, Hidekazu Gifu University; Terada, Kazunori Gifu University

13:45-14:00 FrC15.2
Changes in EMG Latencies during Balance Therapy Using Enhanced Virtual Reality with Haptic Floor .. 4129-4132
Cikajlo, Imre University Rehabilitation Institute; Krpič, Andrej SmartCom Ltd; Gori□ek-Humar, Marta University rehabilitation institute

14:00-14:15 FrC15.3
Haptic Training for a Visuomotor Fetch & Pursue Task 4133-4136
Morasso, Pietro Italian Institute of Technology; casadio, maura University of Genova; Squeri, Valentina Istituto Italiano di Tecnologia

14:15-14:30 FrC15.4
Haptic Fmri: Combining Functional Neuroimaging with Haptics for Studying the Brain's Motor Control Representation 4137-4142
Menon, Samir Stanford University; Brantner, Gerald Stanford University; Aholt, Chris Stanford University; Kay, Kendrick Stanford University; Khatib, Oussama Stanford University

14:30-14:45 FrC15.5
Haptic Perception of Multi-Joint Hypertonia During Simulated Patient-Therapist Physical Tele-Interaction . 4143-4147
Piovesan, Davide Rehabilitation Institute of Chicago; Melendez-Calderon, Alejandro Rehabilitation Institute of Chicago; Mussa-Ivaldi, Ferdinando Northwestern University

14:45-15:00 FrC15.6
Robot Hand with Soft Tactile Sensors and Underactuated Control 4148-4151
Tsutsui, Hiroshi Osaka Institute of Technology; Murashima, Yoshihiko Osaka Institute of Technology; Honma, Naoki Osaka Institute of Technology; Akazawa, Kenzo Osaka Institute of Technology

FrC16: 13:30-15:00 Small Hall (5F)
9.2.2 Point of Care (Oral Session)
Chair: Pino, Esteban J *(Univ. de Concepcion)*

13:30-13:45 FrC16.1
Evaluation of the Microsoft Kinect for Screening ACL Injury 4152-4155
Stone, Erik University of Missouri; Butler, Michael University of Missouri - Columbia; McRuer, Aaron University of Missouri - Columbia; Gray, Aaron University of Missouri - Columbia; Marks, Jeffery University of Missouri - Columbia; Skubic, Marjorie University of Missouri

13:45-14:00 FrC16.2
VCSEL Based, Wearable, Continuously Monitoring Pulse Oximeter 4156-4159
Kollmann, Daniel Koronis Biomedical Technologies; Hogan, William Vixar Inc; Steidl, Charles Vixar Inc; Hibbs-Brenner, Mary Vixar Inc; Hedin, Daniel Advanced Medical Electronics; Lichter, Patrick Koronis Biomedical Technologies

14:00-14:15 FrC16.3
Contact Pressure Monitoring Device for Sleep Studies 4160-4163
Pino, Esteban J Universidad de Concepcion; Dörner De la Paz, Astrid University of Concepcion; Aqueveque, Pablo University of Concepcion; Chávez, Javier A. P. Universidad de Concepción; Morán, Alejandra A. Universidad de Concepción

FrC17: 13:30-15:00 801+802 (8F)
10.6.1 Health Information Systems I (Oral Session)
Chair: Kuroda, Tomohiro *(Kyoto Univ.)*
Co-Chair: Bressan, Nadja *(Univ. of Ontario Inst. of Tech.)*

FrD01: 15:00-16:30 Event Hall-Area B (3F)
1.4.5 Biomedical Signal Classification II (Poster Session)

FrD02: 15:00-16:30 Event Hall-Area B (3F)
1.5.2 Connectivity and Directionality Analysis (Poster Session)

FrD03: 15:00-16:30 Event Hall-Area C (3F)
2.8.7 Medical Image Analysis II (Poster Session)

FrD04: 15:00-16:30 Event Hall-Area C (3F)
2.9.1 MEG imaging (Poster Session)

FrD05: 15:00-16:30 Event Hall-Area C (3F)
2.10.3 Computer Aided Diagnosis II (Poster Session)

15:00-16:30 FrD05.6

A Novel Automatic Breast Density Classification Based in Nagao Filter and a Priori Dense Segmentation .. **N/A**

Ferrer, Jose Pontificia Universidad Catolica del Peru; Castañeda, Benjamín Pontificia Universidad Católica del Perú; Pinto, Joseph Oncosalud; Guerrero, Jorge Oncosalud

15:00-16:30 FrD05.7

Development of a Numerical Simulator of Human Swallowing Using a Particle Method (Part 1. Preliminary Evaluation of the Possibility of Numerical Simulation Using the MPS Method) 4454-4457

Kamiya, Tetsu Meiji Co., Ltd.; Toyama, Yoshio Meiji Co., Ltd.; Michiwaki, Yukihiro Musashino Red Cross Hospital; Kikuchi, Takahiro Musashino Red Cross Hospital

FrD06: 15:00-16:30 Event Hall-Area A (3F)

3.8.2 Microfluidics in Biological Applications II (Poster Session)

15:00-16:30 FrD06.1

Toward Reducing Uncertainty in Fluorescence Recovery After Photobleaching 4458-4461

Lee, Jeonghoon Korea University of Technology and Education; Lee, Donghee Kookmin University; Kim, Jung Kyung Kookmin University; Cho, Myoung-Ock Kookmin University

15:00-16:30 FrD06.2

Separation Method of Blood Constituents Using Dielectrophoresis and Flow-Induced Shear Force 4462-4465

Yamashita, Minami Keio University; Miyata, Shogo KEIO University; Takeuchi, Shinya Nisssha Printing Co., Ltd.; Inoue, Hajime St. Marianna University School of Medicine

15:00-16:30 FrD06.3

High Throughput Cell Sorting Device Using Dielectrophoresis and Fluid-Induced Shear Force 4466-4469

Takahashi, Yuuwa Keio University; Takeuchi, Shinya Nisssha Printing Co., Ltd.; Miyata, Shogo KEIO University

15:00-16:30 FrD06.4

Detection of Stress Hormones by a Microfluidic-Integrated Polycarbazole/Fullerene Photodetector 4470-4473

Pires, Nuno M.M. Norwegian Centre of Expertise on Micro and NanoTechnology, IMST,; Dong, Tao Norwegian Centre of Expertise on Micro and NanoTechnology, Vestf

15:00-16:30 FrD06.5

Microfluidic Cell Culture System with On-Chip Hypoxic Conditioning 4474-4477

Takano, Atsushi Frontier R&D Center, Tokyo Denki University; Tanaka, Masato Tokyo Denki University; Futai, Nobuyuki Shibaura Institute of Technology

15:00-16:30 FrD06.6

Measurement of Subcutaneous Biological Substances Using Thin Metal Needle with Micro Flow Channel 4478-4481

Tsuruoka, Noriko Tohoku Universiity; Ishii, Kenji Tohoku University; Matsunaga, Tadao Tohoku University; Nagatomi, Ryoichi Tohoku University; Haga, Yoichi Tohoku University

15:00-16:30 FrD06.7

Light-Induced Microbubble Poration of Localized Cells 4482-4485

Fan, Qihui University of Hawaii at Manoa; HU, Wenqi University of Hawaii at Manoa; Ohta, Aaron University of Hawaii at Manoa

FrD07: 15:00-16:30 Event Hall-Area A (3F)

3.9.2 Micro and Nano Sensors II (Poster Session)

15:00-16:30 FrD07.1

Continuous Wavelet Transform Based Continuum Regression for Quantitative Analysis of Surface-Enhanced Raman Spectra ..... **N/A**

Li, Shuo Univ. of Texas, at Arlington; Kang, Mingon Univ. of Texas at Arlington; Nyagilo, James Univ. of Texas at Arlington; Dave, Digant The Univ. of Texas at Arlington; Gao, Jean Univ. of Texas

FrD08: 15:00-16:30 Event Hall-Area A (3F)
3.9.3 Bio-nano Technology (Poster Session)

FrD09: 15:00-16:30 Event Hall-Area A (3F)
4.9.3 Models of Cells and Physiological Systems (Poster Session)

FrD10: 15:00-16:30 Event Hall-Area A (3F)
4.9.6 Biomechanics Modeling II (Poster Session)

FrD11: 15:00-16:30 Event Hall-Area C (3F)
8.4.2 Human Machine Interfaces and Robotics Applications (Poster Session)

FrD12: 15:00-16:30 Event Hall-Area D (3F)
6.7.1 Virtual Reality in Rehabilitation (Poster Session)

FrD13: 15:00-16:30 Event Hall-Area D (3F)
10.4.5 Telehealth and Telemedicine II (Poster Session)

FrD14: 15:00-16:30 Event Hall-Area D (3F)
10.5.4 Smart Homes and Ambient Assisted Living III (Poster Session)

FrD15: 15:00-16:30 Event Hall-Area A (3F)
9.6.1 Physiological Measurements (Poster Session)

FrD16: 15:00-16:30 Event Hall-Area A (3F)
9.6.2 Safety (Poster Session)

FrD17: 15:00-16:30 Event Hall-Area D (3F)
10.6.2 Health Information Systems II (Poster Session)

FrD18: 15:00-16:30 Event Hall-Area B (3F)
1.6.2 Adaptive and Kalman Filtering in Biomedical Signals (Poster Session)

FrD19: 15:00-16:30 Event Hall-Area C (3F)
8.5.3 Surgical Robotics II (Poster Session)

FrD21: 15:00-16:30 Event Hall-Area C (3F)
8.5.4 Computer-assisted Surgery (Poster Session)

FrE01: 16:30-18:00 Conference Hall (12F)
1.4.1 Biomedical Signal Classification in Sleep Studies (Oral Session)
Chair: Long, Xi *(Philips Res. and Eindhoven Univ. of Tech.)*
Co-Chair: Gutierrez, Gonzalo Cesar *(Univ. of Valladolid)*

FrE02: 16:30-18:00 1202 (12F)
1.2.10 Entropy-based Analysis of Physiological Time Series (Invited Session)
Chair: Faes, Luca *(Univ. of Trento)*
Co-Chair: Porta, Alberto *(Univ. degli Studi di Milano)*

16:30-16:45 FrE02.1
Compression Based Entropy Estimation of Heart Rate Variability on Multiple Time Scales 5037-5040
Baumert, Mathias The University of Adelaide; Voss, Andreas University of Applied Sciences Jena; Javorka, Michal Comenius University

16:45-17:00 FrE02.2
Different Approaches of Symbolic Dynamics to Quantify Heart Rate Complexity 5041-5044
Cysarz, Dirk University of Witten/Herdecke; Porta, Alberto Universita' degli Studi di Milano; Montano, Nicola Universita' degli Studi di Milano; Van Leeuwen, Peter Chair Radiology / Microtherapy, University of Witten /Herdecke; Kurths, Juergen University Potsdam; Kraemer, Jan F. Humboldt-Universität zu Berlin; Wessel, Niels Humboldt-Universität zu Berlin

17:00-17:15 FrE02.3
Entropy-Based Complexity of the Cardiovascular Control in Parkinson Disease: Comparison between Binning and K-Nearest-Neighbor Approaches 5045-5048
Porta, Alberto Universita' degli Studi di Milano; Bari, Vlasta Politecnico di Milano, Milan, Italy; Bassani, Tito Politecnico di Milano; Marchi, Andrea Department of Emergency, L. Sacco Hospital, Milan, Italy; Tassin, Stefano Ecker Technologies Sagl, Switzerland; Canesi, Margherita Parkinson Institute, Istituti Clinici di Perfezionamento, Milan,; Barbic, Franca Department of Medical Biotechnologies and Translation Medicine,; Furlan, Raffaello Department of Medical Biotechnologies and Translation Medicine,

17:15-17:30 FrE02.4
Decomposing the Transfer Entropy to Quantify Lag-Specific Granger Causality in Cardiovascular Variability 5049-5052
Faes, Luca University of Trento; Nollo, Giandomenico University of Trento

17:30-17:45 FrE02.5
Assessing Sample Entropy of Physiological Signals by the Norm Component Matrix Algorithm: Application on Muscular Signals During Isometric Contraction 5053-5056
Castiglioni, Paolo Fondazione Don Carlo Gnocchi ONLUS; Żurek, Sebastian Institute of Physics, University of Zielona Góra; Piskorski, Jaroslaw Institute of Physics, University of Zielona Góra; Kośmider, Marcin Institute of Physics, University of Zielona Góra; Guzik, Przemyslaw Dept.of Cardiology - Intensive Therapy and Internal Diseases, Po; Cè, Emiliano Dept. of Biomedical Sciences for Health, University of Milan, It; Rampichini, Susanna Dept. of Biomedical Sciences for Health, University of Milan; Merati, Giampiero University of Milan

17:45-18:00 FrE02.6
Entropy Analysis of MEG Background Activity in Attention-Deficit/Hyperactivity Disorder 5057-5060
Gomez, Carlos University of Valladolid, CIF: Q4718001C; Poza, Jesus University of Valladolid; Fernandez, Alberto Universidad Complutense de Madrid; Bachiller, Alejandro University of Valladolid; Gómez, Javier University of Valladolid; Hornero, Roberto University Of Valladolid

FrE03: 16:30-18:00 1203 (12F)
1.6.3 Parametric Filtering and Estimation (Oral Session)
Chair: Cerutti, Sergio *(Pol. di Milano)*

16:30-16:45 FrE03.1
Approximation-Based Common Principal Component for Feature Extraction in Multi-Class Brain-Computer Interfaces 5061-5064
Tran, Dat University of Canberra; Hoang, Tuan University of Canberra; Huang, Xu University of Canberra

16:45-17:00 FrE03.2
Identification of a Parametric, Discrete-Time Model of Ankle Stiffness 5065-5070
Guarin, Diego Luis McGill Univ.; Jalaleddini, Kian McGill Univ.; Kearney, Robert Edward McGill Univ.

FrE04: 16:30-18:00 1001 (10F)
2.4.2 X-Ray Imaging II (Oral Session)
Chair: Janan, Faraz *(Univ. of Oxford)*

FrE05: 16:30-18:00 1002 (10F)
2.7.3 Image Segmentation I (Oral Session)
Chair: Arimura, Hidetaka *(Kyushu Univ.)*

16:30-16:45 FrE05.1
Fully Automated Segmentation of Corpus Callosum in Midsagittal Brain MRIs 5111-5114
Li, Yue University of Alberta; Mandal, Mrinal University of Alberta; Ahmed, Nizam University of Alberta

16:45-17:00 FrE05.2
Simultaneous Label Fusion with Vessel Preserving for Bone Removal in CT Angiography Scans 5115-5118
Yuan, Lei Siemens Corporate Technology; Zhang, Li Siemens Corporate Technology; Ditt, Hendrik Siemens AG; Ordy, Vincent Siemens Corporate Technology; Pereira, Francisco Siemens Corporate Technology; Chefd'hotel, Christophe Siemens Corporate Technology

17:00-17:15 FrE05.3
A Robust Semi-Automatic Approach for ROI Segmentation in 3D CT Images 5119-5122
Lu, Kongkuo Philips Research North America; Xue, Zhong The Methodist Hospital; Wong, Stephen The Methodist Hospital

17:15-17:30 FrE05.4
Non-Euclidean Basis Function Based Level Set Segmentation with Statistical Shape Prior 5123-5126
Ruiz, Esmeralda University Medical Center Freiburg; Reisert, Marco University Medical Center Freiburg; Bai, Li University of Nottingham

17:30-17:45 FrE05.5
Ultrasound Contrast Image Segmentation Using a Modified Level Set Method 5127-5130
Qian, Ming Chinese Academy of Sciences; Niu, Lili Shenzhen Institute of Advanced Technology, Chinese Academy of Sci; Xiao, Yang the Paul C. Lauterbur Research Center for Biomedical imaging, the Insti; Wang, Congzhi Shenzhen Institutes of Advanced Technology, Chinese Academy of S; Qiu, Weibao Shenzhen Institutes of Advanced Technology, Chinese Academy of S; zheng, Hairong Shenzhen Inst of Advanced Tech

17:45-18:00 FrE05.6
Local Binary Fitting Energy Solution by Graph Cuts for MRI Segmentation 5131-5134
Cardenas-Peña, David Universidad Nacional de Colombia; Martínez-Vargas, Juan David Universidad Nacional de Colombia; Castellanos-Dominguez, Germán Universidad Nacional de Colombia

FrE06: 16:30-18:00 1003 (10F)
2.6.2 Image Reconstruction (Oral Session)
Chair: Watabe, Hiroshi *(Tohoku Univ.)*

16:30-16:45 FrE06.1
Three-Dimensional Quantitative Microwave Imaging of Realistic Numerical Breast Phantoms Using Huber Regularization 5135-5138
Bai, Funing Ghent University; Franchois, Ann Ghent University; De Zaeytijd, Jurgen Ghent University; Pizurica, Aleksandra Ghent University

16:45-17:00 FrE06.2
Accuracy and Uncertainty of Asymmetric Magnetization Transfer Ratio Quantification for Amide Proton Transfer (APT) Imaging at 3T: A Monte Carlo Study 5139-5142
Yuan, Jing The Chinese University of Hong Kong; Zhang, Qinwei The Chinese University of Hong Kong; Wang, Yi-Xiang The Chinese University of Hong Kong; Wei, Juan Philips Healthcare, IGIT, Beijing; Zhou, Jinyuan Johns Hopkins University

17:00-17:15 FrE06.3
Iterative Reconstruction of CT Images on GPUs* 5143-5146
Flores, Liubov Alexandrovna Universidad Politecnica de Valencia; Vidal, Vicente Universidad Politécnica de Valencia; Mayo, Patricia Universidad Politecnica de Valencia; Rodenas, Francisco Universidad Politecnica de Valencia; Verdú, Gumersindo Polytechnic University of Valencia

FrE07**:** 16:30-18:00 1004 (10F)
3.5.1 Implantable Sensors and Technologies (Oral Session)
Chair: Murakami, Yuji *(Toyohashi Univ. of Tech.)*
Co-Chair: Bozkurt, Alper *(North Carolina State Univ.)*

FrE08: 16:30-18:00 1005 (10F)
3.6.1 Body Sensor Networks I (Oral Session)
Chair: Jafari, Roozbeh *(Univ. of Texas at Dallas)*
Co-Chair: Jovanov, Emil *(Univ. of Alabama in Huntsville)*

16:30-16:45 FrE08.1
A Wireless ECG Acquisition and Classification System for Body Sensor Networks 5183-5186
Hong, Jia-Hua National Chung Cheng University; Lee, Shuenn-Yuh National Cheng Kung University; Liang, Ming-Chun National Chung Cheng University; Hsieh, Cheng-Han National Chung Cheng University; Chang Chien, Shih-Yu National Chung Cheng University

16:45-17:00 FrE08.2
Indoor Inertial Waypoint Navigation for the Blind 5187-5190
Riehle, Timothy H Koronis Biomed. Technologies Corp.; Anderson, Shane Koronis Biomedical Technologies; Giudice, Nicholas University of Maine, Orono; Lichter, Patrick Koronis Biomedical Technologies; Whalen, William University of Maine

17:00-17:15 FrE08.3
Development of a Low-Cost Wireless Monitoring System Supporting the Continuity of Medical Care of the Patient at Home 5191-5194
Tzavaras, Aris Tech Educational Inst of Athens; Spyropoulos, Basile Technological Education Institute of Athens

17:15-17:30 FrE08.4
Bit Error Rate Estimation for Galvanic-Type Intra-Body Communication Using Experimental Eye-Diagram and Jitter Characteristics 5195-5198
Li, Jiawen University of Macau; Chen, Xi Mei University of Macau; Pun, Sio Hang University of Macau; Mak, Peng Un University of Macau; Gao, Yue Ming Fu zhou University; Vai, Mang I. University of Macau; du, min 523 Gongye Road, Fuzhou University ,Fuzhou, Fujian, 350002,P.R.

17:30-17:45 FrE08.5
Using Wearable UWB Radios to Measure Foot Clearance During Walking 5199-5202
Qi, Yongbin Nanyang Technological University; Soh, Cheong Boon Nanyang Technological University; Gunawan, Erry Nanyang Technological University; Low, Kay soon Nanyang Technological University; Maskooki, Arash Nanyang Technological University

17:45-18:00 FrE08.6
Ballistocardiography with Fiber Optic Sensor in Headrest Position: A Feasibility Study and a New Processing Algorithm 5203-5206
Zhu, Yongwei Institute for Infocomm Research, Agency for Science, Technology; Zhang, Haihong Institute for Infocomm Research; Maniyeri, Jayachandran Institute for Infocomm Research; Ng, Andrew Keong Institute for Infocomm Research (I2R), Agency for Science,Technol; Biswas, Jit Institute for Infocomm Research; Chen, Zhihao Institute for Infocomm Research

FrE09: 16:30-18:00 1006 (10F)
5.5.1 Respiratory Mechanics (Oral Session)
Chair: Giraldo, Beatriz *(Univ. Poiltècnica de Catalunya)*

16:30-16:45 FrE09.1
Mechanical Ventilation System Monitoring: Automatic Detection of Dynamic Hyperinflation and Asynchrony 5207-5210
Nguyen, Quang-Thang Institut Telecom; Telecom Bretagne; UMR CNRS 6285 Lab-STICC; Uni; Pastor, Dominique Institut Telecom; Telecom Bretagne; UMR CNRS 6285 Lab-STICC; Uni; Lellouche, François Research Unit, Institut universitaire de cardiologie et de pneum; L'Her, Erwan Medical Intensive Care Unit, CHRU de Brest, INSERM U1101 LATIM U

16:45-17:00 FrE09.2
Real-Time Noninvasive Estimation of Intrapleural Pressure in Mechanically Ventilated Patients: A Feasibility Study 5211-5215
Albanese, Antonio Columbia University; Karamolegkos, Nikolaos Columbia University; Haider, Syed Philips Research NA; Seiver, Adam Philips; Chbat, Nicolas Philips Research North America

FrE11: 16:30-18:00 1008 (10F)
6.9.1 Stochastic Resonance in Nervous Systems (Invited Session)
Chair: Mino, Hiroyuki *(Kanto Gakuin Univ.)*
Co-Chair: Durand, Dominique *(Case Western Res. Univ.)*

FrE12: 16:30-18:00 1009 (10F)
6.2.5 Brain-computer Interface III (Oral Session)
Chair: Wang, Yu-Te *(Univ. of California San Diego)*

FrE13: 16:30-18:00 1010 (10F)
6.4.3 Sensory Neuroprostheses I (Oral Session)
Chair: Carter, Paul Michael *(Univ. of Sydney)*

FrE15: 16:30-18:00 1102 (11F)
8.6.1 Novel Biorobotics (Oral Session)
Chair: Morasso, Pietro *(Italian Inst. of Tech.)*
Co-Chair: Mizuno, Fumio *(Tohoku Inst. of Tech.)*

FrE16: 16:30-18:00 Small Hall (5F)
9.5.2 Catheter Technologies (Oral Session)
Chair: Uematsu, Miyuki *(National Inst. of Health Sciences)*

FrE17**:** 16:30-18:00 801+802 (8F)
9.4.1 Tissue Stimulation (Oral Session)
Chair: Panescu, Dorin *(Intuitive Surgical)*
Co-Chair: Takahashi, Hirokazu *(Univ. of Tokyo)*

Saturday, 6 July 2013

SaA02: 08:00-09:30 1202 (12F)
1.8.1 Coherence in Biosignal Processing (Oral Session)
Co-Chair: Barbieri, Riccardo *(MGH-Harvard Medical School-MIT)*

08:00-08:15 SaA02.1
Real-Time Cardiorespiratory Coherence Is Blind to Changes in Respiration During General Anesthesia ... 5360-5364
Brouse, Chris J. University of British Columbia; Dumont, Guy University of British Columbia; Myers, Dorothy British Columbia's Children's Hospital; Cooke, Erin British Columbia's Children's Hospital; Stinson, Jonathan British Columbia's Children's Hospital; Lim, Joanne British Columbia Children's Hospital; Ansermino, J. Mark British Columbia's Children's Hospital

08:15-08:30 SaA02.2
Very Low Frequency Modulation in QRS Slopes and Its Relation with Respiration and Heart Rate Variability During Hemodialysis 5365-5368
Hernando, David Univ. of Zaragoza (Spain); Alcaine, Alejandro Univ. of Zaragoza; Laguna, Pablo Zaragoza Univ. and CIBER-BBN; Pueyo, Esther Univ. of Zaragoza; Bailon, Raquel Univ. of Zaragoza

08:30-08:45 SaA02.3
The Cortical and Sub-Cortical Network of Sensory Evoked Response in Healthy Subjects 5369-5372
Muthuraman, Muthuraman Christian Albrechts University; Helge, Hellriegel Dept. of Neurology; Sergiu, Groppa Dept. of Neurology; Gunther, Deuschl Dept. of Neurology; Jan, Raethjen Dept. of Neurology

08:45-09:00 SaA02.4
Automated Detection of Apnea/Hypopnea Events in Healthy Children Polysomnograms: Preliminary Results 5373-5376
Held, Claudio M. Universidad de Chile; Causa, Leonardo Universidad de Chile; Jaillet, Fabrice Université Claude Bernard Lyon 1, Laboratoire d'InfoRmatique en; Chamorro, Rodrigo Universidad de Chile; Garrido, Marcelo Universidad de Chile; Algarin, Cecilia Universidad de Chile; Peirano, Patricio Universidad de Chile

09:00-09:15 SaA02.5
Circadian Changes of Influence of Swallowing on Heart Rate Variability with Respiratory-Phase Domain Analysis 5377-5380
Numata, Takashi The University of Tokyo; Kishida, Yuji The University of Tokyo; Jimbo, Yasuhiko University of Tokyo; Kotani, Kiyoshi University of Tokyo

09:15-09:30 SaA02.6
Characterization of Surrogate Parameters for Blood Pressure Regulation in Neurally-Mediated Syncope ... 5381-5385
de Carvalho, Paulo Univ. of Coimbra - NIF: 501617582; Couceiro, Ricardo Univ. of Coimbra; Muehlsteff, Jens Philips; Henriques, Jorge Univ. of Coimbra - NIF 501617582; Ritz, Anita Heinrich-Heine-Univ. Düsseldorf; Kelm, Malte Univ. Hospital Duesseldorf; Meyer, Christian Heinrich-Heine-Univ. Hospital; Schulze, Volker Heinrich-Heine Univ. Hospital Düsseldorf; Paiva, Rui Pedro Univ. of Coimbra

SaA03: 08:00-09:30 1203 (12F)
1.7.1 Neural Networks in Biosignal Processing and Classification (Oral Session)
Chair: Feng, Dagan *(The Univ. of Sydney)*

08:00-08:15 SaA03.1
Combining Genetic Algorithm and Levenberg-Marquardt Algorithm in Training Neural Network for Hypoglycemia Detection Using EEG Signals 5386-5389
Nguyen, Lien B. University of Technology, Sydney; Nguyen, Anh V. University of Technology, Sydney; Ling, Steve University of Technology Sydney; Nguyen, Hung T. University of Technology, Sydney

08:15-08:30 SaA03.2
Application of Artificial Neural Networks on Mosquito Olfactory Receptor Neurons for an Olfactory Biosensor 5390-5393
Bachtiar, Luqman R The University of Auckland,; Unsworth, Charles Peter University of Auckland; Newcomb, Richard D The New Zealand Institute for Plant & Food Research

SaA04: 08:00-09:30 1001 (10F)
2.5.1 Electrical Source Imaging (Invited Session)
Chair: Ding, Lei *(Univ. of Oklahoma)*
Co-Chair: Hori, Junichi *(Niigata Univ.)*

SaA05: 08:00-09:30 1002 (10F)
2.7.4 Image Segmentation II (Oral Session)
Chair: Mendonça, Teresa *(Faculdade de Ciencias, Univ. do Porto)*

08:00-08:15 SaA05.1
A Novel Tracing Method for the Segmentation of Cell Wall Networks 5433-5436
De Vylder, Jonas Ghent University; rooms, filip ghent university; Dhondt, stijn ghent university; Inze, Dirk ghent university; Philips, Wilfried Gent University

08:15-08:30 SaA05.2
PH² - A dermoscopic image database for research and benchmarking 5437-5440
Mendonça, Teresa Faculdade de Ciencias, Universidade do Porto; Ferreira, Pedro M. Faculdade de Ciencias, Universidade do Porto; Marques, Jorge Instituto Superior Tecnico; Marcal, Andre R. S. Faculdade de Ciencias, Universidade do Porto; Rozeira, Jorge Hospital de Pedro Hispano

08:30-08:45 SaA05.3
Mass Segmentation in Mammograms by Using Bidimensional Emperical Mode Decomposition BEMD .. 5441-5444
Jai Andaloussi, Said Telecom Bretagne; Sekkaki, Abderrahim Faculty of science Ain-chok, Casablanca; Quellec, Gwenole Inserm; Lamard, Mathieu Université de Bretagne Occidentale; Cazuguel, Guy Institut Mines-Telecom/Telecom Bretagne; Roux, Christian TELECOM Bretagne

08:45-09:00 SaA05.4
Segmenting Overlapping Cell Nuclei in Digital Histopathology Images 5445-5448
Shu, Jie University of Nottingham; Fu, Hao University of Nottingham; Qiu, Guoping University of Nottingham; Philip, Kaye School of Molecular Medical Sciences; Mohammad, Ilyas Queens Medical Center NHS Trust, University of Nottingham

09:00-09:15 SaA05.5
Pixel Profiling for Extraction of Arteriovenous Malformation in 3-D CTA Images ..... **N/A**
Babin, Danilo Ghent University; Spyrantis, Michail University of Leuven - KU Leuven; Pizurica, Aleksandra Ghent University; Philips, Wilfried Gent University

09:15-09:30 SaA05.6
Cellular Automata and Anisotropic Diffusion Filter Based Interactive Tumor Segmentation for Positron Emission Tomography 5453-5456
Bi, Lei Univ. of Sydney; Kim, Jinman Univ. of Sydney; Wen, Lingfeng Univ. of Sydney; Kumar, Ashnil Univ. of Sydney; Fulham, Michael Royal Prince Alfred Hospital; Feng, Dagan The Univ. of Sydney

SaA06: 08:00-09:30 1003 (10F)
2.8.1 Image Classification I (Oral Session)
Chair: Schaefer, Gerald *(Loughborough Univ.)*

08:00-08:15 SaA06.1
Classification of Diffuse Lung Diseases Patterns by a Sparse Representation Based Method on HRCT Images 5457-5460
Zhao, Wei Yamaguchi Univ.; Xu, Rui Yamaguchi Univ.; Hirano, Yasushi Yamaguchi Univ.; Tachibana, Rie Oshima National College of Maritime Technology; Kido, Shoji Graduate School of Medicine, Yamaguchi Univ.

08:15-08:30 SaA06.2
Overlapping Node Discovery for Improving Classification of Lung Nodules 5461-5464
Zhang, Fan Univ. of Sydney; Cai, Weidong Univ. of Sydney; Song, Yang Univ. of Sydney; LEE, Min-Zhao The Univ. of Sydney; Shan, Shimin Dalian Univ. of Technology; Feng, Dagan The Univ. of Sydney

08:30-08:45 SaA06.3
Semantic Characteristics Prediction of Pulmonary Nodule Using Artificial Neural Networks 5465-5468
Li, Guangxu Kyushu Institute of Technology; Kim, Hyoungseop Kyushu Institute of Technology; Tan, Joo Kooi Kyushu Institute of Technology; Ishikawa, Seiji Kyushu Institute of Technology; Hirano, Yasushi Yamaguchi University; Kido, Shoji Graduate School of Medicine, Yamaguchi University; Tachibana, Rie Oshima National College of Maritime Technology

SaA07**:** 08:00-09:30 1004 (10F)
3.7.1 Integrated Sensor Systems I (Oral Session)
Chair: Watanabe, Takashi *(Tohoku Univ.)*

SaA08: 08:00-09:30 1005 (10F)
3.8.1 Microfluidics in Biological Applications I (Oral Session)
Chair: Yasuda, Takashi *(Kyushu Inst. of Tech.)*
Co-Chair: Ibrahim, Fatimah *(Univ. of Malaya)*

SaA09: 08:00-09:30 1006 (10F)
4.9.1 Physiome and Multiscale Modeling I (Oral Session)
Chair: Liang, Jie *(Univ. of Illinois at Chicago)*
Co-Chair: Zervakis, Michalis *(Tech. Univ. of Crete, Greece)*

SaA10: 08:00-09:30 1007 (10F)
5.7.1 Measures of Complexity of Heart Rate Variability I (Invited Session)
Chair: Struzik, Zbigniew R. *(The Univ. of Tokyo)*
Co-Chair: Jelinek, Herbert Franz *(Charles Sturt Univ.)*

09:00-09:15 SaA10.5
Heart Rate Complexity and Cardiac Sympathetic Dysinnervation in Patients with Type 2 Diabetes Mellitus 5570-5573
Baumert, Mathias The University of Adelaide; Sacre, Julian Baker IDI Heart and Diabetes Institute

09:15-09:30 SaA10.6
Influence of Age and Gender on Complexity Measures for Short Term Heart Rate Variability Analysis in Healthy Subjects 5574-5577
Voss, Andreas Univ. of Applied Sciences Jena; Schroeder, Rico Univ. of Applied Sciences Jena; Fischer, Claudia Univ. of Applied Sciences Jena, Dept. Medical Engineering a; Heitmann, Andreas Univ. of Applied Sciences Jena; Peters, Annette Helmholtz Zentrum München; Perz, Siegfried Helmholtz Zentrum München

SaA11: 08:00-09:30 1008 (10F)
6.10.1 Neural Signal Processing I (Oral Session)
Chair: Principe, Jose *(Univ. of Florida)*

08:00-08:15 SaA11.1
Laguerre-Volterra Identification of Spike-Timing-Dependent Plasticity from Spiking Activity: A Simulation Study 5578-5581
Robinson, Brian University of Southern California; Song, Dong University of Southern California; Berger, Theodore University of Southern California

08:15-08:30 SaA11.2
Synchrony of High Frequency Oscillations in the Human Epileptic Brain 5582-5585
Cotic, Marija University of Toronto; Zalay, Osbert University of Toronto; Carlen, Peter L. University of Toronto; Chinvarun, Yotin Director of Comprehensive Epilepsy Program and Neurology Unit, P; Bardakjian, Berj Luther University of Toronto

08:30-08:45 SaA11.3
Information-Theoretic Metric Learning: 2-D Linear Projections of Neural Data for Visualization 5586-5589
Brockmeier, Austin University of Florida; Sanchez Giraldo, Luis Gonzalo University of Florida; Emigh, Matthew University of Florida; Bae, Jihye University of Florida; Choi, John Stephen SUNY Downstate Medical Center; Francis, Joseph Thachil SUNY Downstate Medical Center; Principe, Jose University of Florida

08:45-09:00 SaA11.4
Decoding the Evolving Grasping Gesture from Electroencephalographic (EEG) Activity 5590-5593
Agashe, Harshavardhan University of Houston; Contreras-Vidal, José University of Houston

09:00-09:15 SaA11.5
Frontal Theta EEG Dynamics in a Real-World Air Traffic Control Task 5594-5597
Shou, Guofa University of Oklahoma; Ding, Lei University of Oklahoma

09:15-09:30 SaA11.6
Decoding of the Sound Frequency from the Steady-State Neural Activities in Rat Auditory Cortex 5598-5601
Shiramatsu, Tomoyo University of Tokyo; Noda, Takahiro University of Tokyo; Kanzaki, Ryohei The University of Tokyo; Takahashi, Hirokazu University of Tokyo

SaA12: 08:00-09:30 1009 (10F)
6.2.6 Brain-computer Interface IV (Oral Session)
Chair: Paek, Andrew *(Univ. of Houston)*

08:00-08:15 SaA12.1
Reconstructing Surface EMG from Scalp EEG During Myoelectric Control of a Closed Looped Prosthetic Device 5602-5605
Paek, Andrew Univ. of Houston; Brown, Jeremy Univ. of Michigan; Gillespie, R. Brent Univ. of Michigan; O'Malley, Marcia K. Rice Univ.; Shewokis, Patricia A Drexel Univ.; Contreras-Vidal, José Univ. of Houston

08:15-08:30 SaA12.2
High Accuracy Decoding of User Intentions Using EEG to Control a Lower-Body Exoskeleton 5606-5609
Kilicarslan, Atilla University of Houston; Prasad, Saurabh Mississippi State University; Grossman, Robert The Methodist Hospital; Contreras-Vidal, José University of Houston

SaA13: 08:00-09:30 1010 (10F)
6.6.1 Motor Learning and Neuromuscular Control I (Oral Session)
Chair: Perreault, Eric *(Northwestern Univ.)*

SaA14: 08:00-09:30 804 (8F)
7.4.3 Electronic Biointerfaces (Invited Session)
Chair: Ghafar-Zadeh, Ebrahim *(York Univ.)*
Co-Chair: Tandon, Nina *(Columbia Univ.)*

SaA15: 08:00-09:30 1102 (11F)
8.5.1 Motion Cancellation in Surgical Robotics (Oral Session)
Chair: Yang, Sungwook *(Carnegie Mellon Univ.)*
Co-Chair: Gonenc, Berk *(Johns Hopkins Univ.)*

SaA16**:** 08:00-09:30 Small Hall (5F)
9.5.3 Endoscopy (Oral Session)
Chair: Nakamura, Ryoichi *(Chiba Univ.)*
Co-Chair: Kawai, Toshikazu *(Osaka Inst. of Tech.)*

SaA22: 08:00-09:30 1201 (12F)
1.4.2 Biomedical Signal Classification through EMG Analysis (Oral Session)
Chair: Kiryu, Tohru *(Niigata Univ.)*
Co-Chair: Al-Timemy, Ali Hussian *(Plymouth Univ.)*

08:00-08:15 SaA22.1
A New Feature Extraction Method Based on Autoregressive Power Spectrum for Improving Semg Classification 5746-5749
Liu, Jianwei Shanghai Jiao Tong University; He, Jiayuan Shanghai Jiao Tong University; Sheng, Xinjun Shanghai Jiao Tong University; Zhang, Dingguo Shanghai Jiao Tong University; Zhu, XiangYang Shanghai Jiao Tong University

08:15-08:30 SaA22.2
Artifact Removal Algorithm for an EMG-Based Silent Speech Interface 5750-5753
Wand, Michael Karlsruhe Institute of Technology; Himmelsbach, Adam Karlsruhe Institute of Technology; Heistermann, Till Karlsruhe Institute of Technology; Janke, Matthias Karlsruhe Institute of Technology, Cognitive Systems Lab; Schultz, Tanja Karlsruhe Institute of Technology, Cognitive Systems Lab

08:30-08:45 SaA22.3
Improving EMG Based Classification of Basic Hand Movements Using EMD 5754-5757
Sapsanis, Christos University of Patras, Electrical and Computer Engineering Depart; Georgoulas, George TEI of Epirus; Tzes, Anthony University of Patras; Lymberopoulos, Dimitrios University of Patras

08:45-09:00 SaA22.4
A Preliminary Investigation of the Effect of Force Variation for Myoelectric Control of Hand Prosthesis 5758-5761
Al-Timemy, Ali Hussian Plymouth University; Bugmann, Guido Centre for Robotics and Neural Systems, University of Plymouth; Escudero, Javier Plymouth University; Outram, Nicholas University of Plymouth

09:00-09:15 SaA22.5
Enhancing Classification Accuracy of Wrist Movement by Denoising sEMG Signals 5762-5764
Abbas, Baqar Aligarh Muslim Univ.; Farooq, Omar Aligarh Muslim Univ.; Khan, Yusuf Uzzaman Aligarh Muslim Univ.; Ali, Khan, Abid Aligarh Muslim Univ.; Vyas, Anoop Lal Indian Institute of Technology Delhi

09:15-09:30 SaA22.6
EMG Signal Morphology in Essential Tremor and Parkinson's Disease 5765-5768
Ruonala, Verneri Matias Univ. of Eastern Finland; Meigal, Alexander Petrozavodsk State Univ.; Rissanen, Saara Mirjami Univ. of Eastern Finland; Airaksinen, Veikko Olavi Pietari Kuopio Univ. Hospital; Kankaanpää, Markku Juhani Kuopio Univ. Hospital; Karjalainen, Pasi, A Univ. of Eastern Finland

SaB01: 09:30-11:00 Event Hall-Area B (3F)
1.7.3 Support Vector Machine (SVM) applied to Biosignal Classification II (Poster Session)

09:30-11:00 SaB01.1
Design and Implementation of a Low Power Mobile CPU Based Embedded System for Artificial Leg Control 5769-5772
Hernandez, Robert The University of Rhode Island; Yang, Qing University of Rhode Island; Huang, He University of Rhode Island; Zhang, Fan University of Rhode Island; Zhang, Xiaorong University of Rhode Island

09:30-11:00 SaB01.2
SLEEP phenomena as an early biomarker for Parkinsonism 5773-5776
Kempfner, Jacob Technical University of Denmark; Jennum, Poul Danish Centre for Sleep Medicing; Nikolic, Miki Department of Clinical Neurophysiology, GlostrupUniversityHospit; Christensen, Julie Anja Engelhard Technical University of Denmark; Sorensen, Helge B D Technical University of Denmark

09:30-11:00 SaB01.3
Automatic SLEEP staging: From young adults to elderly patients using multi-class support vector machine 5777-5780
Kempfner, Jacob Technical University of Denmark; Jennum, Poul Danish Centre for Sleep Medicing; Sorensen, Helge B D Technical University of Denmark; Christensen, Julie Anja Engelhard Technical University of Denmark; Nikolic, Miki Department of Clinical Neurophysiology, Glostrup University Hospit

SaB02: 09:30-11:00 Event Hall-Area B (3F)
1.9.3 Data Mining in Biosignals II (Poster Session)

SaB03: 09:30-11:00 Event Hall-Area B (3F)

1.10.2 Blind Source Separation and Independent Component Analysis II (Poster Session)

SaB04: 09:30-11:00 Event Hall-Area C (3F)
2.11.3 Retinal Imaging II (Poster Session)

09:30-11:00 SaB04.1
Quality Control and Multi-Lesion Detection in Automated Retinopathy Classification Using a Visual Words Dictionary ..... **N/A**
Jelinek, Herbert Franz Charles Sturt University; Pires, Ramon University of Campinas; Padilha, Rafael University of Campinas; Goldenstein, Siome University of Campinas; Wainer, Jacques University of Campinas; Rocha, Anderson University of Campinas

09:30-11:00 SaB04.2
Self-Assessment for Optic Disc Segmentation 5861-5864
Cheng, Jun Institute for Infocomm Research, AStar; Liu, Jiang Institute for Infocomm Research, A STAR; Yin, Fengshou Institute for Infocomm Research; Lee, Beng Hai Institute for Infocomm Research; Wong, Damon Institute for Infocomm Research; Aung, Tin Singapore Eye Research Institute; Cheng, Ching-Yu Singapore Eye Research Institute; Wong, Tien Yin National University of Singapore

09:30-11:00 SaB04.3
Automated Quantification of Retinal Arteriovenous Nicking from Colour Fundus Images 5865-5868
Nguyen, Uyen Thi Van The Univ. of Melbourne; Bhuiyan, Alauddin Commonwealth Scientific and Industrial Research Organization; Park, Laurence A. F. The Univ. of Western Sydney; kawasaki, Ryo Royal Victorian Eye and Ear Hospital, Univ. of Melbourne; Wong, Tien Yin National Univ. of Singapore; Wang, Jie jin Univ. of Sydney; Mitchell, Paul Univ. of Sydney; Kotagiri, Ramamohanarao The Univ. of Melbourne

09:30-11:00 SaB04.4
Automated Segmentation of the Choroid in Retinal Optical Coherence Tomography Images 5869-5872
Lu, Huiqi University of Liverpool; Boonarpha, Nattapon University of Liverpool; Kwong, Man Ting University of Liverpool; Zheng, Yalin University of Liverpool

09:30-11:00 SaB04.5
Automated Microaneurysm Detection Method Based on Eigenvalue Analysis Using Hessian Matrix in Retinal Fundus Images 5873-5876
Inoue, Tsuyoshi University of Shiga Prefecture; Hatanaka, Yuji University of Shiga Prefecture; Okumura, Susumu University of Shiga Prefecture; Muramatsu, Chisako Gifu University; Fujita, Hiroshi Gifu University

09:30-11:00 SaB04.6
3D Optic Disc Reconstruction Via a Global Fundus Stereo Algorithm 5877-5882
Bansal, Mayank SRI International; Sizintsev, Mikhail SRI International; Eledath, Jayan Sarnoff Corporation; Sawhney, Harpreet Sarnoff Corporation; Pearson, Denise University of Pennsylvania; Stone, Richard University of Pennsylvania

09:30-11:00 SaB04.7
Super-Image Mosaic of Infant Retinal Fundus: Selection and Registration of the Best-Quality Frames from Videos 5883-5886
Ruggeri, Alfredo University of Padua; Poletti, Enea University of Padova

09:30-11:00 SaB04.8
Automatic Screening of Narrow Anterior Chamber Angle and Angle-Closure Glaucoma Based on Slit-Lamp Image Analysis by Using Support Vector Machine 5887-5890
Theeraworn, Chonlada National Electronics and Computer Technology Center(NECTEC) and; Kongprawechnon, Waree Sirindhorn International Institute of Technology; Kondo, Toshiaki Sirindhorn International Institute of Technology; Bunnun, Pished National Electronics and Computer Technology Center (NECTEC); Nishihara, Akinori Tokyo Institute of Technology; Manassakorn, Anita Chulalongkorn University and King Chulalongkorn Memorial Hospita

09:30-11:00 SaB04.9
Comparison of Logistic Regression and Neural Network Classifiers in the Detection of Hard Exudates in Retinal Images 5891-5894
Garcia, Maria University of Valladolid, CIF: Q4718001C; Valverde, Carmen Hospital de Medina del Campo, Valladolid; López, María I. University of Valladolid; Poza, Jesus University of Valladolid; Hornero, Roberto University Of Valladolid

SaB05: 09:30-11:00 Event Hall-Area D (3F)
6.8.1 Wearable Systems for Neurorehabilitation (Poster Session)

09:30-11:00 SaB05.1
A Novel Wearable Laser Device to Regulate Stride Length in Parkinson's Disease 5895-5898
zhao, yan Technical University of Munich; Ramesberger, Stefan TU-Muenchen; Fietzek, Urban M. Schön Klinik München Schwabing Abt. Neurologie und klinische Neu; D'Angelo, Lorenzo Tancredi Technische Universitaet Muenchen; Lueth, Tim Technical University of Munich

09:30-11:00 SaB05.2
Development of Multichannel Array Transducer of Displacement Mechanical-Myogram 5899-5902
Oka, Hisao Okayama Univ.; Konishi, Yuto Osaka Electro-Communication Univ; Kitawaki, Tomoki Okayama Univ. Graduate School; Ichihashi, Noriaki Kyoto Univ.; Yoshida, Masaki Osaka Electro-Communication Univ

09:30-11:00 SaB05.3
Coordinated Upper Limb Training Assisted with an Electromyography (EMG)-Driven Hand Robot after Stroke 5903-5906
Hu, Xiaoling The Hong Kong Polytechnic Univ.; Tong, Kai Yu, Raymond The Hong Kong Polytechnic Univ.; Wei, Xi-jun The Hong Kong Polytechnic Univ.; Rong, Wei Dept of HTI, The Hong Kong Polytechnic Univ.; Susanto, Evan The Hong Kong Polytechnic Univ.; Ho, Sze Kit The Hong Kong Polytechnic Univ.

09:30-11:00 SaB05.4
A Method for Shoulder Range-Of-Motion Estimation Using a Single Wireless Sensor Node 5907-5910
Thiemjarus, Surapa NSTDA; Pongwat, Poomchoompol SIIT; Marukatat, Sanparith NECTEC

09:30-11:00 SaB05.5
Mapping Sensor Activation Time for Typing Tasks Performed with a Tongue Controlled Oral Interface . 5911-5913
Lontis, Eugen Romulus Aalborg University; Andreasen Struijk, Lotte N. S. Aalborg University

09:30-11:00 SaB05.6
Biofeedback Baropodometry Training Evaluation: A Study with Children with Equinus Foot Deformity . 5914-5917
Gomes, Leonardo Grilo Federal Technology University of Paraná; Scremim, Reginato Federal Technology University of Paraná; Abreu de Souza, Mauren Federal University of Technology (UTFPR); Gamba, Humberto Federal Univ of Technology UTFPR- C.N.P.J.

09:30-11:00 SaB05.7
Pattern Recognition Based Forearm Motion Classification for Patients with Chronic Hemiparesis 5918-5921
Geng, Yanjuan Shenzhen Institutes of Advanced Technology; Zhang, Liangqing Guangzhou Medical University; Tang, Dan Guangdong Provincial Work Injury Rehabilitation Center; Zhang, Xiufeng Tsinghua; Li, Guanglin Shenzhen Institutes of Advanced Technology

09:30-11:00 SaB05.8
Generating Tactile Afferent Stimulation Patterns for Slip and Touch Feedback in Neural Prosthetics 5922-5925
Rager, Danielle Univ. of New South Wales; Alvares, Darren The Univ. of New South Wales; Birznieks, Ingvars Univ. of Western Sydney; Redmond, Stephen James Univ. of New South Wales; Morley, John William Univ. of Western Sydney; Lovell, Nigel H. Univ. of New South Wales; Vickery, Richard Univ. of New South Wales

09:30-11:00 SaB05.9
Real-Time Implementation of a Self-Recovery EMG Pattern Recognition Interface for Artificial Arms 5926-5929
Zhang, Xiaorong University of Rhode Island; Huang, He University of Rhode Island; Yang, Qing University of Rhode Island

SaB06: 09:30-11:00 Event Hall-Area D (3F)
6.9.2 Brain Physiology and Modeling (Poster Session)

09:30-11:00 SaB06.1
Sparse Bayesian Inference Methods for Decoding 3D Reach and Grasp Kinematics and Joint Angles with Primary Motor Cortical Ensembles 5930-5933
Chen, Zhe Harvard Medical School/MIT; Takahashi, Kazutaka University of Chicago; Hatsopoulos, Nicholas University of Chicago

SaB14: 09:30-11:00 Event Hall-Area D (3F)
6.10.2 Neural Signal Processing II (Poster Session)

SaC01: 13:30-15:00 Conference Hall (12F)
1.4.3 Biomedical Signal Classification through EEG Analysis (Oral Session)
Chair: Tong, Shanbao *(Shanghai Jiao Tong Univ.)*
Co-Chair: Poza, Jesus *(Univ. of Valladolid)*

SaC02: 13:30-15:00 1202 (12F)
1.10.3 Multimodal Blind Source Separation: Algorithms, Applications and Future Challenges (Invited Session)
Chair: Van Huffel, Sabine *(Katholieke Univ. Leuven)*
Co-Chair: De Vos, Maarten *(KU Leuven)*

13:30-13:45 SaC02.1
Independent Component Analysis of EEG-Fmri Data for Studying Epilepsy and Epileptic Seizures 6011-6014
Franchin, Tiziana Clinical-Technological Innovations Research Unit, Bambino Gesù C; Tana, Maria Gabriella Università degli Studi "G. d'Annunzio" di Chieti-Pescara; Cannatà, Vittorio Clinical-Technological Innovations Research Unit, Bambino Gesù C; Cerutti, Sergio Politecnico di Milano; Bianchi, Anna Maria Politecnico di Milano

13:45-14:00 SaC02.2
Exploiting Intracardiac and Surface Recording Modalities for Atrial Signal Extraction in Atrial Fibrillation 6015-6018
Garibaldi, Michele Univ. de Nice-Sophia Antipolis; Zarzoso, Vicente Université Nice Sophia Antipolis - CNRS

14:00-14:15 SaC02.3
Comparison of Correlation Analysis and JointICA for Simultaneous EEG-Fmri Recordings on Contour Integration Task 6019-6022
Mijovic, Bogdan Katholieke Universiteit Leuven; Machilsen, Bart KU Lueven; Hunyadi, Borbala KU Leuven; De Vos, Maarten KU Leuven; Wagemans, Johan KU Leuven; Van Huffel, Sabine Katholieke Universiteit Leuven

14:15-14:30 SaC02.4
Structure-Revealing Data Fusion Model with Applications in Metabolomics 6023-6026
Acar, Evrim University of Copenhagen; Lawaetz, Anders University of Copenhagen; Rasmussen, Morten University of Copenhagen; Bro, Rasmus Copenhagen University

14:30-14:45 SaC02.5
The Quest for Single Trial Correlations in Multimodal EEG-Fmri Data 6027-6030
De Vos, Maarten KU Leuven; Zink, Rob Katholieke Univ. Leuven; Hunyadi, Borbala KU Leuven; Mijovic, Bogdan Katholieke Univ. Leuven; Van Huffel, Sabine Katholieke Univ. Leuven; Debener, Stefan Hamburg Univ.

SaC03: 13:30-15:00 1203 (12F)
1.7.2 Support Vector Machine (SVM) applied to Biosignal Classification I (Oral Session)
Chair: He, Jiping *(Arizona State Univ.)*
Co-Chair: Ogawa, Mitsuhiro *(Teikyo Univ.)*

13:30-13:45 SaC03.1
Detection of Cigarette Smoke Inhalations from Respiratory Signals Using Reduced Feature Set 6031-6034
Patil, Yogendra University of Alabama; Lopez-Meyer, Paulo The University of Alabama; Tiffany, Stephen State University of New York at Buffalo; Sazonov, Edward University of Alabama

13:45-14:00 SaC03.2
Improving Transient State Myoelectric Signal Recognition in Hand Movement Classification Using Gyroscopes 6035-6038
Boschmann, Alexander University of Paderborn; Nofen, Barbara Universität Paderborn; Platzner, Marco University of Paderborn

14:00-14:15 SaC03.3
Boosting Specificity of MEG Artifact Removal by Weighted Support Vector Machine 6039-6042
Duan, Fang The Univ. of Tokyo; Phothisonothai, Montri Univ. of Tokyo; Kikuchi, Mitsuru Kanazawa Univ.; Yoshimura, Yuko Kanazawa Univ., Research Center for Child Mental Development; Minabe, Yoshio Kanazawa Univ.; Watanabe, Katsumi The Univ. of Tokyo; Aihara, Kazuyuki The Univ. of Tokyo

14:15-14:30 SaC03.4
Online LS-SVM Based Multi-Step Prediction of Physiological Tremor for Surgical Robotics 6043-6046
Tatinati, Sivanagaraja Kyungpook National Univesrsity; Wang, Yubo Kyungpook National University; Shafiq, Ghufran Kyungpook National University; Veluvolu, Kalyana C. Kyungpook National University

14:30-14:45 SaC03.5
Classification of Schizophrenia Using Genetic Algorithm-Support Vector Machine (GA-SVM) 6047-6050
Hiesh, Ming-Hsien National Taiwan University Hospital; Lam, Yan-Yu Andy National Taiwan University; Shen, Chia-Ping National Taiwan University; Chen, Wei National Taiwan University; Lin, Feng-Sheng Academia Sinica of Taiwan; Sung, Hsiao-Ya National Taiwan University; Lin, Jeng-Wei Tunghai University; Chiu, Ming-Jang Department of Nerology, National Taiwan University Hospital, No.; Lai, Feipei National Taiwan University

14:45-15:00 SaC03.6
Selection of Cortical Neurons for Identifying Movement Transitions in Stand and Squat 6051-6054
Ma, Xuan Huazhong University of Science and Technology; Hu, Dingyin University; Huang, Jian Huazhong University of Science and Technology; Li, Wei Huazhong University of Science and Technology; He, Jiping Arizona State University

SaC05: 13:30-15:00 1002 (10F)
2.7.5 Image Segmentation III (Oral Session)
Chair: Watabe, Hiroshi *(Tohoku Univ.)*
Co-Chair: Feng, Dagan *(The Univ. of Sydney)*

13:30-13:45 SaC05.1
Robust Filtering Based Segmentation and Analysis of Dura Mater Vasculature using Epifluorescence Microscopy ..... **N/A**
Prasath, V. B. Surya Univ. of Missouri-Columbia; Bunyak, Filiz Univ. of Missouri Columbia; haddad, oussama Univ. of Missouri-Columbia; Glinskii, Olga Univ. of Missouri-Columbia; Glinsky, Vladislav Univ. of Missouri-Columbia; Huxley, Virginia Univ. of Missouri-Columbia; Palaniappan, Kannappan Univ. of Missouri-Columbia

13:45-14:00 SaC05.2
Segmentation of Aortic Flow in Real Time Magnetic Resonance Images 6059-6062
Maia Queiroz de Mendonça, Gustavo University of Brasilia; da Rocha, Adson F. University of Brasilia; Carvalho, Joao Luiz Azevedo de University of Brasília

14:00-14:15 SaC05.3
Direct Measurement of Speed of Sound in Cartilage in Situ Using Ultrasound and Magnetic Resonance Images 6063-6066
Nitta, Naotaka National Institute of AIST; Aoki, Takako Tokyo Metropolitan University; Hyodo, Koji National Institute of AIST; Misawa, Masaki National Institute of AIST; Homma, Kazuhiro National Institute of AIST

14:15-14:30 SaC05.4
Ultrasound Lesion Segmentation Using Clinical Knowledge-Driven Constrained Level Set 6067-6070
Lin, QiZhong Philips Research Asia Shanghai; Liu, Sheena Xin Philips Research North America; Parajuly, Shyam Sundar Department of Ultrasound, Western China Hospital; Deng, Yinhui Philips research; Boroczky, Lilla Philips Research North America; Fu, Sainan Philips Research China; Wu, Ying Philips Research China; Pen, Yulan Department of Ultrasound, Western China Hospital

14:30-14:45 SaC05.5
Prior Knowledge Enhanced Random Walk for Lung Tumor Segmentation from Low-Contrast CT Images 6071-6074
Cui, Hui The University of Sydney; Wang, Xiu Ying The University of Sydney; Fulham, Michael Royal Prince Alfred Hospital; Feng, Dagan The University of Sydney

14:45-15:00 SaC05.6
Segmentation Using Sparse Shape Model and Minimally Supervised Method in Liver Surgery Planning System 6075-6078
Wang, Guotai Shanghai Jiao Tong University; Zhang, Shaoting Rutgers; Li, Feng University of Western Ontario; Gu, Lixu Shanghai Jiaotong University

SaC06: 13:30-15:00 1003 (10F)
2.8.3 Image Feature Extraction I (Oral Session)
Chair: Mat Sakim, Harsa Amylia *(Univ. Sains Malaysia)*

13:30-13:45 SaC06.1
Lung Image Patch Classification with Automatic Feature Learning 6079-6082
Li, Qing University of Sydney; Cai, Weidong University of Sydney; Feng, Dagan The University of Sydney

13:45-14:00 SaC06.2
The Use of Pseudo-Landmarks for Craniofacial Analysis: A Comparative Study with L1-Regularized Logistic Regression 6083-6086
Mercan, Ezgi University of Washington; Shapiro, Linda G. University of Washington; Weinberg, Seth Department of Oral Biology, University of Pittsburgh; Lee, Su-In University of Washington

14:00-14:15 SaC06.3
Cell Nuclei Segmentation in Fluorescence Microscopy Images Using Inter and Intra-Region Discriminative Information 6087-6090
Song, Yang University of Sydney; Cai, Weidong University of Sydney; Feng, Dagan The University of Sydney; Chen, Mei Carnegie Mellon University

14:15-14:30 SaC06.4
Multi-Channels Statistical and Morphological Features Based Mitosis Detection in Breast Cancer Histopathology 6091-6094
Irshad, Humayun IPAL UMI CNRS; Roux, Ludovic Université Joseph Fourier; Racoceanu, Daniel French National Center for Scientific Research

14:30-14:45 SaC06.5
Discretized Data Pattern in Endoscopic Gastritis Images Using Dynamic Window and Pairwise Gini Criterion 6095-6098
Mohd Yacob, Yasmin University Sains Malaysia; Mat Sakim, Harsa Amylia University Sains Malaysia; Mat Isa, Nor Ashidi University Sains Malaysia; Sobri, Zuriani University Sains Malaysia

14:45-15:00 SaC06.6
Automatic Dental Arch Detection and Panoramic Image Synthesis from CT Images 6099-6102
Sa-ing, Vera National Electronics and Computer Tech. Center; Wangkaoom, Kongyot National Electronics And Computer Tech. Center; Thongvigitmanee, Saowapak National Electronics & Comp Tech Ctr

SaC07: 13:30-15:00 1004 (10F)
3.7.3 Wearable Systems I (Oral Session)
Chair: Poon, Carmen CY *(The Chinese Univ. of Hong Kong)*
Co-Chair: Tanaka, Shinobu *(Kanazawa Univ.)*

13:30-13:45 SaC07.1
Wearable Cuff-less PTT-based System for Overnight Blood Pressure Monitoring 6103-6106
Zheng, Yali The Chinese Univ. of Hong Kong; Yan, Bryan P. Prince of Wales Hospital, The Chinese Univ. of Hong Kong; Zhang, Yuan-Ting The Chinese Univ. of Hong Kong; Yu, Cheuk-Man Prince of Wales Hospital, The Chinese Univ. of Hong Kong, Hon; Poon, Carmen CY The Chinese Univ. of Hong Kong

13:45-14:00 SaC07.2
Blood Pressure Estimation from Pulse Wave Velocity Measured on the Chest 6107-6110
Fuke, Sawa Corporate R&D Center, TOSHIBA Corporation; Suzuki, Takuji Toshiba Corporation; Nakayama, Kanako Corporate R&D Center, TOSHIBA Corporation.; Tanaka, Hirokazu TOSHIBA Corporation; Minami, Shigenobu TOSHIBA Corporation

14:00-14:15 SaC07.3
An Inertial Sensor-Based System to Develop Motor Capacity in Children with Cerebral Palsy 6111-6114
Qiao, Shuo Indian Institute of Technology, Madras; Vathsangam, Harshvardhan University of Southern California; Prabhakar, Anil Indian Institute of Technology, Madras; Chandrachoodan, Nitin Indian Institute of Technology, Madras; Jacob, Namita Chetana Charitable Trust

14:15-14:30 SaC07.4
Wireless Patch Sensor for Remote Monitoring of Heart Rate, Respiration, Activity, and Falls 6115-6118
Chan, Alexander M. Vital Connect, Inc; Selvaraj, Nandakumar Vital Connect Inc; Ferdosi, Nima Vital Connect, Inc.; Narasimhan, Ravi Vital Connect, Inc.

14:30-14:45 SaC07.5
Analysis of Subtle Movements Related to Neurodegenerative Diseases Using Wearable Inertial Sensors: A Study in Healthy Subjects 6119-6122
Martinez-Mendez, Rigoberto Autonomous University of Mexico State; Portillo-Rodriguez, Otniel Autonomous University of Mexico State; Avila-Vilchis, Juan-Carlos Autonomous University of Mexico State; Lorias-Espinoza, Daniel CINVESTAV; Minor-Martinez, Arturo CINVESTAV

SaC10: 13:30-15:00 1007 (10F)
5.7.2 Measures of Complexity of Heart Rate Variability II (Invited Session)
Chair: Jelinek, Herbert Franz *(Charles Sturt Univ.)*
Co-Chair: Struzik, Zbigniew R. *(The Univ. of Tokyo)*

13:30-13:45 SaC10.1
Stress Classification by Separation of Respiratory Modulations in Heart Rate Variability Using Orthogonal Subspace Projection 6123-6126
Widjaja, Devy KU Leuven; Vlemincx, Elke KU Leuven; Van Huffel, Sabine Katholieke Universiteit Leuven

13:45-14:00 SaC10.2
Complexity of the Heart Rhythm after Heart Transplantation by Entropy of Transition Network for RR-Increments of RR Time Intervals between Heartbeats 6127-6130
Makowiec, Danuta Institute of Theoretical Physcis and Astrophysics , Gdansk Unive; Struzik, Zbigniew R. The Univ. of Tokyo; Graff, Beata Medical Univ. of Gdansk; Wdowczyk-Szulc, Joanna Medical Univ. of Gdansk; Zarczynska-Buchowiecka, Marta Medical Univ. of Gdansk; Gruchala, Marcin Medical Univ. of Gdansk, I Department of Cardiology; Rynkiewicz, Andrzej Medical Univ. of Gdansk, I Department of Cardiology

14:00-14:15 SaC10.3
Instantaneous Nonlinear Assessment of Complex Cardiovascular Dynamics by Laguerre-Volterra Point Process Models 6131-6134
Valenza, Gaetano University of Pisa; Citi, Luca MGH / Harvard Medical School; Barbieri, Riccardo MGH-Harvard Medical School-MIT

14:15-14:30 SaC10.4
Multi-Scale Tone Entropy in Differentiating Physiologic and Synthetic RR Time Series 6135-6138
Karmakar, Chandan K. The University of Melbourne; Khandoker, Ahsan Habib Khalifa University of Science, Technology and Research; Palaniswami, Marimuthu The University of Melbourne

14:30-14:45 SaC10.5
Evaluating Cardiovascular Risk Using the Tone-Entropy Algorithm 6139-6141
Khandoker, Ahsan Habib Khalifa University of Science, Technology and Research; Jelinek, Herbert Franz Charles Sturt University

14:45-15:00 SaC10.6
Arrhythmic Dynamics from Singularity Analysis of Electrocardiographic Maps 6142-6145
Pont, Oriol INRIA Bordeaux Sud-Ouest; Yahia, Hussein INRIA Bordeaux Sud-Ouest; Xu, Binbin INRIA Bordeaux Sud-Ouest

SaC11: 13:30-15:00 1008 (10F)
6.11.1 Clinical Neurophysiology (Invited Session)
Chair: Fehrmann, Elizabeth *(Medtronic, Inc.)*
Co-Chair: Sekino, Masaki *(The Univ. of Tokyo)*

13:30-13:45 SaC11.1
A Flexible Algorithm Framework for Closed-Loop Neuromodulation Research Systems 6146-6150
Carlson, David Medtronic; Linde, David Medtronic; Isaacson, Benjamin Medtronic Inc; Afshar, Pedram Medtronic Neuromodulation; Bourget, Duane Medtronic Inc.; Stanslaski, Scott Medtronic; Stypulkowski, Paul Medtronic; Denison, Timothy Medtronic

13:45-14:00 SaC11.2
A Method for Actively Tracking Excitability of Brain Networks Using a Fully Implantable Monitoring System 6151-6154
Freestone, Dean Robert The Univ. of Melbourne; Long, Sam Nicholas The Univ. of Melbourne; Frey, Stephen Rogue Research Inc.; Stypulkowski, Paul Medtronic; Giftakis, Jon Medtronic; Cook, Mark St. Vincent's Hospital

14:00-14:15 SaC11.3
Development of a Uni-Acupoint Transcutaneous Electric Nerve Stimulation Device for Electroacupuncture-Like Neuromodulation ..... **N/A**
Sun, Chenhui Tsinghua University; Hu, Chunhua Tsinghua University; Hao, Hongwei Tsinghua University; Niu, Chuansen Tsinghua University; Li, Luming Tsinghua University

14:15-14:30 SaC11.4
Fatigue Test of Helical Nervous Electrodes and Weak Point Analysis of Helical Nervous Electrodes Design 6159-6162
Yuan, Yuan Tsinghua University; Hao, Hongwei Tsinghua University; Wen, Xiongwei Tsinghua University; Mo, Xiaolong Tsinghua; Li, Luming Tsinghua University

14:30-14:45 SaC11.5
Electrical or Repetitive Transcranial Magnetic Stimulation of Primary Motor Cortex for Intractable Neuropathic Pain 6163-6166
Saitoh, Youichi Osaka University; Maruo, Tomoyuki Osaka University; Yokoe, Masaru Osaka University; Matsuzaki, Taiga Teijin Pharma Limited; Sekino, Masaki The University of Tokyo

14:45-15:00 SaC11.6
Insomnia Types and Sleep Microstructure Dynamics 6167-6170
Chouvarda, Ioanna Aristotle University, EL090049627; Grassi, Andrea Sleep Disorders Centre, Department of Neurology, University of P; Mendez, Martin Oswaldo Universidad Autonoma de San Luis Potosi; Bianchi, Anna Maria Politecnico di Milano; Parrino, Liborio Sleep Disorders Centre, Department of Neurology, University of P; Milioli, Giulia Sleep Disorders Centre, Department of Neurology, University of P; Terzano, Mario Giovanni Sleep Disorders Centre, Department of Neurology, University of P; Maglaveras, Nikolaos Aristotle University of Thessaloniki; Cerutti, Sergio Politecnico di Milano

SaC12: 13:30-15:00 1009 (10F)
6.12.1 Brain Functional Imaging I (Oral Session)
Chair: Babiloni, Fabio *(Univ. of Rome)*
Co-Chair: Iwaki, Sunao *(National Inst. of Advanced Industrial Science and Tech.)*

13:30-13:45 SaC12.1
Time and Time-Frequency Analysis of Near-Infrared Signals for the Assessment of Ozone Autohemotherapy Long-Term Effects in Multiple Sclerosis 6171-6174
Lintas, Giangiacomo Politecnico di Torino - DET - Biolab; Molinari, Filippo Politecnico di Torino; Simonetti, Vincenzo KAOS Onlus Foundation and SIOOT; Franzini, Marianno SIOOT Society; Liboni, William Gradenigo Hospital

13:45-14:00 SaC12.2
Quantitative Evaluation for the Wakefulness State Using Complexity-Based Decision Threshold Value in EEG Signals 6175-6178
Alaraj, Maen Yamagata University; Fukami, Tadanori Yamagata University

14:00-14:15 SaC12.3
Neuroelectric Brain Imaging During a Real Visit of a Fine Arts Gallery: A Neuroaesthetic Study of XVII Century Dutch Painters 6179-6182
Babiloni, Fabio University of Rome; Borghini, Gianluca University of Rome Sapienza; Mattia, Donatella Fondazione Santa Lucia IRCCS; Picconi, Daniela Azienda Speciale Palaexpo; Graziani, Ilenia Dipartimento di Fisiologia e Farmacologia, BrainSigns; Patrizia, Cherubino BrainSigns srl; Trettel, Arianna BrainSigns; Infarinato, Francesco Dipartimento di Fisiologia e Farmacologia; Vecchiato, Giovanni University of Rome Sapienza; Maglione, Anton Giulio University of Rome Sapienza

14:15-14:30 SaC12.4
Induced Gamma-Band Brain Responses to Direct Eye Contact in the Frontal and Parietal Cortices 6183-6186
Iwaki, Sunao National Institute of Advanced Industrial Science and Technology

SaC15: 13:30-15:00 1102 (11F)
8.5.2 Surgical Robotics I (Oral Session)
Chair: Fujie, Masakatsu G. *(Waseda Univ.)*

SaC16: 13:30-15:00 Small Hall (5F)
9.5.4 HIFU (Oral Session)
Chair: Masuda, Kohji *(Tokyo Univ. A&T)*
Co-Chair: Hou, Gary *(Columbia Univ.)*

15:00-16:30 SaD01.11
Absence Seizure Epilepsy Detection using linear and nonlinear EEG analysis methods 6333-6336
Sakkalis, Vangelis ICS-FORTH; Giannakakis, Giorgos Institute of Computer Science (ICS), Computational Medicine Labo; Farmaki, Christina Institute of Computer Science (ICS), FORTH; Mousas, Abdou ICS-FORTH; Pediaditis, Matthew ICS-FORTH; Vorgia, Pelagia University of Crete, Faculty of Medicine; Tsiknakis, Manolis ICS-FORTH

15:00-16:30 SaD01.12
Using Decision Trees to Measure Activities in People with Stroke 6337-6340
Zhang, Ting The University of Alabama; Fulk, George Clarkson University; Tang, Wenlong The University of Alabama; Sazonov, Edward University of Alabama

SaD14: 15:00-16:30 Event Hall-Area D (3F)
6.12.2 Brain Functional Imaging II (Poster Session)

15:00-16:30 SaD14.1
Classification of Stand-To-Sit and Sit-To-Stand Movement from Low Frequency EEG with Locality Preserving Dimensionality Reduction 6341-6344
Bulea, Thomas C. National Institutes of Health; Prasad, Saurabh Mississippi State University; Kilicarslan, Atilla University of Houston, Department of Electrical and Computer Eng; Contreras-Vidal, José University of Houston

15:00-16:30 SaD14.2
Cortical Activation Pattern for Grasping During Observation, Imagery, Execution, FES, and Observation-FES Integrated BCI: An Fnirs Pilot Study 6345-6348
An, Jinung DGIST; Jin, SangHyeon DGIST; Lee, Seung Hyun DGIST; Jang, GwangHee DGIST; Abibullaev, Berdakh DGIST; Lee, Hyun Ju DGIST; Moon, Jeon-Il DGIST

15:00-16:30 SaD14.3
An Fmri-Compatible Multi-Configurable Handheld Response System Using an Intensity-Modulated Fiber-Optic Sensor 6349-6352
Jarrahi, Behnaz ETH Zurich; Wanek, Johann University of Zurich, Balgrist University Hospital; Mehnert, Ulrich University of Zurich, Balgrist University Hospital; Kollias, Spyros University Hospital Zurich

15:00-16:30 SaD14.4
Passive Ankle Dorsiflexion by an Automated Device and the Reactivity of the Motor Cortical Network .. 6353-6356
Pittaccio, Simone National Research Council of Italy; Zappasodi, Filippo Dept. of Neuroscience and Imaging and Institute for Advanced Bio; Tamburro, Gabriella Dept. of Neuroscience and Imaging and Institute for Advanced Bio; Viscuso, Stefano Institute for Energetics and Interphases, National Research Coun; Marzetti, Laura Dept. of Neuroscience and Imaging and Institute for Advanced Bio; Garavaglia, Lorenzo Institute for Energetics and Interphases, National Research Coun; Tecchio, Franca Institute of Cognitive Sciences and Technologies, National Resea; Pizzella, Vittorio University of Chieti-Pescara

15:00-16:30 SaD14.5
Multi-Dipole EEG Source Localization Using Particle Swarm Optimization ..... **N/A**
Shirvany, Yazdan Chalmers University of Technology; Edelvik, Fredrik Fraunhofer-Chalmers Research Center, Chalmers University; Persson, Mikael Chalmers University of Technology

15:00-16:30 SaD14.6
Modular, Bluetooth Enabled, Wireless Electroencephalograph (EEG) Platform 6361-6364
Lovelace, Joseph A Univ. of Cincinnati; Witt, Tyler Univ. of Cincinnati; Beyette, Fred R Univ. of cincinnati

15:00-16:30 SaD14.7
Cortiq – Clinical Software for Electrocorticographic Real-Time Functional Mapping of the Eloquent Cortex 6365-6368
Prueckl, Robert g.tec medical engineering GmbH; Kapeller, Christoph g.tec medical engineering GmbH; Potes, Cristhian Wadsworth Center, New York State Department of Health, Albany, N; Korostenskaja, Milena Florida Hospital for Children, Comprehensive Pediatric Epilepsy; Schalk, Gerwin Wadsworth Center, New York State Department of Health; Lee, Ki H. Florida Hospital for Children, Orlando, FL; Guger, Christoph g.tec medical engineering GmbH

SaD15: 15:00-16:30 Event Hall-Area D (3F)
6.13.3 Human Performance II (Poster Session)

SaE04: 16:30-18:00 1001 (10F)
2.5.3 Electrical Impedance Imaging (Oral Session)
Chair: Woo, Eung Je *(Kyung Hee Univ.)*
Co-Chair: Ma, Weijing *(Univ. of Toronto)*

SaE05: 16:30-18:00 1002 (10F)
2.7.7 Image Processing I (Oral Session)
Chair: Adibi, Sasan *(Royal Melbourne Inst. of Tech. (RMIT))*

16:30-16:45 SaE05.1
Cortical Surface Reconstruction Based on MEG Data and Spherical Harmonics 6449-6452
Lopez, Jose David Universidad de Antioquia; Troebinger, Luzia Wellcome Trust Centre for Neuroimaging, University College Londo; Penny, William D. Wellcome Trust Centre for Neuroimaging, University College Londo; Espinosa, Jairo Jose Universidad Nacional de Colombia; Barnes, Gareth Aston University

16:45-17:00 SaE05.2
Mobile Health (mHealth) Biomedical Imaging Paradigm 6453-6457
Adibi, Sasan Royal Melbourne Institute of Technology (RMIT)

17:00-17:15 SaE05.3
Potential of Hybridization Methods to Reducing the Dimensionality for Multispectral Biological Images ... 6458-6461
Younes, Rafic Lebanese University; Khoder, Jihan Versailles University

17:15-17:30 SaE05.4
Compression of the CT Images Using Classified Energy and Pattern Blocks 6462-6465
Gokbay, Inci Zaim Bahcesehir University; Gezer, Murat Istanbul University; Guz, Umit ISIK University; Gurkan, Hakan ISIK University; Yarman, B. Siddik Istanbul University

17:30-17:45 SaE05.5
Fusion of Multinuclear Magnetic Resonance Images of Knee for the Assessment of Articular Cartilage . 6466-6469
Ahmad Fadzil, Mohamad Hani University Teknologi Petronas; Kumar, Dileep Centre for Intelligent Signal and Imaging Research, University T; Malik, Aamir Saeed University Teknologi PETRONAS; Razak, Ruslan Department of Orthopaedic, Hospital Pantai Ipoh; Kiflie, Azman Radiology Department, Hospital Pantai Ipoh

17:45-18:00 SaE05.6
Visualization of Pulsatile CSF Motion Separated by Membrane-Like Structure Based on Four-Dimensional Phase-Contrast (4D-PC) Velocity Mapping 6470-6473
Yatsushiro, Satoshi School of Information Science and Technology, Tokai University; Hirayama, Akihiro Department of Neurosurgery, School of Medicine, Tokai University; Matsumae, Mitsunori School of Medicine, Tokai University; Kuroda, Kagayaki School of Information Science and Technology, Tokai University

SaE06: 16:30-18:00 1003 (10F)
2.8.4 Image Feature Extraction II (Oral Session)
Chair: Imura, Masataka *(Osaka Univ.)*
Co-Chair: Liao, Hongen *(The Univ. of Tokyo)*

16:30-16:45 SaE06.1
Development of 3-D Ultrasound System for Assessment of Adolescent Idiopathic Scoliosis (AIS): And System Validation 6474-6477
Cheung, Chung Wai James The Hong Kong Polytechnic University; Law, Siu Yin The Hong Kong Polytechnic University; Zheng, Yong-Ping The Hong Kong Polytechnic University

16:45-17:00 SaE06.2
Predicting a Multi-Parametric Probability Map of Active Tumor Extent Using Random Forests 6478-6481
Prior, Fred Washington University School of Medicine; Fouke, Sarah Swedish Medical Center; Benzinger, Tammie Mallinckrodt Institute of Radiology, Washington University Schoo; Boyd, Alicia Mallinckrodt Institute of Radiology, Washington University Schoo; Chicoine, Michael Department of Neurosurgery, Washington University School of Medi; Cholleti, Sharath Center for Comprehensive Informatics, Emory University; Kelsey, Matthew Washington University School of Medicine; Keogh, Bart Department of Radiology, Swedish Medical Center; Kim, Lauren Department of Radiology, Massachusetts General Hospital; Milchenko, Mikhail Mallinckrodt Institute of Radiology, Washington University Schoo; Politte, David Washington University School of Medicine; Tyree, Stephen Department of Computer Science & Engineering, Washington Univers; Weinberger, Kilian Department of Computer Science & Engineering, Washington Univers; Marcus, Daniel Mallinckrodt Institute of Radiology, Washington University Schoo

SaE07: 16:30-18:00 1004 (10F)
3.7.5 Smart Textiles (Oral Session)
Chair: Paradiso, Rita *(Smartex srl)*
Co-Chair: Seeberg, Trine Margrethe *(SINTEF ICT)*

SaE08: 16:30-18:00 1005 (10F)
2.8.6 Medical Image Analysis I (Oral Session)
Chair: Kimura, Yuichi *(Faculty of Biology-Oriented Science and Tech. Kinki Univ.)*
Co-Chair: Razlighi, Qolamreza *(Department of Neurology, Columbia Univ.)*

16:30-16:45 SaE08.1
Multilevel Analysis of Calcium Dynamics in Stimulated Cultures of Cardiomyocytes 6514-6517
Vallmitjana, Alex Automatic Control Department, Universitat Politecnica de Catalun; Barriga, Montserrat Catalan Institute of Cardiovascular Sciences; Hove-Madsen, Leif Cardiovascular Research Center from the Spanish National Researc; Benitez, Raul Universitat Politecnica de Catalunya

16:45-17:00 SaE08.2
On Identification of Sinoatrial Node in Zebrafish Heart Based on Functional Time Series from Optical Mapping 6518-6521
Ding, Weiguang Simon Fraser University; Lin, Eric Simon Fraser University; Ribeiro, Amanda Simon Fraser University; Sarunic, Marinko Simon Fraser University; Tibbits, Glen F. Simon Fraser University; Beg, Mirza Faisal Simon Fraser University

17:00-17:15 SaE08.3
Resting State Inter and Intra Hemispheric Human Brain Functional Connectivity 6522-6525
Razlighi, Qolamreza Department of Neurology, Columbia University,; Steffener, Jason Columbia University; Habeck, Christian Columbia University; Laine, Andrew Columbia University; Stern, Yaakov Columbia University

17:15-17:30 SaE08.4
Graph Theoretical Connectivity Analysis of the Human Brain While Listening to Music with Emotional Attachment: Feasibility Study 6526-6529
Karmonik, Christof The Methodist Hospital Neurological Inst; Brandt, Anthony Shepard School of Music, Rice University; Fung, Steve The Methodist Hospital; Grossman, Robert The Methodist Hospital; Frazier, Todd Center for Performing Arts, Medicine, The Methodist Hospital

17:30-17:45 SaE08.5
Atlas Image Labeling of Subcortical Structures and Vascular Territories in Brain Ct Images 6530-6534
Du, Kaifang The University of Iowa; Zhang, Li Siemens Corporate Technology; Nguyen, Tony Siemens Corporate Technology; Ordy, Vincent Siemens Corporate Technology; Fichte, Heinz Healthcare Sector, Siemens AG; Ditt, Hendrik Siemens AG; Chefd'hotel, Christophe Siemens Corporate Technology

17:45-18:00 SaE08.6
Identification of Brain White Matter Regions for Diagnosis of Alzheimer Using Diffusion Tensor Imaging 6535-6538
B Patil, Ravindra Indian institute of Technology Madras; Ranjan, Piyush Indian institute of Technology Madras; Ramakrishnan, Swaminathan IIT Madras, India

SaE09: 16:30-18:00 1006 (10F)
4.9.2 Physiome and Multiscale Modeling II (Oral Session)
Chair: Dokos, Socrates *(Univ. of New South Wales)*
Co-Chair: Kameneva, Tatiana *(The Univ. of Melbourne; NICTA)*

16:30-16:45 SaE09.1
Cell-Specific Modeling of Retinal Ganglion Cell Electrical Activity 6539-6542
Guo, Tianruo University of New South Wales; Tsai, David University of New South Wales; Morley, John William University of Western Sydney; Suaning, Gregg The University of New South Wales; Lovell, Nigel H. University of New South Wales; Dokos, Socrates University of New South Wales

16:45-17:00 SaE09.2
A Continuum Neuronal Tissue Model Based on a Two-Compartmental Representation of Cells 6543-6546
Al Abed, Amr University of New South Wales; Lovell, Nigel H. University of New South Wales; Suaning, Gregg The University of New South Wales; Dokos, Socrates University of New South Wales

SaE10: 16:30-18:00 1007 (10F)
5.9.1 Heart Rate Variability in Sleep Studies (Invited Session)
Chair: Penzel, Thomas *(Charite Univ. Hospital)*
Co-Chair: Khandoker, Ahsan Habib *(Khalifa Univ. of Science, Tech. and Res.)*

SaE11: 16:30-18:00 1008 (10F)
6.11.2 Neurological Disorders (Oral Session)
Chair: Lan, Ning *(Shanghai Jiao Tong Univ.)*
Co-Chair: Ang, Kai Keng *(Inst. for Infocomm Res.)*

16:30-16:45 SaE11.1
Capacity of Small Groups of Muscles to Accomplish Precision Grasping Tasks 6583-6586
Towles, Joseph University of Wisconsin-Madison; Valero-Cuevas, Francisco University of Southern California; Hentz, Vincent Stanford University

16:45-17:00 SaE11.2
A Novel Experimental Method to Evaluate Motor Task Control in Parkinson's Patients 6587-6590
He, Xin Shanghai Jiao Tong University; Hao, Manzhao School of Biomedical Engineering, Shanghai Jiao Tong University; Wei, Ming Department of Neurology & Institute of Neurology, Ruijin Hospita; Xiao, Qin Department of Neurology & Institute of Neurology, Ruijin Hospita; Lan, Ning Shanghai Jiao Tong University

17:00-17:15 SaE11.3
A Portable System for Quantitative Assessment of Parkinsonian Rigidity 6591-6594
Dai, Houde Technical University of Munich; Jan Hinnerk, Mehrkens Ludwig-Maximilian University; Bernward, Otten Institute of Micro Technology and Medical Device Technology; D'Angelo, Lorenzo Tancredi Technische Universitaet Muenchen

17:15-17:30 SaE11.4
The Role of Delta-Modulated High Frequency Oscillations in Seizure State Classification 6595-6598
Guirgis, Mirna University of Toronto; Chinvarun, Yotin Director of Comprehensive Epilepsy Program and Neurology Unit, P; Carlen, Peter L. University of Toronto; Bardakjian, Berj Luther University of Toronto

17:30-17:45 SaE11.5
Restored Brain Perfusion after Non-Invasive Stimulation of the Facial Nerve in a Canine Stroke Model . 6599-6602
García, Andrea Univ. Autónoma Metropolitana-Iztapalapa; Sacristan, Emilio Univ. Autónoma Metropolitana; Azpiroz-leehan, Joaquin Univ. Autonoma Metropolitana; Borsody, Mark Lake Biosciences, LLC

17:45-18:00 SaE11.6
A Clinical Study of Motor Imagery BCI Performance in Stroke by Including Calibration Data from Passive Movement 6603-6606
Ang, Kai Keng Institute for Infocomm Research; Guan, Cuntai Institute for Infocomm Research; Chua, Karen Sui Geok Tan Tock Seng Hospital Rehabilitation Centre; Phua, Koksoon Institute for Infocomm Research; Wang, Chuanchu Institute for Infocomm Research; Chin, Zheng Yang Institute for Infocomm Research; Zhou, Longjiang Institute for Infocomm Research, Agency for Science, Technology; Tang, Ka Yin, Christina Institute for Infocomm Research, Agency for Science, Technology; Ephraim, Gopal Joseph Tan Tock Seng Hospital; Kuah, Christopher Wee Keong Tan Tock Seng Hospital Rehabilitation Centre

SaE12: 16:30-18:00 1009 (10F)
6.13.1 Human Performance: Cognitive State (Oral Session)
Chair: Astolfi, Laura *(Univ. of Rome Sapienza)*
Co-Chair: Lu, Bao-Liang *(Shanghai Jiao Tong Univ.)*

16:30-16:45 SaE12.1
Mental Fatigue and Working Memory Load Estimation: Interaction and Implications for EEG-Based Passive BCI 6607-6610
Roy, Raphaëlle N. CEA-LETI; Bonnet, Stéphane CEA Léti MINATEC; Charbonnier, Sylvie Gipsa-Lab; Campagne, Aurélie Laboratoire de Psychologie et Neurocognition, Grenoble

16:45-17:00 SaE12.2
Probing ECG-Based Mental State Monitoring on Short Time Segments 6611-6614
Roy, Raphaëlle N. CEA-LETI; Charbonnier, Sylvie Gipsa-Lab; Campagne, Aurélie Laboratoire de Psychologie et Neurocognition, Grenoble

SaE13: 16:30-18:00 1010 (10F)
6.6.4 EMG Models and Processing (Oral Session)
Chair: Yoshida, Masaki *(Osaka Electro-Communication Univ.)*

SaE14: 16:30-18:00 804 (8F)
7.2.2 Micro-, Nano-fabrication in Tissue Engineering (Oral Session)
Chair: Fukuda, Junji *(Yokohama National Univ.)*

16:30-16:45 SaE14.1
Fabrication of Perfusable Vasculatures Using Micromolding and Electrochemical Cell Transfer 6655-6658
Osaki, Tatsuya University of Tsukuba; Fukuda, Junji Yokohama National University

16:45-17:00 SaE14.2
Fabrication of Polymeric Microfluidic Devices with Tunable Wetting Behavior for Biomedical Applications 6659-6662
Steidle, Nicole Elisabeth Karlsruhe Institute of Technology; Schneider, Marc Karlsruhe Institute of Technology; Ahrens, Ralf Karlsruhe Institute of Technology; Worgull, Matthias Karlsruhe Institute of Technology; Guber, Andreas E. Karlsruhe Institute of Technology

17:00-17:15 SaE14.3
Micropatterning C2C12 Myotubes for Orderly Recording of Intracellular Calcium Transients 6663-6666
Takayama, Yuzo National Institute of Advanced Industrial Science and Technology; Wagatsuma, Akira University of Tokyo; Hoshino, Takayuki University of Tokyo; Mabuchi, Kunihiko The University of Tokyo

17:15-17:30 SaE14.4
Preparation and Evaluation of Collagen I/ Gellan Gum/β -TCP Microspheres As Bone Graft Substitute Materials 6667-6670
Ku, Kai-Chi I-Shou University; Lee, Ming Wei Chung Shan Medical University; Kuo, Shyh Ming I-Shou University; Yao, Chun-Hsu China Medical University; Chang, Shwu Jen I-Shou University

17:30-17:45 SaE14.5
Gelatin Nanofiber-Reinforced Alginate Gel Scaffolds for Corneal Tissue Engineering 6671-6674
Tonsomboon, Khaow University of Cambridge; Oyen, Michelle Lynn University of Cambridge, Department of Engineering; Strange, Daniel University of Cambridge

17:45-18:00 SaE14.6
Bidirectional Synaptic Connection between Primary and Stem Cell-Derived Neurons in Co-Culture Device 6675-6678
Shimba, Kenta University of Tokyo; Saito, Atsushi University of Tokyo; Takeuchi, Akimasa The University of Tokyo; Takayama, Yuzo National Institute of Advanced Industrial Science and Technology; Kotani, Kiyoshi University of Tokyo; Jimbo, Yasuhiko University of Tokyo

SaE15: 16:30-18:00 1102 (11F)
8.7.1 Biomechanics for Medical Robotics (Invited Session)
Chair: Naemura, Kiyoshi *(Tokyo Univ. of Tech.)*
Co-Chair: Chinzei, Kiyoyuki *(National Inst. of Advanced Industrial Science and Technology)*

16:30-16:45 SaE15.1
Upper-Limb Tremor Suppression with a 7DOF Exoskeleton Power-Assist Robot 6679-6682
Kiguchi, Kazuo Kyushu University; Hayashi, Yoshiaki Saga University

16:45-17:00 SaE15.2
Coaxial Needle Insertion Assistant for Epidural Puncture - Effect of Lateral Force on Needle 6683-6686
Koseki, Yoshihiko AIST; Kawai, Masato Graduate School of TOYO Univ.; De Lorenzo, Danilo Politecnico di Milano; Yamauchi, Yasushi Toyo Univ.; Chinzei, Kiyoyuki Natl. Inst. of Advanced Industrial Science and Tech.

17:00-17:15 SaE15.3
An Implantable Neural Activity Monitor with Nonlinear Gain-Controlled Amplifier 6687-6690
Kyoso, Masaki Tokyo City University; Takeda, Takahiro Tokyo City University

17:15-17:30 SaE15.4
Histological Observation for Needle-Tissue Interactions 6691-6694
Nakagawa, Yoshiyuki Togo Medikit Co., Ltd.; koseki, yoshihiko AIST

SaE16: 16:30-18:00 Small Hall (5F)
9.3.1 Ambulatory Technologies I (Oral Session)
Chair: Holmar, Jana *(Tallinn Univ. of Tech.)*
Co-Chair: Nebuya, Satoru *(Kitasato Univ.)*

SaE21: 16:30-18:00 10-2 (10F)
10.5.3 Smart Homes and Ambient Assisted Living II (Oral Session)
Chair: Park, Kwang S. *(Seoul National Univ.)*
Co-Chair: Nambu, Masayuki *(Osaka Electro-Communication Univ.)*

16:30-16:45 SaE21.1
A Hybrid Localization Technique for Patient Tracking 6728-6731
Rodionov, Denis Lancaster University; Kolev, George Center of Coordination of International Scientific Education Pro; Bushminkin, Kirill Lancaster University

16:45-17:00 SaE21.2
Biosignal-Based Relaxation Evaluation of Head-Care Robot 6732-6735
Ando, Takeshi Panasonic Corporation; Takeda, Maki Osaka University; Maruyama, Tomomi Osaka University; Susuki, Yuto Osaka University; Hirose, Toshinori Panasonic Corporation; Fujioka, Soichiro Panasonic Corporation; Mizuno, Osamu Panasonic Corporation; Yamada, Kenji Osaka university; Ohno, Yuko Osaka University Graduate School of Medicine; Honda, Yukio Osaka Institute of Technology

17:00-17:15 SaE21.3
Improvement of Acoustic Fall Detection Using Kinect Depth Sensing 6736-6739
Li, Yun University of Missouri; Banerjee, Tanvi University of Missouri; Popescu, Mihail University of Missouri; Skubic, Marjorie University of Missouri

17:15-17:30 SaE21.4
Signal Phase Estimation for Measurement of Respiration Waveform Using a Microwave Doppler Sensor 6740-6743
Noguchi, Hiroshi The University of Tokyo; Kubo, Hajime The Univ. of Tokyo; Mori, Taketoshi The University of Tokyo; Sato, Tomomasa the Univ. of Tokyo; Sanada, Hiromi The University of Tokyo

17:30-17:45 SaE21.5
Subsequence Dynamic Time Warping As a Method for Robust Step Segmentation Using Gyroscope Signals of Daily Life Activities 6744-6747
Barth, Jens ASTRUM IT GmbH; Oberndorfer, Caecilia Univ. of Erlangen-Nuremberg; Kugler, Patrick Univ. of Erlangen-Nuremberg; Schuldhaus, Dominik Univ. of Erlangen-Nuremberg; Winkler, Juergen Univ. Hospital Erlangen; Klucken, Jochen Univ. Hospital Erlangen; Eskofier, Bjoern M Univ. of Erlangen-Nuremberg

17:45-18:00 SaE21.6
A Mobile-Health Application to Detect Wandering Patterns of Elderly People in Home Environment 6748-6751
Vuong, Nhu Khue NTU; Goh, Shen Guan Alvin Nanyang Technological University; Chan, Syin Nanyang Technological University; Chiew Tong, Lau Nanyang Technological University

Sunday, 7 July 2013

SuA01: 08:00-09:30 — Conference Hall (12F)
1.4.4 Biomedical Signal Classification I (Oral Session)
Chair: Momose, Keiko *(Waseda Univ.)*

SuA02: 08:00-09:30 — 1202 (12F)
1.9.1 Pattern Recognition Methods for Data Mining in Biosignals (Oral Session)

08:45-09:00 SuA02.4

Prediction of Chronic Obstructive Pulmonary Disease (COPD) Exacerbation Using Physiological Time Series Patterns 6784-6787

Xie, Yang The University of New South Wales; Redmond, Stephen James University of New South Wales; Mohktar, Mas Sahidayana Faculty of Engineering; Shany, Tal University of New South Wales; Basilakis, Jim University of Western Sydney; Hession, Michael Blacktown-Mt Druitt Hospitals/University of Sydney; Lovell, Nigel H. University of New South Wales

09:00-09:15 SuA02.5

An Effective Wavelet Strategy for the Trend Prediction of Physiological Time Series with Application to Phealth Systems 6788-6791

Rocha, Teresa Inst Superior de Eng de Coimbra; Paredes, Simão Instituto Superior de Engenharia de Coimbra; de Carvalho, Paulo Univ. of Coimbra - NIF: 501617582; Henriques, Jorge Univ. of Coimbra - NIF 501617582

SuA03: 08:00-09:30 1203 (12F)

1.10.1 Blind Source Separation and Independent Component Analysis I (Oral Session)

Chair: Naik, Ganesh R *(Univ. of Tech. Sydney)*

08:00-08:15 SuA03.1

Multiple Time-Lag Canonical Correlation Analysis for Removing Muscular Artifacts in EEG 6792-6795

Shen, Kaiquan NUS; Yu, Ke NUS; Bandla, Aishwarya National University of Singapore; Sun, Yu National University of Singapore; Thakor, Nitish Johns Hopkins University; Li, Xiaoping National University of Singapore

08:15-08:30 SuA03.2

Smoothness Constraint for Cortical Dipolar Sources Estimation 6796-6799

Korats, Gundars CRAN UMR 7039, Université de Lorraine; Ranta, Radu CRAN UMR 7039, Université de Lorraine/ CNRS; LE CAM, Steven Université de Lorraine; Louis-Dorr, Valerie Nancy-University

08:30-08:45 SuA03.3

Method for Removing Motion Artifacts from Fnirs Data Using ICA and an Acceleration Sensor 6800-6803

Hiroyasu, Tomoyuki Doshisha Univ.; Nakamura, Yuka Doshisha Univ.; Yokouchi, Hisatake Doshisha Univ.

08:45-09:00 SuA03.4

Comparison of the AMICA and the InfoMax Algorithm for the Reduction of Electromyogenic Artifacts in EEG Data 6804-6807

Leutheuser, Heike Digital Sports Group, Pattern Recognition Lab, Department of Com; Gabsteiger, Florian Digital Sports Group, Pattern Recognition Lab, Department of Com; Hebenstreit, Felix Digital Sports Group, Pattern Recognition Lab, Department of Com; Reis, Pedro Institute of Sport Science and Sport, Friedrich-Alexander-Univer; Lochmann, Matthias Institute of Sport Science and Sport, Friedrich-Alexander-Univer; Eskofier, Bjoern M University of Erlangen-Nuremberg

09:00-09:15 SuA03.5

An Efficient VLSI Implementation of On-Line Recursive ICA Processor for Real-Time Multi-Channel EEG Signal Separation 6808-6811

Shih, Wei-Yeh National Chiao Tung University; Liao, Jui-Chieh National Chiao Tung University; Huang, Kuan Ju National Chiao Tung University; Fang, Wai-Chi National Chiao Tung University; Cauwenberghs, Gert University of California San Diego; Jung, Tzyy-Ping University of California San Diego

09:15-09:30 SuA03.6

Single Channel Blind Source Separation Based Local Mean Decomposition for Biomedical Applications 6812-6815

Naik, Ganesh R University of Technology Sydney; Guo, Yina Taiyuan University of Science and Technology; Nguyen, Hung T. University of Technology, Sydney

SuA07: 08:00-09:30 1004 (10F)
3.9.1 Micro and Nano Sensors I (Oral Session)
Chair: Haga, Yoichi *(Tohoku Univ.)*
Co-Chair: Gu, Li-Qun *(Univ. of Missouri)*

SuA09: 08:00-09:30 1006 (10F)
4.9.4 Modeling Cardiac Electrical Activity (Oral Session)
Chair: Matsuda, Tetsuya *(Kyoto Univ.)*
Co-Chair: Doessel, Olaf *(Karlsruhe Inst. of Tech. (KIT))*

SuA10: 08:00-09:30 1007 (10F)
5.10.1 Respiratory Monitoring I (Oral Session)
Chair: Jovanov, Emil *(Univ. of Alabama in Huntsville)*

SuA11: 08:00-09:30 1008 (10F)
8.8.1 Neural Control of Movement and Robotics Applications (Oral Session)
Chair: Harley, Linda Rosemary *(Georgia Tech. Res. Inst.)*

SuA12: 08:00-09:30 1009 (10F)
6.13.2 Human Performance I (Oral Session)
Chair: Yokosawa, Koichi *(Hokkaido Univ.)*

SuA13: 08:00-09:30 1010 (10F)
8.9.1 What Makes a Movement Human? (Invited Session)
Chair: Pons, Jose Luis *(Inst. de Automática Industrial)*
Co-Chair: Teramoto, Kenbu *(Saga Univ.)*

SuA14: 08:00-09:30 804 (8F)
7.1.2 Functional Biomaterials (Oral Session)
Chair: Adachi, Taiji *(Kyoto Univ.)*
Co-Chair: Green, Rylie A. *(Univ. of New South Wales)*

SuA15: 08:00-09:30 1102 (11F)
10.4.1 HeartCycle Next Generation of Telehealth Solutions (Invited Session)
Chair: Reiter, Harald *(Philips)*
Co-Chair: Sola, Josep *(CSEM- Centre Suisse d'Electronique et Microtechnique)*

09:00-09:15 SuA15.5
HeartCycle: From Insights to Clinically Evaluated ICT Solutions for Telehealth 6992-6995
Reiter, Harald Philips; Tesanovic, Aleksandra Philips Research Europe; Martínez-Romero, Álvaro Instituto ITACA

09:15-09:30 SuA15.6
HeartCycle: Facilitating the Deployment of Advanced Care Processes 6996-6999
Meneu, Teresa Universidad Politécnica de Valencia; Traver, Vicente Institute ITACA; Guillen, Sergio Institute Itaca Valencia; Valdivieso, Bernardo Hospital Universitario La Fe; Benedí, Jose Miguel ITI - Universidad Politecnica de Valencia; Fernandez-Llatas, Carlos Universidad Politecnica de Valencia

SuA16: 08:00-09:30 Small Hall (5F)
9.3.6 Ballistocardiography and Seismocardiography: Towards an Assessment out of the Laboratory Setting. Methods, Algorithms, Interpretation and Clinical Value I (Invited Session)
Chair: Di Rienzo, Marco *(Fondazione Don Carlo Gnocchi)*
Co-Chair: Viik, Jari *(Tampere Univ. of Tech.)*

08:00-08:15 SuA16.1
Analysis of Endocardial Acceleration During Intraoperative Optimization of Cardiac Resynchronization Therapy 7000-7003
Hernández, Alfredo I Univ. of Rennes 1 and INSERM U642; Ziglio, Filippo Sorin CRM SAS, Clamart, France.; Amblard, Amel Sorin CRM SAS, Clamart, France.; SENHADJI, Lotfi Université de Rennes 1 and INSERM; Leclercq, Christophe CHU Rennes, INSERM U642, LTSI, University of Rennes 1

08:15-08:30 SuA16.2
Seismocardiography: Past, Present and Future 7004-7007
Zanetti, John M. Acceleron Medical Systems; Tavakolian, Kouhyar University of British Columbia

08:30-08:45 SuA16.3
Local Ballistocardiographic Spectrum Studies from Signals Obtained from Limbs and Carotid Artery with an EMFi Sensor Induced with a Tilt Table 7008-7011
Alametsä, Jarmo Tampere University of Technology; Palomäki, Ari Kanta-Häme Central Hospital; Viik, Jari Tampere University of Technology

08:45-09:00 SuA16.4
3D-Ballistocardiography in Microgravity: Comparison with Ground Based Recordings 7012-7016
Migeotte, Pierre-François Royal Military Academy; Delière, Quentin Royal Military Academy; Tank, Jens Hannover Medical School; Funtova, Irina I. IMBP Moscow, Russia; Baevsky, Roman M. IMBP Moscow, Russia; Neyt, Xavier Royal Military Academy; Pattyn, Nathalie Royal Military Academy, Brussels, Belgium

09:00-09:15 SuA16.5
Beat-To-Beat Estimation of LVET and QS2 Indices of Cardiac Mechanics from Wearable Seismocardiography in Ambulant Subjects 7017-7020
Di Rienzo, Marco Fondazione Don Carlo Gnocchi; Vaini, Emanuele Polo Tecnologico, Fondazione Don Carlo Gnocchi; Castiglioni, Paolo Fondazione Don Carlo Gnocchi ONLUS; Meriggi, Paolo Fondazione Don Gnocchi; Rizzo, Francesco Fondazione Don C. Gnocchi ONLUS

09:15-09:30 SuA16.6
Comparative Analysis of Two Systems for Unobtrusive Heart Signal Acquisition and Characterization . 7021-7024
Postolache, Octavian Instituto de Telecomunicacoes; Girão, Pedro Instituto SuperiorTécnico, Instituto de Telecomunicações; Postolache, Gabriela Universidade Atlântica

SuA17: 08:00-09:30 801+802 (8F)
10.5.1 Supporting Elderly People Living Independently Using Activities of Daily Living (Invited Session)
Chair: Karunanithi, Mohanraj *(CSIRO ICT Centre)*
Co-Chair: Jimison, Holly *(Oregon Health & Science Univ.)*

08:00-08:15 SuA17.1
A Socialization Intervention in Remote Health Coaching for Older Adults in the Home 7025-7028
Jimison, Holly Oregon Health & Science University; Marcoe, Jennifer Oregon Health & Science University; Klein, Krystal Oregon Health & Science University

SuB01: 11:00-12:30 Conference Hall (12F)
1.4.6 Biomedical Signal Classification for BCI Applications (Oral Session)
Chair: Samek, Wojciech *(Berlin Inst. of Tech.)*

SuB02: 11:00-12:30 1202 (12F)
1.9.2 Data Mining in Biosignals I (Oral Session)
Chair: Fotiadis, Dimitrios I. *(Univ. of Ioannina)*

11:00-11:15 SuB02.1
Tracking Progression of Patient State of Health in Critical Care Using Inferred Shared Dynamics in Physiological Time Series 7072-7075
Lehman, Li-wei Massachusetts Institute of Technology; Nemati, Shamim Harvard School of Engineering and Applied Sciences; Adams, Ryan Harvard School of Engineering and Applied Sciences; Moody, George Masssachusetts Institute of Technology; Malhotra, Atul Brigham and Women's Hospital and Harvard Medical School; Mark, Roger Massachusetts Institute of Technology

11:15-11:30 SuB02.2
Novel Heuristic Search for Ventricular Arrhythmia Detection Using Normalized Cut Clustering 7076-7079
Castro-Ospina, Andrés Eduardo Universidad Nacional de Colombia; Castro Hoyos, Cristian Universidad Nacional de Colombia, Sede Manizales; Peluffo-Ordóñez, Diego Hernán National University, Colombia - Manizales; Castellanos-Dominguez, Germán Universidad Nacional de Colombia

11:30-11:45 SuB02.3
Discovering Hidden Relationships in Physiological Signals for Prediction of Periventricular Leukomalacia 7080-7083
Jalali, Ali Villanova Univ.; Licht, Daniel J. Children's Hospital of Philadelphia; Nataraj, C. Villanova Univ.

11:45-12:00 SuB02.4
Clinical Validation of the CHRONIOUS Wearable System in Patients with Chronic Disease 7084-7087
Bellos, Christos FORTH BRI Foundation for Research and Technology -Hellas,Biomedi; Papadopoulos, Athanasios Foundation for Research and Technology; Rosso, Roberto Tesan S.p.A.; Fotiadis, Dimitrios I. University of Ioannina

12:00-12:15 SuB02.5
Detection of Sleep Apnea Events Via Tracking Nonlinear Dynamic Cardio-Respiratory Coupling from Electrocardiogram Signals 7088-7091
Karandikar, Kunal Oklahoma State University; Le, Trung Oklahoma State University; Sa-ngasoongsong, Akkarapol Oklahoma State University; Wongdhamma, Woranat Oklahoma State University; Bukkapatnam, Satish Oklahoma State University

SuB03: 11:00-12:30 1203(12F)
1.2.9 Advanced State Space Methods for Analyzing Neurophysiological and Clinical Data (Invited Session)
Chair: Chen, Zhe *(Harvard Medical School/MIT)*
Co-Chair: Shinomoto, Shigeru *(Kyoto Univ.)*

11:00-11:15 SuB03.1
A Variational Nonparametric Bayesian Approach for Inferring Rat Hippocampal Population Codes 7092-7095
Chen, Zhe Harvard Medical School/MIT; Wilson, Matthew MIT

11:15-11:30 SuB03.2
Estimating Inputs and an Internal Neuronal Parameter from a Single Spike Train 7096-7099
Shinomoto, Shigeru Kyoto University; Kim, Hideaki Kyoto University

11:30-11:45 SuB03.3
A Stabilized Dual Kalman Filter for Adaptive Tracking of Brain-Computer Interface Decoding Parameters 7100-7103
Zhang, Yin Carnegie Mellon University; Chase, Steven M. Carnegie Mellon University

11:45-12:00 SuB03.4
Learning Outcome-Discriminative Dynamics in Multivariate Physiological Cohort Time Series 7104-7107
Nemati, Shamim Harvard School of Engineering and Applied Sciences; Lehman, Li-wei Massachusetts Institute of Technology; Adams, Ryan Harvard School of Engineering and Applied Sciences

11:15-11:30 SuB05.2
Multimedia Data Mining for Automatic Diabetic Retinopathy Screening 7144-7147
Quellec, Gwenole Inserm; Lamard, Mathieu Université de Bretagne Occidentale; Cochener, Béatrice CHU Morvan; Decenciere, Etienne MINES ParisTech; LAY, Bruno ADCIS; Chabouis, Agnes Assistance Publique-Hopitaux de Paris, Paris, france; Roux, Christian TELECOM Bretagne; Cazuguel, Guy Institut Mines-Telecom/Telecom Bretagne

11:30-11:45 SuB05.3
Integrating Research, Clinical Practice and Translation: The Singapore Experience 7148-7151
*Liu, Jiang Institute for Infocomm Research, A STAR; Wong, Damon Institute for Infocomm Research; Zhang, Zhuo A*STAR; Lee, Beng Hai Institute for Infocomm Research; Gao, Xinting Institute for Infocomm Research; Yin, Fengshou Institute for Infocomm Research; Zhang, Jielin Nanyang Technological University; Htoo, Min Thet Institute for Infocomm Research*

11:45-12:00 SuB05.4
Towards a Multi-Site International Public Dataset for the Validation of Retinal Image Analysis Software ... 7152-7155
Trucco, Emanuele University of Dundee; Ruggeri, Alfredo University of Padua

12:00-12:30 SuB05.5
Open Discussion on the Formation of an International Interest Group ..... *
Trucco, Emanuele University of Dundee

SuB09: 11:00-12:30 1006 (10F)
4.9.5 Biomechanics Modeling I (Oral Session)
Chair: Palladino, Joseph *(Trinity Coll.)*

11:00-11:15 SuB09.1
Accuracy Improvement in Cranio-Maxillofacial Soft Tissue Simulation Using a Muscle Embedded Meshing Approach 7156-7159
Shahim, Kamal Univ. of Bern; Goksel, Orcun ETH Zurich; Juergens, Philipp Dept. of Oral & Maxillofacial Surgery, Univ. Hospital Basel; Reyes, Mauricio Institute for Surgical Technology and Biomechanics, Univ. Bern

11:15-11:30 SuB09.2
Phase Velocity and Attenuation Predictions of Waves in Cancellous Bone Using an Iterative Effective Medium Approximation 7160-7163
Potsika, Vassiliki University of Ioannina; Protopappas, Vasilios C. University of Patras; Vavva, Maria University of Ioannina; Polyzos, Demosthenes University of Patras; Fotiadis, Dimitrios I. University of Ioannina

11:30-11:45 SuB09.3
A Rectangular Tetrahedral Adaptive Mesh Based Corotated Finite Element Model for Interactive Soft Tissue Simulation 7164-7167
Tagawa, Kazuyoshi Ritsumeikan University; Yamada, Takahiro Ritsumeikan University; Tanaka, Hiromi Ritsumeikan University

11:45-12:00 SuB09.4
Modelling the Generation of the Cochlear Microphonic 7168-7171
Ayat, Mohammad Victoria University of Wellington, New Zealand; Teal, Paul School of Engineering and Computer Science VUW

12:00-12:15 SuB09.5
Estimating Muscle Activation Patterns Using a Surrogate Model of Facial Biomechanics 7172-7175
Wu, Tim University of Auckland; Martens, Harald Norwegian Institute of Food, Fisheries and Aquaculture Research; Hunter, Peter University of Auckland; Mithraratne, Kumar University of Auckland

12:15-12:30 SuB09.6
Cardiac Muscle Strip Model Parameters and Muscle Elastance 7176-7179
Palladino, Joseph Trinity College

SuB11: 11:00-12:30 1008 (10F)
11.3.1 Cutting Edge in Information Technology for Contributions to Society (Invited Session)
Chair: Takada, Hiroki *(Graduate School of Engineering, Univ. of Fukui)*
Co-Chair: Yokoyama, Kiyoko *(Nagoya City Univ.)*

11:00-11:15 SuB11.1
A New Technique of Bone Thickness Measurement for Pedicle Screw Insertion Safety Purpose 7180-7183
Ali Hassan, Muhamad Khairul University of Fukui; Nagamune, Kouki Univ of Fukui, Japan

11:15-11:30 SuB11.2
Study on Improvement of Signal Detectability Considering Noise Characteristics in Medical X-Ray Images 7184-7187
Sugiura, Akihiro Gifu University of Medical Science; Yokoyama, Kiyoko Nagoya City University; Takada, Hiroki Graduate School of Engineering, University of Fukui

11:30-11:45 SuB11.3
Multilingual Medical Dialog System Developed As Smartphone/Tablet Application 7188-7191
Hasegawa, Satoshi Nagoya Bunri University; Hasegawa, Akira Nagoya Bunri University; Takasu, Kento Nagoya Bunri University; Kojima, Takehito Nagoya University; Miyao, Masaru Nagoya University; Sugita, Namiho SK WORD; Sakai, Yuki SK WORD; Kato, Keisuke SK WORD

11:45-12:00 SuB11.4
Usage of Stereoscopic Visualization in the Learning Contents of Rotational Motion 7192-7195
Matsuura, Shu Tokyo Gakugei University

12:00-12:15 SuB11.5
Accommodation Training in Foreign Workers 7196-7199
Takada, Masumi Aichi Medical University School of Medicine; Miyao, Masaru Nagoya University; Matsuura, Yasuyuki University of Fukui; Takada, Hiroki Graduate School of Engineering, University of Fukui

12:15-12:30 SuB11.6
Comparison of Form in Potential Functions While Maintaining Upright Posture During Exposure to Stereoscopic Video Clips 7200-7203
Kutsuna, Kenichiro Shizuoka Univ.; Matsuura, Yasuyuki Univ. of Fukui; Fujikake, Kazuhiro Nagoya Univ.; Miyao, Masaru Nagoya Univ.; Takada, Hiroki Graduate School of Engineering, Univ. of Fukui

SuB12: 11:00-12:30 1009 (10F)
3.6.3 Wearable Sensors and Body Area Sensor Networks for Activity Monitoring: Advances in Understanding of Human Activity (Invited Session)
Chair: Sazonov, Edward *(Univ. of Alabama)*
Co-Chair: Bonato, Paolo *(Harvard Medical School)*

11:00-11:15 SuB12.1
Clinical Applications of Mobile Health Technology ..... *
Bonato, Paolo Harvard Medical School

11:15-11:30 SuB12.2
A Mobile System for Assessment of Physiological Response to Posture Transitions 7205-7208
Jovanov, Emil University of Alabama in Huntsville; Milosevic, Mladen University of Alabama in Huntsville; Milenkovic, Aleksandar University of Alabama in Huntsville

11:30-11:45 SuB12.3
Development of SmartStep: An Insole-Based Physical Activity Monitor 7209-7212
Sazonov, Edward University of Alabama; Hegde, Nagaraj The University of Alabama; Tang, Wenlong The University of Alabama

11:45-12:00 SuB12.4
Measurement of Knee Flexion/Extension Angle Using Wearable UWB Radios 7213-7216
Qi, Yongbin Nanyang Technological University; Soh, Cheong Boon Nanyang Technological University; Gunawan, Erry Nanyang Technological University; Low, Kay soon Nanyang Technological University; Maskooki, Arash Nanyang Technological University

12:00-12:15 SuB12.5
Quantitative Analysis of the Fall-Risk Assessment Test with Wearable Inertia Sensors 7217-7220
Tamura, Toshiyo Osaka Electro-Communication Univ.; Zakaria, Nor Aini Nara Institute of Science and Technology; Kuwae, Yutaka Fujimoto Hayasuzu Hospital; Sekine, Masaki Osaka Electro-Communication Univ.; Minato, Kotaro Nara Institute of Science and Technology; Yoshida, Masaki Osaka Electro-Communication Univ

12:15-12:30 SuB12.6
3-D Kinematics and Neuromuscular Signals' Integration for Post ACL Reconstruction Recovery Assessment 7221-7225
Senanayake, S. Mudiyanselage Namal Arosha Univ. Brunei Darussalam; Malik, Owais Ahmed Univ. Brueni Darussalam; Petra, Pg Dr M Iskandar Univ. of Brunei; Zaheer, Danish Sports Medicine & Research Centre

SuB13: 11:00-12:45 1010 (10F)
8.9.2 Modeling and Simulation in Biomechanics (Oral Session)
Chair: Wessel, Carolina *(Univ. of Oxford)*

11:00-11:15 SuB13.1
An EKF-Based Approach for Estimating Leg Stiffness During Walking 7226-7228
Ochoa Diaz, Claudia Patricia University of Brasília; Marra Menegaz, Henrique University of Brasilia; Padilha Lanari Bó, Antônio Universidade de Brasília; Araújo Borges, Geovany Universidade de Brasília

11:15-11:30 SuB13.2
The Effect of Vary Varus Malalignment on Knee Adduction Moment During Walking of Human Normal Gait 7229-7232
Maneekittichot, Thanakrit King Mongkut's University of Technology Thonburi; Chanthasopeephan, Teeranoot King Mongkut's University of Technology Thonburi

11:30-11:45 SuB13.3
Multijoint Upper Limb Torque Estimation from sEMG Measurements 7233-7236
R. Bueno, Diana University of Zaragoza; Montano Gella, Luis University of Zaragoza

11:45-12:00 SuB13.4
Sport Helmet Design and Virtual Impact Test by Image-Based Finite Element Modeling 7237-7240
Luo, Yunhua University of Manitoba; Liang, ZhaoYang University of Manitoba

12:00-12:15 SuB13.5
Local Dynamic Stability of Lower Extremity Joints in Lower Limb Amputees During Slope Walking 7241-7244
Chen, Jin-Ling Shanghai Jiaotong University; Gu, Dong-Yun Shanghai Ninth People's Hospital Affiliated to Shanghai Jiaotong U

12:15-12:30 SuB13.6
Motion Recognition from Contact Force Measurement 7245-7248
Yabuki, Takumi Tokyo University of Agriculture and Technology; Venture, Gentiane Tokyo University of Agriculture and Technology

12:30-12:45 SuB13.7
Realistic Biomechanical Model of a Cancerous Breast for the Registration of Prone to Supine Deformations 7249-7252
Wessel, Carolina University of Oxford; Schnabel, Julia University of Oxford; Brady, Michael University of Oxford

SuB15: 11:00-12:30 1102 (11F)
10.4.2 mHealth I (Oral Session)
Chair: Panayides, Andreas *(Univ. of Cyprus)*
Co-Chair: Matsumura, Yasushi *(Osaka Univ.)*

11:00-11:15 SuB15.1
M-Health Medical Video Communication Systems: An Overview of Design Approaches and Recent Advances 7253-7256
Panayides, Andreas University of Cyprus; Pattichis, Marios University of New Mexico,; Constantinides, Anthony G. Imperial College; Pattichis, Constantinos University of Cyprus

SuB16: 11:00-12:30 Small Hall (5F)
9.3.7 Ballistocardiography and Seismocardiography: Towards an Assessment out of the Laboratory Setting. Methods, Algorithms, Interpretation and Clinical Value II (Invited Session)
Chair: Migeotte, Pierre-François *(Royal Military Acad.)*
Co-Chair: Inan, Omer *(Stanford Univ.)*

12:00-12:15 SuB16.5

Timing and Source of the Maximum of the Transthoracic Impedance Cardiogram (dZ/dt) in Relation to the H-I-J Complex of the Longitudinal Ballistocardiogram under Gravity and Microgravity Conditions ... 7294-7297

Luchitskaya, Elena IBMP Moscow; Delière, Quentin Royal Military Academy; Diedrich, André Vanderbilt University, Nashville, TN; Pattyn, Nathalie Royal Military Academy, Brussels, Belgium; Almorad, Alexandre Université Libre de Bruxelles, Erasme Hospital, Cardiology; Beck, Luis PUCRS; Gauger, Peter German Space Agency, DLR, Cologne; Limper, Ulrich German Space Agency, DLR, Cologne; Funtova, Irina I. IMBP Moscow, Russia; Baevsky, Roman M. IMBP Moscow, Russia; Migeotte, Pierre-François Royal Military Academy; Tank, Jens Hannover Medical School

SuB17: 11:00-12:30 801+802 (8F)

10.5.2 Smart Homes and Ambient Assisted Living I (Oral Session)

Chair: Nakajima, Kazuki *(Univ. of Toyama)*

Co-Chair: Finkelstein, Joseph *(Johns Hopkins Univ. School of Medicine)*

11:00-11:15 SuB17.1

The Sweet-Home Project: Audio Processing and Decision Making in Smart Home to Improve Well-Being and Reliance 7298-7301

Vacher, Michel CNRS; Chahuara, Pedro LIG UMR CNRS/UJF/G-INP 5217; Lecouteux, Benjamin LIG; Istrate, Dan ESIGETEL; Portet, Francois Grenoble Institute of Technology; Joubert, Thierry THEORIS; Sehili, Mohamed El Amine ESIGETEL; Meillon, Brigitte LIG; Bonnefond, Nicolas Université Joseph Fourier Grenoble 1 - LIG; Fabre, Sébastien Technosens; Roux, Camille Floralis; Caffiau, Sybille Université Joseph Fourier Grenoble 1 - LIG

11:15-11:30 SuB17.2

Development of an Image Processing Support System Based on Fluorescent Dye to Prevent Elderly People with Dementia from Wandering 7302-7305

Nishigaki, Yutaka University of Toyama; Tanaka, Kentaro University of Toyama; Kim, Juhyon University of Toyama; Nakajima, Kazuki University of Toyama

11:30-11:45 SuB17.3

Feasibility of a Wireless Health Monitoring System for Prevention and Health Assessment of Elderly People 7306-7309

Jiménez-Mixco, Viveca Universidad Politécnica de Madrid; Cabrera-Umpierrez, Maria Fernanda Universidad Politecnica de Madrid; Arredondo, María Teresa Technical University of Madrid; Panou, Maria Centre for Research and Technology Hellas; Struck, Matthias Fraunhofer IIS; Bonfiglio, Silvio BARCO

11:45-12:00 SuB17.4

Remotely Controlled Cycling Exercise System for Home-Based Telerehabilitation 7310-7313

Finkelstein, Joseph Johns Hopkins University School of Medicine; Jeong, In cheol Johns Hopkins University

12:00-12:15 SuB17.5

Predictors of Successful Acceptance of Home Telemanagement in Veterans with Multiple Sclerosis 7314-7317

Finkelstein, Joseph Johns Hopkins University School of Medicine; Cha, Eunme Johns Hopkins University; Wood, Jeffrey Johns Hopkins University; Wallin, Mithell Baltimore VAMC

12:15-12:30 SuB17.6

Adaptive and Automated Ambiance Surveillance and Event Detection for Ambient Assisted Living 7318-7321

Matern, Dierck University of Luebeck; Condurache, Alexandru Paul University of Lübeck; Mertins, Alfred University of Lübeck

SuC01: 13:30-15:00 Conference Hall (12F)

1.4.7 Biomedical Signal Classification through ECG Analysis (Oral Session)

Chair: Katayama, Norihiro *(Tohoku Univ.)*

13:30-13:45 SuC01.1

Coordinate Rotation Based Low Complexity Architecture for 3D Single Channel Independent Component Analysis 7322-7325

Yerrapragada, Jayesh Indian Institute of Technology Guwahati; Olemann, Aditi Indian Institute of Technology, Guwahati; Acharyya, Amit Indian Institute of Technology Hyderabad; Shaik, Rafi Ahamed Indian Institute of Technology Guwahati

SuC04: 13:30-15:00 1001 (10F)
2.10.2 Computer Aided Diagnosis I (Oral Session)
Chair: Suzuki, Kenji *(Univ. of Chicago)*

SuC05: 13:30-15:15 1002 (10F)
2.11.2 Retinal Imaging I (Oral Session)
Chair: Trucco, Emanuele *(Univ. of Dundee)*
Co-Chair: Bhuiyan, Alauddin *(Commonwealth Scientific and Industrial Res. Organization)*

SuC07: 13:30-15:00 1004 (10F)
2.5.2 Imaging and Signaling of Human Brain Functions (Invited Session)
Chair: Wongsawat, Yodchanan *(Mahidol Univ.)*

SuC09: 13:30-15:15 1006 (10F)
4.9.7 Multiscale Modeling and Analysis of Uterine Electrophysiological Activity (Invited Session)
Chair: Mischi, Massimo *(Eindhoven Univ. of Tech.)*
Co-Chair: Karlsson, Brynjar *(Reykjavik Univ.)*

SuC13: 13:30-15:15 1010 (10F)
8.9.3 Mechanics of Locomotion and Balance (Oral Session)
Chair: Zecca, Massimiliano *(Waseda Univ.)*

SuC15: 13:30-15:00 1102 (11F)
10.4.4 Telehealth and Telemedicine I (Oral Session)
Chair: Henriques, Jorge *(Univ. of Coimbra - NIF 501617582)*
Co-Chair: Oguri, Koji *(Aichi Prefectural Univ.)*