

2015 37th Annual International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC 2015)

**Milan, Italy
25-29 August 2015**

Index



**IEEE Catalog Number: CFP15EMB-POD
ISBN: 978-1-4244-9269-5**

Program in Chronological Order

(Copyrighted Papers)

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Wednesday, 26 August 2015

WeAT1: 08:30-10:00

Brown 1

8.1 Computer-Assisted Surgery (Oral Session)

Chair: Troccaz, Jocelyne *Univ. Joseph Fourier - CNRS UMR 5525*

Co-Chair: De Momi, Elena *Politecnico di Milano*

08:30-08:45

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Aviles, Angelica Ivone* *Univ. Politècnica de Catalunya*; Alsaleh, Samar George *Washington Univ., Dept. of Computer Science, Th*; Sobrevilla, Pilar *Univ. Politècnica de Catalunya - NIF*; Casals, Alicia *Institute for Biongingering of Catalonia and Univ. Politècni*

08:45-09:00

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Horise, Yuki* *Osaka Univ.*; He, Xingchi *Johns Hopkins Univ.*; Gehlbach, Peter *Johns Hopkins Medical Institute*; Taylor, Russell H. *The Johns Hopkins Univ.*; Iordachita, Iulian *Johns Hopkins Univ.*

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WeAT2: 08:30-10:00

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4.1 Models of Cardiac Electrophysiology and Mechanics (Oral Session)

Chair: Dokos, Socrates *University of New South Wales*

08:30-08:45

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Co-Chair: Vato, Alessandro <i>Fondazione Istituto Italiano di Tecnologia</i>	

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Chair: Jeremic, Aleksandar *McMaster University*
Co-Chair: Li, Xin *Shenzhen Institutes of Advanced Technology, Chinese Academy of Science*

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Co-Chair: Parazzini, Marta *Consiglio Nazionale delle Ricerche*

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Cognitive Sciences and Technologies, National Resea*

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Chair: Durand, Dominique *Case Western Reserve University*
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5.1 Therapeutic Intravascular Devices I (Oral Session)**Chair:** Sunagawa, Kenji *Kyushu University***Co-Chair:** Bluestein, Danny *Stony Brook University*

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WeAT12.2

Modulation of Platelet Membrane Function via Exogenous Lipid Moiety Exposure Alters Platelet Responsiveness to Shear 266-269
 Leung, Siu Ling *the Univ. of Arizona*; Dimasi, Annalisa *Politecnico di Milano*; Heiser, Sarah *Duke Univ.*; Dunn, Andrew *the Univ. of Arizona*; Bluestein, Danny *Stony Brook Univ.*; Slepian, Marvin J.* *Univ. of Arizona*

09:00-09:15

WeAT12.3

Evaluation of Erythrocyte Flow at a Bearing Gap in a Hydrodynamically Levitated Centrifugal Blood Pump 270-273
 Murashige, Tomotaka* *Graduate School of Science and Technology, Tokyo Univ. of S*; Kosaka, Ryo *AIST*; Sakota, Daisuke *National Institute of Advanced Industrial Science and Technology*; Nishida, Masahiro *National Institute of Advanced Industrial Science and Technology*; Kawaguchi, Yasuo *Tokyo Univ. of Science*; Yamane, Takashi *Kobe Univ.*; Maruyama, Osamu *National Institute of Advanced Industrial Science and Technology*

09:15-09:30

WeAT12.4

In Vitro Study of an Intra-Aortic VAD: Effect of Reverse-Rotating Mode on Ventricular Recovery 274-277
 Wang, Yaxin* *Univ. of Cambridge*; Hsu, Po-Lin *Artificial Organ Technology Laboratory, Soochow Univ., Suzh*; Love, Holley *Texas Heart Institute at St. Luke's Hospital*; Timms, Daniel Lee *Bivacor Pty Ltd*; McMahon, Richard *Dept. of Engineering, Univ. of Cambridge*

09:30-09:45

WeAT12.5

Effect of Valsalva in the Pulmonary Prosthetic Conduit Valve on Hemodynamic Function in a Mock Circulatory System 278-281
 Tsuboko, Yusuke* *Tohoku Univ.*; Shiraishi, Yasuyuki *Tohoku Univ.*; Yamada, Akihiro *Tohoku Univ.*; Yambe, Tomoyuki *Tohoku Univ*

09:45-10:00

WeAT12.6

Simulation of Transcatheter Aortic Valve Replacement in Patient-Specific Aortic Roots: Effect of Crimping and Positioning on Device Performance 282-285
 Bianchi, Matteo* *Stony Brook Univ.*; Ghosh, Ram Proshad *Stony Brook Univ.*; Marom, Gil *Stony Brook Univ.*; Slepian, Marvin J. *Univ. of Arizona*; Bluestein, Danny *Stony Brook Univ.*

5.2 Complexity in Cardiovascular Signals (Oral Session)**Chair:** Signorini, Maria G. *Politecnico di Milano***Co-Chair:** Porta, Alberto *Universita' degli Studi di Milano*

08:30-08:45

WeAT13.1

A Percentile-Based Coarse Graining Approach is Helpful in Symbolizing Heart Rate Variability during Graded Head-Up Tilt 286-289
 Cysarz, Dirk* *Univ. of Witten/Herdecke*; Edelhäuser, Friedrich *Univ. of Witten/Herdecke*; Javorka, Michal *Comenius Univ., Jessenius Faculty of Medicine*; Montano, Nicola *Univ. degli Studi di Milano*; Porta, Alberto *Univ. degli Studi di Milano*

08:45-09:00

WeAT13.2

The Fractal Structure of Cardiovascular Beat-to-Beat Series Described over a Broad Range of Scales: Differences between Blood Pressure and Heart Rate, and the Effect of Gender 290-293
 Castiglioni, Paolo* *Fondazione Don Carlo Gnocchi ONLUS*; Brambilla, Valerio *Fondazione Don Carlo Gnocchi, Parma, Italy*; Brambilla, Lorenzo *Fondazione Don Carlo Gnocchi, Parma, Italy*; Gualerzi, Massimo *Fondazione Don Carlo Gnocchi, Parma, Italy*; Lazzeroni, Davide *Fondazione Don Carlo Gnocchi, Parma, Italy*; Coruzzi, Paolo *Dept. of Clinical and Experimental Medicine, Univ. of*

09:00-09:15		WeAT13.3
Time, Frequency and Information Domain Analysis of Heart Period and QT Variability in Asymptomatic Long QT Syndrome Type 2 Patients	294-297	
Bari, Vlasta* <i>IRCCS Policlinico San Donato</i> ; Girardengo, Giulia <i>Dept. of Molecular Medicine, Univ. of Pavia and Fondaz</i> ; Marchi, Andrea <i>Dept. of Electronics Information and Bioengineering, Polite</i> ; De Maria, Beatrice <i>IRCCS Fondazione Salvatore Maugeri, Milano</i> ; George Jr, Alfred <i>Dept. of Medicine and Pharmacology, Vanderbilt Univ.</i> ; Brink, Paul <i>Dept. of Internal Medicine, Univ. of Stellenbosch, Ste</i> ; Crotti, Lia <i>Dept. of Molecular Medicine, Univ. of Pavia and Fondaz</i> ; Schwartz, Peter J. <i>Fondazione IRCCS Policlinico San Matteo and Univ. of Pavia</i> ; Porta, Alberto <i>Univ. degli Studi di Milano</i>		
09:15-09:30		WeAT13.4
Gender-Specific Velocity Recognition of Caress-Like Stimuli through Nonlinear Analysis of Heart Rate Variability	298-301	
Nardelli, Mimma* <i>Univ. of Pisa</i> ; Valenza, Gaetano <i>Univ. of Pisa-MGH-Harvard Medical School</i> ; Bianchi, Matteo <i>Univ. of Pisa</i> ; Greco, Alberto <i>Univ. of Pisa</i> ; Lanata', Antonio <i>Univ. of Pisa</i> ; Bicchi, Antonio <i>Univ. of Pisa</i> ; Scilingo, Enzo Pasquale <i>Univ. of Pisa</i>		
09:30-09:45		WeAT13.5
Influence of Sleep State and Position on Cardio-Respiratory Regulation in Newborn Babies	302-305	
Lucchini, Maristella <i>Politecnico di Milano</i> ; Fifer, William P. <i>Dept. of Psychiatry, Columbia Univ. College of Physici</i> ; Perez, Albany <i>Dept. of Psychiatry, Columbia Univ. College of Physici</i> ; Signorini, Maria G.* <i>Politecnico di Milano</i>		
09:45-10:00		WeAT13.6
Cardiorespiratory and Cardiovascular Interactions in Cardiomyopathy Patients using Joint Symbolic Dynamic Analysis	306-309	
Giraldo, Beatriz* <i>Univ. Poitècnica de Catalunya</i> ; Rodriguez, Javier <i>Institute de Bioenginyeria de Catalunya (IBEC)</i> ; Caminal, Pere <i>Technical Univ. of Catalonia (UPC)</i> ; Bayes-Genis, Antoni <i>Hospital de la Santa Creu i Sant Pau</i> ; Voss, Andreas <i>Univ. of Applied Sciences Jena</i>		
WeAT15: 08:30-10:00		White 1
9.1 Cardiovascular Assessment and Diagnostic Technologies (Oral Session)		
Chair: Panescu, Dorin <i>Advanced Cardiac Therapeutics</i>		
Co-Chair: Hoppe, Karsten <i>DELTA</i>		
08:30-08:45		WeAT15.1
Structured Prediction for Differentiating between Normal Rhythms, Ventricular Tachycardia, and Ventricular Fibrillation in the ECG	310-314	
Alwan, Yaqub* <i>King's College London</i> ; Cvetkovic, Zoran <i>King's College London</i> ; Curtis, Michael <i>King's College London</i>		
08:45-09:00		WeAT15.2
Live ECG Readings using Google Glass in Emergency Situations	315-318	
Schaer, Roger <i>HES-SO Valais</i> ; Salamin, Fanny, Fanny <i>Salamin Hôpital Cantonal Fribourg</i> ; Jiménez del Toro, Oscar Alfonso <i>Univ. of Applied Sciences Western Switzerland (HES-SO)</i> ; Atzori, Manfredo <i>Univ. of Applied Sciences Western Switzerland (HES-SO Valai</i> ; Müller, Henning <i>Univ. of Applied Sciences Western Switzerland (HES-SO)</i> ; Widmer, Antoine* <i>Univ. of Applied Science and Arts Western Switzerland</i>		
09:00-09:15		WeAT15.3
Novel Method for Atrioventricular Motion Assessment from Three-Dimensional Cine Magnetic Resonance Imaging	319-322	
Leng, Shuang <i>National Heart Centre Singapore</i> ; Zhao, Xiaodan* <i>National Heart Centre Singapore</i> ; Tan, Ru San <i>National Heart Center</i> ; Zhong, Liang <i>National Heart Centre Singapore</i>		
09:15-09:30		WeAT15.4
Cardiac Fibrillation Risks with TASER Conducted Electrical Weapons	323-329	
Panescu, Dorin* <i>Advanced Cardiac Therapeutics</i> ; Kroll, Mark <i>Univ. of Minnesota</i> ; Brave, Michael <i>LAAW International, LLC, Scottsdale, AZ</i>		

09:30-09:45	WeAT15.5
Comparing Twelve-Lead Electrocardiography with Close-to-Heart Patch based Electrocardiography	330-333
Hansen, Ingeborg Helbech* <i>Technical Univ. of Denmark</i> ; Hoppe, Karsten <i>DELTA</i> ; Gjerde, Anna Herlev <i>Hospital</i> ; Kanters, Jorgen <i>Univ. of Copenhagen, and Copenhagen Heart Arrhythmia Resear</i> ; Sorensen, Helge B D <i>Technical Univ. of Denmark</i>	
09:45-10:00	WeAT15.6
Prediction of the Time Period of Stroke based on Ultrasound Image Analysis of Initially Asymptomatic Carotid Plaques	334-337
Kyriacou, Efthymoulos <i>Frederick Univ. Cyprus</i> ; Vogazianos, Paris <i>Dept. of Computer Science, Univ. of Cyprus, Nicosia, C</i> ; Christodoulou, Christodoulos <i>Univ. of Cyprus</i> ; Loizou, Christos <i>InterCollege</i> ; Petroudi, Styliani <i>Univ. of Cyprus</i> ; Pattichis, Marios <i>Univ. of New Mexico</i> ; Pantziaris, Marios <i>The Cyprus Institute of Neurology and Genetics</i> ; Nicolaidis, Andrew <i>Imperial College</i> ; Pattichis, Constantinos <i>Univ. of Cyprus</i> ; Panayides, Andreas* <i>Imperial College</i>	
08:45-09:00	WeAT16.2
Modeling the Blood-Brain Barrier in a 3D Triple Co-Culture Microfluidic System	338-341
Adriani, Giulia <i>Singapore-MIT Alliance for Research and Technology</i> ; Ma, Dongliang <i>Duke-NUS Graduate Medical School</i> ; Pavesi, Andrea <i>Singapore-MIT Alliance for Research and Technology, BioSyM</i> ; Goh, Eyleen L. <i>Duke-NUS Graduate Medical School</i> ; Kamm, Roger D.* <i>Massachusetts Institute of Technology</i>	
09:00-09:15	WeAT16.3
Regulation of Nuclear Morphology by Actomyosin Components and Cell Geometry	342-345
M. Ramdas, Nisha* <i>National Centre for Biological Sciences, TIFR, Bangalore, India</i> ; Li, Qingsen <i>FIRC, Institute for Molecular Oncology, Milan, Italy. (Formerly; Shivashankar, G.V. Mechanobiology Institute, NUS, Singapore and FIRC, Institute for</i>	
09:15-09:30	WeAT16.4
Novel Culturing Platform for Brain Slices and Neuronal Cells	346-349
Svendsen, Winnie E* <i>Technical Univ. of Denmark</i> ; Al Atrakchi, Fatima Al-Zahraa <i>Technical Univ. of Denmark</i> ; Bakmand, Tanya <i>Technical Univ. of Denmark</i> ; Waagepetersen, Helle <i>Univ. of Copenhagen</i> ; Dimaki, Maria <i>Technical Univ. of Denmark</i>	
09:30-09:45	WeAT16.5
Construction of Stable Capillary Networks using a Microfluidic Device	350-353
Sudo, Ryo* <i>Keio Univ.</i>	
09:45-10:00	WeAT16.6
Microgrooved Ultra-Thin Films as Building Blocks of Future Bio-Hybrid Actuators	354-357
Vannozzi, Lorenzo* <i>Scuola Superiore Sant'Anna</i> ; Ricotti, Leonardo <i>Scuola Superiore Sant'Anna</i> ; Alyassi, Shaikha <i>Khalifa Univ. of Science, Technology and Research</i> ; Bearzi, Claudia <i>Institute of Cellular Biology and Neurobiology</i> ; Rizzi, Roberto <i>Institute of Cellular Biology and Neurobiology</i> ; Gargioli, Cesare <i>Univ. of Rome Tor Vergata</i> ; Khalaf, Kinda <i>KUSTAR</i> ; Dario, Paolo <i>Scuola Superiore Sant'Anna</i> ; Menciassi, Arianna <i>Scuola Superiore Sant'Anna</i>	

WeAT17: 08:30-10:00	Space 1
1.3 Biomedical Signal Classification V: Sleep Studies (Oral Session)	
Chair: Penzel, Thomas <i>Charite University Hospital</i>	
Co-Chair: Bianchi, Anna Maria <i>Politecnico di Milano</i>	

08:30-08:45	WeAT17.1
Sleep Stage Classification based on Respiratory Signal	358-361
Tataraidze, Alexander* <i>Bauman Moscow State Technical Univ.</i> ; Anishchenko, Lesya <i>Remote Sensing Laboratory, Bauman Moscow State Technical Univ.</i> ; Korostovtseva, Lyudmila <i>Federal North-West Medical Research Centre</i> ; Kooij, Bert Jan <i>Delft Univ. of Technology</i> ; Bochkarev, Mikhail <i>Federal North-West Medical Research Centre</i> ; Sviryaev, Yurii <i>Sleep Laboratory, Federal Almazov Medical Research Centre</i>	

08:45-09:00	WeAT17.2
Sleep Stage Classification based on Bioradiolocation Signals	362-365
Tataraidze, Alexander* <i>Bauman Moscow State Technical Univ.</i> ; Anishchenko, Lesya <i>Remote Sensing Laboratory, Bauman Moscow State Technical Univ.</i> ; Korostovtseva, Lyudmila <i>Federal North-West Medical Research Centre</i> ; Kooij, Bert Jan <i>Delft Univ. of Technology</i> ; Bochkarev, Mikhail <i>Federal North-West Medical Research Centre</i> ; Sviryaev, Yurii <i>Sleep Laboratory, Federal Almazov Medical Research Centre</i>	
09:00-09:15	WeAT17.3
Characterising Insomnia: A Graph Spectral Theory Approach	366-369
Chaparro-Vargas, Ramiro* <i>RMIT Univ., School of Electrical and Computer Engineering</i> ; Ahmed, Beena <i>Texas A&M Univ. at Qatar</i> ; Penzel, Thomas <i>Charite Univ. Hospital</i> ; Cvetkovic, Dean <i>RMIT Univ.</i>	
09:15-09:30	WeAT17.4
A Classification Method for Eye Movements Direction during REM Sleep Trained on Wake Electro-Oculographic Recordings	370-373
Betta, Monica* <i>Univ. of Pisa</i> ; Laurino, Marco <i>Scuola Superiore Sant'Anna</i> ; Gemignani, Angelo <i>Univ. of Pisa</i> ; Landi, Alberto <i>Univ. of Pisa</i> ; Menicucci, Danilo <i>National Research Council (CNR)</i>	
09:30-09:45	WeAT17.5
Improving Sleep/Wake Detection via Boundary Adaptation for Respiratory Spectral Features	374-377
Long, Xi* <i>Eindhoven Univ. of Technology and Philips Research</i> ; Haakma, Reinder <i>Philips Research</i> ; Rolink, Jerome <i>RWTH Aachen Univ.</i> ; Fonseca, Pedro <i>Philips Research and Eindhoven Univ. of Technology</i> ; Aarts, Ronald M. <i>Philips</i>	
09:45-10:00	WeAT17.6
Automatic Sleep Staging using State Machine-Controlled Decision Trees	378-381
Imtiaz, Syed Anas* <i>Imperial College London</i> ; Rodriguez-Villegas, Esther <i>Imperial College London</i>	

WeAT18: 08:30-10:00	Space 2
1.4 Signal Processing in Physiological Systems IV: Cardiovascular Signals (Oral Session)	
Chair: Sassi, Roberto <i>Università degli Studi di Milano</i>	

08:30-08:45	WeAT18.1
A New Multi-Window Detection Approach for P-Wave Boundary Points in Electrocardiograms based on Bilateral Accumulative Area	382-385
Chen, Riqing <i>The Institute of Biomedical Engineering, Graduate School at Shen</i> ; Wu, Jian* <i>Tsinghua Univ.</i> ; Huang, Yingsong <i>Tsinghua Univ.</i>	
08:45-09:00	WeAT18.2
A New Algorithm for Estimating the V-Index using Sinusoidal Basis Functions	386-389
Kheirati Roonizi, Ebadollah <i>Univ. degli studi di Milano</i> ; Mainardi, Luca* <i>Politecnico di Milano</i> ; Sassi, Roberto <i>Univ. degli Studi di Milano</i>	
09:00-09:15	WeAT18.3
Visualization of Multivariate Physiological Data for Cardiorespiratory Fitness Assessment through ECG (R-Peak) Analysis	390-393
Muñoz Cardona, John Edison* <i>Univ. da Madeira, MITI</i> ; Bermúdez i Badia, Sergi <i>Madeira Interactive Technologies Institute - Univ. da Mad</i> ; Cameirao, Monica <i>Univ. da Madeira, Madeira Interactive Technologies Instit</i> ; Gouveia, Elvio Rubio <i>Univ. of Madeira</i>	
09:15-09:30	WeAT18.4
Towards Numerical Temporal-Frequency System Modelling of Associations between Electrocardiogram and Ballistocardiogram	394-397
Srinivasan, Aravind <i>Nanyang Technological Univ.</i> ; Zhang, Haihong* <i>Institute for Infocomm Research</i> ; Lin, Zhiping <i>Nanyang Technological Univ.</i> ; Biswas, Jit <i>Institute for Infocomm Research</i> ; Chen, Zhihao <i>Institute for Infocomm Research</i>	
09:30-09:45	WeAT18.5
Photoplethysmogram Intensity Ratio: A Potential Indicator for Improving the Accuracy of PTT-Based Cuffless Blood Pressure Estimation	398-401
Ding, Xiao-Rong <i>The Chinese Univ. of Hong Kong</i> ; Zhang, Yuan-Ting* <i>The Chinese Univ. of Hong Kong</i>	

09:45-10:00 WeAT18.6
Analysis of T-Wave Alternans in Ambulatory Recordings using the ADTWA Index 402-405
 Corino, Valentina* *Politecnico di Milano*; Monacizzo, Simone *Politecnico di Milano*; Sassi, Roberto *Univ. degli Studi di Milano*; Mainardi, Luca *Politecnico di Milano*; Martínez, Juan Pablo *Univ. of Zaragoza*

WeAT19: 08:30-10:00 Space 3
2.3 MR DTI and DSI (Oral Session)
Chair: Rizzo, Giovanna *National Research Council (CNR)*

08:30-08:45 WeAT19.1
Improved Spherical Deconvolution to Solve Fiber Crossing in Diffusion-Weighted MR Imaging 406-409
 Toselli, Benedetta* *Univ. of Genova*; Franchin, Cristina *Institute of Molecular Bioimaging and Physiology - CNR*; Scifo, Paola *IRCCS San Raffaele Scientific Institute*; Rizzo, Giovanna *National Research Council (CNR)*

08:45-09:00 WeAT19.2
Theoretical Analysis of Phantom Rotations in BSD-DTI 410-413
 Krzyzak, Artur, Tadeusz *AGH Univ. of Science and Technology, Faculty of Geology, G*; Borkowski, Karol* *AGH Univ. of Science and Technology*

09:00-09:15 WeAT19.3
Anisotropic Phantoms in Magnetic Resonance Imaging 414-417
 Krzyzak, Artur, Tadeusz *AGH Univ. of Science and Technology, Faculty of Geology, G*; Klodowski, Krzysztof* *AGH Univ. of Science and Technology, Faculty of Physics and*; Raszewski, Zbigniew *Military Univ. of Technology, Faculty of Advanced Technolog*

09:15-09:30 WeAT19.4
The B Matrix Calculation using the Anisotropic Phantoms for DWI and DTI Experiments 418-421
 Krzyzak, Artur, Tadeusz* *AGH Univ. of Science and Technology, Faculty of Geology, G*; Klodowski, Krzysztof *AGH Univ. of Science and Technology, Faculty of Physics and*

09:30-09:45 WeAT19.5
The Relationships between the Identified Critical Nodes within DTI-Based Brain Structural Network using Hub Measurements and Vulnerability Measurement 422-425
 Jin, Cong *Beijing Univ. of Technology*; Lin, Lan *Beijing Univ. of Technology*; Kuo, Li-Wei *National Health Research Institutes*; Wu, Shuicai *Beijing Univ. of Technology*; Fu, Zhenrong *Beijing Univ. of Technology*; Chao, Yi-Ping* *Chang Gung Univ.*

09:45-10:00 WeAT19.6
Automatic Segmentation of Short Association Bundles using a New Multi-Subject Atlas of the Left Hemisphere Fronto-Parietal Brain Connections 426-429
 Guevara, Miguel* *Univ. of Concepcion*; Seguel, Daniel *Univ. of Concepción*; Roman, Godoy, Claudio Esteban *Univ. de Concepcion*; Duclap, Delphine *I2BM, CEA-Neurospin*; Lebois, Alice *I2BM, Cea, NeuroSpin*; Le Bihan, Denis *CEA I2BM NeuroSpin*; Mangin, Jean-François *CEA I2BM NeuroSpin*; Poupon, Cyril *CEA I2BM NeuroSpin*; Guevara, Pamela *Univ. of Concepción*

WeAT20: 08:30-10:00 Space 4
3.1 Novel Applications of Wearable Sensor Technology with Live Demonstrations (Invited Session)
Chair: Sazonov, Edward *University of Alabama*
Co-Chair: Postolache, Octavian *Instituto de Telecomunicações*

08:30-08:45 WeAT20.1
Evaluation of Accuracy and Reliability of PulseOn Optical Heart Rate Monitoring Device 430-433
 Delgado-Gonzalo, Ricard *CSEM*; Parak, Jakub* *Tampere Univ. of Technology*; Tarniceriu, Adrian *PulseOn SA*; Renevey, Philippe *CSEM*; Bertschi, Mattia *CSEM*; Korhonen, Ilkka *Tampere Univ. of Technology*

08:45-09:00 WeAT20.2
Pulse Detection with a Single Accelerometer Placed at the Carotid Artery: Performance in a Real-Life Diagnostic Test during Acute Hypotension 434-437
 Muehlsteff, Jens* *Philips*; Dellimore, Kiran *Philips Research*; Aarts, Vincent *Philips Research*; Derks, Rene *Philips Research*; Peiker, Christiane *Univ. Klinikum Hamburg-Eppendorf*; Meyer, Christian *Heinrich-Heine-Univ. Hospital*

09:00-09:15 WeAT20.3
Congestive Heart Failure Patient Monitoring using Wearable Bio-Impedance Sensor Technology 438-441
Lee, Seulki* *imec*; Squillace, Gabriel *imec*; Smeets, Christophe *Ziekenhuis Oost-Limburg*; Vandecasteele, Marianne *imec*; Grieten, Lars *Holst-IMEC*; de Francisco, Ruben *imec*; Van Hoof, Chris *IMEC*

09:15-09:30 WeAT20.4
Wearable Sensor Network to Study Laterality of Brain Functions 442-445
Postolache, Gabriela *Instituto de Medicina Molecular*; Silva Girão, Pedro *Instituto Superior Tecnico, Instituto de Telecomunicações*; Postolache, Octavian* *Instituto de Telecomunicações*

09:30-09:45 WeAT20.5
From the Design to Real E-Textile Platforms for Rehabilitation and Chronic Obstrusive Pulmonary Diseases Care 446-449
Paradiso, Rita* *Smartex srl*; Caldani, Laura *Smartex srl*; De Toma, Gianluca *Smartex S.r.l.*

WeAT21: 08:30-10:00 Suite 8
9.2 Clinical Engineering I (Oral Session)
Chair: Chiew, Yeong Shiong *University of Canterbury*
Co-Chair: Kelly, Daniel *Ulster University*

08:30-08:45 WeAT21.1
A Preliminary Health Technology Assessment of a Guidance System for Interventional Radiology 450-453
Caparelli, Claudia* *Univ. Campus Bio-Medico di Roma*; Carpino, Giorgio *Campus Bio-Medico Univ.*; Brunetti, Gioacchino *MASMEC Biomed*; Larizza, Piero *MASMEC Biomed*; Guglielmelli, Eugenio *Campus Bio-Medico Univ.*

08:45-09:00 WeAT21.2
Safety-Preserving Closed-Loop Control of Anesthesia 454-457
Yousefi, Mahdi* *The Univ. of British Columbia*; van Heusden, Klaske *The Univ. of British Columbia*; Dumont, Guy *Univ. of British Columbia*; Ansermino, J. Mark *British Columbia's Children's Hospital*

09:00-09:15 WeAT21.3
Validation of Clinical Activity Tracking System in Intensive Care Unit to Assess Nurse Workload Distribution 458-461
Guo, Peng *Univ. of Canterbury*; Chiew, Yeong Shiong* *Univ. of Canterbury*; Shaw, Geoffrey M *Christchurch Hospital*; Chase, J. Geoffrey *Univ. of Canterbury*

09:15-09:30 WeAT21.4
Smartphone Derived Movement Profiles to Detect Changes in Health Status in COPD Patients – A Preliminary Investigation 462-465
Kelly, Daniel* *Ulster Univ.*; Caulfield, Brian *UCD*; Donnelly, Seamas *Insight Centre*

09:30-09:45 WeAT21.5
Can Virtual Reality Trainers Improve the Compliance Discrimination Abilities of Trainee Surgeons? 466-469
Jamieson, Earle* *The Univ. of Leeds*; Chandler, James *The Univ. of Leeds*; Culmer, Peter *Leeds Univ.*; Manogue, Michael *The Univ. of Leeds*; Mon-Williams, Mark *The Univ. of Leeds*; Wilkie, Richard *The Univ. of Leeds*

WeBPoT1: 10:00-11:30 Gold Room
1.41 Biomedical Signal Classification in Motion Studies and Brain Computer Interfaces (Poster Session)

10:00-11:30 WeBPoT1.1
Parametric Estimation of Sample Entropy for Physical Activity Recognition 470-473
Aktaruzzaman, Md *Univ. degli Studi di Milano*; Scarabottolo, Nello *Univ. degli Studi di Milano*; Sassi, Roberto* *Univ. degli Studi di Milano*

10:00-11:30 WeBPoT1.2
A Two-Stage Model for Inference of Target Identity during 2D Cursor Control from Natural Gaze Trajectories 474-477
Chen, Zhaokang *HKUST*; Shi, Bertram E* *Hong Kong Univ. of Science and Technology*

10:00-11:30	WeBPoT1.3
Task Discrimination for Non-Weight-Bearing Movements using Muscle Synergies	478-481
<i>Afzal, Taimoor Univ. of Arkansas at Little Rock; Iqbal, Kamran* Univ. of Arkansas at Little Rock; White, Gannon Univ. of Arkansas At Little Rock; Wright, Andrew Univ. of Arkansas at Little Rock</i>	
10:00-11:30	WeBPoT1.4
Automatic Misclassification Rejection for LDA Classifier using ROC Curves	482-485
<i>Menon, Radhika* Univ. of Strathclyde; Di Caterina, Gaetano Univ. of Strathclyde; Lakany, Heba Univ. of Strathclyde; Petropoulakis, Lykourgos Univ. of Strathclyde; Conway, Bernard A Univ. of Strathclyde; Soraghan, John J Univ. of Strathclyde</i>	
10:00-11:30	WeBPoT1.5
Upper-Limb Movement Classification based on Ssemg Signal Validation with Continuous Channel Selection	486-489
<i>Cene, Vinicius H.* UFRGS; Favieiro, Gabriela Winkler Federal Univ. of Rio Grande do Sul (UFRGS); Balbinot, Alexandre Federal Univ. of Rio Grande do Sul (UFRGS)</i>	
10:00-11:30	WeBPoT1.6
Real-Time Motion Discrimination Considering Variation of EMG Signals Associated with Lapse of Time	490-493
<i>Shiraki, Masashi* Doshisha Univ.; Tsujiuchi, Nobutaka Doshisha Univ.; Ito, Akihito Doshisha Univ.; Yamamoto, Tetsushi Doshisha Univ.</i>	
10:00-11:30	WeBPoT1.7
Muscular Fatigue Detection using sEMG in Dynamic Contractions	494-497
<i>R. Bueno, Diana* Univ. of Zaragoza; Lizano, José María Univ. of Zaragoza; Montano Gella, Luis Univ. of Zaragoza</i>	
10:00-11:30	WeBPoT1.8
Intersession Adaptation of the EEG-Based Detector of Self-Paced Walking Intention in Stroke Patients	498-501
<i>Sburlea, Andreea Ioana* Bit&Brain Technologies S.L.; Montesano, Luis Univ. de Zaragoza; Minguez, Javier Zaragoza Univ.</i>	
10:00-11:30	WeBPoT1.9
Fitness Activity Classification by using Multiclass Support Vector Machines on Head-Worn Sensors	502-505
<i>Loh, Darrell* MSc Student, Simon Fraser Univ.; Lee, Matthew MSc Student, Simon Fraser Univ.; Zihajehzadeh, Shaghayegh PhD Student, Simon Fraser Univ.; Hoskinson, Reynald Simon Fraser Univ.; Park, Edward J. Simon Fraser Univ.</i>	
10:00-11:30	WeBPoT1.10
Towards Increasing the Number of Commands in a Hybrid Brain-Computer Interface with Combination of Gaze and Motor Imagery	506-509
<i>Meena, Yogesh Kumar* Ulster Univ.; Cecotti, Hubert Univ. of Ulster; Wong-Lin, KongFatt Univ. of Ulster; Prasad, Girijesh Univ. of Ulster</i>	
10:00-11:30	WeBPoT1.11
Physical Activity Group Classification Algorithm using Triaxial Acceleration and Heart Rate	510-513
<i>Nakanishi, Motofumi* Omron Healthcare Co., Ltd; Izumi, Shintaro Kobe Univ.; Nagayoshi, Sho Omron Healthcare Co., Ltd; Sato, Hironori Omron Healthcare Co., Ltd.; Kawaguchi, Hiroshi Kobe Univ.; Yoshimoto, Masahiko Kobe Univ.; Ando, Takafumi National Institute of Health and Nutrition; Nakae, Satoshi Tokyo Gakugei Univ.; Usui, Chiyoko Japan Society for the Promotion of Science; Aoyama, Tomoko Japan Society for the Promotion of Science; Tanaka, Shigeo National Institute of Health and Nutrition</i>	
10:00-11:30	WeBPoT1.12
Classification of Driver Fatigue in an Electroencephalography-Based Countermeasure System with Source Separation Module	514-517
<i>Chai, Rifai* Univ. of Technology, Sydney; Naik, Ganesh R Univ. of Technology Sydney; Tran, Yvonne Univ. of Technology, Sydney; Ling, Steve Univ. of Technology Sydney; Craig, Ashley The Univ. of Sydney; Nguyen, Hung T. Univ. of Technology, Sydney</i>	

WeBPoT2: 10:00-11:30 Gold Room
1.42 Biomedical Signal Classification in Cardiovascular and Respiratory Application (Poster Session)

- 10:00-11:30 WeBPoT2.1
A One-Class Approach to Cardiotocogram Assessment 518-521
 Gavrilis, Dimitris *Athena Research Center*; Nikolakopoulos, George* *Luleå Univ. of Technology*;
 Georgoulas, George *TEI of Epirus*
- 10:00-11:30 WeBPoT2.2
**Temporal Correction of Detected R-Peaks in ECG Signals: A Crucial Step to Improve QRS
 Detection Algorithms** 522-525
 Gradl, Stefan* *Friedrich-Alexander Univ. Erlangen-Nürnberg (FAU)*; Leutheuser, Heike *Digital Sports Group,
 Pattern Recognition Lab, Dept. of Com*; Elgendi, Mohamed *Univ. of British Columbia*; Lang, Nadine *Fraunhofer-
 Institute für Integrierte Schaltungen IIS*; Eskofier, Bjoern M *Friedrich-Alexander-Univ. Erlangen-Nürnberg*
- 10:00-11:30 WeBPoT2.3
**Dry Contact Fingertip ECG-Based Authentication System using Time, Frequency Domain Features
 and Support Vector Machine** 526-529
 Singh, Karan *Wipro Limited*; Singhvi, Akshit *Wipro Limited*; Pathangay, Vinod* *Wipro Technologies*
- 10:00-11:30 WeBPoT2.4
Automatic Sleep Staging based on ECG Signals using Hidden Markov Models 530-533
 Chen, Ying* *Univ. of Aizu*; Zhu, Xin *The Univ. of Aizu*; Chen, Wenxi *Univ. of Aizu*
- 10:00-11:30 WeBPoT2.5
An Enhanced Cerebral Recovery Index for Coma Prognostication Following Cardiac Arrest 534-537
 Ghassemi, Mohammad* *Massachusetts Institute of Technology*; Amorim, Edilberto *Massachusetts General
 Hospital*; Pati, Sandipan *Univ. of Alabama School of Medicine*; Mark, Roger *Massachusetts Institute of
 Technology*; Brown, Emery N *MGH-Harvard Medical School-MIT*; Purdon, Patrick *Massachusetts General
 Hospital*; Westover, Brandon *Massachusetts General Hospital*
- 10:00-11:30 WeBPoT2.6
Emotion State Identification based on Heart Rate Variability and Genetic Algorithm 538-541
 Yu, Sung-Nien* *National Chung Cheng Univ.*; Chen, Shu-Feng *National Chung Cheng Univ.*
- 10:00-11:30 WeBPoT2.7
**Early Mastitis Diagnosis through Topological Analysis of Biosignals from Low-Voltage Alternate
 Current Electrokinetics** 542-545
 Zhang, Zhifei* *The Univ. of Tennessee*; Song, Yang *Univ. of Tennessee, Knoxville*; Cui, Haochen *Univ. of
 Tennessee, Knoxville*; Wu, Jayne *The Univ. of Tennessee*; Schwartz, Fernando *Univ. of Tennessee*; Qi,
 Hairong *Univ. of Tennessee*
- 10:00-11:30 WeBPoT2.8
The Respiration Pattern as an Indicator of the Anaerobic Threshold 546-549
 Mirmohamadsadeghi, Leila* *Swiss Federal Institute of Technology Lausanne (EPFL)*; Vesin, Jean-Marc *EPFL*;
 Lemay, Mathieu *EPFL*; Dériaz, Olivier *SUVA*
- 10:00-11:30 WeBPoT2.9
Age Group Classification and Gender Detection based on Forced Expiratory Spirometry 550-553
 Ozbek, I. Yucel* *Ataturk Univ.*; Cosgun, Sema *Ataturk Univ.*

WeBPoT3: 10:00-11:30 Gold Room
1.43 Biomedical Signal Classification in Central Nervous System Studies (Poster Session)

- 10:00-11:30 WeBPoT3.1
An Application of Gaussian Processes on Ocular Artifact Removal from EEG 554-557
 Noorzadeh, Saman* *Univ. of Joseph Fourier*; Rivet, Bertrand *Grenoble Univ.*;
 Gumery, Pierre-Yves *Univ. Joseph Fourier*

10:00-11:30		WeBPoT3.2
Global EEG Segmentation using Singular Value Decomposition	558-561	
Haddad, Ali <i>Rutgers Univ.</i> ; Najafizadeh, Laleh* <i>Rutgers Univ.</i>		
10:00-11:30		WeBPoT3.3
Reliability-Based Automatic Repeat Request for Short Code Modulation Visual Evoked Potentials in Brain Computer Interfaces	562-565	
Sato, Jun-ichi* <i>The Univ. of Electro-Communications</i> ; Washizawa, Yoshikazu <i>The Univ. of Electro-Communications</i>		
10:00-11:30		WeBPoT3.4
The Portable P300 Dialing System based on Tablet and Emotiv Epoc Headset	566-569	
Tong, Jijun <i>Zhejiang Sci-tech Univ.</i> ; Zhang, Peng <i>Zhejiang Sci-tech Univ.</i> ; Xiao, Ran <i>Univ. of Oklahoma</i> ; Ding, Lei* <i>Univ. of Oklahoma</i>		
10:00-11:30		WeBPoT3.5
Using Robust Principal Component Analysis to Alleviate Day-to-Day Variability in EEG based Emotion Classification	570-573	
Jao, Ping-Keng <i>Academia Sinica</i> ; Lin, Yuan-Pin* <i>Univ. of California, San Diego</i> ; Yang, Yi-Hsuan <i>Academia Sinica</i> ; Jung, Tzyy-Ping <i>Univ. of California San Diego</i>		
10:00-11:30		WeBPoT3.6
Classification of High Frequency Oscillations in Epileptic Intracerebral EEG	574-577	
Jrad, Nisrine* <i>LTSI - Univ. of Rennes 1</i> ; Kachenoura, Amar <i>Univ. de Rennes1 and INSERM</i> ; Merlet, Isabelle <i>INSERM - Univ. de Rennes 1</i> ; Pasnicu, Anca <i>CHU Rennes</i> ; Bénar, Christian G. <i>INSERM</i> ; Wendling, Fabrice <i>INSERM - Univ. de Rennes 1</i>		
10:00-11:30		WeBPoT3.7
Epileptic Seizure Detection on Patients with Mental Retardation based on EEG Features: A Pilot Study	578-581	
Wang, Lei* <i>Eindhoven Univ. of Technology</i> ; Cluitmans, Pierre J.M. <i>Eindhoven Univ. of Technology</i> ; Arends, Johan B.A.M. <i>Epilepsy Center Kempenhaeghe</i> ; Wu, Yan <i>Eindhoven Univ. of Technology</i> ; Sazonov, Andrei Vladimirovich <i>Eindhoven Univ. of Technology</i>		
10:00-11:30		WeBPoT3.8
Classification of Convulsive Psychogenic Non-Epileptic Seizures using Muscle Transforms Obtained from Accelerometry Signal	582-585	
Kusmakar, Shitanshu* <i>The Univ. of Melbourne</i> ; Gubbi, Jayavardhana <i>The Univ. of Melbourne</i> ; Yan, Bernard <i>The Royal Melbourne Hospital</i> ; O'Brien, Terence <i>The Royal Melbourne Hospital</i> ; Palaniswami, Marimuthu <i>The Univ. of Melbourne</i>		
10:00-11:30		WeBPoT3.9
Classification of Convulsive Psychogenic Non-Epileptic Seizures using Histogram of Oriented Motion of Accelerometry Signals	586-589	
Kusmakar, Shitanshu* <i>The Univ. of Melbourne</i> ; Gubbi, Jayavardhana <i>The Univ. of Melbourne</i> ; Rao, Aravinda <i>The Univ. of Melbourne</i> ; Yan, Bernard <i>The Royal Melbourne Hospital</i> ; O'Brien, Terence <i>The Royal Melbourne Hospital</i> ; Palaniswami, Marimuthu <i>The Univ. of Melbourne</i>		
10:00-11:30		WeBPoT3.10
Joint Collaborative Representation based Sleep Stage Classification with Multi-Channel EEG Signals	590-593	
Liu, Xiao <i>Shanghai Univ.</i> ; Shi, Jun <i>Shanghai Univ.</i> ; Tu, Yiheng* <i>The Univ. of Hong Kong</i> ; Zhang, Zhiguo <i>Nanyang Technological Univ.</i>		
10:00-11:30		WeBPoT3.11
Pattern Recognition with Adaptive-Thresholds for Sleep Spindle in High Density EEG Signals	594-597	
Gemignani, Jessica* <i>European Space Agency</i> ; Agrimi, Jacopo <i>Scuola Superiore Sant'Anna</i> ; Enrico, Cheli <i>Univ. of Pisa</i> ; Gemignani, Angelo <i>Univ. of Pisa</i> ; Laurino, Marco <i>Scuola Superiore Sant'Anna</i> ; Allegrini, Paolo <i>Scuola Superiore Sant'Anna</i> ; Landi, Alberto <i>Univ. of Pisa</i> ; Menicucci, Danilo <i>National Reaserch Council (CNR)</i>		
10:00-11:30		WeBPoT3.12
Sleep-Stage Scoring in Mice: The Influence of Data Pre-Processing on a System's Performance	598-601	
Katsageorgiou, Vasiliki-Maria* <i>Istituto Italiano di Tecnologia (IIT), Genova</i> ; Lassi, Glenda <i>Istituto Italiano di Tecnologia</i> ; Tucci, Valter <i>Istituto Italiano di Tecnologia</i> ; Murino, Vittorio <i>Istituto Italiano di Tecnologia</i> ; Sona, Diego <i>Istituto Italiano di Tecnologia (IIT)</i>		

10:00-11:30 WeBPoT3.13
A Brain Computer Interface for Robust Wheelchair Control Application based on Pseudorandom Code Modulated Visual Evoked Potential 602-605
Mohebbi, Ali* *Technical Univ. of Denmark*; Engelsholm, Signe Katrine Dybbro *Technical Univ. of Denmark*;
Puthusserypady, Sadasivan *Technical Univ. of Denmark*; Kjaer, Troels Wesenberg *Roskilde Univ. Hospital*;
Thomsen, Carsten Eckhart *Univ. of Copenhagen*; Sorensen, Helge B D *Technical Univ. of Denmark*

10:00-11:30 WeBPoT3.14
EEG Recordings as a Source for the Detection of IRBD 606-609
Bisgaard, Sissel* *Dept. of Electrical Engineering, Technical Univ. of De*; Duun-Christensen, Bolette *Dept. of Electrical Engineering, Technical Univ. of De*; Kempfner, Lykke *Danish Center for Sleep Medicine, Dept. of Clinical Neuroph*; Sorensen, Helge B D *Technical Univ. of Denmark*; Jennum, Poul *Univ. of Copenhagen, Demnar*

10:00-11:30 WeBPoT3.15
Automated Sleep Spindle Detection using IIR Filters and a Gaussian Mixture Model 610-613
Patti, Chanakya Reddy* *Royal Melbourne Institute of Technology*; Penzel, Thomas *Charite Univ. Hospital*;
Cvetkovic, Dean *RMIT Univ.*

WeBPoT4: 10:00-11:30 Gold Room
2.31 EEG, MEG and EIT II (Poster Session)

10:00-11:30 WeBPoT4.1
Experimental Realization of Induced Current Magnetic Resonance Current Density Imaging 614-617
Eroglu, Hasan H.* *TSK Rehabilitation and Care Center*; Sadighi, Mehdi *Middle East Technical Univ., Electrical and Electronics Eng*; Sumser, Kemal *Middle East Technical Univ., Dept. of Electrical and*; Naji, Nashwan *Middle East Technical Univ.*; Eyuboglu, B.Murat *Middle East Technical Univ., Dept. of Electrical and E*

10:00-11:30 WeBPoT4.2
Event-Related Brain Potential Signaling Unexpected Timing of Feedback: A Source Localization Analysis 618-621
Magosso, Elisa* *Univ. of Bologna*; Forcelli, Veronica *Univ. of Bologna*; Garofalo, Sara *Dept. of Psychology, CNC, Univ. of Bologna*; di Pellegrino, Giuseppe *Univ. of Bologna*; Ursino, Mauro *Univ. of Bologna*

10:00-11:30 WeBPoT4.3
Tackling Modelling Error in the Application of Electrical Impedance Tomography to the Head 622-625
Ouypornkochagorn, Taweechai* *Univ. of Edinburgh*; McCann, Hugh *Univ. of Manchester*; Polydorides, Nick *Univ. of Cyprus*

10:00-11:30 WeBPoT4.4
Mapping of Language Areas in Patients with Brain Tumors 626-629
Hyder, Rasha *Univ. Teknologi Petronas*; Kamel, Nidal* *Technical Univ. of Petronas*; Tang, Tong Boon *Univ. Teknologi Petronas*; Faruque, Reza *USM*

10:00-11:30 WeBPoT4.5
EEG Source Localization Constrained by Time Varying FMRI 630-633
Nguyen, Thinh *Univ. of Houston*; Potter, Tom *Univ. of Houston*; Karmonik, Christof *The Methodist Hospital Neurological Inst*; Grossman, Robert *The Methodist Hospital*; Zhang, Yingchun* *Univ. of Houston*

10:00-11:30 WeBPoT4.7
Estimating Underlying Neuronal Activity from EEG using an Iterative Sparse Technique 634-637
Sohrabpour, Abbas *Univ. of Minnesota*; Lu, Yunfeng *Univ. of Minnesota*; He, Bin* *Univ. of Minnesota*

10:00-11:30 WeBPoT4.8
Voxel Seed Coherent Source Analysis on Transient Global Amnesia Patients 638-641
Muthuraman, Muthuraman* *Christian Albrechts Univ.*; Juliane, Doehring *Dept. of Neurology, Christian Albrechts Univ.*; Martin, Nahrwold *Digital Signal Processing and System Theory, Faculty of Enginner*; Mideksa, Kidist Gebremariam *Univ. of Kiel*; Chirumamilla, Venkata Chaitanya *Johannes Gutenberg Univ., Dept. of Neurology Mainz*; Margraf, Nils *Univ. of Kiel, Dept. of Neurology*; Jan, Raethjen *Dept. of Neurology*; Gunther, Deuschl *Dept. of Neurology*; Thorsten, Bartsch *Dept. of Neurology, Christian Albrechts Univ.*

10:00-11:30 WeBPoT4.9
Combining Bayesian Source Imaging with Equivalent Dipole Approach to Solve the Intracranial EEG Source Localization Problem 642-645
Le Cam, Steven *Univ. de Lorraine*; Caune, Vairis *CRAN UMR 7039, Univ. de Lorraine/ CNRS*; Ranta, Radu *CRAN UMR 7039, Univ. de Lorraine/ CNRS*; Korats, Gundars* *CRAN UMR 7039, Univ. de Lorraine*; Louis-Dorr, Valerie *Nancy-Univ.*

10:00-11:30 WeBPoT4.10
Impedance based Automatic Electrode Positioning 646-649
Miklody, Daniel* *Technische Univ. Berlin*; Höhne, Johannes *Berlin Institute of Technology*

WeBPoT5: 10:00-11:30 Gold Room
2.32 Image Analysis (Poster Session)

10:00-11:30 WeBPoT5.1
Contactless Vision-Based Pulse Rate Detection of Infants under Neurological Examinations 650-653
Sikdar, Arindam *IIT Bhubaneswar*; Behera, Santosh Kumar *IIT Bhubaneswar*; Dogra, Debi Prosad *IIT Bhubaneswar*; Bhaskar, Harish* *Khalifa Univ.*

10:00-11:30 WeBPoT5.2
Speeding up the File Access of Large Compressed NifTI Neuroimaging Data 654-657
Rajna, Zalán* *Univ. of Oulu*; Keskinarkaus, Anja *Univ. of Oulu*; Kiviniemi, Vesa *Johannes Dept. of Diagnostic Radiology, MRC, Oulu Univ. Hospita*; Seppänen, Tapio *Univ. of Oulu*

10:00-11:30 WeBPoT5.3
Brain Tumor Image Segmentation using Kernel Dictionary Learning 658-661
Lee, Jeon *Univ. of Maryland, Baltimore County*; Kim, Seung-Jun* *Univ. of Maryland, Baltimore County*; Chen, Rong *Univ. of Maryland, Baltimore*; Herskovits, Edward *The Univ. of Maryland, Baltimore*

10:00-11:30 WeBPoT5.4
Symbolic Representation of Brain Vascular Network with ArterioVenous Malformations from 3DRA Images 662-665
Li, Fan* *ESME Sudria Engineering School*; Tankyevych, Olena *Paris-Est Univ.*; Chenoune, Yasmina *Laboratoire Ingénierie des Systèmes de Traitement de l'Informati*; Blanc, Raphaël *Fondation Ophtalmologique de Rhothschild, Interventional Neurora*; Petit, Eric *Univ. Paris 12 Val-de-Marne*

10:00-11:30 WeBPoT5.5
An Age Estimation Method using Brain Local Features for T1-Weighted Images 666-669
Kondo, Chihiro* *Tohoku Univ.*; Ito, Koichi *Tohoku Univ.*; Wu, Kai *South China Univ. of Technology*; Sato, Kazunori *Tohoku Univ.*; Taki, Yasuyuki *Tohoku Univ.*; Fukuda, Hiroshi *Tohoku Pharmaceutical Univ.*; Aoki, Takafumi *Tohoku Univ.*

10:00-11:30 WeBPoT5.6
Exploring Influence of Subliminal Interoception on Whole-Brain Functional Network Connectivity Dynamics 670-674
Jarrahi, Behnaz* *Univ. of California, Los Angeles*; Mantini, Dante *ETH*; Mehnert, Ulrich *Univ. of Zurich, Balgrist Univ. Hospital*; Kollias, Spyros *Univ. Hospital Zurich*

10:00-11:30 WeBPoT5.7
Automatic and Robust Single-Camera Specular Highlight Removal in Cardiac Images 675-678
Alsaleh, Samar* *George Washington Univ., Dept. of Computer Science, Th*; Aviles, Angelica Ivone *Univ. Politècnica de Catalunya*; Sobrevilla, Pilar *Univ. Politècnica de Catalunya - NIF*; Casals, Alicia *Institute for Bionginengineering of Catalonia and Univ. Politècni*; Hahn, James *George Washington Univ.*

10:00-11:30 WeBPoT5.8
Creating Shape Templates for Patient Specific Biventricular Modeling in Congenital Heart Disease 679-682
Gilbert, Kathleen* *Univ. of Auckland*; Farrar, Genevieve *Univ. of California, San Diego*; Cowan, Brett *Univ. of Auckland*; Suinesiaputra, Avan *Univ. of Auckland*; Occleshaw, Christopher *Univ. of Auckland*; Pontre, Beau *Univ. of Auckland*; Perry, James *Univ. of California, San Diego*; Hegde, Sanjeet *Univ. of California, San Diego*; Marsden, Alison *Univ. of California, San Diego*; Omens, Jeffrey *UCSD*; McCulloch, Andrew *Univ. of California, San Diego*; Young, Alistair *Univ. of Auckland*

10:00-11:30	WeBPoT5.9
Automatic Localization of the Left Ventricle in Cardiac MRI Images using Deep Learning	683-686
Emad, Omar* <i>Nile Univ.</i> ; Yassine, Inas <i>Cairo Univ.</i> ; Fahmy, Ahmed S. <i>Cairo Univ.</i>	
10:00-11:30	WeBPoT5.10
Relationship between Cardiac Quiescent Periods Derived from Seismocardiography and Echocardiography	687-690
Wick, Carson <i>Georgia Institute of Technology</i> ; Inan, Omer <i>Georgia Institute of Technology</i> ; Bhatti, Pamela <i>Georgia Institute of Technology</i> ; Tridandapani, Srimi* <i>Emory Univ.</i>	
10:00-11:30	WeBPoT5.11
Identification of Left Ventricular Systolic Dysfunction and Contraction Inhomogeneity in Post-Infarction Patients using a Segmental Two-Parameter Empirical Deformable Model	691-694
Leong, Chen Onn* <i>Univ. of Malaya</i> ; Jahanzad, Zeinab <i>Univ. of Malaya</i> ; Liew, Yih Miin <i>Univ. of Malaya</i> ; Lim, Einly <i>Univ. of Malaya</i>	
10:00-11:30	WeBPoT5.12
Quantification of Coronary Artery Stenosis by Area Stenosis from Cardiac CT Angiography	695-698
Zhou, Jiayin* <i>Institute for Infocomm Research</i> ; Huang, Weimin <i>Institute for Infocomm Research, Agency for Science Technology and</i> ; Chi, Yanling <i>Institute for Infocomm Research</i> ; Duan, Yuping <i>Institute for Infocomm Research, A*STAR</i> ; Zhong, Liang <i>National Heart Centre Singapore</i> ; Zhao, Xiaodan <i>National Heart Centre Singapore</i> ; Zhang, Jun-Mei <i>National Heart Center</i> ; Tan, Ru San <i>National Heart Center</i> ; Xiong, Wei <i>Institute for Infocomm Research, A-STAR</i> ; Toe, Kyaw Kyar <i>Institute for Infocomm Research, A*STAR</i>	
10:00-11:30	WeBPoT5.13
Brain Tumor Grading based on Neural Network and Convolutional Neural Network	699-702
Pan, Yuehao <i>Nanyang Technological Univ.</i> ; Huang, Weimin* <i>Institute for Infocomm Research, Agency for Science Technology and</i> ; Lin, Zhiping <i>Nanyang Technological Univ.</i> ; Zhu, Wanzheng <i>Nanyang Technological Univ.</i> ; Zhou, Jiayin <i>Institute for Infocomm Research</i> ; Wong, Yen Ling <i>Jocelyn National Univ. Health System</i> ; Ding, Zhongxiang <i>Zhejiang Provincial People's Hospital</i>	
10:00-11:30	WeBPoT5.14
Measurement of Body Joint Angles for Physical Therapy based on Mean Shift Tracking using Two Low Cost Kinect Images	703-706
Chen, Yung-Chih <i>Tzu Chi Univ.</i> ; Lee, H. J* <i>Tzu Chi Univ.</i> ; Lin, K.H <i>Tzu Chi Univ.</i>	
10:00-11:30	WeBPoT5.15
Multiscale Edge Detection and Parametric Shape Modeling for Boundary Delineation in Optoacoustic Images	707-710
Mandal, Subhamoy* <i>TU München and Helmholtz Zentrum München</i> ; P Sudarshan, Viswanath <i>TU Munich</i> ; Nagaraj, Yeshaswini <i>Technical Univ. Munich</i> ; Deán-Ben, C. Luis <i>Biological and Medical Imaging, Technical Univ. of Munich a</i> ; Razansky, Daniel <i>Technical Univ. of Munich and Helmholtz Center Munich</i>	
WeBPoT6: 10:00-11:30	Gold Room
2.33 Image Classification and Feature Extraction II (Poster Session)	
10:00-11:30	WeBPoT6.1
Transfer Representation Learning for Medical Image Analysis	711-714
Shie, ChuenKai* <i>HTC corporation</i> ; Chuang, Chung-Hsiang <i>HTC</i> ; Wu, Jake Meng-Hsi <i>HTC Corporation</i> ; Chou, Chun-Nan <i>HTC Corporation</i> ; Chang, Edward <i>HTC Reseach</i>	
10:00-11:30	WeBPoT6.2
Glaucoma Detection based on Deep Convolutional Neural Network	715-718
Chen, Xiangyu* <i>Institute for Infocomm Research, A*STAR</i> ; Xu, Yanwu <i>Institute for Infocomm Research</i> ; Wong, Damon <i>Institute for Infocomm Research</i> ; Wong, Tien Yin <i>National Univ. of Singapore</i> ; Liu, Jiang <i>Institute for Infocomm Research, A STAR</i>	
10:00-11:30	WeBPoT6.3
Fuzzy Membership Functions for Analysis of High-Resolution CT Images of Diffuse Pulmonary Diseases	719-722
Almeida, Eliana Silva de <i>Univ. Federal de Alagoas</i> ; Rangayyan, Raj* <i>Univ. of Calgary</i> ; Azevedo-Marques, Paulo Mazzoncini <i>Univ. of São Paulo</i>	

10:00-11:30	WeBPoT6.4
Classification of Vertebral Compression Fractures in Magnetic Resonance Images using Spectral and Fractal Analysis	723-726
Azevedo-Marques, Paulo Mazzoncini* <i>Univ. of São Paulo</i> ; Spagnoli, Heloisa Ferreira <i>Univ. of São Paulo</i> ; Frighetto-Pereira, Lucas <i>Univ. of São Paulo</i> ; Menezes-Reis, Rafael <i>Univ. of São Paulo</i> ; Metzner, Guilherme A. <i>Univ. of São Paulo</i> ; Rangayyan, Raj <i>Univ. of Calgary</i> ; Nogueira-Barbosa, Marcello <i>Univ. of Sao Paulo</i>	
10:00-11:30	WeBPoT6.5
Detection of Blur Artifacts in Histopathological Whole-Slide Images of Endomyocardial Biopsies	727-730
Wu, Hang <i>Georgia Institute of Technology</i> ; Phan, John H. <i>Georgia Institute of Technology</i> ; Bhatia, Ajay Emory <i>Univ.</i> ; Cundiff, Caitlin <i>Emory Univ.</i> ; Shehata, Bahig <i>Emory Univ.</i> ; Wang, May D.* <i>Georgia Tech and Emory Univ.</i>	
10:00-11:30	WeBPoT6.6
Blood Detection in Wireless Capsule Endoscope Images based on Salient Superpixels	731-734
Iakovidis, Dimitris* <i>Technological Educational Institute of Central Greece</i> ; Chatzis, Dimitris <i>Univ. of Thessaly</i> ; Chrysanthopoulos, Panos <i>Univ. of Thessaly</i> ; Koulaouzidis, Anastasios <i>The Royal Infirmary of Edinburgh</i>	
10:00-11:30	WeBPoT6.7
Voice Pathology Classification based on High-Speed Videoendoscopy	735-738
Panek, Daria* <i>AGH Univ. of Science and Technology</i> ; Skalski, Andrzej <i>AGH Univ. of Science and Technology</i> ; Zielinski, Tomasz <i>AGH Univ of Science & Technology</i> ; Deliyski, Dimitar <i>Communication Sciences Research Center, Cincinnati Children's Ho</i>	
10:00-11:30	WeBPoT6.8
Automatic Segmentation of Rima Glottidis in 4D Laryngeal CT Scans for Early Detection of Parkinson's Disease	739-742
Hewavitharanage, Sajini Ruwanthika Gintota* <i>The Univ. of Melbourne</i> ; Gubbi, Jayavardhana <i>The Univ. of Melbourne</i> ; Thyagarajan, Dominic <i>Monash Medical Centre</i> ; Lau, Ken <i>Monash Medical Centre</i> ; Palaniswami, Marimuthu <i>The Univ. of Melbourne</i>	
10:00-11:30	WeBPoT6.9
Automatic Detection of Cell Divisions (Mitosis) in Live-Imaging Microscopy Images using Convolutional Neural Networks	743-746
Shkolyar, Anat <i>Tel Aviv Univ.</i> ; Gefen, Amit <i>Tel Aviv Univ.</i> ; Benayahu, Dafna <i>Tel Aviv Univ.</i> ; Greenspan, Hayit K.* <i>Tel Aviv Univ.</i>	
10:00-11:30	WeBPoT6.10
A Multi-Environment Dataset for Activity of Daily Living Recognition in Video Streams	747-750
Borreo, Alessandro <i>Dept. of Engineering, Univ. Campus Bio-Medico of Rome</i> ; Onofri, Leonardo <i>Univ. Campus Bio-Medico di Roma</i> ; Soda, Paolo* <i>Univ. Campus Bio-Medico</i>	
10:00-11:30	WeBPoT6.11
Estimating Flow Rate and Total Volume of Simulated Urine Flow Noninvasively from a Monocular Camera	751-754
Isomura, Atsushi* <i>Aichi Prefectural Univ.</i> ; Bhuiyan, Shoab <i>Suzuka Univ. of Medical Science</i> ; Kawanaka, Haruki <i>Aichi Prefectural Univ.</i> ; Watanabe, Eiichi <i>Fujita Health Univ.</i> ; Oguri, Koji <i>Aichi Prefectural Univ.</i>	
10:00-11:30	WeBPoT6.12
Follow-Me: A New Start-and-Stop Method for Visual Animal Tracking in Biology Research	755-758
Linares-Sánchez, Luis Javier <i>Univ. of Murcia</i> ; Fernandez Aleman, Jose Luis <i>Univ. of Murcia</i> ; García-Mateos, Ginés* <i>Univ. of Murcia</i> ; Pérez-Ruzafa, Ángel <i>Univ. of Murcia</i> ; Sánchez-Vázquez, Francisco Javier <i>Univ. of Murcia</i>	
10:00-11:30	WeBPoT6.13
Hyperspectral Image Acquisition and Analysis of Cultured Bacteria for the Discrimination of Urinary Tract Infections	759-762
Turra, Giovanni <i>Univ. of Brescia, Copan Italia SpA</i> ; Conti, Nicola <i>Univ. of Brescia, Copan Italia SpA</i> ; Signoroni, Alberto* <i>Univ. of Brescia</i>	
10:00-11:30	WeBPoT6.14
A Tool for the Quantification of Radial Neo-Vessels in Chick Chorioallantoic Membrane Angiogenic Assays	763-766
Gnutti, Alessandro <i>Univ. of Brescia</i> ; Signoroni, Alberto* <i>Univ. of Brescia</i> ; Leonardi, Riccardo <i>Univ. of Brescia</i> ; Corsini, Michela <i>Univ. of Brescia</i> ; Presta, Marco <i>Univ. of Brescia</i> ; Mitola, Stefania <i>Univ. of Brescia</i>	

10:00-11:30	WeBPoT6.15
Eigenfoot Decomposition of Plantar Pressure Images and Case Study of Feature Prediction of Two Modalities	767-770
Cuppens, Kris* <i>Mobilab - Thomas More Univ. College</i> ; Saey, Tom <i>Mobilab - Thomas More Univ. College</i> ; De Raeve, Eveline <i>Mobilab - Thomas More Univ. College</i> ; Van den Herrewegen, Inge <i>Mobilab - Thomas More Univ. College</i> ; Knippels, Ingrid <i>Mobilab - Thomas More Univ. College</i> ; Broeckx, Mario <i>Mobilab - Thomas More Univ. College</i> ; Peeraer, Louis <i>Mobilab - Thomas More Univ. College</i>	
10:00-11:30	WeBPoT6.16
Moddicom: A Complete and Easily Accessible Library for Prognostic Evaluations Relying on Image Features	771-774
Dinapoli, Nicola <i>Univ. Cattolica del Sacro Cuore</i> ; Alitto, Anna Rita <i>Univ. Cattolica del Sacro Cuore</i> ; Vallati, Mauro <i>Univ. of Huddersfield</i> ; Gatta, Roberto* <i>Univ. Cattolica del Sacro Cuore</i> ; Autorino, Rosa <i>Univ. Cattolica del Sacro Cuore</i> ; Boldrini, Luca <i>Univ. Cattolica del Sacro Cuore</i> ; Damiani, Andrea <i>Univ. Cattolica del Sacro Cuore</i> ; Valentini, Vincenzo <i>Univ. Cattolica del Sacro Cuore</i>	
10:00-11:30	WeBPoT6.17
A 3D Sparse Motion Field Filtering for Quantitative Analysis of Fascial Layers Mobility based on 3D Ultrasound Scans	775-780
Turini, Giuseppe <i>Kettering Univ.</i> ; Condino, Sara* <i>Univ. of Pisa</i> ; Stecco, Antonio <i>Univ. of Padua</i> ; Ferrari, Vincenzo <i>Univ. di Pisa</i> ; Ferrari, Mauro <i>Univ. of Pisa</i> ; Gesi, Marco <i>Univ. of Pisa</i>	
10:00-11:30	WeBPoT6.18
Differential Evolution based Advised SVM for Histopathological Image Analysis for Skin Cancer Detection	781-784
Masood, Ammara <i>Univ. of Technology Sydney</i> ; Al-Jumaily, Adel* <i>Univ. of Technology Sydney</i>	
10:00-11:30	WeBPoT6.19
Transfer Learning for Bag-of-Visual Words Approach to NBI Endoscopic Image Classification	785-788
Sonoyama, Shoji <i>Hiroshima Univ.</i> ; Hirakawa, Tsubasa <i>Hiroshima Univ.</i> ; Tamaki, Toru* <i>Hiroshima Univ.</i> ; Kurita, Takio <i>Hiroshima Univ.</i> ; Raytchev, Bisser <i>Hiroshima Univ.</i> ; Kaneda, Kazufumi <i>Hiroshima Univ.</i> ; Koide, Tetsushi <i>Hiroshima Univ.</i> ; Yoshida, Shigeto <i>Hiroshima General Hospital of West Japan Railway Company</i> ; Kominami, Yoko <i>Hiroshima Univ.</i> ; Tanaka, Shinji <i>Hiroshima Univ.</i>	
10:00-11:30	WeBPoT6.20
Preprocessing with Image Denoising and Histogram Equalization for Endoscopy Image Analysis using Texture Analysis	789-792
Hiroyasu, Tomoyuki <i>Doshisha Univ.</i> ; Hayashinuma, Katsutoshi* <i>Doshisha Univ.</i> ; Ichikawa, Hiroshi <i>Doshisha Univ.</i> ; Yagi, Nobuaki <i>Murakami Memorial Hospital Asahi Univ.</i>	
10:00-11:30	WeBPoT6.21
Segmentation of Ultrasound Images of Fetal Anatomic Structures using Random Forest for Low-Cost Settings	793-796
Crimi, Alessandro* <i>ETH</i> ; Amoah, Benjamin <i>ETH/AIMS</i> ; Anto, Evelyn <i>ETH/AIMS</i>	
10:00-11:30	WeBPoT6.22
Convolutional Neural Networks for Mammography Mass Lesion Classification	797-800
Arevalo, John <i>Univ. Nacional de Colombia</i> ; Gonzalez Osorio, Fabio Augusto <i>Univ. Nacional de Colombia</i> ; Ramos-Pollan, Raul <i>Univ. Industrial de Santander</i> ; Oliveira, José Luis <i>DETI/IEETA - Univ. of Aveiro</i> ; Guevara López, Miguel Angel* <i>Univ. of Aveiro</i>	
10:00-11:30	WeBPoT6.23
Feature Extraction Employing Fuzzy-Morphological Decomposition for Detection and Classification of Mass on Mammograms	N/A
Lima, Sidney* <i>Federal Univ. of Pernambuco</i> ; Azevedo, Washington <i>Federal Univ. of Pernambuco</i> ; Cordeiro, Filipe <i>Federal Univ. of Pernambuco</i> ; Silva-Filho, Abel <i>Federal Univ. of Pernambuco</i> ; dos Santos, Wellington <i>Univ. Federal de Pernambuco</i>	

10:00-11:30	Development of a Multichannel Implantable Connector 805-808 Koch, Julia* <i>Univ. of Freiburg</i> ; Ordonez, Juan Sebastian <i>Univ. of Freiburg</i> ; Stieglitz, Thomas <i>Univ. of Freiburg</i> ; Schuettler, Martin <i>Univ. of Freiburg</i>	WeBPoT7.1
10:00-11:30	Non-Hermetic Encapsulation for Implantable Electronic Devices based on Epoxy 809-812 Boeser, Fabian* <i>Univ. of Freiburg</i> ; Ordonez, Juan Sebastian <i>Univ. of Freiburg</i> ; Schuettler, Martin <i>Univ. of Freiburg</i> ; Stieglitz, Thomas <i>Univ. of Freiburg</i> ; Plachta, Dennis T.T. <i>Univ. of Freiburg - IMTEK</i>	WeBPoT7.2
10:00-11:30	On the use of Test Gases of Various Radii to Investigate Molecular Sieving in Leak Channels 813-816 Lim, William W* <i>Univ. of New South Wales</i> ; Bucknall, Martin Paul <i>Univ. of New South Wales</i> ; Adler, Lewis <i>Univ. of New South Wales</i> ; McKenzie, David <i>Univ. of Sydney</i> ; Suaning, Gregg <i>The Univ. of New South Wales</i>	WeBPoT7.3
10:00-11:30	Safe Inductive Power Transmission to Millimeter-Sized Implantable Microelectronics Devices 817-820 Kiani, Mehdi* <i>Pennsylvania State Univ.</i> ; Ibrahim, Ahmed <i>Pennsylvania State Univ.</i>	WeBPoT7.4
10:00-11:30	Deep Tissue Targeted Near-Infrared Optogenetic Stimulation using Fully Implantable Upconverting Light Bulbs 821-824 Chamanzar, Maysamreza* <i>Univ. of California Berkeley</i> ; Garfield, David <i>Molecular Foundry, Lawrence Berkeley National Laboratory, CA USA</i> ; Iafrati, Jillian <i>Univ. of California San Francisco</i> ; Sohal, Vikaas <i>Univ. of California San Francisco</i> ; Chan, Emory <i>Molecular Foundry, Lawrence Berkeley National Laboratory, CA USA</i> ; Cohen, Bruce <i>Molecular Foundry, Lawrence Berkeley National Laboratory, CA USA</i> ; Schuck, P. James <i>Molecular Foundry, Lawrence Berkeley National Laboratory, CA USA</i> ; Maharbiz, Michel <i>Univ. of California, Berkeley</i>	WeBPoT7.5
10:00-11:30	Adaptive Kalman Filter for Indoor Localization using Bluetooth Low Energy and Inertial Measurement Unit 825-828 Yoon, Paul K.* <i>Simon Fraser Univ.</i> ; Zihajehzadeh, Shaghayegh <i>PhD Student, Simon Fraser Univ.</i> ; Kang, Bong-Soo <i>Hannam Univ.</i> ; Park, Edward J. <i>Simon Fraser Univ.</i>	WeBPoT7.6
10:00-11:30	A Wireless Monitoring System for Hydrocephalus Shunts 829-832 Narayanaswamy, Anand <i>Univ. of Texas at Dallas</i> ; Nourani, Mehrdad* <i>Univ. of Texas at Dallas</i> ; Tamil, Lakshman <i>Univ. of Texas at Dallas</i> ; Bianco, Sabatino <i>Bianco Brain & Spine</i>	WeBPoT7.7

10:00-11:30	A Reconfigurable Medically Cohesive Biomedical Front-End with $\Sigma\Delta$ ADC for in 0.18μm CMOS 833-836 Jha, Pankaj* <i>Indian Institute of Technology Hyderabad</i> ; Patra, Pravanjan <i>Indian Institute of Technology Hyderabad</i> ; Naik, Jairaj <i>Indian Institute of Technology Hyderabad</i> ; Acharyya, Amit <i>Indian Institute of Technology Hyderabad</i> ; Singh, Shiv Govind <i>IIT Hyderabad</i> ; P, Rajalakshmi <i>Indian Institute of Technology Hyderabad</i> ; Dutta, Ashudeb <i>Indian Institute of Technology Hyderabad</i>	WeBPoT8.1
10:00-11:30	A 0.5-V Multi-Channel Low-Noise Readout Front-End for Portable EEG Acquisition 837-840 Huang, Wen-Yen* <i>National Tsing-Hua Univ.</i> ; Cheng, Yu-Wei <i>National Tsing-Hua Univ.</i> ; Tang, Kea Tiong <i>National Tsing Hua Univ.</i>	WeBPoT8.2
10:00-11:30	Estimating Direction and Depth of Visual Fixation using Electrooculography 841-844 Stevenson, Cory* <i>Univ. of California, San Diego</i> ; Jung, Tzyy-Ping <i>Univ. of California San Diego</i> ; Cauwenberghs, Gert <i>Univ. of California San Diego</i>	WeBPoT8.3

10:00-11:30	WeBPoT8.4
On the Identification and Interpretation of Human Skin Spectral Responses under Adverse Environmental Conditions	845-848
Baranoski, Gladimir <i>Univ. of Waterloo</i> ; Chen, Tenn Francis* <i>Univ. of Waterloo</i>	
10:00-11:30	WeBPoT8.6
A Non-Contact Capacitance based ElectroCardiograph and Associated Heart-Rate Detection using Enhanced Fourier Interpolation Method	849-852
Kumar Thakur, Rupak* <i>Indian Institute of Technology Kharagpur</i> ; Chandrika Sreekantan, Anoop <i>Indian Institute of Technology Kharagpur</i>	
10:00-11:30	WeBPoT8.7
Estimating Respiratory Rate from FBG Optical Sensors	853-856
Zhu, Yongwei* <i>Institute for Infocomm Research, Agency for Science, Technology</i> ; Maniyeri, Jayachandran <i>Institute for Infocomm Research</i> ; Foo, Siang Fook Victor <i>Institute for Infocomm Research</i> ; Zhang, Haihong <i>Institute for Infocomm Research</i>	
10:00-11:30	WeBPoT8.8
An Ultra Low Power ECG Signal Processor Design for Cardiovascular Disease Detection	857-860
Jain, Sanjeev Kumar* <i>Indian Institute of Tech. Delhi</i> ; Bhaumik, Basabi <i>Indian Institute of Tech. Delhi</i>	
10:00-11:30	WeBPoT8.9
Accuracy of Reflectance Photoplethysmography on Detecting Cuff-Induced Vascular Occlusions	861-864
Ysehak Abay, Tomas* <i>City Univ. of London</i> ; Kyriacou, Panayiotis <i>City Univ. London</i>	
10:00-11:30	WeBPoT8.10
Preliminary Analysis of the use of Smartwatches for Longitudinal Health Monitoring	865-868
Jovanov, Emil* <i>Univ. of Alabama in Huntsville</i>	

WeBPoT9: 10:00-11:30	Gold Room
3.19 Micro- and Nano-Technology (Poster Session)	

10:00-11:30	WeBPoT9.1
A Hand-Held Micro Surgical Device for Contact Force Regulation against Involuntary Movements	869-872
Kyeong, Seulki <i>KAIST</i> ; Chang, Dongjune <i>KAIST</i> ; Kim, Yunjoo <i>KAIST</i> ; Gu, Gwang Min <i>KAIST</i> ; Lee, Seungkey <i>KAIST</i> ; Jeong, Soohoa <i>KAIST</i> ; Kim, Jung* <i>KAIST</i>	
10:00-11:30	WeBPoT9.2
Electronic Cages for Living Cells	873-876
Al Saeed, Sarah* <i>Kuwaiti Biomedical Engineering Society</i> ; Bakewell, David <i>Univ. of Liverpool</i>	
10:00-11:30	WeBPoT9.3
A 512-Channels, Whole Array Readout, CMOS Implantable Probe for Acute Recordings from the Brain	877-880
Angotzi, Gian Nicola* <i>IIT, Genova</i> ; Malerba, Mario <i>Fondazione Istituto Italiano di Tecnologia</i> ; Zucca, Stefano <i>Fondazione Istituto Italiano di Tecnologia</i> ; Berdondini, Luca <i>Istituto Italiano di Tecnologia</i>	
10:00-11:30	WeBPoT9.4
Automated Navigation of a Glass Micropipette on a High-Density Microelectrode Array	881-884
Lin, Jing <i>ETH Zurich</i> ; Obien, Marie Engelene* <i>RIKEN Quantitative Biology Center</i> ; Hierlemann, Andreas <i>ETH Zurich</i> ; Frey, Urs <i>RIKEN</i>	
10:00-11:30	WeBPoT9.5
Design of a Wideband CMOS Impedance Spectroscopy ASIC Analog Front-End for Multichannel Biosensor Interfaces	885-888
Valente, Virgilio* <i>Univ. College London</i> ; Jiang, Dai <i>Univ. College London</i> ; Demosthenous, Andreas <i>Univ. College London</i>	
10:00-11:30	WeBPoT9.6
A 1.04uW Wireless Integrated MEMS Interface in UMC 0.18um CMOS	889-892
Laurenson, Callum <i>Monash Univ.</i> ; Rivet, Francois <i>Univ. of Bordeaux</i> ; Yuce, Mehmet <i>Monash Univ.</i> ; Redouté, Jean-Michel* <i>Monash Univ.</i>	

10:00-11:30 WeBPoT9.7
High-Intensity Static Magnetic Field Exposure Devices for in Vitro Experiments on Biopharmaceutical Plant Factories in Aerospace Environments 893-896
Lopresto, Vanni* *ENEA*; Merla, Caterina *ENEA*; Pinto, Rosanna *ENEA*; Benvenuto, Eugenio *ENEA*

10:00-11:30 WeBPoT9.8
Design Optimization of the Sensor Spatial Arrangement in a Direct Magnetic Field-Based Localization System for Medical Applications 897-900
Maréchal, Luc *SUTD (Singapore Univ. of Technology and Design)*; Foong, Shaohui* *Singapore Univ. of Technology and Design (SUTD)*; Sun, Zhenglong *Singapore Univ. of Technology and Design (SUTD)*; Wood, Kristin *Singapore Univ. of Technology and Design (SUTD)*

WeBPoT10: 10:00-11:30 Gold Room
4.12 Biomechanics Modeling (Poster Session)

10:00-11:30 WeBPoT10.1
Inferring Intra-Cellular Mechanics using Geometric Metamorphosis: A Preliminary Study 901-904
Hussan, Jagir R.* *Univ. of Auckland*; Hunter, Peter *Univ. of Auckland*

10:00-11:30 WeBPoT10.2
Stiffness Matrix Representation of Hyper-Elasticity for Surgical Simulation and Navigation 905-908
Nishiyama, Shuhei* *Osaka Univ.*; Kuroda, Yoshihiro *Osaka Univ.*; Takemura, Haruo *Osaka Univ.*

10:00-11:30 WeBPoT10.3
Development of a Finite Element Model of a Finger Pad for Biomechanics of Human Tactile Sensations 909-912
Vodlak, Teja* *Swansea Univ.*; Vidrih, Zlatko *Swansea Univ.*; Fetih, Dusan *C3M, Centre for Computational Continuum Mechanics*; Peric, Djordje *Swansea Univ.*; Rodic, Tomaz *C3M, Centre for Computational Continuum Mechanics*

10:00-11:30 WeBPoT10.4
Combined Approach for the Biomechanical Characterization of Skin Lesions 913-916
Franzetti, Gaia* *Politecnico di Milano*; Crippa, Federica *Politecnico di Milano*; Cutri, Elena *Dept. of Chemistry, Materials and Chemical Engineering Depa*; Spatafora, Grazia *Dept. of Chemistry, Materials and Chemical Engineering Depa*; Montin, Eros *Politecnico di Milano*; Mainardi, Luca *Politecnico di Milano*; Spadola, Giuseppe *Dermatological Surgery Division, Istituto Europeo di Oncologia*; Testori, Alessandro *Dermatological Surgery Division, Istituto Europeo di Oncologia*; Pennati, Giancarlo *Dept. of Chemistry, Materials and Chemical Engineering Depa*

10:00-11:30 WeBPoT10.5
Implementation of a 3D Porcine Lumbar Finite Element Model for the Simulation of Monolithic Spinal Rods with Variable Flexural Stiffness 917-920
Brummund, Martin* *École de Technologie Supérieure*; Brailovski, Vladimir *Ecole de technologie supérieure*; Facchinello, Yann *École de Technologie Supérieure*; Petit, Yvan *École de Technologie Supérieure*; Mac-Thiong, Jean-Marc *Dept. of surgery, Faculty of Medicine, Univ. of Montre*

10:00-11:30 WeBPoT10.6
A Mechano-Regulatory Model for Bone Healing Predictions under the Influence of Ultrasound 921-924
Vavva, Maria *Univ. of Ioannina*; Grivas, Konstantinos *Dept. of Mechanical Engineering and Aeronautics, Univ.*; Aurelie, Carlier *Dept. of Mechanical Engineering, KU Leuven, Leuven*; Polyzos, Demosthenes *Univ. of Patras*; Geris, Liesbet *Univ. de Liège, Biomechanics Research Unit; KU Leuven, Prom*; Van Oosterwyck, Hans *Dept. of Mechanical Engineering, KU Leuven, Leuven, Belgium*; Fotiadis, Dimitrios I.* *Univ. of Ioannina*

10:00-11:30 WeBPoT10.7
Effect of Modeling Parameters on the Frequency Response of the Middle Ear by Means of Finite Element Analysis 925-928
Spiridon, Ioannis *Unit of Medical Technology and Intelligent Information Systems,*; Sakellarios, Antonis *Univ. of Ioannina*; Rigas, Georgios *Univ. of Ioannina*; Tagaris, Anastassios *National Technical Univ. of Athens*; Bellos, Christos *National Technical Univ. of Athens*; Bibas, Thanos *Univ. of Athens*; Böhnke, Frank *Technical Univ. of Munich*; Iliopoulou, Dimitra *National Technical Univ. of Athens*; Koutsouris, Dimitrios *Biomedical Engineering Laboratory, School of Electrical and Comp*; Fotiadis, Dimitrios I.* *Univ. of Ioannina*

10:00-11:30 WeBPoT10.8
Compliance Boundary Conditions for Simulating Deformations in a Limited Target Region 929-932
Ozkan, Ece* *ETH Zurich*; Goksel, Orcun *ETH Zurich*

10:00-11:30 WeBPoT10.9
Recovering the Mechanical Properties of Denatured Intervertebral Discs through Platelet-Rich Plasma Therapy 933-936
Khalaf, Kinda* *KUSTAR*; Nikkhoo, Mohammad *Science and Research Branch, Islamic Azad Univ.*; Kuo, Y.W. *National Taiwan Univ.*; Hsu, Y.C. *National Taiwan Univ.*; Parnianpour, Mohammad *Sharif Univ. of Technology*; Campbell-Kyureghyan, Naira *Univ. of Wisconsin*; Haghpanahi, Mohammad *Iran Univ. of Science and Tech*; Wang, J.L. *National Taiwan Univ.*

WeBPoT11: 10:00-11:30 Gold Room
4.13 Synthetic Biology (Poster Session)

10:00-11:30 WeBPoT11.1
Reconfigurable Neuromorphic Computation in Biochemical Systems 937-940
Chiang, Hui-Ju Katherine *National Taiwan Univ.*, *Inria Paris-Rocquencourt*; Jiang, Jie-Hong R.* *National Taiwan Univ.*; Fages, François *Inria Paris-Rocquencourt*

10:00-11:30 WeBPoT11.2
Retroactivity Analysis of a Chemical Reaction Network Module for the Subtraction of Molecular Fluxes 941-944
Bilotta, Mariaconcetta* *Univ. Magna Graecia di Catanzaro*; Cosentino, Carlo *Univ. degli Studi Magna Graecia di Catanzaro*; Bates, Declan Gerard *Univ. of Warwick*; Salerno, Luca *Univ. degli Studi Magna Graecia di Catanzaro*; Amato, Francesco *Univ. degli Studi Magna Graecia di Catanzaro*

10:00-11:30 WeBPoT11.3
Development and Experimental Validation of a Mechanistic Model of in Vitro DNA Recombination 945-948
Bowyer, Jack Edward* *Univ. of Warwick*; Bates, Declan Gerard *Univ. of Warwick*

10:00-11:30 WeBPoT11.4
Biomolecular Implementation of a Quasi Sliding Mode Feedback Controller based on DNA Strand Displacement Reactions 949-952
Sawlekar, Rucha* *Univ. of Warwick*; Montefusco, Francesco *Univ. of Padova*; Kulkarni, Vishwesh *Univ. of Warwick*; Bates, Declan Gerard *Univ. of Warwick*

10:00-11:30 WeBPoT11.5
Methods for Genetic Optimization of Biocatalysts for Biofuel Production from Dairy Waste through Synthetic Biology 953-956
Pasotti, Lorenzo* *Univ. of Pavia, via Ferrata 5, Pavia, I-27100, Italy*; Zucca, Susanna *Dept. of Electrical, Computer and Biomedical Engineering, U*; Casanova, Michela *Dept. of Electrical, Computer and Biomedical Engineering, U*; Politi, Nicolo' *Dept. of Electrical, Computer and Biomedical Engineering, U*; Massaiu, Ilaria *Dept. of Electrical, Computer and Biomedical Engineering, U*; Mazzini, Giuliano *Institute of Molecular Genetics, National Resource Council, via*; Micoli, Giuseppina *Centro di Ricerche Ambientali, IRCCS Fondazione Salvatore Mauger, Calvio, Cinzia Dept. of Biology and BioTechnology "Lazzaro Spallanzani", U*; Cusella De Angelis, Maria Gabriella *Dept. of Public Health, Experimental Medicine and Forensics*; Magni, Paolo *Univ. of Pavia*

WeBPoT12: 10:00-11:30 Gold Room
5.10 Blood Flow Models (Poster Session)

10:00-11:30 WeBPoT12.1
Changes in Inflammatory Response During and After Cardiopulmonary Bypass using a Rat Extracorporeal Circulation Model 957-960
Fujii, Yutaka* *Natl. cerebral and cardiovascular Center Research Institute*; Shirai, Mikiyasu *Natl. Cardiovascular Center Research Institute*; Pearson, James *Monash Univ.*; Takewa, Yoshiaki *Dept. of Artificial Organs, Natl. Cerebral and Cardiovas*; Tatsumi, Eisuke *Dept. of Artificial Organs, Natl. Cerebral and Cardiovas*

10:00-11:30 WeBPoT12.2
Effect of in Vivo Flow Dynamics on Angiogenesis by Computational Modeling 961-964
Ghaffari, Siavash* *McGill*; Leask, Richard *McGill*; Jones, Elizabeth *KU Leuven*

10:00-11:30 WeBPoT12.3
GPU-Accelerated Model for Fast, Three-Dimensional Fluid-Structure Interaction Computations 965-968
Nita, Cosmin* *Transilvania Univ. of Brasov*; Itu, Lucian *Transilvania Univ. of Brasov*; Mihalef, Viorel *Siemens Corporate Research*; Sharma, Puneet *Siemens Corporation, Corporate Technology*; Rapaka, Saikiran *Siemens Corporate Technology*

10:00-11:30 WeBPoT12.4
CFD Analysis of Unsteady Flow through Conjoining Aorta and Aortic Isthmus 969-972
Gunter, Amy Lee *Concordia Univ.*; Keshavarz-Motamed, Zahra *Concordia Univ.*; Portaro, Rocco* *Concordia Univ.*; Kadem, Lyes *Concordia Univ.*; Ng, Hoi Dick *Concordia Univ.*

10:00-11:30 WeBPoT12.5
Validation Study of a 3D-QCA Coronary Reconstruction Method using a Hybrid IntraVascular UltraSound and Angiography Reconstruction Method and Patient-Specific Fractional Flow Reserve Data 973-976
Siogkas, Panagiotis *FORTH-IMBB*; Athanasiou, Lambros *Univ. of Ioannina*; Sakellarios, Antonis *Univ. of Ioannina*; Stefanou, Kostas *FORTH-BRI*; Exarchos, Themis P. *Unit of Medical Tech & Intelligent Info*; Papafaklis, Michail *Medical School, Univ. of Ioannina*; Naka, Katerina *Univ. of Ioannina*; Parodi, Oberdan *CNR Clinical Physiology Institute - Milan*; Michalis, Lampros *Univ. of Ioannina*; Fotiadis, Dimitrios I.* *Univ. of Ioannina*

10:00-11:30 WeBPoT12.6
Numerical Analysis of the Hemodynamics of an Abdominal Aortic Aneurysm Repaired using the Endovascular Chimney Technique 977-980
Ben Gur, Hila* *School of Mechanical Engineering, Faculty of Engineering, Tel Av*; Kosa, Gabor *Tel Aviv Univ., School of Mechanical Engineering*; Moshe, Brand *Ariel Univ. Center of Samaria*

10:00-11:30 WeBPoT12.7
Computational Analysis of Stenosis Geometry Effects on Right Coronary Hemodynamics 981-984
Caruso, Maria Vittoria *Magna Graecia Univ.*; De Rosa, Salvatore *Magna Graecia Univ.*; Indolfi, Ciro *Magna Graecia Univ.*; Fragomeni, Gionata* *Magna Graecia Univ of Catanzaro*

WeBPoT13: 10:00-11:30 Gold Room
5.11 Arterial Pressure (Poster Session)

10:00-11:30 WeBPoT13.1
Predicting Hyperlactatemia in the MIMIC II Database 985-988
Dunitz, Max* *MIT*; Verghese, George *Massachusetts Institute of Technology*; Heldt, Thomas *Massachusetts Institute of Technology*

10:00-11:30 WeBPoT13.2
Intraoperative Hemodynamics Predict Postoperative Mortality in Orthotopic Liver Transplantation 989-992
Prasad, Varesh* *Massachusetts Institute of Technology*; Toschi, Nicola *Univ. of Rome "Tor Vergata", Faculty of Medicine*; Canichella, Antonio *Univ. of Rome "Tor Vergata"*; Marcellucci, Martina *Univ. of Rome "Tor Vergata"*; Coniglione, Filadelfo *Univ. of Rome "Tor Vergata"*; Dauri, Mario *Univ. of Rome "Tor Vergata"*; Guerrisi, Maria *Univ. of Rome "Tor Vergata"*; Heldt, Thomas *Massachusetts Institute of Technology*

10:00-11:30 WeBPoT13.3
Investigation of the Composition of Arterial Plaques based on Arterial Waveforms and Material Properties 993-996
Feng, Jiling* *Manchester Metropolitan Univ.*; Rajeswaran, T *Manchester Metropolitan Univ.*; Alexander, Yvonne *Manchester Metropolitan Univ.*; Wilkinson, Fiona *Manchester Metropolitan Univ.*; Azzawi, May *Manchester Metropolitan Univ.*; Parikh, V *Bolton Univ.*; MirafTAB, M. *Bolton Univ.*; Serracino-Inglott, Ferdinand *Manchester Royal Infirmary*

10:00-11:30 WeBPoT13.4
Cardiovascular System Identification: Simulation Study using Arterial and Central Venous Pressures 997-1000
Karamolegkos, Nikolaos* *Columbia Univ.*; Vicario, Francesco *Philips Research North America*; Chbat, Nicolas *W. Philips Research North America*

10:00-11:30 WeBPoT13.5
An Assessment of the Relationship between Dicrotic Notch Timing and Cardiac Preload 1001-1004
Kannangara, Don Oliver *Univ. of Canterbury*; Davidson, Shaun *Univ. of Canterbury*; Pretty, Christopher G.* *Univ. of Canterbury*; Kamoi, Shun *Univ. of Canterbury*; Corbett-Davies, Joseph *Univ. of Canterbury*; Desai, Thomas *Univ. of Liege*; Shaw, Geoffrey M *Christchurch Hospital*; Chase, J. Geoffrey *Univ. of Canterbury*

10:00-11:30 WeBPoT13.6
Stroke Volume Estimation using Aortic Pressure Measurements and Aortic Cross Sectional Area: Proof of Concept 1005-1008
Kamoi, Shun* *Univ. of Canterbury*; Pretty, Christopher G. *Univ. of Canterbury*; Chiew, Yeong Shiong *Univ. of Canterbury*; Pironet, Antoine *Univ. of Liège (ULg), GIGA-Cardiovascular Sciences, Liège,*; Davidson, Shaun *Univ. of Canterbury*; Desai, Thomas *Univ. of Liege*; Shaw, Geoffrey M *Christchurch Hospital*; Chase, J. Geoffrey *Univ. of Canterbury*

10:00-11:30 WeBPoT13.7
Wave Speed and Reflections Proximal to Aneurysm and Stenosis of Flexible Tubes 1009-1012
Hacham, Wisam *Univ. of Baghdad*; Abdullah, Najdat *Univ. of Baghdad*; Al-Ammri, A.Salam *Univ. of Baghdad*; Khir, Ashraf* *Brunel Univ.*

WeBPoT14: 10:00-11:30 Gold Room
6.29 Neural Interfaces II (Poster Session)

10:00-11:30 WeBPoT14.1
Chronic and Low Charge Injection Wireless Intraneural Stimulation in Vivo 1013-1016
Romero-Ortega, Mario* *Univ. of Texas at Dallas*; Kanneganti, Aswini *Univ. of Texas at Arlington*; Bendale, Geetanjali *Univ. of Texas at Dallas*; Seifert, Jennifer *Univ. of Texas at Dallas*; Bredeson, Samuel *Illinois Institute of Technology*; Troyk, Philip *Illinois Institute of Technology*; Deku, Felix *Univ. of Texas at Dallas*; Cogan, Stuart *EIC Laboratories, Inc.*

10:00-11:30 WeBPoT14.2
Chronic In-Vivo Testing of a 16-Channel Implantable Wireless Neural Stimulator 1017-1020
Bredeson, Samuel* *Illinois Institute of Technology*; Kanneganti, Aswini *Univ. of Texas at Arlington*; Deku, Felix *Univ. of Texas at Dallas*; Cogan, Stuart *EIC Laboratories, Inc.*; Romero-Ortega, Mario *Univ. of Texas at Dallas*; Troyk, Philip *Illinois Institute of Technology*

10:00-11:30 WeBPoT14.3
Design of Mechanical Interface to Re-Distribute Excess Pressure to Prevent the Formation of Decubitus Ulcers in Bed Ridden Patients 1021-1024
Nageswaran, Sharmila *VIT Univ.*; Vijayakumar, Rekha *VIT Univ.*; Sivarasu, Sudesh* *Univ. of Cape Town*

10:00-11:30 WeBPoT14.4
Towards Out-of-the-Lab EEG in Uncontrolled Environments: Feasibility Study of Dry EEG Recordings during Exercise Bike Riding 1025-1028
Kohli, Siddharth* *The Univ. of Manchester*; Casson, Alexander James *The Univ. of Manchester*

10:00-11:30 WeBPoT14.5
KDI: A Wireless ECoG Recording Platform with Impedance Spectroscopy, Electrical Stimulation and Real-Time, Lossless Data Compression 1029-1032
Foerster, Michael* *CEA/LETI, MINATEC Campus*; Burdin, Florent *CEA LETI CLINATEC*; Safont, Franck *CEA LETI CLINATEC*; Bernert, Marie *CEA LETI CLINATEC*; Dehaene, David *CEA/LETI, MINATEC Campus*; Lambert, Aurélien *CEA LETI CLINATEC*; Charvet, Guillaume *CEA/LETI, MINATEC campus*

10:00-11:30 WeBPoT14.6
An Implantable Wireless Optogenetic Stimulation System for Peripheral Nerve Control 1033-1036
Song, Kang-II* *Korea Institute of Science and Technology*; Park, Sunghye *Korea Institute of Science and Technology*; Kim, Myoung-Soo *Yonsei Univ.*; Joo, Chulmin *Yonsei Univ.*; Kim, Yongjun *Yonsei Univ.*; Suh, Jun-Kyo *Korea Institute of Science and Technology*; Hwang, Dosik *Yonsei Univ.*; Youn, Inchan *Korea Institute of Science and Technology*

10:00-11:30 WeBPoT14.7
A Current-Excited Triple-Time-Voltage Oversampling Method for Bio-Impedance Model for Cost-Efficient Circuit System 1037-1040
Hong, Yan* *Nanyang Technological Univ.*; Wang, Yong *Nanyang Technological Univ.*; Goh, Wang Ling *Nanyang Technological Univ.*; Gao, Yuan *Institute of Microelectronics, Singapore*; Yao, Lei *Institute of Microelectronics, Singapore*

10:00-11:30 WeBPoT14.8
Restoration of Vision using Wireless Cortical Implants: The Monash Vision Group Project 1041-1044
Lowery, Arthur James* *Monash Univ.*; Rosenfeld, Jeffrey V. *Monash Univ.*; Lewis, Philip Mark *Monash Univ.*;
Browne, Damien *Monash Vision Group, Monash Univ.*; Mohan, Anand *Monash Univ.*; Brunton, Emma Kate *Monash Univ.*;
Yan, Edwin *Monash Univ.*; Maller, Jerome *Monash Univ.*; Mann, Collette *Monash Vision Group, Monash Univ.*;
Rajan, Ramesh *Monash Univ.*; Rosa, Marcello *Monash Univ.*; Pritchard, Jeanette *Monash Vision Group*

10:00-11:30 WeBPoT14.9
Mechanical Deformation of Thin Film Platinum under Electrical Stimulation 1045-1048
Ordonez, Juan Sebastian* *Univ. of Freiburg*; Rudmann, Linda *Univ. of Freiburg*; Cvancara, Paul *IMTEK, Univ. of Freiburg*;
Bentler, Christian *Univ. Freiburg*; Stieglitz, Thomas *Univ. of Freiburg*

WeBPoT15: 10:00-11:30 Gold Room
6.30 Brain-Computer/Machine Interface V (Poster Session)

10:00-11:30 WeBPoT15.1
A Co-Adaptive Sensory Motor Rhythms Brain-Computer Interface based on Common Spatial Patterns and Random Forest 1049-1052
Schwarz, Andreas *Graz Univ. of Technology*; Scherer, Reinhold* *Graz Univ. of Technology*; Steyrl, David *Graz Univ. of Technology*;
Faller, Josef *Graz Univ. of Technology*; Müller-Putz, Gernot *Graz Univ. of Technology*

10:00-11:30 WeBPoT15.2
Sheet Music by Mind: Towards a Brain-Computer Interface for Composing 1053-1056
Pinegger, Andreas *Graz Univ. of Technology*; Wriessnegger, Selina* *Graz Univ. of Technology*; Müller-Putz, Gernot *Graz Univ. of Technology*

10:00-11:30 WeBPoT15.3
A Dynamic Stopping Method for Improving Performance of Steady-State Visual Evoked Potential based Brain-Computer Interfaces 1057-1060
Nakanishi, Masaki* *Univ. of California San Diego*; Wang, Yijun *Univ. of California, San Diego*; Wang, Yu-Te *Univ. of California San Diego*;
Jung, Tzzy-Ping *Univ. of California San Diego*

10:00-11:30 WeBPoT15.4
Leveraging Historical Knowledge of Neural Dynamics to Rescue Decoder Performance as Neural Channels are Lost: "Decoder Hysteresis" 1061-1066
Kao, Jonathan* *Stanford Univ.*; Ryu, Stephen *Stanford Univ.*; Shenoy, Krishna V. *Stanford Univ.*

10:00-11:30 WeBPoT15.5
A Multimodal 2D Brain Computer Interface 1067-1070
Almajidy, Rand Kasim* *Univ. Medical Center, Freiburg Dept. of Neurosurgery*; Boudria, Yacine *Univ. of Rhode Island*;
Hofmann, Ulrich G. *Univ. of Freiburg*; Besio, W. G. *Univ. of Rhode Island*; Mankodiya, Kunal *Univ. of Rhode Island*

10:00-11:30 WeBPoT15.6
Head-Related Impulse Response Cues for Spatial Auditory Brain-Computer Interface 1071-1074
Nakaizumi, Chisaki *Univ. of Tsukuba*; Makino, Shoji *Univ. of Tsukuba*; Rutkowski, Tomasz* *Univ. of Tsukuba*

10:00-11:30 WeBPoT15.7
Region based Brain Computer Interface for a Home Control Application 1075-1078
Akman Aydin, Eda* *Gazi Univ.*; Bay, Omer Faruk *Gazi Univ.*; Guler, Inan *Gazi Univ.*

10:00-11:30 WeBPoT15.8
Is Breathing Rate a Confounding Variable in Brain-Computer Interfaces (BCIs) based on EEG Spectral Power? 1079-1082
Ibarra Chaoul, Andrea* *Univ. of Tuebingen*; Grosse-Wentrup, Moritz *Max Planck Institute for Biological Cybernetics*

10:00-11:30 WeBPoT15.9
Comparing Metrics to Evaluate Performance of Regression Methods for Decoding of Neural Signals 1083-1086
Spüler, Martin* *Univ. of Tübingen*; Sarasola-Sanz, Andrea *Univ. of Tübingen*; Birbaumer, Niels *Eberhard-Karls- Univ.*;
Rosenstiel, Wolfgang *Dept. of Computer Engineering, Univ. Tübingen, Germany*; Ramos-Murguialday, Ander *Eberhard Karls Univ. of Tübingen/TECNALIA*

10:00-11:30	WeBPoT15.10
A Brain-Computer Interface (BCI) System to use Arbitrary Windows Applications by Directly Controlling Mouse and Keyboard	1087-1090
Spüler, Martin* <i>Univ. of Tübingen</i>	
10:00-11:30	WeBPoT15.11
Combining Firing Rate and Spike-Train Synchrony Features in the Decoding of Motor Cortical Activity	1091-1094
Chew, Gabriel* <i>Institute for Infocomm Research, Agency for Science, Technology</i> ; Ang, Kai Keng <i>Institute for Infocomm Research</i> ; So, Rosa <i>Institute for Infocomm Research</i> ; Xu, Zhiming <i>Institute for Infocomm Research, Agency for Science, Technology</i> ; Guan, Cuntai <i>Institute for Infocomm Research</i>	
10:00-11:30	WeBPoT15.12
Towards SSVEP-Based, Portable, Responsive Brain-Computer Interface	1095-1098
Kaczmarek, Piotr* <i>Poznan Univ. of Technology</i> ; Salomon, Paweł <i>Poznan Univ. of Technology</i>	
10:00-11:30	WeBPoT15.13
A Generalizable Adaptive Brain-Machine Interface Design for Control of Anesthesia	1099-1102
Yang, Yuxiao <i>Univ. of Southern California</i> ; Shانهchi, Maryam* <i>Univ. of Southern California</i>	
10:00-11:30	WeBPoT15.14
Immersive BCI with SSVEP in VR Head-Mounted Display	1103-1106
Koo, Bonkon <i>POSTECH</i> ; Lee, Hwan-Gon <i>Hallym Univ.</i> ; Nam, Yunjun <i>POSTECH</i> ; Choi, Seungjin* <i>Pohang Univ. of Science and Technology</i>	
10:00-11:30	WeBPoT15.15
Brain-Machine Interfaces for Assistive Smart Homes: A Feasibility Study with Wearable Near-Infrared Spectroscopy	1107-1110
Ogawa, Takeshi* <i>ATR Cognitive Mechanisms Laboratories</i> ; Hirayama, Jun-ichiro <i>Advanced Telecommunications Research Institute International (ATR)</i> ; Pankaj, Gupta <i>ATR Cognitive Mechanisms Laboratories</i> ; Moriya, Hiroki <i>ATR Cognitive Mechanisms Laboratories</i> ; Yamaguchi, Shumpei <i>Shimadzu Corp.</i> ; Ishikawa, Akihiro <i>Shimadzu Corp.</i> ; Inoue, Yoshihiro <i>Shimadzu Corp.</i> ; Kawanabe, Motoaki <i>ATR Cognitive Mechanisms Laboratories</i> ; Ishii, Shin <i>ATR Neural Information Analysis Laboratories, Dept. of Dynamic B</i>	
10:00-11:30	WeBPoT15.16
Decoding Fast-Paced Error-Related Potentials in Monitoring Protocols	1111-1114
Chavarriaga, Ricardo* <i>Ecole Polytechnique Federale de Lausanne</i> ; Iturrate, Inaki <i>EPFL</i> ; Wannebroucq, Quentin <i>EPFL</i> ; Millán, José del R. <i>Ecole Polytechnique Federale de Lausanne</i>	
10:00-11:30	WeBPoT15.17
Detecting Intention to Grasp during Reaching Movements from EEG	1115-1118
Randazzo, Luca* <i>EPFL</i> ; Iturrate, Inaki <i>EPFL</i> ; Chavarriaga, Ricardo <i>Ecole Polytechnique Federale de Lausanne</i> ; Leeb, Robert <i>Ecole Polytechnique Fédérale de Lausanne</i> ; Millán, José del R. <i>Ecole Polytechnique Federale de Lausanne</i>	

WeBPoT16: 10:00-11:30	Gold Room
6.31 Motor Neuroprostheses II (Poster Session)	

10:00-11:30	WeBPoT16.1
Real-Time Simultaneous Myoelectric Control by Transradial Amputees using Linear and Probability-Weighted Regression	1119-1123
Smith, Lauren <i>Northwestern Univ.</i> ; Kuiken, Todd <i>Rehabilitation Institute of Chicago</i> ; Hargrove, Levi* <i>Rehabilitation Institute of Chicago</i>	
10:00-11:30	WeBPoT16.2
Iron 'ElectriRx' Man: Overground Stepping in an Exoskeleton Combined with Noninvasive Spinal Cord Stimulation after Paralysis	1124-1127
Gad, Parag <i>Univ. of California, Los Angeles</i> ; Gerasimenko, Yury <i>Univ. of California, Los Angeles</i> ; Zdunowski, Sharon <i>Univ. of California, Los Angeles, Dept. of Integrative</i> ; Sayenko, Dimitry <i>Univ. of California, Los Angeles, Dept. of Integrative</i> ; Haakana, Piia <i>Univ. of California, Los Angeles, Dept. of Neurosurger</i> ; Turner, Amanda <i>Univ. of California, Los Angeles, Dept. of Integrative</i> ; Lu, Daniel <i>Univ. of California, Los Angeles, Dept. of Neurosurger</i> ; Roy, Roland <i>Univ. of California, Los Angeles</i> ; Edgerton, V Reggie* <i>Univ. of California, Los Angeles</i>	

10:00-11:30	WeBPoT16.3
Detection of Critical Errors of Locomotion Mode Recognition for Volitional Control of Powered Transfemoral Prostheses	1128-1131
Zhang, Fan <i>North Carolina State Univ. and Univ. of North Carolina</i> ; Liu, Ming <i>NC State Univ.</i> ; Huang, He* <i>North Carolina State Univ. and Univ. of North Carolina</i>	
10:00-11:30	WeBPoT16.4
Musculoskeletal Model Predicts Multi-Joint Wrist and Hand Movement from Limited EMG Control Signals ..	1132-1135
Crouch, Dustin <i>North Carolina State Univ.</i> ; Huang, He* <i>North Carolina State Univ. and Univ. of North Carolina</i>	
10:00-11:30	WeBPoT16.5
Muscle Synergies for Reliable Classification of Arm Motions using Myoelectric Interface	1136-1139
Antuvan, Chris Wilson <i>Nanyang Technological Univ.</i> ; Bisio, Federica <i>Univ. of Genoa</i> ; Cambria, Erik <i>Nanyang Technological Univ.</i> ; Masia, Lorenzo* <i>Nanyang Technological Univ.</i>	
10:00-11:30	WeBPoT16.6
Offline Accuracy: A Potentially Misleading Metric in Myoelectric Pattern Recognition for Prosthetic Control	1140-1143
Ortiz-Catalan, Max* <i>Chalmers Univ. of Technology</i> ; Rouhani, Faezeh <i>Chalmers Univ. of Technology</i> ; Brånemark, Rickard <i>Gothenburg Univ.</i> ; Håkansson, Bo <i>Chalmers Univ. of Technology</i>	
10:00-11:30	WeBPoT16.7
A Comparison of Open-Loop and Closed-Loop Adaptive Calibration for Pattern Recognition based Myoelectric Control	1144-1147
He, Jiayuan <i>Shanghai Jiao Tong Univ.</i> ; Zhang, Dingguo <i>Shanghai Jiao Tong Univ.</i> ; Sheng, Xinjun* <i>Shanghai Jiao Tong Univ.</i> ; Zhu, Xiangyang <i>Shanghai Jiao Tong Univ.</i>	

WeBPoT17: 10:00-11:30	Gold Room
8.13 Human Machine Interfaces and Robotics Applications (Poster Session)	

10:00-11:30	WeBPoT17.1
Evaluation of Touch-Sensitive Screen Tablet Terminal Button Size and Spacing Accounting for Effect of Fingertip Contact Angle	1148-1151
Nishimura, Takahiro* <i>National Institute of Special Needs Education</i> ; Doi, Kouki <i>National Institute of Special Needs Education</i> ; Fujimoto, Hiroshi <i>Waseda Univ.</i>	
10:00-11:30	WeBPoT17.2
An Online Hybrid Brain-Computer Interface Combining Multiple Physiological Signals for Webpage Browse	1152-1155
Chen, Long <i>Tianjin Univ.</i> ; Wang, Zhongpeng <i>Tianjin Univ.</i> ; He, Feng <i>Tianjin Univ.</i> ; Yang, Jiajia <i>Tianjin Univ.</i> ; Qi, Hongzhi <i>Tianjin Univ.</i> ; Zhou, Peng <i>Tianjin Univ.</i> ; Wan, Bai-kun <i>Tianjin Univ.</i> ; Ming, Dong* <i>Tianjin Univ.</i>	
10:00-11:30	WeBPoT17.3
Development of a Haptic Interface for Motor Rehabilitation Therapy using Augmented Reality	1156-1159
Vidrios-Serrano, Carlos <i>Univ. Autonoma de Nayarit</i> ; Bonilla, Isela* <i>Univ. Autonoma de San Luis Potosi</i> ; Viguera-Gomez, Flavio <i>Univ. Autonoma de San Luis Potosi</i> ; Mendoza, Marco <i>Univ. Autonoma de San Luis Potosi</i>	
10:00-11:30	WeBPoT17.4
Operation Assistance for the Bio-Remote Environmental Control System using a Bayesian Network-Based Prediction Model	1160-1163
Shibanoki, Taro* <i>Ibaraki Univ.</i> ; Nakamura, Go <i>the Hyogo Rehabilitation Center</i> ; Shima, Keisuke <i>Yokohama National Univ.</i> ; Chin, Takaaki <i>Hyogo Rehabilitation Center</i> ; Tsuji, Toshio <i>Hiroshima Univ.</i>	

WeBPoT18: 10:00-11:30	Gold Room
8.14 Haptic Interfaces (Poster Session)	

10:00-11:30	WeBPoT18.1
Displaying Shape Haptically using MRF-Based Device	1164-1167
Rizzo, Rocco <i>Univ. of Pisa</i> ; Musolino, Antonino <i>Univ. of Pisa</i> ; Tucci, Mauro <i>Univ. of Pisa</i> ; Jones, Lynette* <i>Massachusetts Institute of Technology</i>	

10:00-11:30 WeBPoT18.2
A Dual-User Teleoperation System with Online Authority Adjustment for Haptic Training 1168-1171
Liu, Fei* *INSA de Lyon*; Lelevé, Arnaud *INSA de Lyon*; Eberard, Damien *INSA de Lyon*; Redarce, Tanneguy
Institute National des Sciences Appliquées (INSA de Lyon)

10:00-11:30 WeBPoT18.3
Large Displacement Haptic Stimulus Actuator using Piezoelectric Pump for Wearable Devices 1172-1175
Kodama, Taisuke* *Kobe Univ.*; Izumi, Shintaro *Kobe Univ.*; Masaki, Kana *Kobe Univ.*; Kawaguchi, Hiroshi *Kobe Univ.*; Maenaka, Kazusuke *Univ of Hyogo*; Yoshimoto, Masahiko *Kobe Univ.*

WeBPoT19: 10:00-11:30 Gold Room
8.15 Design and Development of Robots for Human-Robot Interaction (Poster Session)

10:00-11:30 WeBPoT19.1
A Multi-Stage Design Framework for the Development of Task-Specific Robotic Exoskeletons 1176-1180
Carmichael, Marc Garry* *Univ. of Technology, Sydney*; Khonasty, Richardo *Univ. of Technology, Sydney*; Liu, Dikai *Univ. of Technology, Sydney*

10:00-11:30 WeBPoT19.2
A Novel Holding Mechanism for Next Generation Active Wireless Capsule Endoscopy 1181-1185
Woods, Stephen* *Imperial College London*; Constandinou, Timothy *Imperial College of Science, Technology and Medicine*

10:00-11:30 WeBPoT19.3
Development of an MRI-Powered Robotic System for Cryoablation 1186-1189
Ouchi, Ryutaro* *Univ. of Tsukuba*; Saotome, Kousaku *Univ. of Tsukuba*; Matsushita, Akira *Univ. of Tsukuba*; Suzuki, Kenji *Univ. of Tsukuba*

10:00-11:30 WeBPoT19.4
Kinematic Reconstruction of the Human Arm Joints in Robot-Aided Therapies with Hermes Robot 1190-1193
Bertomeu-Motos, Arturo* *Univ. Miguel Hernandez de Elche*; Morales, Ricardo, Ricardo *Univ. Miguel Hernandez*; Lledó Pérez, Luís Daniel *Univ. Miguel Hernández de Elche*; Díez Pomares, Jorge *Univ. Miguel Hernández de Elche*; Catalán Orts, Jose María *Univ. Miguel Hernandez de Elche*; Garcia-Aracil, Nicolas *Univ. Miguel Hernandez*

WeBPoT20: 10:00-11:30 Gold Room
9.11 Clinical Engineering II (Poster Session)

10:00-11:30 WeBPoT20.1
Development of Implantable Hemodialysis System using PES Membranes with Higher Water-Permeability 1194-1197
To, Naoya* *Keio Univ.*; Sanada, Ippei *Keio Univ.*; Ito, Hikaru *Keio Univ.*; Morita, Shinya *Keio Univ.*; Kanno, Yoshihiko *Tokyo Medical Univ.*; Miki, Norihisa *Keio Univ.*

10:00-11:30 WeBPoT20.2
Development and Integration of a Surveillance Monitoring Solution to Provide Earlier Detection of the Deteriorating Patient 1198-1202
Donnelly, Nicola* *Intelesens*; Harper, Roy *NHS*; Branagh, David *Intelesens*; Francey, Jonathan *Intelesens*; Collins, Holly *Intelesens*; Faro-Maza, Virginia *Intelesens*; Hunniford, Thomas *Intelesens*; Mooney, Andrew *Intelesens*; McLaughlin, James *Univ. of Ulster*

10:00-11:30 WeBPoT20.3
Determining the Variability in O2 Saturation Measurements in Devices of the "Dr. Guillermo Rawson" Hospital N/A
Muñoz Zapata, Fernando Jorge* *National Univ. of San Juan*; Pulenta, Luis *Hospital Rawson*; Bustamante, Paola Andrea *Univ. Nacional de San Juan*; Avila Perona, Enrique Mario *National Univ. of San Juan*

10:00-11:30 WeBPoT20.4
Sleep State Classification using Pressure Sensor Mats 1207-1210
Baran Pouyan, Mazyar *Univ. of Texas at Dallas*; Nourani, Mehrdad* *Univ. of Texas at Dallas*; Pompeo, Matthew *Presbyterian Wound Care Clinic*

10:00-11:30	WeBPoT20.5
The Dimensioning and Development of Hospital Electric Installations to Guarantee the Continuity of use of the Therapeutic and Diagnostic System	1211-1214
Stroili, Manuela* <i>Ospedali Riuniti e Univ. di Trieste</i> ; Pavan, Elena Clio <i>Univ. Hospital Ospedali Riuniti di Trieste</i> ; Gorela, Marino <i>Univ. Hospital Ospedali Riuniti di Trieste</i> ; Kenda, Fulvio <i>Univ. Hospital Ospedali Riuniti di Trieste</i>	
10:00-11:30	WeBPoT20.6
Tablet-Based Patient Monitoring and Decision Support Systems in Hospital Care	1215-1218
Baig, Mirza Mansoor <i>Auckland Univ. of Technology</i> ; GholamHosseini, Hamid* <i>Auckland Univ. of Technology</i> ; Lindén, Maria <i>Malardalen Univ.</i>	
10:00-11:30	WeBPoT20.7
Integrated Vital Signs Monitoring System using Ubiquitous Devices: Multiple Physical Signs Detection and Decision Support for Hospitalized Older Adults	1219-1222
Baig, Mirza Mansoor <i>Auckland Univ. of Technology</i> ; GholamHosseini, Hamid* <i>Auckland Univ. of Technology</i> ; Connolly, Martin J. <i>Univ. of Auckland, North Shore Hospital</i>	
10:00-11:30	WeBPoT20.8
Image based Quantitative Reader for Lateral Flow Immunofluorescence Assay	1223-1226
Basak Chowdhury, Kaushik* <i>Indian Institute of Technology Madras</i> ; Joseph, Jayaraj <i>HTIC, Indian Institute of Technology Madras</i> ; Sivaprakasam, Mohanasankar <i>Indian Institute of Technology Madras</i>	
10:00-11:30	WeBPoT20.9
Comprehensive Framework for Preventive Maintenance Priority of Medical Equipment	1227-1230
Saleh, Neven* <i>Cairo Univ.</i>	
10:00-11:30	WeBPoT20.10
Organizational Principles of Cloud Storage to Support Collaborative Biomedical Research	1231-1234
Kanbar, Lara* <i>McGill Univ.</i> ; Shalish, Wissam <i>McGill Univ.</i> ; Robles-Rubio, Carlos Alejandro <i>McGill Univ.</i> ; Precup, Doina <i>McGill Univ.</i> ; Brown, Karen <i>McGill Univ.</i> ; Sant'Anna, Guilherme Mendes <i>McGill Univ.</i> ; Kearney, Robert Edward <i>McGill Univ.</i>	
10:00-11:30	WeBPoT20.11
A Preliminary Study of the Relation between Back-Pain and Plantar-Pressure Evolution during Pregnancy	1235-1238
Martínez-Martí, Fernando* <i>Univ. of Granada</i> ; Martínez-García, María Sofía <i>Univ. of Granada</i> ; Carvajal Rodríguez, Miguel Ángel <i>Univ. of Granada</i> ; Palma López, Alberto <i>Univ. of Granada</i> ; Molina-Molina, Alejandro <i>Univ. of Granada</i> ; Soto Hermoso, Victor M. <i>Univ. of Granada</i> ; Ocón Hernández, Olga <i>Univ. of Granada</i> ; Florida Navío, Jesús <i>Univ. of Granada</i>	
WeBPoT21: 10:00-11:30	Gold Room
9.12 Physiological Sensors and Monitoring (Poster Session)	
10:00-11:30	WeBPoT21.1
Anterior Temporal Artery Tap to Identify Systemic Interference using Short-Separation NIRS Measurements: A NIRS/EEG-TDCS Study	1239-1242
Sood, Mehak* <i>International Institute of Information Technology, Hyderabad</i> ; Jindal, Utkarsh <i>International Institute of Information Technology, Hyderabad</i> ; Roy Chowdhury, Shubhajit <i>International Institute of Information Technology, Hyderabad</i> ; Das, Abhijit <i>Institute of Neurosciences Kolkata</i> ; Kondziella, Daniel <i>Rigshospitalet, Denmark and Norwegian Univ. of Science and</i> ; Dutta, Anirban <i>INRIA</i>	
10:00-11:30	WeBPoT21.2
Full-Field Strain Sensor for Guiding Hernia Repairs	1243-1246
Liao, Amy* <i>UC Berkeley</i> ; Harris, Hobart <i>UCSF</i> ; Maharbiz, Michel <i>Univ. of California, Berkeley</i>	
10:00-11:30	WeBPoT21.3
Non-Invasive Estimation of Cardiovascular Parameters using Ballistocardiography	1247-1250
van Rooij, Britt* <i>Eindhoven Univ. of Technology</i> ; Tavakolian, Kouhyar <i>Assistant Professor, Arzanpour, Siamak Simon Fraser Univ.</i> ; Blaber, Andrew Philip <i>Simon Fraser Univ.</i> ; Leguy, Carole <i>Dept. of Space Physiology, German Aerospace Center (DLR) Ca</i>	

10:00-11:30		WeBPoT21.4
A Smart Phone-Based Robust Correction Algorithm for the Colorimetric Detection of Urinary Tract Infection	1251-1254	
Karlson, Haakon <i>Buskerud and Vestfold Univ. College</i> ; Dong, Tao* <i>Dept. of Micro and Nano Systems Technology, Buskerud and Ve</i>		
10:00-11:30		WeBPoT21.5
Shear-Mediated Platelet Activation in Patients Implanted with Continuous Flow LVADs: A Preliminary Study Utilizing the Platelet Activity State (PAS) Assay	1255-1258	
Valerio, Lorenzo <i>San Raffaele Hospital</i> ; Consolo, Filippo <i>Politecnico di Milano</i> ; Bluestein, Danny <i>Stony Brook Univ.</i> ; Tran, Phat <i>Univ. of Arizona</i> ; Slepian, Marvin J. <i>Univ. of Arizona</i> ; Redaelli, Alberto* <i>Politecnico di Milano</i> ; Pappalardo, Federico <i>San Raffaele Hospital</i>		
10:00-11:30		WeBPoT21.6
Evaluation of the Variation in Sensory Test Results using Semmes-Weinstein Monofilaments	1259-1262	
Chikai, Manabu* <i>National Institute Advanced Industrial Science and Technology</i> ; Ozawa, Emi <i>Showa-Inan General Hospital</i> ; Takahashi, Noriyo <i>Tokuyukai Rehabilitation Clinic</i> ; Nunokawa, Kiyohiko <i>Tokyo International Univ.</i> ; Ino, Shuichi <i>AIST</i>		
10:00-11:30		WeBPoT21.7
A Multimodal Stress Monitoring System with Canonical Correlation Analysis	1263-1266	
Ha, Unsoo* <i>KAIST</i> ; Kim, Changhyeon <i>KAIST</i> ; Lee, Yongsu <i>KAIST</i> ; Kim, Hyunki <i>KAIST</i> ; Roh, Taehwan <i>KAIST</i> ; Yoo, Hoi-Jun <i>KAIST</i>		
10:00-11:30		WeBPoT21.8
Behavior of Long-Period Measurements using a Small-Sized Photoacoustic Cell for Aqueous Glucose Monitoring	1267-1270	
Wadamori, Naoki* <i>Nagaoka Univ. of Technology</i>		
10:00-11:30		WeBPoT21.9
Development of a Diagnostic Dehydration Screening Sensor based on Infrared Spectrometry	1271-1274	
Jacobus, Visser <i>Stellenbosch Univ.</i> ; Scheffer, Cornie <i>Stellenbosch Univ.</i> ; Dellimore, Kiran* <i>Philips Research</i> ; Kieser, Eduard <i>Stellenbosch Univ.</i> ; Smith, Johan <i>Faculty of Medicine, Stellenbosch Univ.</i>		
10:00-11:30		WeBPoT21.10
Head Ballistocardiogram based on Wireless Multi-Location Sensors	1275-1278	
Onizuka, Kohei* <i>Toshiba</i> ; Sodini, Charles G. <i>Massachusetts Institute of Technology</i>		
10:00-11:30		WeBPoT21.11
Kinect v2 based System for Parkinson's Disease Assessment	1279-1282	
Rocha, Ana Patrícia* <i>Univ. of Aveiro</i> ; Choupina, Hugo <i>Univ. of Porto</i> ; Fernandes, José Maria <i>Univ. of Aveiro</i> ; Rosas, Maria José S. <i>João Univ. Hospital</i> ; Vaz, Rui S. <i>João Univ. Hospital</i> ; Cunha, João Paulo Silva <i>Univ. of Porto and INESC TEC</i>		

WeBPoT22: 10:00-11:30	Gold Room
9.13 Thermal Therapeutic and Diagnostic Systems (Poster Session)	

10:00-11:30		WeBPoT22.1
Goniometric Measurement for the Estimation of Anisotropy Coefficient of Human and Animal Pancreas	1283-1286	
Saccomandi, Paola <i>Univ. Campus Bio-Medico of Rome</i> ; Schena, Emiliano* <i>Univ. of Rome Campus Bio-Medico</i> ; Massaroni, Carlo <i>Univ. Campus Bio-Medico di Roma</i> ; Di Matteo, Francesco Maria <i>Univ. Campus Bio-Medico of Rome</i> ; Silvestri, Sergio <i>Univ. Campus Bio-Medico di Roma</i>		
10:00-11:30		WeBPoT22.2
Magnetic Resonance-Compatible Needle-Like Probe based on Bragg Grating Technology for Measuring Temperature during Laser Ablation	1287-1290	
Cappelli, Silvia <i>Unit of Measurements and Biomedical Instrumentation, Center for, Saccomandi, Paola Univ. Campus Bio-Medico of Rome</i> ; Massaroni, Carlo <i>Univ. Campus Bio-Medico di Roma</i> ; Polimadei, Andrea <i>ENEA - Centro Ricerche Frascati</i> ; Silvestri, Sergio <i>Univ. Campus Bio-Medico di Roma</i> ; Caponero, Michele Arturo <i>ENEA - Centro Ricerche Frascati</i> ; Frauenfelder, Giulia* <i>Univ. Campus Bio-Medico di Roma</i> ; Schena, Emiliano <i>Univ. of Rome Campus Bio-Medico</i>		

10:00-11:30	WeBPoT22.3
Evaluation of Optoelectronic Plethysmography Accuracy and Precision in Recording Displacements during Quiet Breathing Simulation	1291-1294
Massaroni, Carlo* <i>Univ. Campus Bio-Medico di Roma</i> ; Schena, Emiliano <i>Univ. of Rome Campus Bio-Medico</i> ; Saccomandi, Paola <i>Univ. Campus Bio-Medico of Rome</i> ; Morrone, Michelangelo <i>Univ. Campus Bio-Medico di Roma</i> ; Sterzi, Silvia <i>Campus Bio-medico Univ.</i> ; Silvestri, Sergio <i>Univ. Campus Bio-Medico di Roma</i>	
10:00-11:30	WeBPoT22.4
Talaporfin Sodium Binding and Photocytotoxicity of Photosensitization Reaction on Myocardial Cell under Various Albumin Concentrations and Temperature	1295-1298
Ogawa, Emiyu* <i>Keio Univ. Graduate School</i> ; Takenoya, Hiromi <i>Keio Univ. Graduate School</i> ; Ito, Arisa <i>Keio Univ.</i> ; Arai, Tsunenori <i>Keio Univ.</i>	
10:00-11:30	WeBPoT22.5
Drug Delivery of Anti-Restenosis Agent by 40 – 60°C Heating to Porcine Aortic Smooth Muscle Cells in Vitro	1299-1302
Homma, Rie* <i>Keio Univ.</i> ; Shinozuka, Machiko <i>Keio Univ.</i> ; Shimazaki, Natsumi <i>Keio Univ.</i> ; Arai, Tsunenori <i>Keio Univ.</i>	
10:00-11:30	WeBPoT22.6
An RF Device for Effective Thermal Treatment of Atherosclerosis	1303-1306
Jiang, Chenwei <i>Shanghai Jiaotong Univ.</i> ; Zhang, Kangwei <i>Shanghai Jiao Tong Univ.</i> ; Zhao, Shiqing <i>Shanghai Jiao Tong Univ.</i> ; Zou, Jincheng <i>Shanghai Jiaotong Univ.</i> ; Zhang, Aili <i>Shanghai Jiao Tong Univ.</i> ; Xu, Lisa Xuemin* <i>Shanghai Jiaotong Univ.</i>	
10:00-11:30	WeBPoT22.8
Different Responses of the Skin Temperature to Physical Exercise: Systematic Review	1307-1310
Neves, Eduardo Borba* <i>Federal Technological Univ. of Paraná (UTFPR)</i> ; Vilaça-Alves, José <i>Research Center in Sports, Health Sciences and Human Development</i> ; Antunes, Natacha <i>Research Center in Sports, Health Sciences and Human Development</i> ; Felisberto, Ivo Miguel <i>Vieira Research Center in Sports, Health Sciences and Human Development</i> ; Rosa, Claudio <i>Research Center in Sports, Health Sciences and Human Development</i> ; Reis, Victor <i>Machado Research Center in Sports, Health Sciences and Human Development</i>	
10:00-11:30	WeBPoT22.9
A Computer-Assisted Robotic Platform for Focused Ultrasound Surgery: Assessment of High Intensity Focused Ultrasound Delivery	1311-1314
Cafarelli, Andrea* <i>Scuola Superiore Sant'Anna</i> ; Mura, Marco <i>Scuola Superiore Sant'Anna</i> ; Diodato, Alessandro <i>Scuola Superiore Sant'Anna/The BioRobotics Institute</i> ; Schiappacasse, Andrea <i>Univ. of Genoa / Camelot Biomedical Systems</i> ; Santoro, Matteo <i>Camelot Biomedical Systems Srl</i> ; Ciuti, Gastone <i>The BioRobotics Institute, Scuola Superiore Sant'Anna, Pisa, Ita</i> ; Menciassi, Arianna <i>Scuola Superiore Sant'Anna</i>	
10:00-11:30	WeBPoT22.10
Treatment for Neuropathic Pain and Chronic Inflammation using LASER in Animal Models	1315-1318
Nohama, Percy* <i>Univ. Tecnologica Federal do Parana</i> ; Erthal, Vanessa <i>Federal Technological Univ. of Paraná</i>	

WeBPoT23: 10:00-11:30	Gold Room
9.14 Design, Development and Standards of Medical Devices II (Poster Session)	

10:00-11:30	WeBPoT23.1
Fundamental Analysis and Development of the Current and Voltage Control Method by Changing the Driving Frequency for the Transcutaneous Energy Transmission System	1319-1322
Miura, Hidekazu* <i>Tohoku Univ.</i> ; Yamada, Akihiro <i>Tohoku Univ.</i> ; Shiraishi, Yasuyuki <i>Tohoku Univ.</i> ; Yambe, Tomoyuki <i>Tohoku U</i>	
10:00-11:30	WeBPoT23.2
Design and Simulation of a 800 Mbit/s Data Link for Magnetic Resonance Imaging Wearables	1323-1326
Vogt, Christian* <i>ETH Zürich</i> ; Bütthe, Lars <i>ETH Zürich</i> ; Petti, Luisa <i>ETH</i> ; Cantarella, Giuseppe <i>ETH Zürich</i> ; Munzenrieder, Niko <i>ETH</i> ; Daus, Alwin <i>ETH Zürich</i> ; Troster, Gerhard <i>ETH Zurich</i>	

10:00-11:30	WeBPoT23.3
Combining Qualitative and Quantitative Methods to Analyze Serious Games Outcomes: A Pilot Study for a New Cognitive Screening Tool	1327-1330
<i>Vallejo, Vanessa Univ. of Bern, ARTORG Center for Biomedical Engineering Res; Mitache, Andrei Univ. of Bern, ARTORG Center for Biomedical Engineering Res; Tarnanas, Ioannis Univ. of Bern, ARTORG Center for Biomedical Engineering Res; Müri, René Gerontechnology and Rehabilitation Group, Univ. Hospital of, Mosimann, Urs Peter Gerontechnology and Rehabilitation Group, Univ. Hospital of, Nef, Tobias* Gerontechnology and Rehabilitation, ARTORG Center for Biomedical</i>	
10:00-11:30	WeBPoT23.4
Developing Medical Device Software in Compliance with Regulations	1331-1334
<i>Zema, Maddalena Politecnico di Torino; Rosati, Samanta Politecnico di Torino; Gioia, Virginia Politecnico di Torino; Knaflitz, Marco Politecnico di Torino; Balestra, Gabriella* Politecnico di Torino</i>	
10:00-11:30	WeBPoT23.5
Development and Validation of a Bioartificial Liver Device with Fluidized Bed Bioreactors Hosting Alginate-Encapsulated Hepatocyte Spheroids	1335-1338
<i>Figaro, Sarah* Univ. de Technologie de Compiègne, Gambro industries; Pereira, Ulysse Univ. de Technologie de Compiègne; Rada, Hiram Gambro Industries; Semenzato, Nicolas Gambro Industries; Pouchoulin, Dominique Gambro Industries; Legallais, Cecile Univ. of Technology of Compiègne - France</i>	
10:00-11:30	WeBPoT23.6
A 128-Ch Δ -Σ ADC based Mixed Signal IC for Full Digital Beamforming Wireless Handheld Ultrasound Imaging System	1339-1342
<i>Chirala, Mohan* Samsung Research America; Huynh, Phuong Samsung Research America; Ryu, Jaeyoung Samsung Research Korea; Kim, Young-Hwan Samsung Research Korea</i>	
10:00-11:30	WeBPoT23.7
Electric Fence Standards Comport with Human Data and AC Limits	1343-1348
<i>Kroll, Mark* Univ. of Minnesota; Perkins, Pete Safety Engineering; Panescu, Dorin Advanced Cardiac Therapeutics</i>	

WeBPoT24: 10:00-11:30	Gold Room
9.15 Drug Delivery and Other Therapeutic Systems (Poster Session)	

10:00-11:30	WeBPoT24.1
In-Vitro Testing of RF-Enabled Low Force Mechanical Thrombectomy for Ischemic Stroke	1349-1352
<i>Chon, Chi Hang* The Hong Kong Univ. of Science and Technology; Qin, Zhen The Hong Kong Univ. of Science and Technology; Lam, Alexander K.N. Hong Kong Univ. of Science and Technology; Kwok, John C.K. Hong Kong Univ. of Science and Technology; Yuen, Matthew M.F. Hong Kong Univ. of Science and Technology; Lam, David C.C. Hong Kong Univ. of Science and Technology</i>	
10:00-11:30	WeBPoT24.2
Feasibility Examination of Isolated Zonal Thrombolysis using Raman Spectroscopy	1353-1356
<i>Qin, Zhen* The Hong Kong Univ. of Science and Technology; Chon, Chi Hang The Hong Kong Univ. of Science and Technology; Lam, Alexander K.N. Hong Kong Univ. of Science and Technology; Kwok, John C.K. Hong Kong Univ. of Science and Technology; Yuen, Matthew M.F. Hong Kong Univ. of Science and Technology; Lam, David C.C. Hong Kong Univ. of Science and Technology</i>	
10:00-11:30	WeBPoT24.3
Creating Eye Closure in Patients with Facial Nerve Paralysis using an Implantable Solenoid Actuator	1357-1360
<i>Hasmat, Shaheen* Univ. of New South Wales; Lovell, Nigel H. Univ. of New South Wales; Eviston, Timothy Univ. of New South Wales; Ekmejian, Rafael Univ. of New South Wales; Suaning, Gregg The Univ. of New South Wales; Clark, Jonathan Univ. of Sydney</i>	
10:00-11:30	WeBPoT24.4
A Smart Pill for Drug Delivery with Sensing Capabilities	1361-1364
<i>Goffredo, Rosa* Univ. Campus Bio-Medico di Roma; Accoto, Dino Campus Bio-Medico Univ.; Santonico, Marco Electronics for sensorial systems Lab, Univ. Campus Bio-Med; Pennazza, Giorgio Electronics for sensorial systems Lab, Univ. Campus Bio-Med; Guglielmelli, Eugenio Campus Bio-Medico Univ.</i>	

10:00-11:30 WeBPoT24.5
Fabrication of SU-8 based Capacitive Micromachined Ultrasonic Transducer for Low Frequency Therapeutic Applications 1365-1368
Joseph, Jose* *Indian Institute of Technology, Hyderabad*; Singh, Shiv Govind *IIT Hyderabad*; Vanjari, Siva Rama Krishna *IIT Hyderabad*

10:00-11:30 WeBPoT24.6
Active Induction of in Vivo Microbubbles by Acoustic Radiation Force at the Bifurcation of Blood Vessel and Its Evaluation 1369-1372
Masuda, Kohji* *Tokyo Univ. A&T*; Koido, Jun *Tokyo Univ. of Agriculture and Technology*; Miyazawa, Shinya *Tokyo Univ. of Agri. & Tech.*; Wada, Hikaru *Tokyo Univ. of Agri. & Tech.*; Hosaka, Naoto *Tokyo Univ. of Agriculture and Technology*; Mochizuki, Takashi *Tokyo Univ. of Agriculture and Technology*

WeBPoT25: 10:00-11:30 Gold Room
10.11 Health Information Systems (Poster Session)

10:00-11:30 WeBPoT25.1
A Semantically-Aided Architecture for a Web-Based Monitoring System for Carotid Atherosclerosis 1373-1376
Kolias, Vassileios* *National Technical Univ. of Athens*; Stamou, Giorgos *National Technical Univ. of Athens*; Golemati, Spyretta *National Kapodistrian Univ. of Athens*; Stoitsis, John *Institute of Communication*; Gkekas, Christos *National Kapodistrian Univ. of Athens*; Liapis, Christos *National Kapodistrian Univ. of Athens*; Nikita, Konstantina *National Technical Univ. of Athens*

10:00-11:30 WeBPoT25.2
A New Femtocaching File Placement Algorithm for Telemedicine 1377-1380
Leung, Warren Pak Tao* *King's College London*; Shikh-Bahaei, Mohammad *King's College London*

10:00-11:30 WeBPoT25.3
A Machine Learning Methodology for Medical Imaging Anonymization 1381-1384
Monteiro, Eriksson *Univ. of Aveiro*; Costa, Carlos *DETI/IEETA, Univ. of Aveiro*; Oliveira, José Luis* *DETI/IEETA - Univ. of Aveiro*

10:00-11:30 WeBPoT25.4
CPDI: An Index for Measuring Deviations in Clinical Pathways 1385-1388
Zema, Maddalena *Politecnico di Torino*; Rosati, Samanta *Politecnico di Torino*; Duran Carvajal, Jonathan Eliecer *Politecnico di Torino*; Balestra, Gabriella* *Politecnico di Torino*

10:00-11:30 WeBPoT25.5
Technical Solutions for Mitigating Security Threats Caused by Health Professionals in Clinical Settings 1389-1392
Fernandez Aleman, Jose Luis* *Univ. of Murcia*; Sánchez García, Ana Belén *Hospital Univ. Reina Sofía de Murcia*; García-Mateos, Ginés *Univ. of Murcia*; Toval, Ambrosio *Univ. of Murcia*

10:00-11:30 WeBPoT25.6
Real-Time Medical Collaboration Services Over the Web 1393-1396
Andrikos, Christos *National Technical Univ. of Athens*; Rassias, Georgios *National Technical Univ. of Athens*; Tsanakas, Panayiotis *National Technical Univ. of Athens*; Maglogiannis, Ilias* *Univ. of Piraeus*

10:00-11:30 WeBPoT25.7
Digital Patient: Personalized and Translational Data Management through the MyHealthAvatar EU Project .. 1397-1400
Kondylakis, Haridimos* *Foundation for Research and Tech. - Hellas*; Spanakis, Manolis *Foundation for Research and Tech. - Hellas (FORTH)*; Sfakianakis, Stelios *Foundation for Research and Tech. Hellas*; Sakkalis, Vangelis *ICS-FORTH*; Tsiknakis, Manolis *ICS-FORTH*; Marias, Kostas *Foundation for Res. & Tech. Hellas*; Xia, Zhao *Dept. of Computer Science and Tech., Univ. of Bed*; Yu, Hong Qing *Dept. of Computer Science and Tech., Univ. of Bed*; Dong, Feng *Dept. of Computer Science and Tech., Univ. of Bed*

10:00-11:30 WeBPoT25.8
Electronic Health Record Application Support Service Enablers 1401-1404
Neofytou, Marios *Univ. of Cyprus*; Neokleous, Kleanthis *Univ. of Cyprus*; Aristodimou, Aristos *Univ. of Cyprus*; Constantinou, Ioannis *Univ. of Cyprus*; C. Antoniou, Zinonas *Univ. of Cyprus*; Schiza, Eirini *Univ. of Cyprus*; Pattichis, Constantinos* *Univ. of Cyprus*; Schizas, Christos *Univ. of Cyprus*

10:00-11:30 WeBPoT25.9
A Trust Assessment Mechanism for Ubiquitous Healthcare Environment Employing Cloud Theory 1405-1408
Athanasidou, Georgia* *Univ. of Patras*; Fengou, Maria-Anna *Univ. of Patras*; Beis, Antonios *Dromokaition Mental Hospital*; Lymberopoulos, Dimitrios *Univ. of Patras*

10:00-11:30 WeBPoT25.10
Steganography in Arrhythmic Electrocardiogram Signal 1409-1412
S, Edward Jero* *IIT Madras*; Ramu, Palaniappan *Indian Institute of Technology Madras*; Ramakrishnan, Swaminathan *IIT Madras, India*

10:00-11:30 WeBPoT25.11
Development of Health Diagnostics based on Personalized Medical Models 1413-1416
Hudson, Donna L* *Univ. of California, San Francisco*; Cohen, Maurice *Univ. of California San Francisco*; Hudson, Samuel E *California State Univ. Bakersfield*

WeCT1: 11:30-13:00 Brown 1
8.2 Motor Control Strategies in Complex Tasks (Invited Session)
Chair: Zenzeri, Jacopo *Istituto Italiano di Tecnologia*
Co-Chair: Nomura, Taishin *Osaka University*

11:30-11:45 WeCT1.1
Dealing with Instability in Bimanual and Collaborative Tasks 1417-1420
De Santis, Dalia* *Istituto Italiano di Tecnologia*; Avila Mireles, Edwin Johnatan *Istituto Italiano di Tecnologia*; Squeri, Valentina *Istituto Italiano di Tecnologia*; Morasso, Pietro *Italian Institute of Technology*; Zenzeri, Jacopo *Istituto Italiano di Tecnologia*

11:45-12:00 WeCT1.2
Impedance Control: Learning Stability in Human Sensorimotor Control 1421-1424
Franklin, David W.* *Univ. of Cambridge*

12:00-12:15 WeCT1.3
Distribution Learning within Boundaries 1425-1431
shah, Amit *Univ. of Illinois at Chicago*; Patton, James (Jim)* *Rehab Institute of Chicago & U. of Illinois at Chicago*

12:15-12:30 WeCT1.4
Non-Actively Controlled Double-Inverted-Pendulum-Like Dynamics Can Minimize Center of Mass Acceleration during Human Quiet Standing 1432-1435
Suzuki, Yasuyuki* *Osaka Univ.*; Morimoto, Hiroki *Osaka Univ.*; Kiyono, Ken *Osaka Univ.*; Morasso, Pietro *Italian Institute of Technology*; Nomura, Taishin *Osaka Univ.*

12:30-12:45 WeCT1.5
Intermittent Control of Unstable Multivariate Systems 1436-1439
Loram, Ian David* *Manchester Metropolitan Univ.*; Gawthrop, Peter *The Univ. of Melbourne*; Gollee, Henrik *Univ. of Glasgow*

12:45-13:00 WeCT1.6
Structure of the Set of Feasible Neural Commands for Complex Motor Tasks N/A
Valero-Cuevas, Francisco* *Univ. of Southern California*; Cohn, Brian *USC*; Szedlak, May *ETH*; Gärtner, Bernd *gaertner@inf.ethz.ch*; Fukuda, Komei *ETH*

WeCT2: 11:30-13:00 Brown 2
4.2 Multiscale Modeling (Oral Session)
Chair: Aletti, Federico *University of California San Diego*

11:30-11:45 WeCT2.1
A Modeling Approach to Study the Normal Mammary Gland Growth Process 1444-1447
Butner, Joseph *Univ. of New Mexico*; Cristini, Vittorio *Univ. of New Mexico*; Wang, Zhihui* *Univ. of New Mexico*

11:45-12:00	WeCT2.2
Determining the Efficient Inter-Electrode Distance for High-Resolution Mapping using a Mathematical Model of Human Gastric Dysrhythmias	1448-1451
Putney, Joy <i>Dept. of Physics-Engineering, Washington and Lee Univ.</i> ; O'Grady, Gregory <i>Univ. of Auckland</i> ; Angeli, Timothy Robert <i>Auckland Bioengineering Institute, Univ. of Auckland</i> ; Paskaranandavadivel, Niranchan <i>The Univ. of Auckland</i> ; Cheng, Leo K <i>The Univ. of Auckland</i> ; Erickson, Jon <i>Washington and Lee Univ.</i> ; Du, Peng* <i>The Univ. of Auckland</i>	
12:00-12:15	WeCT2.3
A Comparison of Solver Performance for Complex Gastric Electrophysiology Models	1452-1455
Sathar, Shameer* <i>Univ. of Auckland</i> ; Cheng, Leo K <i>The Univ. of Auckland</i> ; Trew, Mark L. <i>Univ. of Auckland</i>	
12:15-12:30	WeCT2.4
Ultrasound Propagation in Cortical Bone: Axial Transmission and Backscattering Simulations	1456-1459
Potsika, Vassiliki <i>Unit of Medical Technology and Intelligent Information Systems,</i> ; Grivas, Konstantinos <i>Dept. of Mechanical Engineering and Aeronautics, Univ.</i> ; Gortsas, Theodoros <i>Dept. of Mechanical Engineering and Aeronautics, Univ.</i> ; Protopappas, Vasilios C. <i>Univ. of Patras</i> ; Polyzos, Demosthenes <i>Univ. of Patras</i> ; Raum, Kay <i>Julius Wolff Institute, Berlin-Brandenburg School for Regenerat</i> ; Fotiadis, Dimitrios I.* <i>Univ. of Ioannina</i>	
12:30-12:45	WeCT2.5
Computational Modeling of Ultrasonic Backscattering to Evaluate Fracture Healing	1460-1463
Potsika, Vassiliki <i>Unit of Medical Technology and Intelligent Information Systems,</i> ; Gortsas, Theodoros <i>Dept. of Mechanical Engineering and Aeronautics, Univ.</i> ; Protopappas, Vasilios C. <i>Univ. of Patras</i> ; Polyzos, Demosthenes <i>Univ. of Patras</i> ; Fotiadis, Dimitrios I.* <i>Univ. of Ioannina</i>	
12:45-13:00	WeCT2.6
Physiomodel – An Integrative Physiology in Modelica	1464-1467
Matejak, Marek <i>Charles Univ.</i> ; Kofránek, Jiří* <i>Creative Connections s.r.o.</i>	
WeCT3: 11:30-13:00 Brown 3 6.4 Brain-Computer/Machine Interface II (Oral Session) Chair: Müller-Putz, Gernot <i>Graz University of Technology</i> Co-Chair: Millán, José del R. <i>Ecole Polytechnique Federale de Lausanne</i>	
11:30-11:45	WeCT3.1
Movement Target Decoding from EEG and the Corresponding Discriminative Sources: A Preliminary Study	1468-1471
Ofner, Patrick* <i>Graz Univ. of Technology</i> ; Müller-Putz, Gernot <i>Graz Univ. of Technology</i>	
11:45-12:00	WeCT3.2
The Detection and Classification of the Mental State Elicited by Humor from EEG Patterns	1472-1475
Ramaraju, Sriharsha* <i>Univ. of South Wales</i> ; Izzidien, Ahmed <i>Univ. of Southwales</i> ; Roula, Mohammed Ali <i>Univ. of South Wales</i>	
12:00-12:15	WeCT3.3
Hybrid Gaze/EEG Brain Computer Interface for Robot Arm Control on a Pick and Place Task	1476-1479
Wang, Haofei <i>Hong Kong Univ. of Science and Technology</i> ; Dong, Xujiong <i>HKUST</i> ; Chen, Zhaokang <i>HKUST</i> ; Shi, Bertram E* <i>Hong Kong Univ. of Science and Technology</i>	
12:15-12:30	WeCT3.4
Towards Perception Awareness: Perceptual Event Detection for Brain Computer Interfaces	1480-1483
Nejati, Hossein* <i>sutd.edu.sg</i> ; Tsourides, Kleovoulos (Leo) <i>mit.edu</i> ; Pomponiu, Victor <i>Singapore Univ. of Technology and Design</i> ; Ehrenberg, Evan C. <i>mit.edu</i> ; Cheung, Ngai-Man <i>Singapore Univ. of Technology and Design</i> ; Sinha, Pawan <i>mit.edu</i>	
12:30-12:45	WeCT3.5
Neural Indicators of the Depth of Cognitive Processing for User-Adaptive Neurotechnological Applications	1484-1487
Nicolae, Irina-Emilia* <i>Electronics, Telecommunication and Information Technology Facult</i> ; Acqualagna, Laura <i>Berlin Institute of Technology</i> ; Blankertz, Benjamin <i>Technische Univ. Berlin</i>	

12:45-13:00 WeCT3.6
Goal-Directed or Aimless? EEG Differences during the Preparation of a Reach-and-Touch Task 1488-1491
 Pereira, Joana *Graz Univ. of Technology*; Ofner, Patrick *Graz Univ. of Technology*;
 Müller-Putz, Gernot* *Graz Univ. of Technology*

WeCT4: 11:30-13:00 Amber 1
1.5 Nonstationary Processing of Biomedical Signals (Oral Session)
Chair: Bianchi, Anna Maria *Politecnico di Milano*
Co-Chair: Van Huffel, Sabine *Katholieke Universiteit Leuven*

11:30-11:45 WeCT4.1
Data-Driven Metric Representing the Maturation of Preterm EEG 1492-1495
 Koolen, Ninah* *Dept. of Electrical Engineering, Univ. of Leuven*; Dereymaeker, Anneleen *Dept. of Development and Regeneration, Univ. of Leuven*; Räsänen, Okko *Dept. of Signal Processing and Acoustics, Aalto Univ.*;; Jansen, Katrien *Dept. of Pediatrics, Univ. Hospital Gasthuisberg, Leuven*; Vervisch, Jan *Dept. of Development and Regeneration, Univ. of Leuven*; Matic, Vladimir *Katholieke Univ. Leuven and IBBT-K.U. Leuven FutureHealth*; De Vos, Maarten *Univ. of Oxford*; Naulaers, Gunnar *Univ. Hospitals Leuven*; Van Huffel, Sabine *Katholieke Univ. Leuven*; Vanhatalo, Sampsa *Helsinki Univ. Central Hospital and Univ. of Helsinki*,

11:45-12:00 WeCT4.2
l0-regularized Time-varying Sparse Inverse Covariance Estimation for Tracking Dynamic FMRI Brain Networks 1496-1499
 Fu, Zening *Univ. of Hong Kong*; Han, Sheng *The Univ. of Hong Kong*; Tan, Ao* *The Univ. of Hong Kong*;
 Tu, Yiheng *The Univ. of Hong Kong*; Zhang, Zhiguo *Nanyang Technological Univ.*

12:00-12:15 WeCT4.3
Estimation of Heart Rate from Photoplethysmography during Physical Exercises using Wiener Filtering and Phase Vocoder 1500-1503
 Temko, Andriy* *Univ. College Cork*

12:15-12:30 WeCT4.4
Robust Monitoring of Hypovolemia in Intensive Care Patients using Photoplethysmogram Signals 1504-1507
 Roederer, Alexander* *Univ. of Pennsylvania*; Weimer, James *Univ. of Pennsylvania*;
 DiMartino, Joseph *Univ. of Pennsylvania Health System*; Gutsche, Jacob *Univ. of Pennsylvania Health System*; Lee, Insup *Univ. of Pennsylvania*

12:30-12:45 WeCT4.5
Attenuation of the Influence of Cardiolocomotor Coupling in Heart Rate Variability Interpretation during Exercise Test 1508-1511
 Hernando, Alberto* *BSICoS Group, CIBER-BBN*; Hernando, David *Univ. of Zaragoza (Spain)*; Garatachea, Nuria *Faculty of Health and Sport Science, Univ. of Zaragoza, Hues*; Bailon, Raquel *Univ. of Zaragoza*;
 Casajús, José Antonio *GENUD Research Group, Faculty of Health and Sport Sciences, Univ*

12:45-13:00 WeCT4.6
EEG-Based Index for Engagement Level Monitoring during Sustained Attention 1512-1515
 Coelli, Stefania* *Dept. of Electronics, Information and Bioengineering, Polit*; Sclocco, Roberta *Politecnico di Milano*; Barbieri, Riccardo *MGH-Harvard Medical School-MIT*; Reni, Gianluigi *IRCCS*; Zucca, Claudio *IRCCS "E. Medea"*; Bianchi, Anna Maria *Politecnico di Milano*

WeCT5: 11:30-13:00 Amber 2
1.6 Signal Processing in Physiological Systems II: Neural Signals (Oral Session)
Chair: Lipping, Tarmo *Tampere University of Technology*
Co-Chair: Sparacino, Giovanni *University of Padova*

11:30-11:45 WeCT5.1
A Feature Design Framework for Hardware Efficient Neural Spike Sorting 1516-1519
 Sokolic, Jure* *Univ. College London*; Zamani, Majid *Univ. College London*; Demosthenous, Andreas *Univ. College London*; Rodrigues, Miguel R. D. *Univ. College London*

11:45-12:00		WeCT5.2
Automated Analysis of Local Field Potentials Evoked by Mechanical Whisker Stimulation in Rat Barrel Cortex		1520-1523
Rubega, Maria* <i>Univ. of Padova</i> ; Cecchetto, Claudia <i>Univ. of Padova</i> ; Vassanelli, Stefano <i>NeuroChip Laboratory, Univ. of Padova</i> ; Sparacino, Giovanni <i>Univ. of Padova</i>		
12:00-12:15		WeCT5.3
Supervised Segmentation of Microelectrode Recording Artifacts using Power Spectral Density		1524-1527
Bakstein, Eduard <i>Czech Technical Univ. in Prague</i> ; Schneider, Jakub* <i>Czech Technical Univ. in Prague</i> ; Sieger, Tomas <i>Czech Technical Univ. in Prague</i> ; Novak, Daniel <i>Czech Technical Univ. in Prague</i> ; Wild, Jiri <i>Czech Technical Univ. in Prague</i> ; Jech, Robert <i>First Faculty of Medicine, Charles Univ.</i>		
12:15-12:30		WeCT5.4
Patient Specific Parkinson's Disease Detection for Adaptive Deep Brain Stimulation		1528-1531
Mohammed, Ameer* <i>Univ. College London</i> ; Zamani, Majid <i>Univ. College London</i> ; Bayford, Richard H. <i>Middlesex Univ.</i> ; Demosthenous, Andreas <i>Univ. College London</i>		
12:30-12:45		WeCT5.5
Prediction of Outcome in Traumatic Brain Injury Patients using Long-Term qEEG Features		1532-1535
Mikola, Annika <i>North Estonia Medical Centre</i> ; Ratsep, Indrek <i>Tallinn Univ. of Technology</i> ; Särkelä, Mika <i>GE</i> ; Lipping, Tarmo* <i>Tampere Univ. of Technology</i>		
12:45-13:00		WeCT5.6
Relationship between Inter-Stimulus-Intervals and Intervals of Autonomous Activities in a Neuronal Network		1536-1539
Ito, Hidekatsu <i>Kwansei Gakuin Univ.</i> ; Minoshima, Wataru <i>Kwansei Gakuin Univ.</i> ; Kudoh, Suguru* <i>Kwansei Gakuin Univ.</i>		
WeCT6: 11:30-13:00		Amber 3
2.4 Novel Ultrasound Imaging Method II (Oral Session)		
Chair: Troccaz, Jocelyne <i>Univ. Joseph Fourier - CNRS UMR 5525</i>		
11:30-11:45		WeCT6.1
3D Ultrasound Imaging Method to Assess the True Spinal Deformity		1540-1543
Vo, Quang N.* <i>Univ. of Alberta</i> ; Lou, Edmond H. <i>Univ. of Alberta</i> ; Le, Lawrence H <i>Univ. of Alberta</i>		
11:45-12:00		WeCT6.2
Using Rotation for Steerable Needle Detection in 3D Color-Doppler Ultrasound Images		1544-1547
Mignon, Paul* <i>Univ. Joseph Fourier</i> ; Poignet, Philippe <i>LIRMM, UMR CNRS 5506, Univ. of Montpellier II</i> ; Troccaz, Jocelyne <i>Univ. Joseph Fourier - CNRS UMR 5525</i>		
12:00-12:15		WeCT6.3
Co-Located Haptic Interaction for Virtual USG Exploration		1548-1551
Ruffaldi, Emanuele <i>Scuola Superiore S.Anna, Pisa, Italy</i> ; Brizzi, Filippo <i>Scuola Superiore Sant'Anna</i> ; Filippeschi, Alessandro* <i>Scuola Superiore S.Anna, Pisa, Italy</i> ; Avizzano, Carlo Alberto <i>Scuola Superiore Sant'Anna</i>		
12:15-12:30		WeCT6.4
Compressed Sensing for High Frame Rate, High Resolution and High Contrast Ultrasound Imaging		1552-1555
Liu, Jing <i>Tsinghua Univ.</i> ; He, Qiong <i>Tsinghua Univ.</i> ; Luo, Jianwen* <i>Tsinghua Univ.</i>		
12:30-12:45		WeCT6.5
2D Simulations based on General Time-Dependent Reciprocal Relation for LFEIT		1556-1559
Karadas, Mursel* <i>Middle East Technical Univ.</i> ; Gençer, Nevzat <i>Middle East Technical Univ.</i>		
12:45-13:00		WeCT6.6
Evaluation of a Frequency-Domain Ultrasonic Imaging Attenuation Compensation Technique		1560-1563
Rouyer, Julien <i>Pontificia Univ. Católica del Perú</i> ; Varray, François <i>Creatis</i> ; Pozo Fortunic, Edmundo <i>Pontificia Univ. Católica del Perú</i> ; Basset, Olivier <i>Univ. Lyon1, INSA-Lyon, CNRS UMR 5220, INSERM U630.</i> ; Cachard, Christian <i>Univ. Lyon 1</i> ; Lavarello, Roberto* <i>Pontificia Univ. Catolica del Peru</i>		

WeCT7: 11:30-13:00	Amber 4
2.5 MR Novel Hardware and Methods (Oral Session)	
Co-Chair: Bonmassar, Giorgio A. A. <i>Martinos Ctr. for Biomedical Imaging</i>	

11:30-11:45	WeCT7.1
A Frequency Translation Approach for Multichannel 13C Spectroscopy	1564-1567
Ogier, Stephen <i>Texas A&M Univ.</i> ; Wright, Steven M.* <i>Texas A&M Univ.</i>	

11:45-12:00	WeCT7.2
High-Resolution Dynamic Speech Imaging with Deformation Estimation	1568-1571
Fu, Maojing <i>Univ. of Illinois at Urbana-Champaign</i> ; Barlaz, Marissa <i>Univ. of Illinois at Urbana-Champaign</i> ; Shosted, Ryan <i>Univ. of Illinois at Urbana-Champaign</i> ; Liang, Zhi-Pei <i>Univ. of Illinois at Urbana-Champaign</i> ; Sutton, Bradley P.* <i>Univ. of Illinois at Urbana-Champaign</i>	

12:00-12:15	WeCT7.3
Even-Odd Mode Excitation for Stability Investigation of Cartesian Feedback Amplifier used in Parallel Transmit Array	1572-1575
Shooshtary, Samaneh* <i>Institute of Microwave and RF Technology of Duisburg-Essen Univ.</i> ; Solbach, Klaus <i>Institute of Microwave and RF Technology of Duisburg-Essen Univ.</i>	

12:15-12:30	WeCT7.4
MRI of Biopsy Needles by Susceptibility Mapping based on Wiener Filter and L1-Regularization	1576-1579
Yang, Tao <i>Texas A&M Univ.</i> ; Ji, Jim Xiuquan* <i>Texas A&M Univ.</i>	

12:30-12:45	WeCT7.5
Resistive Tapered Striplines Design for MR Conditional Implants	1580-1583
Bonmassar, Giorgio* <i>A. A. Martinos Ctr. for Biomedical Imaging</i>	

12:45-13:00	WeCT7.6
Magnetic Resonance Microlmaging of a Swine Infarcted Heart: Performing Cardiac Virtual Histologies	1584-1587
Ortiz, Rafael <i>Univ. Politècnica de València</i> ; Morales, José Manuel <i>Univ. de València</i> ; Ruiz-España, Silvia <i>Univ. Politècnica de València</i> ; Bodí, Vicente <i>Univ. de València</i> ; Monleon, Daniel <i>Hospital Clinico Univ. de Valencia</i> ; Moratal, David* <i>Univ. Politècnica de València</i>	

WeCT8: 11:30-13:00	Amber 5
10.3 Emerging IT for Efficient/Low-Cost Healthcare Delivery (Oral Session)	
Chair: Korhonen, Ilkka <i>Tampere University of Technology</i>	
Co-Chair: Sacchi, Lucia <i>University of Pavia</i>	

11:30-11:45	WeCT8.1
Model based Methods for the Analysis of Non-Stationary Effects of Telemonitoring as an Intervention for the Management of Chronic Conditions at Home	1588-1591
Celler, Branko George* <i>Univ. of New South Wales</i> ; Sparks, Ross <i>CSIRO - Digital Productivity Flagship</i>	

11:45-12:00	WeCT8.2
Data Correction for Seven Activity Trackers based on Regression Models	1592-1595
Andalibi, Vafa <i>Tampere Univ. of Technology</i> ; Honko, Harri* <i>Tampere Univ. of Technology</i> ; Christophe, Francois <i>Tampere Univ. of Technology</i> ; Viik, Jari <i>Tampere Univ. of Technology</i>	

12:00-12:15	WeCT8.3
A Cloud-Based System for Automatic Glaucoma Screening	1596-1599
Yin, Fengshou* <i>Institute for Infocomm Research</i> ; Wong, Damon <i>Institute for Infocomm Research</i> ; Quan, Ying <i>Institute for Infocomm Research</i> ; Yow, Ai Ping <i>Institute for Infocomm Research</i> ; Tan, Ngan Meng A* <i>STAR, Institute for Infocomm Research</i> ; Gopalakrishnan, Kavitha <i>Institute For Infocomm Research</i> ; Lee, Beng Hai <i>Institute for Infocomm Research</i> ; Xu, Yanwu <i>Institute for Infocomm Research</i> ; Zhang, Zhuo A* <i>STAR</i> ; Cheng, Jun <i>Institute for Infocomm Research, AStar</i> ; Liu, Jiang <i>Institute for Infocomm Research, A STAR</i>	

12:15-12:30	WeCT8.4
Visualization-Based Medical Expenditure Analysis Support System	1600-1603
Toyoda, Shuichi* <i>Jobu Univ.</i>	

12:30-12:45 WeCT8.5
Septic Safe Interactions with Smart Glasses in Health Care 1604-1607
Czuszynski, Krzysztof* *Gdansk Univ. of Technology*; Ruminski, Jacek *Gdansk Univ. of Technology*; Kocejko, Tomasz *Gdansk Univ. of Technology*; Wtorek, Jerzy *Gdansk Univ. of Technology*

12:45-13:00 WeCT8.6
Establishing an Indigenous Tele-Eye Care Service 1608-1611
Kanagasingam, Yogi *The Australian eHealth Research Centre, Perth, CSIRO.*; Boyle, Justin* *CSIRO ICT Centre*; Vignarajan, Janardhan *CSIRO*; Xiao, Di *Commonwealth Scientific and Industrial Research Organization*; Zhang, Ming *CSIRO*

WeCT9: 11:30-13:00 Amber 6
10.4 Personalised Health (Oral Session)
Chair: Doug, Fridsma *AMIA - Informatics Professionals. Leading the Way*
Co-Chair: Wang, May D. *Georgia Tech and Emory University*

11:30-11:45 WeCT9.1
Investigating Correlation between Verbal Interactions and Perceived Stress 1612-1615
Osmani, Venet* *CREATE-NET*; Ferdous, Raihana *Create-Net*; Mayora, Oscar *CREATE-NET*; Beltrán, Jessica *CICESE*

11:45-12:00 WeCT9.2
Time-Series Modeling of Long-Term Weight Self-Monitoring Data 1616-1620
Helander, Elina* *Tampere Univ. of Technology*; Pavel, Misha *Northeastern Univ.*; Jimison, Holly *Northeastern Univ.*; Korhonen, Ilkka *Tampere Univ. of Technology*

12:00-12:15 WeCT9.3
Annotation and Prediction of Stress and Workload from Physiological and Inertial Signals 1621-1624
Ghosh, Arindam* *Univ. of Trento*; Danieli, Morena *Univ. of Trento*; Riccardi, Giuseppe *Univ. of Trento*

12:15-12:30 WeCT9.4
Modeling Perceived Stress via HRV and Accelerometer Sensor Streams 1625-1628
Wu, Min* *Institute for Infocomm Research, A*STAR, Singapore*; Cao, Hong *McLaren Applied Technologies*; Nguyen, Hai-Long *I2R, A*Star, Singapore*; Surmacz, Karl *McLaren Applied Technologies*; Hargrove, Caroline *McLaren Applied Technologies*

12:30-12:45 WeCT9.5
A Smart Spirometry Device for Asthma Diagnosis 1629-1632
Kassem, Abdallah* *Notre Dame Univ.-Louaize*; Hamad, Mustapha *Notre Dame Univ.-Louaize*; El-Mou Cary, Chady *Notre Dame Univ.-Louaize*

12:45-13:00 WeCT9.6
Quantifiable Fitness Tracking using Wearable Devices 1633-1637
Bajpai, Anurag *Samsung R&D Institute Bangalore, India*; Jilla, Vivek *Samsung Research India Bangalore*; Tiwari, Vijay Narayan *Samsung Research India, Bangalore*; Venkatesan, Shankar *Samsung R&D Institute Bangalore, India*; Narayanan, Rangavittal* *Samsung India Software Operations Pvt. Ltd.*

WeCT10: 11:30-13:00 Amber 7
6.5 Sensory Neuroprostheses I (Oral Session)
Chair: Suaning, Gregg *The University of New South Wales*
Co-Chair: Babiloni, Fabio *University of Rome*

11:30-11:45 WeCT10.1
Assistive Peripheral Prosthetic Vision Aids Perception and Mobility in Outdoor Environments: A Virtual-Reality Simulation Study 1638-1641
Zapf, Marc Patrick Hans* *Univ. of New South Wales*; Boon, Mei-Ying *School of Optometry and Vision Science, UNSW Australia*; Lovell, Nigel H. *Univ. of New South Wales*; Suaning, Gregg *The Univ. of New South Wales*

11:45-12:00		WeCT10.2
Cortical Neural Excitations in Rats in Vivo with using a Prototype of a Wireless Multi-Channel Microstimulation System		1642-1645
Hayashida, Yuki* <i>Osaka Univ.</i> ; Umehira, Yuuichi <i>Grad. Eng., Osaka Univ.</i> ; Takatani, Kouki <i>Grad. Eng., Osaka Univ.</i> ; Futami, Shigetoshi <i>Grad. Eng., Osaka Univ.</i> ; Kameda, Seiji <i>Osaka Univ.</i> ; Kamata, Takatsugu <i>Osaka Univ.</i> ; Khan, Arif Ullah <i>Osaka Univ.</i> ; Takeuchi, Yoshinori <i>Osaka Univ.</i> ; Imai, Masaharu <i>Osaka Univ.</i> ; Yagi, Tetsuya <i>Osaka Univ., Gard. Eng</i>		
12:00-12:15		WeCT10.3
Impact of Monaural Frequency Compression on Binaural Fusion at the Brainstem Level		1646-1649
Klauke, Isabelle <i>Systems Neuroscience & NeuroTechnology Unit</i> ; Kohl, Manuel <i>Saarland Univ. of Applied Sciences</i> ; Hannemann, Ronny <i>Siemens Audiologische Technik</i> ; Kornagel, Ulrich <i>Sivantos GmbH</i> ; Strauss, Daniel J.* <i>Saarland Univ., Medical Faculty</i> ; Corona-Strauss, Farah I. <i>Saarland Univ. Hospital</i>		
12:15-12:30		WeCT10.4
Resistivity Profiles of Wild-Type, α-Syn, and β-Syn Mouse Retina		1650-1653
Wang, Boshuo <i>Univ. of Southern California</i> ; Weiland, James* <i>Univ. of Southern California</i>		
12:30-12:45		WeCT10.5
Mental Workload Estimations in Unilateral Deafened Children		1654-1657
Cartocci, Giulia <i>Univ. of Rome Sapienza</i> ; Maglione, Anton Giulio <i>Univ. of Rome Sapienza</i> ; Scorpecci, Alessandro <i>Ospedale Pediatrico "Bambino Gesù" - IRCCS</i> ; Marsella, Pasquale <i>IRCCS Ospedal Bambin Gesù</i> ; Malerba, Paolo <i>Cochlear</i> ; Babiloni, Fabio* <i>Univ. of Rome</i> ; Di Flumeri, Gianluca <i>Univ. of Rome Sapienza</i> ; Borghini, Gianluca <i>Univ. of Rome Sapienza</i> ; Aricò, Pietro <i>Fondazione Santa Lucia</i>		
12:45-13:00		WeCT10.6
Motion Sensitivity Analysis of Retinal Ganglion Cells in Mouse Retina using Natural Visual Stimuli		1658-1662
Wadehn, Federico* <i>ETH Zurich</i> ; Schieban, Konrad <i>ETH Zurich</i> ; Nikolic, Konstantin <i>Imperial College London</i>		
WeCT11: 11:30-13:00		Amber 8
6.6 Motor Neuroprostheses I (Oral Session)		
Chair: Englehart, Kevin <i>University of New Brunswick</i>		
11:30-11:45		WeCT11.1
Classification of Hand and Wrist Tasks of Unknown Force Levels using Muscle Synergies		1663-1666
Atoufi, Bahareh <i>Univ. of New Brunswick</i> ; Kamavuako, Ernest Nlandu <i>Aalborg Univ.</i> ; Hudgins, Bernard <i>Univ. of New Brunswick</i> ; Englehart, Kevin* <i>Univ. of New Brunswick</i>		
11:45-12:00		WeCT11.2
Optimal Calibration of the Learning Rate in Closed-Loop Adaptive Brain-Machine Interfaces		1667-1670
Hsieh, Han-Lin <i>Univ. of Southern California</i> ; Shanechi, Maryam* <i>Univ. of Southern California</i>		
12:00-12:15		WeCT11.3
Design of a Pulse-Triggered Four-Channel Functional Electrical Stimulator using Complementary Current Source and Time Division Multiplexing Output Method		1671-1674
Wang, Haipeng <i>Southeast Univ., Institute of RF- & OE-ICs</i> ; Wang, Zhigong* <i>Southeast Univ.</i> ; Lü, Xiaoying <i>Southeast Univ.</i> ; Huang, Zonghao <i>Southeast Univ.</i> ; Zhou, Yuxuan <i>School of Biological Science and Medical Engineering, Southeast Uni</i>		
12:15-12:30		WeCT11.4
Nonlinear Mappings between Discrete and Simultaneous Motions to Decrease Training Burden of Simultaneous Pattern Recognition Myoelectric Control		1675-1678
Ingraham, Kimberly* <i>Rehabilitation Institute of Chicago</i> ; Smith, Lauren <i>Northwestern Univ.</i> ; Simon, Ann <i>Rehabilitation Institute of Chicago</i> ; Hargrove, Levi <i>Rehabilitation Institute of Chicago</i>		
12:30-12:45		WeCT11.5
Influence of Multiple Dynamic Factors on the Performance of Myoelectric Pattern Recognition		1679-1682
Khushaba, Rami N. <i>Univ. of Technology, Sydney (UTS)</i> ; Ali, Ali Hussian* <i>Baghdad Univ.</i> ; Kodagoda, Sarath <i>Univ. of Technology, Sydney (UTS)</i>		

12:45-13:00 WeCT11.6
Design and Preliminary Testing of the RIC Hybrid Knee Prosthesis 1683-1686
 Lenzi, Tommaso* *Rehabilitation Institute of Chicago*; Sensinger, Jonathon W. *Univ. of New Brunswick*;
 Lipsey, Jim *Rehabilitation Institute of Chicago*; Hargrove, Levi *Rehabilitation Institute of Chicago*;
 Kuiken, Todd *Rehabilitation Institute of Chicago*

WeCT13: 11:30-13:00 Suite 6
5.3 Respiratory Engineering I (Oral Session)
Chair: Jané, Raimon *Institut de Bioenginyeria de Catalunya (IBEC)*
Co-Chair: de Chazal, Philip *University of Sydney*

11:30-11:45 WeCT13.1
Model-Based Estimation of Pulmonary Compliance and Resistance Parameters from Time-Based Capnography 1687-1690
 Abid, Abubakar* *Massachusetts Institute of Technology*; Mieloszyk, Rebecca *Massachusetts Institute of Technology*; Verghese, George *Massachusetts Institute of Technology*; Krauss, Baruch *Harvard Medical School*; Heldt, Thomas *Massachusetts Institute of Technology*

11:45-12:00 WeCT13.2
Design and Characterization of a Measurement System for Monitoring Pressure Exerted by Bronchial Blockers: in Vitro Trials 1691-1694
 Vallone, Niccolò *Univ. Bampus Bio-Medico di Roma*; Pizzo, Cecilia Maria *Univ. Bampus Bio-Medico di Roma*;
 Massaroni, Carlo* *Univ. Campus Bio-Medico di Roma*; Saccomandi, Paola *Univ. Campus Bio-Medico of Rome*;
 Silvestri, Sergio *Univ. Campus Bio-Medico di Roma*; Carassiti, Massimiliano *Univ. Campus Bio-Medico of Rome*;
 Mattei, Alessia *Univ. Bampus Bio-Medico di Roma*; Schena, Emiliano *Univ. of Rome Campus Bio-Medico*

12:00-12:15 WeCT13.3
Liquid Ventilator for Ultrafast Hypothermia Induction in Juvenile Lambs: Preliminary Results 1695-1698
 Nadeau, Mathieu* *Univ. de Sherbrooke*; Sage, Michaël *Univ. de Sherbrooke*; Kohlhauer, Matthias *Institute National de la Santé et de la Recherche Médicale*; Robert, Raymond *Univ. de Sherbrooke*; Vandamne, Jonathan *Univ. de Sherbrooke*; Mousseau, Julien *Univ. de Sherbrooke*; Tissier, Renaud *Institute National de la Santé et de la Recherche Médicale*; Praud, Jean-Paul *Univ. of Sherbrooke*; Walti, Hervé *Univ. de Sherbrooke*; Micheau, Philippe *Univ. de Sherbrooke*

12:15-12:30 WeCT13.4
Clustering of Capnogram Features to Track State Transitions during Procedural Sedation 1699-1702
 Mieloszyk, Rebecca* *Massachusetts Institute of Technology*; Guo, Margaret *MIT*; Verghese, George *Massachusetts Institute of Technology*; Andolfatto, Gary *Univ. of British Columbia, Lions Gate Hospital*; Heldt, Thomas *Massachusetts Institute of Technology*; Krauss, Baruch *Harvard Medical School*

12:30-12:45 WeCT13.5
EMG-Derived Respiration Signal using the Fixed Sample Entropy during an Inspiratory Load Protocol 1703-1706
 Estrada, Luis *Univ. Politècnica de Catalunya*; Torres, Abel* *Univ. Politècnica de Catalunya*; Sarlabous, Leonardo *Univ. Politècnica de Catalunya (UPC)*; Jané, Raimon *Institute de Bioenginyeria de Catalunya (IBEC)*

12:45-13:00 WeCT13.6
Wearable Lung-Health Monitoring System with Electrical Impedance Tomography 1707-1710
 Hong, Sunjoo* *KAIST*; Lee, Jaehyuk *KAIST*; Yoo, Hoi-Jun *KAIST*

WeCT15: 11:30-13:00 White 1
9.3 Design, Development and Standards of Medical Devices I (Invited Session)
Chair: Andersen, Björn *Universität zu Lübeck*
Co-Chair: Kasparick, Martin *University of Rostock*

11:30-11:45 WeCT15.1
Communication Patterns for Interconnecting and Composing Medical Systems 1711-1716
 Ranganath, Venkatesh-Prasad* *Kansas State Univ.*; Kim, Yu Jin *Kansas State Univ.*; Hatcliff, John *Kansas State Univ.*; Robby, FNU *Kansas State Univ.*

11:45-12:00		WeCT15.2
Dynamic DICOM Configuration in a Service-Oriented Medical Device Architecture	1717-1720	
Schlamelcher, Jan* <i>OFFIS – Institute for Information Technology</i> ; Onken, Michael <i>OFFIS – Institute for Information Technology, Oldenburg, Germany</i> ; Eichelberg, Marco <i>OFFIS – Institute for Information Technology, Oldenburg, Germany</i> ; Hein, Andreas <i>OFFIS – Institute for Information Technology, Oldenburg, Germany</i>		
12:00-12:15		WeCT15.3
New IEEE 11073 Standards for Interoperable, Networked Point-of-Care Medical Devices	1721-1724	
Kasparick, Martin* <i>Univ. of Rostock</i> ; Schlichting, Stefan <i>Drägerwerk AG & Co. KGaA</i> ; Golatowski, Frank <i>Univ. of Rostock</i> ; Timmermann, Dirk <i>Univ. of Rostock</i>		
12:15-12:30		WeCT15.4
Reporting Device Observations for Semantic Interoperability of Surgical Devices and Clinical Information Systems	1725-1728	
Andersen, Björn* <i>Univ. zu Lübeck</i> ; Ulrich, Hannes <i>Univ. zu Lübeck</i> ; Rehmann, Daniel <i>Univ. zu Lübeck</i> ; Kock, Ann-Kristin <i>Univ. zu Lübeck</i> ; Wrage, Jan-Hinrich <i>Univ. zu Lübeck</i> ; Ingenerf, Josef <i>Univ. zu Lübeck</i>		
12:30-12:45		WeCT15.5
Regulatory Science based Approach in Development of Novel Medical Devices	1729-1732	
Sakuma, Ichiro* <i>The Univ. of Tokyo</i>		
12:45-13:00		WeCT15.6
Rule-Based Medical Device Adaptation for the Digital Operating Room	1733-1736	
Franke, Stefan* <i>Univ. Leipzig</i> ; Neumuth, Thomas <i>Innovation Center Computer Assisted Surgery, Univ. of Leipz</i>		
11:45-12:00		WeCT16.2
Bioengineered Cell-Instructive 3D Matrices as Vehicles for Cellular Therapies	1737-1740	
Barrias, Cristina C* <i>INEB-Instituto de Engenharia Biomédica; Univ. do Porto</i>		
12:00-12:15		WeCT16.3
A Novel 3-Dimensional Approach for Cardiac Regeneration	1741-1744	
Munarin, Fabiola* <i>Brown Univ.</i> ; Coulombe, Kareen <i>Brown Univ.</i>		
12:15-12:30		WeCT16.4
Biofunctionalization of Polymeric Surfaces	1745-1748	
Mateos-Timoneda, Miguel Angel* <i>CIBER-BBN</i> ; Levato, Riccardo <i>Institute for Bioengineering of Catalonia</i> ; Punet, Xavier <i>Institute for Bioengineering of Catalonia</i> ; Cano, Irene <i>Institute for Bioengineering of Catalonia</i> ; Castano, Oscar <i>Institute for Bioengineering of Catalonia</i> ; Engel, Elisabeth <i>UPC</i>		
12:30-12:45		WeCT16.5
Molecular Mechanisms Orchestrating the Stem Cell Response to Translational Scaffolds	1749-1752	
Brown, Justin* <i>The Pennsylvania State Univ.</i>		
12:45-13:00		WeCT16.6
Biomimetic Hybrid Scaffolds for Osteo-Chondral Tissue Repair: Design and Osteogenic Differentiation of Human Placenta-Derived Cells (hPDC)	1753-1756	
Farè, Silvia* <i>Politecnico di Milano</i> ; Bertoldi, Serena <i>Politecnico di Milano</i> ; Meskinfam, Masoumeh <i>Islamic Azad Univ. Lahijan branch</i> ; Spoldi, Valentina <i>Fondazione Poliambulanza-Istituto Ospedaliero, Brescia</i> ; Tanzi, Maria Cristina <i>INSTM, local unit Politecnico di Milano</i> ; Parolini, Ornella <i>Fondazione Poliambulanza-Istituto Ospedaliero, Brescia</i>		

WeCT17: 11:30-13:00	Space 1
1.7 Biomedical Signal Classification I: BCI Application (Oral Session)	

11:30-11:45		WeCT17.1
An Investigation of Time-Varying and Simultaneous Frequency Stimulation for Multi-Class SSVEP-Based Brain-Computer Interface	1757-1760	
Dehzangi, Omid* <i>Univ. of Michigan-Dearborn</i> ; Jafari, Roozbeh <i>Univ. of Texas at Dallas</i>		

11:45-12:00		WeCT17.2
EEG Error Potentials Detection and Classification using Time-Frequency Features for Robot Reinforcement Learning	1761-1764	
Boubchir, Larbi* <i>Univ. of Paris 8, LIASD research Lab.</i> ; Touati, Youcef <i>LIASD - Univ. of Paris 8</i> ; Daachi, Boubaker <i>CNRS - AIST - JRL</i> ; Ali Chérif, Arab <i>LIASD - Univ. of Paris 8</i>		
12:00-12:15		WeCT17.3
Online Control of a Humanoid Robot through Hand Movement Imagination using CSP and ECoG based Features	1765-1768	
Kapeller, Christoph* <i>g.tec Medical Engineering GmbH</i> ; Gergondet, Pierre <i>CNRS</i> ; Kamada, Kyousuke <i>Asahikawa Medical Univ.</i> ; Ogawa, Hiroshi <i>Asahikawa Medical Univ.</i> ; Takeuchi, Fumiya <i>Asahikawa Medical Univ.</i> ; Ortner, Rupert <i>g.tec - Guger Technologies OG</i> ; Prueckl, Robert <i>g.tec Medical Engineering GmbH</i> ; Kheddar, Abderrahmane <i>CNRS</i> ; Scharinger, Josef <i>Dept. of Computational Perception, Johannes Kepler Univ.</i> ; Guger, Christoph <i>g.tec Medical Engineering GmbH</i>		
12:15-12:30		WeCT17.4
Single-Trial Classification of Multi-User P300-Based Brain-Computer Interface using Riemannian Geometry	1769-1772	
Korcowski, Louis* <i>Univ. Grenoble-Alpes, GIPSA-Lab</i> ; Jutten, Christian <i>Univ. of Grenoble</i> ; Congedo, Marco <i>CNRS</i>		
12:30-12:45		WeCT17.5
Feature Extraction for BCIs based on Electromagnetic Source Localization and Multiclass Filter Bank Common Spatial Patterns	1773-1776	
Zaitcev, Aleksandr* <i>The Univ. of Sheffield</i> ; Cook, Greg <i>Univ. of Sheffield, UK</i> ; Liu, Wei <i>The Univ. of Sheffield</i> ; Paley, Martyn <i>Univ. of Sheffield</i> ; Milne, Elizabeth <i>The Univ. of Sheffield</i>		
12:45-13:00		WeCT17.6
Classifying the Auditory P300 using Mobile EEG Recordings without Calibration Phase	1777-1780	
Zink, Rob* <i>Katholieke Univ. Leuven</i> ; Hunyadi, Borbala <i>KU Leuven</i> ; Van Huffel, Sabine <i>Katholieke Univ. Leuven</i> ; De Vos, Maarten <i>Univ. of Oxford</i>		
WeCT18: 11:30-13:00		Space 2
1.8 Disentangling Patho-Physiological Mechanisms from Multivariate Cardiovascular Variability Series (Invited Session)		
Chair: Porta, Alberto <i>Universita' degli Studi di Milano</i>		
Co-Chair: Faes, Luca <i>University of Trento</i>		
11:30-11:45		WeCT18.1
Wiener-Granger Causality in QT-HP Variability Interactions	1781-1784	
Porta, Alberto* <i>Univ. degli Studi di Milano</i> ; Bari, Vlasta <i>IRCCS Policlinico San Donato</i> ; Marchi, Andrea <i>Dept. of Electronics Information and Bioengineering, Polite</i> ; De Maria, Beatrice <i>IRCCS Fondazione Salvatore Maugeri, Milano</i> ; Cerutti, Sergio <i>Politecnico di Milano</i>		
11:45-12:00		WeCT18.2
Assessing Cerebral Blood Flow Control from Variability in Blood Pressure and Arterial CO2 Levels	1785-1788	
Nikolic, Dragana* <i>Institute of Sound and Vibration Research, Univ. of Southam</i> ; Birch, Anthony Alan <i>Univ. Hospital Southampton</i> ; Panerai, Ronney <i>Univ. of Leicester</i> ; Simpson, David Martin <i>Univ. of Southampton</i>		
12:00-12:15		WeCT18.3
Algorithms for the Inference of Causality in Dynamic Processes: Application to Cardiovascular and Cerebrovascular Variability	1789-1792	
Faes, Luca* <i>Univ. of Trento</i> ; Porta, Alberto <i>Univ. degli Studi di Milano</i> ; Nollo, Giandomenico <i>Univ. of Trento</i>		
12:15-12:30		WeCT18.4
Causal Coherence Analysis of Cardiovascular Variables in Obese Preadolescents and Adolescents	1793-1796	
Javorka, Michal* <i>Comenius Univ., Jessenius Faculty of Medicine</i> ; Czippelova, Barbora <i>Dept. of Physiology, Comenius Univ., Jessenius Faculty</i> ; Turianikova, Zuzana <i>Dept. of Physiology, Comenius Univ., Jessenius Faculty</i> ; Lazarova, Zuzana <i>Dept. of Physiology, Comenius Univ., Jessenius Faculty</i> ; Tonhajzerova, Ingrid <i>Dept. of Physiology, Comenius Univ., Jessenius Faculty</i> ; Javorka, Kamil <i>Dept. of Physiology, Comenius Univ., Jessenius Faculty</i> ; Baumert, Mathias <i>The Univ. of Adelaide</i>		

12:30-12:45 WeCT18.5
Measuring Heart Rate Variability by Means of Information Entropies based on Choi-Williams Distribution 1797-1800
 Vallverdu, Montserrat* *Univ. Politècnica de Catalunya*; Claria, Francesc *Lleida Univ.*; Melia, Umberto Sergio Pio *Univ. Politècnica de Catalunya*; Bayes de Luna, Antonio *Hospital de la Santa Creu i Sant Pau*; Caminal, Pere *Technical Univ. of Catalonia (UPC)*

12:45-13:00 WeCT18.6
Symbolic Dynamics of Pulse Transit Time and Heart Period in Children with Upper Airway Obstruction ... 1801-1804
 Baumert, Mathias* *The Univ. of Adelaide*; Kohler, Mark *Univ. of South Australia*; Pamula, Yvonne *Adelaide Women's and Children's Hospital*; Immanuel, Sarah Anita *Univ. of Adelaide*

WeCT19: 11:30-13:00 Space 3
2.6 fMRI and Brain Connectivity (Oral Session)
Chair: Baccala, Luiz Antonio *Escola Politécnica*
Co-Chair: Mitsis, Georgios D. *McGill University*

11:30-11:45 WeCT19.1
Evaluation of Performance to Detect Default Mode Network Among Some Algorithms Applied to Resting-State FMRI Data 1805-1808
 Tachikawa, Kenta* *Waseda Univ.*; Izawa, Shun *Waseda Univ.*; Ono, Yumie *Meiji Univ.*; Kuriki, Shinya *Tokyo Denki Univ.*; Ishiyama, Atsushi *Waseda Univ.*

11:45-12:00 WeCT19.2
Arterial CO2 Effects Modulate Dynamic Functional Connectivity in Resting-State FMRI 1809-1812
 Nikolaou, Foivia *KIOS Research Center, Dept. of Electrical and Computer Engi*; Orphanidou, Christina *Univ. of Cyprus*; Wise, Richard G. *Cardiff Univ. Brain Research Imaging Center (CUBRIC), Schoo*;
 Mitsis, Georgios D.* *McGill Univ.*

12:00-12:15 WeCT19.3
Effects of Acute Electromagnetic Fields Exposure on the Interhemispheric Homotopic Functional Connectivity during Resting State 1813-1816
 Lv, Bin* *China Academy of Telecommunication Research of Ministry of Indus*; Shao, Qing *China Academy of Telecommunication Research of Ministry of Indus*; Chen, Zhiye *PLA General Hospital*; Ma, Lin *PLA General Hospital*; Wu, Tongning *China Academy of Telecommunication Research of Ministry of Indus*

12:15-12:30 WeCT19.4
Independent Component versus Local Sparse Component Analysis in Resting State FMRI 1817-1820
 Vieira, Gilson *Univ. of São Paulo*; Amaro, Edson *Univ. of São Paulo*; Sato, João Ricardo *Univ. Federal do ABC*;
 Baccala, Luiz Antonio* *Escola Politecnica*

12:30-12:45 WeCT19.5
Emergence of the Default-Mode Network from Resting-State to Activation-State in Reciprocal Social Interaction via Eye Contact 1821-1824
 Lee, Ray* *Princeton Univ.*

12:45-13:00 WeCT19.6
Object Categories Specific Brain Activity Classification with Simultaneous EEG-FMRI 1825-1828
 Ahmad, Rana Fayyaz *Univ. Teknologi Petronas*; Malik, Aamir Saeed* *Univ. Teknologi Petronas*; Kamel, Nidal *Technical Univ. of Petronas*; Reza, Faruque *Dept. of Neurosciences, School of Medical Sciences, Hospita*

WeCT20: 11:30-13:00 Space 4
3.2 Body Sensor Networks (Oral Session)
Co-Chair: Sassi, Roberto *Università degli Studi di Milano*

11:30-11:45 WeCT20.1
Smart Helmet: Monitoring Brain, Cardiac and Respiratory Activity 1829-1832
 von Rosenberg, Wilhelm* *Imperial College London*; Chanwimalueang, Theerasak *Imperial College London*;
 Goverdovsky, Valentin *Imperial College London*; Mandic, Danilo *Imperial College*

11:45-12:00	WeCT20.2
Accelerometer Body Sensor Network Improves Systolic Time Interval Assessment with Wearable Ballistocardiography	1833-1836
Wiens, Andrew* <i>Georgia Institute of Technology</i> ; Inan, Omer <i>Georgia Institute of Technology</i>	
12:00-12:15	WeCT20.3
Periodic Leg Movement (PLM) Monitoring using a Distributed Body Sensor Network	1837-1840
Madhushri, Priyanka <i>Univ. of Alabama in Huntsville</i> ; Ahmed, Beena <i>Texas A&M Univ. at Qatar</i> ; Penzel, Thomas <i>Charite Univ. Hospital</i> ; Jovanov, Emil* <i>Univ. of Alabama in Huntsville</i>	
12:15-12:30	WeCT20.4
Magnetic Human Body Communication	1841-1844
Park, Jiwoong <i>Univ. of California, San Diego</i> ; Mercier, Patrick P.* <i>Univ. of California, San Diego</i>	
12:30-12:45	WeCT20.5
Human Body and Head Characteristics as a Communication Medium for Body Area Network	1845-1848
Kifle, Yonatan <i>Khalifa Univ. of Science, Technology and Research</i> ; Kim, Hun-Seok <i>Univ. of Michigan</i> ; Yoo, Jerald* <i>Masdar Institute of Science and Technology</i>	
12:45-13:00	WeCT20.6
Smart Photoplethysmographic Sensor for Pulse Wave Registration at Different Vascular Depths	1849-1852
Leier, Mairo* <i>Tallinn Univ. of Technology</i> ; Pilt, Kristjan <i>Technical Univ. of Tallinn</i> ; Karai, Deniss <i>TUT Technomedicum</i> ; Jervan, Gert <i>Tallinn Univ. of Technology</i>	
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WeET1: 15:30-17:00	Brown 1
8.3 Mechanobiology (Invited Session)	
Chair: Remuzzi, Andrea <i>University of Bergamo</i>	
Co-Chair: Raimondi, Manuela Teresa <i>Politecnico di Milano</i>	
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15:30-15:45	WeET1.1
Using Microfluidics to Investigate Tumor Cell Extravasation and T-Cell Immunotherapies	1853-1856
Pavesi, Andrea <i>Singapore-MIT Alliance for Research and Technology, BioSyM</i> ; Tanoto, Tan Anthony <i>Duke Nus</i> ; Chen, Michelle <i>MIT</i> ; Adriani, Giulia <i>Singapore-MIT Alliance for Research and Technology</i> ; Antonio, Bertolotti <i>Duke Nus</i> ; Kamm, Roger D.* <i>Massachusetts Institute of Technology</i>	
15:45-16:00	WeET1.2
A Strain-Dependent Diffusivity Model to Study the Nuclear Import of Mechanobiological Transcription Factors	1857-1860
Nava, Michele* <i>Politecnico di Milano</i> ; Fedele, Roberto <i>Politecnico di Milano</i> ; Raimondi, Manuela Teresa <i>Politecnico di Milano</i>	
16:00-16:15	WeET1.3
Real-Time Deformability Cytometry as a Label-Free Indicator of Cell Function	1861-1864
Otto, Oliver* <i>Technische Univ. Dresden</i> ; Rosendahl, Philipp <i>Technische Univ. Dresden</i> ; Golfier, Stefan <i>Technische Univ. Dresden</i> ; Mietke, Alexander <i>Max Planck Institute of the Physics of Complex Systems</i> ; Herbig, Maik <i>Technische Univ. Dresden</i> ; Jacobi, Angela <i>Technische Univ. Dresden</i> ; Toepfner, Nicole <i>Technische Univ. Dresden</i> ; Herold, Christoph <i>Technische Univ. Dresden</i> ; Klaue, Daniel <i>Technische Univ. Dresden</i> ; Girardo, Salvatore <i>Technische Univ. Dresden</i> ; Winzi, Maria <i>Technische Univ. Dresden</i> ; Fischer-Friedrich, Elisabeth <i>Technische Univ. Dresden</i> ; Guck, Jochen <i>Technische Univ. Dresden</i>	
16:15-16:30	WeET1.4
Modulation of Cellular Responses: The Two-Photon Polymerization Approach in the Control of the Physical Micro/Nanoenvironment	1865-1868
Marino, Attilio <i>Italian Institute of Technology</i> ; Filippeschi, Carlo <i>Italian Institute of Technology</i> ; Mattoli, Virgilio <i>Italian Institute of Technology</i> ; Mazzolai, Barbara <i>Istituto Italiano di Tecnologia</i> ; Ciofani, Gianni* <i>Italian Institute of Technology</i>	
16:30-16:45	WeET1.5
Theory and Application of Arterial Tissue In-Host Remodelling	1869-1872
Zunino, Paolo* <i>Univ. of Pittsburgh</i>	

16:45-17:00 WeET1.6
Tissue Motion Due to Needle Deflection 1873-1876
 Leibinger, Alexander* *Imperial College London*; Burrows, Christopher *Imperial College London*; Oldfield, Matthew *Imperial College London*; Rodriguez y Baena, Fernando *Imperial College London*

WeET2: 15:30-17:00 Brown 2
4.3 Cardiovascular System Modeling (Oral Session)
Chair: Khoo, Michael *University of Southern California*
Co-Chair: Fotiadis, Dimitrios I. *University of Ioannina*

15:30-15:45 WeET2.1
Modeling of Blood Flow through Sutured Micro-Vascular Anastomoses 1877-1880
 Karanasiou, Georgia *Dept. of Biomedical Research, Institute of Molecular Biolog*; Gatsios, Dimitrios *Dept. of Biomedical Research, Institute of Molecular Biolog*; Lykissas, Marios *Dept. of Orthopaedic Surgery, Univ. of Ioannina, Schoo*; Stefanou, Kostas *FORTH-BRI*; Rigas, Georgios *Univ. of Ioannina*; Lagaris, Isaac *Dept. of Computer Science, Univ. of Ioannina, Ioannina*; Kostas-Agnantis, Ioannis *Dept. of Orthopaedic Surgery, Univ. of Ioannina, Schoo*; Gkiatas, Ioannis *Dept. of Orthopaedic Surgery, Univ. of Ioannina, Schoo*; Beris, Alexandros *Dept. of Orthopaedic Surgery, Univ. of Ioannina, Schoo*; Fotiadis, Dimitrios I.* *Univ. of Ioannina*

15:45-16:00 WeET2.2
Simulation of Aortic Valve Dynamics during Ventricular Support 1881-1885
 Alonazi, Khalid* *UNSW*; Lovell, Nigel H. *Univ. of New South Wales*; Dokos, Socrates *Univ. of New South Wales*

16:00-16:15 WeET2.3
Modeling of Neonatal Hemodynamics during PDA Closure 1886-1889
 Soleymani, Sadaf* *Children's Hospital Los Angeles, Univ. of Southern Californ*; Khoo, Michael *Univ. of Southern California*; Noori, Shahab *Children's Hospital Los Angeles*; Seri, Istvan *Children's Hospital Los Angeles, Sidra Medical and Research Cent*

16:15-16:30 WeET2.4
Development of a Cerebral Circulation Model for the Automatic Control of Brain Physiology 1890-1893
 Utsuki, Tomohiko* *Tokai Univ.*

16:30-16:45 WeET2.5
Morphological Analysis of Pressure Wave in the Arterial Tree with Stenosis – A Modeling Approach 1894-1897
 Lakshmanan, Suganthi* *IIT Madras*; M, Manivannan *Indian Institute of Technology Madras*

16:45-17:00 WeET2.6
A Method for Localized Computation of Pulse Wave Velocity in Carotid Structure 1898-1901
 Patil, Ravindra* *Philips Research India*; Palanisamy, Krishnamoorthy *Philips Research India*; Sethuraman, Shriram *Philips Research North America*

WeET3: 15:30-17:00 Brown 3
6.7 Brain-Computer/Machine Interface III (Oral Session)
Chair: Rutkowski, Tomasz *University of Tsukuba*

15:30-15:45 WeET3.1
Improved Concept and First Results of an Auditory Single-Switch BCI for the Future use in Disorders of Consciousness Patients 1902-1905
 Bauernfeind, Günther *Graz Univ. of Technology*; Horki, Petar *Graz Univ. of Technology*; Kurz, Eva-Maria *Graz Univ. of Technology*; Schippinger, Walter *Albert Schweitzer Hospital*; Pichler, Gerald *Albert Schweitzer Klinik*; Müller-Putz, Gernot* *Graz Univ. of Technology*

15:45-16:00 WeET3.2
Chromatic and High-Frequency Cvep-Based BCI Paradigm 1906-1909
 Aminaka, Daiki *Univ. of Tsukuba*; Makino, Shoji *Univ. of Tsukuba*; Rutkowski, Tomasz* *Univ. of Tsukuba*

16:00-16:15 WeET3.3
Inter-Stimulus Interval Study for the Tactile Point-Pressure Brain-Computer Interface 1910-1913
 Shimizu, Kensuke *Univ. of Tsukuba*; Makino, Shoji *Univ. of Tsukuba*; Rutkowski, Tomasz* *Univ. of Tsukuba*

16:15-16:30 WeET3.4
Accurate Single-Trial Detection of Movement Intention Made Possible using Adaptive Wavelet Transform 1914-1917
Chamanzar, Alireza* *Sharif Univ. of Technology*; Malekmohammadi, Alireza *Sharif Univ. of Technology*;
Bahrani, Masih *Sharif Univ. of Technology*; Shabany, Mahdi *Sharif Univ. of Technology*

16:30-16:45 WeET3.5
**Event-Related Modulation of Steady-State Visual Evoked Potentials for Eyes-Closed Brain
Computer Interface** 1918-1921
Nishifuji, Seiji* *Yamaguchi Univ.*; Sugita, Yuya *Yamaguchi Univ.*; Hirano, Hitoshi *Yamaguchi Univ.*

16:45-17:00 WeET3.6
Towards Decoding of Functional Movements from the Same Limb using EEG 1922-1925
Shiman, Farid* *Univ. of Tübingen*; Irastorza-Landa, Nerea *Univ. of Tübingen*; Sarasola-Sanz, Andrea *Univ. of
Tübingen*; Spüler, Martin *Univ. of Tübingen*; Birbaumer, Niels *Eberhard-Karls-Univ.*; Ramos-Murguialday, Ander
Eberhard Karls Univ. of Tübingen/TECNALIA

WeET4: 15:30-17:00 Amber 1
1.9 Signal Processing for Artifact Removal (Oral Session)
Chair: Mitsis, Georgios D. *McGill University*
Co-Chair: Picard, Rosalind *Massachusetts Institute of Technology*

15:30-15:45 WeET4.1
Comparison of Three ICA Algorithms for Ocular Artifact Removal from TMS-EEG Recordings 1926-1929
Lyzhko, Ekaterina* *Schleswig-Holstein Univ. Hospital (UK-SH)*; Hamid, Laith *Univ. of Kiel*; Makhortykh, Sergey
the Institute of Mathematical Problems of Biology, Pushchino, Mo; Moliadze, Vera *Schleswig-Holstein Univ.
Hospital (UK-SH)*; Siniatchkin, Michael *Univ. of Kiel*

15:45-16:00 WeET4.2
Artifact Removal Algorithms for Stroke Detection using a Multistatic MIST Beamforming Algorithm 1930-1933
Ricci, Elisa* *Univ. of Rome "Tor Vergata"*; Di Domenico, Simone *Univ. of Rome "Tor Vergata"*; Cianca,
Ernestina *Univ. of Rome "Tor Vergata"*; Rossi, Tommaso *Univ. of Rome "Tor Vergata"*

16:00-16:15 WeET4.3
Automatic Identification of Artifacts in Electrodermal Activity Data 1934-1937
Taylor, Sara* *Massachusetts Institute of Technology*; Jaques, Natasha *Massachusetts Institute of Technology*;
Chen, Weixuan *Massachusetts Institute of Technology*; Fedor, Szymon *Massachusetts Institute of Technology*;
Sano, Akane *Massachusetts Institute of Technology*; Picard, Rosalind *Massachusetts Institute of Technology*

16:15-16:30 WeET4.4
**Extending the Automated Gastrointestinal Analysis Pipeline: Removal of Invalid Slow Wave Marks in
Gastric Serosal Recordings** 1938-1941
Paskaranandavivel, Niranchan* *The Univ. of Auckland*; Du, Peng *The Univ. of Auckland*; Erickson, Jon
Washington and Lee Univ.; O'Grady, Gregory *Univ. of Auckland*; Cheng, Leo K *The Univ. of Auckland*

16:30-16:45 WeET4.5
Investigating Effects of Different Artefact Types on Motor Imagery BCI 1942-1945
Frølich, Laura* *Technical Univ. of Denmark*; Winkler, Irene *Berlin Institute of Technology*; Müller, Klaus-Robert
Technical Univ. of Berlin; Samek, Wojciech *Berlin Institute of Technology*

16:45-17:00 WeET4.6
**Automatic Detection and Removal of Muscle Artifacts from Scalp EEG Recordings in
Patients with Epilepsy** 1946-1950
Anastasiadou, Maria *Univ. of Cyprus*; Christodoulakis, Manolis *Univ. of Cyprus*; Papathanasiou, Eleftherios S.
The Cyprus Institute for Neurology and Genetics; Papacostas, Savvas S. *The Cyprus Institute for Neurology
and Genetics*; Mitsis, Georgios D.* *McGill Univ.*

WeET5: 15:30-17:00	Amber 2
1.10 Time-Scale Analysis of Biosignals and Wavelets (Oral Session)	
Chair: Yamamoto, Yoshiharu <i>The University of Tokyo</i>	
Co-Chair: Chouvarda, Ioanna <i>Aristotle University</i>	

15:30-15:45	WeET5.1
Point-Process High-Resolution Representations of Heartbeat Dynamics for Multiscale Analysis: A CHF Survivor Prediction Study	1951-1954
Valenza, Gaetano <i>Univ. of Pisa-MGH-Harvard Medical School</i> ; Wendt, Herwig <i>CNRS, Univ. of Toulouse</i> ; Kiyono, Ken <i>Osaka Univ.</i> ; Hayano, Junichiro <i>Nagoya City Univ.</i> ; Watanabe, Eiichi <i>Fujita Health Univ.</i> ; Yamamoto, Yoshiharu <i>The Univ. of Tokyo</i> ; Abry, Patrice <i>ENS Lyon, CNRS</i> ; Barbieri, Riccardo* <i>MGH-Harvard Medical School-MIT</i>	
15:45-16:00	WeET5.2
Removing Movement Artifacts from Equine ECG Recordings Acquired with Textile Electrodes	1955-1958
Lanata', Antonio* <i>Univ. of Pisa</i> ; Guidi, Andrea <i>Univ. of Pisa</i> ; Baragli, Paolo <i>Dept. of Veterinary Sciences, Univ. of Pisa</i> ;; Paradiso, Rita <i>Smartex srl</i> ; Valenza, Gaetano <i>Univ. of Pisa-MGH-Harvard Medical School</i> ; Scilingo, Enzo Pasquale <i>Univ. of Pisa</i>	
16:00-16:15	WeET5.3
Primary Study for Detection of Arterial Blood Pressure Waveform Components	1959-1962
Paradkar, Neeraj* <i>International Institute of Information Technology</i> ; Roy Chowdhury, Shubhajit <i>International Institute of Information Technology, Hyderabad</i>	
16:15-16:30	WeET5.4
Ineffective Efforts in ICU Assisted Ventilation: Exploring Causalities via Multiscale Analysis	1963-1966
Chytas, Achilleas <i>Lab of Medical Informatics, Medical School, Aristotle Univ.</i> ; Babales, Dimitris <i>Dept. of Intensive Care Medicine, Univ. Hospital of He</i> ; Georgopoulos, Dimitris <i>Dept. of Intensive Care Medicine, Univ. Hospital of He</i> ; Maglaveras, Nikolaos <i>Aristotle Univ. of Thessaloniki</i> ; Chouvarda, Ioanna* <i>Aristotle Univ.</i>	
16:30-16:45	WeET5.5
Dysfunctional Long Term Habituation to Exogeneous Tinnitus-Matched Sounds in Patients with High Tinnitus Distress	1967-1970
Lehser, Caroline <i>Saarland Univ. Hospital</i> ; Hannemann, Ronny <i>Siemens Audiologische Technik</i> ; Corona-Strauss, Farah I. <i>Saarland Univ. Hospital</i> ; Strauss, Daniel J.* <i>Saarland Univ., Medical Faculty</i> ; Haab, Lars <i>Saarland Univ. Hospital</i> ; Seidler-Fallböhrmer, Birgit <i>TTHZ GmbH</i> ; Seidler, Harald <i>MediClin Bosenberg Kliniken</i>	
16:45-17:00	WeET5.6
P-Leader Multifractal Analysis and Sparse SVM for Intrapartum Fetal Acidosis Detection	1971-1974
Leonarduzzi, Roberto Fabio* <i>Ecole Normale Supérieure de Lyon</i> ; Spilka, Jiri <i>Czech Technical Univ. in Prague</i> ; Frecon, Jordan <i>ENS Lyon, CNRS</i> ; Wendt, Herwig <i>CNRS, Univ. of Toulouse</i> ; Pustelnik, Nelly <i>Laboratoire de Physique ENS de Lyon, CNRS UMR5672, Univ. Ly.</i> ; Jaffard, Stephane <i>Univ. Paris XII</i> ; Abry, Patrice <i>ENS Lyon, CNRS</i> ; Doret, Muriel <i>Hospices Civils de Lyon Univ. Lyon I</i>	

WeET6: 15:30-17:00	Amber 3
2.7 Image Registration (Oral Session)	
Chair: Grisan, Enrico <i>University of Padova</i>	
Co-Chair: Pickering, Mark <i>The University of New South Wales</i>	

15:30-15:45	WeET6.1
Image Registration Robust to Sparse Large Errors	1975-1980
Liu, Jing* <i>Univ. of California, San Diego</i> ; Chuang, Marian <i>UCSD</i> ; Chisholm, Andrew <i>UC San Diego</i> ; Cosman, Pamela <i>Univ. of California, San Diego</i>	
15:45-16:00	WeET6.2
Optical Flow with Structure Information for Epithelial Image Mosaicing	1981-1984
Ali, Sharib* <i>Univ. of Lorraine</i> ; Faraz, Khuram <i>Univ. of Lorraine</i> ; Daul, Christian <i>Univ. of Lorraine</i> ; Blondel, Walter <i>Univ. of Lorraine</i>	

16:00-16:15 WeET6.3
Automatic Mitral Annulus Tracking in Volumetric Ultrasound using Non-Rigid Image Registration 1985-1988
De Veene, Henri* *IBiTech-bioMMeda, Univ. of Ghent*; Bertrand, Philippe *Dept. of Cardiology, Ziekenhuis Oost-Limburg, Genk*; Popovic, Natasa *KU Leuven*; Vandervoort, Pieter *Dept. of Cardiology, Ziekenhuis Oost-Limburg, Genk*; Claus, Piet *Catholic Univ. Leuven*; De Beule, Matthieu *IBiTech-bioMMeda, Univ. of Ghent and FEops, Ghent*; Heyde, Brecht *KU Leuven*

16:15-16:30 WeET6.4
Automated Fiducial Point Selection for Reducing Registration Error in the Co-Localisation of Left Atrium Electroanatomic and Imaging Data 1989-1992
Ali, Rheeda* *Imperial College London*; Cantwell, Chris *Imperial College London*; Qureshi, Norman *Imperial College London*; Roney, Caroline *Imperial College London*; Lim, Phang Boon *Imperial College London*; Sherwin, Spencer *Imperial College London*; Siggers, Jennifer *Imperial College London*; Peters, Nicholas *Imperial College London*

16:30-16:45 WeET6.5
Registration of Coronary Arteries in Computed Tomography Angiography Images using Hidden Markov Model 1993-1996
Luo, Yuxuan *Tsinghua Univ.*; Feng, Jianjiang* *Tsinghua Univ.*; Xu, Miao *Tsinghua Univ.*; Zhou, Jie *Tsinghua Univ.*; Min, James *Weill Cornell Medical College*; Xiong, Guanglei *Weill Cornell Medical College*

16:45-17:00 WeET6.6
Non-Rigid Registration of Cervical Spine MRI Volumes 1997-2000
Aktar, Mst. Nargis* *Univ. of New South Wales, Canberra*; Alam, Md. Jahangir *Univ. of New South Wales, Canberra*; Pickering, Mark *The Univ. of New South Wales*; Webb, Alexandra *The Australian National Univ. Medical School*; Perriman, Diana *Canberra Hospital*

WeET7: 15:30-17:00 Amber 4
2.8 Image Segmentation I (Oral Session)
Chair: Krishnan, Karthik *Samsung R&D Institute*

15:30-15:45 WeET7.1
Atlas-Based Segmentation of Abdominal Organs in 3D Ultrasound, and Its Application in Automated Kidney Segmentation 2001-2005
Marsousi, Mahdi* *Univ. of Toronto*; Plataniotis, Konstantinos *Univ. of Toronto*; Stergiopoulos, Stergios *Defence Research and Development Canada Toronto, an Agency for t*

15:45-16:00 WeET7.2
A Fully-Automatic Locally Adaptive Thresholding Algorithm for Blood Vessel Segmentation in 3D Digital Subtraction Angiography 2006-2009
Boegel, Marco* *Friedrich-Alexander-Univ. Erlangen-Nuremberg*; Hoelter, Philip *Friedrich-Alexander Univ. Erlangen-Nuremberg*; Redel, Thomas *Siemens AG*; Maier, Andreas *Friedrich-Alexander-Univ. Erlangen-Nuremberg*; Hornegger, Joachim *Friedrich-Alexander Univ. Erlangen-Nuremberg*; Doerfler, Arnd *Friedrich-Alexander Univ. Erlangen-Nuremberg*

16:00-16:15 WeET7.3
Emphasizing Mesenteric Blood Vessels in Laparoscopic Colon Cancer Surgery Video Images 2010-2013
Hiroyasu, Tomoyuki *Doshisha Univ.*; Tanaka, Nachi* *Doshisha Univ.*; Hagiwara, Akeo *Doshisha Univ.*; Ozamoto, Yuki *Doshisha Univ.*; Yokouchi, Hisatake *Doshisha Univ.*

16:15-16:30 WeET7.4
Automatic Segmentation of the Spine by Means of a Probabilistic Atlas with a Special Focus on Ribs Suppression. Preliminary Results 2014-2017
Ruiz-España, Silvia *Univ. Politècnica de València*; Domingo, Juan *Univ. de València*; Díaz-Parra, Antonio *Univ. Politècnica de València*; Dura, Esther *Univ. de València*; D'Ocón-Alcañiz, Víctor *Univ. Politècnica de València*; Arana, Estanislao *Radiology Dept., Fundación Instituto Valenciano de Oncología*; Moratal, David* *Univ. Politècnica de València*

16:30-16:45 WeET7.5
A Markov Random Field Orientation Prior for Electronic Cleansing in CT Colonography 2018-2021
Krishnan, Karthik* *Samsung R&D Institute*; Desai, Nasir *Samsung Electronics*

16:45-17:00 WeET7.6
Semi-Automated Breast Cancer Tumor Detection with Thermographic Video Imaging 2022-2025
 Venkataramani, Krithika* *Xerox Research Center India*; Mestha, Lalit, K. *Palo Alto Research Center - A Xerox Company*; Ramachandra, L. *Manipal Univ. Hospital*; Prasad, S. S. *Manipal Univ. Hospital*;
 Kumar, Vijay *Manipal Univ., Paediatric Surgery*; Raja, Priyanka J. *Xerox Research Center India*

WeET8: 15:30-17:00 Amber 5
10.5 Body Sensor Networks for Personal Health (Oral Session)
Co-Chair: Ramat, Stefano *Università di Pavia*

15:30-15:45 WeET8.1
Motion Artifact Cancellation and Outlier Rejection for Clip-Type PPG-Based Heart Rate Sensor 2026-2029
 Shimazaki, Takunori* *Osaka City Univ.*; Hara, Shinsuke *Osaka City Univ.*; Okuhata, Hiroyuki *Synthesis Corporation*; Nakamura, Hajime *Osaka City Univ., Graduate School of Medicine*; Kawabata, Takashi *Kansai Univ.*

15:45-16:00 WeET8.2
SEEQ MCT Wearable Sensor Performance Correlated to Skin Irritation and Temperature 2030-2033
 Engel, Jonathan* *Medtronic, Inc*; Landrum, Brett *Medtronic*; Chakravarthy, Niranjana *Corventis, Inc*;
 Rothwell, Dustin *Medtronic*; Chavan, Abhi *Corventis, Inc*

16:00-16:15 WeET8.3
Automatic Detection, Extraction and Analysis of Unrestrained Gait using a Wearable Sensor System ... 2034-2037
 Ahmadi, Amin* *Dublin City Univ.*; Richter, Chris *Sports Surgery Clinic*; O'Connor, Noel *Dublin City Univ.*;
 Moran, Kieran *Dublin City Univ.*

16:15-16:30 WeET8.4
A Programmable Low Power Current Source for Bioimpedance Measurement: Towards a Wearable Personalized Health Assistant 2038-2042
 Hamed, Zaid* *Royal Institute of Technology (KTH)*; Tenhunen, Hannu *KTH*; Yang, Geng *Royal Institute of Technology (KTH) Sweden*

16:30-16:45 WeET8.5
Design and Implementation of an Intelligent Belt System using Accelerometer 2043-2046
 Liu, Botong* *Peking Univ.*; Wang, Duo *Peking Univ.*; Li, Sha *Peking Univ.*; Nie, Xuhui *Peking Univ.*; Xu, Shan *Peking Univ.*;
 Jiao, Bingli *Peking Univ.*; Duan, Xiaohui *Peking Univ.*; Huang, Anpeng *Peking Univ.*

WeET9: 15:30-17:00 Amber 6
5.4 Baroreflex/Autonomic Nervous System (Oral Session)
Chair: Porta, Alberto *Università degli Studi di Milano*
Co-Chair: Avolio, Alberto P *Macquarie University*

15:30-15:45 WeET9.1
The Effect of Fluid Overload by Saline Infusion on Heart Variability in Men during Sleep 2047-2050
 Vena, Daniel *Univ. of Toronto/Toronto Rehabilitation Institute*; Yadollahi, Azadeh* *Univ. of Toronto*

15:45-16:00 WeET9.2
Hemodynamics Changes with Acute Carotid Baroreceptor Field Stimulation Are Age-Dependent in Normotensive Rats 2051-2054
 Kouchaki, Zahra* *Macquarie Univ.*; Butlin, Mark *Macquarie Univ.*; Avolio, Alberto P *Macquarie Univ.*

16:00-16:15 WeET9.3
Cardiovascular Control Indexes in Amyotrophic Lateral Sclerosis Patients and their Relation with Clinical Markers 2055-2058
 De Maria, Beatrice *IRCCS Fondazione Salvatore Maugeri, Milano*; Bari, Vlasta *IRCCS Policlinico San Donato*;
 Marchi, Andrea* *Dept. of Electronics Information and Bioengineering, Politec*; Barbic, Franca *Dept. of Medical Biotechnologies and Translation Medicine*;
 Furlan, Raffaello *Dept. of Medical Biotechnologies and Translation Medicine*;
 Mora, Gabriele *IRCCS Fondazione Salvatore Maugeri, Milan, Italy*; Dalla Vecchia, Laura *IRCCS Fondazione Salvatore Maugeri, Milan, Italy*;
 Porta, Alberto *Univ. degli Studi di Milano*

16:15-16:30	WeET9.4
Cardioinhibitory Carotid Sinus Syndrome: A Mathematical Model	2059-2062
Finucane, Ciaran* <i>St James's Hospital</i> ; Kenny, Rose Anne <i>Trinity College Dublin</i> ; Boyle, Gerard <i>St. James's Hospital</i>	
16:30-16:45	WeET9.5
Evaluation of the Correlation between Cardiac and Sympathetic Baroreflex Sensitivity before Orthostatic Syncope	2063-2066
Marchi, Andrea* <i>Dept. of Electronics Information and Bioengineering, Politec; Bari, Vlasta IRCCS Policlinico San Donato</i> ; De Maria, Beatrice <i>IRCCS Fondazione Salvatore Maugeri, Milano</i> ; Cerutti, Sergio <i>Politecnico di Milano</i> ; Heusser, Karsten <i>Institute für Klinische Pharmakologie, Medizinische Hochschule Ha</i> ; Tank, Jens <i>Hannover Medical School</i> ; Jordan, Jens <i>Institute für Klinische Pharmakologie, Medizinische Hochschule Ha</i> ; Barbic, Franca <i>Dept. of Medical Biotechnologies and Translation Medicine</i> ; Furlan, Raffaello <i>Dept. of Medical Biotechnologies and Translation Medicine</i> ; Porta, Alberto <i>Univ. degli Studi di Milano</i>	
16:45-17:00	WeET9.6
Temporal Analysis of Cardiac Autonomic Regulation during Orthostatic Challenge by Short-Term Symbolic Dynamics	2067-2070
Reulecke, Sina* <i>Univ. Autónoma Metropolitana</i> ; Charleston-Villalobos, Sonia <i>Univ. Autónoma Metropolitana</i> ; Voss, Andreas <i>Univ. of Applied Sciences Jena</i> ; Gonzalez-Camarena, Ramon <i>Univ. Autónoma Metropolitana</i> ; Gaitan-Gonzalez, Mercedes <i>Univ. Autónoma Metropolitana</i> ; Gonzalez-Hermosillo, Jesus Antonio <i>Instituto Nacional de Cardiología</i> ; Hernandez-Pacheco, Guadalupe <i>Instituto Nacional de Cardiología "Ignacio Chavez"</i> ; Aljama-Corrales, Tomas <i>Univ. Autónoma Metropolitana</i>	
WeET10: 15:30-17:00	Amber 7
6.8 Neural Stimulation I (Oral Session)	
15:30-15:45	WeET10.1
Gender Effect on Discrimination of Location and Frequency in Surface Electrical Stimulation	2071-2074
Geng, Bo* <i>Aalborg Univ.</i> ; Paramanathan, Senthooopiya A. <i>Aalborg Univ.</i> ; Pedersen, Karina F. <i>Aalborg Univ.</i> ; Lauridsen, Mette V. <i>Aalborg Univ.</i> ; Gade, Julie <i>Aalborg Univ.</i> ; Lontis, Eugen Romulus <i>Aalborg Univ.</i> ; Jensen, Winnie <i>Center for Sensory-Motor Interaction</i>	
15:45-16:00	WeET10.2
A Figure of Merit for Neural Electrical Stimulation Circuits	2075-2078
Kolbl, Florian* <i>Univ. of Bordeaux</i> ; Demosthenous, Andreas <i>Univ. College London</i>	
16:00-16:15	WeET10.3
A Theoretical Framework for Studying the Electromagnetic Stimulation of Nervous Tissue	2079-2082
Accoto, Dino* <i>Campus Bio-Medico Univ.</i> ; Valentini, Simona <i>Univ. Campus Bio-Medico</i> ; Portaccio, Iacopo <i>Univ. Campus Bio-Medico di Roma</i> ; Guglielmelli, Eugenio <i>Campus Bio-Medico Univ.</i>	
16:15-16:30	WeET10.4
Subject-Specific Optimization of Channel Currents for Multichannel Transcranial Magnetic Stimulation	2083-2086
Cline, Christopher* <i>Univ. of Minnesota</i> ; Johnson, Nessa <i>Univ. of Minnesota</i> ; He, Bin <i>Univ. of Minnesota</i>	
16:30-16:45	WeET10.5
A Framework for Identification of Brain Network Dynamics using a Novel Binary Noise Modulated Electrical Stimulation Pattern	2087-2090
Yang, Yuxiao* <i>Univ. of Southern California</i> ; Shanechi, Maryam <i>Univ. of Southern California</i>	
16:45-17:00	WeET10.6
Multi-Electrode Neurostimulation System for Treatment of Cognitive Impairments	2091-2094
Kublanov, Vladimir* <i>Ural Federal Univ.</i> ; Petrenko, Timur <i>Ural Federal Univ.</i> ; Babich, Mikhail <i>Ural Federal Univ.</i>	

WeET11: 15:30-17:00	Amber 8
6.9 EMG Processing and Applications (Oral Session)	
Chair: Frigo, Carlo <i>Politecnico di Milano</i>	
Co-Chair: Tamei, Tomoya <i>Nara Institute of Science and Technology</i>	

15:30-15:45 WeET11.1
Modeling Dynamic High-DOF Finger Postures from Surface EMG using Nonlinear Synergies in Latent Space Representation 2095-2098
 Ngeo, Jimson *Nara Institute of Science and Tech.*; Tamei, Tomoya *Nara Institute of Science and Tech.*; Ikeda, Kazushi *Nara Institute of Science and Tech.*; Shibata, Tomohiro* *Kyushu Institute of Tech.*

15:45-16:00 WeET11.2
Muscle Synergies in Children with Dystonia Capture "Healthy" Patterns Regardless the Altered Motor Performance 2099-2102
 Lunardini, Francesca *Politecnico di Milano*; Casellato, Claudia* *Politecnico di Milano*;
 Bertucco, Matteo *Univ. of Southern California*; Sanger, Terence David *Univ. of Southern California*;
 Pedrocchi, Alessandra *Politecnico di Milano*

16:00-16:15 WeET11.3
An Analysis of Physiological Signals as a Measure of Task Engagement in a Multi-Limb-Coordination Motor-Learning Task 2103-2106
 Murray, Spencer* *Vanderbilt Univ.*; Goldfarb, Michael *Vanderbilt Univ.*

16:15-16:30 WeET11.4
Processing of Surface EMG through Pattern Recognition Techniques Aimed at Classifying Shoulder Joint Movements 2107-2110
 Rivela, Diletta* *Politecnico di Milano*; Pavan, Esteban E. *Politecnico di Milano*; Scannella, Alessia *Politecnico di Milano*; Frigo, Carlo *Politecnico di Milano*; Gini, Giuseppina *Politecnico di Milano*; Belluco, Paolo *Politecnico di Milano*

16:30-16:45 WeET11.5
Analog Front-Ends Comparison in the Way of a Portable, Low-Power and Low-Cost EMG Controller based on Pattern Recognition 2111-2114
 Mastinu, Enzo* *Chalmers - Univ. of Technology*; Ortiz-Catalan, Max *Chalmers Univ. of Technology*; Håkansson, Bo *Chalmers Univ. of Technology*

16:45-17:00 WeET11.6
Antagonist Muscle Co-Activation of Limbs in Human Infant Crawling: A Pilot Study 2115-2118
 Xiong, Qiliang *Chongqing Univ.*; Hou, Wensheng* *Bioengineering Inst of Chongqing Univ*

WeET12: 15:30-17:00	Suite 5
10.6 Innovative Methods and IT-Tools to Support Diagnosis and Management of Type 2 Diabetes Mellitus (Invited Session)	
Chair: Bellazzi, Riccardo <i>University of Pavia</i>	
Co-Chair: Traver, Vicente <i>Institute ITACA</i>	

15:30-15:45 WeET12.1
A Bayesian Network Analysis of the Probabilistic Relations between Risk Factors in the Predisposition to Type 2 Diabetes 2119-2122
 Sambo, Francesco* *Univ. of Padova*; Di Camillo, Barbara *Univ. of Padova*; Franzin, Alberto *Univ. Libre de Bruxelles*; Facchinetti, Andrea *Univ. of Padova*; Hakaste, Liisa *Folkhalsan Institute of Genetics*; Kravic, Jasmina *Lund Univ. Diabetes Centre, Malmo*; Fico, Giuseppe *Technical Univ. of Madrid*; Tuomilehto, Jaakko *National Institute for Health and Welfare, Helsinki*; Groop, Leif *Lund Univ. Diabetes Centre, Malmo*; Gabriel, Rafael *Hospital Univ. La Paz, Madrid*; Tuomi, Tiinamajja *Folkhalsan Institute of Genetics*; Cobelli, Claudio *Univ. of Padova*

15:45-16:00 WeET12.2
Data Integration Technologies to Improve Clinical Decisions on T2DM Patients 2123-2126
 Segagni, Daniele* *IRCCS Fondazione Salvatore Maugeri, Pavia*; Sacchi, Lucia *Univ. of Pavia*; Dagliati, Arianna *Univ. of Pavia, Italy*; Tibollo, Valentina *IRCCS Fondazione Salvatore Maugeri, Pavia*; Leporati, Paola *Fondazione Salvatore Maugeri*; De Cata, Pasquale *Fondazione Salvatore Maugeri*; Cerra, Carlo *ASL Pavia*; Luca, Chiovato *Fondazione Salvatore Maugeri*; Bellazzi, Riccardo *Univ. of Pavia*

16:00-16:15		WeET12.3
Diabetes Care Related Process Modeling using Process Mining Techniques. Lessons Learned in the Application of Interactive Pattern Recognition: Facing Spaghetti Effect	2127-2130	
Fernandez-Llatas, Carlos <i>Univ. Politecnica de Valencia</i> ; Martínez-Millana, Antonio <i>Univ. Politécnica de Valencia</i> ; Martínez-Romero, Álvaro <i>Instituto ITACA</i> ; Benedí, Jose Miguel <i>ITI - Univ. Politecnica de Valencia</i> ; Traver, Vicente* <i>Institute ITACA</i>		
16:15-16:30		WeET12.4
Improving Risk-Stratification of Diabetes Complications using Temporal Data Mining	2131-2134	
Sacchi, Lucia* <i>Univ. of Pavia</i> ; Dagliati, Arianna <i>Univ. of Pavia, Italy</i> ; Segagni, Daniele <i>IRCCS Fondazione Salvatore Maugeri, Pavia</i> ; Leporati, Paola <i>Fondazione Salvatore Maugeri</i> ; Luca, Chiovato <i>Fondazione Salvatore Maugeri</i> ; Bellazzi, Riccardo <i>Univ. of Pavia</i>		
16:30-16:45		WeET12.5
Social Media for Empowering Patients with Diabetes	2135-2138	
Gómez Gálvez, Pedro Javier <i>Digitalica Health</i> ; Cristina Suárez-Mejías, Cristina Suárez-Mejías <i>Digitalica</i> ; Fernandez-Luque, Luis* <i>Northern Research Institute Tromsø (Norut)</i>		
16:45-17:00		WeET12.6
Use of an Holistic Approach for Effective Adoption of User-Centred-Design Techniques in Diabetes Disease Management: Preliminary Experiences in User Need Elicitation	2139-2142	
Fico, Giuseppe* <i>Technical Univ. of Madrid</i> ; Arredondo, María Teresa <i>Technical Univ. of Madrid</i>		
WeET15: 15:30-17:00		White 1
9.4 Stimulation and Monitoring Technologies (Invited Session)		
Co-Chair: Mohseni, Pedram <i>Case Western Reserve University</i>		
15:30-15:45		WeET15.1
An Ingestible, NIR-Fluorometric, Cancer-Screening Capsule	2143-2146	
Georgiou, Julius* <i>Univ. of Cyprus</i> ; Demosthenous, Panayiota <i>Univ. of Cyprus</i>		
15:45-16:00		WeET15.2
3D-Printed Wearable Backpack Stimulator for Chronic in Vivo Aquatic Stimulation	2147-2150	
Tang, Wei <i>New Mexico State Univ.</i> ; Unguez, Graciela* <i>New Mexico State Univ.</i>		
16:00-16:15		WeET15.3
Pulsed Ultrasound for Enhancing Vaccine Production	2151-2154	
Chen, Jle* <i>Univ. of Alberta</i>		
16:15-16:30		WeET15.4
Efficient Microstimulation of the Brain: A Parametric Approach	2155-2158	
Watson, Meghan* <i>Polytechnique Montreal</i> ; Dancause, Numa <i>Univ. de Montreal</i> ; Sawan, Mohamad <i>Polytechnique Montreal</i>		
16:30-16:45		WeET15.5
Cortical Control of Intraspinal Microstimulation: Toward a New Approach for Restoration of Function after Spinal Cord Injury	2159-2162	
Shahdoost, Shahab <i>Case Western Reserve Univ.</i> ; Frost, Shawn <i>Univ. of Kansas Medical Center</i> ; Dunham, Caleb <i>Univ. of Kansas Medical Center</i> ; DeJong, Stacey <i>Univ. of Iowa</i> ; Barbay, Scott <i>Univ. of Kansas Medical Center</i> ; Nudo, Randolph <i>Univ. of Kansas Medical Center</i> ; Mohseni, Pedram* <i>Case Western Reserve Univ.</i>		
16:45-17:00		WeET15.6
VLSI Circuits for Bidirectional Interface to Peripheral and Visceral Nerves	2163-2166	
Greenwald, Elliot <i>Johns Hopkins Univ.</i> ; Thakor, Nitish* <i>Johns Hopkins Univ.</i>		

WeET16: 15:30-17:00	White 2
7.3 Automated Biological Laboratories (Invited Session)	
Chair: Ghafar-Zadeh, Ebrahim <i>York Univ.</i>	
Co-Chair: Gosselin, Benoit <i>Laval University</i>	

15:30-15:45	WeET16.1
Low-Power Adaptive Spike Detector based on a Sigma-Delta Control Loop	2167-2170
Gagnon-Turcotte, Gabriel <i>Univ. Laval</i> ; Sawan, Mohamad <i>Polytechnique Montreal</i> ; Gosselin, Benoit* <i>Laval Univ.</i>	
15:45-16:00	WeET16.2
Microfluidic Platform for Neurotransmitter Sensing based on Cyclic Voltammetry and Dielectrophoresis for in Vitro Experiments	2171-2174
Greener, Jesse <i>Univ. Laval</i> ; Miled, Amine* <i>Laval Univ.</i> ; Mathault, Jessy <i>Univ. Laval</i>	
16:00-16:15	WeET16.3
An Automated Microphysiological Assay for Toxicity Evaluation	2175-2178
Eggert, Sebastian <i>cellasys GmbH</i> ; Alexander, Frank <i>cellasys GmbH</i> ; Wiest, Joachim* <i>cellasys GmbH</i>	
16:15-16:30	WeET16.4
High-Speed Event Detector for Embedded Nanopore Bio-Systems	2179-2182
Huang, Yiyun <i>York Univ.</i> ; Magierowski, Sebastian* <i>York Univ.</i> ; Ghafar-Zadeh, Ebrahim <i>York Univ.</i> ; Wang, Chengjie <i>York Univ.</i>	
16:30-16:45	WeET16.5
Robotic Printing and Drug Testing of 384-Well Tumor Spheroids	2183-2186
Ham, Stephanie <i>Univ. of Akron</i> ; Thakuri, Pradip <i>The Univ. of Akron</i> ; Tavana, Hossein* <i>The Univ. of Akron</i>	
16:45-17:00	WeET16.6
Affordable Techniques for Fabricating Large Array of Functional Nanowires: From DNA to Micellar Systems	2187-2190
Glazer, Piotr Jakub* <i>Delft Univ. of Technology</i> ; Boukany, Pouyan <i>Delft Univ. of Technology</i>	

WeET17: 15:30-17:00	Space 1
1.11 Connectivity Measurements (Oral Session)	
Co-Chair: Babiloni, Fabio <i>University of Rome</i>	

15:30-15:45	WeET17.1
Connectivity of Epileptic Brain Regions in Wake and Sleep	2191-2194
Klimes, Petr* <i>Institute of Scientific Instruments of the ASCR, v.v.i.</i> ; Duque, Juliano Jinzenji <i>Univ. of São Paulo</i> ; Jurak, Pavel <i>Inst of Scientific Instruments Academy</i> ; Halamek, Josef <i>Institute of Scientific Instruments</i> ; Worrell, Gregory A. <i>Mayo Clinic</i>	
15:45-16:00	WeET17.2
Detecting Labor using Graph Theory on Connectivity Matrices of Uterine EMG	2195-2198
Al-Omar, Sally <i>Univ. de Rennes 1</i> ; Diab, Ahmad* <i>Univ. de technologie de Compiègne - UTC</i> ; Nader, Noujoud <i>Sorbonne Univ., Univ. de Technologie de Compiègne</i> ; Khalil, Mohamad <i>Lebanese Univ., Doctoral School for Sciences and Tech.</i> ; Karlsson, Brynjar <i>Reykjavik Univ.</i> ; Marque, Catherine <i>Univ. of Tech. of Compiègne</i>	
16:00-16:15	WeET17.3
Comparison of Different Kalman Filter Approaches in Deriving Time Varying Connectivity from EEG Data	2199-2202
Ghumare, Eshwar* <i>Laboratory for Cognitive Neurology, KU Leuven</i> ; Schrooten, Maarten <i>KU Leuven - Univ. of Leuven, Laboratory for Cognitive Neuro</i> ; Vandenberghe, Rik <i>Laboratory for Cognitive Neurology, KU Leuven</i> ; Dupont, Patrick <i>KU Leuven</i>	
16:15-16:30	WeET17.4
Brain Network Properties in Depressed Patients Receiving Seizure Therapy: A Graph Theoretical Analysis of Peri-Treatment Resting EEG	2203-2206
Deng, Zhi-De* <i>Duke Univ.</i> ; McClintock, Shawn <i>Duke Univ.</i> ; Lisanby, Sarah <i>Duke Univ.</i>	

16:30-16:45		WeET17.5
Comparison of Network Analysis Approaches on EEG Connectivity in Beta during Visual Short-Term Memory Binding Tasks		2207-2210
Smith, Keith* <i>Univ. of Edinburgh</i> ; Azami, Hamed <i>Univ. of Edinburgh</i> ; Escudero, Javier <i>Univ. of Edinburgh</i> ; Parra, Mario A <i>Univ. of Edinburgh</i> ; Starr, John <i>Univ. of Edinburgh</i>		
16:45-17:00		WeET17.6
Graph Theory in Brain-To-Brain Connectivity: A Simulation Study and an Application to an EEG Hyperscanning Experiment		2211-2214
Toppi, Jlenia* <i>Univ. of Rome "Sapienza"</i> ; Ciaramidaro, Angela <i>Dept. of Child and Adolescent Psychiatry, Psychosomatics, a</i> ; Vogel, Pascal <i>Institute of Neurophysiology, Neuroscience Center, Goethe-Univ.</i> ; Mattia, Donatella <i>Fondazione Santa Lucia IRCCS</i> ; Babiloni, Fabio <i>Univ. of Rome</i> ; Siniatchkin, Michael <i>Univ. of Kiel</i> ; Astolfi, Laura <i>Univ. of Rome Sapienza</i>		
WeET18: 15:30-17:00		Space 2
1.12 Time-Frequency Analysis of Biosignals II: Cardiorespiratory (Oral Session)		
Chair: Bianchi, Anna Maria <i>Politecnico di Milano</i>		
Co-Chair: Moussavi, Zahra <i>University of Manitoba</i>		
15:30-15:45		WeET18.1
Can Home-Monitoring of Sleep Predict Depressive Episodes in Bipolar Patients?		2215-2218
Migliorini, Matteo <i>Politecnico di Milano</i> ; Mariani, Sara <i>Wyss Institute for Biologically Inspired Engineering at Harvard</i> ; Bertschy, Gilles <i>Dept. of Psychiatry and Mental Health, Strasbourg Univ.</i> ; Kosel, Markus <i>Service de Psychiatrie Générale Univ. de Genève</i> ; Bianchi, Anna Maria* <i>Politecnico di Milano</i>		
15:45-16:00		WeET18.2
An Online Algorithm for Least-Square Spectral Analysis: Applied to Time-Frequency Analysis of Heart Rate		2219-2222
Zhang, Zhe* <i>The Univ. of Sydney</i> ; Leong, Philip Heng Wai <i>The Univ. of Sydney</i>		
16:00-16:15		WeET18.3
Dependence of Cardiac Spectrum on the Spatial Resolution of the Electrode Systems in a Realistic Model of the Canine Ventricles		2223-2226
Beltrán Molina, Ferney Alberto* <i>Univ. ECCI</i> ; Cruz Salazar, Emeterio <i>ECCI Univ.</i> ; Requena Carrion, Jesus <i>Univ. Rey Juan Carlos</i>		
16:15-16:30		WeET18.4
Influences of Gender and Anthropometric Features on Inspiratory Inhaler Acoustics and Peak Inspiratory Flow Rate		2227-2230
Taylor, Terence E.* <i>Trinity College Dublin</i> ; Holmes, Martin S. <i>Trinity College Dublin</i> ; Sulaiman, Imran <i>Royal College of Surgeons in Ireland (RCSI)</i> ; Costello, Richard <i>Royal College of Surgeons in Ireland (RCSI)</i> ; Reilly, Richard <i>Trinity College Dublin</i>		
16:30-16:45		WeET18.5
Upper Airway Resistance Changes from Inspiration to Expiration during Wakefulness is a Predictor of Sleep Apnea: A Pilot Study		2231-2234
Soltanzadeh, Ramin* <i>Univ. of Manitoba</i> ; Moussavi, Zahra <i>Univ. of Manitoba</i>		
16:45-17:00		WeET18.6
Effects of Changing in the Neck Circumference during Sleep on Snoring Sound Characteristics		2235-2238
Saha, Shumit* <i>Univ. of Manitoba</i> ; Taheri, Mahsa <i>Toronto Rehabilitation Institute</i> ; Moussavi, Zahra <i>Univ. of Manitoba</i> ; Yadollahi, Azadeh <i>Univ. of Toronto</i>		

2.9 PET and SPECT Imaging (Oral Session)**Chair:** Laine, Andrew F. *Columbia University***Co-Chair:** Bertoldo, Alessandra *University of Padova*

15:30-15:45

WeET19.1

Weighted Quantification of 18F-FDG Tumor Metabolism Activity using Fuzzy-Thresholding to Predict Post-Treatment Tumor Recurrence

2239-2242

Roman-Jimenez, Geoffrey* *INSERM, U1099, Rennes, F-35000, France; and with Univ. of R; Acosta, Oscar Univ. of Rennes 1; Ospina, Juan David LTSI - Univ. of Rennes 1; Leseur, Julie Dept. of Radiothérapie, Centre Eugène Marquis, Rennes, F-3; Devillers, Anne Dept. of Radiothérapie, Centre Eugène Marquis, Rennes, F-3; Le Gouestre, Jonathan Keosys Medical Imaging, Saint-Herblain, F-44815, France; Simon, Antoine Univ. of Rennes; Tervé, Pierre KeoSys; De Crevoisier, Renaud *INSERM, U1099, Rennes, F-35000, France - Univ. de Rennes 1,**

15:45-16:00

WeET19.2

Non-Invasive Quantification of Brain [18F]-FDG Uptake by Combining Medical Health Records and Dynamic PET Imaging Data

2243-2246

Roccia, Elisa* *Univ. of Padova; Mikhno, Arthur Columbia Univ.; Zanderigo, Francesca Columbia Univ.; Angelini, Elsa Columbia Univ.; Ogden, Todd Columbia Univ.; Mann, J John Columbia Univ.; Laine, Andrew F. Columbia Univ.*

16:00-16:15

WeET19.3

Modelling Arterial Input Functions in Positron Emission Tomography Dynamic Studies

2247-2250

Tonietto, Matteo* *Univ. of Padova; Rizzo, Gaia Dept. of Information Engineering, Univ. of Padova; Veronese, Mattia Centre for Neuroimaging Sciences, IoPPN, King's College London; Bertoldo, Alessandra Univ. of Padova*

16:15-16:30

WeET19.4

Semi-Supervised Manifold Learning with Affinity Regularization for Alzheimer's Disease Identification using Positron Emission Tomography Imaging

2251-2254

Lu, Shen* *Univ. of Sydney; Xia, Yong Northwestern Polytechnical Univ.; Cai, Weidong Univ. of Sydney; Feng, Dagan The Univ. of Sydney*

16:30-16:45

WeET19.5

A Statistical Method for Lung Tumor Segmentation Uncertainty in PET Images based on User Inference ..

2255-2258

Zheng, Chaojie* *Univ. of Sydney; Wang, Xiu Ying The Univ. of Sydney; Feng, Dagan The Univ. of Sydney*

16:45-17:00

WeET19.6

Iterative Reconstruction for PET Scanners with Continuous Scintillators

2259-2262

Iriarte Ruiz, Ana* *Univ. CEU San Pablo; Caffarena, Gabriel Univ. CEU San Pablo; Fernández-López, Mariano Univ. San Pablo CEU; Garcia-Carmona, Rodrigo Univ. CEU-San Pablo; Otero, Abraham San Pablo CEU; Sorzano Sanchez, Carlos Oscar National Center of BioTechnology (CSIC); Marabini, Roberto UAM*

3.3 Wearable Systems I (Oral Session)**Chair:** Besio, W. G. *University of Rhode Island***Co-Chair:** Kanoh, Shin'ichiro *Shibaura Institute of Technology*

15:30-15:45

WeET20.1

Performance Evaluation of Power Transmission Coils for Powering Endoscopic Wireless Capsules

2263-2266

Basar, Md.Rubel *Univ. of Malay; Ahmad, Mohd Yazed* Univ. of Malaya; Cho, Jongman Inje Univ.; Ibrahim, Fatimah Univ. of Malaya*

15:45-16:00

WeET20.2

Development of an Eyewear to Measure Eye and Body Movements

2267-2270

Kanoh, Shin'ichiro* *Shibaura Institute of Technology; Ichi-nohe, Susumu JIN Co., Ltd.; Shioya, Shunsuke JIN Co., Ltd.; Inoue, Kazutaka JIN Co., Ltd.; Kawashima, Ryuta Tohoku Univ.*

16:00-16:15		WeET20.3
Developing an Online Steady-State Visual Evoked Potential-Based Brain-Computer Interface System using EarEEG		2271-2274
Wang, Yu-Te* <i>Univ. of California San Diego</i> ; Nakanishi, Masaki <i>Univ. of California San Diego</i> ; Lind Kappel, Simon <i>Aarhus Univ., Denmark</i> ; Kidmose, Preben <i>Aarhus Univ., Denmark</i> ; Mandic, Danilo <i>Imperial College</i> ; Wang, Yijun <i>Univ. of California, San Diego</i> ; Cheng, Chung-Kuan <i>Univ. of California, San Diego</i> ; Jung, Tzzy-Ping <i>Univ. of California San Diego</i>		
16:15-16:30		WeET20.4
Energy-Aware Embedded Classifier Design for Real-Time Emotion Analysis		2275-2278
Padmanabhan, Manoj* <i>Embedded Systems Lab. (ESL), EPFL</i> ; Murali, Srinivasan <i>SmartCardia Sàrl</i> ; Rincón, Francisco <i>SmartCardia Sàrl</i> ; Atienza, David <i>Ecole Polytechnique Federale de Lausanne</i>		
16:30-16:45		WeET20.5
A Wireless Patch for Sleep Respiratory Disorders Applications		2279-2282
Gerbelot, Rémi <i>CEA, LETI, MINATEC Campus</i> ; Koenig, Anne <i>CEA-LETI Minatec</i> ; Goyer, Cedric <i>CEA, LETI, MINATEC Campus</i> ; Willemijn, Jérôme <i>CEA, LETI, MINATEC Campus</i> ; Desir, Chesner <i>CEA, LETI, MINATEC Campus</i> ; Porcherot, Jean <i>CEA/LETI, MINATEC Campus</i> ; Haby, Sylla Kane <i>CEA, LETI, MINATEC Campus</i> ; Guillemaud, Regis <i>CEA Léti MINATEC</i> ; Borel, Jean Christian <i>CHU Grenoble, Laboratoire du Sommeil</i> ; Jallon, Pierre* <i>CEA Grenoble</i>		
16:45-17:00		WeET20.6
On the Tridimensional Estimation of the Gaze Point by a Stereoscopic Wearable Eye Tracker		2283-2286
Lanata', Antonio* <i>Univ. of Pisa</i> ; Greco, Alberto <i>Univ. of Pisa</i> ; Valenza, Gaetano <i>Univ. of Pisa-MGH-Harvard Medical School</i> ; Scilingo, Enzo Pasquale <i>Univ. of Pisa</i>		

Thursday, 27 August 2015

ThAT2: 08:30-10:00		Brown 2
4.4 Models of Neural Systems and Stimulation (Oral Session)		
Chair: Dokos, Socrates <i>University of New South Wales</i>		
Co-Chair: Morgera, Salvatore Domenic <i>University of South Florida</i>		
08:30-08:45		ThAT2.1
A Model of Electrical Stimulation of a Retinal Cell Population using a Multi-Electrode Array		2287-2290
Al Abed, Amr <i>Univ. of New South Wales</i> ; Lovell, Nigel H. <i>Univ. of New South Wales</i> ; Suaning, Gregg <i>The Univ. of New South Wales</i> ; Dokos, Socrates* <i>Univ. of New South Wales</i>		
08:45-09:00		ThAT2.2
A 3D-Continuum Bidomain Model of Retinal Electrical Stimulation using an Anatomically Detailed Mesh ...		2291-2294
Shalhaf, Farzaneh* <i>the Univ. of Auckland</i> ; Du, Peng <i>The Univ. of Auckland</i> ; Lovell, Nigel H. <i>Univ. of New South Wales</i> ; Dokos, Socrates <i>Univ. of New South Wales</i> ; Vaghefi, Ehsan <i>The Univ. of Auckland</i>		
09:00-09:15		ThAT2.3
A 3-D Admittance-Level Computational Model of a Rat Hippocampus for Improving Prosthetic Design		2295-2298
Gilbert, Andrew* <i>Univ. of Utah</i> ; Loizos, Kyle <i>Univ. of Utah</i> ; RamRakhyani, Anil <i>Univ. of Utah</i> ; Hendrickson, Phillip <i>Univ. of Southern California</i> ; Lazzi, Gianluca <i>Univ. of Utah</i> ; Berger, Theodore <i>Univ. of Southern California</i>		
09:15-09:30		ThAT2.4
Analysis of Bipolar External Excitation of Spherical Tissue by Spatially Opposed Current Source and Sink Points		2299-2302
Schwartz, Benjamin <i>Arizona State Univ.</i> ; Sadleir, Rosalind* <i>Arizona State Univ.</i>		
09:30-09:45		ThAT2.5
External Current Application in a Bidomain Model of Active Neural Tissue		2303-2306
Keim, Steven <i>Arizona State Univ.</i> ; Fu, Fanrui <i>Arizona State</i> ; Sadleir, Rosalind* <i>Arizona State Univ.</i>		
09:45-10:00		ThAT2.6
Reactive Near Field Electromagnetic Axonal Communication Channels and Their Role in Neurodegenerative Diseases		2307-2310
Morgera, Salvatore Domenic* <i>Univ. of South Florida</i>		

ThAT3: 08:30-10:00	Brown 3
6.10 Brain-Computer/Machine Interface IV (Oral Session)	
Chair: Millán, José del R. <i>Ecole Polytechnique Federale de Lausanne</i>	
Co-Chair: Wriessnegger, Selina <i>Graz University of Technology</i>	

08:30-08:45	ThAT3.1
Spatial Filter and Feature Selection Optimization based on EA for Multi-Channel EEG	2311-2314
Wang, Yubo <i>Kyungpook National Univ.</i> ; Mohanarangam, Krithikaa <i>Kyungpook National Univ.</i> ; Mallipeddi, Rammohan* <i>Kyungpook National Univ.</i> ; Veluvolu, Kalyana C. <i>Kyungpook National Univ.</i>	
08:45-09:00	ThAT3.2
Effects of Feedback Latency on P300-Based Brain-Computer Interface	2315-2318
Arvaneh, Mahnaz* <i>Trinity College Dublin</i> ; Ward, Tomas <i>NUIM</i> ; Robertson, Ian <i>Trinity College Dublin</i>	
09:00-09:15	ThAT3.3
Modulation of Inter-Hemispheric Asymmetry of Motor-Related Brain Activity using Brain-Computer Interfaces	2319-2322
Pereira, Michael* <i>Ecole Polytechnique Federale de Lausanne</i> ; Sobolewski, Aleksander <i>Ecole Polytechnique Federale de Lausanne</i> ; Millán, José del R. <i>Ecole Polytechnique Federale de Lausanne</i>	
09:15-09:30	ThAT3.4
Bring Mental Activity into Action! an Enhanced Online Co-Adaptive Brain-Computer Interface Training Protocol	2323-2326
Scherer, Reinhold* <i>Graz Univ. of Technology</i> ; Faller, Josef <i>Graz Univ. of Technology</i> ; Opisso, Eloy <i>Guttman Institute</i> ; Costa, Ursula <i>Guttman Rehabilitation Hospital</i> ; Steyrl, David <i>Graz Univ. of Technology</i> ; Müller-Putz, Gernot <i>Graz Univ. of Technology</i>	
09:30-09:45	ThAT3.5
Orientation-Modulated Attention Effect on Visual Evoked Potential: Application for PIN System using Brain-Computer Interface	2327-2330
Wilaiprasitporn, Theerawat* <i>Tokyo Institute of Technology</i> ; Yagi, Tooru <i>Tokyo Institute of Technology</i>	
09:45-10:00	ThAT3.6
Classification of Unconscious Like/Dislike Decisions: First Results towards a Novel Application for BCI Technology	2331-2334
Wriessnegger, Selina* <i>Graz Univ. of Technology</i> ; Hackhofer, Daniel <i>Graz Univ. of Technology</i> ; Müller-Putz, Gernot <i>Graz Univ. of Technology</i>	

ThAT4: 08:30-10:00	Amber 1
1.13 Data Mining for Cardiovascular Signals (Oral Session)	
Chair: Korhonen, Ilkka <i>Tampere University of Technology</i>	
Co-Chair: Abry, Patrice <i>ENS Lyon, CNRS</i>	

08:30-08:45	ThAT4.1
Intrapartum Fetal Heart Rate Classification from Trajectory in Sparse SVM Feature Space	2335-2338
Spilka, Jiri* <i>Czech Technical Univ. in Prague</i> ; Frecon, Jordan <i>ENS Lyon, CNRS</i> ; Leonarduzzi, Roberto Fabio <i>Ecole Normale Supérieure de Lyon</i> ; Pustelnik, Nelly <i>Laboratoire de Physique ENS de Lyon, CNRS UMR5672, Univ. Ly</i> ; Abry, Patrice <i>ENS Lyon, CNRS</i> ; Doret, Muriel <i>Hospices Civils de Lyon Univ. Lyon I</i>	
08:45-09:00	ThAT4.2
Exploratory Analysis of Associations between Individual Lifestyles and Heart Rate Variability -Based Recovery during Sleep	2339-2342
Pietilä, Julia* <i>Tampere Univ. of Technology</i> ; Helander, Elina <i>Tampere Univ. of Technology</i> ; Myllymäki, Tero <i>Univ. of Jyväskylä</i> ; Korhonen, Ilkka <i>Tampere Univ. of Technology</i> ; Jimison, Holly <i>Northeastern Univ.</i> ; Pavel, Misha <i>Northeastern Univ.</i>	
09:00-09:15	ThAT4.3
Time-Dependent Sleep Stage Transition Model based on Heart Rate Variability	2343-2346
Takeda, Toki* <i>NTT Service Evolution Laboratories</i> ; Mizuno, Osamu <i>NTT Service Evolution Laboratories</i> ; Tanaka, Tomohiro <i>NTT Service Evolution Laboratories</i>	

09:15-09:30		ThAT4.4
MICROST: A Mixed Approach for Heart Rate Monitoring during Intensive Physical Exercise using Wrist-Type PPG Signals	.....	2347-2350
Zhu, Shilin <i>Univ. of Science and Technology of China</i> ; Tan, Ke <i>Univ. of Science and Technology of China</i> ; Zhang, Xinyu <i>Univ. of Science and Technology of China</i> ; Liu, Zhiqiang <i>Univ. of Science and Technology of China</i> ; Liu, Bin* <i>Univ. of Science and Technology of China</i>		
09:30-09:45		ThAT4.5
Psychophysiology of Disgust: ECG Noise Entropy as a Biomarker	.....	2351-2354
Bras, Susana* <i>Univ. de Aveiro</i> ; Ferreira, Jacqueline <i>Univ. de Aveiro</i> ; Soares, Sandra <i>Univ. de Aveiro</i> ; F. Silva, Carlos <i>Univ. of Aveiro</i>		
09:45-10:00		ThAT4.6
Classification of Hypoxic-Ischemic Encephalopathy using Long Term Heart Rate Variability based Features	.....	2355-2358
Ahmed, Rehan* <i>Univ. College Cork</i> ; Temko, Andriy <i>Univ. College Cork</i> ; Marnane, Liam <i>Univ. College Cork</i> ; Boylan, Geraldine <i>Univ. College Cork</i> ; Lightbody, Gordon <i>Univ. College Cork</i>		
ThAT5: 08:30-10:00		Amber 2
1.14 Signal Processing in Physiological Systems VII: Metabolic System and Diabetes (Oral Session)		
Chair: Cobelli, Claudio <i>University of Padova</i>		
Co-Chair: Karmakar, Chandan <i>Deakin University</i>		
08:30-08:45		ThAT5.1
Accuracy of Devices for Self-Monitoring of Blood Glucose: A Stochastic Error Model	.....	2359-2362
Vettoretti, Martina* <i>Univ. of Padova</i> ; Facchinetti, Andrea <i>Univ. of Padova</i> ; Sparacino, Giovanni <i>Univ. of Padova</i> ; Cobelli, Claudio <i>Univ. of Padova</i>		
08:45-09:00		ThAT5.2
Patient Decision-Making of CGM Sensor Driven Insulin Therapies in Type 1 Diabetes: in Silico Assessment	.....	2363-2366
Vettoretti, Martina* <i>Univ. of Padova</i> ; Facchinetti, Andrea <i>Univ. of Padova</i> ; Sparacino, Giovanni <i>Univ. of Padova</i> ; Cobelli, Claudio <i>Univ. of Padova</i>		
09:00-09:15		ThAT5.3
Multi-Lag HRV Analysis Discriminates Disease Progression of Post-Infarct People with No Diabetes versus Diabetes	.....	2367-2370
Karmakar, Chandan* <i>Deakin Univ.</i> ; Jelinek, Herbert Franz <i>Charles Sturt Univ.</i> ; Khandoker, Ahsan Habib <i>Khalifa Univ. of Science, Technology and Research</i> ; Tulppo, Mikko <i>Verve</i> ; Mäkikallio, Timo <i>Univ. of Oulu</i> ; Kiviniemi, Antti <i>Verve</i> ; Huikuri, Heikki <i>Univ. of Oulu</i> ; Palaniswami, Marimuthu <i>The Univ. of Melbourne</i>		
09:15-09:30		ThAT5.4
Assessment of Beta Cell Function and Insulin Secretion in Subjects that Underwent Renal Transplantation	.....	2371-2374
Tura, Andrea* <i>CNR</i> ; Hecking, Manfred <i>Clinical Division of Nephrology, Medical Univ. of Vienna</i> ; Wolzt, Michael <i>Clinical Pharmacology, Medical Univ. of Vienna</i> ; Saemann, Marcus D. <i>Clinical Division of Nephrology, Medical Univ. of Vienna</i> ; Pacini, Giovanni <i>CNR</i>		
09:30-09:45		ThAT5.5
Decrease of EEG Coherence during Hypoglycemia in Type 1 Diabetic Subjects	.....	2375-2378
Rubega, Maria* <i>Univ. of Padova</i> ; Sparacino, Giovanni <i>Univ. of Padova</i> ; Sejling, Anne Sophie <i>Univ. of Southern Denmark</i> ; Juhl, Claus B <i>Hyposafe</i> ; Cobelli, Claudio <i>Univ. of Padova</i>		
09:45-10:00		ThAT5.6
Improving the Prediction Performance of PLSR using RReliefF and FSD for the Quantitative Analysis of Glucose in Near Infrared Spectra	.....	2379-2382
Patchava, Krishna Chaitanya* <i>The Univ. of Sheffield</i> ; Benaissa, Mohammed <i>The Univ. of Sheffield</i> ; Behairy, Hatim <i>King Abdulaziz City for Science and Technology</i>		

ThAT6: 08:30-10:00 Amber 3
2.10 Multi Modality Imaging (Oral Session)
Chair: Leonhardt, Steffen *RWTH Aachen University*

08:30-08:45 ThAT6.1
Detection and Analysis of Temperature-Sensitive Dermal Blood Perfusion Dynamics and Distribution by a Hybrid Camera System 2383-2386
Blanik, Nikolai* *RWTH Aachen Univ.*; Paul, Michael *RWTH Aachen Univ.*; Blazek, Vladimir *Phillips Chair for Medical Information Technology, RWTH Aachen Un*; Leonhardt, Steffen *RWTH Aachen Univ.*

08:45-09:00 ThAT6.2
Macrophage with Gold Nanorod Visualized by Optical-Resolution and Acoustic-Resolution Photoacoustic Microscopes 2387-2390
Yamazaki, Rena *Tohoku Univ.*; Ogasawara, Koetsu *Tohoku Univ.*; Fujiwara, Mitsuhiro *Okusonic Corporation*; Kobayashi, Kazuto *Honda Electronics Co., Ltd.*; Saijo, Yoshifumi* *Tohoku Univ.*

09:00-09:15 ThAT6.3
Multi-Modal Data Fusion for Cardiac Resynchronization Therapy Planning and Assistance 2391-2394
Bruge, Sophie* *LTSI*; Simon, Antoine *Univ. of Rennes*; Lederlin, Mathieu *CHU Rennes, Univ. of Rennes1, LTSI*; Betancur, Julián *Univ. de Rennes 1*; Hernández, Alfredo I *Univ. of Rennes 1 and INSERM U1099*; Donal, Erwan *INSERM U642 LTSI.*; Leclercq, Christophe *CHU Rennes, INSERM U642, LTSI, Univ. of Rennes 1*; Garreau, Mireille *INSERM, U642, Univ. de Rennes 1*

09:15-09:30 ThAT6.4
Combining 3D Models with 2D Infrared Images for Medical Applications 2395-2398
Abreu de Souza, Mauren* *Federal Univ. of Technology (UTFPR)*; Krefer, Andriy G. *Federal Univ. of Technology - Paraná*; Borba, Gustavo Benvenuto *Federal Univ. of Technology - Paraná*; Mezzadri Centeno, Tania *Graduate School on Electrical Engineering (CPGEI), Federal Univ.*; Gamba, Humberto *Federal Univ of Technology UTFPR- C.N.P.J.*

09:30-09:45 ThAT6.5
Prostate Whole-Mount Histology Reconstruction and Registration to MRI for Correlating In-Vivo Observations with Biological Findings 2399-2402
Commandeur, Frédéric* *Univ. de Rennes 1, LTSI, Rennes, F-35000, France / INSERM.*; Acosta, Oscar *Univ. of Rennes 1*; Simon, Antoine *Univ. of Rennes*; Mathieu, Romain *Dept. of Urology, CHU Pontchaillou, Rennes, F-35000, France*; Fautrel, Alain *H2P2, Laboratoire d'Anatomie Pathologique, Rennes, France*; Gnep, Khemara *Dept. de Radiothérapie, Centre Eugène Marquis, Rennes, Fra*; Haignon, Pascal *Univ. of Rennes 1*; De Crevoisier, Renaud *INSERM, U1099, Rennes, F-35000, France - Univ. de Rennes 1,*

ThAT7: 08:30-10:00 Amber 4
2.11 Image Segmentation II (Oral Session)
Chair: Baselli, Giuseppe *Politecnico di Milano*
Co-Chair: Xie, Xianghua *Swansea University*

08:30-08:45 ThAT7.1
Automatic Segmentation of Lymph Vessel Wall using Optimal Surface Graph Cut and Hidden Markov Models 2403-2406
Jones, Jonathan-Lee *Swansea Univ.*; Essa, Ehab *Swansea Univ.*; Xie, Xianghua* *Swansea Univ.*

08:45-09:00 ThAT7.2
A Custom Grow-Cut based Scheme for 2D-Gel Image Segmentation 2407-2410
Kostopoulou, Eirini* *National and Kapodistrian Univ. of Athens*; Katsigiannis, Stamos *National and Kapodistrian Univ. of Athens*; Maroulis, Dimitris *Univ. of Athens, Dep. of Informatics and Telecommunications*

09:00-09:15 ThAT7.3
Unsupervised Detection of Liver Lesions in CT Images 2411-2414
Affifi, Ahmed* *Chiba Univ.*; Nakaguchi, Toshiya *Chiba Univ.*

09:15-09:30		ThAT7.4
A Unified Framework for Automatic Wound Segmentation and Analysis with Deep Convolutional Neural Networks	2415-2418	
Wang, Changhan <i>Univ. of Michigan, Ann Arbor</i> ; Yan, Xinchun <i>Univ. of Michigan, Ann Arbor</i> ; Smith, Max <i>Univ. of Michigan - Ann Arbor</i> ; Kochhar, Kanika <i>Univ. of Michigan</i> ; Rubin, Marcie <i>NYU Medical Center, Warren, Stephen M NYU Medical Center</i> ; Wrobel, James <i>Univ. of Michigan</i> ; Lee, Honglak* <i>Univ. of Michigan</i>		
09:30-09:45		ThAT7.5
3-Dimensional Throat Region Segmentation from MRI Data based on Fourier Interpolation and 3-Dimensional Level Set Methods	2419-2422	
Campbell, Sean <i>Univ. of Strathclyde</i> ; Doshi, Trushali* <i>Univ. of Strathclyde</i> ; Soraghan, John J <i>Univ. of Strathclyde</i> ; Petropoulakis, Lykourgos <i>Univ. of Strathclyde</i> ; Di Caterina, Gaetano <i>Univ. of Strathclyde</i> ; Grose, Derek <i>Beatson West of Scotland Cancer Centre</i> ; MacKenzie, Kenneth <i>Glasgow Royal Infirmary</i>		
09:45-10:00		ThAT7.6
RFA-Cut: Semi-Automatic Segmentation of Radiofrequency Ablation Zones via Optimal S-T-Cuts	2423-2429	
Egger, Jan* <i>Graz Univ. of Tech.</i> ; Busse, Harald <i>Leipzig Univ. Hospital</i> ; Brandmaier, Philipp <i>Leipzig Univ. Hospital</i> ; Seider, Daniel <i>Leipzig Univ. Hospital</i> ; Gawlitzka, Matthias <i>Leipzig Univ. Hospital</i> ; Strocka, Steffen <i>Leipzig Univ. Hospital</i> ; Voglreiter, Philip <i>Graz Univ. of Tech.</i> ; Dokter, Mark <i>Graz Univ. of Tech.</i> ; Hofmann, Michael <i>Graz Univ. of Tech.</i> ; Kainz, Bernhard <i>Imperial College London</i> ; Chen, Xiaojun <i>Shanghai Jiao Tong Univ.</i> ; Hann, Alexander <i>Katharinen Hospital Stuttgart</i> ; Boechat, Pedro <i>Graz Univ. of Tech.</i> ; Yu, Wei <i>Graz Univ. of Tech.</i> ; Freisleben, Bernd <i>Univ. of Marburg</i> ; Alhonnoro, Tuomas <i>Aalto Univ.</i> ; Pollari, Mika <i>Aalto Univ.</i> ; Moche, Michael <i>Leipzig Univ. Hospital</i> ; Schmalstieg, Dieter <i>Graz Univ. of Tech.</i>		
ThAT8: 08:30-10:00		Amber 5
8.4 Modeling and Simulation in Musculoskeletal Biomechanics (Oral Session)		
Chair: Carmichael, Marc Garry <i>University of Technology, Sydney</i>		
Co-Chair: Monaco, Vito <i>Scuola Superiore Sant'Anna, Pisa</i>		
08:30-08:45		ThAT8.1
A Finite Element Model of Tactile Flow for Softness Perception	2430-2433	
Battaglia, Edoardo* <i>Univ. of Pisa - Research Center E. Piaggio</i> ; Bianchi, Matteo <i>Univ. of Pisa</i> ; D'Angelo, Maria Laura <i>Dept. of Advanced Robotics, Istituto Italiano di Tecnologia</i> ; D'Imperio, Mariapaola <i>Dept. of Advanced Robotics, Istituto Italiano di Tecnologia</i> ; Cannella, Ferdinando <i>Istituto Italiano di Tecnologia</i> ; Scilingo, Enzo Pasquale <i>Univ. of Pisa</i> ; Bicchi, Antonio <i>Univ. of Pisa</i>		
08:45-09:00		ThAT8.2
Concurrent Multibody and Finite Element Analysis of the Lower-Limb during Amputee Running	2434-2437	
Rigney, Stacey Mary <i>Univ. of New South Wales</i> ; Simmons, Anne <i>Univ. of New South Wales</i> ; Kark, Lauren* <i>Graduate School of Biomedical Engineering</i> ,		
09:00-09:15		ThAT8.3
Upper Limb Strength Estimation of Physically Impaired Persons using a Musculoskeletal Model: A Sensitivity Analysis	2438-2441	
Carmichael, Marc Garry* <i>Univ. of Technology, Sydney</i> ; Liu, Dikai <i>Univ. of Technology, Sydney</i>		
09:15-09:30		ThAT8.4
Forward Dynamics Simulation of Human Figures on Assistive Devices using Geometric Skin Deformation Model	2442-2445	
Yoshiyasu, Yusuke* <i>AIST</i> ; Ayusawa, Ko <i>National Institute of Advanced Industrial Science and Technology</i> ; Yoshida, Eiichi <i>National Institute of Advanced Industrial Science and Technology</i> ; Matsumoto, Yoshio <i>Advanced Industrial Science and Technology</i> ; Endo, Yui <i>National Institute of Advanced Industrial Science and Technology</i>		
09:30-09:45		ThAT8.5
Bipedal Spring-Damper-Mass Model Reproduces External Mechanical Power of Human Walking	2446-2449	
Etenzi, Ettore* <i>Scuola Superiore S.Anna</i> ; Monaco, Vito <i>Scuola Superiore Sant'Anna, Pisa</i>		
09:45-10:00		ThAT8.6
Optimizing Porous Lattice Structures for Orthopaedic Implants	2450-2453	
Rodgers, Geoffrey W* <i>Univ. of Canterbury</i> ; Van Houten, Elijah <i>Univ. de Sherbrooke</i> ; Bianco, Rohan <i>Univ. of Canterbury</i> ; Besset, Romain <i>Univ. of Canterbury</i> ; Woodfield, Tim <i>Univ. of Otago</i>		

ThAT9: 08:30-10:00 Amber 6
8.5 Power Prosthetics – Upper Limb (Oral Session)
Chair: Bertos, Georgios *National Technical University of Athens*

08:30-08:45 ThAT9.1
Feasibility of a Biomechatronic EPP Upper Limb Prosthesis Controller 2454-2457
Moutopoulou, Efi *National Technical Univ. of Athens*; Bertos, Georgios* *National Technical Univ. of Athens*;
Papadopoulos, Evangelos *National Technical Univ. of Athens*; Mablekos-Alexiou, Anestis *National Technical Univ. of Athens*

08:45-09:00 ThAT9.2
Design and Characterization of a Powered Elbow Prosthesis 2458-2461
Bennett, Daniel* *Vanderbilt Univ.*; Goldfarb, Michael *Vanderbilt Univ.*; Mitchell, Jason *Vanderbilt Univ.*

09:00-09:15 ThAT9.3
Exploiting Arm Posture Synergies in Activities of Daily Living to Control the Wrist Rotation in Upper Limb Prostheses: A Feasibility Study 2462-2465
Montagnani, Federico* *Scuola Superiore Sant'Anna*; Controzzi, Marco *Scuola Superiore Sant'Anna*; Cipriani, Christian *Scuola Superiore Sant'Anna*

09:15-09:30 ThAT9.4
Pinch-Force-Magnification Mechanism of Low Degree of Freedom EMG Prosthetic Hand for Children ... 2466-2469
Ye, Hesong* *The Univ. of Electro- Communications*; Sakoda, Shintaro *The Univ. of Electro-Communications*;
Jiang, Yinlai *The Univ. of Electro-Communications*; Morishita, Soichiro *Univ. of Electro-Communications*; Yokoi, Hiroshi *Univ. of Tokyo*

09:30-09:45 ThAT9.5
Rehand: Realistic Electric Prosthetic Hand Created with a 3D Printer 2470-2473
Yoshikawa, Masahiro* *NAIST*; Sato, Ryo *NAIST*; Higashihara, Takanori *Takamatsu Prosthetic & Orthotic MFG. LTD.*; Ogasawara, Tsukasa *Nara Institute of Science and Technology*; Kawashima, Noritaka *Research Institute, National Rehabilitation Center for Persons wi*

09:45-10:00 ThAT9.6
Design and Analysis of an Underactuated Anthropomorphic Finger for Upper Limb Prosthetics 2474-2477
Omarkulov, Nurdos *Nazarbayev Univ.*; Telegenov, Kuat *Nazarbayev Univ.*; Zeinullin, Maralbek *Nazarbayev Univ.*; Begalinova, Ainur *Nazarbayev Univ.*; Shintemirov, Almas* *Nazarbayev Univ.*

ThAT10: 08:30-10:00 Amber 7
6.11 Rehabilitation I (Oral Session)
Chair: Dhaher, Yasin *Northwestern University*
Co-Chair: Lan, Ning *Shanghai Jiao Tong University*

08:30-08:45 ThAT10.1
Linking Wheelchair Kinetics to Glenohumeral Joint Demand during Everyday Accessibility Activities ... 2478-2481
Holloway, Catherine* *Univ. College London*; Symonds, Andrew *Univ. College London*; Suzuki, Tatsuto *Univ. College London*; Angela, Gall *Royal National Orthopaedic Hospital*; Peter, Smitham *Univ. College London*; Taylor, Steve *Univ. College London*

08:45-09:00 ThAT10.2
Reliability of Phantom Pain Relief in Neurorehabilitation using a Multimodal Virtual Reality System 2482-2485
Sano, Yuko* *Univ. of Tokyo*; Ichinose, Akimichi *The Univ. of Tokyo*; Wake, Naoki *Graduate School of Information Science and Technology, Univ.*; Osumi, Michihiro *Kio Univ.*; Sumitani, Masahiko *Univ. of Tokyo*; Kumagaya, Shin-ichiro *Univ. of Tokyo*; Kuniyoshi, Yasuo *Univ. of Tokyo*

09:00-09:15 ThAT10.3
Multivariate Outcomes in a Three Week Bimanual Self-Telerehabilitation with Error Augmentation Post-Stroke 2486-2492
Abdel Majeed, Yazan *Univ. of Illinois at Chicago*; Abdollahi, Farnaz *Rehabilitation Institute of Chicago*; Patton, James (Jim)* *Rehab Institute of Chicago & U. of Illinois at Chicago*

09:15-09:30 ThAT10.4
A Sensory Feedback System for Prosthetic Hand based on Evoked Tactile Sensation 2493-2496
 Liu, Xiaoxuan *Shanghai Jiao Tong Univ.*; Chai, Guohong *Shanghai Jiao Tong Univ.*; Qu, Hongen *MED-X Research Institute of Shanghai Jiao Tong Univ.*; Lan, Ning* *Shanghai Jiao Tong Univ.*

09:30-09:45 ThAT10.5
Quantifying Facial Paralysis using the Kinect V2 2497-2501
 Gaber, Amira* *Cairo Univ.*; Taher, Mona *Cairo Univ.*; Abdel Wahed, Manal *Cairo Univ.*

09:45-10:00 ThAT10.6
Tuning of Robotic Therapy Controllers for Stroke Gait: Using Isometrically Constrained EMG Modular Structures 2502-2505
 Tan, Andrew* *Northwestern Univ.*; Dhaher, Yasin *Northwestern Univ.*

ThAT11: 08:30-10:00 6.12 Brain Physiology and Modeling I (Oral Session) Chair: Berger, Theodore <i>University of Southern California</i> Co-Chair: Pedrocchi, Alessandra <i>Politecnico di Milano</i>	Amber 8
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08:30-08:45 ThAT11.1
Reconstruction of Neural Network Topology using Spike Train Data: Small-World Features of Hippocampal Network 2506-2509
 She, Qi *City Univ. of Hong Kong*; So, Ka Yan *City Univ. of Hong Kong*; Chan, Rosa H. M.* *City Univ. of Hong Kong*

08:45-09:00 ThAT11.2
Characteristics of the Neuronal Firing Patterns in the Subthalamic Nucleus with Graded Dopaminergic Cell Loss in the Nigrostriatal Pathway 2510-2513
 Park, Sunghye* *Korea Institute of Science and Technology*; Song, Kang-Il *Korea Institute of Science and Technology*; Suh, Jun-Kyo *Korea Institute of Science and Technology*; Youn, Inchan *Korea Institute of Science and Technology*

09:00-09:15 ThAT11.3
Healthy and Pathological Cerebellar Spiking Neural Networks in Vestibulo-Ocular Reflex 2514-2517
 Antonietti, Alberto *Politecnico di Milano*; Casellato, Claudia* *Politecnico di Milano*; Geminiani, Alice *Politecnico di Milano*; D'Angelo, Egidio *Univ. of Pavia*; Pedrocchi, Alessandra *Politecnico di Milano*

09:15-09:30 ThAT11.4
Analysis of EEG Variables to Measure the Affective Dimensions of Arousal and Valence Related to the Vision of Emotional Pictures 2518-2521
 Vecchiato, Giovanni *Univ. of Rome Sapienza*; Gaeta, Giuliano *Univ. of Nottingham*; Susac, Ana *Univ. of Zageb*; Supek, Selma *Univ. of Zagreb*; Babiloni, Fabio* *Univ. of Rome*

09:30-09:45 ThAT11.5
Higher Visual Functions in the Upper and Lower Visual Fields: A Pilot Study in Healthy Subjects 2522-2525
 Zito, Giuseppe Angelo *Gerontechnology and Rehabilitation Group, Univ. of Bern, Be*; Müri, René *Gerontechnology and Rehabilitation Group, Univ. Hospital of*; Mosimann, Urs Peter *Gerontechnology and Rehabilitation Group, Univ. Hospital of*; Nyffeler, Thomas *Neurology and Neurorehabilitation Center, Luzerner Kantonsspital*; Nef, Tobias* *Gerontechnology and Rehabilitation, ARTORG Center for Biomedical*

09:45-10:00 ThAT11.6
Estimation of a Large-Scale Generalized Volterra Model for Neural Ensembles with Group Lasso and Local Coordinate Descent 2526-2529
 Robinson, Brian* *Univ. of Southern California*; Song, Dong *Univ. of Southern California*; Berger, Theodore *Univ. of Southern California*

10.7 Knowledge Discovery and Management (Oral Session)**Chair:** Doug, Fridsma *AMIA - Informatics Professionals. Leading the Way***Co-Chair:** Bellazzi, Riccardo *University of Pavia*

08:30-08:45

ThAT12.1

Early Detection of Heart Failure with Varying Prediction Windows by Structured and Unstructured Data in Electronic Health Records

2530-2533

Wang, Yajuan* *IBM T.J. Watson Research Center*; Ng, Kenney *IBM T.J. Watson Research Center*; Byrd, Roy *IBM T.J. Watson Research Center*; Hu, Jianying *IBM T.J. Watson Research Center*; Ebadollahi, Shahram *IBM T.J. Watson Research Center*; Daar, Zahra *Geisinger Health System*; deFilippi, Christopher *Univ. of Maryland School of Medicine*; Steinhubl, Steven *Scripps Health*; Stewart, Walter *Sutter Health*

08:45-09:00

ThAT12.2

A Data-Driven Feature Extraction Framework for Predicting the Severity of Condition for Congestive Heart Failure Patients

2534-2537

Sideris, Costas* *Univ. of California, Los Angeles*; Alshurafa, Nabil *Univ. of California, Los Angeles*; Pourhomayoun, Mohammad *Univ. of California, Los Angeles*; Shahmohammadi, Farhad *Univ. of California, Los Angeles*; Samy, Lauren *Univ. of California, Los Angeles*; Sarrafzadeh, Majid *Univ. of California Los Angeles*

09:00-09:15

ThAT12.3

Expert Knowledge Integration in the Data Mining Process with Application to Cardiovascular Risk Assessment

2538-2542

Tavares, Miguel *CISUC - Univ. of Coimbra*; Paredes, Simao *Instituto Politécnico de Coimbra*; Rocha, Teresa *Inst Superior de Eng de Coimbra*; de Carvalho, Paulo *Univ. of Coimbra - NIF*; Henriques, Jorge* *Univ. of Coimbra - NIF*; Morais, João *Hospital de Santo André, Leiria*; Ramos, João Pedro *Univ. of Coimbra*; Mendes, Diana *Univ. de Coimbra*

09:15-09:30

ThAT12.4

Prediction of Health Outcomes using Big (Health) Data

2543-2546

Arandjelovic, Ognjen* *Univ. of St Andrews*

09:30-09:45

ThAT12.5

A Reusable Ontology for Primitive and Complex HL7 FHIR Data Types

2547-2550

Beredimas, Nikolaos *Aristotle Univ. of Thessaloniki*; Kilintzis, Vassilis* *Aristotle Univ. of Thessaloniki*; Chouvarda, Ioanna *Aristotle Univ.*; Maglaveras, Nikolaos *Aristotle Univ. of Thessaloniki*

09:45-10:00

ThAT12.6

An Automatic Method for the Enrichment of DICOM Metadata using Biomedical Ontologies

2551-2554

Peréz, Wilson *Univ. de Cuenca*; Tello, Andrés *Univ. de Cuenca*; Saquicela, Victor *Univ. de Cuenca*; Vidal, Maria-Esther *Univ. Simón Bolívar*; La Cruz, Alexandra* *Simon Bolivar Univ.***9.5 Tissue-Heating Therapeutic Technologies (Oral Session)****Chair:** Wenger, Cornelia *Faculdade de Ciências, Universidade de Lisboa***Co-Chair:** Pearce, John Anthony *University of Texas at Austin*

08:30-08:45

ThAT15.1

Modeling Tumor Treating Fields (TTFields) Application within a Realistic Human Head Model

2555-2558

Wenger, Cornelia* *Faculdade de Ciências, Univ. de Lisboa*; Salvador, Ricardo *Univ. of Lisbon*; Basser, Peter *NIH*; Miranda, Pedro *Faculty of Science, Univ. of Lisbon*

08:45-09:00

ThAT15.2

FEM Numerical Model Study of Electrosurgical Dispersive Electrode Design Parameters

2559-2562

Pearce, John Anthony* *Univ. of Texas at Austin*

09:00-09:15

ThAT15.3

Internal Temperature Increase during Photothermal Tumour Ablation in Mice using Gold Nanorods

2563-2566

Mooney, Rachael *City of Hope Medical Center*; Schena, Emiliano* *Univ. of Rome Campus Bio-Medico*; Aboody, Karen S *City of Hope Medical Center*; Berlin, Jacob M *City of Hope Medical Center*; Zhumkhawala, Ali *City of Hope Medical Center*

09:15-09:30	ThAT15.4
Multi-Pulse Laser Ablation Modeling with Applications to Automated Zona Removal	2567-2570
Wong, Christopher Yee* <i>Univ. of Toronto</i> ; Mills, James <i>Univ. of Toronto</i>	
09:30-09:45	ThAT15.5
Robotized High Intensity Focused Ultrasound (HIFU) System for Treatment of Mobile Organs using Motion Tracking by Ultrasound Imaging: An in Vitro Study	2571-2575
Chanel, Laure-Anaïs* <i>Univ. de Strasbourg-CNRS</i> ; Nageotte, Florent <i>Univ. of Strasbourg</i> ; Vappou, Jonathan <i>ICube laboratory</i> ; Luo, Jianwen <i>Tsinghua Univ.</i> ; Cuvillon, Loic <i>Univ. of Strasbourg</i> ; de Mathelin, Michel <i>Univ. of Strasbourg</i>	
09:45-10:00	ThAT15.6
Non-Invasive Measurement of the Temperature Rise in Tissue Surrounding a Kidney Stone Subjected to Ultrasonic Propulsion	2576-2579
Oweis, Ghanem F.* <i>American Univ. of Beirut</i> ; Dunmire, Barbrina <i>Center for Industrial and Medical Ultrasound, Applied Physics La</i> ; Cunitz, Bryan <i>Center for Industrial and Medical Ultrasound, Applied Physics La</i> ; Bailey, Michael <i>Center for Industrial and Medical Ultrasound, Applied Physics La</i>	

ThAT16: 08:30-10:00

White 2

7.4 Cell and Molecular Biotechnology I (Oral Session)

Chair: Ruggiero, Carmelina *University of Genova*

08:30-08:45	ThAT16.1
Peroxidated Olive Oil Nanoemulsion for Cancer Targeted Therapy	2580-2583
Dellacasa, Elena <i>Univ. of Genova</i> ; Pastorino, Laura <i>Univ. of Genova</i> ; Scanarotti, Chiara <i>Univ. of Genova</i> ; Vernazza, Stefania <i>Univ. of Genova</i> ; Bassi, Anna Maria <i>Univ. of Genova</i> ; Rolandi, Ranieri <i>Univ. of Genova</i> ; Ruggiero, Carmelina* <i>Univ. of Genova</i>	
08:45-09:00	ThAT16.2
Modeling and Simulation of Platelet Reaction and Diffusion towards an Electro-Stimulating Dental Implant ...	2584-2587
Delenda, Bachir* <i>Univ. of Rostock, Faculty of Computer Science and Electrical</i> ; Bader, Rainer <i>Univ. Medicine of Rostock, Dept. of Orthopaedics</i> ; van Rienen, Ursula <i>Univ. of Rostock</i>	
09:00-09:15	ThAT16.3
A Lumped-Parameter Approach for Designing a Novel Pulsatile Bioreactor for Ex-Vivo Studies of Human Saphenous Vein Remodeling	2588-2591
Piola, Marco <i>Politecnico di Milano</i> ; Soncini, Monica* <i>Politecnico di Milano</i> ; Pesce, Maurizio <i>Centro Cardiologico Monzino</i> ; Fiore, Gianfranco <i>Politecnico di Milano</i>	
09:15-09:30	ThAT16.4
In-Vitro Assessment of Jurkat T-Cells Response to 1966 MHz Electromagnetic Fields in a GTEM Cell	2592-2595
Moraitis, Nektarios* <i>National Technical Univ. of Athens</i> ; Christopoulou, Maria <i>National Technical Univ. of Athens</i> ; Nikita, Konstantina <i>National Technical Univ. of Athens</i> ; Voulgaridou, Georgia-Persephoni <i>Democritus Univ. of Thrace</i> ; Anestopoulos, Ioannis <i>Democritus Univ. of Thrace</i> ; Panagiotidis, Mihalis <i>Heriot Watt Univ.</i> ; Pappa, Aglaia <i>Democritus Univ. of Thrace</i>	
09:30-09:45	ThAT16.5
Chitosan Solutions as Injectable Systems for Dermal Filler Applications: Rheological Characterization and Biological Evidence	2596-2599
Halimi, Célia* <i>CYTOSIAL Biomedic</i> ; Montembault, Alexandra <i>Ingénierie des Matériaux Polymères, Univ. Claude Bernard Ly</i> ; Guerry, Alexandre <i>CYTOSIAL Biomedic</i> ; Delair, Thierry <i>Ingénierie des Matériaux Polymères, Univ. Claude Bernard Ly</i> ; Viguier, Eric <i>ICE, Vetagro Sup</i> ; Fulchiron, René <i>Ingénierie des Matériaux Polymères, Univ. Claude Bernard Ly</i> ; David, Laurent <i>Ingénierie des Matériaux Polymères, Univ. Claude Bernard Ly</i>	
09:45-10:00	ThAT16.6
Producing 3D Neuronal Networks in Hydrogels for Living Bionic Device Interfaces	2600-2603
Aregueta-Robles, Ulises Alejandro* <i>Univ. of New South Wales</i> ; Lim, Khoon S. <i>Univ. of New South Wales</i> ; Martens, Penny <i>Univ. of New South Wales</i> ; Lovell, Nigel H. <i>Univ. of New South Wales</i> ; Poole-Warren, Laura A. <i>Univ. of New South Wales</i> ; Green, Rylie A. <i>Univ. of New South Wales</i>	

08:45-09:00		ThAT17.2	
	Knee Motion Pattern Classification from Trunk Muscle based Onsemg Signals	2604-2607	
	<i>López Delis, Alberto Center of Medical Biophysics; Delisle Rodriguez, Denis* Centro de Biofísica Médica, Univ. de Oriente, Santiago de C; Villa Parra, Ana Cecilia Univ. Politécnica Salesiana; Bastos, Teodiano Univ. Federal do Espírito Santo</i>		
09:00-09:15		ThAT17.3	
	Convolutional Neural Networks for Patient-Specific ECG Classification	2608-2611	
	<i>Kiranyaz, Serkan* Qatar Univ.; Ince, Turker Izmir Univ. of Economics; Gabbouj, Moncef Tampere Univ. of Technology; Hamila, Ridha Qatar Univ.</i>		
09:15-09:30		ThAT17.4	
	Prediction of Switching Time between Movement Preparation and Execution by Neural Activity in Monkey Premotor Cortex	2612-2615	
	<i>Li, Hongbao Zhejiang Univ.; Liao, Yuxi Zhejiang Univ.; Wang, Yiwen* Zhejiang Univ.; Zhang, Qiaosheng Zhejiang Univ.; Zhang, Shaomin Zhejiang Univ.; Zheng, Xiaoxiang Zhejiang Univ.</i>		
09:30-09:45		ThAT17.5	
	Towards Fully Automated Closed-Loop Deep Brain Stimulation in Parkinson's Disease Patients: A LAMSTAR-Based Tremor Predictor	2616-2619	
	<i>Khobragade, Nivedita* Univ. of Illinois at Chicago; Tuninetti, Daniela Univ. of Illinois at Chicago; Graupe, Daniel Univ. of Illinois at Chicago</i>		
09:45-10:00		ThAT17.6	
	On the use of Convolutional Neural Networks and Augmented CSP Features for Multi-Class Motor Imagery of EEG Signals Classification	2620-2623	
	<i>Yang, Huijuan* Institute for Infocomm Research, Agency for Science, Technology an; Sakhavi, Siavash Sharif Univ. of Technology; Ang, Kai Keng Institute for Infocomm Research; Guan, Cuntai Institute for Infocomm Research</i>		

08:30-08:45		ThAT18.1	
	Functional Mesh Model with Temporal Measurements for Brain Decoding	2624-2628	
	<i>Onal, Itir* Middle East Technical Univ.; Ozay, Mete Middle East Technical Univ.; Yarman Vural, Fatos Middle East Technical Univ.</i>		
08:45-09:00		ThAT18.2	
	Multi-Model based Classification of Schizophrenia Patients	2629-2632	
	<i>Cetin, Mustafa S. Univ. of New Mexico, The Mind Research Network, Albuquerque; Houck, Jon M. Dept. of Psychology, Univ. of New Mexico; Vergara, Victor Manuel The Mind Research Network; Miller, Robyn The Mind Research Network; Calhoun, Vince* The Mind Research Network/Univ. of New Mexico</i>		
09:00-09:15		ThAT18.3	
	Joint Source Separation of Simultaneous EEG-fMRI Recording in Two Experimental Conditions using Common Spatial Patterns	2633-2636	
	<i>Tan, Ao* The Univ. of Hong Kong; Fu, Zening Univ. of Hong Kong; Tu, Yiheng The Univ. of Hong Kong; Hung, Y.S. The Univ. of Hong Kong; Zhang, Zhiguo Nanyang Technological Univ.</i>		
09:15-09:30		ThAT18.4	
	Spatiotemporal Analysis of the Appearance of Gamma-Band Microstates in Resting State MEG	2637-2640	
	<i>Kelsey, Matthew* Washington Univ. School of Medicine; Prior, Fred Washington Univ. School of Medicine; Larson-Prior, Linda Washington Univ. in St. Louis</i>		

09:30-09:45 ThAT18.5
Supervised Nonlinear Dimension Reduction of Functional Magnetic Resonance Imaging Data using Sliced Inverse Regression 2641-2644
 Tu, Yiheng* *The Univ. of Hong Kong*; Tan, Ao *The Univ. of Hong Kong*; Fu, Zening *Univ. of Hong Kong*; Hung, Y.S. *The Univ. of Hong Kong*; Hu, Li *Southwest Univ.*; Zhang, Zhiguo *Nanyang Technological Univ.*

09:45-10:00 ThAT18.6
Efficient Solution Methodology for Calibrating the Hemodynamic Model using Functional Magnetic Resonance Imaging (fMRI) Measurements 2645-2648
 Zambri, Brian* *California State Univ., Northridge, Interdisciplinary Resea*; Djellouli, Rabia *California state Univ. Northridge*; Laleg, Taous-Meriem *INRIA*

ThAT19: 08:30-10:00 Space 3
2.12 Image Analysis in Cancer Imaging (Oral Session)
Co-Chair: Acosta, Oscar *Univ. of Rennes 1*

08:30-08:45 ThAT19.1
Exploring Automatic Prostate Histopathology Image Gleason Grading via Local Structure Modeling 2649-2652
 Wang, Daihou *Rutgers, the State Univ. of New Jersey*; Foran, David J. *Rutgers Cancer Institute of New Jersey*; Ren, Jian *Rutgers Univ.*; Zhong, Hua *Rutgers Cancer Institute of New Jersey*; Kim, Isaac Y. *Rutgers Cancer Institute of New Jersey*; Qi, Xin* *Rutgers Univ.*

08:45-09:00 ThAT19.2
Melanoma Detection Algorithm based on Feature Fusion 2653-2656
 Barata, Catarina* *Instituto Superior Tecnico*; Celebi, M. Emre *Louisiana State Univ in Shreveport*; Marques, Jorge *Instituto Superior Tecnico*

09:00-09:15 ThAT19.3
A New Parameter Computed with Independent Component Analysis to Predict Rectal Toxicity Following Prostate Cancer Radiotherapy 2657-2660
 Fargeas, Auréline* *LTSI - Univ. of Rennes 1*; Ospina, Juan David *LTSI - Univ. of Rennes 1*; Kachenoura, Amar *Univ. de Rennes1 and INSERM*; Costet, Nathalie *LTSI, Univ. de Rennes1*; Albera, Laurent *Univ. de Rennes 1 and INSERM*; Lafond, Caroline *Univ. of Rennes 1*; Acosta, Oscar *Univ. of Rennes 1*; De Crevoisier, Renaud *INSERM, U1099, Rennes, F-35000, France - Univ. de Rennes 1,*

09:15-09:30 ThAT19.4
An Automated Method for Detecting Architectural Distortions on Mammograms using Direction Analysis of Linear Structure 2661-2664
 Matsubara, Tomoko* *Nagoya Bunri Univ.*; Ito, Akihiro *Gifu Univ.*; Tsunomori, Akinori *Konica Minolta, Inc*; Hara, Takeshi *Gifu Univ Graduate Sch of Medicine*; Muramatsu, Chisako *Gifu Univ.*; Endo, Tokiko *National Hospital Organization East Nagoya Hospital*; Fujita, Hiroshi *Gifu Univ.*

09:30-09:45 ThAT19.5
Iris Melanoma Segmentation Applying Active Contour Model N/A
 Jaworek-Korjakowska, Joanna* *AGH Univ. of Science and Technology*

09:45-10:00 ThAT19.6
Automatic Polyp Detection: A Comparative Study 2669-2672
 El Khatib, Alaa* *Khalifa Univ.*; Werghi, Naoufel *Khalifa Univ. of Science, Technology & Research*; Al-Ahmad, Hussein *Khalifa Univ.*

ThAT20: 08:30-10:00 Space 4
3.4 Implantable Sensors I (Oral Session)
Co-Chair: Shiba, Kenji *Tokyo University of Science*

08:30-08:45 ThAT20.1
Ultrasonic Beamforming System for Interrogating Multiple Implantable Sensors 2673-2676
 Seo, Dongjin* *Univ. of California Berkeley*; Tang, Hao-Yen *UC Berkeley*; Carmena, Jose M. *Univ. of California, Berkeley*; Rabaey, Jan M. *Univ. of California, Berkeley*; Alon, Elad *UC Berkeley*; Boser, Bernhard *UC Berkeley*; Maharbiz, Michel *Univ. of California, Berkeley*

08:45-09:00		ThAT20.2
Piezoresistive Nanocomposite as an Embedded Stress Sensor in Instrumented Knee Prosthesis	2677-2680	
Do, Quyen* <i>Univ. of New South Wales, Canberra</i> ; O'Byrne, Sean <i>Univ. of New South Wales, Canberra</i> ; Perriman, Diana <i>Canberra Hospital</i> ; Smith, Paul <i>The Canberra Hospital</i>		
09:00-09:15		ThAT20.3
Electrically Induced Energy Transmission used for Implantable Medical Devices Deep Inside the Body: Measurement of Received Voltage in Consideration of Biological Effect	2681-2684	
Shiba, Kenji* <i>Tokyo Univ. of Science</i>		
09:15-09:30		ThAT20.4
Experimenting with Microbial Fuel Cells for Powering Implanted Biomedical Devices	2685-2688	
Roxby, Daniel Ninio* <i>Univ. of Technology, Sydney</i> ; Tran, Nham <i>Univ. of Technology, Sydney</i> ; Yu, Pak-Lam <i>Massey Univ., BioTechnology Group</i> ; Nguyen, Hung T. <i>Univ. of Technology, Sydney</i>		
09:30-09:45		ThAT20.5
Towards a Highly-Scalable Wireless Implantable System-on-a-Chip for Gastric Electrophysiology	2689-2692	
Ibrahim, Ahmed* <i>Pennsylvania State Univ.</i> ; Farajidavar, Aydin <i>New York Institute of Technology</i> ; Kiani, Mehdi <i>Pennsylvania State Univ.</i>		
09:45-10:00		ThAT20.6
A Low-Noise Instrumentation Amplifier with DC Suppression for Recording ENG Signals	2693-2696	
Paraskevopoulou, Sivylla-Eleni* <i>Imperial College London</i> ; Eftekhar, Amir <i>Imperial College</i> ; Kulasekeram, Nishanth <i>Imperial College London</i> ; Toumazou, Christofer <i>Imperial College London</i>		
ThBPoT1: 10:00-11:30		Gold Room
1.44 Biomedical Simulation involving Signal Processing II (Poster Session)		
10:00-11:30		ThBPoT1.1
Ultrasound Observation of GAG Content of Human Hip Joint Cartilage in Different Old Age Groups	2697-2700	
Ren, Pengling <i>Beihang Univ.</i> ; Li, Xiaofei <i>Beihang Univ.</i> ; Fan, Fan <i>Beihang Univ.</i> ; Cai, Xiran <i>Beihang Univ.</i> ; Gong, He <i>Beihang Univ.</i> ; Fan, Yubo <i>Beihang Univ.</i> ; Niu, Haijun* <i>Beihang Univ.</i>		
10:00-11:30		ThBPoT1.2
Motion Trajectory Analysis for Evaluating the Performance of Functional Upper Extremity Tasks in Daily Living: A Pilot Study	2701-2704	
Li, Saiyi* <i>Deakin Univ.</i> ; Pathirana, Pubudu N. <i>Deakin Univ.</i> ; Galea, Mary P. <i>Dept. of Medicine (Royal Melbourne Hospital)</i>		
10:00-11:30		ThBPoT1.3
Spatially Distributed Surface Electromyography Signal Simulator	N/A	
Moura, Igor Luiz Bernardes de* <i>Univ. of Brasilia</i> ; von Borries, Ricardo F. <i>The Univ. of Texas at El Paso</i> ; Miosso, Cristiano <i>Univ. of Brasilia at Gama</i> ; Soares, Fabiano Araujo <i>Univ. of Brasilia - UnB</i>		
10:00-11:30		ThBPoT1.4
A Wall-Less Poly(vinyl Alcohol) Cryogel Flow Phantom with Accurate Scattering Properties for Transcranial Doppler Ultrasound Propagation Channels Analysis	2709-2712	
Weir, Alexander James* <i>NHS Greater Glasgow and Clyde</i> ; Sayer, Robin <i>NHS Greater Glasgow and Clyde</i> ; Wang, Cheng-Xiang <i>Heriot-Watt Univ.</i> ; Parks, Stuart <i>Medical Devices Unit</i>		
10:00-11:30		ThBPoT1.5
A Novel Pseudo Resistor Structure for Biomedical Front-End Amplifiers	2713-2716	
Huang, Yu-Chieh* <i>Natl. Chiao Tung Univ.</i> ; Yang, Tzu-Sen <i>Natl. Chiao Tung Univ.</i> ; Chen, Xin-Zhuang <i>Natl. Chiao Tung Univ.</i> ; Chiou, Jin-Chern <i>Natl. Chiao Tung Univ.</i> ; Hsu, Shun-Hsi <i>Natl. Chiao Tung Univ.</i>		
10:00-11:30		ThBPoT1.6
Interferogram-Based Breast Tumor Classification using Microwave-Induced Thermoacoustic Imaging ..	2717-2720	
Nan, Hao* <i>Stanford Univ.</i> ; Haghi, Benyamin Sharif <i>Univ. of Technology</i> ; Arbabian, Amin <i>Stanford Univ.</i>		

1.45 Adaptive, Multivariate and Neural Network Approaches (Poster Session)

- 10:00-11:30 ThBPoT2.1
Detection of Fiducial Points in ECG Waves using Iteration based Adaptive Thresholds 2721-2724
 Kang, Wonjune* *Westminster School*; Byun, Kyunguen *Dept. of Electrical and Electronic Engineering, Yonsei Univ*; Kang, Hong-Goo *Yonsei Univ.*
- 10:00-11:30 ThBPoT2.2
Influence of the Occlusion Effect Over the Prediction-Error Feedback Cancellation System in Hearing Aids .. 2725-2728
 Coelho Borges, Renata* *UFSC*; Holsbach Costa, Márcio *UFSC*
- 10:00-11:30 ThBPoT2.3
Automatic Artifact Suppression in Simultaneous TDCS-EEG using Adaptive Filtering 2729-2732
 Mancini, Matteo *Univ. degli Studi di Roma Tre*; Pellicciari, Maria Concetta *Cognitive Neuroscience Section, IRCCS Centro San Giovanni di Dio*; Brignani, Debora *Cognitive Neuroscience Section, IRCCS Centro San Giovanni di Dio*; Mauri, Piercarlo *Cognitive Neuroscience Section, IRCCS Centro San Giovanni di Dio*; De Marchis, Cristiano* *Univ. degli Studi Roma Tre*; Miniussi, Carlo *Neuroscience Section, Dept. of Clinical and Experimental Sc*; Conforto, Silvia *Univ. Roma TRE*
- 10:00-11:30 ThBPoT2.4
Effects of Contralateral Acoustic Stimulation on Otoacoustic Emissions Induced by Swept Tones 2733-2736
 Chen, Shixiong *Shenzhen Institutes of Advanced Technology*; Jin, Yanbing *Northeastern Univ.*; Xu, Lisheng *Northeastern Univ.*; Li, Guanglin* *Shenzhen Institutes of Advanced Technology*
- 10:00-11:30 ThBPoT2.5
Orientation and Depth Estimation for Femoral Components using Image Sensor, Magnetometer and Inertial Sensors in THR Surgeries 2737-2740
 Gao, Jiyang *Tsinghua Univ.*; Su, Shaojie *Tsinghua Univ.*; Chen, Hong* *Tsinghua Univ.*; Wang, Zhihua *Tsinghua Univ.*
- 10:00-11:30 ThBPoT2.6
The Performance of the Spatiotemporal Kalman Filter and LORETA in Seizure Onset Localization 2741-2744
 Hamid, Laith* *Univ. of Kiel*; Sarabi, Masoud *Dept. of Neuropediatrics, Univ. of Kiel, 24105 Kiel, G*; Japaridze, Natia *Dept. of Neuropediatrics, Christian-Albrechts-Univ. of*; Wiegand, Gert *Dept. of Neuropediatrics, Univ. of Kiel, 24105 Kiel, G*; Heute, Ulrich *Univ. of Kiel*; Stephani, Ulrich *Christian-Albrechts-Univ. of Kiel*; Galka, Andreas *Christian-Albrechts-Univ. of Kiel*; Siniatchkin, Michael *Univ. of Kiel*
- 10:00-11:30 ThBPoT2.7
The Choice of the Source Space and the Laplacian Matrix in LORETA and the Spatio-Temporal Kalman Filter EEG Inverse Methods 2745-2749
 Habboush, Nawar* *Dept. of Medical Psychology and Medical Sociology, Univ.*; Hamid, Laith *Univ. of Kiel*; Japaridze, Natia *Dept. of Neuropediatrics, Christian-Albrechts-Univ. of*; Wiegand, Gert *Dept. of Neuropediatrics, Univ. of Kiel, 24105 Kiel, G*; Heute, Ulrich *Univ. of Kiel*; Stephani, Ulrich *Christian-Albrechts-Univ. of Kiel*; Galka, Andreas *Christian-Albrechts-Univ. of Kiel*; Siniatchkin, Michael *Univ. of Kiel*
- 10:00-11:30 ThBPoT2.8
Model based Filtering for Artifact and Noise Suppression with State Estimation for Electrodermal Activity Measurements in Real Time 2750-2753
 Tronstad, Christian* *National Hospital of Norway*; Staal, Odd Martin *Prediktor Medical AS and Norwegian Univ. of Science and Tec*; Sælid, Steinar *Prediktor Medical AS*; Martinsen, Ørjan G *Univ. of Oslo*
- 10:00-11:30 ThBPoT2.9
Searching Arousals: A Fuzzy Logic Approach 2754-2757
 Chaparro-Vargas, Ramiro* *RMIT Univ., School of Electrical and Computer Engineering*; Ahmed, Beena *Texas A&M Univ. at Qatar*; Penzel, Thomas *Charite Univ. Hospital*; Cvetkovic, Dean *RMIT Univ.*
- 10:00-11:30 ThBPoT2.10
Heart Rate Estimation from Facial Photoplethysmography during Dynamic Illuminance Changes 2758-2761
 Lee, Dongseok* *Seoul National Univ.*; Kim, Jeehoon *Seoul National Univ.*; Kwon, Sungjun *Seoul National Univ.*; Park, Kwang S. *Seoul National Univ.*

10:00-11:30	ThBPoT2.11
Robust Driver Heartbeat Estimation: A Q-Hurst Exponent based Automatic Sensor Change with Interactive Multi-Model EKF	2762-2766
Vrazic, Sacha* <i>IMRA Europe SAS</i>	
10:00-11:30	ThBPoT2.12
A Flexible Spatio-Temporal Filter for Biomedical Multichannel Data Denoising	2767-2770
Nuanprasert, Somchai* <i>Osaka Univ.</i> ; Adachi, Yoshiaki <i>Kanazawa Institute of Technology</i> ; Suzuki, Takashi <i>Osaka Univ.</i>	
10:00-11:30	ThBPoT2.13
Measuring Cervical Vertebra Movements using Kinect Sensor	2771-2774
Ma, Xiaolong <i>XJTU</i> ; Xu, Guanghua* <i>Xi'an Jiaotong Univ.</i> ; Li, Min <i>School of Mechanical Engineering, Xi'an Jiaotong Univ.</i> ; Xie, Jun <i>Xi'an Jiaotong Univ.</i> ; Chen, longting <i>XJTU</i> ; Pei, Wei <i>Xi'an Jiaotong Univ.</i>	
10:00-11:30	ThBPoT2.14
An Evaluation of EEG Ocular Artifact Removal with a Multi-Channel Wiener Filter based on Probabilistic Generative Model	2775-2778
Maki, Hayato* <i>Nara Institute of Science and Technology</i> ; Toda, Tomoki <i>Nara Institute of Science and Technology</i> ; Sakriani, Sakti <i>Nara Institute of Science and Technology</i> ; Graham, Neubig <i>Nara Institute of Science and Technology</i> ; Satoshi, Nakamura <i>Nara Institute of Science and Technology</i>	
10:00-11:30	ThBPoT2.15
Eliminating Pulse-Induced Artifacts in Urethral Pressure Data	2779-2783
Klünder, Mario* <i>Univ. of Stuttgart</i> ; Feuer, Ronny <i>Univ. of Stuttgart</i> ; Amend, Bastian <i>Univ. of Tübingen</i> ; Kelp, Alexandra <i>Univ. of Tübingen</i> ; Stenzl, Arnulf <i>Univ. Hospital Tübingen</i> ; Sievert, Karl-Dietrich <i>Univ. of Tübingen</i> ; Sawodny, Oliver <i>Institute for System Dynamics, Univ. of Stuttgart</i> ; Ederer, Michael <i>Institute for System Dynamics, Univ. of Stuttgart</i>	
10:00-11:30	ThBPoT2.16
Reconstruction of Signal in Plastic Scintillator of PET using Tikhonov Regularization	2784-2787
Raczynski, Lech* <i>National Centre for Nuclear Research</i>	
10:00-11:30	ThBPoT2.17
CAP Waveform Estimation from the Measured Electrical Bioimpedance Values: Patient's Heart Rate Variability Analysis	2788-2791
Krivoshei, Andrei* <i>Tallinn Univ. of Technology</i> ; Uuetoa, Hasso <i>Sahlgrenska Univ. Hospital</i> ; Min, Mart <i>Tallinn Univ. of Technology</i> ; Annus, Paul <i>ELIKO</i> ; Uuetoa, Tiina <i>East-Tallinn Central Hospital</i> ; Lamp, Jürgen <i>ELIKO Competence Center</i>	
10:00-11:30	ThBPoT2.18
Mortality Prediction in Septic Shock Patients: Towards New Personalized Models in Critical Care	2792-2795
Carrara, Marta* <i>Politecnico di Milano, Italy</i> ; Baselli, Giuseppe <i>Politecnico di Milano</i> ; Ferrario, Manuela <i>Politecnico di Milano</i>	
10:00-11:30	ThBPoT2.19
A Novel Technique to Investigate the Effect of Ageing on Ventricular Repolarization Characteristics in Healthy and LQTS Subjects	2796-2799
Imam, Hasan <i>Univ. of Melbourne</i> ; Karmakar, Chandan* <i>Deakin Univ.</i> ; Palaniswami, Marimuthu <i>The Univ. of Melbourne</i> ; Khandoker, Ahsan Habib <i>Khalifa Univ. of Science, Technology and Research</i>	
10:00-11:30	ThBPoT2.20
Automated Analysis of Nocturnal Oximetry as Screening Tool for Childhood Obstructive Sleep Apnea-Hypopnea Syndrome	2800-2803
Álvarez, Daniel <i>Univ. of Valladolid, CIF</i> ; Kheirandish-Gozal, Leila <i>Section of Sleep Medicine, Dept. of Pediatrics, Pritzker Sc</i> ; Gutierrez, Gonzalo Cesar <i>Univ. of Valladolid</i> ; Crespo, Andrea <i>Hospital Univ. Rio Hortega, Valladolid</i> ; Philby, Mona F. <i>Section of Sleep Medicine, Dept. of Pediatrics, Pritzker Sc</i> ; Mohammadi, Meelad <i>Section of Sleep Medicine, Dept. of Pediatrics, Pritzker Sc</i> ; del Campo, Félix <i>Hospital del Río Hortega</i> ; Gozal, David <i>Section of Sleep Medicine, Dept. of Pediatrics, Pritzker Sc</i> ; Hornero, Roberto* <i>Univ. of Valladolid</i>	

10:00-11:30	ThBPoT2.21
Breast Cancer Classification using Extracted Parameters from a Terahertz Dielectric Model of Human Breast Tissue	2804-2807
Truong, Bao C. Q.* <i>Univ. of Technology Sydney</i> ; Hoang, Tuan D. <i>Univ. of Technology, Sydney</i> ; Fitzgerald, Anthony <i>The Univ. of Western Australia</i> ; Wallace, Vincent <i>The Univ. of Western Australia</i> ; Nguyen, Tuan Nghia <i>Univ. of Technology, Sydney</i> ; Nguyen, Hung T. <i>Univ. of Technology, Sydney</i>	
10:00-11:30	ThBPoT2.22
Automatic Cough Episode Detection using a Vibroacoustic Sensor	2808-2811
Młyńczak, Marcel* <i>Warsaw Univ. of Technology, Faculty of Mechatronics, Insti</i> ; Pariaszewska, Katarzyna <i>Warsaw Univ. of Technology, Faculty of Mechatronics, Insti</i> ; Cybulski, Gerard <i>Warsaw Univ. of Technology, Faculty of Mechatronics</i>	
10:00-11:30	ThBPoT2.23
Residual Analysis of Ground Reaction Forces Simulation during Gait using Neural Networks with Different Configurations	2812-2815
Leporace, Gustavo* <i>Univ. Federal do Rio de Janeiro</i> ; Batista, Luiz Alberto <i>Univ. Estadual do Rio de Janeiro</i> ; Metsavaht, Leonardo <i>Instituto Brasil de Tecnologias da Saúde</i> ; Nadal, Jurandir <i>Federal Univ. of Rio de Janeiro</i>	
10:00-11:30	ThBPoT2.24
Biometric Identification with High Frequency Electrocardiogram: Unregistered User Refusal Method and Performance Evaluation	2816-2819
Kyoso, Masaki* <i>Tokyo City Univ.</i>	
10:00-11:30	ThBPoT2.25
EEG based Patient Emotion Monitoring using Relative Wavelet Energy Feature and Back Propagation Neural Network	2820-2823
Purnamasari, Prima Dewi* <i>Univ. Indonesia</i> ; Ratna, Anak Agung Putri <i>Univ. Indonesia</i> ; Kusumoputro, Benyamin <i>Univ. Indonesia</i>	
10:00-11:30	ThBPoT2.26
Model Selection for PCA-Linear SVM for Automated Detection of NS1 Molecule from Raman Spectra of Salivary Mixture	2824-2827
Mohd Radzol, Afaf Rozan <i>Univ. Teknologi MARA</i> ; Lee, Khuan Y.* <i>Univ. Teknologi MARA</i> ; Mansor, Wahidah <i>Univ. Teknologi MARA</i>	
10:00-11:30	ThBPoT2.27
Sleep Spindle Detection using Deep Learning: A Validation Study based on Crowdsourcing	2828-2831
Tan, Dakun <i>Xidian Univ.</i> ; Zhao, Rui <i>Xidian Univ.</i> ; Sun, Jinbo <i>School of Life Science and Technology, Xidian Univ., Xi'an</i> ; Qin, Wei* <i>Xidian Univ.</i>	
10:00-11:30	ThBPoT2.28
A New Connectivity Toolbox to Infer Topological Features of In-Vitro Neural Networks	2832-2835
Pastore, Vito Paolo* <i>Univ. of Genova</i> ; Poli, Daniele <i>Univ. of Genova</i> ; Martinoia, Sergio <i>Univ. of Genova</i> ; Massobrio, Paolo <i>Univ. of Genova</i>	
10:00-11:30	ThBPoT2.29
A Comparative Study of Breast Cancer Diagnosis based on Neural Network Ensemble via Improved Training Algorithms	2836-2839
Azami, Hamed* <i>Univ. of Edinburgh</i> ; Escudero, Javier <i>Univ. of Edinburgh</i>	
10:00-11:30	ThBPoT2.30
Cluster-Span Threshold: An Unbiased Threshold for Binarising Weighted Complete Networks in Functional Connectivity Analysis	2840-2843
Smith, Keith* <i>Univ. of Edinburgh</i> ; Azami, Hamed <i>Univ. of Edinburgh</i> ; Parra, Mario A <i>Univ. of Edinburgh</i> ; Starr, John <i>Univ. of Edinburgh</i> ; Escudero, Javier <i>Univ. of Edinburgh</i>	
10:00-11:30	ThBPoT2.31
Investigating Deep Learning for FNIRS based BCI	2844-2847
Henrich, Johannes* <i>Karlsruhe Institute of Technology</i> ; Herff, Christian <i>Karlsruhe Institute of Technology</i> ; Heger, Dominic <i>Karlsruhe Institute of Technology, Cognitive Systems Lab</i> ; Schultz, Tanja <i>Karlsruhe Institute of Technology, Cognitive Systems Lab</i>	

10:00-11:30 ThBPoT2.32
Resting State EEG-Based Biometrics for Individual Identification using Convolutional Neural Networks ... 2848-2851
Ma, Lan* *The Chinese Univ. of Hong Kong*; Minett, James *The Chinese Univ. of Hong Kong*; Blu, Thierry *The Chinese Univ. of Hong Kong*; Wang, William S-Y *The Chinese Univ. of Hong Kong*

10:00-11:30 ThBPoT2.33
A Dynamic EMG-Torque Model of Elbow based on Neural Networks 2852-2855
Peng, Liang *Institute of Automation, Chinese Academy of Sciences*; Hou, Zeng-Guang* *Institute of Automation, Chinese Academy of Sciences*; Wang, Weiqun *Institute of Automation, Chinese Academy of Sciences*

10:00-11:30 ThBPoT2.34
The Segmented-Beat Modulation Method for ECG Estimation 2856-2859
Agostinelli, Angela *Polytechnic Univ. of Marche*; Giuliani, Corrado *Polytechnic Univ. of Marche*; Fioretti, Sandro *Univ. Politecnica delle Marche*; Di Nardo, Francesco *Polytechnic Univ. of Marche*; Burattini, Laura* *Univ. Politecnica delle Marche*

10:00-11:30 ThBPoT2.35
A Basic Study of Activity Type Detection and Energy Expenditure Estimation for Children and Youth in Daily Life using 3-Axis Accelerometer and 3-Stage Cascaded Artificial Neural Network 2860-2863
Jang, Yongwon* *Electronics & Telecom Research Inst.*; Song, Yoonseon *Electronics & Telecom Research Inst.*; Noh, Hyung Wook *Electronics and Telecommunications Research Institute*; Kim, Seunghwan *Electronics & Telecom Research Inst*

ThBPoT3: 10:00-11:30 Gold Room
1.46 Connectivity, Causality and Phase Locking in Biomedical Signals (Poster Session)

10:00-11:30 ThBPoT3.1
Kernel-Nonlinear-PDC Extends Partial Directed Coherence to Detecting Nonlinear Causal Coupling 2864-2867
Massaroppe, Lucas* *Univ. of Sao Paulo*; Baccala, Luiz Antonio *Escola Politecnica*

10:00-11:30 ThBPoT3.2
Assessing Assumptions of Multivariate Linear Regression Framework Implemented for Directionality Analysis of fMRI 2868-2871
Dang, Shilpa* *Indian Institute of Technology Delhi*; Chaudhury, Santanu *Indian Institute of Technology Delhi*; Lall, Brejesh *Indian Institute of Technology Delhi*; Roy, Prasun Kumar *National Brain Research Center*

10:00-11:30 ThBPoT3.3
Induced Schizophrenic Like Breathing Pattern Leads to Impaired Cardiorespiratory Coupling in Healthy Subjects 2872-2875
Schulz, Steffen *Univ. of Applied Sciences Jena*; Hauelsen, Jens *Technical Univ. Ilmenau*; Bär, Karl-Jürgen *Friedrich-Schiller-Univ. of Jena*; Voss, Andreas* *Univ. of Applied Sciences Jena*

10:00-11:30 ThBPoT3.4
Classification of Pregnancy and Labor Contractions using a Graph Theory based Analysis 2876-2879
Nader, Noujoud* *Sorbonne Univ., Univ. de Technologie de Compiègne*; Hassan, Mahmoud *Univ. de Rennes 1*; El Falou, Wassim *Univ. Libanaise- Faculté de Génie; Univ. libanaise- E*; Diab, Ahmad *Univ. de technologie de Compiègne - UTC*; Al-Omar, Sally *Univ. de Rennes 1*; Khalil, Mohamad *Lebanese Univ., Doctoral School for Sciences and Technology*; Marque, Catherine *Univ. of Technology of Compiègne*

10:00-11:30 ThBPoT3.5
Prediction of Motor Imagery based Brain Computer Interface Performance using a Reaction Time Test 2880-2883
Darvishi, Sam* *The Univ. of Adelaide*; Abbott, Derek *The Univ. of Adelaide*; Baumert, Mathias *The Univ. of Adelaide*

10:00-11:30 ThBPoT3.6
An EEG Coherence-Based Analysis Approach for Investigating Response Conflict Processes in 7 and 9-Year Old Children 2884-2887
Almabruk, Tahani* *Curtin Univ.*; Iyer, Kartik *Curtin Univ.*; Tan, Tele *Curtin Univ.*; Roberts, Gareth *Murdoch Univ.*; Anderson, Mike *Murdoch Univ.*

10:00-11:30 ThBPoT3.7
Seizure Prediction by Analyzing EEG Signal based on Phase Correlation 2888-2891
Parvez, Mohammad Zavid* *Charles Sturt Univ.*; Paul, Manoranjan *Charles Sturt Univ.*

10:00-11:30	ThBPoT3.8
Long-Term Scalp Epileptic EEG Quantification with GMA Dynamics	2892-2895
Ji, Hong <i>Institute of Artificial Intelligence and Robotics, Xi'an Jiaotong</i> ; Khodam Hazrati, Mehrnaz <i>Univ. of Luebeck</i> ; Chen, Badong* <i>Xi'an Jiaotong Univ.</i> ; Liu, Yonghong <i>Xijing Hospital</i> ; Keil, Andreas <i>Univ. of Florida</i> ; Principe, Jose <i>Univ. of Florida</i>	
10:00-11:30	ThBPoT3.9
EEG Classification of Emotions using Emotion-Specific Brain Functional Network	2896-2899
Gonuguntla, Venkateswarlu <i>Kyungpook National Univ.</i> ; Shafiq, Ghufuran <i>Kyungpook National Univ.</i> ; Wang, Yubo <i>Kyungpook National Univ.</i> ; Veluvolu, Kalyana C.* <i>Kyungpook National Univ.</i>	
10:00-11:30	ThBPoT3.10
Effect of Age on Changes in Motor Units Functional Connectivity	2900-2903
Poosapadi Arjunan, Sridhar* <i>RMIT Univ.</i> ; Kant Kumar, Dinesh <i>RMIT Univ.</i>	
10:00-11:30	ThBPoT3.11
Assessing Small-Worldness of Dynamic Functional Brain Connectivity during Complex Tasks	2904-2907
Ren, Shen <i>Singapore Institute for NeuroTechnology, Centre for Life Science</i> ; Taya, Fumihiko <i>National Univ. of Singapore</i> ; Sun, Yu <i>National Univ. of Singapore</i> ; de Souza, Joshua <i>Singapore Institute for NeuroTechnology, Centre for Life Science</i> ; Thakor, Nitish <i>Johns Hopkins Univ.</i> ; Bezerianos, Anastasios* <i>National Univ. of Singapore</i>	
ThBPoT4: 10:00-11:30	Gold Room
2.34 Image Registration II (Poster Session)	
10:00-11:30	ThBPoT4.1
Patient Specific Phantom in Bimodal Image Navigation System	2908-2911
Juszczak, Jan <i>Silesian Univ. of Technology</i> ; Pyciński, Bartłomiej* <i>Silesian Univ. of Technology</i> ; Pietka, Ewa <i>Silesian Univ. of Technology</i>	
10:00-11:30	ThBPoT4.2
Finding Complete 3D Vertex Correspondence for Statistical Shape Modeling	2912-2915
Palmer, Robert Ieuan <i>Swansea Univ.</i> ; Xie, Xianghua* <i>Swansea Univ.</i> ; Tam, Gary <i>Swansea Univ.</i>	
10:00-11:30	ThBPoT4.3
Development of 2D+T Tracking Algorithm in Ultrasound Images for Radiotherapy	2916-2919
Abdouni, Abdenaceur* <i>Centre Leon Berard</i> ; Presles, Benoît <i>CREATIS</i> ; Fargier-Voiron, Marie <i>CREATIS</i> ; Rit, Simon <i>Univ. de Lyon, CREATIS ; CNRS UMR5220 ; Inserm U1044 ; INSA</i> ; Sarrut, David <i>Léon Bérard anti-cancer Center / CREATIS laboratory</i>	
10:00-11:30	ThBPoT4.4
A New Region Descriptor for Multi-Modal Medical Image Registration and Region Detection	2920-2923
Wan, Xiaonan <i>Institute of Automation, the Chinese Academy of Sciences</i> ; Yu, Dongdong <i>Key Laboratory of Molecular Imaging, Institute of Automation, Ch</i> ; Yang, Feng <i>Dept. of Biomedical Engineering, Beijing Jiaotong Univ.</i> ; Yang, Caiyun <i>Institute of Automation, Chinese Academy of Sciences</i> ; Leng, Chengcai <i>Key Laboratory of Molecular Imaging, Institute of Automation, Ch</i> ; Xu, Min <i>Chinese Academy of Sciences</i> ; Tian, Jie* <i>Chinese Academy of Sciences</i>	
10:00-11:30	ThBPoT4.5
Atlas to Patient Registration with Brain Tumor based on a Mesh-Free Method	2924-2927
Boulanger, Pierre* <i>Univ. of Alberta</i> ; Diaz, Idanis <i>Univ. of Alberta</i>	
10:00-11:30	ThBPoT4.6
Regional Assessment of Lung Function using Thin-Plate Splines to Align Structural and Functional Imaging	2928-2931
Bennett, Michael John* <i>Univ. Hospital Southampton NHS Foundation Trust</i> ; Havelock, Tom <i>Faculty of Medicine, Univ. of Southampton</i> ; Bennett, Surussawadi <i>Research Centre in Back, Neck, Other Joint Pain and Human Perfor</i> ; Conway, Joy <i>Faculty of Health Sciences, Univ. of Southampton</i> ; Fleming, John <i>Southampton NIHR Respiratory Biomedical Research Unit, Univ.</i> ; Howarth, Peter <i>Faculty of Medicine, Univ. of Southampton</i>	

10:00-11:30 ThBPoT4.7
Markerless Registration for Image-Guided Endoscopic Retrograde Cholangiopancreatography (ERCP) 2932-2935
Jung, Young-gi *Korea Advanced Institute of Science and Technology*; Kim, Myeongjin *KAIST (Korea Advanced Institute of Science and Technology)*; Lee, Doo Yong* *KAIST*

10:00-11:30 ThBPoT4.8
Registration of Lung CT Images Acquired in Different Respiratory Ranges with 4DCT and HRCT 2936-2939
Pennati, Francesca *Politecnico di Milano*; Salito, Caterina *Politecnico di Milano*;
Aliverti, Andrea* *Politecnico di Milano*

10:00-11:30 ThBPoT4.9
A Comparative Study for Chest Radiograph Image Retrieval using Binary, Texture and Deep Learning Classification 2940-2943
Anavi, Yaron *Tel-Aviv Univ.*; Greenspan, Hayit K.* *Tel Aviv Univ.*; Kogan, Ilya *Tel-Aviv Univ.*; Gelbart, Elad *Tel Aviv Univ.*; Geva, Ofer *Tel-Aviv Univ.*

10:00-11:30 ThBPoT4.10
Content-Based Image Retrieval in Homomorphic Encryption Domain 2944-2947
Bellafqira, Reda *Institute Mines-Telecom; Telecom Bretagne*; Coatrieux, Gouenou *Institute Telecom - Telecom Bretagne - Inserm*; Bouslimi, Dalel* *Telecom Bretagne*; Quellec, Gwenole *Inserm*

ThBPoT5: 10:00-11:30 Gold Room
2.35 Image Segmentation, Compression and Enhancement (Poster Session)

10:00-11:30 ThBPoT5.1
Ensembling Brain Regions for Brain Decoding 2948-2951
Alkan, Sarper* *Middle East Technical Univ.*; Yarman Vural, Fatos *Middle East Technical Univ.*

10:00-11:30 ThBPoT5.2
Sparse High Order Potentials for Extending Multi-Surface Segmentation of OCT Images with Drusen 2952-2955
Oliveira, Jorge* *Univ. of Minho*; Pereira, Sérgio Rafael *Mano Univ. of Minho, School of Engineering, Dept. of Electr.*; Goncalves, Luís *OftalmoCenter*; Ferreira, Manuel Joao *Univ. of Minho*; Silva, Carlos Alberto *Batista Univ. do Minho*

10:00-11:30 ThBPoT5.3
Lossless Compression of Medical Images using Burrows-Wheeler Transformation with Inversion Coder . 2956-2959
Preston, Collin *SUNY Fredonia*; Arnavut, Ziya *SUNY Fredonia*; Koc, Basar* *Univ. of Miami*

10:00-11:30 ThBPoT5.4
Hair Removal on Dermoscopy Images 2960-2963
Maglogiannis, Ilias* *Univ. of Piraeus*; Delibasis, Konstantinos *Univ. of Central Greece*

10:00-11:30 ThBPoT5.5
Facial Nerve Image Enhancement from CBCT using Supervised Learning Technique 2964-2967
Lu, Ping* *Institute for Surgical Technology and Biomechanics, Univ. o;* Barazzetti, Livia *Univ. of Bern*;
Chandran, Vimal *Univ. of Bern*; Gavaghan, Kate *Bern Univ.*; Weber, Stefan *Univ. of Bern*; Gerber, Nicolas *Univ. of Bern*; Reyes, Mauricio *Institute for Surgical Technology and Biomechanics, Univ. Bern*

10:00-11:30 ThBPoT5.6
Nasopharyngeal Carcinoma Segmentation via HMRF-EM with Maximum Entropy 2968-2972
Huang, Kai-Wei *Sun Yat-Sen Univ.*; Zhao, Zhe-Yi* *Sun Yat-sen Univ.*; Gong, Qian *Sun Yat-Sen Univ.*; Zha, Juan *Sun Yat-sen Univ.*; Chen, Liu *Sun Yat-Sen Univ.*; Yang, Ran *Sun Yat-Sen Univ.*

10:00-11:30 ThBPoT5.7
CT Image Segmentation in Traumatic Brain Injury 2973-2976
Soroushmehr, S.M.Reza* *Univ. of Michigan, Ann Arbor*; Bafna, Abhishek *Univ. of Michigan, Ann Arbor*;
Schlosser, Steven *NovoDynamics Inc*; Ward, Kevin *Virginia Commonwealth Univ.*; Derksen, Harm *Univ. of Michigan, Ann Arbor*; Najarian, Kayvan *Univ. of Michigan - Ann Arbor*

10:00-11:30		ThBPoT5.8
Multi-Atlas Label Fusion using Hybrid of Discriminative and Generative Classifiers for Segmentation of Cardiac MR Images		2977-2980
Sedai, Suman <i>IBM Research Australia</i> ; Garnavi, Rahil* <i>IBM Research Australia</i> ; Roy, Pallab <i>IBM Research Australia</i> ; Liang, Xi <i>IBM Melbourne Research Lab</i>		
10:00-11:30		ThBPoT5.9
Accurate Kidney Surface Reconstruction from 3D Ultrasonography for Volume Assessment: First Clinical Evaluation		2981-2984
Li, Zhi-Cheng* <i>Shenzhen Institutes of Advanced Technology, Chinese Academy of S</i> ; Li, Kai <i>The Third Affiliated Hospital of Sun Yat-sen Univ.</i> ; Ken, Chen <i>Shenzhen Institutes of Advanced Technology, Chinese Academy of S</i> ; Xie, Yaoqin <i>Shenzhen Institutes of Advanced Technology, Chinese Academy of S</i>		
10:00-11:30		ThBPoT5.10
Determination of Lung Regions on Chest CT Images with Diffuse Lung Diseases by use of Anatomical Structures and Pulmonary Textures		2985-2988
Karasawa, Kyohei <i>Yamaguchi Univ.</i> ; Kido, Shoji* <i>Graduate School of Medicine, Yamaguchi Univ.</i> ; Hirano, Yasushi <i>Yamaguchi Univ.</i> ; Kozuka, Kazuki <i>Panasonic Corporation</i>		
10:00-11:30		ThBPoT5.11
Echogenicity based Approach to Detect, Segment and Track the Common Carotid Artery in 2D Ultrasound Images		2989-2992
Subbarao, Nikhil Narayan* <i>Nanyang Technological Univ.</i> ; Marziliano, Pina <i>Nanyang Technological Univ.</i>		
10:00-11:30		ThBPoT5.12
A DBSCAN based Approach for Jointly Segment and Classify Brain MR Images		2993-2996
Baselice, Fabio* <i>Univ. of Napoli Parthenope</i> ; Coppolino, Luigi <i>Univ. of Napoli Parthenope, Dept. di Ingegneria</i> ; D'Antonio, Salvatore <i>Univ. of Napoli Parthenope, Dept. di Ingegneria</i> ; Ferraioli, Giampaolo <i>Univ. of Napoli Parthenope, Dept. di Scienze e Tecno</i> ; Sgaglione, Luigi <i>Univ. of Napoli Parthenope, Dept. di Ingegneria</i>		
10:00-11:30		ThBPoT5.13
Image Segmentation of Pyramid Style Identifier based on Support Vector Machine for Colorectal Endoscopic Images		2997-3000
Okamoto, Takumi <i>Hiroshima Univ.</i> ; Koide, Tetsushi* <i>Hiroshima Univ.</i> ; Sugi, Koki <i>Hiroshima Univ.</i> ; Shimizu, Tatsuya <i>Hiroshima Univ.</i> ; Hoang, Anh-Tuan <i>Hiroshima Univ.</i> ; Tamaki, Toru <i>Hiroshima Univ.</i> ; Raytchev, Bisser <i>Hiroshima Univ.</i> ; Kaneda, Kazufumi <i>Hiroshima Univ.</i> ; Kominami, Yoko <i>Hiroshima Univ.</i> ; Yoshida, Shigeto <i>Hiroshima Univ.</i> ; Mieno, Hiroshi <i>Hiroshima General Hospital of West Japan Railway Company</i> ; Tanaka, Shinji <i>Hiroshima Univ.</i>		
10:00-11:30		ThBPoT5.14
Segmentation of Bones and MCP Joint Region of the Hand from Ultrasound Images		3001-3004
Sultan, Malik Saad* <i>Univ. of Porto</i> ; Martins, Nelson <i>Enermeter, Sistemas de Medição, Lda & Instituto de Telecomunicac</i> ; Ferreira, Manuel <i>Enermeter, Sistemas de Medição, Lda</i> ; Coimbra, Miguel <i>Instituto de Telecomunicações / Univ. do Porto</i>		
10:00-11:30		ThBPoT5.15
Image Processing in Biodosimetry: A Proposal of a Generic Free Software Platform		3005-3008
Dümpelmann, Matthias* <i>Univ. Medical Center Freiburg</i> ; da Matta, Mariel Cadena <i>GERAR - Univ. Federal de Pernambuco</i> ; Pereira de Lemos Pinto, Marcela Maria <i>GERAR - Univ. Federal de Pernambuco</i> ; Salazar e Fernandes, Thiago <i>GERAR - Univ. Federal de Pernambuco</i> ; da Silva, Edvane <i>GERAR - Univ. Federal de Pernambuco</i> ; Amaral, Ademir <i>Univ. Federal de Pernambuco</i>		
10:00-11:30		ThBPoT5.16
Automated Saliency-Based Lesion Segmentation in Dermoscopic Images		3009-3012
Ahn, Euijoon* <i>Univ. of Sydney</i> ; BI, LEI <i>Univ. of Sydney</i> ; Jung, Younhyun <i>The Univ. of Sydney</i> ; Kim, Jinman <i>Univ. of Sydney</i> ; Li, Changyang <i>Univ. of Sydney</i> ; Fulham, Michael <i>Royal Prince Alfred Hospital</i> ; Feng, Dagan <i>The Univ. of Sydney</i>		

10:00-11:30	ThBPoT5.17
Computer Aided Analysis of Prostate Histopathology Images Gleason Grading Especially for Gleason Score 7	3013-3016
Ren, Jian <i>Rutgers Univ.</i> ; Sadimin, Evita <i>The Johns Hopkins Medical Institutions</i> ; Wang, Daihou <i>Rutgers, the State Univ. of New Jersey</i> ; Epstein, Jonathan <i>The Johns Hopkins Medical Institutions</i> ; Foran, David J. <i>Rutgers Cancer Institute of New Jersey</i> ; Qi, Xin* <i>Rutgers Univ.</i>	
10:00-11:30	ThBPoT5.18
Colon Centerline Extraction in Fragmented Segmentations	3017-3020
Krishnan, Karthik* <i>Samsung R&D Institute</i> ; Madrosiya, Akshay <i>Samsung Research Institute, Bangalore</i> ; Desai, Nasir <i>Samsung Electronics</i>	
10:00-11:30	ThBPoT5.19
Automated Colour Identification in Melanocytic Lesions	3021-3024
Sabbaghi Mahmoudi, Sahar* <i>The Univ. of Melbourne</i> ; Aldeen, Mohammad <i>The Univ. of Melbourne</i> ; Garnavi, Rahil <i>IBM Research Australia</i> ; Varigos, George <i>The Royal Melbourne Hospital</i> ; Constantinos, Dolianitis <i>The Royal Melbourne Hospital</i> ; Nicolopoulos, Jenny <i>The Royal Melbourne Hospital</i>	
10:00-11:30	ThBPoT5.20
Automatic Detection of Small Bowel Tumors in Endoscopic Capsule Images by ROI Selection based on Discarded Lightness Information	3025-3028
Vieira, Pedro Miguel* <i>Univ. do Minho</i> ; Ramos, Jaime <i>Hospital dos Capuchos</i> ; Lima, Carlos Manuel Gregorio Santos <i>Univ. of Minho</i>	
10:00-11:30	ThBPoT5.21
Deep Neural Network and Random Forest Hybrid Architecture for Learning to Detect Retinal Vessels in Fundus Images	3029-3032
Maji, Debapriya <i>Indian Institute of Technology, Kharagpur</i> ; Santara, Anirban <i>Indian Institute of Technology, Kharagpur</i> ; Ghosh, Sambuddha <i>Regional Institute of Ophthalmology Kolkata</i> ; Sheet, Debdoot* <i>Indian Institute of Technology Kharagpur</i> ; Mitra, Pabitra <i>Indian Institute of Technology, Kharagpur</i>	
10:00-11:30	ThBPoT5.22
Correction Tool for Active Shape Model based Lumbar Muscle Segmentation	3033-3036
Valenzuela, Waldo* <i>Univ. of Bern</i> ; Ferguson, Stephen J. <i>Univ. of Bern</i> ; Ignasiak, Dominika <i>Institute for Biomechanics, ETH Zurich</i> ; Diserens, Gaelle <i>Dept. of Clinical Research / AMSM, Univ. of Bern</i> ; Vermathen, Peter <i>Dept. of Clinical Research / AMSM, Univ. of Bern</i> ; Boesch, Chris <i>Dept. of Clinical Research / AMSM, Univ. of Bern</i> ; Reyes, Mauricio <i>Institute for Surgical Technology and Biomechanics, Univ. Bern</i>	
10:00-11:30	ThBPoT5.23
Brain Tumour Segmentation based on Extremely Randomized Forest with High-Level Features	3037-3040
Pinto, Adriano <i>Univ. of Minho</i> ; Pereira, Sérgio Rafael Mano <i>Univ. of Minho, School of Engineering, Dept. of Electr</i> ; Correia, Higino <i>Univ. of Minho</i> ; Oliveira, Jorge* <i>Univ. of Minho</i> ; Rasteiro, Deolinda <i>Instituto Politécnico de Coimbra, Departamento de Física e Matem</i> ; Silva, Carlos Alberto Batista <i>Univ. do Minho</i>	
10:00-11:30	ThBPoT5.24
A Multiparametric and Multiscale Approach to Automated Segmentation of Brain Veins	3041-3044
Monti, Serena* <i>IRCCS SDN and Politecnico di Milano</i> ; Palma, Giuseppe <i>Institute of Biostructure and Bioimaging</i> ; Borrelli, Pasquale <i>IRCCS SDN</i> ; Tedeschi, Enrico <i>Dept. of Advanced Biomedical Sciences, Univ. "Federico"</i> ; Cocozza, Sirio <i>Dept. of Advanced Biomedical Sciences, Univ. "Federico"</i> ; Salvatore, Marco <i>IRCCS SDN</i> ; Mancini, Marcello <i>Institute of Biostructure and Bioimaging</i>	
10:00-11:30	ThBPoT5.25
Epidermal Segmentation in High-Definition Optical Coherence Tomography	3045-3048
Li, Annan* <i>Institute for Infocomm Research, ASTAR</i> ; Cheng, Jun <i>Institute for Infocomm Research, AStar</i> ; Yow, Ai Ping <i>Institute for Infocomm Research</i> ; Wall, Carolin <i>Institute for Infocomm Research, Agency for Science, Technology</i> ; Wong, Damon <i>Institute for Infocomm Research</i> ; Tey, Hongliang <i>National Skin Center, Singapore</i> ; Liu, Jiang <i>Institute for Infocomm Research, A STAR</i>	

10:00-11:30	ThBPoT5.26
A Fully Automated Level-Set based Segmentation Method of Thoracic and Lumbar Vertebral Bodies in Computed Tomography Images	3049-3052
Ruiz-España, Silvia <i>Univ. Politècnica de València</i> ; Díaz-Parra, Antonio <i>Univ. Politècnica de València</i> ; Arana, Estanislao <i>Radiology Dept., Fundación Instituto Valenciano de Oncología</i> ; Moratal, David* <i>Univ. Politècnica de València</i>	
10:00-11:30	ThBPoT5.27
A Fast Atlas Pre-Selection for Multi-Atlas based Brain Segmentation	3053-3056
Ma, Jingbo <i>Harbin Institute of Technology Shenzhen Graduate School</i> ; Ma, Heather Ting* <i>Harbin Institute of Technology Shenzhen Graduate School</i> ; Li, Hengtong <i>Harbin Institute of Technology Shenzhen Graduate School, Shenzhen</i> ; Ye, Chenfei <i>Harbin Institute of Technology Shenzhen Graduate School</i> ; Wu, Dan <i>Johns Hopkins Univ.</i> ; Tang, Xiaoying <i>Johns Hopkins Univ.</i> ; Miller, Michael <i>Johns Hopkins Univ.</i> ; Mori, Susumu <i>Johns Hopkins Univ. School of Medicine</i>	
10:00-11:30	ThBPoT5.28
Minimum Mutual Information based Level Set Clustering Algorithm for Fast MRI Tissue Segmentation	3057-3060
Dai, Shuanglu <i>Stevens Institute of Technology</i> ; Man, Hong* <i>Stevens Institute of Technology</i> ; Zhan, Shu <i>Hefei Univ. of Technology</i>	
10:00-11:30	ThBPoT5.29
Region of Interest Extraction for Lossless Compression of Bone X-Ray Images	3061-3064
Kazemnia, Salome <i>Isfahan Univ. of Technology</i> ; Karimi, Nader <i>Isfahan Univ. of Technology</i> ; Soroushmehr, S.M.Reza* <i>Univ. of Michigan, Ann Arbor</i> ; Samavi, Shadrokh <i>McMaster Univ.</i> ; Derksen, Harm <i>Univ. of Michigan, Ann Arbor</i> ; Najarian, Kayvan <i>Univ. of Michigan - Ann Arbor</i>	
10:00-11:30	ThBPoT5.30
Speckle Reduction based on Wiener Filter in Ultrasound Images	3065-3068
Baselice, Fabio* <i>Univ. of Napoli Parthenope</i> ; Ferraioli, Giampaolo <i>Univ. of Napoli Parthenope, Dept. di Scienze e Tecno</i> ; Johnsy, Angel <i>Caroline Univ. of Napoli Parthenope</i> ; Schirinzi, Gilda <i>Univ. of Napoli Parthenope, Dept. di Ingegneria</i> ; Pascazio, Vito <i>Univ. of Napoli Parthenope, Dept. di Ingegneria</i>	
10:00-11:30	ThBPoT5.31
Active Contour Segmentation using Level Set Function with Enhanced Image from Prior Intensity	3069-3072
Kim, Sunhee <i>Korea Institute of Science and Technology</i> ; Kim, Youngjun* <i>Korea Institute of Science and Technology</i> ; Lee, Deukhee <i>Korea Institute of Science and Technology</i> ; Park, Sehyung <i>Korea Institute of Science and Technology</i>	
10:00-11:30	ThBPoT5.32
Ground Truth Delineation for Medical Image Segmentation based on Local Consistency and Distribution Map Analysis	3073-3076
Cheng, Irene <i>Univ. of Alberta</i> ; Sun, Xinyao <i>Univ. of Alberta</i> ; Alsufyani, Noura <i>Univ. of Alberta</i> ; Xiong, Zhihui <i>NUDT, Changsha</i> ; Major, Paul <i>Univ. of Alberta</i> ; Basu, Anup* <i>Univ. of Alberta</i>	
10:00-11:30	ThBPoT5.33
Segmentation of Acne Lesion using Fuzzy C-Means Technique with Intelligent Selection of the Desired Cluster	3077-3080
Khan, Javed <i>Univ. Teknologi Petronas</i> ; Malik, Aamir Saeed* <i>Univ. Teknologi Petronas</i> ; Kamel, Nidal <i>Technical Univ. of Petronas</i> ; Dass, Sarat <i>Univ. Teknologi Petronas</i> ; M. Affandi, Azura <i>Hospital Kuala Lumpur</i>	
10:00-11:30	ThBPoT5.34
Geometry-Independent Assessment of Renal Volume in Polycystic Kidney Disease from Magnetic Resonance Imaging	3081-3084
Turco, Dario* <i>Univ. of Bologna</i> ; Severi, Stefano <i>Univ. of Bologna</i> ; Mignani, Renzo <i>Nephrology and Dialysis Unit, Infermi Hospital</i> ; Magistroni, Riccardo <i>Surgical, Medical and Dental Dept. of Morphological Science</i> ; Corsi, Cristiana <i>Univ. of Bologna</i>	
10:00-11:30	ThBPoT5.35
Muscle Segmentation in Time Series Images of Drosophila Metamorphosis	3085-3088
Yadav, Kuleesha* <i>Bioinformatics Institute, A*STAR, Singapore</i> ; Lin, Feng <i>Nanyang Technological Univ., Singapore</i> ; Wasser, Martin <i>BiolmagingMW</i>	

10:00-11:30	ThBPoT5.36
Automatic Segmentation of Nerve Structures in Ultrasound Images using Graph Cuts and Gaussian Processes	3089-3092
Gil González, Julián* <i>Univ. Tecnológica de Pereira</i> ; Alvarez, Mauricio A. <i>Univ. Tecnológica de Pereira</i> ; Orozco, Alvaro <i>Univ. Tecnológica de Pereira</i>	
10:00-11:30	ThBPoT5.37
Colorectal Polyp Segmentation using Front Propagation on Surfaces Guided by Shape	3093-3096
Krishnan, Karthik* <i>Samsung R&D Institute</i> ; Soniwal, Yogesh <i>Samsung Research Institute, Bangalore</i> ; Madrosiya, Akshay <i>Samsung Research Institute, Bangalore</i> ; Desai, Nasir <i>Samsung Electronics</i>	
10:00-11:30	ThBPoT5.38
A Clustering based Method for Collagen Proportional Area Extraction in Liver Biopsy Images	3097-3100
Giannakeas, Nikolaos* <i>Univ. of Ioannina</i> ; Tsipouras, Markos G. <i>Univ. of Ioannina</i> ; Tzallas, Alexandros <i>Technological Educational Institute of Epirus</i> ; Kyriakidi, Kalliroi <i>Univ. of Ioannina</i> ; E. Tsianou, Zoe <i>Univ. of Ioannina</i> ; Manousou, Pinelopi <i>Royal Free Sheila Sherlock Liver Unit, Royal Free Hospital and U</i> ; Hall, Andrew <i>Dept. of Histopathology, UCL Medical School, Royal Free Cam</i> ; Karvounis, Evaggelos <i>Univ. of Ioannina</i> ; Tsianos, Vasileios <i>Univ. of Ioannina</i> ; Tsianos, Epameinondas <i>Division of Gastroenterology, Faculty of Medicine, School of Hea</i>	
10:00-11:30	ThBPoT5.39
Peripheral Nerve Segmentation using Nonparametric Bayesian Hierarchical Clustering	3101-3104
Giraldo-Gutierrez, Juan José* <i>Univ. Tecnológica de Pereira</i> ; Alvarez, Mauricio A. <i>Univ. Tecnológica de Pereira</i> ; Orozco, Alvaro <i>Univ. Tecnológica de Pereira</i>	
10:00-11:30	ThBPoT5.40
Estimation of Vocal Folds Plane in 3D CT Images for Diagnosis of Vocal Folds Abnormalities	3105-3108
Hewavitharanage, Sajini Ruwanthika Gintota* <i>The Univ. of Melbourne</i> ; Gubbi, Jayavardhana <i>The Univ. of Melbourne</i> ; Thyagarajan, Dominic <i>Monash Medical Centre</i> ; Lau, Ken <i>Monash Medical Centre</i> ; Palaniswami, Marimuthu <i>The Univ. of Melbourne</i>	

ThBPoT6: 10:00-11:30	Gold Room
3.20 Wearable Systems II (Poster Session)	

10:00-11:30	ThBPoT6.1
Pull Test Estimation in Parkinson's Disease Patients using Wearable Sensor Technology	3109-3112
Pasluosta, Cristian Federico* <i>Friedrich-Alexander-Univ. Erlangen-Nürnberg</i> ; Barth, Jens <i>ASTRUM IT GmbH</i> ; Gaßner, Heiko <i>Univ. Klinikum Erlangen, Dept. of Molecular Neurology</i> ; Klucken, Jochen <i>Univ. Hospital Erlangen</i> ; Eskofier, Bjoern M <i>Friedrich-Alexander-Univ. Erlangen-Nürnberg</i>	
10:00-11:30	ThBPoT6.2
Preliminary Methods for Wearable Neuro-Vascular Assessment with Non-Invasive, Active Sensing	3113-3116
Carek, Andrew* <i>Georgia Institute of Technology</i> ; Töreyn, Hakan <i>Georgia Institute of Technology</i> ; Hersek, Sinan <i>Georgia Institute of Technology</i> ; Inan, Omer <i>Georgia Institute of Technology</i>	
10:00-11:30	ThBPoT6.3
Objective Evaluation of Oral Presentation Skills using Inertial Measurement Units	3117-3120
Sessa, Salvatore* <i>Waseda Univ.</i> ; Kong, Weisheng <i>Waseda Univ.</i> ; Zhang, Di <i>Waseda Univ.</i> ; Cosentino, Sarah <i>Waseda Univ.</i> ; Manawadu, Udara <i>Waseda Univ.</i> ; Kawasaki, Motoji <i>Waseda Univ.</i> ; Thomas, George <i>Waseda Univ.</i> ; Suzuki, Tomohiro <i>Waseda Univ.</i> ; Tsumura, Ryosuke <i>Waseda Univ.</i> ; Takanishi, Atsuo <i>Waseda Univ.</i>	
10:00-11:30	ThBPoT6.4
A Knitted Garment using Intarsia Technique for Heart Rate Variability Biofeedback: Evaluation of Initial Prototype	3121-3124
Abtahi, Farhad* <i>KTH Royal Institute of Technology</i> ; Ji, Guangchao <i>School of Technology and Health, KTH Royal Institute of Technolo</i> ; Lu, Ke <i>School of Technology and Health, KTH Royal Institute of Technolo</i> ; Rödby, Kristian <i>School of Technology and Health, KTH Royal Institute of Technolo</i> ; Seoane, Fernando <i>KTH-Royal Institute of Technology</i>	

10:00-11:30	ThBPoT6.5
Clinical Validation of LTMS-S: A Wearable System for Vital Signs Monitoring	3125-3128
Chételat, Olivier* <i>CSEM</i> ; Ferrario, Damien <i>CSEM</i> ; Proença, Martin <i>Swiss Center for Electronics and MicroTechnology (CSEM)</i> ; Porchet, Jacques-André <i>CSEM SA</i> ; Falhi, Abdessamad <i>CSEM</i> ; Grossenbacher, Olivier <i>CSEM SA</i> ; Delgado-Gonzalo, Ricard <i>CSEM</i> ; Della Ricca, Nicolas <i>HNE</i> ; Sartori, Claudio <i>Univ. Hospital CHUV Lausanne</i>	
10:00-11:30	ThBPoT6.6
Synchronization and Communication of Cooperative Sensors	3129-3132
Chételat, Olivier* <i>CSEM</i> ; Rapin, Michael <i>Swiss Center of Electronics and MicroTechnology CSEM</i> ; Meier, Christophe <i>CSEM SA</i> ; Bischof, André <i>CSEM</i> ; Augustyniak, Marcin Kamil <i>CSEM</i>	
10:00-11:30	ThBPoT6.7
Towards the Development of a Wearable Electrical Impedance Tomography System: A Study about the Suitability of a Low Power Bioimpedance Front-End	3133-3136
Menolotto, Matteo <i>STMicroelectronics</i> ; Rossi, Stefano* <i>STMicroelectronics</i> ; Dario, Paolo <i>Scuola Superiore Sant'Anna</i> ; Della Torre, Luigi <i>STMicroelectronics</i>	
10:00-11:30	ThBPoT6.8
Psychological Acute Stress Measurement using a Wireless Adhesive Biosensor	3137-3140
Selvaraj, Nandakumar* <i>Vital Connect Inc</i>	
10:00-11:30	ThBPoT6.9
A Magnetometer-Free Indoor Human Localization based on Loosely Coupled IMU/UWB Fusion	3141-3144
Zihajehzadeh, Shaghayegh* <i>PhD Student, Simon Fraser Univ.</i> ; Yoon, Paul K. <i>Simon Fraser Univ.</i> ; Park, Edward J. <i>Simon Fraser Univ.</i>	
10:00-11:30	ThBPoT6.10
Optimum Experimental Design Applied to MEMS Accelerometer Calibration for 9-Parameter Auto-Calibration Model	3145-3148
Ye, Lin* <i>Univ. of Technology, Sydney (UTS)</i> ; Su, Steven Weidong <i>Univ. of Technology, Sydney</i>	
10:00-11:30	ThBPoT6.11
Performance Assessment of an RFID System for Automatic Surgical Sponge Detection in a Surgery Room	3149-3152
Dinis, Hugo* <i>Univ. of Minho</i> ; Zamith, Manuel <i>Univ. of Minho</i> ; Mendes, Paulo M. <i>Univ. of Minho</i>	
10:00-11:30	ThBPoT6.12
Sensors on Instrumented Socks for Detection of Lower Leg Edema – An in Vitro Study	3153-3156
Zhang, Song <i>Univ. of Minnesota</i> ; Rajamani, Rajesh* <i>Univ. of Minnesota</i>	
10:00-11:30	ThBPoT6.13
Flexible and Self-Adaptive Neural Ribbon with Three-Dimensional Electrodes for Sciatic Nerve Recording ..	3157-3160
Xiang, Zhuolin <i>National Univ. of Singapore</i> ; Yen, Shih-Cheng <i>National Univ. of Singapore</i> ; Sheshadri, Swathi <i>National Univ. of Singapore</i> ; Xue, Ning A* <i>STAR</i> ; LEE, Sanghoon <i>National Univ. of Singapore</i> ; Wang, Jiahui <i>National Univ. of Singapore</i> ; Thakor, Nitish <i>Johns Hopkins Univ.</i> ; Chengkuo, Lee* <i>National Univ. of Singapore</i>	

ThBPoT7: 10:00-11:30	Gold Room
3.21 Bioelectric Sensors and Sensor Systems (Poster Session)	

10:00-11:30	ThBPoT7.1
Study of Impedance Spectra for Dry and Wet EarEEG Electrodes	3161-3164
Lind Kappel, Simon* <i>Aarhus Univ., Denmark</i> ; Kidmose, Preben <i>Aarhus Univ., Denmark</i>	
10:00-11:30	ThBPoT7.2
Electroencephalogram Measurement from the Hairy Part of the Scalp using Polymer-Based Dry Microneedle Electrodes	3165-3168
Arai, Miyako <i>Keio Univ.</i> ; Kudo, Yuta <i>Keio Univ.</i> ; Miki, Norihisa* <i>Keio Univ.</i>	

10:00-11:30	ThBPoT7.3
EEG Acquisition System based on Active Electrodes with Common-Mode Interference Suppression by Driving Right Leg Circuit	3169-3172
Guermandi, Marco* <i>Univ. of Bologna</i> ; Bigucci, Alessandro <i>Univ. of Bologna</i> ; Franchi Scarselli, Eleonora <i>Univ. of Bologna</i> ; Guerrieri, Roberto <i>Univ. of Bologna</i>	
10:00-11:30	ThBPoT7.4
An MRI Readable Wireless Flexible Pressure Sensor	3173-3176
Nakamura, Tatsuya* <i>Univ. of Tokyo</i> ; Inoue, Yusuke <i>The Univ. of Tokyo</i> ; Kim, Dongmin <i>The Univ. of Tokyo</i> ; Matsuhisa, Naoji <i>The Univ. of Tokyo</i> ; Yokota, Tomoyuki <i>The Univ. of Tokyo</i> ; Sekitani, Tsuyoshi <i>The Univ. of Tokyo</i> ; Someya, Takao <i>the Univ. of Tokyo</i> ; Sekino, Masaki <i>The Univ. of Tokyo</i>	
10:00-11:30	ThBPoT7.5
Electrochemical Label-Free Degranulation Monitoring for In-Situ Evaluation of Cellular Function	3177-3180
Tabata, Miyuki <i>Tokyo Medical and Dental Univ.</i> ; Goda, Tatsuro <i>Tokyo Medical and Dental Univ., Institute of Biomaterials a</i> ; Matsumoto, Akira <i>Tokyo Medical and Dental Univ., Institute of Biomaterials a</i> ; Miyahara, Yuji* <i>Tokyo Medical and Dental Univ., Institute of Biomaterials a</i>	
10:00-11:30	ThBPoT7.6
A Novel Love Wave Biosensor for Rapid and Sensitive Detection of Marine Toxins	3181-3184
Zhang, Xi <i>Zhejiang Univ.</i> ; Fang, Jiaru <i>Zhejiang Univ.</i> ; Zou, Yingchang <i>Zhejiang Univ.</i> ; Zou, Ling <i>Zhejiang Univ.</i> ; Hu, Ning <i>Zhejiang Univ.</i> ; Wang, Ping* <i>Zhejiang Univ.</i>	
10:00-11:30	ThBPoT7.7
Finger Motion Capture from Wrist-Electrode Contact Resistance	3185-3188
Yoshimoto, Shunsuke* <i>Osaka Univ.</i> ; Kawaguchi, Junki <i>Osaka Univ.</i> ; Imura, Masataka <i>Kwansei Gakuin Univ.</i> ; Oshiro, Osamu <i>Osaka Univ.</i>	
10:00-11:30	ThBPoT7.8
Digitally Controlled Feedback for DC Offset Cancellation in a Wearable Multichannel EMG Platform	3189-3192
Tomasini, Marco <i>Univ. of Bologna</i> ; Benatti, Simone <i>Univ. of Bologna</i> ; Casamassima, Filippo* <i>Univ. of Bologna</i> ; Milosevic, Bojan <i>Fondazione Bruno Kessler</i> ; Fateh, Schekeb <i>ETHZ</i> ; Farella, Elisabetta <i>Fondazione Bruno Kessler (FBK)</i> ; Benini, Luca <i>Univ. of Bologna</i>	
10:00-11:30	ThBPoT7.9
A Programmable and Self-Adjusting Class E Amplifier for Efficient Wireless Powering of Biomedical Implants	3193-3196
Stoecklin, Sebastian* <i>Albert-Ludwigs-Univ. Freiburg</i> ; Volk, Tobias <i>Albert-Ludwigs-Univ. Freiburg</i> ; Yousaf, Adnan <i>Albert-Ludwigs-Univ. Freiburg</i> ; Reindl, Leonhard <i>Albert-Ludwigs-Univ. Freiburg</i>	
10:00-11:30	ThBPoT7.10
Evaluation of Novel Textile Electrodes for ECG Signals Monitoring based on PEDOT: PSS-Treated Woven Fabrics	3197-3200
Pani, Danilo* <i>Univ. of Cagliari</i> ; Dessì, Alessia <i>DIEE - Univ. of Cagliari</i> ; Gusai, Elisa <i>DIEE - Univ. of Cagliari</i> ; Saenz-Cogollo, Jose Francisco <i>CNR</i> ; Barabino, Gianluca <i>DIEE - Univ. of Cagliari</i> ; Fraboni, Beatrice <i>Univ. of Bologna, Dept. of Physics and Astronomy</i> ; Bonfiglio, Annalisa <i>Univ. of Cagliari</i>	
10:00-11:30	ThBPoT7.11
The Role of Micro-Scale Current Sensing in Biomedicine: A Unifying View and Design Guidelines	3201-3204
Carminati, Marco* <i>Politecnico di Milano</i> ; Ferrari, Giorgio <i>Politecnico di Milano</i> ; Vergani, Marco <i>Flextronics</i> ; Sampietro, Marco <i>Politecnico di Milano</i>	

ThBPoT8: 10:00-11:30	Gold Room
3.22 Microfluidic Techniques, Methods and Systems II (Poster Session)	

10:00-11:30	ThBPoT8.1
A Miniaturized Electrolytic Pump Sensorized with a Strain Gauge based on Thermoplastic Nanocomposite for Drug Delivery Systems	3205-3208
Goffredo, Rosa* <i>Univ. Campus Bio-Medico di Roma</i> ; Ferrone, Andrea <i>Univ. degli Studi "Roma Tre"</i> ; Maiolo, Luca <i>Institute of Microelectronics and Microsystems; Consiglio Nazion</i> ; Pecora, Alessandro <i>Institute of Microelectronics and Microsystems; Consiglio Nazion</i> ; Accoto, Dino <i>Campus Bio-Medico Univ.</i>	

10:00-11:30		ThBPoT8.2
Long Range Microfluidic Shear Device for Cellular Mechanotransduction Studies		3209-3212
Dash, Sanat Kumar* <i>Indian Institute of Technology Madras</i> ; Verma, Rama Shanker <i>Indian Institute of Technology Madras</i> ; Das, Sarit K. <i>Indian Institute of Technology Madras</i>		
10:00-11:30		ThBPoT8.3
E.coli DH5α Cell Response to Sudden Change in Microfluidic Chemical Environment		3213-3216
Murugesan, Nithya* <i>Indian Institute of Technology Madras</i> ; Panda, Tapobrata <i>Indian Institute of Technology Madras</i> ; Das, Sarit K. <i>Indian Institute of Technology Madras</i>		
10:00-11:30		ThBPoT8.4
Novel Localized Heating Technique on Centrifugal Microfluidic Disc with Wireless Temperature Monitoring System		3217-3220
Joseph, Karunan <i>Univ. of Malaya</i> ; Ibrahim, Fatimah* <i>Univ. of Malaya</i> ; Cho, Jongman <i>Inje Univ.</i>		
10:00-11:30		ThBPoT8.5
Liquid Density Effect on Burst Frequency in Centrifugal Microfluidic Platforms		3221-3224
Al Faqheri, Wisam <i>Medical Informatics & Biological Micro-electro-mechanical System</i> ; Ibrahim, Fatimah* <i>Univ. of Malaya</i> ; Thio, Tzer Hwai Gilbert <i>Univ. of Malaya / Inti International Univ.</i> ; Joseph, Karunan <i>Univ. of Malaya</i> ; Mohktar, Mas Sahidayana <i>Faculty of Engineering</i> ; Madou, Marc <i>Univ. of California, Irvine / Univ. of Malaya</i>		
10:00-11:30		ThBPoT8.6
Red Blood Cells Flows in Rectilinear Microfluidic Chip		3225-3228
Anandan, Princia <i>Univ. of Catania</i> ; Ortiz, Daniel <i>Univ. of San Diego California</i> ; Cabrales, Pedro <i>Univ. of San Diego California</i> ; Intaglietta, Marcos <i>Univ. of San Diego California</i> ; Bucolo, Maide* <i>Univ. degli Studi di Catania</i>		
10:00-11:30		ThBPoT8.7
Simplified Fluid-Structure Coupled Analysis of Particle Movement for Designing of Microfluidic Cell Sorter ...		3229-3232
Takagi, Yuto* <i>Mie Univ.</i> ; Kotev, Vladimir <i>Bulgarian Academy of Sciences</i> ; Yano, Kenichi <i>Mie Univ.</i>		
ThBPoT9: 10:00-11:30		Gold Room
4.14 Algorithms and Techniques for Systems Modeling (Poster Session)		
10:00-11:30		ThBPoT9.1
Identification of Dynamical Biological Systems based on Random Effects Models		3233-3236
Batista, Levy* <i>Univ. de Lorraine, Cran, Cybernano</i> ; Bastogne, Thierry <i>Univ. de Lorraine</i> ; Djermoune, El Hadi <i>Univ. de Lorraine, CRAN CNRS UMR 7039</i>		
10:00-11:30		ThBPoT9.2
New VHP-Female V. 2.0 Full-Body Computational Phantom and Its Performance Metrics using FEM Simulator ANSYS HFSS		3237-3241
Yanamadala, Janakinadh <i>Worcester Polytechnic Institute</i> ; Noetscher, Gregory <i>Worcester Polytechnic Institute</i> ; Rathi, Vishal <i>Worcester Polytechnic Institute</i> ; Maliye, Saili <i>Worcester Polytechnic Institute</i> ; Win, Htay Aung <i>Worcester Polytechnic Institute</i> ; Tran, Anh Le <i>Worcester Polytechnic Institute</i> ; Jackson, Xavier Jamel <i>Worcester Polytechnic Institute</i> ; Htet, Aung Thu <i>Worcester Polytechnic Institute</i> ; Kozlov, Mikhail <i>Max Planck Institute for Human Cognitive and Brain Sciences</i> ; Nazarian, Ara <i>Beth Israel Deaconess Medical Center</i> ; Louie, Sara <i>Ansys, Inc.</i> ; Makarov, Sergey* <i>Electrical and Computer Engineering, Worcester Polytechnic Instit</i>		
10:00-11:30		ThBPoT9.3
A Semi-Mechanistic Pharmacokinetic Model of Saquinavir Combined with Itraconazole in HIV-1-Positive Patients		3242-3245
Lohitnavy, Manupat* <i>Naresuan Univ.</i> ; Methaneethorn, Janthima <i>Naresuan Univ.</i> ; Sriarwut, Thanyalak <i>Naresuan Univ.</i> ; Pankaew, Anongnat <i>Naresuan Univ.</i> ; Jenjob, Anchalee <i>Naresuan Univ.</i> ; Phuphuk, Kiatiphong <i>Naresuan Univ.</i>		
10:00-11:30		ThBPoT9.4
Pharmacokinetic Model for the Inhibition of Simvastatin Metabolism by Itraconazole		3246-3249
Lohitnavy, Manupat* <i>Naresuan Univ.</i> ; Methaneethorn, Janthima <i>Naresuan Univ.</i> ; Chian-Ngernthanyakool, Rangsimaporn <i>Naresuan Univ.</i> ; Tongpeng, Wasinee <i>Naresuan Univ.</i> ; Chan-IM, Daranee <i>Naresuan Univ.</i> ; Phaochorm, Suttipong <i>Naresuan Univ.</i>		

10:00-11:30		ThBPoT9.5
Incorporation of Inhaled Insulin into the FDA Accepted University of Virginia/Padova Type 1 Diabetes Simulator	3250-3253	
Visentin, Roberto* <i>Univ. of Padova</i> ; Klabunde, Thomas <i>Sanofi-Aventis Deutschland GmbH, R&D LGCR/Structure, Design & In</i> ; Grant, Marshall <i>Mannkind Cooperation</i> ; Dalla Man, Chiara <i>Univ. of Padova</i> ; Cobelli, Claudio <i>Univ. of Padova</i>		
10:00-11:30		ThBPoT9.6
Uncovering Microbial Duality within Human Microbiomes: A Novel Algorithm for the Analysis of Host-Pathogen Interactions	3254-3257	
Coelho, Edgar Duarte <i>Univ. of Aveiro</i> ; Arrais, Joel Perdiz <i>Univ. of Coimbra</i> ; Oliveira, José Luis* <i>Univ. of Aveiro</i>		
10:00-11:30		ThBPoT9.7
An Evaluation of the Emergence of Drug Resistant Virus for HIV/AIDS Drug Treatments	3258-3261	
Chang, H.J.* <i>Kookmin Univ.</i>		
10:00-11:30		ThBPoT9.8
Online Prediction of Glucose Concentration in Type 1 Diabetes using Extreme Learning Machines	3262-3265	
Georga, Eleni I. <i>Univ. of Ioannina</i> ; Protopappas, Vasilios C. <i>Univ. of Patras</i> ; Polyzos, Demosthenes <i>Univ. of Patras</i> ; Fotiadis, Dimitrios I.* <i>Univ. of Ioannina</i>		
10:00-11:30		ThBPoT9.9
Mathematical Modeling of Tumor Response to Radiation: Radio-Sensitivity Correlation with BOLD, TOLD, ΔR_1 and ΔR_2^* Investigated in Large Dunning R3327-AT1 Rat Prostate Tumors	3266-3269	
Belfatto, Antonella* <i>Politecnico di Milano</i> ; White, Derek A. <i>Univ. of Texas Southwestern</i> ; Zhang, Zhongwei <i>Univ. of Texas Southwestern</i> ; Zhang, Zhang <i>Univ. of Texas Southwestern</i> ; Cerveri, Pietro <i>Politecnico di Milano</i> ; Baroni, Guido <i>Politecnico di Milano</i> ; Mason, Ralph P. <i>Univ. of Texas Southwestern</i>		
10:00-11:30		ThBPoT9.10
Inference of Asynchronous Boolean Network from Biological Pathways	3270-3274	
Das, Haimabati* <i>Indian Institute of Technology Kharagpur</i> ; Layek, Ritwik <i>Indian Institute of Technology Kharagpur</i>		
10:00-11:30		ThBPoT9.11
Predicting Protein Function from Biomedical Text	3275-3278	
Taha, Kamal* <i>Khalifa Univ.</i> ; Yoo, Paul <i>Bournemouth Univ.</i>		
10:00-11:30		ThBPoT9.12
Differential Pathlength Factor Estimation for Brain-Like Tissue from a Single-Layer Monte Carlo Model	3279-3282	
Chatterjee, Subhasri* <i>City Univ. London</i> ; Phillips, Justin <i>City Univ. London</i> ; Kyriacou, Panayiotis <i>City Univ. London</i>		
10:00-11:30		ThBPoT9.13
GPU Technology as a Platform for Accelerating Physiological Systems Modeling based on Laguerre-Volterra Networks	3283-3286	
Papadopoulos, Agathoklis <i>Univ. of Cyprus</i> ; Kostoglou, Kyriaki <i>Univ. of Cyprus</i> ; Mitsis, Georgios D.* <i>Univ. of Cyprus</i> ; Theocharides, Theocharis <i>Univ. of Cyprus</i>		
10:00-11:30		ThBPoT9.14
Software Tools for Data Modelling and Processing of Human Body Temperature Circadian Dynamics ...	3287-3290	
Petrova, Elena* <i>Ulyanovsk State Univ.</i> ; Afanasova, Anastasiya <i>Ulyanovsk State Univ.</i>		
10:00-11:30		ThBPoT9.16
The Volterra Functional Series is a Viable Alternative to Kinetic Models for Synaptic Modeling – Calibration and Benchmarking	3291-3294	
Hu, Eric* <i>Univ. of Southern California</i> ; Bouteiller, Jean-Marie Charles <i>Univ. of Southern California</i> ; Song, Dong <i>Univ. of Southern California</i> ; Berger, Theodore <i>Univ. of Southern California</i>		

5.12 Therapeutic Intravascular Devices II (Poster Session)

- 10:00-11:30 ThBPoT10.1
Bearing Gap Adjustment for Improvement of Levitation Performance in a Hydrodynamically Levitated Centrifugal Blood Pump 3295-3298
 Kosaka, Ryo* *AIST*; Yoshida, Fumihiko *Tokyo Univ. of Science*; Nishida, Masahiro *National Institute of Advanced Industrial Science and Technology*; Maruyama, Osamu *National Institute of Advanced Industrial Science and Technology*; Kawaguchi, Yasuo *Tokyo Univ. of Science*; Yamane, Takashi *Kobe Univ.*
- 10:00-11:30 ThBPoT10.2
A New Approach to Generate Arbitrary Pulsatile Pressure Wave Forms in Mechanical Circulatory Support Systems 3299-3302
 Aghababaei, Amin* *Ruhr-Univ. Bochum*; Hexamer, Martin *Ruhr-Univ. Bochum*
- 10:00-11:30 ThBPoT10.3
Effect of Intra-Aortic Balloon Pump on Coronary Blood Flow during Different Balloon Cycles Support: A Computer Study 3303-3306
 Aye, Thin Pa Pa* *Mahidol Univ.*; Htet, Zwe Lin *Mahidol Univ.*; Singhavilai, Thamvarit *Mahidol Univ.*; Naiyanetr, Phornphop *Mahidol Univ.*
- 10:00-11:30 ThBPoT10.4
Hemodynamics during Rotary Blood Pump Support with Speed Synchronization in Heart Failure Condition: A Modelling Study 3307-3310
 Htet, Zwe Lin *Mahidol Univ.*; Aye, Thin Pa Pa *Mahidol Univ.*; Singhavilai, Thamvarit *Mahidol Univ.*; Naiyanetr, Phornphop* *Mahidol Univ.*
- 10:00-11:30 ThBPoT10.5
Oscillometric Measurement of Arterial Pulse Pressure for Patients Supported by a Rotary Blood Pump ... 3311-3314
 Yu, Yih-Choung* *Lafayette College*; Peterson, Anna *Lafayette College*
- 10:00-11:30 ThBPoT10.6
Hemodynamic Performance of Edwards Intuity Valve in a Compliant Aortic Root Model 3315-3318
 Jahren, Silje Ekroll* *ARTORG Center, Univ. of Bern, Bern*; Heinisch, Paul Philipp *Dept. of Cardiovascular Surgery, Univ. Hospital Bern,;* Wirz, Jessica *ARTORG Center, Univ. of Bern, Bern*; Winkler, Bernhard Michael *Dept. of Cardiovascular Surgery, Univ. Hospital Bern,;* Carrel, Thierry *Dept. of Cardiovascular Surgery, Univ. Hospital Bern,;* Obrist, Dominik *ARTORG Center, Univ. of Bern, Bern*
- 10:00-11:30 ThBPoT10.7
Design of Bioprosthetic Aortic Valves using Biaxial Test Data 3319-3322
 Dabiri, Yaghoub* *The Univ. of Calgary*; Paulson, Kent *The Univ. of Calgary*; Tyberg, John *The Univ. of Calgary*; Ronsky, Janet L. *Univ. of Calgary*; Ali, Imtiaz *The Univ. of Calgary*; Di Martino, Elena *The Univ. of Calgary*; Narine, Kishan *The Univ. of Calgary*
- 10:00-11:30 ThBPoT10.8
Energy-Efficient Implantable Transmitter for Restenosis Monitoring with Intelligent-Stents 3323-3326
 Rivas, David* *Univ. of Cantabria*; Miguel, Jose A. *Univ. of Cantabria*; Lechuga, Yolanda *Univ. of Cantabria*; Allende, Miguel A. *Univ. of Cantabria*; Martinez, Mar *Univ. of Cantabria*
- 10:00-11:30 ThBPoT10.9
3D Velocity Field Characterization of Prosthetic Heart Valve with Two Different Valve Testers by Means of Stereo-PIV 3327-3330
 D'Avenio, Giuseppe* *Istituto Superiore di Sanità*; Grigioni, Mauro *Istituto Superiore di Sanità*; Daniele, Carla *Istituto Superiore di Sanità*; Morbiducci, Umberto *Politecnico di Torino*; Hamilton, Kathrin *Helmholtz-Institute, Aachen*

ThBPoT11: 10:00-11:30 Gold Room
5.13 Heart Rate Variability (Poster Session)

- 10:00-11:30 ThBPoT11.1
Towards an Objective Measurement of Emotional Stress: Preliminary Analysis based on Heart Rate Variability 3331-3334
Arza Valdés, Adriana* *Autonomous Univ. of Barcelona*; Garzón Rey, Jorge Mario *Univ. Autonoma de Barcelona*; Hemando, Alberto *Univ. of Zaragoza*; Aguilo, Jordi *School of Engineering. Autonomous Univ. of Barcelona.*; Bailon, Raquel *Univ. of Zaragoza*
- 10:00-11:30 ThBPoT11.2
Statistical Assessment of Performance of Algorithms for Detrending RR Series 3335-3338
Fasano, Antonio* *Univ. Campus Bio-Medico di Roma*; Villani, Valeria *Univ. degli Studi di Modena e Reggio Emilia*
- 10:00-11:30 ThBPoT11.3
Concomitant Dynamic Changes in Autonomic Nervous System Function and Nasal Airflow Resistance during Allergen Provocation 3339-3342
Seppänen, Tiina Maarit* *Univ. of Oulu*; Alho, Olli-Pekka *Univ. of Oulu*; Seppänen, Tapio *Univ. of Oulu*
- 10:00-11:30 ThBPoT11.4
Correlation between Autonomous Function and Left Ventricular Performance after Acute Myocardial Infarction 3343-3346
Cabiddu, Ramona* *Cardiopulmonary Physiotherapy Laboratory, Federal Univ. of*; Trimer, Renata *Cardiopulmonary Physiotherapy Laboratory, Federal Univ. of*; Italiano Monteiro, Clara *Cardiopulmonary Physiotherapy Laboratory, Federal Univ. of*; Borghi-Silva, Audrey *Cardiopulmonary Physiotherapy Laboratory, Federal Univ. of*; Trimer, Vitor *Cardiopulmonary Physiotherapy Laboratory, Federal Univ. of*; de Carvalho, Paulo *Univ. of Coimbra - NIF*; Rocha, Teresa *Inst Superior de Eng de Coimbra*; Paredes, Simao *Instituto Politécnico de Coimbra*; Bianchi, Anna Maria *Politecnico di Milano*; Henriques, Jorge *Univ. of Coimbra - NIF*
- 10:00-11:30 ThBPoT11.5
Alignment of R-R Interval Signals using the Circadian Heart Rate Rhythm 3347-3350
Gayraud, Nathalie Therese Helene *Univ. of Ioannina*; Manis, George* *Univ. of Ioannina*

ThBPoT12: 10:00-11:30 Gold Room
6.32 Sensory Neuroprostheses II (Poster Session)

- 10:00-11:30 ThBPoT12.1
Degeneration Stage-Specific Response Pattern of Retinal Ganglion Cell Spikes in Rd10 Mouse Retina 3351-3354
Park, Dae-jin *Chungbuk national Univ.*; Senok, Solomon *Alfaisal Univ.*; Goo, Yong Sook* *Chungbuk Nati Univ School of Medicine*
- 10:00-11:30 ThBPoT12.2
Fabrication and Functional Demonstration of a Smart Electrode with a Built-In CMOS Microchip for Neural Stimulation of a Retinal Prosthesis 3355-3358
Noda, Toshihiko* *Nara Institute of Science and Tech.*; Fujisawa, Takumi *Nara Institute of Science and Tech.*; Kawasaki, Ryohei *Nara Institute of Science and Tech.*; Tashiro, Hiroyuki *Kyushu Univ.*; Takehara, Hiroaki *Nara Institute of Science and Tech.*; Sasagawa, Kiyotaka *Nara Institute of Science and Tech.*; Tokuda, Takashi *Nara Institute of Science and Tech.*; Ohta, Jun *Nara Institute of Science and Tech.*
- 10:00-11:30 ThBPoT12.3
Electrically Evoked Potentials in an Ovine Model for the Evaluation of Visual Prosthesis Efficacy 3359-3362
Barriga-Rivera, Alejandro* *Univ. of New South Wales*; Eiber, Calvin D. *Univ. of New South Wales*; Dodds, Christopher William *Douglas Univ. of New South Wales*; Fung, Adrian *Australian School of Advanced Medicine, Macquarie Univ.*; Tatarinoff, Veronica *Graduate School of Biomedical Engineering, The Univ. of New*; Lovell, Nigel H. *Univ. of New South Wales*; Suaning, Gregg *The Univ. of New South Wales*
- 10:00-11:30 ThBPoT12.4
Patch Clamp Recordings of Retinal Bipolar Cells in Response to Extracellular Electrical Stimulation in Wholemout Mouse Retina 3363-3366
Walston, Steven *Univ. of Southern California*; Chow, Robert *Univ. of Southern California*; Weiland, James* *Univ. of Southern California*

10:00-11:30	ThBPoT12.5
Towards Determining the Afferent Sites of Perception Feedback on Residual Arms of Amputees with Transcutaneous Electrical Stimulation	3367-3370
Wang, Hui <i>Shenzhen Institutes of Advanced Technology, Chinese Academy of S</i> ; Fang, Peng <i>Shenzhen Institutes of Advanced Technology, Chinese Academy of S</i> ; Tian, Lan <i>Shenzhen Institutes of Advanced Technology, Chinese Academy of</i> ; Zheng, Yue <i>Shenzhen Institutes of Advanced Technology, Chinese Academy of S</i> ; Zhou, Hui <i>Shenzhen Institute of Advanced Technology</i> ; Li, Guanglin* <i>Shenzhen Institutes of Advanced Technology</i> ; Zhang, Xiufeng <i>National Research Center for Rehabilitation Technical Aids</i>	
10:00-11:30	ThBPoT12.6
A Wearable Mobility Device for the Blind using Retina-Inspired Dynamic Vision Sensors	3371-3374
Ghaderi, Viviane* <i>Univ. of Southern California</i> ; Mulas, Marcello <i>Technische Univ. München</i> ; Santos Pereira, Vinicius Felisberto <i>Technische Univ. München</i> ; Everding, Lukas <i>Technische Univ. München</i> ; Weikersdorfer, David <i>Google, Inc.</i> ; Conradt, Jorg <i>Technische Univ. München</i>	
10:00-11:30	ThBPoT12.7
Investigating the Feasibility of EVestG Assessment for Screening Concussion	3375-3378
Suleiman, Abed* <i>Univ. of Manitoba</i> ; Lithgow, Brian <i>Univ. of Manitoba</i> ; Mansouri, Behzad <i>Univ. of Manitoba</i> ; Moussavi, Zahra <i>Univ. of Manitoba</i>	
10:00-11:30	ThBPoT12.8
Semantic Labelling to Aid Navigation in Prosthetic Vision	3379-3382
Horne, Lachlan* <i>National ICT Australia</i> ; Alvarez, Jose <i>NICTA</i> ; McCarthy, Chris <i>NICTA</i> ; Barnes, Nick <i>NICTA Canberra Research Laboratory</i>	
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ThBPoT13: 10:00-11:30	Gold Room
6.33 Neural Stimulation II (Poster Session)	
10:00-11:30	ThBPoT13.1
Effects of Electrode Size and Spacing on Sensory Modalities in the Phantom Thumb Perception Area for the Forearm Amputees	3383-3386
Li, Peng <i>Shanghai Jiao Tong Univ.</i> ; Chai, Guohong <i>Shanghai Jiao Tong Univ.</i> ; Zhu, Kaihua <i>Shanghai Jiao Tong Univ.</i> ; Lan, Ning <i>Shanghai Jiao Tong Univ.</i> ; Sui, Xiaohong* <i>Shanghai Jiao Tong Univ.</i>	
10:00-11:30	ThBPoT13.2
A New Handheld Electromagnetic Cortical Stimulator for Brain Mapping during Open Skull Neurosurgery: A Feasibility Study	3387-3390
Buzzi, Jacopo <i>Politecnico di Milano</i> ; De Momi, Elena <i>Politecnico di Milano</i> ; Baratelli, Francesco Maria <i>Politecnico di Milano</i> ; Giacometti, Marco <i>Politecnico di Milano</i> ; Fiocchi, Serena <i>Consiglio Nazionale delle Ricerche CNR</i> ; Parazzini, Marta <i>Consiglio Nazionale delle Ricerche</i> ; Ravazzani, Paolo <i>CNR</i> ; Ferrigno, Giancarlo* <i>Politecnico di Milano</i>	
10:00-11:30	ThBPoT13.3
Interfacing in Silico and in Vitro Neuronal Networks	3391-3394
Bruzzone, Arianna <i>Univ. di Genova</i> ; Pasquale, Valentina <i>Istituto Italiano di Tecnologia</i> ; Nowak, Przemyslaw <i>Univ. of Genoa</i> ; Tessadori, Jacopo <i>IIT - Italian Institute of Technology</i> ; Massobrio, Paolo <i>Univ. of Genova</i> ; Chiappalone, Michela* <i>Italian Institute of Technology</i>	
10:00-11:30	ThBPoT13.4
Optimization of a Wearable Pudendal Nerve Stimulator using Computational Models	3395-3398
Nasrollahy Shiraz, Arsam* <i>Univ. College London</i> ; Leaker, Brian <i>Nephro Urology Clinical Trials Unit (NUCT) Ltd.</i> ; Demosthenous, Andreas <i>Univ. College London</i>	
10:00-11:30	ThBPoT13.5
Corticospinal Excitability Changes to Anodal TDCS Elucidated with NIRS-EEG Joint-Imaging: An Ischemic Stroke Study	3399-3402
Jindal, Utkarsh* <i>International Institute of Information Technology, Hyderabad</i> ; Sood, Mehak <i>International Institute of Information Technology, Hyderabad</i> ; Roy Chowdhury, Shubhajit <i>International Institute of Information Technology, Hyderabad</i> ; Das, Abhijit <i>Institute of Neurosciences Kolkata</i> ; Kondziella, Daniel <i>Rigshospitalet, Denmark and Norwegian Univ. of Science and</i> ; Dutta, Anirban <i>INRIA</i>	

- 10:00-11:30 ThBPoT13.6
A Comparison between Block and Smooth Modeling in Finite Element Simulations of TDCS 3403-3406
 Indahlastari, Aprinda *Arizona State Univ.*; Sadleir, Rosalind* *Arizona State Univ.*
- 10:00-11:30 ThBPoT13.7
Spatially Distributed Sequential Array Stimulation of Tibial Anterior Muscle for Foot Drop Correction ... 3407-3410
 Zhou, Hui *Shenzhen Institute of Advanced Technology*; Wang, Yingying *Shenzhen Institutes of Advanced Technology, Chinese Academy of S*; Chen, Wanzhen *Shenzhen Institutes of Advanced Technology, Chinese Academy of S*; Zhang, NanXin *Shenzhen institutes of Advanced Technology, Chinese Academy of Sc*; Krundel, Ludovic *Shenzhen Institutes of Advanced Technology, Chinese Academy of S*; Li, Guanglin* *Shenzhen Institutes of Advanced Technology*
- 10:00-11:30 ThBPoT13.8
Fiber Size-Selective Stimulation using Action Potential Filtering for a Peripheral Nerve Interface: A Simulation Study 3411-3414
 Rapeaux, Adrien* *Imperial College London*; Nikolic, Konstantin *Imperial College London*; Williams, Ian *Centre for Bio-Inspired Technology, Dept. of Electrical and E*; Eftekhari, Amir *Imperial College*; Constandinou, Timothy *Imperial College of Science, Technology and Medicine*
- 10:00-11:30 ThBPoT13.9
Fabrication and Characterization of Stimulus Nerve Cuff Electrode with Highly Roughened Surface for Chronic Implant 3415-3418
 Lee, Yi Jae *Korea Institute of Science and Technology*; Song, Kang-Il *Korea Institute of Science and Technology*; Kang, Ji Yoon *Korea Institute of Science and Tech*; Lee, Soo Hyun* *Korea Institute of Science and Technology*
- 10:00-11:30 ThBPoT13.10
Iterative Electrodes Increase Neural Recruitment for Deep Brain Stimulation 3419-3422
 Wei, Xuefeng* *The College of New Jersey*; Iyengar, Naina *The College of New Jersey*; DeMaria, Andrew *The College of New Jersey*
- 10:00-11:30 ThBPoT13.11
Wrist Rigidity Assessment during Deep Brain Stimulation Surgery 3423-3426
 Costa, Pedro *Faculdade de Engenharia da Univ. do Porto*; Rosas, Maria José S. *João Univ. Hospital*; Vaz, Rui S. *João Univ. Hospital*; Cunha, João Paulo Silva* *Univ. of Porto and INESC TEC*
- 10:00-11:30 ThBPoT13.12
Long-Term Detection of Parkinsonian Tremor Activity from Subthalamic Nucleus Local Field Potentials .. 3427-3431
 Houston, Brady* *Univ. of Washington*; Blumenfeld, Zachary *Stanford Univ.*; Quinn, Emma *Stanford Univ.*; Bronte-Stewart, Helen *Stanford Univ.*; Chizeck, Howard *Univ. of Washington*
- 10:00-11:30 ThBPoT13.13
Therapeutic Effects of Functional Electrical Stimulation on Motor Cortex in Children with Spastic Cerebral Palsy 3432-3435
 Mukhopadhyay, Rupsha *Indian Institute of Technology, Kharagpur*; Mahadevappa, Manjunatha* *Indian Institute of Technology Kharagpur*; Prasanna, Lenka *National Institute for the Orthopaedically Handicapped*; Biswas, Abhishek *National Institute for the Orthopaedically Handicapped*
- 10:00-11:30 ThBPoT13.14
Removal of Transcranial A.C. Current Stimulation Artifact from Simultaneous EEG Recordings by Superposition of Moving Averages 3436-3439
 Kohli, Siddharth* *The Univ. of Manchester*; Casson, Alexander James *The Univ. of Manchester*
- 10:00-11:30 ThBPoT13.15
A Fast Stimulability Screening Protocol for Neuronal Cultures on Microelectrode Arrays 3440-3443
 Kapucu, Fikret Emre* *Tampere Univ. of Technology*; Tanskanen, Jarno M. A. *Tampere Univ. of Technology*; Yuting, Yuan *Tampere Univ. of Technology*; Hyttinen, Jari *Tampere Univ. of Technology*

10:00-11:30 ThBPoT13.16
Optimization of Parkinson Disease Treatment Combining Anti-Parkinson Drugs and Deep Brain Stimulation using Patient Diaries 3444-3447
Schneider, Jakob* *Czech Technical Univ. in Prague*; Novak, Daniel *Czech Technical Univ. in Prague*; Jech, Robert *First Faculty of Medicine, Charles Univ.*

10:00-11:30 ThBPoT13.17
Bioimpedance Spectroscopy Method for Investigating Changes to Intracranial Dose during Transcranial Direct Current Stimulation 3448-3451
Caytak, Hershel *Univ. of Ottawa*; Nejadgholi, Isar *Univ. of Ottawa*; Batkin, Izmail *Ottawa Univ.*;
Bolic, Miodrag* *Univ. of Ottawa*

ThBPoT14: 10:00-11:30 Gold Room
6.34 Motor Learning, Neural Control, and Neuromuscular Systems II (Poster Session)

10:00-11:30 ThBPoT14.1
Effect of Handedness on Muscle Synergies during Upper Limb Planar Movements 3452-3455
Duthilleul, Nicolas *Ecole Polytechnique Federale de Lausanne*; Pirondini, Elvira *TNE - EPFL*; Coscia, Martina* *TNE Lab Ecole Polytechnique Federale de Lausanne*; Micera, Silvestro *Scuola Superiore Sant'Anna*

10:00-11:30 ThBPoT14.2
Effects of Prosthesis use on the Capability to Control Myoelectric Robotic Prosthetic Hands 3456-3459
Atzori, Manfredo* *Univ. of Applied Sciences Western Switzerland (HES-SO Valai)*; Mittaz Hager, Anne-Gabrielle *School of Health Sciences, Physiotherapy, Univ. of Applied*; Elsig, Simone *School of Health Sciences, Physiotherapy, Univ. of Applied*; Giatsidis, Giorgio *Clinic of Plastic Surgery, Padova Univ. Hospital*; Bassetto, Franco *Clinic of Plastic Surgery, Padova Univ. Hospital*; Müller, Henning *Univ. of Applied Sciences Western Switzerland (HES-SO)*

10:00-11:30 ThBPoT14.3
High Density EMG Investigation of H-Reflex Distribution Over the Soleus Muscle 3460-3463
Botter, Alberto* *Politecnico di Torino*; Vazzoler, Ivan *Politecnico di Torino*; Vieira, Taian *Politecnico di Torino*

10:00-11:30 ThBPoT14.4
Does the Global Temporal Activation Differ in Triceps Surae during Standing Balance? 3464-3467
Vieira dos Anjos, Fabio* *Politecnico di Torino*; Fontanella, Flavia *Politecnico di Torino*; Gazzoni, Marco *Politecnico di Torino*; Vieira, Taian *Politecnico di Torino*

10:00-11:30 ThBPoT14.5
Time to Boundary Function to Assess Upright Stance in Blind Children 3468-3471
D'Anna, Carmen* *Roma TRE Univ.- Engineering Dept.*; Gazzellini, Simone *Bambino Gesù Children's Hospital*; Petrarca, Maurizio *Pediatric Hospital Bambino Gesù*; Vasco, Gessica *Bambino Gesù Children's Hospital*; Castelli, Enrico *Pediatric Hospital Bambino Gesù*; Schmid, Maurizio *Roma Tre Univ.*; Conforto, Silvia *Univ. Roma TRE*

10:00-11:30 ThBPoT14.6
Motor Control Strategies in the Bimanual Stabilization of an Unstable Virtual Tool 3472-3475
Avila Mireles, Edwin Johnatan* *Istituto Italiano di Tecnologia*; De Santis, Dalia *Istituto Italiano di Tecnologia*; Squeri, Valentina *Istituto Italiano di Tecnologia*; Morasso, Pietro *Italian Institute of Technology*; Zenzeri, Jacopo *Istituto Italiano di Tecnologia*

10:00-11:30 ThBPoT14.7
Development of a Method to Quantify Inter-Limb Coupling in Individuals with Hemiparetic Stroke 3476-3479
Hawe, Rachel* *Northwestern Univ.*; Dewald, Julius P. A. *Northwestern Univ.*

10:00-11:30 ThBPoT14.8
A Wearable Vibrotactile Device for Upper-Limb Bilateral Motion Training in Stroke Rehabilitation: A Case Study 3480-3483
Hung, Chai-Ting* *The Univ. of British Columbia*; Croft, Elizabeth Anne *Univ. of British Columbia*; Van der Loos, H. F. Machiel *Univ. of British Columbia*

10:00-11:30		ThBPoT14.9
FNIRS Measure of Transitive and Intransitive Gesture Execution, Observation and Imagination in Ecological Setting: A Pilot Study	3484-3487	
Vanutelli, Maria Elide <i>Catholic Univ. of Milan</i> ; Cortesi, Livia <i>Catholic Univ. of Milan</i> ; Molteni, Erika* <i>Scientific Institute, IRCCS E. Medea</i> ; Balconi, Michela <i>Catholic Univ. of Milan</i>		
10:00-11:30		ThBPoT14.10
Phantom Movements from Physiologically Inappropriate Muscles: A Case Study with a High Transhumeral Amputee	3488-3491	
Gade, Julie <i>Aalborg Univ.</i> ; Hugosdottir, Rosa <i>Aalborg Univ.</i> ; Kamavuako, Ernest Nlandu* <i>Aalborg Univ.</i>		
10:00-11:30		ThBPoT14.11
Muscle Fatigue Estimation with Twitch Force Derived from Seng Peaks	3492-3495	
Youngjin, Na <i>KAIST</i> ; Lee, Hae-Dong <i>Yonsei Univ.</i> ; Kim, Jung* <i>Korea Advanced Institute of Science and Tech.</i>		
10:00-11:30		ThBPoT14.12
Decomposing Time Series Data by a Non-Negative Matrix Factorization Algorithm with Temporally Constrained Coefficients	3496-3499	
Cheung, Vincent CK* <i>The Chinese Univ. of Hong Kong</i> ; Devarajan, Karthik <i>Fox Chase Cancer Center, Philadelphia, PA, 19111 USA</i> ; Severini, Giacomo <i>Harvard Medical School</i> ; Turolla, Andrea <i>IRCCS San Camillo Hospital Foundation</i> ; Bonato, Paolo <i>Harvard Medical School</i>		
10:00-11:30		ThBPoT14.13
Intermittent Appearances of Saddle-Type Hyperbolic Dynamics during Human Stick Balancing on a Manually Controlled Cart	3500-3503	
Yoshikawa, Naoya* <i>Osaka Univ.</i> ; Suzuki, Yasuyuki <i>Osaka Univ.</i> ; Kiyono, Ken <i>Osaka Univ.</i> ; Nomura, Taishin <i>Osaka Univ.</i>		
10:00-11:30		ThBPoT14.14
A Computer Vision based Candidate for Functional Balance Test	3504-3508	
Nalci, Alican* <i>Univ. of California San Diego</i> ; Khodamoradi, Alireza <i>Univ. of California San Diego</i> ; Balkan, Ozgur <i>Univ. of California San Diego</i> ; Nahab, Fatta <i>Univ. of California San Diego</i> ; Garudadri, Harinath <i>Univ. of California, San Diego</i>		
10:00-11:30		ThBPoT14.15
Analysis of Neck Muscle Activity and Comparison of Head Movement and Body Movement during Rotational Motion	3509-3512	
Sirikantharajah, Shahini <i>Ryerson Univ.</i> ; Valter McConville, Kristiina M.* <i>Ryerson Univ.</i> ; Zolfaghari, Nika <i>Ryerson Univ.</i>		
ThBPoT15: 10:00-11:30		Gold Room
7.5 Cell and Molecular Biotechnology II (Poster Session)		
10:00-11:30		ThBPoT15.1
The Effect of Light-Emitting Diode Irradiation at Different Wavelengths on Calcification of Osteoblast-Like Cells in 3D Culture	3513-3516	
Chintavalakorn, Rochaya <i>King Mongkut's Univ. of Technology Thonburi</i> ; Khantachawana, Anak* <i>King Mongkut's Univ. of Technology Thonburi</i> ; Viravaidya-Pasuwat, Kwanchanok <i>King Mongkut's Univ. of Technology, Thonburi</i> ; Tanglitanont, Tatsanee <i>Mahidol Univ.</i> ; Santiwong, Peerapong <i>Mahidol Univ.</i>		
10:00-11:30		ThBPoT15.2
Computational Tool for Morphological Analysis of Cultured Neonatal Rat Cardiomyocytes	3517-3520	
Leite, Maria Ruth <i>Univ. of São Paulo</i> ; Cestari, Idagene <i>Heart Institute, Univ. of São Paulo</i> ; Cestari, Ismar Newton* <i>Heart Institute (InCor) Univ. of São Paulo</i>		
10:00-11:30		ThBPoT15.3
Efficacy of Ultrasound Mediated Microbubbles in Diclofenac Gel to Enhance Transdermal Permeation in Rheumatoid Arthritis Induced Rat	3521-3524	
Liao, Ai-Ho* <i>National Taiwan Univ. of Science and Technology</i> ; Chuang, Ho-Chiao <i>National Taipei Univ. of Technology</i>		

ThBPoT16: 10:00-11:30		Gold Room
7.6 Novel Biomaterials Technologies (Poster Session)		
10:00-11:30		ThBPoT16.1
Neuralization of Mouse Embryonic Stem Cells in Alginate Hydrogels under Retinoic Acid and SAG Treatment		3525-3528
Delivopoulos, Evangelos* <i>Univ. of Reading</i> ; Shakesheff, Kevin <i>Univ. of Nottingham</i> ; Peto, Heather <i>Univ. of Nottingham</i>		
10:00-11:30		ThBPoT16.2
Evaluation of the Repairing Effect of Collagen Type I and MaxGel on the Infarcted Myocardium in an Animal Model		3529-3532
Neuta, Paola Andrea* <i>Univ. Autónoma de Occidente</i> ; Rojas, Diana Marcela <i>Ghent Univ.</i> ; Agredo, Wilfredo <i>Univ. Autonoma de Occidente</i> ; Gutierrez, Jose Oscar <i>Univ. del Valle</i>		
10:00-11:30		ThBPoT16.3
High Pressure Assessment of Bilayered Electrospun Vascular Grafts by Means of an Electroforce Biodynamic System®		3533-3536
Armentano, Ricardo Luis* <i>Republic Univ., Favaloro Univ.</i> ; Valdez Jasso, Daniela <i>Univ. of Illinois at Chicago (UIC)</i> ; Cymberknop, Leandro Javier <i>Univ. Tecnológica Nacional</i> ; Montini Ballarin, Florencia <i>Research Institute for Materials Science and Technology (INTEMA)</i> ; Velez, Daniela <i>Univ. of Illinois at Chicago (UIC)</i> ; Caracciolo, Pablo <i>INTEMA - Mar del Plata Univ.</i> ; Abraham, Gustavo <i>Abel Research Institute for Materials Science and Technology (INTEMA)</i>		
10:00-11:30		ThBPoT16.4
Massively-Multicellular Alignment with the Self-Aggregate of Air Bubbles		3537-3540
Tanaka, Nobuyuki* <i>RIKEN</i> ; Haraguchi, Yuji <i>Tokyo Women's Medical Univ.</i> ; Shimizu, Tatsuya <i>Tokyo Women's Medical Univ.</i> ; Yamato, Masayuki <i>Tokyo Women's Medical Univ.</i> ; Okano, Teruo <i>Tokyo Women's Medical Univ.</i> ; Miyake, Jun <i>Osaka Univ.</i>		
10:00-11:30		ThBPoT16.5
Natural Magnetic Nanoparticle Containing Droplet for Smart Drug Delivery and Heat Treatment		3541-3544
Lee, Suwon* <i>Univ. of Ulsan</i> ; Ahn, Jae Hyun <i>Seoul National Univ.</i> ; Choi, Hongsoo <i>DGIST</i> ; Seo, Jong Mo <i>Seoul National Univ., School of Engineering</i> ; Cho, Dong Il <i>Seoul National Univ.</i> ; Koo, Kyoin <i>Univ. of Ulsan</i>		
10:00-11:30		ThBPoT16.6
The Impact of Bone Microstructure on the Field Distribution of Electrostimulative Implants		3545-3548
Zimmermann, Ulf* <i>Univ. of Rostock</i> ; van Rienen, Ursula <i>Univ. of Rostock</i>		
10:00-11:30		ThBPoT16.7
Development of Technique for Laser Welding of Biological Tissues Using Laser Welding Device and Nanocomposite Solder		8209-8212
Gerasimenko, Alexander <i>National Research University of Electronic Technology (MIET)</i> ; Ichkitidze, Levan <i>National Research University of Electronic Technology (MIET)</i> ; Podgaetsky, Vitaly <i>National Research University of Electronic Technology (MIET)</i> ; Ryabkin, Dmitriy <i>National Research University of Electronic Technology (MIET)</i> ; Pyankov, Evgeniy <i>National Research University of Electronic Technology (MIET)</i> ; Savel'ev, Michail <i>National Research University of Electronic Technology (MIET)</i> ; Selishchev, Sergey <i>National Research University of Electronic Technology (MIET)</i>		

ThBPoT17: 10:00-11:30		Gold Room
7.7 Tissue Engineering (Poster Session)		

10:00-11:30		ThBPoT17.1
Controlling Cell Migration and Adhesion into a Scaffold by External Electric Currents		3549-3552
Jaatinen, Leena* <i>Tampere Univ. of Technology</i> ; Hyttinen, Jari <i>Tampere Univ. of Technology</i> ; Voros, Janos <i>ETH Zurich</i>		
10:00-11:30		ThBPoT17.2
On-Line Tracking of Living Cell Subjected to Cyclic Stretch		3553-3556
Huang, Wenjing <i>Kyushu Institute of Technology</i> ; Ahmad, Belal <i>Kyushu Institute of Technology</i> ; Kawahara, Tomohiro* <i>Kyushu Institute of Technology</i>		

10:00-11:30	ThBPoT17.3
Microengineered Embryonic Stem Cells Niche to Induce Neural Differentiation	3557-3560
Joshi, Ramila <i>The Univ. of Akron</i> ; Tavana, Hossein* <i>The Univ. of Akron</i>	
10:00-11:30	ThBPoT17.4
Mimicking Biophysical Stimuli within Bone Tumor Microenvironment	3561-3564
Marturano, Alessandro <i>Columbia Univ., Dept. of Biomedical Engineering</i> ; Yeager, Keith <i>Columbia Univ.</i> ; Bach, Daniel <i>The Cooper Union. Dept. of Mechanical Engineering</i> ; Villasante, Aranzazu <i>Columbia Univ., Dept. of Biomedical Engineering</i> ; Cimetta, Elisa* <i>Columbia Univ.</i> ; Vunjak-Novakovic, Gordana <i>Columbia Univ.</i>	
ThBPoT18: 10:00-11:30	
8.16 Rehabilitation and Assitive Technologies (Poster Session)	
10:00-11:30	ThBPoT18.1
Real-Time Transmission of Panoramic Images for a Telepresence Wheelchair	3565-3568
Ha, Van Kha Ly* <i>Univ. of Technology, Sydney</i> ; Nguyen, Tuan Nghia <i>Univ. of Technology, Sydney</i> ; Nguyen, Hung T. <i>Univ. of Technology, Sydney</i>	
10:00-11:30	ThBPoT18.2
A Novel Target Following Solution for an Electric Powered Hospital Bed	3569-3572
Nguyen, Huy Hoang* <i>Univ. of Technology Sydney</i> ; Nguyen, Hung T. <i>Univ. of Technology, Sydney</i> ; Nguyen, Tuan Nghia <i>Univ. of Technology, Sydney</i> ; Clout, Raymond <i>Univ. of Technology, Sydney</i>	
10:00-11:30	ThBPoT18.3
A Robotic Gait Training System Integrating Split-Belt Treadmill, Footprint Sensing and Synchronous EEG Recording for Neuro-Motor Recovery	3573-3577
Liu, Yi-Hung* <i>National Taipei Univ. of Technology</i> ; Zhang, Bo <i>Waseda Univ.</i> ; Liu, Quanquan <i>Waseda Univ.</i> ; Hsu, Wei-Chun <i>Graduate Institute of Biomedical Engineering, National Taiwan Un</i> ; Hsiao, Yu-Tsung <i>National Taipei Univ. of Technology</i> ; Su, Jui-Yiao <i>Industrial Technology Research Institute</i> ; Kobayashi, Yo <i>Waseda Univ.</i> ; Fujie, Masakatsu G. <i>Waseda Univ.</i>	
10:00-11:30	ThBPoT18.4
Stiffness-Based Tuning of an Adaptive Impedance Controller for Robot-Assisted Rehabilitation of Upper Limbs	3578-3581
Maldonado, Berenice <i>Univ. Autonoma de Nayarit</i> ; Mendoza, Marco* <i>Univ. Autonoma de San Luis Potosi</i> ; Bonilla, Isela <i>Univ. Autonoma de San Luis Potosi</i> ; Reyna-Gutierrez, Ivan <i>Univ. Autonoma de San Luis Potosi</i>	
10:00-11:30	ThBPoT18.5
Evaluation of Venous Return in Lower Limb by Passive Ankle Exercise Performed by PHARAD	3582-3585
Yonezawa, Teru* <i>Tokyo Univ. of Science</i> ; Nomura, Kenta <i>Tokyo Univ. of Science</i> ; Onodera, Takayuki <i>Tokyo Univ. of Science</i> ; Ichimura, Shiro <i>Tokyo Univ. of Science</i> ; Takemura, Hiroshi <i>Tokyo Univ. of Science</i> ; Mizoguchi, Hiroshi <i>Tokyo Univ. of Science</i>	
10:00-11:30	ThBPoT18.6
A Tactile Handle for Cane use Monitoring	3586-3589
Trujillo-León, Andrés <i>Univ. of Malaga</i> ; Ady, Ragou <i>Univ. Pierre et Marie Curie</i> ; Vidal-Verdu, Fernando <i>Univ. of Malaga</i> ; Bachta, Wael* <i>Univ. Pierre et Marie Curie</i>	
10:00-11:30	ThBPoT18.7
An Ecological Evaluation of the Metabolic Benefits Due to Robot-Assisted Gait Training	3590-3593
Peri, Elisabetta <i>NEARlab, Dept. of Electronics, Information and bioengineeri</i> ; Biffi, Emilia* <i>Scientific Institute Eugenio Medea, Bosisio Parini</i> ; Cristina, Maghini <i>Scientific Institute Eugenio Medea, Bosisio Parini</i> ; Marzorati, Mauro <i>National Research Council</i> ; Diella, Eleonora <i>Scientific Institute Eugenio Medea, Bosisio Parini</i> ; Pedrocchi, Alessandra <i>Politecnico di Milano</i> ; Turconi, Anna Carla <i>Scientific Institute Eugenio Medea, Bosisio Parini</i> ; Reni, Gianluigi <i>IRCCS</i>	
10:00-11:30	ThBPoT18.8
Wrist Proprioceptive Acuity: A Comprehensive Robot-Aided Assessment	3594-3597
Cappello, Leonardo <i>Istituto Italiano di Tecnologia</i> ; Contu, Sara <i>NTU</i> ; Konczak, Juergen <i>Univ. of Minnesota</i> ; Masia, Lorenzo* <i>Nanyang Technological Univ.</i>	

10:00-11:30	ThBPoT18.9
Preliminary Analysis of Non-Dominant Proprioceptive Acuity and Interlimb Asymmetry in the Human Wrist	3598-3601
Contu, Sara <i>NTU</i> ; Cappello, Leonardo <i>Istituto Italiano di Tecnologia</i> ; Konczak, Juergen <i>Univ. of Minnesota</i> ; Masia, Lorenzo* <i>Nanyang Technological Univ.</i>	
10:00-11:30	ThBPoT18.10
An Intelligent Control Framework for Robot-Aided Resistance Training using Hybrid System Modeling and Impedance Estimation	3602-3606
Xu, Guozheng <i>Nanjing Univ. of Posts and Telecommunications</i> ; Guo, Xiaobo* <i>Anyang Institute of Technology</i> ; Zhai, Yan <i>Anyang Institute of Technology</i> ; Li, Huijun <i>Southeast Univ.</i>	
10:00-11:30	ThBPoT18.11
Initial Investigation into the Effect of an Active/Passive Exoskeleton on Hammer Curl Performance in Healthy Subjects	3607-3610
Matthew, Robert, Peter* <i>UC Berkeley</i> ; Mica, Eric, John <i>UC Berkeley</i> ; Meinhold, Waiman <i>UC Berkeley</i> ; Loeza, Joel, Alfredo <i>UC Berkeley</i> ; Tomizuka, Masayoshi <i>UC Berkeley</i> ; Bajcsy, Ruzena <i>UC Berkeley, CITRIS</i>	
10:00-11:30	ThBPoT18.12
Estimating EMG Signals to Drive NeuroMusculoSkeletal Models in Cyclic Rehabilitation Movements	3611-3614
Tagliapietra, Luca* <i>Univ. of Padua</i> ; Vivian, Michele <i>Univ. of Padua</i> ; Sartori, Massimo <i>Univ. of Padova</i> ; Farina, Dario <i>Bernstein Center for Computational Neuroscience, Univ. Medic</i> ; Reggiani, Monica <i>Univ. of Padova</i>	
ThBPoT19: 10:00-11:30	Gold Room
8.17 Biomimetic Robotics (Poster Session)	
10:00-11:30	ThBPoT19.1
Beyond Astronaut's Capabilities: The Current State of the Art	3615-3618
Gemignani, Jessica* <i>European Space Agency</i> ; Gheysens, Tom <i>European Space Agency</i> ; Summerer, Leopold <i>European Space Agency</i>	
10:00-11:30	ThBPoT19.2
Design and Development of a Bio-Inspired, Under-Actuated Soft Gripper	3619-3622
Shah, Syed Taimoor Hassan* <i>Scuola Superiore Sant'Anna, Pisa, Italy</i> ; Manti, Mariangela <i>Scuola Superiore Sant'Anna, Pisa, Italy</i> ; Passetti, Giovanni <i>Scuola Superiore Sant'Anna, the BioRobotics Institute</i> ; D'Elia, Nicolò <i>The BioRobotics Institute, Scuola Superiore Sant'Anna, Pisa, Ita</i> ; Cianchetti, Matteo <i>Scuola Superiore Sant'Anna</i> ; Laschi, Cecilia <i>Scuola Superiore Sant'Anna</i>	
10:00-11:30	ThBPoT19.3
A Biorobotic Model of the Human Larynx	3623-3626
Manti, Mariangela* <i>Scuola Superiore Sant'Anna, Pisa, Italy</i> ; Cianchetti, Matteo <i>Scuola Superiore Sant'Anna</i> ; Nacci, Andrea <i>Otolaryngology Audiology and Phoniatic Unit, Univ. Hospita</i> ; Ursino, Francesco <i>National Institute for Research in Phoniatics, Univ. of Pi</i> ; Laschi, Cecilia <i>Scuola Superiore Sant'Anna</i>	
10:00-11:30	ThBPoT19.4
Self-Entrainment to Optimal Gaits of an Underactuated Biomimetic Swimming Robot using Adaptive Frequency Oscillators	3627-3630
Alessi, Alessio* <i>Univ. Campus Bio-Medico di Roma</i> ; Accoto, Dino <i>Campus Bio-Medico Univ.</i> ; Guglielmelli, Eugenio <i>Campus Bio-Medico Univ.</i>	
10:00-11:30	ThBPoT19.5
Magnetically Driven Microrobotic System for Cancer Cell Manipulation	3631-3634
Lucarini, Gioia* <i>Scuola Superiore Sant'Anna</i> ; Iacovacci, Veronica <i>Scuola Superiore Sant'Anna</i> ; Ricotti, Leonardo <i>Scuola Superiore Sant'Anna</i> ; Comisso, Nicola <i>Institute for Energetics and Interphases-CNR</i> ; Dario, Paolo <i>Scuola Superiore Sant'Anna</i> ; Menciassi, Arianna <i>Scuola Superiore Sant'Anna</i>	

ThBPoT20: 10:00-11:30 Gold Room
8.18 Image Guided Surgery (Poster Session)

10:00-11:30 ThBPoT20.1
Anticipation of Brain Shift in Deep Brain Stimulation Automatic Planning 3635-3638
Hamzé, Noura* *ICube, Univ. of Strasbourg*; Bilger, Alexandre *Univ. of Luxembourg*; Duriez, Christian *INRIA*;
Cotin, Stephane *Inria*; Essert, Caroline *ICube - Univ. de Strasbourg*

10:00-11:30 ThBPoT20.2
Planning Screw Insertion Trajectory in Lumbar Spinal Fusion using Pre-Operative CT Images 3639-3642
Ahmadian, Alireza* *Tehran Univ. of Medical Sciences*; Daemi, Najmeh *Tehran Univ. of Medical Sciences, Biomedical Engineering De*; Mirbagheri, Alireza *Tehran Univ. of Medical Sciences (TUMS)*; Ahmadian, Amirhossein *Sharif Univ. of Tech.*; Saberi, Hooshang *Imam hospital, Research Center for Science and Tech. in Med*; Amidi, Fardin *Tehran Univ. of medical science*; Alirezaie, Javad *Ryerson Univ., Univ of Waterloo*

10:00-11:30 ThBPoT20.3
Shoulder-Mounted Robot for MRI-Guided Arthrography: Accuracy and Mounting Study 3643-3646
Monfaredi, Reza* *Children's National Health System*; Wilson, Emmanuel *Children's National Medical Center, SZI*; Sze, Raymond *Children's National Medical Center, SZI*; Sharma, Karun *Children's National Medical Center*; Azizi, Bamshad *Children's National Health System*; lordachita, Iulian *Johns Hopkins Univ.*; Cleary, Kevin *Children's National Medical Center*

ThBPoT21: 10:00-11:30 Gold Room
11.2 BME and Global Health (Poster Session)

10:00-11:30 ThBPoT21.1
Enhancing Professionalism among Engineering Students through Involvements in Technical Societies .. 3647-3650
Ghosh, Sreejita* *Univ. of Groningen*; Samineni, Anvesh *VIT Univ., Vellore*; Mandal, Subhamoy *TU München and Helmholtz Zentrum München*; Murari, Bhaskar Mohan *VIT Univ., Vellore*

10:00-11:30 ThBPoT21.2
Walking Cycle Control for an Active Ankle Prosthesis with one Degree of Freedom Monitored from a Personal Computer 3651-3654
Guzhñay Cordero, Andrés Esteban *Univ. Politécnica Salesiana; Calle Arevalo, Luis Alfredo Univ. Politécnica Salesiana*; Zambrano Abad, Julio César* *Univ. Politécnica Salesiana*

ThBPoT22: 10:00-11:30 Gold Room
11.3 Instruction and Learning (Poster Session)

10:00-11:30 ThBPoT22.1
Complete Factorial Design Experiment for 3D Load Cell Instrumented Crank Validation 3655-3658
Valle-Casas, Omar *UFRGS*; Dalazen, Rafael *UFRGS*; Balbinot, Alexandre *Federal Univ. of Rio Grande do Sul (UFRGS)*; Cene, Vinicius H.* *UFRGS*

10:00-11:30 ThBPoT22.2
An Assessment Strategy for Proposals of Engineering Projects in the Bachelor of Biomedical Engineering Curriculum at Universidad Autónoma Metropolitana-Iztapalapa 3659-3662
Castaneda-Villa, Norma* *Univ. Autónoma Metropolitana-Izt*; Jimenez-Gonzalez, Aida *Univ. Autonoma Metropolitana-Iztapalapa*; Ortiz-Posadas, Martha R. *Univ. Autónoma Metropolitana*

10:00-11:30 ThBPoT22.3
Closed Loop Control of a Robot Assisted Smart Flexible Needle for Percutaneous Intervention 3663-3666
Maria Joseph, Felix Orlando* *Case Western Reserve Univ.*; Podder, Tarun *UH - Case Western Reserve Univ.*

10:00-11:30 ThBPoT22.4
Student Teaching and Research Laboratory Focusing on Brain-Computer Interface Paradigms – Creative Environment for Computer Science Students 3667-3670
Rutkowski, Tomasz* *Univ. of Tsukuba*

10:00-11:30 ThBPoT22.5
Instrumented and Interactive Limb Models for Biomechanics Education: An Assessment of Efficacy and Engagement 3671-3674
Sulas, Romina *UNSW*; Liem, Nicholas *UNSW*; Kark, Lauren* *Graduate School of Biomedical Engineering*,

10:00-11:30 ThBPoT22.6
Italy-Japan International Project-Based Learning for Developing Human Resources using Design of Welfare Equipment as a Subject 3675-3678
Hanafusa, Akihiko* *Shibaura Institute of Technology*; Komeda, Takashi *Shibaura Institute of Technology*; Ito, Kazuhisa *Shibaura Institute of Technology*; Zobel, Pierluigi *Beomonte Univ. of L'Aquila*

ThBPoT23: 10:00-11:30 Gold Room
11.4 Novel Approaches to Biomedical Engineering Education (Poster Session)

10:00-11:30 ThBPoT23.1
Surviving Sepsis – A 3D Integrative Educational Simulator 3679-3682
Ježek, Filip* *Faculty of Electrical Engineering, Czech Technical Univ. in Prague*; Tribula, Martin *Charles Univ. in Prague*; Kulhánek, Tomáš *Charles Univ. in Prague*; Matejak, Marek *Charles Univ. in Prague*; Privitzer, Pavol *Charles Univ. in Prague*; Šilar, Jan *Charles Univ. in Prague*; Kofránek, Jiří *Creative Connections s.r.o.*; Lhotska, Lenka *Czech Technical Univ. in Prague*

10:00-11:30 ThBPoT23.2
Experiences in Teaching of Modeling and Simulation with Emphasize on Equation based and Acausal Modeling Techniques 3683-3686
Kulhánek, Tomáš* *Academy of Performing Arts in Prague*; Ježek, Filip *Czech Technical Univ. in Prague*; Matejak, Marek *Charles Univ. in Prague*; Šilar, Jan *Charles Univ. in Prague*; Kofránek, Jiří *Creative Connections s.r.o.*

10:00-11:30 ThBPoT23.3
Opening Biomedical Engineering Education in Africa 3687-3690
Ahluwalia, Arti* *Pisa Univ.*

10:00-11:30 ThBPoT23.4
Experimental and Credentialing Capital: An Adaptable Framework for Facilitating Science Outreach for Underrepresented Youth 3691-3694
Drazan, John* *Rensselaer Polytechnic Institute*; D'Amato, Anthony *Rensselaer Polytechnic Institute*; Winkelman, Max *Rensselaer Polytechnic Institute*; Littlejohn, Aaron James *Rensselaer Polytechnic Institute*; Johnson, Christopher *Rensselaer Polytechnic Institute*; Ledet, Eric *Rensselaer Polytechnic Institute*; Eglash, Ron *RPI*

10:00-11:30 ThBPoT23.5
A Virtual Surgical Training System that Simulates Cutting of Soft Tissue using a Modified Pre-Computed Elastic Model 3695-3698
Toe, Kyaw Kyar* *Institute for Infocomm Research, A*STAR*; Huang, Weimin *Institute for Infocomm Research, Agency for Science Technology and Research*; Yang, Tao *Institute for Infocomm Research, A*STAR*; Duan, Yuping *Institute for Infocomm Research, A*STAR*; Zhou, Jiayin *Institute for Infocomm Research*; Su, Yi *Institute of High Performance Computing*; Teo, Soo Kng *Institute of High Performance Computing, A*STAR*; Selvaraj, Senthil Kumar *Institute of High Performance Computing*; Lim, Calvin *Institute of High Performance Computing*; Chui, Chee Kong *National Univ. of Singapore*; Chang, Stephen KY *National Univ. of Singapore*

ThBPoT24: 10:00-11:30 Gold Room
12.5 Gerontechnology (Poster Session)

10:00-11:30 ThBPoT24.1
Early Illness Recognition using Frequent Motif Discovery 3699-3702
Hajihashemi, Zahra *Univ. of Missouri, Columbia, MO*; Popescu, Mihail* *Univ. of Missouri*

10:00-11:30 ThBPoT24.2
Preliminary Results of using Inertial Sensors to Detect Dementia-Related Wandering Patterns 3703-3706
Vuong, Nhu Khue* *NTU*; Chan, Syin *Nanyang Technological Univ.*; Lau, Chiew Tong *Nanyang Technological Univ.*; Chan, Yew Wei *Stephen Alzheimer's Disease Association of Singapore*; Chen, SH Annabel *Nanyang Technological Univ.*; Yap, Philip *Khoo Teck Puat Hospital*

10:00-11:30 ThBPoT24.3
Slightly Superior Performance of Bioimpedance Spectroscopy Over Single Frequency Regression Equations for Assessment of Total Body Water 3707-3710
 Seoane, Fernando *KTH-Royal Institute of Technology*; Abtahi, Shirin *Chalmers Univ. of Technology*; Abtahi, Farhad* *KTH Royal Institute of Technology*; Ellegård, Lars *Dept. of clinical nutrition at the Univ. of Göteborg*; Johannsson, Gudmundur *Dept. of clinical nutrition at the Univ. of Göteborg*; Ingvar, Bosaeus *Dept. of clinical nutrition at the Univ. of Göteborg*; Ward, Leigh C *School of Chemistry and Molecular Biosciences, Univ. of Que*

10:00-11:30 ThBPoT24.4
Extraction of Facial Features as Indicators of Stress and Anxiety 3711-3714
 Pediaditis, Matthew* *ICS-FORTH*; Giannakakis, Giorgos *Institute of Computer Science (ICS), Foundation for Research and*; Chiarugi, Franco *Foundation for Research and Technology - Hellas (FORTH)*; Manousos, Dimitris *ICS-FORTH*; Pampouchidou, Anastasia *Institute of Computer Science (ICS), FORTH*; Christinaki, Eirini *ICS-FORTH*; Iatraki, Galatea *ICS-FORTH*; Kazantzaki, Eleni *Institute of Computer Science (ICS), FORTH*; Simos, Panagiotis *Dept. of Psychiatry, Univ. of Crete*; Marias, Kostas *Foundation for Res. & Tech. Hellas*; Tsiknakis, Manolis *ICS-FORTH*

ThBPoT25: 10:00-11:30	Gold Room
12.6 Technologies for Detecting, Managing and Preventing Falls II (Poster Session)	

10:00-11:30 ThBPoT25.1
Extraction of Traditional COP-Based Features from COM Sway in Postural Stability Evaluation 3715-3718
 Romano, Fausto *Univ. of Pavia*; Colagiorgio, Paolo *Univ. of Pavia*; Buizza, Angelo *Univ. of Pavia*; Sardi, Francesca *Univ. of Pavia*; Ramat, Stefano* *Univ. di Pavia*

10:00-11:30 ThBPoT25.2
Continuous Real-World Gait Monitoring in Community-Based Older Adults 3719-3722
 Walsh, Lorcan *Novartis*; Doyle, Julie* *CASALA, Dundalk Institute of Technology*; Smith, Erin *Univ. College Dublin*; Inomata, Akihiro *Fujitsu Japan*; Bond, Rodd *Netwell Centre, Dundalk Institute of Technology*

10:00-11:30 ThBPoT25.3
FreeWalker: A Smart Insole for Longitudinal Gait Analysis 3723-3726
 Wang, Baitong *National Univ. of Singapore*; Rajput, Kuldeep Singh* *National Univ. of Singapore*; Tam, Wing Kin *National Univ. of Singapore*; Yang, Zhi *National Univ. of Singapore*

10:00-11:30 ThBPoT25.4
Fall-Detection Solution for Mobile Platforms using Accelerometer and Gyroscope Data 3727-3730
 De Cillis, Francesca* *Univ. Campus Bio-Medico di Roma*; De Simio, Francesca *Univ. Campus Bio-Medico di Roma*; Guido, Floriana *Univ. Campus Bio-Medico di Roma*; Antonelli Incalzi, Raffaele *Univ. Campus Bio-Medico di Roma*; Setola, Roberto *Univ. CAMPUS Bio-Medico*

10:00-11:30 ThBPoT25.5
Robotic Psychophysics System for Assessment, Diagnosis and Rehabilitation of the Neurological causes of Falls in the Elderly 3731-3734
 Faisal, A. Aldo* *Imperial College London*; Lin, Chin-Hsuan *Imperial College London*

ThET2: 14:30-16:00	Brown 2
9.6 Wearable and Portable Devices (Oral Session)	
Chair: 0	

14:30-14:45 ThET2.1
Characterization of Wrist-Wearable Activity Measurement using Whole Body Calorimetry in Semi-Free Living Conditions 3735-3738
 Amor, James* *Univ. of Warwick*; Hattersley, John G. *UHCW/Univ. of Warwick*; Barber, Thomas M. *Univ. of Warwick*; James, Christopher *Univ. of Warwick*

14:45-15:00 ThET2.2
Monitoring Physiology and Behavior using Android in Phobias 3739-3742
 Cruz, Telmo *IEETA, DETI, Univ. de Aveiro, Aveiro*; Bras, Susana* *Univ. de Aveiro*; Soares, Sandra *Univ. de Aveiro*; Fernandes, José Maria *Univ. of Aveiro*

15:00-15:15 ThET2.3
Novel Textile Systems for the Continuous Monitoring of Vital Signals: Design and Characterization 3743-3746
Trindade, Isabel* *FibEnTech, Univ. da Beira Interior*; Martins, Frederico *FibEnTech, Univ. da Beira Interior*; Dias, Rúben *INESC TEC, FEUP*; Oliveira, Cristina *INESC TEC, FEUP*; Machado da Silva, José *INESC TEC, FEUP*

15:15-15:30 ThET2.4
Implementation of Smart Phone Video Plethysmography and Dependence on Lighting Parameters 3747-3750
Fletcher, Richard Ribon* *Massachusetts Institute of Technology*; Chamberlain, Daniel *MIT*; Paggi, Nicholas *Massachusetts Institute of Technology*; Deng, Xinyue *Massachusetts Institute of Technology*

15:30-15:45 ThET2.5
Unconstrained Detection of Freezing of Gait in Parkinson's Disease Patients using Smartphone 3751-3754
Kim, Hanbyul* *Seoul National Univ.*; Lee, Hong Ji *Seoul National Univ.*; Lee, Woongwoo *Dept. of Neurology, Eulji General Hospital*; Kwon, Sungjun *Seoul National Univ.*; Kim, Sang Kyong *Seoul National Univ.*; Jeon, Hyo Seon *Seoul National Univ.*; Park, Hyeyoung *Dept. of Neurology and Movement Disorder Center, Seoul Nati*; Shin, Chae Won *Dept. of Neurology and Movement Disorder Center, Seoul Nati*; Yi, WonJin *Seoul National Univ Sch of Dentistry*; Jeon, Beom S. *Seoul National Univ.*; Park, Kwang S. *Seoul National Univ.*

15:45-16:00 ThET2.6
ARTSENSTouch – A Portable Device for Evaluation of Carotid Artery Stiffness 3755-3758
Joseph, Jayaraj* *HTIC, Indian Institute of Technology*; T, Aryasree *Healthcare Technology Innovation Centre, IIT Madras*; Radhakrishnan, Ravikumar *Thambiran Heart and Vascular Institute, Chennai*; Sivaprakasam, Mohanasankar *Indian Institute of Technology Madras*

ThET3: 14:30-16:00 Brown 3
6.13 Neural Signal Processing I (Oral Session)
Chair: Jones, Richard D. *New Zealand Brain Research Institute*
Co-Chair: Nieuws, Thierry *Istituto Italiano Tecnologia*

14:30-14:45 ThET3.1
Investigating Cell Culture Dynamics Combining High Density Recordings with Dimensional Reduction Techniques 3759-3762
Nieuws, Thierry* *Istituto Italiano Tecnologia*; Di Marco, Stefano *Istituto Italiano di Tecnologia*; Maccione, Alessandro *Istituto Italiano di Tecnologia*; Amin, Hayder *Istituto Italiano di Tecnologia (IIT)*; Berdondini, Luca *Istituto Italiano di Tecnologia*

14:45-15:00 ThET3.2
High-Density MEA Recordings Unveil the Dynamics of Bursting Events in Cell Cultures 3763-3766
Lonardoni, Davide* *Istituto Italiano di Tecnologia*; Di Marco, Stefano *Istituto Italiano di Tecnologia*; Amin, Hayder *Istituto Italiano di Tecnologia (IIT)*; Maccione, Alessandro *Istituto Italiano di Tecnologia*; Berdondini, Luca *Istituto Italiano di Tecnologia*; Nieuws, Thierry *Istituto Italiano Tecnologia*

15:00-15:15 ThET3.3
A Step Towards EEG-Based Brain Computer Interface for Autism Intervention 3767-3770
Fan, Jing* *Vanderbilt Univ.*; Wade, Joshua *Vanderbilt Univ.*; Bian, Dayi *Vanderbilt Univ.*; Key, Alexandra *Vanderbilt Univ.*; Warren, Zachary *Vanderbilt Univ.*; Mion, Lorraine *Vanderbilt Univ.*; Sarkar, Nilanjan *Vanderbilt Univ.*

15:15-15:30 ThET3.4
Multi-Unit Activity Contains Information about Spatial Stimulus Structure in Mouse Primary Visual Cortex .. 3771-3774
Tolkiehn, Marie* *Imperial College London*; Schultz, Simon R *Imperial College London*

15:30-15:45 ThET3.5
Optimized Echo State Networks with Leaky Integrator Neurons for EEG-Based Microsleep Detection 3775-3778
Ayyagari, Sudhanshu* *Univ. of Canterbury*; Jones, Richard D. *New Zealand Brain Research Institute*; Weddell, Stephen J. *Univ. of Canterbury*

15:45-16:00 ThET3.6
Characteristics of Thalamic Local Field Potentials in Patients with Disorders of Consciousness 3779-3782
Huang, Yongzhi *Suzhou institute of Biomedical Engineering and Technology, Chine*; He, Jianghong *Beijing Army General Hospital*; Green, Alexander L *Univ. of Oxford*; Aziz, Tipu Z *Univ. of Oxford*; Stein, John F *Univ. of Oxford*; Wang, Shouyan* *Chinese Academy of Sciences*

ThET4: 14:30-16:00	Amber 1
1.17 Causality and Coherence Analysis (Oral Session)	
Chair: Baccala, Luiz Antonio <i>Escola Politecnica</i>	
Co-Chair: Cincotti, Febo <i>Sapienza University of Rome</i>	

14:30-14:45 ThET4.1
Atrial Sources Identification by Causality Analysis during Atrial Fibrillation 3783-3786
Rodrigo, Miguel* *Univ. Politecnica de Valencia*; Climent, Andreu M. *Univ. Politecnica de Valencia*; Liberos, Alejandro *Univ. Politecnica de Valencia*; Fernandez-Avilés, Francisco *Hospital General Univ. Gregorio Marañón, Madrid*; Berenfeld, Omer *SUNY Upstate Medical Univ.*; Atienza, Felipe *Hospital General Univ. Gregorio Marañón, Madrid*; Guillem, Maria S. *Univ. Politecnica de Valencia*

14:45-15:00 ThET4.2
A New Algorithm for Neural Connectivity Estimation of EEG Event Related Potentials 3787-3790
Rodrigues, Pedro Luiz Coelho *Escola Politécnica USP*; Baccala, Luiz Antonio* *Escola Politecnica*

15:00-15:15 ThET4.3
Effect of Inter-Trials Variability on the Estimation of Cortical Connectivity by Partial Directed Coherence 3791-3794
Petti, Manuela* *Univ. of Rome "Sapienza", Neuroelectrical Imaging and BCI Lab IR*; Caschera, Stefano *Sapienza Univ. of Rome*; Pichiorri, Floriana *Fondazione Santa Lucia, IRCCS, Rome, Italy*; Toppi, Jlenia *Univ. of Rome "Sapienza"*; Anzolin, Alessandra *Univ. of Rome "Sapienza", Neuroelectrical Imaging and BCI Lab IR*; Babiloni, Fabio *Univ. of Rome*; Cincotti, Febo *Sapienza Univ. of Rome*; Mattia, Donatella *Fondazione Santa Lucia IRCCS*; Astolfi, Laura *Univ. of Rome Sapienza*

15:15-15:30 ThET4.4
Globally Conditioned Causality in Estimating Directed Brain-Heart Interactions through Joint MRI and RR Series Analysis 3795-3798
Duggento, Andrea* *Univ. of Rome "Tor Vergata"*; Bianciardi, Marta *Dept. of Radiology, A.A. Martinos Center for Biomedical Im*; Wald, Lawrence L. *A. A. Martinos Center for Biomedical Imaging, Dept. of Radiology*; Passamonti, Luca *Univ. of Cambridge*; Guerrisi, Maria *Univ. of Rome "Tor Vergata"*; Barbieri, Riccardo *MGH-Harvard Medical School-MIT*; Toschi, Nicola *Univ. of Rome "Tor Vergata", Faculty of Medicine*

15:30-15:45 ThET4.5
Causal Relationships in the Variability of Cardiovascular System Evoked by Orthostatic Stress by Transfer Entropy 3799-3802
Wejer, Dorota* *Univ. of Gdańsk*; Faes, Luca *Univ. of Trento*; Makowiec, Danuta *Institute of Theoretical Physics and Astrophysics, Gdansk Univ.*

ThET5: 14:30-16:00	Amber 2
1.18 Adaptive and Kalman Filtering (Oral Session)	
Chair: Barbieri, Riccardo <i>MGH-Harvard Medical School-MIT</i>	
Co-Chair: Augustyniak, Piotr <i>AGH University of Science and Tech</i>	

14:30-14:45 ThET5.1
Reduction of EEG Artifacts in Simultaneous EEG-fMRI: Reference Layer Adaptive Filtering (RLAF) 3803-3806
Steyrl, David* *Graz Univ. of Tech.*; Patz, Franz *Guger Technologies OG*; Krausz, Gunther *g.tec Medical Engineering GmbH*; Edlinger, Günter *g.tec Medical Engineering GmbH*; Müller-Putz, Gernot *Graz Univ. of Tech.*

14:45-15:00 ThET5.2
Simple Method for Adaptive Filtering of Motion Artifacts in E-Textile Wearable ECG Sensors 3807-3810
Elboshra, Tamador *Khalifa Univ.*; Andrzej, Sluzek *Khalifa Univ.*; Yapici, Murat Kaya* *Khalifa Univ.*

15:00-15:15 ThET5.3
ECG De-Noising: A Comparison between EEMD-BLMS and DWT-NN Algorithms 3811-3814
Jensen, Søren* *DTU*; Kærsgaard, Kevin *DTU*; Puthusserypady, Sadasivan *Technical Univ. of Denmark*

15:15-15:30 ThET5.4
Estimation of Heart Rate and Heart Rate Variability from Pulse Oximeter Recordings using Localized Model Fitting 3815-3818
Wadehn, Federico* *ETH Zurich*; Carnal, David *ETH Zurich*; Loeliger, Hans-Andrea *ETH Zurich*

15:30-15:45 ThET5.5
Evaluation of Adaptive Parafac Algorithms for Tracking of Simulated Moving Brain Sources 3819-3822
Fotouhi, Ardeshir *Tehran Univ. of Medical Sciences*; Eqlimi, Ehsan *Tehran Univ. of Medical Sciences*; Makki Abadi, Bahador* *Tehran Univ. of Medical Sciences*

15:45-16:00 ThET5.6
Power Line Interference Attenuation in Multi-Channel sEMG Signals: Algorithms and Analysis 3823-3826
Soedirdjo, Subaryani Dambawati Harjaya* *Politecnico di Torino*; Ullah, Khalil *Politecnico di Torino*; Merletti, Roberto *Politecnico di Torino*

ThET6: 14:30-16:00 Amber 3
2.13 Elastography (Oral Session)
Chair: Bensamoun, Sabine *UTC*
Co-Chair: Baselli, Giuseppe *Politecnico di Milano*

14:30-14:45 ThET6.1
Use of Digital Image Correlation and Ultrasound: Analysis of Thigh Muscle Displacement Fields 3827-3830
Affagard, Jean-Sébastien *Univ. de Technologie de Compiègne (UTC)*; Feissel, Pierre *Univ. de Technologie de Compiègne (UTC)*; Bensamoun, Sabine* *UTC*

14:45-15:00 ThET6.2
Enabling Real-Time Ultrasound Imaging of Soft Tissue Mechanical Properties by Simplification of the Shear Wave Motion Equation 3831-3834
Engel, Aaron* *Univ. of Nebraska-Lincoln*; Bashford, Greg *Univ. of Nebraska-Lincoln*

15:00-15:15 ThET6.3
Edge-Preserving Ultrasonic Strain Imaging with Uniform Precision 3835-3838
Khodadadi, Hossein* *Concordia Univ.*; Rivaz, Hassan *Concordia Univ.*; Aghdam, Amir G *Concordia Univ.*

15:15-15:30 ThET6.4
Effects of Data Acquisition Parameters on the Quality of Sonoelastographic Imaging 3839-3842
Torres, Gabriela *Pontificia Univ. Catolica del Peru*; Ormachea, Juvenal *Univ. of Rochester*; Lavarello, Roberto* *Pontificia Univ. Catolica del Peru*; Parker, Kevin *Univ. of Rochester*; Castañeda, Benjamín *Pontificia Univ. Católica del Perú*

15:30-15:45 ThET6.5
An Experimental Phantom Study on the Effect of Calcifications on Ultrasound Shear Wave Elastography ... 3843-3846
Gregory, Adriana *Mayo Clinic College of Medicine*; Bayat, Mahdi *Mayo Clinic College of Medicine*; Denis, Max *Mayo College of Medicine*; Mehrmohammadi, Mohammad *Univ. of Texas at Austin*; Fatemi, Mostafa *Mayo Clinic*; Alizad, Azra* *Mayo Clinic*

15:45-16:00 ThET6.6
A New Shear Wave Imaging System for Ultrasound Elastography 3847-3850
Qiu, Weibao* *Shenzhen Institutes of Advanced Technology, Chinese Academy of S*; Wang, Congzhi *Shenzhen Institutes of Advanced Technology, Chinese Academy of S*; Xiao, Yang *the Paul C. Lauterbur Research Center for Biomedical Imaging, the Insti*; Qian, Ming *Chinese Academy of Sciences*; Zheng, Hairong *Shenzhen Inst of Advanced Tech*

ThET7: 14:30-16:00 Amber 4
2.14 Image Segmentation III (Oral Session)
Chair: Angelini, Elsa *Columbia University*

14:30-14:45 ThET7.1
Robust Supervised Segmentation of Neuropathology Whole-Slide Microscopy Images 3851-3854
Vandenbergh, Michel *Erminio Commissariat à l'Energie Atomique et aux Energies Alternatives* (; Balbastre, Yael *Commissariat à l'Energie Atomique et aux Energies Alternatives* (; Souedet, Nicolas *Commissariat à l'Energie Atomique*; Hérard, Anne-Sophie *Commissariat à l'Energie Atomique*; Dhenain, Marc *Commissariat à l'Energie Atomique*; Frouin, Frédérique *Sorbonne Univ. Paris 06, UPMC, CNRS, INSERM*; Delzescaux, Thierry* *Commissariat à l'Energie Atomique*

14:45-15:00	ThET7.2
Efficient Segmentation of Skin Epidermis in Whole Slide Histopathological Images	3855-3858
Xu, Hongming <i>Univ. of Alberta</i> ; Mandal, Mrinal* <i>Univ. of Alberta</i>	
15:00-15:15	ThET7.3
Automatic Segmentation of Zona Pellucida and Its Application in Cleavage-Stage Embryo Biopsy Position Selection	3859-3864
WANG, ZENAN <i>Nanyang Technological Univ.</i> ; Ang, Wei <i>Tech Nanyang Technological Univ.</i> ; Tan, Steven <i>Singapore Polytechnic</i> ; Latt, Win Tun* <i>Singapore Polytechnic</i>	
15:15-15:30	ThET7.4
Multi-Stage Random Forest Method for Phase Contrast Cell Segmentation	3865-3868
Essa, Ehab <i>Swansea Univ.</i> ; Xie, Xianghua* <i>Swansea Univ.</i> ; Errington, Rachel <i>institute of Cancer & Genetics, School of Medicine, Cardiff Univ.</i> ; White, Nick <i>School of Optometry and Vision Sciences, Cardiff Univ.</i>	
15:30-15:45	ThET7.5
Automated Segmentation of Regions of Interest in Whole Slide Skin Histopathological Images	3869-3872
Xu, Hongming <i>Univ. of Alberta</i> ; Lu, Cheng <i>ShaanXi Normal Univ.</i> ; Mandal, Mrinal* <i>Univ. of Alberta</i>	
15:45-16:00	ThET7.6
Bacterial Foraging based Edge Detection for Cell Image Segmentation	3873-3876
Pan, Yongsheng <i>Northwestern Polytechnical Univ.</i> ; Zhou, Tao <i>Ningxia Medical Univ.</i> ; Xia, Yong* <i>Northwestern Polytechnical Univ.</i>	
ThET8: 14:30-16:00 Amber 5	
8.6 Wearable Robotic Systems: Orthotics (Oral Session)	
Co-Chair: Micera, Silvestro <i>Scuola Superiore Sant'Anna</i>	
14:30-14:45	ThET8.1
Design and Performance Characterization of a Hand Orthosis Prototype to Aid Activities of Daily Living in a Post-Stroke Population	3877-3880
Gasser, Benjamin W.* <i>Vanderbilt Univ.</i> ; Goldfarb, Michael <i>Vanderbilt Univ.</i>	
14:45-15:00	ThET8.2
Gastrocnemius Myoelectric Control of a Robotic Hip Exoskeleton	3881-3884
Grazi, Lorenzo* <i>Scuola Superiore Sant'Anna</i> ; Crea, Simona <i>Scuola Superiore Sant'Anna</i> ; Parri, Andrea <i>Scuola Superiore Sant'Anna</i> ; Yan, Tingfang <i>Scuola Superiore Sant'Anna</i> ; Cortese, Mario <i>Scuola Superiore Sant'Anna</i> ; Giovacchini, Francesco <i>Scuola Superiore Sant'Anna</i> ; Cempini, Marco <i>Scuola Superiore Sant'Anna</i> ; Pasquini, Guido <i>Fondazione Don Carlo Gnocchi IRCCS</i> ; Micera, Silvestro <i>Scuola Superiore Sant'Anna</i> ; Vitiello, Nicola <i>Scuola Superiore Sant'Anna</i>	
15:00-15:15	ThET8.3
Compliant Gait Assistance Triggered by User Intention	3885-3888
Rajasekaran, Vijaykumar* <i>Institute for Bioengineering of Catalonia, Univ. Politècni</i> ; Aranda, Joan <i>Technical Univ. of Catalonia</i> ; Casals, Alicia <i>Institute for Biongingeering of Catalonia and Univ. Politècni</i>	
15:15-15:30	ThET8.4
Modeling and Design of a Tendon Actuated Soft Robotic Exoskeleton for Hemiparetic Upper Limb Rehabilitation	3889-3892
Nycz, Christopher* <i>Worcester Polytechnic Institute</i> ; Delph, Michael <i>Worcester Polytechnic Institute</i> ; Fischer, Gregory <i>Worcester Polytechnic Institute</i>	
15:30-15:45	ThET8.5
Fuzzy-Logic-Based Hybrid Locomotion Mode Classification for an Active Pelvis Orthosis: Preliminary Results	3893-3896
Yuan, Kebin <i>Peking Univ.</i> ; Parri, Andrea <i>Scuola Superiore Sant'Anna</i> ; Yan, Tingfang <i>Scuola Superiore Sant'Anna</i> ; Wang, Long <i>Peking Univ.</i> ; Munih, Marko <i>Univ. of Ljubljana</i> ; Vitiello, Nicola <i>Scuola Superiore Sant'Anna</i> ; Wang, Qining* <i>Peking Univ.</i>	

15:45-16:00 ThET8.6
A Wearable Virtual Chair with the Passive Stability Assist 3897-3900
 Choi, Hyun Do* *SAIT (Samsung Advanced Institute of Technology)*; Lee, Younbaek *SAIT(Samsung Advanced Institute of Technology)*; Lee, Minhyung *Samsung Advanced Institute and Technology*; Kim, Jeonghun *SAIT(Samsung Advanced Institute of Technology)*; Shim, Youngbo *Samsung Advanced Institute of Technology*

ThET9: 14:30-16:00 Amber 6
8.7 Joint Biomechanics: Spine (Oral Session)
Chair: Petit, Yvan *École de Technologie Supérieure*

14:30-14:45 ThET9.1
Simulation of High Energy Vertebral Fractures on Complete Porcine Specimens 3901-3904
 Petit, Yvan* *École de Technologie Supérieure*; Boisclair, Dominic *École de Technologie Supérieure*; Parent, Stefan *Univ. of Montreal*; Mac-Thiong, Jean-Marc *Dept. of surgery, Faculty of Medicine, Univ. of Montre*

14:45-15:00 ThET9.2
Lumbar Load Estimation using a Musculoskeletal Model in Consideration of Vertebral Body Displacement: Lumbar Load Simulation under Static Conditions 3905-3908
 Imamura, Yumeko* *The National Institute of Advanced Industrial Science and Techno*; Tanaka, Takayuki *Hokkaido Univ.*; Kusaka, Takashi *Hokkaido Univ.*; Tsuchiya, Yoshio *Hokkaido Univ.*

15:00-15:15 ThET9.3
Calibration Method for Lumbosacral Dimensions in Wearable Sensor System of Lumbar Alignment 3909-3912
 Tsuchiya, Yoshio* *Hokkaido Univ.*; Kusaka, Takashi *Hokkaido Univ.*; Tanaka, Takayuki *Hokkaido Univ.*; Matsuo, Yoshikazu *Hakodate National College of Technology Dept. of Production*; ODA, Makoto *Hokkaido Univ. Hospital*; Sasaki, Tsukasa *Hokkaido Univ. Hospital*; Kamishima, Tamotsu *Hokkaido Univ.*; Yamanaka, Masanori *Univ.*

15:15-15:30 ThET9.4
In-Vitro Assessment of the Stabilization Capacity of Monolithic Spinal Rods with Variable Flexural Stiffness: Methodology and Examples 3913-3916
 Facchinello, Yann* *École de Technologie Supérieure*; Brailovski, Vladimir *Ecole de technologie supérieure*; Petit, Yvan *École de Technologie Supérieure*; Brummund, Martin *École de Technologie Supérieure*; Tremblay, Jaelle *Zimmer CAS*; Mac-Thiong, Jean-Marc *Dept. of surgery, Faculty of Medicine, Univ. of Montre*

15:30-15:45 ThET9.5
The Influence of Initial Position of a Flexible Bar on the Lumbar Discs and Muscles Forces: A Sensitivity Analysis 3917-3920
 Khalaf, Kinda* *KUSTAR*; Abdollahi, Masoud *Sharif Univ. of Technology*; Nikkhoo, Mohammad *Science and Research Branch, Islamic Azad Univ.*; Asghari, Mohsen *Sharif Univ. of Technology*; Hoviattalab, Maryam *Sharif Univ. of Technology*; Ashouri, Sajad *Sharif Univ. of Technology*; Nikpour, Seyedhassan *Sharif Univ. of Technology*; Sedighe, Kahrizi *Tarbiat Modares Univ.*; Parnianpour, Mohammad *Sharif Univ. of Technology*

15:45-16:00 ThET9.6
A Simulation Study on Marrow Fat Effect on Biomechanics of Vertebra Bone 3921-3924
 Chen, Yang *Harbin Institute of Technology Shenzhen Graduate School*; Ma, Heather Ting* *Harbin Institute of Technology Shenzhen Graduate School*; Liang, Li *Harbin Institute of Technology Shenzhen Graduate School*; Zhang, Chaoyang *Harbin Institute of Technology Shenzhen Graduate School*; Griffith, James F *The Chinese Univ. of Hong Kong*; Leung, Ping-chung *The Chinese Univ. of Hong Kong*

ThET10: 14:30-16:00 Amber 7
6.14 Rehabilitation II (Oral Session)
Co-Chair: Conforto, Silvia *University Roma TRE*

14:30-14:45 ThET10.1
Assessing Neuro-Motor Recovery in a Stroke Survivor with High-Resolution EEG, Robotics and Virtual Reality 3925-3928
 Comani, Silvia *Univ. of Chieti-Pescara*; Schinaia, Lorenzo *Casa di Cura Privata Villa Serena (Italy)*; Tamburro, Gabriella *Dept. of Neuroscience and Imaging and Institute for Advanced Bio*; Velluto, Lucia *Casa di Cura Privata Villa Serena (Italy)*; Sorbi, Sandro *Dept. of Neuroscience, Psychology, Drug Research and Child*; Conforto, Silvia* *Univ. Roma TRE*; Guarnieri, Biancamaria *Casa di Cura Privata Villa Serena (Italy)*

14:45-15:00 ThET10.2
An Arm for a Leg: Adapting a Robotic Arm for Gait Rehabilitation 3929-3932
Franchi, Giulia *Roma Tre Univ.*; Viereck, Ulrich *Northeastern Univ.*; Platt, Robert *Northeastern Univ.*;
Yen, Sheng-che *Northeastern Univ.*; Hasson, Christopher* *Northeastern Univ.*

15:00-15:15 ThET10.3
Pediatric rehabilitation with the reachMAN's modular handle 3933-3936
Tong, Liu Zhu* *National Univ. of Singapore*; Ong, Hian Tat *National Univ. Hospital*; Tan, Jia Xuan *National Univ. of Singapore*; Lin, Jeremy *National Univ. Hospital*; Burdet, Etienne *Imperial College of Science, Technology and Medicine*; Ge, Shuzhi Sam *Pusan National Univ.*; *National Univ. of Singapore*; Teo, Chee Leong *National Univ. of Singapore*

15:15-15:30 ThET10.4
A Model of Injury Potential for Myelinated Nerve Fiber 3937-3940
Zhang, Guanghao *Institute of Electrical Engineering, Chinese Academy of Sciences*; Huo, Xiaolin* *Chinese Academy of Sciences*; Wang, Aihua *Chinese Academy of Sciences*; Zhang, Cheng *Chinese Academy of Sciences, Beijing.*; Wu, Changzhe *Chinese Academy of Sciences*

15:30-15:45 ThET10.5
Monitoring Game-Based Motor Rehabilitation of Patients at Home for Better Plans of Care and Quality of Life 3941-3944
Ponte, Serena* *Univ. degli Studi di Genova*; Gabrielli, Silvia *CREATE-NET*; Jonsdottir, Johanna *Fondazione Don Gnocchi Onlus*; Morando, Matteo *Univ. degli Studi di Genova*; Dellepiane, Silvana *Univ. degli Studi di Genova*

15:45-16:00 ThET10.6
The Impact of Visual Feedback on the Motor Control of the Upper-Limb 3945-3948
Urra, Oiane* *Institute de Bioenginyeria de Catalunya (IBEC)*; Casals, Alicia *Institute for Biengineering of Catalonia and Univ. Politècni*; Jané, Raimon *Institute de Bioenginyeria de Catalunya (IBEC)*

ThET11: 14:30-16:00 Amber 8
6.15 Brain Physiology and Modeling II (Oral Session)
Chair: Song, Dong *University of Southern California*

14:30-14:45 ThET11.1
Bidirectional Neural Interface: Closed-Loop Feedback Control for Hybrid Neural Systems 3949-3952
Chou, Zane* *Univ. of California, San Diego*; Lim, Jeffrey *Univ. of California, San Diego*; Brown, Sophie *Univ. of California San Diego*; Keller, Melissa *Univ. of California San Diego*; Bugbee, Joseph *UCSD*; Broccard, Frederic *Univ. of California San Diego*; Khraiche, Massoud *Univ. of California, San Diego*; Silva, Gabriel *UCSD*; Cauwenberghs, Gert *Univ. of California San Diego*

14:45-15:00 ThET11.2
Comparison of Sensorimotor Rhythms in EEG Signals during Simple and Combined Motor Imageries Over the Contra and Ipsilateral Hemispheres 3953-3956
Lindig, Cecilia* *Inria*; Bougrain, Laurent *Univ. of Lorraine*

15:00-15:15 ThET11.3
A Large Scale Simulation of Excitation Propagation in Layer 2/3 of Primary and Secondary Visual Cortices of Mice 3957-3960
Ohtsu, Shoya* *Osaka Univ.*; Nomura, Taishin *Osaka Univ.*; Uno, Shota *Osaka Univ.*; Maeda, Kazuki *Osaka Univ.*; Hayashida, Yuki *Osaka Univ.*; Yagi, Tetsuya *Osaka Univ., Gard. Eng*

15:15-15:30 ThET11.4
Sparse Generalized Volterra Model of Human Hippocampal Spike Train Transformation for Memory Prostheses 3961-3964
Song, Dong* *Univ. of Southern California*; Robinson, Brian *Univ. of Southern California*; Hampson, Robert *Wake Forest School of Medicine*; Marmarelis, Vasilis *Univ. of Southern California*; Deadwyler, Sam *Wake Forest Univ.*; Berger, Theodore *Univ. of Southern California*

15:30-15:45 ThET11.5
Topography-Dependent Spatio-Temporal Correlations in the Entorhinal-Dentate-CA3 Circuit in a Large-Scale Computational Model of the Rat Hippocampus 3965-3968
 Yu, Gene* *Univ. of Southern California*; Hendrickson, Phillip *Univ. of Southern California*; Song, Dong *Univ. of Southern California*; Berger, Theodore *Univ. of Southern California*

15:45-16:00 ThET11.6
Thermo-Electrical Equivalents for Simulating the Electro-Mechanical Behavior of Biological Tissue 3969-3972
 Ilaria, Cinelli* *NUI of Galway*; Duffy, Maeve *NUI Galway*; McHugh, Peter *NUI of Galway*

ThET13: 14:30-16:00 Suite 6
11.1 Innovations in Biomedical Engineering Education (Invited Session)
Chair: Zequera Diaz, Martha Lucia *Associate Prof. at Pontificia Univ. Javeriana - Electronics Dept. - Ergosalud Ltda.*
Co-Chair: Magjarevic, Ratko *University of Zagreb*

14:30-14:45 ThET13.1
Critical Assessment and Outlook for the 50 Biomedical Engineering Undergraduate Programs in Mexico .. 3973-3976
 Azpiroz-leeahan, Joaquin* *Univ. Autonoma Metropolitana*; Martinez-Licon, Fabiola *Univ. Autonoma Metropolitana*; Urbina-Medal, E. Gerardo *Univ. Autonoma Metropolitana*; Cadena, Miguel *Univ. Autonoma Metropolitana*; Sacristan, Emilio *Univ. Autónoma Metropolitana*

15:00-15:15 ThET13.3
A Proposal to Enhance Engineering Education in Biology and Medicine by Following the Legacy of René Favaloro 3977-3980
 Armentano, Ricardo Luis* *Republic Univ., Favaloro Univ.*; Cardelino, Juan *Faculty of Engineering, Republic Univ.*; Wray, Sandra *Univ. Favaloro*; Cymberknop, Leandro Javier *Univ. Tecnológica Nacional*; Kun, Luis *Center for Hemispheric Defense Studies (CHDS) / NDU*

15:15-15:30 ThET13.4
Influencing the Job Market by the Quality of Graduates – A Biomedical Engineering Example 3981-3984
 Augustyniak, Ewa *AGH Univ. of Science and Technology, Krakow, Poland*; Augustyniak, Piotr* *AGH Univ. of Science and Tech*

15:45-16:00 ThET13.6
Design and Implementation of a Flipped Classroom Learning Environment in the Biomedical Engineering Context 3985-3988
 Corrias, Alberto* *National Univ. of Singapore*; Goh, James Cho Hong *National Univ. of Singapore*

ThET16: 14:30-16:00 White 2
4.5 Biomolecular System Dynamics (Oral Session)
Chair: Riva, Alberto *University of Florida*

14:30-14:45 ThET16.1
Modeling the LPS-induced Effects on Transcription Factor Activation and Gene Expression in Murine Macrophages 3989-3992
 Sanwald, Julia* *Univ. of Stuttgart*; Albrecht, Ute *Heinrich Heine Univ. Düsseldorf, Clinic of Gastroenterology*; Wagenpfeil, Jay *Univ. of Stuttgart*; Thomas, Maria *Dr. Margarete Fischer-Bosch Institute of Clinical Pharmacology*; Sawodny, Oliver *Institute for System Dynamics, Univ. of Stuttgart*; Bode, Johannes G. *Heinrich Heine Univ. Düsseldorf, Clinic of Gastroenterology*; Feuer, Ronny *Univ. of Stuttgart*

14:45-15:00 ThET16.2
Selection and Mutation in X-Linked Recessive Diseases Epidemiological Model 3993-3996
 VERRILLI, FRANCESCA* *Univ. of Sannio*; Kebriaei, Hamed *Univ. of Tehran*; Glielmo, Luigi *Univ. of Sannio*; Corless, Martin J. *Purdue Univ.*; Del Vecchio, Carmen *Univ. degli studi del Sannio*

15:00-15:15 ThET16.3
Identifying MIRNA-Mediated Signaling Subpathways by Integrating Paired MIRNA/MRNA Expression Data with Pathway Topology 3997-4000
 Vrahatis, Aristidis *Univ. of Patras*; Dimitrakopoulos, Georgios *Univ. of Patras*; Tsakalidis, Athanasios *Univ. of Patras*; Bezerianos, Anastasios* *National Univ. of Singapore*

15:15-15:30 ThET16.4
MRI-Guided Epilepsy Detection 4001-4004
Zamani Pedram, Maysam Sharif Univ. of Technology, Dept. of mechanical enginee; Shamloo, Amir Sharif Univ. of Technology; Alasty, Aria Sharif Univ. of Technology; Ghafar-Zadeh, Ebrahim* York Univ.

15:30-15:45 ThET16.5
Electrostatic Study of Alanine Mutational Effects on Transcription: Application to GATA-3: DNA Interaction Complex 4005-4008
El-Assaad, Atlal* American Univ. of Beirut; Dawy, Zaher American Univ. of Beirut; Nemer, Georges American Univ. of Beirut

15:45-16:00 ThET16.6
Evaluation of a Plasma Insulin Model for Glycaemic Control in Intensive Care 4009-4012
Dickson, Jennifer* Univ. of Canterbury; Thomas, Felicity Univ. of Canterbury; Pretty, Christopher G. Univ. of Canterbury; Stewart, Kent Univ. of Canterbury; Shaw, Geoffrey M Christchurch Hospital; Chase, J. Geoffrey Univ. of Canterbury

ThET17: 14:30-16:00 Space 1
1.19 Biosignal Monitoring and Processing for Ubiquitous Health Care (Invited Session)
Chair: Yana, Kazuo Hosei University
Co-Chair: Chon, Ki University of Connecticut

14:30-14:45 ThET17.1
Inkjet Printed ECG Electrodes for Long Term Biosignal Monitoring in Personalized and Ubiquitous Healthcare 4013-4016
Batchelor, John Univ. of Kent; Casson, Alexander James* The Univ. of Manchester

14:45-15:00 ThET17.2
Real-Time Sensing, Transmission and Analysis for Vital Signs of Persons during Exercises 4017-4020
Hara, Shinsuke* Osaka City Univ.; Kawabata, Takashi Kansai Univ.; Nakamura, Hajime Aihara Second Hospital

15:00-15:15 ThET17.3
Psychobehavioral Validity of Self-Reported Symptoms based on Spontaneous Physical Activity 4021-4024
Kim, Jinhyuk The Univ. of Tokyo; Nakamura, Toru* The Univ. of Tokyo; Kikuchi, Hiroe Dept. of Psychosomatic Research, National Institute of Ment; Yamamoto, Yoshiharu The Univ. of Tokyo

15:15-15:30 ThET17.4
Wearable Near-Infrared Spectroscopy Neuroimaging and Its Applications 4025-4028
Funane, Tsukasa* Hitachi, Ltd.

ThET18: 14:30-16:00 Space 2
1.20 Information Dynamics in Networks of Biomedical Signals (Invited Session)
Chair: Faes, Luca University of Trento
Co-Chair: Porta, Alberto Universita' degli Studi di Milano

14:30-14:45 ThET18.1
General Anesthesia Reduces the Information Exchange between Heart and Circulation 4029-4032
Porta, Alberto* Univ. degli Studi di Milano; Bari, Vlasta IRCCS Policlinico San Donato; Marchi, Andrea Dept. of Electronics Information and Bioengineering, Polite; De Maria, Beatrice IRCCS Fondazione Salvatore Maugeri, Milano; Pistuddi, Valeria Dept. of Cardiothoracic, Vascular Anesthesia and Intensive; Ranucci, Marco Dept. of Cardiothoracic, Vascular Anesthesia and Intensive

14:45-15:00 ThET18.2
Redundant and Synergistic Information Transfer in Cardiovascular and Cardiorespiratory Variability 4033-4036
Faes, Luca* Univ. of Trento; Porta, Alberto Univ. degli Studi di Milano; Nollo, Giandomenico Univ. of Trento

15:00-15:15 ThET18.3
Synergy, Redundancy and Unnormalized Granger Causality 4037-4040
 Stramaglia, Sebastiano* *Univ. of Bari, Italy, and INFN Sezione di Bari, Italy*; Angelini, Leonardo *Univ. of Bari and INFN Sezione di Bari*; Cortes, Jesus M *Computational Neuroimaging Lab, Biocruces Health Research Instit*; Marinazzo, Daniele *Faculty of Psychology and Educational Sciences, Dept. of Da*

15:15-15:30 ThET18.4
Causality Networks from Multivariate Time Series and Application to Epilepsy 4041-4044
 Siggiridou, Elsa *Aristotle Univ. of Thessaloniki*; Koutlis, Christos *Aristotle Univ. of Thessaloniki*; Tsimpiris, Alkiviadis *Aristotle Univ. of Thessaloniki*; Kimiskidis, Vasilios *Aristotle Univ. of Thessaloniki*; Kugiumtzis, Dimitris* *Aristotle Univ. of Thessaloniki*

15:30-15:45 ThET18.5
Anesthesia-Related Changes in Information Transfer may be Caused by Reduction in Local Information Generation 4045-4048
 Wollstadt, Patricia* *Meg Unit, Brain Imaging Center, Goethe Univ. Frankfurt*; Sellers, Kristin K. *Univ. of North Carolina at Chapel Hill, Chapel Hill*; Hutt, Axel *INRIA CR Nancy*; Frohlich, Flavio *Univ. of North Carolina at Chapel Hill*; Wibral, Michael *Goethe Univ.*

15:45-16:00 ThET18.6
Quantifying Spatiotemporal Complexity of Cardiac Dynamics using Ordinal Patterns 4049-4052
 Schlemmer, Alexander* *Max Planck Institute for Dynamics and Self-Organization*; Berg, Sebastian *Max Planck Institute for Dynamics and Self-Organization*; Shajahan, T K *Max Planck Institute for Dynamics and Self-Organization*; Luther, Stefan *Max Planck Institute for Dynamics and Self-Organization*; Parlitz, Ulrich *Max Planck Institute for Dynamics and Self-Organization*

ThET19: 14:30-16:00	Space 3
2.15 EEG, MEG and EIT I (Oral Session)	
Chair: de Carvalho, Paulo <i>University of Coimbra - NIF</i>	
Co-Chair: Witte, Herbert <i>Jena University Hospital Friedrich Schiller University</i>	

14:30-14:45 ThET19.1
Source-Domain Spectral EEG Analysis of Sports-Related Concussion via Measure Projection Analysis ... 4053-4056
 Balkan, Ozgur* *Univ. of California San Diego*; Virji-Babul, Naznin *Univ. of British Columbia*; Miyakoshi, Makoto *Swartz Center for Computational Neuroscience, INC, UCSD*; Makeig, Scott *Univ. of California San Diego*; Garudadri, Harinath *Univ. of California, San Diego*

14:45-15:00 ThET19.2
Sparse Cortical Source Localization using Spatio-Temporal Atoms 4057-4060
 Korats, Gundars* *CRAN UMR 7039, Univ. de Lorraine*; Ranta, Radu *CRAN UMR 7039, Univ. de Lorraine/CNRS*; Le Cam, Steven *Univ. de Lorraine*; Louis-Dorr, Valerie *Nancy-Univ.*

15:00-15:15 ThET19.3
A Novel Volume Integral Equation for Solving the Electroencephalography Forward Problem 4061-4064
 Rahmouni, Lyes* *Telecom Bretagne*; Mitharwal, Rajendra *Telecom Bretagne*; Andriulli, Francesco P. *Institute Mines-Telecom*

15:15-15:30 ThET19.4
Feature Analysis for Correlation Studies of Simultaneous EEG-FMRI Data: A Proof of Concept for Neurofeedback Approaches 4065-4068
 Simões, Marco *Univ. of Coimbra*; João, Lima *IBILI, Univ. of Coimbra*; Direito, Bruno *FCTUC, Univ. of Coimbra*; Castelhamo, João *ICNAS, Univ. of Coimbra*; Ferreira, Carlos *ICNAS, Univ. of Coimbra*; de Carvalho, Paulo* *Univ. of Coimbra - NIF*; Castelo-Branco, Miguel *Univ. of Coimbra*

15:30-15:45 ThET19.5
EIT Image Regularization by a New Multi-Objective Simulated Annealing Algorithm 4069-4072
 Martins, Thiago de Castro *Escola Politecnica da Univ. de Sao Paulo*; Tsuzuki, Marcos de Sales Guerra* *Escola Politecnica da Univ. de Sao Paulo*

15:45-16:00 ThET19.6
The ACE1 Thoracic Electrical Impedance Tomography System for Ventilation and Perfusion 4073-4076
 Mellenthin, Michelle* *Colorado State Univ.*; Mueller, Jennifer *Colorado State Univ.*; Camargo, Erick Dario Leon *Bueno Federal Univ. of ABC (UFABC)*; Moura, Fernando Silva de *Federal Univ. of ABC*; Hamilton, Sarah J. *Marquette Univ.*; Lima, Raul Gonzalez *Escola Politecnica da Univ. de Sao Paulo*

ThET20: 14:30-16:00 Space 4
3.5 RF Technologies for Medical Implants I (Invited Session)
Chair: Balasingham, Ilangko *Oslo University Hospital and Norwegian University of Science and Technology*
Co-Chair: Chavez-Santiago, Raul *Oslo University Hospital*

14:30-14:45 ThET20.1
An Intra-Body Molecular Communication Networks Framework for Continuous Health Monitoring and Diagnosis 4077-4080
 Chahibi, Youssef* *Georgia Institute of Technology*; Balasingham, Ilangko *Oslo Univ. Hospital and Norwegian Univ. of Science and*

14:45-15:00 ThET20.2
Wireless Communication Link for Capsule Endoscope at 600 MHz 4081-4084
 Khaleghi, Ali* *Oslo Univ. Hospital*; Balasingham, Ilangko *Oslo Univ. Hospital and Norwegian Univ. of Science and*

15:00-15:15 ThET20.3
Wireless Radio Channel for Intramuscular Electrode Implants in the Control of Upper Limb Prostheses 4085-4088
 Stango, Antonietta* *Univ. Medical Center Göttingen*; Yekeh Yazdandoost, Kamya *Wireless Network Research Institute, National Institute of Infor*; Farina, Dario *Bernstein Center for Computational Neuroscience, Univ. Medic*

15:15-15:30 ThET20.4
A More Acceptable Endoluminal Implantation for Wirelessly Monitoring Vital Signals using Ingestible Sensors Anchored to the Stomach Wall 4089-4092
 Ohta, Hidetoshi* *Sapporo Orthopedics and Cardiovascular Hospital*; Izumi, Shintaro *Kobe Univ.*; Yoshimoto, Masahiko *Kobe Univ.*

15:30-15:45 ThET20.5
A Microwave Imaging-Based 3D Localization Algorithm for an In-Body RF Source as in Wireless Capsule Endoscopes 4093-4096
 Chandra, Rohit* *Norwegian Univ. of Science and Technology (NTNU)*; Balasingham, Ilangko *Oslo Univ. Hospital and Norwegian Univ. of Science and*

15:45-16:00 ThET20.6
Multichannel Neural Recording with a 128 Mbps UWB Wireless Transmitter for Implantable Brain-Machine Interfaces 4097-4100
 Ando, Hiroshi* *NICT*; Takizawa, Kenichi *NICT*; Yoshida, Takeshi *Hiroshima Univ.*; Matsushita, Kojiro *Gufu Univ.*; Hirata, Masayuki *Osaka Univ. Medical School*; Suzuki, Takafumi *National Institute of Information and Communications Technology*

ThFPoT1: 16:00-17:30 Gold Room
1.47 Independent Component Analysis and Empirical Mode Decomposition (Poster Session)

16:00-17:30 ThFPoT1.1
On the Influence of High-Pass Filtering on ICA-Based Artifact Reduction in EEG-ERP 4101-4105
 Winkler, Irene* *Berlin Institute of Technology*; Debener, Stefan *Hamburg Univ.*; Müller, Klaus-Robert *Berlin Institute of Technology*; Tangermann, Michael *Univ. of Freiburg*

16:00-17:30 ThFPoT1.3
Tracking Non-Stationary EEG Sources using Adaptive Online Recursive Independent Component Analysis 4106-4109
 Hsu, Sheng-Hsiou* *Univ. of California, San Diego*; Pion-Tonachini, Luca *Univ. of California, San Diego*; Jung, Tzzy-Ping *Univ. of California San Diego*; Cauwenberghs, Gert *Univ. of California San Diego*

16:00-17:30	ThFPoT1.4
Automatic Preprocessing of EEG Signals in Long Time Scale	4110-4113
Corradino, Claudia* <i>Univ. of Catania</i> ; Bucolo, Maide <i>Univ. degli Studi di Catania</i>	
16:00-17:30	ThFPoT1.5
Real-Time EEG Source-Mapping Toolbox (REST): Online ICA and Source Localization	4114-4117
Pion-Tonachini, Luca* <i>Univ. of California, San Diego</i> ; Hsu, Sheng-Hsiou <i>Univ. of California, San Diego</i> ; Makeig, Scott <i>Univ. of California San Diego</i> ; Jung, Tzzy-Ping <i>Univ. of California San Diego</i> ; Cauwenberghs, Gert <i>Univ. of California San Diego</i>	
16:00-17:30	ThFPoT1.6
R-Principal Subspace for Driver Cognitive State Classification	4118-4121
Almahasneh, Hossam <i>Univ. Technology Petronas</i> ; Kamel, Nidal* <i>Technical Univ. of Petronas</i> ; Walter, Nicolas <i>Univ. Technology Petronas</i> ; Malik, Aamir Saeed <i>Univ. Teknologi Petronas</i>	
16:00-17:30	ThFPoT1.7
Multiscale PCA to Distinguish Regular and Irregular Surfaces using Tri Axial Head and Trunk Acceleration Signals	4122-4125
Pendharkar, Gita <i>Monash Univ.</i> ; Naik, Ganesh R* <i>Univ. of Technology Sydney</i> ; Acharyya, Amit <i>Indian Institute of Technology Hyderabad</i> ; Nguyen, Hung T. <i>Univ. of Technology, Sydney</i>	
16:00-17:30	ThFPoT1.8
Automated Clustering of Independent Components for Discontinuous Sounds Thoracic Imaging	4126-4129
Charleston-Villalobos, Sonia* <i>Univ. Autonoma Metropolitana</i> ; Castaneda-Villa, Norma <i>Univ. Autónoma Metropolitana-Izt</i> ; Gonzalez-Camarena, Ramon <i>Univ. Autonoma Metropolitana</i> ; Mejía Ávila, Mayra <i>Instituto Nacional de Enfermedades Respiratorias</i> ; Aljama-Corrales, Tomas <i>Univ. Autonoma Metropolitana</i>	
16:00-17:30	ThFPoT1.9
Hessian Regularization based Non-Negative Matrix Factorization for Gene Expression Data Clustering	4130-4133
Liu, Xiao <i>Shanghai Univ.</i> ; Shi, Jun <i>Shanghai Univ.</i> ; Wang, Congzhi* <i>Shenzhen Institutes of Advanced Technology, Chinese Academy of S</i>	
16:00-17:30	ThFPoT1.10
Empirical Mode Decomposition Applied for Non-Invasive Electrohysterographic Signals Denoising	4134-4137
Taralunga, Dragos-Daniel* <i>Politehnica Univ. of Bucharest</i> ; Ungureanu, G. Mihaela <i>Politehnica Univ. of Bucharest</i> ; Hurezeanu, Bogdan <i>Univ. Politehnica of Bucharest</i> ; Gussi, Ilinca <i>Univ. of Medicine and Pharmacy Carol Davila</i> ; Strungaru, Rodica <i>Politehnica Univ. of Bucharest</i>	
16:00-17:30	ThFPoT1.11
Empirical Mode Decomposition for Slow Wave Extraction from Electrogastrographical Signals	4138-4141
Mika, Barbara <i>Silesian Univ. of Technology</i> ; Komorowski, Dariusz, Waldemar <i>Silesian Univ. of Technology</i> ; Tkacz, Ewaryst* <i>Silesian Univ of Tech, Faculty of Biomedical Engineering</i>	
16:00-17:30	ThFPoT1.12
Preliminary Evaluation of Wearable Wellness System for Obstructive Sleep Apnea Detection	4142-4145
Crupi, Riccardo <i>Smartex s.r.l.</i> ; Faetti, Tommaso <i>Smartex s.r.l.</i> ; Paradiso, Rita* <i>Smartex srl</i>	

ThFPoT2: 16:00-17:30	Gold Room
1.48 Nonlinear and Nonstationary Analysis of Biosignals (Poster Session)	

16:00-17:30	ThFPoT2.1
Fractals Properties of EEG during Event-Related Desynchronization of Motor Imagery	4146-4149
Nguyen, Ngoc Quang* <i>Tokyo Univ. of Agriculture and Techonology</i> ; Truong, Quang Dang Khoa <i>Tokyo Univ. of Agriculture and Techonology</i> ; Kondo, Toshiyuki <i>Tokyo Univ. of Agriculture and Technology</i>	
16:00-17:30	ThFPoT2.2
Phase-Amplitude Cross-Frequency Coupling in EEG-Derived Cortical Time Series Upon an Auditory Perception Task	4150-4153
Papadaniil, Chrysa* <i>Aristotle Univ. of Thessaloniki</i> ; Kosmidou, Vasiliki <i>Information Technologies Institute, CERTH</i> ; Tsolaki, Anthoula <i>Aristotle Univ. of Thessaloniki</i> ; Hadjileontiadis, Leontios <i>Aristotle Univ. of Thessaloniki</i> ; Tsolaki, Magda <i>Aristotle Univ. of Thessaloniki</i> ; Kompatsiaris, Ioannis (Yannis) <i>Information Technologies Institute, CERTH</i>	

16:00-17:30	ThFPoT2.3
EEG Signal Features Extraction based on Fractal Dimension	4154-4157
Finotello, Francesca <i>Univ. of Padova</i> ; Scarpa, Fabio* <i>Univ. of Padova</i> ; Zanon, Mattia <i>Univ. of Padova</i>	
16:00-17:30	ThFPoT2.4
Lempel-Ziv and Multiscale Lempel-Ziv Complexity in Depression	4158-4161
Kalev, Kaia* <i>Tallinn Univ. of Tehnology, Technomedicum</i> ; Bachmann, Maie <i>Tallinn Univ. of Tech.</i> ; Lass, Jaanus <i>Tallinn Univ. of Tech.</i> ; Hinrikus, Hiie <i>Tallinn Univ. of Tech.</i> ; Orgo, Laura <i>Tallinn Univ. of Tech.</i>	
16:00-17:30	ThFPoT2.5
Detrended Fluctuation Analysis for Major Depressive Disorder	4162-4165
Wajid, Mumtaz <i>Univ. Teknologi Petronas</i> ; Malik, Aamir Saeed* <i>Univ. Teknologi Petronas</i> ; Ali, Syed Saad Azhar <i>Univ. Tekologi Petronas</i> ; Azhar, Yasin <i>Univ. Sains Malaysia</i> ; Amin, Hafeez Ullah <i>Univ. Teknologi Petronas</i>	
16:00-17:30	ThFPoT2.6
Tsallis Entropy as a Biomarker for Detection of Alzheimer's Disease	4166-4169
Al-nuaimi, Ali H.* <i>Univ. of Plymouth</i> ; Jammeh, Emmanuel <i>Plymouth Univ., School of Computing and Mathematics</i> ; Sun, Lingfen <i>Plymouth Univ., School of Computing and Mathematics</i> ; Ifeachor, Emmanuel <i>Univ. of Plymouth</i>	
16:00-17:30	ThFPoT2.7
Distribution Entropy Analysis of Epileptic EEG Signals	4170-4173
Li, Peng* <i>Shandong Univ.</i> ; Yan, Chang <i>Shandong Univ.</i> ; Karmakar, Chandan <i>Deakin Univ.</i> ; Liu, Changchun <i>Shandong Univ.</i>	
16:00-17:30	ThFPoT2.8
Non-Linear Analysis of EEG and HRV Signals during Sleep	4174-4177
Martin, Alejandro <i>Univ. Autonoma de San Luis Potosi</i> ; Guerrero-Mora, Guillermina <i>Univ. Autonoma de San Luis Potosi</i> ; Dorantes Méndez, Guadalupe <i>Univ. Autónoma de San Luis Potosi</i> ; Alba, Alfonso <i>Univ. Autonoma de San Luis Potosi</i> ; Mendez, Martin Oswaldo <i>Univ. Autonoma de San Luis Potosi</i> ; Chouvarda, Ioanna* <i>Aristotle Univ.</i>	
16:00-17:30	ThFPoT2.9
Highly Scalable Parallel Processing of Extracellular Recordings of Multielectrode Arrays	4178-4181
Gehring, Tiago Victor* <i>Univ. of Sheffield</i> ; Vasilaki, Eleni <i>Univ. of Sheffield</i> ; Giugliano, Michele <i>Univ. of Antwerpen</i>	
16:00-17:30	ThFPoT2.10
Effect of Filtering on the Classification Rate of Nonlinear Analysis Methods Applied to Uterine EMG Signals	4182-4185
Diab, Ahmad <i>Univ. de technologie de Compiègne - UTC</i> ; Falou, Omar* <i>Sunnybrook Health Sciences Centre / Univ. of Toronto</i> ; Hassan, Mahmoud <i>Univ. de Rennes 1</i> ; Karlsson, Brynjar <i>Reykjavik Univ.</i> ; Marque, Catherine <i>Univ. of Technology of Compiègne</i>	
16:00-17:30	ThFPoT2.11
Sensors' Ground Reaction Force Behavior for Both Normal and Parkinson Subjects – A Qualitative Study ..	4186-4189
Alkhatib, Rami* <i>Rafik Hariri Univ. / Univ.' De Lyon</i> ; Corbier, Christophe <i>Laboratoire LASPI, Univ. Jean-Monnet, 20 avenue de Paris, 4</i> ; El Badaoui, Mohamed <i>Laboratoire LASPI, Univ. Jean-Monnet, 20 avenue de Paris, 4</i> ; Moslem, Bassam <i>Hariri Canadian Univ.</i> ; Diab, Mohamad <i>Rafik Hariri Univ.</i>	
16:00-17:30	ThFPoT2.12
Toward Lightweight Biometric Signal Processing for Wearable Devices	4190-4193
Francescon, Roberto <i>Univ. of Padova</i> ; Hooshmand, Mohsen <i>Univ. of Padova</i> ; Gadaleta, Matteo <i>Univ. of Padova</i> ; Grisan, Enrico <i>Univ. of Padova</i> ; Yoon, Seung Keun <i>Samsung Advanced Institute of Technology</i> ; Rossi, Michele* <i>Univ. of Padova</i>	
16:00-17:30	ThFPoT2.13
A Multi-Spot Exploration of the Topological Structures of the Reconstructed Phase-Space for the Detection of Cardiac Murmurs	4194-4197
Oliveira, Jorge* <i>Instituto de Telecomunicações, Faculdade de Ciências da Univ.</i> ; Oliveira, Cristina <i>Faculdade de Engenharia da Univ. do Porto</i> ; Cardoso, Bruna <i>Faculdade de Medicina da Univ. do Porto</i> ; Sultan, Malik Saad <i>Univ. of Porto</i> ; Coimbra, Miguel <i>Instituto de Telecomunicações / Univ. do Porto</i>	

16:00-17:30 ThFPoT2.14
Intracranial Pressure for the Characterization of Different Types of Hydrocephalus: A Permutation Entropy Study 4198-4201
Adjei, Tricia *Oxehealth, Oxford*; Abasolo, Daniel* *Univ. of Surrey*; Santamarta, David *Hospital Univ. de León, León*

16:00-17:30 ThFPoT2.15
Non-Contact Dual Pulse Doppler System based Respiratory and Heart Rates Estimation for CHF Patients ... 4202-4205
Tran, Vinh Phuc *Univ. of Technology Sydney*; Al-Jumaily, Adel* *Univ. of Technology Sydney*

ThFPoT3: 16:00-17:30 Gold Room
2.36 Image Visualization and Rendering (Poster Session)

16:00-17:30 ThFPoT3.1
A GPU Accelerated Moving Mesh Correspondence Algorithm with Applications to RV Segmentation 4206-4209
Punithakumar, Kumaradevan* *Univ. of Alberta*; Noga, Michelle *Univ. of Alberta*; Boulanger, Pierre *Univ. of Alberta*

16:00-17:30 ThFPoT3.2
A High-Accuracy Surgical Augmented Reality System using Enhanced Integral Videography Image Overlay 4210-4213
Zhang, Xinran *Tsinghua Univ.*; Chen, Guowen *Tsinghua Univ.*; Liao, Hongen* *Tsinghua Univ.*;

16:00-17:30 ThFPoT3.3
Adaptive Stereo Medical Image Watermarking using Non-Corresponding Blocks 4214-4217
Mohaghegh, Hoda *Isfahan Univ. of Technology*; Karimi, Nader *Isfahan Univ. of Technology*; Soroushmehr, S.M.Reza* *Univ. of Michigan, Ann Arbor*; Samavi, Shadrokh *McMaster Univ.*; Najarian, Kayvan *Univ. of Michigan - Ann Arbor*

16:00-17:30 ThFPoT3.4
Techniques for Estimating Blood Pressure Variation using Video Images 4218-4221
Sugita, Norihiro* *Tohoku Univ.*; Obara, Kazuma *Tohoku Univ.*; Yoshizawa, Makoto *Tohoku Univ.*; Abe, Makoto *Tohoku Univ.*; Tanaka, Akira *Fukushima Univ.*; Homma, Noriyasu *Tohoku Univ. Graduate School of Medicine*

16:00-17:30 ThFPoT3.5
High Quality Surface Reconstruction in Radiotherapy: Cross-Sectional Contours to 3D Mesh using Wavelets 4222-4225
Moriconi, Stefano* *National Research Council*; Scalco, Elisa *National Research Council*; Broggi, Sara *Scientific Institute San Raffaele*; Avuzzi, Barbara *Fondazione IRCCS Istituto Nazionale dei Tumori*; Valdagni, Riccardo *Fondazione IRCCS Istituto Nazionale dei Tumori*; Rizzo, Giovanna *National Research Council (CNR)*

16:00-17:30 ThFPoT3.6
An Innovative Calibration based Integral Photography Rendering Algorithm for Medical Application and Its Evaluation 4226-4229
Chen, Guowen *Tsinghua Univ.*; Zhang, Xinran *Tsinghua Univ.*; Fan, Zhencheng *Tsinghua Univ.*; Liao, Hongen* *Tsinghua Univ.*;

16:00-17:30 ThFPoT3.7
Clustering-Based Limb Identification for Pressure Ulcer Risk Assessment 4230-4233
Baran Pouyan, Mazyar *Univ. of Texas at Dallas*; Nourani, Mehrdad* *Univ. of Texas at Dallas*; Pompeo, Matthew *Presbyterian Wound Care Clinic*

16:00-17:30 ThFPoT3.8
Visualization of Multiple Anatomical Structures with Explicit Isosurface Manipulation 4234-4237
Wan, Xiaonan *Institute of Automation, the Chinese Academy of Sciences*; Yang, Fei *Institute of Automation, Chinese Academy of Science*; Yang, Feng *Dept. of Biomedical Engineering, Beijing Jiaotong Univ.*; Li, Xiuli *Institute of Automation, Chinese Academy of Sciences*; Xu, Min *Chinese Academy of Sciences*; Tian, Jie* *Chinese Academy of Sciences*

16:00-17:30 ThFPoT3.9
Accelerating DRR Generation using Fourier Slice Theorem on the GPU 4238-4241
Abdellah, Marwan* *Biomedical Engineering Dept., Cairo Univ.*; Eldeib, Ayman M. *Cairo Univ.*; Owis, Mohamed *Cairo Univ.*

16:00-17:30 ThFPoT3.10
GPU Acceleration for Digitally Reconstructed Radiographs using Bindless Texture Objects and CUDA/OpenGL Interoperability 4242-4245
 Abdellah, Marwan* *Biomedical Engineering Dept., Cairo Univ.*; Eldeib, Ayman M. *Cairo Univ.*;
 Owis, Mohamed *Cairo Univ.*

ThFPoT4: 16:00-17:30 **Gold Room**
2.37 IR and Near IR Imaging and Spectroscopy (Poster Session)

16:00-17:30 ThFPoT4.1
Hyperspectral Imaging of Vascular Anastomosis Associated with Blood Flow and Hemoglobin Concentration 4246-4249
 Sakota, Daisuke* *National Institute of Advanced Industrial Science and Technology*; Nagaoka, Eiki *Tokyo Medical and Dental Univ.*; Maruyama, Osamu *National Institute of Advanced Industrial Science and Technology*

16:00-17:30 ThFPoT4.2
Robust Remote Monitoring of Breathing Function by using Infrared Thermography 4250-4253
 Barbosa Pereira, Carina* *RWTH Aachen Univ.*; Yu, Xinchu *RWTH Aachen Univ.*; Blazek, Vladimir *Philips Chair for Medical Information Technology, RWTH Aachen Univ.*; Leonhardt, Steffen *RWTH Aachen Univ.*

16:00-17:30 ThFPoT4.3
Thermogram Breast Cancer Detection Approach based on Neutrosophic Sets and Fuzzy C-Means Algorithm 4254-4257
 Gaber, Tarek* *IT4Innovations, VSB-Technical Univ. of Ostrava, Ostrava, C*; Zahran, Gehad *Faculty of Computers and Information - Cairo Univ.*; Anter, Ahmed *Teaching assistant - Faculty of Computer Science and Informatics*; Mona, Soliman *Faculty of Computers and information. Cairo Univ., Cairo*; Ali, Mona *Abdelbaset Sadek Minia Univ.*; Semary, Noura *Faculty of Computers and Information, Menoufia Univ., Egypt*; Aboul Alla, Hassanien *Faculty of Computer and Information, Cairo Univ., Cairo, Eg*; Vaclav, Snasel *IT4Innovation, VSB-Technical Univ. of Ostrava, Ostrava, Cz*

16:00-17:30 ThFPoT4.4
Functional Connectivity Analysis of Brain Hemodynamics during Rubber Hand Illusion 4258-4261
 Arizono, Naoki* *Tokyo Univ. of Agriculture and Technology*; Kondo, Toshiyuki *Tokyo Univ. of Agriculture and Technology*

16:00-17:30 ThFPoT4.6
In Vivo NIRS Monitoring in Pig Spinal Cord Tissues 4262-4265
 Tsiakaka, Olivier* *UPMC - LIP6*; Terosiet, Mehdi *ENSEA*; Romain, Olivier *ETIS UMR 8051, ENSEA, Univ. of Cergy-Pontoise, CNRS*; Histace, Aymeric *ETIS UMR 8051 CNRS*; Benali, Habib *INSERM - Univ. Pierre et Marie Curie*; Pradat, Pierre-Francois *Sorbonne Univ., UPMC, Univ Paris 06, Laboratory of Biomed*; Vallette, Farouk *UPMC, LIP6*; Feher, Michael *UPMC, LIP6*; Feruglio, Sylvain *UPMC - Paris 6*

ThFPoT5: 16:00-17:30 **Gold Room**
2.38 MR Neuroimaging II (Poster Session)

16:00-17:30 ThFPoT5.1
High-Resolution MRI of Spinal Cords by Compressive Sensing Parallel Imaging 4266-4269
 Li, Peng *Texas A&M Univ.*; Yu, Xiangdong *Texas A&M Univ.*; Griffin, Jay *Texas A&M Univ.*;
 Levine, Jonathan M *Texas A&M Univ.*; Ji, Jim Xiuquan* *Texas A&M Univ.*

16:00-17:30 ThFPoT5.2
The Predictive Power of Structural MRI in Autism Diagnosis 4270-4273
 Katuwal, Gajendra* *RIT*; Michael, Andrew *Rochester Institute of Technology*; Cahill, Nathan *Rochester Institute of Technology*; Baum, Stefi *Rochester Institute of Technology*

16:00-17:30	ThFPoT5.3
Medial Temporal Lobe High Resolution Magnetic Resonance Images for the Early Diagnosis of Alzheimer's Disease	4274-4277
Brun, Francesco* <i>Univ. of Trieste</i> ; Sensi, Francesco <i>INFN, Genoa</i> ; Quartulli, Rossella <i>INFN, Trieste</i> ; Rei, Luca <i>INFN, Genoa</i> ; Grucka, Alban <i>Univ. of Trieste</i> ; Mancarella, Valentina <i>Univ. of Trieste</i> ; Chincarini, Andrea <i>INFN, Genoa</i> ; Ukmar, Maja <i>Azienda Ospedaliero - Univ. "Ospedali Riuniti" Trieste</i> ; Accardo, Agostino <i>Univ. of Trieste</i> ; Longo, Renata <i>Univ. of Trieste & INFN, Dept. of Physics</i>	
16:00-17:30	ThFPoT5.4
Multimodal MRI Classification in Vascular Mild Cognitive Impairment	4278-4281
Diciotti, Stefano* <i>Alma Mater Studiorum, Univ. of Bologna</i> ; Ciulli, Stefano <i>Univ. of Florence</i> ; Ginestroni, Andrea <i>Careggi General Hospital Florence</i> ; Salvadori, Emilia <i>Univ. of Florence</i> ; Poggesi, Anna <i>Univ. of Florence</i> ; Pantoni, Leonardo <i>Univ. of Florence</i> ; Inzitari, Domenico <i>Univ. of Florence</i> ; Mascaldi, Mario <i>Univ. of Florence</i> ; Toschi, Nicola <i>Univ. of Rome "Tor Vergata", Faculty of Medicine</i>	
16:00-17:30	ThFPoT5.5
Functional Diffusion Map: A Biomarker of Brain Metastases Response to Treatment based on Magnetic Resonance Image Analysis	4282-4285
Ruiz-España, Silvia <i>Univ. Politècnica de València</i> ; Jiménez-Moya, Ana <i>Univ. Politècnica de València</i> ; Arana, Estanislao <i>Radiology Dept., Fundación Instituto Valenciano de Oncología</i> ; Moratal, David* <i>Univ. Politècnica de València</i>	
16:00-17:30	ThFPoT5.6
Sparse Dictionary Learning for fMRI Analysis using Autocorrelation Maximization	4286-4289
Khalid, Muhammad Usman* <i>NICTA and The Australian National Univ.</i> ; Shah, Adnan <i>Univ. of Melbourne</i> ; Seghouane, Abd-krim <i>The Univ. of Melbourne</i>	
16:00-17:30	ThFPoT5.7
Resting-State Brain Activity in the Motor Cortex Reflects Task-Induced Activity: A Multi-Voxel Pattern Analysis	4290-4293
Kusano, Toshiki* <i>Nagaoka Univ. of Technology</i> ; Kurashige, Hiroki <i>Tokyo Univ.</i> ; Nambu, Isao <i>Nagaoka Univ. of Technology</i> ; Moriguchi, Yoshiya <i>National Center of Neurology and Psychiatry</i> ; Hanakawa, Takashi <i>National Center of Neurology and Psychiatry</i> ; Wada, Yasuhiro <i>Nagaoka Univ. of Technology</i> ; Osu, Rieko <i>ATR Computational Neuroscience Laboratories</i>	
16:00-17:30	ThFPoT5.8
Automatic Detection of Local Arterial Input Functions through Independent Component Analysis on Dynamic Contrast Enhanced Magnetic Resonance Imaging	4294-4297
Narváez, Mario <i>Univ. Politècnica de València</i> ; Ruiz-España, Silvia <i>Univ. Politècnica de València</i> ; Arana, Estanislao <i>Radiology Dept., Fundación Instituto Valenciano de Oncología</i> ; Moratal, David* <i>Univ. Politècnica de València</i>	
16:00-17:30	ThFPoT5.9
An MRI-Compatible and Quantifiable Mechanical Stimulator for Allodynia in a Rat Model of Neuropathic Pain	4298-4301
Suzuki, Toshiki* <i>The Univ. of Tokyo</i> ; Kim, Dongmin <i>The Univ. of Tokyo</i> ; Nagase, Masae <i>The Univ. of Tokyo</i> ; Saitoh, Youichi <i>Osaka Univ.</i> ; Someya, Takao <i>the Univ. of Tokyo</i> ; Sekino, Masaki <i>The Univ. of Tokyo</i>	
16:00-17:30	ThFPoT5.10
Testing the Effects of Pre-Processing on Voxel based Morphometry Analysis	4302-4305
Chirumamilla, Venkata Chaitanya* <i>Johannes Gutenberg Univ., Dept. of Neurology Mainz</i> ; Koirala, Nabin <i>Johannes Gutenberg Univ., Dept. of Neurology Mainz</i> ; Mideksa, Kidist Gebremariam <i>Univ. of Kiel</i> ; Anwar, Abdul Rauf <i>Univ. of Engineering & Technology</i> ; Schmidt, Gerhard <i>Univ. of Kiel, Digital Signal Processing and System Theory</i> ; Gunther, Deuschl <i>Dept. of Neurology</i> ; Sergiu, Groppa <i>Dept. of Neurology</i> ; Muthuraman, Muthuraman <i>Christian Albrechts Univ.</i>	
16:00-17:30	ThFPoT5.11
A Collaborative Environment for Shared Classification of Neuroimages: The Experience of the Colibri Project	4306-4309
Alloni, Anna* <i>Univ. of Pavia</i> ; Lanzola, Giordano <i>Univ. of Pavia</i> ; Triulzi, Fabio Maria <i>Fondazione IRCCS Ca' Granda, Ospedale Maggiore Policlinico</i> ; Bellazzi, Riccardo <i>Univ. of Pavia</i> ; Reni, Gianluigi <i>IRCCS</i>	

16:00-17:30	ThFPoT5.12
A Statistical Approach in Human Brain Connectome of Parkinson Disease in Elderly People using Network based Statistics	4310-4313
Aarabi, Mohammad Hadi* <i>Students' Scientific Research Center, Tehran Univ. of Medica</i> ; Kamalian, Aida <i>Student's Scientific Research Center, Tehran Univ. of Medica</i> ; Mohajer, Bahram <i>Student's Scientific Research Center, Tehran Univ. of Medica</i> ; Shirin Shandiz, Mahdi <i>Student's Scientific Research Center, Tehran Univ. of Medica</i> ; Eqlimi, Ehsan <i>Tehran Univ. of Medical Sciences</i> ; Shojaei, Ahmad Basir <i>Eye Health Research Center, Tehran, Iran</i> ; Safabakhsh, Hamidreza <i>Basir Eye Health Research Center, Tehran, Iran</i>	
16:00-17:30	ThFPoT5.13
Testing Different ICA Algorithms and Connectivity Analyses on MS Patients	4314-4317
Muthuraman, Muthuraman* <i>Christian Albrechts Univ.</i> ; Anjum, Tauqeer <i>Univ. of Kiel, Digital Signal Processing and System Theory</i> ; Drogby, Amgad <i>Johannes Gutenberg Univ., Dept. of Neurology Mainz</i> ; Vinzenz, Fleischer <i>Dept. of Neurology, Johannes Gutenberg Univ., Mainz</i> ; Reitz, Sarah Christina <i>Dept. of Neurology, Goethe Univ. Frankfurt am Main, Fr</i> ; Mideksa, Kidist <i>Gebremariam Univ. of Kiel</i> ; Schmidt, Gerhard <i>Univ. of Kiel, Digital Signal Processing and System Theory</i> ; Zipp, Frauke <i>Johannes Gutenberg Univ., Dept. of Neurology Mainz</i> ; Sergiu, Groppa <i>Dept. of Neurology</i>	
ThFPoT6: 16:00-17:30	Gold Room
2.39 Retinal and Ophthalmic Imaging III (Poster Session)	
16:00-17:30	ThFPoT6.1
Glaucoma Classification using Regional Wavelet Features of the ONH and Its Surroundings	4318-4321
Haleem, Muhammad Salman* <i>Manchester Metropolitan Univ.</i> ; Han, Liangxiu <i>Manchester Metropolitan Univ.</i> ; van Hemert, Jano <i>Optos plc</i> ; Fleming, Alan <i>Optos plc</i>	
16:00-17:30	ThFPoT6.2
New Hierarchical Approach for Microaneurysms Detection with Matched Filter and Machine Learning ..	4322-4325
Wu, Jiayi* <i>Xi'an Jiaotong Univ.</i> ; Xin, Jingmin <i>Xi'an Jiaotong Univ.</i> ; Hong, Lai <i>the School of Software Engineering, Shenzhen Institute of Inform</i> ; You, Jane <i>The Hong Kong Polytechnic Univ.</i> ; Zheng, Nanning <i>Xi'an Jiaotong Univ.</i>	
16:00-17:30	ThFPoT6.3
An Augmented Reality Assistance Platform for Eye Laser Surgery	4326-4329
Ong, Ee Ping* <i>Institute for Infocomm Research</i> ; Lee, Jimmy Addison <i>Institute for Infocomm Research, ASTAR</i> ; Cheng, Jun <i>Institute for Infocomm Research, AStar</i> ; Lee, Beng Hai <i>Institute for Infocomm Research</i> ; Xu, Guozhen <i>Institute for Infocomm Research</i> ; Laude, Augustinus <i>Tan Tock Seng Hospital</i> ; Teoh, Stephen <i>National Healthcare Group (NHG) Eye Institute</i> ; Lim, Tock Han <i>Tan Tock Seng Hospital</i> ; Wong, Damon <i>Institute for Infocomm Research</i> ; Liu, Jiang <i>Institute for Infocomm Research, A STAR</i>	
16:00-17:30	ThFPoT6.4
Computer-Assisted Grading of Diabetic Macular Edema on Retinal Color Fundus Images	4330-4333
Sundaresan, Vaanathi* <i>Indian Institute of Technology Madras</i> ; Ram, Keerthi <i>International Institute of Information Technology-Hyderabad</i> ; Joshi, Niranjan <i>Healthcare Technology Innovation Centre</i> ; Sivaprakasam, Mohanasankar <i>Indian Institute of Technology Madras</i> ; Gandhi, Rashmin <i>Beyond Eyecare</i>	
16:00-17:30	ThFPoT6.5
3-D Localization of Diabetic Macular Edema using OCT Thickness Maps	4334-4337
Roychowdhury, Sohini* <i>Univ. of Washington, Bothell</i> ; Koozekanani, Dara <i>Univ. of Minnesota</i> ; Reinsbach, Michael <i>Univ. of Minnesota, Dept. of Ophthalmology</i> ; Parhi, Keshab <i>Univ. of Minnesota</i>	
16:00-17:30	ThFPoT6.6
Computer-Aided Diagnosis of Plus Disease in Retinal Fundus Images of Preterm Infants via Measurement of Vessel Tortuosity	4338-4342
Oloumi, Faraz* <i>Univ. of Calgary</i> ; Rangayyan, Raj <i>Univ. of Calgary</i> ; Ells, Anna L. <i>Division of Ophthalmology, Dept. of Surgery, Alberta Childr</i>	
16:00-17:30	ThFPoT6.7
A New Tool to Connect Blood Vessels in Fundus Retinal Images	4343-4346
Calivà, Francesco* <i>Univ. of Lincoln</i> ; Aletti, Matteo <i>INRIA</i> ; Al-Diri, Bashir <i>The Univ. of Lincoln</i> ; Hunter, Andrew <i>Univ. of Lincoln</i>	

16:00-17:30		ThFPoT6.8
Interactive Retinal Vessel Centreline Extraction and Boundary Delineation using Anisotropic Fast Marching and Intensities Consistency	4347-4350	
Chen, Da* <i>Univ. Paris Dauphine</i> ; Cohen, Laurent <i>Paris Dauphine Univ.</i>		
16:00-17:30		ThFPoT6.9
Reducing the Artifacts in the Identification of Outer Retinal Boundary in the SD-OCT Image with Inherit Retinal Dystrophies	4351-4354	
Zhang, Min* <i>Kyoto Univ.</i> ; Sekiguchi, Hiroyuki <i>Kyoto Univ.</i> ; Uji, Akihito <i>Kyoto Univ.</i> ; Yakami, Masahiro <i>Kyoto Univ.</i> ; Togashi, Kaori <i>Kyoto Univ. Graduate School of Medicine, Kyoto, Japan.</i>		
ThFPoT7: 16:00-17:30		Gold Room
3.23 New Sensing Techniques II (Poster Session)		
16:00-17:30		ThFPoT7.1
A Mucoadhesive Endoluminal Wearable Sensory System	4355-4358	
Chan, Cecilia K.W. <i>The Chinese Univ. of Hong Kong, Hong Kong</i> ; Zheng, Yali <i>The Chinese Univ. of Hong Kong</i> ; Elaine, Elaine H.L. <i>The Chinese Univ. of Hong Kong</i> ; Yu, Ruoxi <i>The Chinese Univ. of Hong Kong</i> ; Leung, Hin Kwong <i>The Chinese Univ. of Hong Kong</i> ; Zhang, Ruikai <i>The Chinese Univ. of Hong Kong</i> ; Poon, Carmen CY* <i>The Chinese Univ. of Hong Kong</i>		
16:00-17:30		ThFPoT7.2
Photoelectric Properties in Metal Ion Modified DNA Nanostructure	4359-4362	
Kulkarni, Atul <i>Sungkyunkwan Univ.</i> ; Dugasani, Sreekantha Reddy <i>Sungkyunkwan Univ.</i> ; Kim, Jang Ah <i>Sungkyunkwan Univ. (SKKU)</i> ; Kim, Hyeong-U <i>Sungkyunkwan Univ. (SKKU)</i> ; Park, Sung Ha <i>Sungkyunkwan Univ.</i> ; Taesung, Kim* <i>Sungkyunkwan Univ., Mechanical Engineering</i>		
16:00-17:30		ThFPoT7.3
Development of an Integrated Optical Contact Force Monitoring Sensor for Cardiac Ablation Catheters ...	4363-4366	
Kim, Jang Ah <i>Sungkyunkwan Univ. (SKKU)</i> ; Kim, Changmin <i>Sungkyunkwan Univ.</i> ; Park, Kihong <i>Sungkyunkwan Univ.</i> ; Kulkarni, Atul <i>Sungkyunkwan Univ.</i> ; Taesung, Kim* <i>Sungkyunkwan Univ., Mechanical Engineering</i>		
16:00-17:30		ThFPoT7.4
Resistopalatography as an Assistive Technology for Users with Spinal Cord Injuries	4367-4370	
Horne, Robert* <i>Univ. of Kent</i> ; Kelly, Stephen <i>Univ. of Kent, Ekhuff, Kess</i> ; Sharp, Paul <i>Univ. of Kent</i>		
16:00-17:30		ThFPoT7.5
A Low Power, Area Efficient FPGA based Beamforming Technique for 1-D CMUT Arrays	4371-4374	
Joseph, Bastin* <i>IIT Hyderabad</i> ; Joseph, Jose <i>Indian Institute of Technology, Hyderabad</i> ; Vanjari, Siva Rama Krishna <i>IIT Hyderabad</i>		
16:00-17:30		ThFPoT7.6
Unobtrusive Tactile Sensing based on Electromechanical Boundary Estimation	4375-4378	
Yoshimoto, Shunsuke* <i>Osaka Univ.</i> ; Imura, Masataka <i>Kwansei Gakuin Univ.</i> ; Oshiro, Osamu <i>Osaka Univ.</i>		
16:00-17:30		ThFPoT7.7
A μ-Biomimetic Flow Sensor for Medical and Pharmaceutical Applications	4379-4382	
Stepniak, Simon <i>Center of Advanced European Studies and Research</i> ; Bleckmann, Horst <i>Univ. of Bonn, Institute of Zoology</i> ; Herzog, Hendrik <i>Univ. of Bonn</i> ; Klein, Adrian <i>Univ. of Bonn</i> ; Schulze, Elisabeth <i>Forschungszentrum caesar</i> ; Tätzner, Simon <i>Fraunhofer IBMT</i> ; Steltenkamp, Siegfried* <i>Univ. of Bonn</i>		
16:00-17:30		ThFPoT7.8
Effects of Sensor Type and Location on Signal Quality in Bed Mounted Ballistocardiographic Heart Rate and Respiration Monitoring	4383-4386	
Vehkaoja, Antti* <i>Tampere Univ. of Technology</i> ; Kontunen, Anton Santeri <i>Tampere Univ. of Technology</i> ; Lekkala, Jukka <i>Tampere Univ. of Technology</i>		
16:00-17:30		ThFPoT7.9
Comparative Study on Dielectric Constants and Conductivities of Invasive Ductal Carcinoma Tissues ..	4387-4390	
Kikkawa, Takamaro* <i>Hiroshima Univ.</i> ; Sugitani, Takumi <i>Hiroshima Univ.</i> ; Arihiro, Koji <i>Hiroshima Univ.</i>		

3.24 Sensors and Systems (Poster Session)

- 16:00-17:30 ThFPoT8.1
Nanomaterial-Based Biosensors for a Real-Time Detection of Biological Damage by UV Light 4391-4394
 Santonicola, M. Gabriella* *Sapienza Univ. of Rome*; Coscia, Marta Gina *Sapienza Univ. of Rome*; Sirilli, Matteo *Sapienza Univ. of Rome*; Laurenzi, Susanna *Sapienza Univ. of Rome*
- 16:00-17:30 ThFPoT8.2
Evaluation of a Noninvasive Deep Body Thermometer in Measurement of Specific Positions 4395-4398
 Huang, Ming* *Nara Institute of Science and Technology*; Tamura, Toshiyo *Osaka Electro-Communication Univ.*; Chen, Wenxi *Univ. of Aizu*; Ono, Naoaki *Nara Institute of Science and Technology*; Sato, Tetsuo *Nara Inst of Science & Tech*; Kanaya, Shigehiko *Nara Institute of Science and Technology*
- 16:00-17:30 ThFPoT8.3
Intuitive Wireless Control of a Robotic Arm for people living with an Upper Body Disability 4399-4402
 Cheikh Latyr, Fall *Univ. Laval*; Turgeon, Philippe *Univ. Laval*; Maheu, Véronique *Kiniva*; Lecours, Alexandre *Univ. Laval*; Boukadoum, Mounir *Univ. of Quebec at Montréal*; Roy, Sébastien *Univ. de Sherbrooke*; Massicotte, Daniel *Univ. du Québec à Trois-Rivières*; Gosselin, Clément *Univ. Laval*; Gosselin, Benoit* *Laval Univ.*
- 16:00-17:30 ThFPoT8.4
Passive RFID Tag based Heart Rate Monitoring from an ECG Signal 4403-4406
 Vora, Shrenik* *Drexel Univ.*; Dandekar, Kapil *Drexel Univ.*; Kurzweg, Timothy *Drexel Univ.*
- 16:00-17:30 ThFPoT8.5
An Eight-Legged Tactile Sensor to Estimate Coefficient of Static Friction 4407-4410
 Chen, Wei *Univ. of New South Wales*; Rodpongpan, Sura *Chulalongkorn Univ.*; Luo, William *Univ. of New South Wales*; Isaacson, Nathan *UNSW Australia*; Kark, Lauren *Graduate School of Biomedical Engineering*; Khamis, Heba *Univ. of Western Sydney*; Redmond, Stephen James* *Univ. of New South Wales*
- 16:00-17:30 ThFPoT8.6
Surface Deformation Tracking and Modeling of Soft Materials 4411-4414
 Parker, Matthew David *The Univ. of Auckland*; Babarenda Gamage, Thiranjia *Auckland Bioengineering Institute, Univ. of Auckland*; HajiRassouliha, Amir *The Univ. of Auckland*; Taberner, Andrew *The Univ. of Auckland*; Nash, Martyn *Univ. of Auckland*; Nielsen, Poul* *The Univ. of Auckland*

4.15 Clinical Applications of Modeling (Poster Session)

- 16:00-17:30 ThFPoT9.1
Melanosome Distribution Patterns Affecting Skin Reflectance: Implications for the in Vivo Estimation of Epidermal Melanin Content 4415-4418
 Chen, Tenn Francis* *Univ. of Waterloo*; Baranoski, Gladimir *Univ. of Waterloo*
- 16:00-17:30 ThFPoT9.2
Homology Modeling of Target Proteins and Identification Novel Anti-Fungal Compounds against Candida Tropicalis through Structure based Virtual Screening 4419-4422
 Ravinarayanan, Haribalaganesh *Kalasalingam Univ.*; Paul, Bibhash Kumar *Kalasalingam Univ.*; Chakraborty, Angshu *Kalasalingam Univ.*; Sundar, Krishnan* *Kalasalingam Univ.*
- 16:00-17:30 ThFPoT9.3
Anthropometric Measurements for Assessing Insulin Sensitivity on Patients with Metabolic Syndrome, Sedentaries and Marathoners 4423-4426
 Severeyn Varela, Erika *Univ. Simón Bolívar*; Wong C, Sara *Univ. Simon Bolivar*; Herrera, Hector *Univ. Simón Bolívar*; Altuve, Miguel* *Pontifical Bolivarian Univ.*
- 16:00-17:30 ThFPoT9.4
Feature Selection and Oversampling in Analysis of Clinical Data for Extubation Readiness in Extreme Preterm Infants 4427-4430
 Gourdeau, Pascale* *McGill Univ.*; Kanbar, Lara *McGill Univ.*; Shalish, Wissam *McGill Univ.*; Sant'Anna, Guilherme Mendes *McGill Univ.*; Kearney, Robert Edward *McGill Univ.*; Precup, Doina *McGill Univ.*

16:00-17:30	ThFPoT9.5
Correlation of Clinical Parameters with Cardiorespiratory Behavior in Successfully Extubated Extremely Preterm Infants	4431-4434
Kanbar, Lara* <i>McGill Univ.</i> ; Shalish, Wissam <i>McGill Univ.</i> ; Robles-Rubio, Carlos Alejandro <i>McGill Univ.</i> ; Precup, Doina <i>McGill Univ.</i> ; Brown, Karen <i>McGill Univ.</i> ; Sant'Anna, Guilherme Mendes <i>McGill Univ.</i> ; Kearney, Robert Edward <i>McGill Univ.</i>	
16:00-17:30	ThFPoT9.6
Accuracy and Optimization of a Subcutaneous Insulin Model for Less Acute Critical Care Patients	4435-4438
Thomas, Felicity* <i>Univ. of Canterbury</i> ; Dickson, Jennifer <i>Univ. of Canterbury</i> ; Pretty, Christopher G. <i>Univ. of Canterbury</i> ; Stewart, Kent <i>Univ. of Canterbury</i> ; Fisk, Liam <i>Univ. of Canterbury</i> ; Shaw, Geoffrey M <i>Christchurch Hospital</i> ; Chase, J. Geoffrey <i>Univ. of Canterbury</i>	
16:00-17:30	ThFPoT9.7
Procoagulant Control Strategies for the Human Blood Clotting Process	4439-4442
Laurino, Marco* <i>Scuola Superiore Sant'Anna</i> ; Menara, Tommaso <i>Univ. degli studi di Pisa</i> ; Stella, Alessandro <i>Univ. di Pisa</i> ; Betta, Monica <i>Univ. of Pisa</i> ; Landi, Alberto <i>Univ. of Pisa</i>	
16:00-17:30	ThFPoT9.8
A Machine Learning Pipeline for Multiple Sclerosis Course Detection from Clinical Scales and Patient Reported Outcomes	4443-4446
Fiorini, Samuele <i>Univ. of Genoa</i> ; Verri, Alessandro <i>Univ. of Genoa</i> ; Tacchino, Andrea <i>Italian MS Foundation</i> ; Ponzio, Michela <i>Italian MS Foundation</i> ; Brichetto, Giampaolo <i>Italian MS Foundation</i> ; Barla, Annalisa* <i>Univ. of Genoa</i>	
16:00-17:30	ThFPoT9.9
Next Generation Patient Monitor Powered by In-Silico Physiology	4447-4453
Baronov, Dimitar* <i>Etiometry Inc.</i> ; McManus, Michael <i>Etiometry Inc.</i> ; Butler, Evan <i>Etiometry Inc.</i> ; Chung, Douglas <i>Etiometry Inc.</i> ; Almodovar, Melvin <i>Boston Children's Hospital</i>	
16:00-17:30	ThFPoT9.10
Mathematical Models of Tumor Growth using Voronoi Tessellations in Pathology Slides of Kidney Cancer .	4454-4457
Saribudak, Aydin* <i>CCNY</i> ; Dong, Yiyu <i>MSKCC</i> ; Gundry, Stephen <i>City College of New York</i> ; Hsieh, James J. <i>MSKCC</i> ; Uyar, M. Umit <i>City College of New York</i>	
16:00-17:30	ThFPoT9.11
Extracting Reliable Gene Expression Signatures through Stable Bootstrap Validation	4458-4461
Chlis, Nikolaos-Kosmas <i>Technical Univ. of Crete</i> ; Bei, Ekaterini <i>Technical Univ. of Crete</i> ; Moirogiorgou, Konstantina <i>Technical Univ. of Crete</i> ; Zervakis, Michalis* <i>Technical Univ. of Crete, Greece</i>	
16:00-17:30	ThFPoT9.12
Rank-Based MIRNA Signatures for Blood-Based Diagnosis of Tuberculosis	4462-4465
Lauria, Mario* <i>COSBI</i>	
16:00-17:30	ThFPoT9.13
Epileptic EEG Visualization and Sonification based on Linear Discriminate Analysis	4466-4469
Chen, Wei <i>National Taiwan Univ.</i> ; Shen, Chia-Ping <i>National Taiwan Univ.</i> ; Chiu, Ming-Jang <i>Dept. of Neurology, National Taiwan Univ. Hospital, No.</i> ; Zhao, Qibin <i>RIKEN Brain Science Institute</i> ; Cichocki, Andrzej <i>BSI RIKEN</i> ; Lin, Jeng-Wei* <i>Tunghai Univ.</i> ; Lai, Feipei <i>National Taiwan Univ.</i>	
16:00-17:30	ThFPoT9.14
Early Detection of Epilepsy Seizures based on a Weightless Neural Network	4470-4474
Aguiar, Kleber de <i>Federal Univ. of Rio de Janeiro</i> ; França, Felipe Maia Galvão <i>Federal Univ. of Rio de Janeiro</i> ; Barbosa, Valmir Carneiro <i>Federal Univ. of Rio de Janeiro</i> ; Teixeira, César* <i>Univ. of Coimbra</i>	

5.14 Cardiac Electrophysiology II (Poster Session)

- 16:00-17:30 ThFPoT10.1
Magnetocardiograms Early Detection of Pulmonary Arterial Hypertension using Inverse Problem Analysis in Rat Model 4475-4478
 Yasuda, Shotaro* *Waseda Univ.*; Higano, Sho *Waseda Univ.*; Ono, Yumie *Meiji Univ.*; Ishiyama, Atsushi *Waseda Univ.*; Minamisawa, Susumu *Jikei Univ. School of Medicine*; Kajimura, Ichige *Jikei Univ. School of Medicine*
- 16:00-17:30 ThFPoT10.2
Imaging of Cardiac Electrical Excitation Conduction 4479-4482
 Zhou, Dafang *Tongji Univ.*; Jiang, Shiqin* *Tongji Univ.*; Zhu, Jiachen *Tongji Univ.*; Zhao, Chen *Tongji Univ.*; Yan, Yurui *Tongji Univ.*; Grönemeyer, D *Dept. of Biomagnetism, Grönemeyer Institute for Microtherapy, Fa*; Van Leeuwen, Peter *Chair Radiology / Microtherapy, Univ. of Witten/Herdecke*
- 16:00-17:30 ThFPoT10.3
Computationally Efficient Method for Localizing the Spiral Rotor Source using Synthetic Intracardiac Electrograms during Atrial Fibrillation 4483-4486
 Shariat, Mohammad Hassan* *Queen's Univ., Kingston, Ontario, Canada*; Gazor, Saeed *Queen's Univ., Kingston, Ontario, Canada*; Redfearn, Damian P *Queen's Univ.*
- 16:00-17:30 ThFPoT10.4
Calcium Leak Induced Arrhythmias in Mouse Sino-Atrial Node and Ventricle Cells: A Simulation Study ... N/A
 Wang, Qingjie *Dept. of Cardiology, Zhongda Hospital of Southeast Univ.*; Kharche, Sanjay *Univ. of Exeter*; Jones, Gareth *Univ. of Manchester*; Luo, Cunjin *School of Computer Science and Technology, Harbin Institute of T*; Tang, Chengchun *Dept. of Cardiology, Zhongda Hospital of Southeast Univ.*; Zhang, Henggui* *Univ. of Manchester*
- 16:00-17:30 ThFPoT10.5
Formation of Second-Degree Atrioventricular Blocks in the Cardiac Heterogeneous Oscillator Model ... 4491-4494
 Ryzhii, Elena *Univ. of Aizu*; Ryzhii, Maxim* *Univ. of Aizu*
- 16:00-17:30 ThFPoT10.6
Performance of Dower's Inverse Transform and Frank Lead System for Identification of Myocardial Infarction 4495-4498
 Aranda, Alfonso* *Medtronic*; Bonizzi, Pietro *Maastricht Univ.*; Karel, Joël *Maastricht Univ.*; Peeters, Ralf *Maastricht Univ.*
- 16:00-17:30 ThFPoT10.8
Feasibility of Visualizing Higher Regions of Shannon Entropy in Atrial Fibrillation Patients 4499-4502
 Poigai Arunachalam, Shivaram *Mayo Clinic*; Mulpuru, Siva *Mayo Clinic*; Friedman, Paul *Mayo Clinic*; Tolkacheva, Elena* *Univ. of Minnesota*
- 16:00-17:30 ThFPoT10.9
Spiral Wave Classification using Normalized Compression Distance: Towards Atrial Tissue Spatiotemporal Electrophysiological Behavior Characterization 4503-4506
 Alagoz, Celal* *Drexel Univ.*; Guez, Allon *Drexel Univ.*; Cohen, Andrew *Drexel Univ.*; Bullinga, John R *Penn Presbyterian Medical Center*
- 16:00-17:30 ThFPoT10.10
A Multi-Criteria Evaluation Method for Assessing the Defibrillation Outcome of Different Electrode Placements in Swine 4507-4510
 Lai, Dakun* *Univ. of Electronic Science and Technology of China*; Li, Pengye *Univ. of Electronic Science and Technology of China*; Xu, Qi *Univ. of Electronic Science and Technology of China*

5.15 Respiratory Engineering and Sleep Apnea (Poster Session)

16:00-17:30

ThFPoT11.1

Rib-Cage-Movement Measurements as a Potential New Trigger Signal in Non-Invasive Mechanical Ventilation

4511-4514

Ivanovic, Marija* *Vinca Institute of Nuclear Sciences*; Petrovic, Jovana *Vinca Institute of Nuclear Sciences*; Miletic, Marjan *Vinca Institute of Nuclear Sciences, Univ. of Belgrade, Mik*; Danicic, Aleksandar *Vinca Institute of Nuclear Sciences*; Bojovic, Bosko *NewCardio, Inc*; Vukcevic, Miodrag *Bezanijska Kosa Hospital*; Lazovic, Biljana *Univ. Clinical Hospital Center Zemun-Dept of pulmono*; Gluovic, Zoran *Univ. Clinical Hospital Center Zemun-Intensive care Unit*; Ljupco, Hadzиеvski *NewCardio, Inc*; Allsop, Thomas *Aston Institute of Photonic Technologies*; Webb, David *Aston Institute of Photonic Technologies*

16:00-17:30

ThFPoT11.2

Lung Assist Devices Influence Cardio-Energetic Parameters: Numerical Simulation Study

4515-4519

De Lazzari, Claudio* *National Research Council (CNR)*; Quatember, Bernhard *Innsbruck Medical Univ.*; Recheis, Wolfgang *Medical Univ., Dept. Radiology*; Mayr, Martin *Univ. of Applied Sciences Wiener Neustadt*; Demertzis, Stefanos *Cardiocentro Ticino & Univ. of Bern*; Allasia, Giampietro *Univ. di Torino*; de Rossi, Alessandra *Univ. of Torino*; Cavoretto, Roberto *Univ. of Torino*; Venturino, Ezio *Univ. di Torino*; Genuini, Iginio *Sapienza Univ.*

16:00-17:30

ThFPoT11.3

Retrospective Data-Driven Respiratory Gating for PET using TOF Information

4520-4523

Wang, Mengdie *Tsinghua Univ./ Harvard Medical School*; Guo, Ning *Massachusetts General Hospital/Harvard Medical School*; Zhang, Hui *Tsinghua Univ.*; El Fakhri, Georges *Harvard Medical School, Massachusetts General Hospital*; Hu, Guangshu *Tsinghua Univ.*; Li, Quanzheng* *Harvard Medical School, Massachusetts General Hospital*

16:00-17:30

ThFPoT11.4

A Novel Method for Non-Invasive Respiration Monitoring

4524-4527

Cook, Andrew J.* *Univ. of New South Wales, Sydney*; Gargiulo, Gaetano *The MARCS Institute (Univ. of Western Sydney)*; Cook, Rebekah *Univ. of Notre Dame Australia*; Ng, Ben *Prince of Wales Hospital*; Hindmarsh, Diane *Bureau of Health Information*; Lehmann, Torsten *Univ. of New South Wales*; Hamilton, Tara *Julia Univ. of New South Wales*

16:00-17:30

ThFPoT11.5

Comparing Consumption Oxygen during and after Squat Exercise in Smith Machine and Whole-Body Vibration

4528-4531

Justo, Ana Catarina *Garcia Research Center in Sports, Health Sciences and Human Development*; Saavedra, Francisco José Félix *Research Center in Sports, Health Sciences and Human Development*; Vilaça-Alves, José *Research Center in Sports, Health Sciences and Human Development*; Rosa, Claudio *Research Center in Sports, Health Sciences and Human Development*; Neves, Eduardo Borba* *Federal Technological Univ. of Paraná (UTFPR)*; Reis, Victor Machado *Research Center in Sports, Health Sciences and Human Development*

16:00-17:30

ThFPoT11.6

A Polynomial Model of Patient-Specific Breathing Effort during Controlled Mechanical Ventilation

4532-4535

Redmond, Daniel* *Univ. of Canterbury*; Docherty, Paul David *Univ. of Canterbury*; Chiew, Yeong Shiong *Univ. of Canterbury*; Chase, J. Geoffrey *Univ. of Canterbury*

16:00-17:30

ThFPoT11.7

Identifying Sleep Apnea Syndrome using Heart Rate and Breathing Effort Variation Analysis based on Ballistocardiography

4536-4539

Zhao, Weichao* *Northwestern Polytechnical Univ.*; Ni, Hongbo *Northwestern Polytechnical Univ.*; Zhou, Xingshe *Northwestern Polytechnical Univ.*; Song, Yalong *Northwestern Polytechnical Univ.*; Wang, Tianben *Northwestern Polytechnical Univ.*

16:00-17:30	ThFPoT11.8
Analysis and Classification of Oximetry Recordings to Predict Obstructive Sleep Apnea Severity in Children	4540-4543
Gutierrez, Gonzalo Cesar <i>Univ. of Valladolid</i> ; Kheirandish-Gozal, Leila <i>Section of Sleep Medicine, Dept. of Pediatrics, Pritzker Sc</i> ; Álvarez, Daniel <i>Univ. of Valladolid, CIF</i> ; Crespo, Andrea <i>Hospital Univ. Rio Hortega, Valladolid</i> ; Philby, Mona F. <i>Section of Sleep Medicine, Dept. of Pediatrics, Pritzker Sc</i> ; Mohammadi, Meelad <i>Section of Sleep Medicine, Dept. of Pediatrics, Pritzker Sc</i> ; del Campo, Félix <i>Hospital del Rio Hortega</i> ; Gozal, David <i>Section of Sleep Medicine, Dept. of Pediatrics, Pritzker Sc</i> ; Hornero, Roberto* <i>Univ. of Valladolid</i>	
16:00-17:30	ThFPoT11.9
Computer-Assisted Diagnosis of the Sleep Apnea-Hypopnea Syndrome: An Overview of Different Approaches	4544-4549
Alvarez-Estevez, Diego* <i>Medisch Centrum Haaglanden</i> ; Moret-Bonillo, Vicente A <i>Coruña Univ.</i>	
ThFPoT12: 16:00-17:30	Gold Room
6.35 Rehabilitation IV (Poster Session)	
16:00-17:30	ThFPoT12.1
Development of the Bedridden Person Support System using Hand Gesture	4550-4553
Ichimura, Kohei* <i>Tokai Univ.</i> ; Magatani, Kazushige <i>Tokai Univ.</i>	
16:00-17:30	ThFPoT12.2
Preliminary Evaluation of the Tactile Feedback System based on Artificial Skin and Electrotactile Stimulation	4554-4557
Franceschi, Marta <i>Univ. of Genoa</i> ; Seminara, Lucia* <i>Univ. of Genoa</i> ; Pinna, Luigi <i>Univ. of Genoa</i> ; Dosen, Strahinja <i>Univ. Medical Center, UMG, Goettingen</i> ; Farina, Dario <i>Bernstein Center for Computational Neuroscience, Univ. Medic</i> ; Valle, Maurizio <i>Univ. of Genova</i>	
16:00-17:30	ThFPoT12.3
Kinematic Analysis of Unilateral and Bilateral Drinking Task after Brain and Periphery Injuries	4558-4561
Dimwamwa, Elaida <i>Univ. of Pennsylvania</i> ; Johnson, Michelle* <i>Univ. of Pennsylvania</i>	
16:00-17:30	ThFPoT12.4
Motor Control Investigation of Dystonic Cerebral Palsy: A Pilot Study of Passive Knee Trajectory	4562-4565
Androwis, Ghaith* <i>Kessler Foundation, and New Jersey Institute of Technology</i> ; Michael, Peter <i>New Jersey Institute of Technology</i> ; Nolan, Karen <i>Human Performance and Engineering Laboratory (Kessler Foundation)</i> ; Jewaid, Darine <i>New Jersey Institute of Technology</i> ; Strongwater, Allan <i>St. Joseph's Regional Medical Center</i> ; Foulds, Richard <i>New Jersey Institute of Technology</i>	
16:00-17:30	ThFPoT12.5
Combined Robotic-Aided Gait Training and 3D Gait Analysis Provide Objective Treatment and Assessment of Gait in Children and Adolescents with Acquired Hemiplegia	4566-4569
Molteni, Erika* <i>Scientific Institute, IRCCS E. Medea</i> ; Beretta, Elena <i>IRCCS "E.Medea", Associazione La Nostra Famiglia, Bosisio Parini</i> ; Altomonte, Daniele <i>Scientific Institute, IRCCS E. Medea</i> ; Formica, Francesca <i>Scientific Institute, IRCCS E. Medea</i> ; Strazzer, Sandra <i>IRCCS</i>	
16:00-17:30	ThFPoT12.6
Improving Posture and Sitting Behavior through Tactile and Visual Feedback in a Sedentary Environment ..	4570-4573
van Almkerk, Marc <i>Eindhoven, Univ. of Technology</i> ; Bierling, Bart <i>Eindhoven, Univ. of Technology</i> ; Leermakers, Nono <i>Eindhoven Univ. of Technology</i> ; Vinken, Jeroen <i>Eindhoven Univ. of Technology</i> ; Timmermans, Annick A.A.* <i>Hasselt Univ.</i>	
16:00-17:30	ThFPoT12.7
Smartphone App Design for the Wireless Control of a Neuromuscular Electrical Stimulator Device with Integrated Randomization Allocation Process for RCT Applications	4574-4577
Sweeney, Dean <i>National Univ. of Ireland</i> ; Quinlan, Leo* <i>National Univ. of Ireland</i> ; ÓLaighin, Gearoid <i>National Univ. of Ireland Galway</i>	

- 16:00-17:30 ThFPoT12.8
Design of Small-Size Pouch Motors for Rat Gait Rehabilitation Device 4578-4581
 Chang, Shih-Yin* *The Univ. of Tokyo*; Takashima, Kenta *Tokyo Univ.*; Nishikawa, Satoshi *The Univ. of Tokyo*;
 Niiyama, Ryuma *Univ. of Tokyo*; Someya, Takao *the Univ. of Tokyo*; Onodera, Hiroshi *Univ. of Tokyo Graduate*
School of Engineering; Kuniyoshi, Yasuo *Univ. of Tokyo*
- 16:00-17:30 ThFPoT12.9
An EEG-Driven Lower Limb Rehabilitation Training System for Active and Passive Co-Stimulation 4582-4585
 Zhang, Xin *Xi'an Jiaotong Univ.*; Xu, Guanghua* *Xi'an Jiaotong Univ.*; Xie, Jun *Xi'an Jiaotong Univ.*; Li, Min
School of Mechanical Engineering, Xi'an Jiaotong Univ.; Pei, Wei *Xi'an Jiaotong Univ.*; Zhang, Jinhua *Xi'an*
Jiaotong Univ.
- 16:00-17:30 ThFPoT12.10
Neural Network Decoupling Technique and Its Application to a Powered Wheelchair System 4586-4589
 Nguyen, Tuan Nghia* *Univ. of Technology, Sydney*; Nguyen, Hung T. *Univ. of Technology, Sydney*
- 16:00-17:30 ThFPoT12.11
Cough Detection through Mechanomyographic Signal in Synchronized Respiratory Electrical Stimulation Systems 4590-4593
 Costa, Taisa Daiana da* *Federal Univ. of Technology - Parana State*; Nogueira-Neto, Guilherme *State Univ. of*
Campinas; Nohama, Percy *Univ. Tecnologica Federal do Parana*
- 16:00-17:30 ThFPoT12.12
Oscillating Field Stimulation Promotes Recovery after Spinal Cord Injury in Rats: Assessment using Behavioral, Electrophysiological and Histological Evaluations 4594-4597
 Zhang, Cheng *Chinese Academy of Sciences, Beijing*; Zhang, Guanghao *Institute of Electrical Engineering,*
Chinese Academy of Sciences; Wang, Aihua *Chinese Academy of Sciences*; Wu, Changzhe *Chinese Academy*
of Sciences; Huo, Xiaolin* *Chinese Academy of Sciences*
- 16:00-17:30 ThFPoT12.13
Determination of Appropriate Imagery Task to Discriminate ERD of "Pinch" and "Hold" Movements in Healthy Participants and Stroke Patients 4598-4601
 Matsubara, Miku* *Meiji Univ.*; Kayanuma, Hidenori *Meiji Univ.*; Ono, Yumie *Meiji Univ.*; Omatsu, Satoko *Murata*
Hospital; Tominaga, Takanori *Murata Hospital*
- 16:00-17:30 ThFPoT12.14
A New Methodology for Functional Principal Components Analysis from Scarce Data. Application to Stroke Rehabilitation 4602-4605
 Belda-Lois, Juan-Manuel* *Asociación Instituto de Biomecánica de Valencia*; Sánchez-Sánchez, Mariluz *Univ.*
de València
- 16:00-17:30 ThFPoT12.15
Impaired Regulation Post-Stroke of Motor Unit Firing Behavior during Volitional Relaxation of Knee Extensor Torque Assessed using High Density Surface EMG Decomposition 4606-4609
 Murphy, Spencer *Marquette Univ.*; Berrios, Reivian *Marquette Univ.*; Nelson, Andrew *Medical College of*
Wisconsin; Negro, Francesco *Bernstein Center for Computational Neuroscience, Univ. Medic*; Farina, Dario
Bernstein Center for Computational Neuroscience, Univ. Medic; Schmit, Brian *Marquette Univ.*; Hyngstrom,
 Allison* *Marquette Univ.*
- 16:00-17:30 ThFPoT12.16
A Study on Cortico-Muscular Coupling in Finger Motions for Exoskeleton Assisted Neuro-Rehabilitation .. 4610-4614
 Chowdhury, Anirban* *IIT Kanpur*; Raza, Haider *Univ. of Ulster*; Dutta, Ashish *Indian Institute of Technology*
Kanpur; Nishad, Shyam Sunder *IIT Kanpur*; Saxena, Anupam *IIT Kanpur*; Prasad, Girijesh *Univ. of Ulster*
- 16:00-17:30 ThFPoT12.17
A Shape-Based Helmet Fitting System for Concussion Protection 4615-4618
 Cai, Xingcheng* *Queen's Univ.*; Blostein, Dorothea *Queen's Univ.*;
 Saunders, Fraser W. *Kingston General Hospital*
- 16:00-17:30 ThFPoT12.18
Effect of Viewing Mode on Pathfinding in Immersive Virtual Reality 4619-4622
 White, Paul* *Univ. of Manitoba*; Byagowi, Ahmad *Univ. of Manitoba*; Moussavi, Zahra *Univ. of Manitoba*

- 16:00-17:30 ThFPoT12.19
Validating ArmAssist Assessment as Outcome Measure in Upper-Limb Post-Stroke Telerehabilitation 4623-4626
 Rodriguez-de-Pablo, Cristina* *TECNALIA*; Balasubramanian, Sivakumar *Imperial College London*; Savic, Andrej *School of Electrical Engineering, Belgrade Univ.*; Tomic, Tijana *Dimkic Clinic for Rehabilitation Dr Miroslav Zotović, Belgrade, Se*; Konstantinovic, Ljubica *Clinic for Rehabilitation Dr. Miroslav Zotović and the Univ*; Keller, Thierry *Tecnalia Research & Innovation*
- 16:00-17:30 ThFPoT12.20
Design and Fabrication of a Three Dimensional Printable Non-Assembly Articulated Hand Exoskeleton for Rehabilitation 4627-4630
 Cui, Lei* *Curtin Univ.*; Phan, Anthony *Curtin Univ.*; Allison, Garry *Curtin Univ.*
- 16:00-17:30 ThFPoT12.21
Data Glove Embedded with 9-Axis IMU and Force Sensing Sensors for Evaluation of Hand Function 4631-4634
 Hsiao, Pei-Chi *Dept. of Physical Medicine and Rehabilitation, Chi-Mei Medi*; Yang, Shu-Yu *Dept. of Physical Medicine and Rehabilitation, Chi-Mei Medi*; Lin, Bor-Shing *National Taipei Univ.*; Lee, I-Jung* *National Taipei Univ.*; Chou, Willy *Dept. of Physical Medicine and Rehabilitation, Chi-Mei Medi*
- 16:00-17:30 ThFPoT12.22
Powered Exoskeleton with Palm Degrees of Freedom for Hand Rehabilitation 4635-4638
 Richards, Daniel S *Dept. of Engineering, Univ. of Glasgow*; Georgilas, Ioannis* *Univ. of the West of England, EDM*; Dagnino, Giulio *Univ. of the West of England*; Dogramadzi, Sanja *Univ. of the West of England*
- 16:00-17:30 ThFPoT12.23
Heart Rate Regulation during Cycle-Ergometer Exercise via Bio-Feedback 4639-4642
 Argha, Ahmadreza* *Univ. of Technology, Sydney*; Su, Steven Weidong *Univ. of Technology, Sydney*; Nguyen, Hung T. *Univ. of Technology, Sydney*; Celler, Branko George *Univ. of New South Wales*
- 16:00-17:30 ThFPoT12.24
Bimanual Elbow Exoskeleton: Force based Protocol and Rehabilitation Quantification 4643-4646
 Alavi, Nezam* *Simon Fraser Univ.*; Herrnstadt, Gil *Simon Fraser Univ.*; Randhawa, Bubblepreet *Simon Fraser Univ.*; Boyd, Lara *Univ. of British Columbia*; Menon, Carlo *Simon Fraser Univ.*
- 16:00-17:30 ThFPoT12.25
Evaluation of an Objective Listening Effort Measure in a Selective, Multi-Speaker Listening Task using Different Hearing Aid Settings 4647-4650
 Schäfer, Patrick Johannes* *Systems Neuroscience and NeuroTechnology Unit, NeuroCenter, Facu*; Serman, Maja *Sivantos GmbH, Erlangen, Germany*; Arnold, Mirko *Sivantos GmbH, Erlangen, Germany*; Corona-Strauss, Farah I. *Saarland Univ. Hospital*; Strauss, Daniel J. *Saarland Univ., Medical Faculty*; Seidler-Fallböhrer, Birgit *TTHZ GmbH*; Seidler, Harald *MediClin Bosenberg Kliniken*
- 16:00-17:30 ThFPoT12.26
Determining Inertial Measurement Unit Placement for Estimating Human Trunk Sway While Standing, Walking and Running 4651-4654
 Yu, Bo *Shanghai JiaoTong Univ.*; Bao, Tian *Univ. of Michigan*; Zhang, Dingguo *Shanghai Jiao Tong Univ.*; Carender, Wendy *Univ. of Michigan Health System*; Sienko, Kathleen H. *Univ. of Michigan*; Shull, Peter B.* *Shanghai Jiao Tong Univ.*
- 16:00-17:30 ThFPoT12.27
MovAid a Novel Device for Advanced Rehabilitation Monitoring 4655-4658
 Gupta, Prashant* *Manav Rachna College of Engineering, Faridabad*; Verma, Piyush *Manav Rachna College of Engineering, Faridabad*; Gupta, Rakesh *Post Graduate Institute of Medical Science*; Verma, Bhawna *Post Graduate Institute of Medical Science, Rohtak, Haryana*
- 16:00-17:30 ThFPoT12.28
Injury Potentials of Spinal Cord in Ex Vivo Compression Injury Model 4659-4662
 Wang, Aihua *Chinese Academy of Sciences*; Zhang, Guanghao *Institute of Electrical Engineering, Chinese Academy of Sciences*; Zhang, Cheng *Chinese Academy of Sciences, Beijing,*; Huo, Xiaolin* *Chinese Academy of Sciences*; Song, Tao *Chinese Academy of Sciences*

16:00-17:30 ThFPoT12.29
A Body-Machine Interface for Training Selective Pelvis Movements in Stroke Survivors: A Pilot Study .. 4663-4666
Summa, Susanna* *Univ. of Genoa*; Pierella, Camilla *Univ. of Genoa, Genoa, Italy*; Giannoni, Psiche *ART Education and Rehabilitation Dept. srl*; Sciacchitano, Alessio *Univ. of Genoa*; Iacovelli, Selene *Univ. of Genoa*; Farshchiansadegh, Ali *Northwestern Univ.*; Mussa-Ivaldi, Ferdinando *Northwestern Univ.*; Casadio, Maura *Univ. of Genova*

16:00-17:30 ThFPoT12.30
A Wearable Device for Monitoring and Prevention of Repetitive Ankle Sprain 4667-4670
Attia, Mohammed* *Cairo Univ.*; Taher, Mona *Cairo Univ.*

16:00-17:30 ThFPoT12.31
Preliminary Assessment of Variable Geometry Stair Ascent and Descent with a Powered Lower Limb Orthosis for Individuals with Paraplegia 4671-4674
Ekelem, Andrew* *Vanderbilt Univ.*; Murray, Spencer *Vanderbilt Univ.*; Goldfarb, Michael *Vanderbilt Univ.*

16:00-17:30 ThFPoT12.32
Comparison between the Therapeutic Effects of Robotic-Assisted Locomotor Training And an Anti-Spastic Medication on Spasticity 4675-4678
Mirbagheri, Mehdi* *Northwestern Univ./RIC*

ThFPoT13: 16:00-17:30 Gold Room
6.36 Brain Physiology and Modeling III (Poster Session)

16:00-17:30 ThFPoT13.1
Neural Correlates of Ankle Movements during Different Motor Tasks: A Feasibility Study 4679-4682
Marre, Ilaria *Univ. of Genova*; Iandolo, Riccardo *Univ. of Genova*; Bellini, Alessandro *Univ. of Genova*; Bommarito, Giulia *Univ. of Genova*; Niels, Oesingmann *Mount Sinai School of Medicine, New York*; Fleysler, Lazar *Mount Sinai School of Medicine, New York*; Levrero, Fabrizio *Univ. of Genova*; Mancardi, Gianluigi *Univ. of Genova*; Casadio, Maura *Univ. of Genova*; Inglese, Matilde* *Icahn School of Medicine at Mount Sinai, New York*

16:00-17:30 ThFPoT13.2
Combining Sudomotor Nerve Impulse Estimation with fMRI to Investigate the Central Sympathetic Response to Nausea 4683-4686
Sclocco, Roberta* *Politecnico di Milano*; Citi, Luca *Univ. of Essex*; Garcia, Ronald *Massachusetts General Hospital*; Cerutti, Sergio *Politecnico di Milano*; Bianchi, Anna Maria *Politecnico di Milano*; Kuo, Braden *Massachusetts General Hospital, Harvard Medical School*; Napadow, Vitaly *Massachusetts General Hospital*; Barbieri, Riccardo *MGH-Harvard Medical School-MIT*

16:00-17:30 ThFPoT13.3
The Brain Responses to Different Frequencies of Binaural Beat Sounds on QEEG at Cortical Level 4687-4691
Jirakittayakorn, Nantawachara *Mahidol Univ.*; Wongsawat, Yodchanan* *Mahidol Univ.*

16:00-17:30 ThFPoT13.4
Tendency to Overestimate the Explicit Time Interval in Relation to Aging and Cognitive Decline 4692-4695
Ranjbar Pouya, Omid* *Univ. of Manitoba*; Kelly, Debbie *Univ. of Manitoba*; Moussavi, Zahra *Univ. of Manitoba*

16:00-17:30 ThFPoT13.5
Cooperation Driven Coherence: Brains Working Hard Together 4696-4699
Bezerianos, Anastasios* *National Univ. of Singapore*; Sun, Yu *National Univ. of Singapore*; Chen, Yu *National Univ. of Singapore*; Wong, Kian Foong *National Univ. of Singapore*; Taya, Fumihiko *National Univ. of Singapore*; Arico, Pietro *Fondazione Santa Lucia*; Borghini, Gianluca *Univ. of Rome Sapienza*; Babiloni, Fabio *Univ. of Rome*; Thakor, Nitish *Johns Hopkins Univ.*

16:00-17:30 ThFPoT13.6
3D Axonal Network Coupled to Microelectrode Arrays: A Simulation Model to Study Neuronal Dynamics .. 4700-4704
Appali, Revathi* *Univ. of Rostock*; Sriperumbudur, Kiran K *Univ. of Rostock*; van Rienen, Ursula *Univ. of Rostock*

16:00-17:30	ThFPoT13.7
Electrical Neurostimulation for Chronic Pain: On Selective Relay of Sensory Neural Activities in Myelinated Nerve Fibers	4705-4708
Sacré, Pierre* <i>Johns Hopkins Univ.</i> ; Sarma, Sridevi V. <i>Johns Hopkins Univ.</i> ; Guan, Yun <i>Johns Hopkins Univ. School of Medicine</i> ; Anderson, William S. <i>Johns Hopkins School of Medicine, Dept. of Neurosurgery</i>	
16:00-17:30	ThFPoT13.8
Balance of Synaptic and Electrotonic Connections Controls the Excitability of Networks in Biophysical Model of Epilepsy	4709-4712
Grigorovsky, Vasily* <i>Univ. of Toronto</i> ; Bardakjian, Berj <i>Luther Univ. of Toronto</i>	
16:00-17:30	ThFPoT13.9
A Million-Plus Neuron Model of the Hippocampal Dentate Gyrus: Dependency of Spatio-Temporal Network Dynamics on Topography	4713-4716
Hendrickson, Phillip* <i>Univ. of Southern California</i> ; Yu, Gene <i>Univ. of Southern California</i> ; Song, Dong <i>Univ. of Southern California</i> ; Berger, Theodore <i>Univ. of Southern California</i>	
16:00-17:30	ThFPoT13.10
Classification of Finger Vibrotactile Input using Scalp EEG	4717-4720
He, Yongtian* <i>Univ. of Houston</i> ; Contreras-Vidal, José <i>Univ. of Houston</i>	
16:00-17:30	ThFPoT13.11
Anesthesia Effect on Single Local Field Potentials Variability in Rat Barrel Cortex: Preliminary Results	4721-4724
Cecchetto, Claudia <i>Univ. of Padova</i> ; Mahmud, Mufti <i>Univ. of Padova</i> ; Vassanelli, Stefano* <i>NeuroChip Laboratory, Univ. of Padova</i>	
16:00-17:30	ThFPoT13.12
Investigating the Correlation between the Neural Activity and Task Performance in a Psychomotor Vigilance Test	4725-4728
Hu, Zhongze <i>Tsinghua Univ.</i> ; Thakor, Nitish <i>Johns Hopkins Univ.</i> ; Bezerianos, Anastasios <i>National Univ. of Singapore</i> ; Sun, Yu* <i>National Univ. of Singapore</i>	
ThFPoT14: 16:00-17:30 Gold Room	
6.37 Neural Signal Processing III (Poster Session)	
16:00-17:30	ThFPoT14.1
Quantifying in Vivo and in Vitro Neuronal Bursts by an Automatized Adaptive Burst Detection Algorithm and Entropy Measures	4729-4732
Kapucu, Fikret Emre* <i>Tampere Univ. of Technology</i> ; Mikkonen, Jarno Eelis <i>Univ. of Jyväskylä</i> ; Tanskanen, Jarno M. A. <i>Tampere Univ. of Technology</i> ; Hyttinen, Jari <i>Tampere Univ. of Technology</i>	
16:00-17:30	ThFPoT14.2
Electroencephalographic Spectral Correlates of Caress-Like Affective Haptic Stimuli	4733-4736
Valenza, Gaetano* <i>Univ. of Pisa-MGH-Harvard Medical School</i> ; Greco, Alberto <i>Univ. of Pisa</i> ; Nardelli, Mimma <i>Univ. of Pisa</i> ; Bianchi, Matteo <i>Univ. of Pisa</i> ; Lanata', Antonio <i>Univ. of Pisa</i> ; Rossi, Simone <i>Azienda Ospedaliera Univ. of Siena</i> ; Scilingo, Enzo Pasquale <i>Univ. of Pisa</i>	
16:00-17:30	ThFPoT14.3
Emergence of Critical Dynamics in Large-Scale in Vitro Cortical Networks	4737-4740
Massobrio, Paolo* <i>Univ. of Genova</i> ; Pasquale, Valentina <i>Istituto Italiano di Tecnologia</i> ; Martinoia, Sergio <i>Univ. of Genova</i>	
16:00-17:30	ThFPoT14.4
Beta/Theta Ratio Neurofeedback Training Effects on the Spectral Topography of EEG	4741-4744
Yang, Limin <i>Univ. of Macau</i> ; Nan, Wenya <i>Univ. of Macau, Dept. of Electrical & Electronics</i> ; Qu, Xiaoting <i>Univ. of Macau</i> ; Wan, Feng* <i>Univ. of Macau</i> ; Mak, Pui-In <i>Univ. of Macau</i> ; Mak, Peng Un <i>Univ. of Macau</i> ; Vai, Mang I. <i>Univ. of Macau</i> ; Hu, Yong <i>The Univ. of Hong Kong</i> ; Rosa, Agostinho Claudio da <i>Technical Univ. of Lisbon</i>	
16:00-17:30	ThFPoT14.5
Neural Network based Forward Prediction of Bladder Pressure using Pudendal Nerve Electrical Activity	4745-4748
Geramipour, Arezou <i>Iran Univ. of Science and Technology</i> ; Makki, Saeid <i>Iran Univ. of Science and Technology</i> ; Erfanian, Abbas* <i>Iran Univ. of Science and Technology</i>	

16:00-17:30	ThFPoT14.6
Filter Bank Common Spatial Patterns in Mental Workload Estimation	4749-4752
Arvaneh, Mahnaz* <i>Trinity College Dublin</i> ; Umilta, Alberto <i>School of Psychology, Univ. of Padova, Padova, Ital</i> ; Robertson, Ian <i>Trinity College Dublin</i>	
16:00-17:30	ThFPoT14.7
Spectra of Infant EEG within the First Year of Life: A Pilot Study	4753-4756
Xiao, Ran <i>Univ. of Oklahoma</i> ; Qi, Xiao <i>Univ. of Oklahoma</i> ; Fagg, Andrew <i>Univ. of Oklahoma</i> ; Kolobe, Thubi <i>Univ. of Oklahoma Health Sciences Center</i> ; Miller, David <i>Univ. of Oklahoma</i> ; Ding, Lei* <i>Univ. of Oklahoma</i>	
16:00-17:30	ThFPoT14.8
EEG-Based Time and Spatial Interpretation of Activation Areas for Relaxation and Words Writing between Poor and Capable Dyslexic Children	4757-4760
Mohamad, Noor Bariah <i>Univ. Teknologi MARA</i> ; Lee, Khuan Y.* <i>Univ. Teknologi MARA</i> ; Mansor, Wahidah <i>Univ. Teknologi MARA</i> ; Mahmoodin, Zulkifli <i>Univ. Kuala Lumpur British Malaysian Institute</i>	
16:00-17:30	ThFPoT14.9
Impact of Stimuli Distribution on Neural Network Responses	4761-4764
Scarsi, Francesca <i>Univ. di Genova</i> ; Tessadori, Jacopo <i>IIT - Italian Institute of Technology</i> ; Pasquale, Valentina <i>Istituto Italiano di Tecnologia</i> ; Chiappalone, Michela* <i>Italian Institute of Technology</i>	
16:00-17:30	ThFPoT14.10
A Computationally Efficient Order Statistics based Outlier Detection Technique for EEG Signals	4765-4768
Giri, Bapun K <i>IISER Kolkata</i> ; Sarkar, Soumajyoti <i>IISEST, Shibpur</i> ; Mazumder, Satyaki <i>IISER Kolkata</i> ; Das, Koel* <i>Indian Institute of Science Education and Research, Kolkata</i>	
16:00-17:30	ThFPoT14.11
Classification of Awake, REM, and NREM from EEG via Singular Spectrum Analysis	4769-4772
Mahvash Mohammadi, Sara* <i>London South Bank Univ.</i> ; Enshaeifar, Shirin <i>Dept. of Computing, Univ. of Surrey</i> ; Ghavami, Mohammad <i>London South Bank Univ.</i> ; Sanei, Saeid <i>Univ. of Surrey</i>	
16:00-17:30	ThFPoT14.12
Feasibility of Blind Source Separation Methods for the Denoising of Dense-Array EEG	4773-4776
Taheri, Nasrin* <i>Electrical Engineering Shahid Chamran Univ.</i> ; Kachenoura, Amar <i>Univ. de Rennes1 and INSERM</i> ; Ansari-Asl, Karim <i>Shahid Chamran Univ. of Ahvaz</i> ; Karfoul, Ahmad <i>Al-Baath Univ.</i> ; Senhadji, Lotfi <i>Univ. de Rennes 1 and INSERM</i> ; Albera, Laurent <i>Univ. de Rennes 1 and INSERM</i> ; Merlet, Isabelle <i>INSERM - Univ. de Rennes 1</i>	
ThFPoT15: 16:00-17:30 Gold Room	
8.19 Prosthetics and Orthotics (Poster Session)	
16:00-17:30	ThFPoT15.1
Combining Human Volitional Control with Intrinsic Controller on Robotic Prosthesis: A Case Study on Adaptive Slope Walking	4777-4780
Chen, Baojun <i>Peking Univ.</i> ; Wang, Qining* <i>Peking Univ.</i>	
16:00-17:30	ThFPoT15.2
Structure Design for a Two-DoF Myoelectric Prosthetic Hand to Realize Basic Hand Functions in ADLs ...	4781-4784
Hoshikawa, Suguru* <i>The Univ. of Electro-Communications</i> ; Jiang, Yinlai <i>The Univ. of Electro-Communications</i> ; Kato, Ryu <i>The Univ. of Tokyo</i> ; Morishita, Soichiro <i>Univ. of Electro-Communications</i> ; Nakamura, Tatsuhiro <i>The Univ. of Tokyo</i> ; Yabuki, Yoshiko <i>The Univ. of Electro-Communications</i> ; Yokoi, Hiroshi <i>Univ. of Tokyo</i>	
16:00-17:30	ThFPoT15.3
Real-Time Gait Event Detection for Transfemoral Amputees during Ramp Ascending and Descending ..	4785-4788
Maqbool, Hafiz Farhan* <i>Univ. of Leeds</i> ; Husman, Muhammed Afif <i>Univ. of Leeds</i> ; Awad, Mohammed Ibrahim <i>Univ. of Leeds</i> ; Abouhossein, Alireza <i>Univ. of Leeds</i> ; Dehghani-Sanij, Abbas A. <i>Univ. of Leeds</i>	

16:00-17:30	ThFPoT15.4
Application of Metal Hydride Paper to Simple Pressure Generator for use in Soft Actuator Systems	4789-4792
Ino, Shuichi* <i>National Institute of Advanced Industrial Science and Tech.</i> ; Sakaki, Kouji <i>National Institute of Advanced Industrial Science and Tech.</i> ; Hosono, Minako <i>Industrial Research Institute of Shizuoka Prefecture</i> ; Doi, Kouki <i>National Institute of Special Needs Education</i> ; Shimada, Shigenobu <i>Tokyo Metropolitan Industrial Tech. Research Institute</i> ; Chikai, Manabu <i>National Institute Advanced Industrial Science and Tech.</i>	
16:00-17:30	ThFPoT15.5
Performance Evaluation of the Extra Corporeal Enteral Prosthesis (ECEP) vs a By-Pass	4793-4796
Sozanski, Jean Pierre* <i>INSERM</i> ; De Jonckheere, Julien <i>CHRU de Lille</i> ; Jeanne, Mathieu <i>CHRU de Lille</i> ; Logier, Regis <i>CHRU de Lille</i> ; Nzamushe, Jean-Robert <i>CHRU Lille</i>	
16:00-17:30	ThFPoT15.6
Lightweight Custom Composite Prosthetic Components using an Additive Manufacturing-Based Molding Technique	4797-4802
Leddy, Michael* <i>Yale Univ.</i> ; Belter, Joseph <i>Yale Univ.</i> ; Gemmell, Jr., Kevin <i>Yale Univ.</i> ; Dollar, Aaron <i>Yale Univ.</i>	
16:00-17:30	ThFPoT15.7
Modification of Hemiplegic Compensatory Gait Pattern by Symmetry-Based Motion Controller of HAL ..	4803-4807
Kawamoto, Hiroaki* <i>Univ. of Tsukuba</i> ; Kadone, Hideki <i>Univ. of Tsukuba</i> ; Sakurai, Takeru <i>Univ. of Tsukuba</i> ; Sankai, Yoshiyuki <i>Univ. of Tsukuba</i>	
16:00-17:30	ThFPoT15.8
Development of Stewart Platform Type Ankle-Foot Device for Trip Prevention Support	4808-4811
Nomura, Kenta* <i>Tokyo Univ. of Science</i> ; Yonezawa, Teru <i>Tokyo Univ. of Science</i> ; Ogitsu, Takeki <i>Tokyo Univ. of Science</i> ; Mizoguchi, Hiroshi <i>Tokyo Univ. of Science</i> ; Takemura, Hiroshi <i>Tokyo Univ. of Science</i>	
16:00-17:30	ThFPoT15.9
Selective Linear-Regression Model for Hand Posture Discrimination and Grip Force Estimation using Surface Electromyogram Signals	4812-4815
Yamanoi, Yusuke* <i>the Univ. of Electro-Communications</i> ; Morishita, Soichiro <i>Univ. of Electro-Communications</i> ; Kato, Ryu <i>The Univ. of Tokyo</i> ; Yokoi, Hiroshi <i>Univ. of Tokyo</i>	
16:00-17:30	ThFPoT15.10
Stress Analysis of Two Craniofacial Implants in Implant Retained Auricular Prostheses	4816-4819
Chanthasopephan, Teeranoot* <i>King Mongkut's Univ of Tech Thonburi</i>	
16:00-17:30	ThFPoT15.11
Application of Neural based Estimation Algorithm for Gait Phases of Above Knee Prosthesis	4820-4823
Tileylioglu, Emre* <i>Hacettepe Univ.</i> ; Yilmaz, Atila <i>Hacettepe Univ.</i>	
16:00-17:30	ThFPoT15.12
A Bio-Inspired Force Control for Cyclic Manipulation of Prosthetic Hands	4824-4827
Ciancio, Anna Lisa* <i>Univ. Campus Bio-Medico di Roma</i> ; Barone, Roberto <i>Univ. Campus Bio-Medico di Roma</i> ; Zollo, Loredana <i>Univ. Campus Bio-Medico</i> ; Carpino, Giorgio <i>Campus Bio-Medico Univ.</i> ; Davalli, Angelo <i>INAIL Prosthesis Center</i> ; Sacchetti, Rinaldo <i>Centro Protesi INAIL, Budrio</i> ; Guglielmelli, Eugenio <i>Campus Bio-Medico Univ.</i>	
16:00-17:30	ThFPoT15.13
Stable Force-Myographic Control of a Prosthetic Hand using Incremental Learning	4828-4831
Rasouli, Mahdi* <i>National Univ. of Singapore</i> ; Ghosh, Rohan <i>National Univ. of Singapore</i> ; lee, Wang Wei <i>National Univ. of Singapore</i> ; Thakor, Nitish <i>Johns Hopkins Univ.</i> ; Kukreja, Sunil <i>National Univ. of Singapore</i>	
16:00-17:30	ThFPoT15.14
Development of an Eye Tracking Medical Headlamp	4832-4835
Lee, Sangjoon* <i>Sun Moon Univ.</i>	

- 16:00-17:30 ThFPoT16.1
Method for Estimating the Temperature Distribution Associated with the Vessel Cooling Effect in Radio Frequency Ablation 4836-4839
 Lu, Xiaowei* *Waseda Univ.*; Kikuchi, Hayato *Waseda Univ.*; Hirooka, Kazumasa *Waseda Univ.*; Isobe, Yosuke *Waseda Univ.*; Watanabe, Hiroki *Waseda Univ.*; Kobayashi, Yo *Waseda Univ.*; Miyashita, Tomoyuki *Waseda Univ.*; Fujie, Masakatsu G. *Waseda Univ.*
- 16:00-17:30 ThFPoT16.2
Modelling Needle Forces during Insertion into Soft Tissue 4840-4844
 Cheng, Zhuoqi* *Istituto Italiano di Tecnologia*; Chauhan, Manish *Istituto Italiano di Tecnologia*; Davies, Brian *Imperial College London*; Caldwell, Darwin G. *Italian Institute of Technology*; Mattos, Leonardo *IIT - Istituto Italiano di Tecnologia*
- 16:00-17:30 ThFPoT16.3
Prediction of Mechanical Behaviour from Histology in Thin Collagenous Tissues 4845-4848
 Brooks, Robert Joseph* *Hostipal for Sick Children, Univ. of Toronto*; Looi, Thomas *CIGITI, Hospital for Sick Children*; Drake, James *Univ. of Toronto, CIGITI, Hospital for Sick Children*

- 16:00-17:30 ThFPoT17.1
Master Device for Teleoperated Needle Insertion-Type Interventional Robotic System 4849-4852
 Woo, Hyun Soo* *KIMM*; Cho, Jang Ho *KAIST*; Kim, Chul Seung *KIMM*; Lee, Hyuk Jin *KIMM*
- 16:00-17:30 ThFPoT17.2
Design Optimization of Neuroendoscopic Continuum Instruments for Third Ventriculostomy and Tumor Biopsy 4853-4856
 Eastwood, Kyle* *Univ. of Toronto*; Looi, Thomas *CIGITI, Hospital for Sick Children*; naguib, Hani *Univ. of Toronto*; Drake, James *Univ. of Toronto, CIGITI, Hospital for Sick Children*
- 16:00-17:30 ThFPoT17.3
Redundancy Optimization Strategy for Hands-On Robotic Surgery 4857-4860
 Barra, Beatrice *Politecnico di Milano*; Beretta, Elisa *Politecnico di Milano*; Nessi, Federico *Politecnico di Milano*; Ferrigno, Giancarlo *Politecnico di Milano*; De Momi, Elena* *Politecnico di Milano*
- 16:00-17:30 ThFPoT17.4
Comfort and Learnability Assessment of a New Soft Robotic Manipulator for Minimally Invasive Surgery .. 4861-4864
 Shafti, Ali* *King's College London*; Andorno, Federica *Univ. of Turin*; Marchese, Nicola *Univ. of Turin*; Arolfo, Simone *Univ. of Turin*; Aydin, Abdullatif *King's College London*; Elhage, Oussama *King's College London*; Noh, Yohan *King's College London*; Wurdemann, Helge Arne *King's College London*; Arezzo, Alberto *Univ. of Turin*; Dasgupta, Prokar *Guys Hospital*; Althoefer, Kaspar *King's College London*
- 16:00-17:30 ThFPoT17.5
Design and Real-Time Control of a Robotic System for Fracture Manipulation 4865-4868
 Dagnino, Giulio* *Univ. of the West of England*; Georgilas, Ioannis *Univ. of the West of England, EDM*; Tarassoli, Payam *Univ. Hospitals Bristol*; Atkins, Roger *Univ. Hospitals Bristol*; Dogramadzi, Sanja *Univ. of the West of England*
- 16:00-17:30 ThFPoT17.6
Closed-Loop Asymmetric-Tip Needle Steering Under Continuous Intraoperative MRI Guidance 4869-4874
 Patel, Niravkumar* *Worcester Polytechnic Institute*; van Katwijk, Tim *Univ. of Twente*; Li, Gang *Worcester Polytechnic Institute*; Moreira, Pedro *LIRMM-UMR CNRS, Univ. of Montpellier II*; Shang, Weijian *Brigham and Women's Hospital and Harvard Medical School*; Misra, Sarthak *Univ. of Twente*; Fischer, Gregory *Worcester Polytechnic Institute*

- 16:00-17:30 ThFPoT17.7
Motion Prediction using Dual Kalman Filter for Robust Beating Heart Tracking 4875-4878
 Yang, Bo* *Univ. of Electronic Science and Technology of China*; Liu, Chao *LIRMM - CNRS*; Poignet, Philippe *LIRMM, UMR CNRS 5506, Univ. of Montpellier II*; Zheng, Wenfeng *Univ. of Electronic Science and Technology of China*; Liu, Shan *Univ. of Electronic Science and Technology of China*
- 16:00-17:30 ThFPoT17.8
Robot Assisted Stapedotomy Ex Vivo with an Active Handheld Instrument 4879-4882
 Vendrametto, Tobia *Politecnico di Milano*; McAfee, Jacob S. *Univ. of Pittsburgh Medical Center, Pittsburgh*; Hirsch, Barry E. *Univ. of Pittsburgh Medical Center*; Riviere, Cameron N. *Carnegie Mellon Univ.*; Ferrigno, Giancarlo *Politecnico di Milano*; De Momi, Elena* *Politecnico di Milano*
- 16:00-17:30 ThFPoT17.9
Design and Development of Magnetorheological Fluid-Based Passive Actuator 4883-4886
 Shokrollahi, Elnaz* *Univ. of Toronto*; Price, Karl *Univ. of Toronto*; Drake, James *Univ. of Toronto, CIGITI, Hospital for Sick Children*; Goldenberg, Andrew A. *Univ. of Toronto*
- 16:00-17:30 ThFPoT17.10
Design and Evaluation of a Trilateral Shared-Control Architecture for Teleoperated Training Robots 4887-4893
 Shamaei, Kamran* *Stanford Univ.*; Kim, Lawrence H. *Stanford Univ.*; Okamura, Allison *Stanford Univ.*
- 16:00-17:30 ThFPoT17.11
Enhanced Position-Force Tracking of Time-Delayed Teleoperation for Robotic-Assisted Surgery 4894-4897
 Guo, Jing* *LIRMM, CNRS & Univ. of Montpellier 2*; Liu, Chao *LIRMM - CNRS*; Poignet, Philippe *LIRMM, UMR CNRS 5506, Univ. of Montpellier II*
- 16:00-17:30 ThFPoT17.12
Preliminary Study for Motion Scaling based Control in Minimally Invasive Vascular Interventional Robot . 4898-4901
 Feng, Zhen-Qiu *Institute of Automation, Chinese Academy of Sciences*; Bian, Gui-Bin *Institute of Automation, Chinese Academy of Sciences*; Xie, Xiao-Liang *Chinese Academy of Sciences*; Hao, Jian-Long *Institute of Automation Chinese Academy of Sciences*; Gao, Zhan-Jie *Institute of Automation Chinese Academy of Science*; Hou, Zeng-Guang* *Institute of Automation, Chinese Academy of Sciences*
- 16:00-17:30 ThFPoT17.13
Preliminary Analysis of Force-Torque Measurements for Robot-Assisted Fracture Surgery 4902-4905
 Georgilas, Ioannis* *Univ. of the West of England, EDM*; Dagnino, Giulio *Univ. of the West of England*; Tarassoli, Payam *Univ. Hospitals Bristol*; Atkins, Roger *Univ. Hospitals Bristol*; Dogramadzi, Sanja *Univ. of the West of England*
- 16:00-17:30 ThFPoT17.14
Haptic Interface for Robot-Assisted Ophthalmic Surgery 4906-4909
 Barthel, Alexander *Technische Univ. Muenchen*; Trematerra, Diego *Technische Univ. Muenchen*; Nasser, M. Ali* *Technische Univ. Muenchen*; Zapp, Daniel *Augen Klinik rechts der Isar, Technische Univ. Muenchen*; Lohmann, Chris *Klinikum Rechst der isaar, Muenchen*; Knoll, Alois *Technical Univ. Munich*; Maier, Mathias *Klinikum Rechst der isaar, Muenchen*
- 16:00-17:30 ThFPoT17.15
Computer-Assisted Single-Stage Cranioplasty 4910-4913
 Murphy, Ryan J.* *Johns Hopkins Univ. Applied Physics Laboratory*; Wolfe, Kevin C. *Johns Hopkins Univ. Applied Physics Laboratory*; Liacouras, Peter C. *Walter Reed National Military Medical Center*; Grant, Gerald T. *Walter Reed National Military Medical Center*; Gordon, Chad R. *Johns Hopkins Univ. School of Medicine*; Armand, Mehran *Johns Hopkins Univ. Applied Physics Laboratory*
- 16:00-17:30 ThFPoT17.16
Volumetric Compensation of Accuracy Errors in a Multi-Robot Surgical Platform 4914-4917
 Vicentini, Federico* *CNR - National Research Council of Italy*; Magnoni, Paolo *National Research Council of Italy (CNR)*; Giussani, Matteo *National Research Council of Italy (CNR)*; Molinari Tosatti, Lorenzo *CNR - National Research Council*

16:00-17:30 ThFPoT17.17
BCI-Based User Training in Surgical Robotics 4918-4921
Olivieri, Emidio* *Istituto Italiano di Tecnologia*; Barresi, Giacinto *Istituto Italiano di Tecnologia*;
Mattos, Leonardo *IIT - Istituto Italiano di Tecnologia*

16:00-17:30 ThFPoT17.18
3D-Printed Soft Microrobot for Swimming in Biological Fluids 4922-4925
Qiu, Tian *Max Planck Institute for Intelligent Systems*; Palagi, Stefano *Max Planck Institute for Intelligent Systems*; Fischer, Peer* *Max Planck Institute for Intelligent Systems*

16:00-17:30 ThFPoT17.19
Requirements Analysis and Preliminary Design of a Robotic Assistant for Reconstructive Microsurgery ... 4926-4930
Vanthourhout, Léna* *Univ. Catholique de Louvain*; Herman, Benoît *Univ. Catholique de Louvain*; Duisit, Jérôme *Univ. Catholique de Louvain*; Château, François *Univ. Catholique de Louvain*; Szewczyk, Jerome *Univ. Pierre et Marie Curie - Paris 6*; Lengelé, Benoît *Univ. Catholique de Louvain*; Raucent, Benoît *Univ. Catholique de Louvain*

ThFPoT18: 16:00-17:30 Gold Room
10.12 Wireless/Ubiquitous Technologies and Systems (Poster Session)

16:00-17:30 ThFPoT18.1
Preliminary Assessment of the SensiumVitals®: A Low-Cost Wireless Solution for Patient Surveillance in the General Wards 4931-4937
Hernandez Silveira, Miguel* *Sensium Healthcare Ltd*; Wlczorkowski-Rettinger, Ksawery Franciszek *Sensium Healthcare Ltd.*; Ang, Su-Shin *Toumaz Technology*; Burdett, Alison *Toumaz Technology Ltd.*

16:00-17:30 ThFPoT18.2
ROI Analysis for Remote Photoplethysmography on Facial Video 4938-4941
Kwon, Sungjun* *Seoul National Univ.*; Kim, Jeehoon *Seoul National Univ.*; Lee, Dongseok *Seoul National Univ.*;
Park, Kwang S. *Seoul National Univ.*

16:00-17:30 ThFPoT18.3
Estimation of Sleep Posture using a Patch-Type Accelerometer based Device 4942-4945
Yoon, Heenam *Seoul National Univ.*; Hwang, Suhwan *Seoul National Univ.*; Jung, Dawoon *Seoul National Univ.*; Choi, Sangho *Seoul National Univ.*; Joo, Kwangmin *Seoul National Univ.*; Choi, Jaewon *Seoul National Univ. Hospital*; Lee, Yujin *Seoul National Univ. Hospital*; Jeong, Do-Un *Seoul National Univ. Hospital*; Park, Kwang S.* *Seoul National Univ.*

16:00-17:30 ThFPoT18.4
A Tracking System for Laboratory Mice to Support Medical Researchers in Behavioral Analysis 4946-4949
Macri, Simone *Istituto Superiore di Sanità*; Mainetti, Luca *Univ. of Salento*; Patrono, Luigi* *Univ. of Salento*;
Pieretti, Stefano *Istituto Superiore di Sanità*; Secco, Andrea *Univ. of Salento*; Sergi, Ilaria *Univ. of Salento*

16:00-17:30 ThFPoT18.5
Application of Smart Glasses for Fast and Automatic Color Correction in Health Care 4950-4953
Ruminski, Jacek *Gdansk Univ. of Technology*; Czuszyński, Krzysztof* *Gdansk Univ. of Technology*

16:00-17:30 ThFPoT18.6
A Dynamic Control Algorithm based on Physiological Parameters and Wearable Interfaces for Adaptive Ventricular Assist Devices 4954-4957
Tortora, Giuseppe* *Scuola Superiore Sant'Anna*; Fontana, Rossella *The BioRobotics Institute of Scuola Superiore Sant'Anna*; Argiolas, Samuele *Scuola Superiore Sant'Anna*; Vatteroni, Monica *Scuola Superiore Sant'Anna*; Dario, Paolo *Scuola Superiore Sant'Anna*; Trivella, Maria G. *Istituto di Fisiologia Clinica-CNR, Pisa*

16:00-17:30 ThFPoT18.7
Relative Accuracy of Time and Frequency Domain Features to Quantify Upper Extremity Coordination 4958-4961
Garrison, Benton *Univ. of Tennessee Knoxville*; Wade, Eric* *Univ. of Tennessee*

- 16:00-17:30 ThFPoT19.1
Wearable and Low-Stress Ambulatory Blood Pressure Monitoring Technology for Hypertension Diagnosis 4962-4965
 Altintas, Ersin* *Central Research Laboratories*; Takoh Kimiyasu, Kimiyasu *NEC Corporation*; Ohno Yuji, Yuji *NEC Corporation*; Abe Katsumi, Katsumi *NEC Corporation*; Akagawa Takeshi, Takeshi *NEC Corporation*; Ariyama Tetsuri, Tetsuri *NEC Corporation*; Kubo Masahiro, Masahiro *NEC Corporation*; Tsuda Kenichiro, Kenichiro *NEC Corporation*; Tochikubo Osamu, Osamu *Yokohama City Univ., School of Medicine*
- 16:00-17:30 ThFPoT19.2
Monitoring Activities of Daily Living using Wireless Acoustic Sensor Networks in Clean and Noisy Conditions 4966-4969
 Vuegen, Lode* *KU Leuven, Dept. of Electrical Engineering, ESAT-ETC-AdvISe*; Van Den Broeck, Bert *KU Leuven, Dept. of Electrical Engineering, ESAT-ETC-AdvISe*; Karsmakers, Peter *KU Leuven, Dept. of Electrical Engineering, ESAT-ETC-AdvISe*; Van hamme, Hugo *KU Leuven, Dept. of Electrical Engineering, ESAT-PSI, Kaste*; Vanrumste, Bart *Katholieke Univ. Leuven*
- 16:00-17:30 ThFPoT19.3
A Mobile Indoor Positioning System based on iBeacon Technology 4970-4973
 Lin, Xin-Yu* *National Taiwan Univ.*; Ho, Te-Wei *National Taiwan Univ.*; Fang, Cheng-Chung *National Taiwan Univ. Hospital*; Yen, Zui-Shen *National Taiwan Univ. Hospital*; Yang, Bey-Jing *National Taiwan Univ. Hospital*; Lai, Feipei *National Taiwan Univ.*
- 16:00-17:30 ThFPoT19.4
Fall Detection Algorithm in Energy Efficient Multistate Sensor System 4974-4977
 Korats, Gundars *CRAN UMR 7039, Univ. de Lorraine*; Hofmanis, Janis* *Ventspils Univ.*; Skorodumovs, Aleksejs *Ventspils International Radio Astronomy Centre (VIRAC)*; Avots, Egils *Ventspils Univ. College*
- 16:00-17:30 ThFPoT19.5
A Novel Ultra-Wideband 80 GHz FMCW Radar System for Contactless Monitoring of Vital Signs 4978-4981
 Wang, Siying* *Fraunhofer Institute for High Frequency Physics and Radar Techni*; Pohl, Antje *RWTH Aachen Univ., Philips Chair for Medical Information Te*; Jaeschke, Timo *Institute for Integrated Systems, Ruhr-Univ. Bochum*; Czaplik, Michael *Univ. Hospital RWTH Aachen, Dept. of Anaesthesiology*; Koeny, Marcus *Philips Chair of Medical Information Technology, RWTH Aachen Uni*; Leonhardt, Steffen *RWTH Aachen Univ.*; Pohl, Nils *Fraunhofer Institute for High Frequency Physics and Radar Techni*
- 16:00-17:30 ThFPoT19.6
Telemedicine Multimedia Systems to Support Neurodegenerative Diseases Participatory Management 4982-4985
 Borges, Diogo Menezes *Univ. of Porto and INESC TEC*; Cunha, João Paulo Silva* *Univ. of Porto and INESC TEC*
- 16:00-17:30 ThFPoT19.7
SenseMyHeart: A Cloud Service and API for Wearable Heart Monitors 4986-4989
 Pinto Silva, Pedro Manuel *INESC TEC (Instituto de Engenharia de Sistemas e Computadores do)*; Cunha, João Paulo Silva* *Univ. of Porto and INESC TEC*

- 16:00-17:30 ThFPoT20.1
A Fall Prediction Methodology for Elderly based on a Depth Camera 4990-4993
 Alazrai, Rami* *German Jordanian Univ.*; Mowafi, Yaser *German Jordanian Univ.*; Hamad, Eyad *German Jordanian Univ.*
- 16:00-17:30 ThFPoT20.2
Easy-to-Use, General, and Accurate Multi-Kinect Calibration and Its Application to Gait Monitoring for Fall Prediction 4994-4998
 Staranowicz, Aaron* *Univ. of Texas at Arlington*; Ray, Christopher *Univ. of Texas at Arlington*; Mariottini, Gian-Luca *The Univ. of Texas at Arlington*

16:00-17:30	ThFPoT20.3
Person Identification from Gait Analysis with a Depth Camera at Home	4999-5002
Dubois, Amandine* <i>Univ. de Fribourg</i> ; Bresciani, Jean-Pierre <i>Univ. de Fribourg</i>	
16:00-17:30	ThFPoT20.4
Characterization of a Multi-User Indoor Positioning System based on Low Cost Depth Vision (Kinect) for Monitoring Human Activity in a Smart Home	5003-5007
Sevrin, Loïc* <i>Univ. de Lyon</i> ; Noury, Norbert <i>Univ. Lyon 1</i> ; Abouchi, Nacer <i>CPE Lyon</i> ; Jumel, Fabrice <i>CPE Lyon</i> ; Massot, Bertrand <i>INSA Lyon</i> ; Saraydaryan, Jacques <i>CPE Lyon</i>	
ThFPoT21: 16:00-17:30	
12.7 Assistive Technology for the Ageing Population II (Poster Session)	
16:00-17:30	ThFPoT21.1
Design and Evaluation of a Smartphone Application for Non-Speech Sound Awareness for People with Hearing Loss	5008-5011
Mielke, Matthias* <i>Univ. of Siegen</i> ; Brück, Rainer <i>Univ. of Siegen</i>	
16:00-17:30	ThFPoT21.2
Low Vision System for Rapid Near and Far-Field Magnification Switching	5012-5015
Ambroggi, Nicholas <i>Massachusetts Institute of Technology</i> ; Dias Carlson, Rachel <i>Massachusetts Institute of Technology</i> ; Gantner, Karl <i>Massachusetts Institute of Technology</i> ; Anisha, Gururaj <i>Massachusetts Institute of Technology</i> ; Hanumara, Nevan <i>Massachusetts Institute of Technology</i> ; Narain, Jaya* <i>Massachusetts Institute of Technology</i> ; Winter, Amos <i>MIT</i> ; Zielske, Iris <i>Massachusetts Institute of Technology</i> ; Satgunam, PremNandhini <i>LV Prasad Eye Institute</i> ; Kumar, Deepak <i>LV Prasad Eye Institute</i> ; Gothwal, Vijaya <i>LV Prasad Eye Institute</i>	
16:00-17:30	ThFPoT21.3
Towards Personalized Smart Wheelchairs: Lessons Learned from Discovery Interviews	5016-5019
Padir, Taskin* <i>Worcester Polytechnic Institute</i>	
16:00-17:30	ThFPoT21.4
User-Centric Design of a Personal Assistance Robot (FRASIER) for Active Aging	5020-5023
Padir, Taskin* <i>Worcester Polytechnic Institute</i> ; Skorinko, Jeanine <i>Worcester Polytechnic Institute</i> ; Dimitrov, Velin <i>Worcester Polytechnic Institute</i>	
16:00-17:30	ThFPoT21.5
Development and Pilot Testing of a Kneeling Ultralight Wheelchair Design	5024-5027
Mattie, Johanne* <i>British Columbia Institute of Technology</i> ; Leland, Danny <i>British Columbia Institute of Technology</i> ; Borisoff, Jaimie F. <i>British Columbia Institute of Technology</i>	
16:00-17:30	ThFPoT21.6
Early Detection of Sit-to-Stand Transitions in a Lower Limb Orthosis	5028-5031
Bell, Jason <i>The Univ. of Alabama</i> ; Shen, Xiangrong <i>Univ. of Alabama</i> ; Sazonov, Edward* <i>Univ. of Alabama</i>	
16:00-17:30	ThFPoT21.7
Promoting Autonomy in a Smart Home Environment with a Smarter Interface	5032-5035
Brennan, Chris* <i>Univ. of Ulster</i> ; McCullagh, Paul <i>Univ. of Ulster</i> ; Galway, Leo <i>Univ. of Ulster</i> ; Lightbody, Gaye <i>Univ. of Ulster</i>	
16:00-17:30	ThFPoT21.8
Action Tagging in a Multi-User Indoor Environment for Behavioural Analysis Purposes	5036-5039
Guerra, Claudio* <i>Dip. di Ingegneria dell'Informazione, Univ. di Parma</i> ; Bianchi, Valentina <i>Dip. di Ingegneria dell'Informazione, Univ. di Parma</i> ; De Munari, Ilaria <i>Univ. of Parma</i> ; Ciampolini, Paolo <i>Univ. of Parma</i>	

12.8 Technologies for Active Aging (Poster Session)

- 16:00-17:30 ThFPoT22.1
Automated Walking Aid Detector based on Indoor Video Recordings 5040-5045
 Puttemans, Steven* *KU Leuven, EAVISE Research Group*; Baldewijns, Greet *KU Leuven campus Geel, AdvISe Tech. Lab, Belgium*; Croonenborghs, Tom *KU Leuven campus Geel, AdvISe Tech. Lab, Belgium*; Vanrumste, Bart *Katholieke Univ. Leuven*; Goedemé, Toon *KU Leuven, Campus De Nayer, EAVISE Research Group*
- 16:00-17:30 ThFPoT22.2
Automatic Detection of Health Changes using Statistical Process Control Techniques on Measured Transfer Times of Elderly 5046-5049
 Baldewijns, Greet* *KU Leuven campus Geel, AdvISe Tech. Lab, Belgium*; Luca, Stijn *KU Leuven Tech. Campus Geel, AdvISe*; Nagels, William *KU Leuven, Faculty of Engineering Tech.*; Vanrumste, Bart *Katholieke Univ. Leuven*; Croonenborghs, Tom *KU Leuven campus Geel, AdvISe Tech. Lab, Belgium*
- 16:00-17:30 ThFPoT22.3
Physical Activity Classification Meets Daily Life: Review on Existing Methodologies and Open Challenges ... 5050-5053
 Awais, Muhammad* *Univ. of Bologna*; Mellone, Sabato *Univ. of Bologna*; Chiari, Lorenzo *Univ. of Bologna*
- 16:00-17:30 ThFPoT22.4
Influence of Age and Gender on Sensor-Based Functional Measures: A Factor Analysis Approach. 5054-5057
 Coni, Alice* *Univ. of Bologna, Italy*; Mellone, Sabato *Univ. of Bologna*; Colpo, Marco *Laboratory of Clinical Epidemiology, Azienda Sanitaria Firenze*; Bandinelli, Stefania *Laboratory of Clinical Epidemiology, Azienda Sanitaria Firenze*; Chiari, Lorenzo *Univ. of Bologna*
- 16:00-17:30 ThFPoT22.5
ECG Synthesis from Separate Wearable Bipolar Electrodes 5058-5061
 Farotto, Dario *Technical Univ. of Eindhoven*; Atallah, Louis* *Philips Research*; van der Heijden, Patrick *Holst-IMEC*; Grieten, Lars *Holst-IMEC*
- 16:00-17:30 ThFPoT22.6
Mining Human Behavior for Health Promotion 5062-5065
 Banos, Oresti* *Kyung Hee Univ.*; Bang, Jaehun *Kyung Hee Univ.*; Hur, Taeho *Kyung Hee Univ.*; Siddiqi, Muhammad Hameed *Kyung Hee Univ.*; Thien, Huynh-The *Kyung Hee Univ.*; Vui, Le-Ba *Kyung Hee Univ.*; Khan, Wajahat Ali *Kyung Hee Univ.*; Ali, Taqdir *Kyung Hee Univ., South Korea*; Villalonga, Claudia *Research Center for Information and Communications Technologies*; Lee, Sungyoung *Kyung Hee Univ.*
- 16:00-17:30 ThFPoT22.7
Modeling of Human Movement Monitoring using Bluetooth Low Energy Technology 5066-5069
 Mokhtari, Ghassem* *CSIRO*; Zhang, Qing *CSIRO ICT Centre*; Karunanithi, Mohanraj *CSIRO Digital Productivity Flagship*
- 16:00-17:30 ThFPoT22.8
Human Motion Energy Harvesting using a Piezoelectric MFC Patch 5070-5073
 Bassani, Giulia* *Scuola Superiore Sant'Anna*; Filippeschi, Alessandro *Scuola Superiore S. Anna, Pisa, Italy*; Ruffaldi, Emanuele *Scuola Superiore S. Anna, Pisa, Italy*
- 16:00-17:30 ThFPoT22.9
A Random Forest-Based Ensemble Method for Activity Recognition 5074-5077
 Feng, Zengtao *Southeast Univ.*; Mo, Lingfei* *Univ. of Southeast, China*; Li, Meng *Southeast Univ.*
- 16:00-17:30 ThFPoT22.10
Validation of an Optimized Algorithm to use Kinect in a Non-Structured Environment for Sit-to-Stand Analysis 5078-5081
 Cippitelli, Enea* *Univ. Politecnica delle Marche*; Gasparrini, Samuele *Univ. Politecnica delle Marche*; Spinsante, Susanna *Univ. Politecnica delle Marche*; Gambi, Ennio *Univ. Politecnica delle Marche*; Verdini, Federica *Univ. Politecnica delle Marche*; Burattini, Laura *Univ. Politecnica delle Marche*; Di Nardo, Francesco *Polytechnic Univ. of Marche*; Fioretti, Sandro *Univ. Politecnica delle Marche*

- 16:00-17:30 ThFPoT23.1
Affordable Low Complexity Heart/Brain Monitoring Methodology for Remote Health Care 5082-5085
 Vemishetty, Naresh *IIT Hyderabad*; Jadhav, Pranit *IIT Hyderabad*; Adapa, Bhagyaraja *Indian Institute of Technology Hyderabad*; Acharyya, Amit* *Indian Institute of Technology Hyderabad*; P, Rajalakshmi *Indian Institute of Technology Hyderabad*; Naik, Ganesh R *Univ. of Technology Sydney*
- 16:00-17:30 ThFPoT23.2
Epileptic Seizure Detection using Wrist-Worn Biosensors 5086-5089
 Cogan, Diana *The Univ. of Texas at Dallas*; Nourani, Mehrdad* *Univ. of Texas at Dallas*; Harvey, Jay *Texas Epilepsy Group*; Nagaraddi, Venkatesh *Texas Epilepsy Group*
- 16:00-17:30 ThFPoT23.3
Visualizing the Brain on a Mixed Reality Smartphone Application 5090-5093
 Soeiro, José *BioISI – Biosystems & Integrative Sciences Institute, Univ.*; Cláudio, Ana Paula* *BioISI – Biosystems & Integrative Sciences Institute, Univ.*; Carmo, Maria Beatriz *BioISI – Biosystems & Integrative Sciences Institute, Univ.*; Ferreira, Hugo *Institute of Biophysics and Biomedical Engineering*
- 16:00-17:30 ThFPoT23.4
Transmission of Wireless Neural Signals through a 0.18um CMOS Low-Power Amplifier 5094-5097
 Gazziro, Mario* *Univ. Federal of ABC*; Braga, Carlos *Fellip UFABC*; Moreira, Dilvan *Univ. of Sao Paulo*; de Carvalho, Andre *Univ. of Sao Paulo*; Rodrigues Jr, Jose F *Univ. of Sao Paulo*; Navarro, Joao *Univ. of São Paulo, School of Engineering of São Carlos, EI*; Mateus, Juan *Chipus Microelectronics*; Pasti Mioni, Daniel *Chipus Microelectronics*; Pilon Pessatti, Murilo *Chipus Microelectronics*; Dal Fabbro, Paulo Augusto *Chipus Microelectronics*; Frewin, Christopher *Univ. of South Florida*; Sadow, Stephen *Univ. of South Florida*

- 16:00-17:30 ThFPoT24.1
New Training Methods based on Mixed Reality for Interventional Ultrasound: Design and Validation 5098-5101
 Francesconi, Martina* *Univ. of Pisa*; Freschi, Cinzia *Univ. of Pisa*; Sincerì, Sara *EndoCAS - Univ. of Pisa*; Carbone, Marina *EndoCAS - Univ. of Pisa*; Cappelli, Carla *Azienda Ospedaliero-Univ. Pisana*; Morelli, Luca *Azienda Ospedaliero-Univ. Pisana*; Ferrari, Vincenzo *Univ. di Pisa*; Ferrari, Mauro *Univ. of Pisa*
- 16:00-17:30 ThFPoT24.2
Basic Endovascular Skills Trainer: A Surgical Simulator for the Training of Novice Practitioners of Endovascular Procedures 5102-5105
 Sincerì, Sara* *EndoCAS - Univ. of Pisa*; Carbone, Marina *EndoCAS - Univ. of Pisa*; Marconi, Michele *Univ. of Pisa*; Moglia, Andrea *EndoCAS - Univ. of Pisa*; Ferrari, Mauro *Univ. of Pisa*; Ferrari, Vincenzo *Univ. di Pisa*
- 16:00-17:30 ThFPoT24.3
Development of Trabecular Bone Surrogates for Kyphoplasty-Balloon Dilatation Training 5106-5109
 Hollensteiner, Marianne* *Upper Austria Univ. of Applied Sciences*; Samrykit, Markus *Univ. of Applied Sciences Upper Austria*; Hess, Michael *Upper Austria Univ. of Applied Sciences*; Fuerst, David *Upper Austria Univ. of Applied Sciences*; Schrempf, Andreas *Upper Austria Univ. of Applied Sciences*
- 16:00-17:30 ThFPoT24.4
Assessment Parameters for a Novel Simulator in Minimally Invasive Spine Surgery 5110-5113
 Fuerst, David* *Upper Austria Univ. of Applied Sciences*; Hollensteiner, Marianne *Upper Austria Univ. of Applied Sciences*; Schrempf, Andreas *Upper Austria Univ. of Applied Sciences*
- 16:00-17:30 ThFPoT24.5
Comparison of Oral Surgery Task Performance in a Virtual Reality Surgical Simulator and an Animal Model using Objective Measures 5114-5117
 Ioannou, Ioanna* *Univ. of Melbourne*; Kazmierczak, Ed *The Univ. of Melbourne*; Stern, Linda *Univ. of Melbourne*

ThGT2: 17:30-19:00	Brown 2
9.7 Physiological Monitoring Devices (Oral Session)	
Co-Chair: Lago, Paolo <i>Fondazione IRCCS Policlinico S. Matteo</i>	

17:30-17:45 ThGT2.1
A Chair for Cuffless Real-Time Estimation of Systolic Blood Pressure based on Pulse Transit Time 5118-5121
Tang, Zunyi* *Osaka Electro-Communication Univ.*; Sekine, Masaki *Osaka Electro-Communication Univ.*;
Tamura, Toshiyo *Osaka Electro-Communication Univ.*; Yoshida, Masaki *Osaka Electro-Communication Univ.*;
Chen, Wenxi *Univ. of Aizu*

17:45-18:00 ThGT2.2
Simulation Study on the Effect of Tissue Geometries to Fluence Composition for Non-Invasive Fetal Pulse Oximetry 5122-5125
Böttlich, Marcel* *Technische Univ. Ilmenau*; Ley, Sebastian *Technische Univ. Ilmenau*;
Husar, Peter *Ilmenau Univ. of Technology*

18:00-18:15 ThGT2.3
Intraoperative Monitoring of Intestinal Viability: Evaluation of a New Combined Sensor 5126-5129
McGuinness Abdollahi, Zahra* *City Univ. London*; Thaha, Mohamed *The Royal London Hospital, Bart's Health NHS Trust*; Ramsanahie, Anthony *The Royal London Hospital, Bart's Health NHS Trust*; Ahmed, Shafi *The Royal London Hospital, Bart's Health NHS Trust*; Kyriacou, Panayiotis *City Univ. London*; Phillips, Justin *City Univ. London*

18:15-18:30 ThGT2.4
Impedance Sensing Device for Monitoring Ulcer Healing in Human Patients 5130-5133
Liao, Amy* *UC Berkeley*; Lin, Monica *UC Berkeley / UC San Francisco*; Ritz, Lauren *UCSF*; Swisher, Sarah *UC Berkeley*; Ni, David *UC Berkeley*; Mann, Kaylee *Univ. of California Berkeley*; Roy, Shuvo *Univ. of California at San Francisco*; Harrison, Michael *Univ. of California at San Francisco*; Arias, Ana *UC Berkeley*; Subramanian, Vivek *UC Berkeley*; Young, David *UCSF*; Maharbiz, Michel *Univ. of California, Berkeley*; Khan, Yasser *UC Berkeley*

18:30-18:45 ThGT2.5
Detection of Levodopa Induced Dyskinesia in Parkinson's Disease Patients based on Activity Classification 5134-5137
Jalloul, Nahed* *LTSI Univ. de rennes 1*; Porée, Fabienne *Univ. de Rennes 1*; viardot, geoffrey *FORENAP*;
L'Hostis, Philippe *Biotrial Core Lab*; Carrault, Guy *Univ. de Rennes 1*

18:45-19:00 ThGT2.6
Impedance Spectroscopy to Monitor Fracture Healing 5138-5141
Lin, Monica* *UC Berkeley / UC San Francisco*; Herfat, Safa *Univ. of California, San Francisco*; Bahney, Chelsea *Univ. of California, San Francisco*; Marmor, Meir *Univ. of California, San Francisco*; Maharbiz, Michel *Univ. of California, Berkeley*

ThGT3: 17:30-19:00	Brown 3
6.16 Neural Signal Processing II (Oral Session)	
Chair: Bertrand, Alexander <i>KU Leuven, University of Leuven</i>	
Co-Chair: Ravazzani, Paolo <i>CNR</i>	

17:30-17:45 ThGT3.1
EC-PC Spike Detection for High Performance Brain-Computer Interface 5142-5145
Tam, Wing Kin* *National Univ. of Singapore*; So, Rosa *Institute for Infocomm Research*; Guan, Cuntai *Institute for Infocomm Research*; Yang, Zhi *National Univ. of Singapore*

17:45-18:00 ThGT3.2
Improving Neural Decoding in the Central Auditory System using Bio-Inspired Spectro-Temporal Representations and a Generalized Bilinear Model 5146-5150
Siahpoush, Shadi* *Univ. de sherbrooke*; Erfani, Yousof *Univ. de sherbrooke*; Rode, Thilo *Hörzentrum Hannover GmbH*; Lim, Hubert *Univ. of Minnesota*; Rouat, Jean *Univ. de sherbrooke*; Plourde, Eric *Univ. de Sherbrooke*

18:00-18:15		ThGT3.3
FPGA Implementation of Principal Component Regression (PCR) for Real-Time Differentiation of Dopamine from Interferents	5151-5154	
Bozorgzadeh, Bardia <i>Case Western Reserve Univ.</i> ; Covey, Daniel <i>Illinois State Univ.</i> ; Garriss, Paul <i>Illinois State Univ.</i> ; Mohseni, Pedram* <i>Case Western Reserve Univ.</i>		
18:15-18:30		ThGT3.4
Comparison of Speech Envelope Extraction Methods for EEG-Based Auditory Attention Detection in a Cocktail Party Scenario	5155-5158	
Biesmans, Wouter* <i>KU Leuven</i> ; Vanthornhout, Jonas <i>KU Leuven, Univ. of Leuven</i> ; Wouters, Jan <i>KU Leuven, Univ. of Leuven</i> ; Moonen, Marc <i>KU Leuven, Univ. of Leuven</i> ; Francart, Tom <i>KU Leuven, Univ. of Leuven</i> ; Bertrand, Alexander <i>KU Leuven, Univ. of Leuven</i>		
18:30-18:45		ThGT3.5
Probing Meaningfulness of Oscillatory EEG Components with Bootstrapping, Label Noise and Reduced Training Sets	5159-5162	
Castaño-Candamil, Juan Sebastián <i>Univ. of Freiburg</i> ; Meinel, Andreas <i>Univ. of Freiburg</i> ; Dähne, Sven <i>Technical Univ. of Berlin</i> ; Tangermann, Michael* <i>Univ. of Freiburg</i>		
18:45-19:00		ThGT3.6
Research on Multi-Dimensional N-Back Task Induced EEG Variations	5163-5166	
Chen, Runge <i>Tianjin Univ.</i> ; Wang, Xiaolu <i>Tianjin Univ.</i> ; zhang, lu <i>Tianjin Univ.</i> ; Yi, Weibo <i>Tianjin Univ.</i> ; Ke, Yufeng <i>Tianjin Univ.</i> ; Qi, Hongzhi <i>Tianjin Univ.</i> ; He, Feng <i>Tianjin Univ.</i> ; Zhao, Xin <i>Tianjin Univ.</i> ; Wang, Xuemin <i>Tianjin Univ.</i> ; Ming, Dong <i>Tianjin Univ.</i> ; Zhou, Peng* <i>Tianjin Univ.</i>		
ThGT4: 17:30-19:00		Amber 1
1.21 Signal Processing in Physiological Systems VIII: Movement (Oral Session)		
Chair: Della Croce, Ugo <i>University of Sassari</i>		
17:30-17:45		ThGT4.1
Automatic Task Analysis based on Head Movement	5167-5170	
Makepeace, Robert William <i>Univ. of New South Wales</i> ; Epps, Julien* <i>The Univ. of New South Wales</i>		
17:45-18:00		ThGT4.2
Timed Up-and-Go Phase Segmentation in Parkinson's Disease Patients using Unobtrusive Inertial Sensors	5171-5174	
Reinfelder, Samuel* <i>Friedrich-Alexander-Univ. Erlangen-Nürnberg</i> ; Hauer, Roland <i>Friedrich-Alexander-Univ. Erlangen-Nürnberg</i> ; Barth, Jens <i>ASTRUM IT GmbH</i> ; Klucken, Jochen <i>Univ. Hospital Erlangen</i> ; Eskofier, Bjoern M <i>Friedrich-Alexander-Univ. Erlangen-Nürnberg</i>		
18:00-18:15		ThGT4.3
Estimating In-Home Walking Speed Distributions for Unobtrusive Detection of Mild Cognitive Impairment in Older Adults	5175-5178	
Akl, Ahmad* <i>Univ. of Toronto</i> ; Mihailidis, Alex <i>Univ. of Toronto</i>		
18:15-18:30		ThGT4.4
Hidden Markov Model-Based Strategy for Gait Segmentation using Inertial Sensors: Application to Elderly, Hemiparetic Patients and Huntington's Disease Patients	5179-5182	
Mannini, Andrea* <i>Scuola Superiore Sant'Anna</i> ; Trojaniello, Diana <i>Univ. of Sassari</i> ; Della Croce, Ugo <i>Univ. of Sassari</i> ; Sabatini, Angelo Maria <i>Scuola Superiore Sant'Anna</i>		
18:30-18:45		ThGT4.5
Temporal and Kinematic Variables for Real-World Falls Harvested from Lumbar Sensors in the Elderly Population	5183-5186	
Bourke, Alan* <i>Univ. of Limerick</i> ; Klenk, Jochen <i>Dept. of Clinical Gerontology, Robert Bosch Hospital, Stutt</i> ; Schwickert, Lars <i>Dept. of Clinical Gerontology, Robert Bosch Hospital, Stutt</i> ; Aminian, Kamiar <i>Ecole Polytechnique Federale</i> ; Ihlen, Espen A F <i>Dept. of Neuroscience, Faculty of Medicine, Norwegian Univ.</i> ; Helbstad, Jorunn L <i>Dept. of Neuroscience, Faculty of Medicine, Norwegian Univ.</i> ; Chiari, Lorenzo <i>Univ. of Bologna</i> ; Becker, Clemens <i>Dept. of Clinical Gerontology, Robert Bosch Hospital, Stutt</i>		

18:45-19:00 ThGT4.6
Frequency-Based Features for Early Cerebral Palsy Prediction 5187-5190
 Rahmati, Hodjat* *NTNU, Trondheim, Norway*; Martens, Harald *Dept. of Engineering Cybernetics, NTNU*; Aamo, Ole Morten *Dept. of Engineering Cybernetics, NTNU, Trondheim, Norway*; Stavdahl, Øyvind *Norwegian Univ. of Science and Technology*; Støen, Ragnhild *Dept. of Pediatrics, St. Olavs Univ. Hospital*; Adde, Lars *Clinic for Clinical Services, St. Olavs Univ. Hospital, Tro*

ThGT5: 17:30-19:00 Amber 2
1.22 Signal Processing in Physiological Systems V: Arrhythmias Detection (Oral Session)
Co-Chair: Owis, Mohamed *Cairo University*

17:30-17:45 ThGT5.1
Arrhythmia Detection using Amplitude Difference Features based on Random Forest 5191-5194
 Park, Juyoung* *Hanyang Univ.*; Seunghan, Lee *Hanyang Univ.*; Kang, Kyungtae *Hanyang Univ.*

17:45-18:00 ThGT5.2
Arrhythmia Classification based on Novel Distance Series Transform of Phase Space Trajectories 5195-5198
 Sayed, Khaled* *Cairo Univ.*; Khalaf, Aya *Cairo Univ.*; Kadah, Yasser M. *Cairo Univ.*

18:00-18:15 ThGT5.3
Image Features of Spectral Correlation Function for Arrhythmia Classification 5199-5202
 Khalaf, Aya* *Cairo Univ.*; Owis, Mohamed *Cairo Univ.*; Yassine, Inas *Cairo Univ.*

18:15-18:30 ThGT5.4
Automatic Cardiac Arrhythmia Detection and Classification using Vectorcardiograms and Complex Networks 5203-5206
 Queiroz, Vinícius Augusto *Pereira Univ. Federal de Ouro Preto*; Luz, Eduardo* *Univ. Federal de Ouro Preto*; Moreira, Gladston Juliano *Prates Univ. Federal de Ouro Preto*; Guarda, Álvaro *Univ. Federal de Ouro Preto*; Menotti, David *Univ. Federal de Ouro Preto*

18:30-18:45 ThGT5.5
Distribution Entropy (DistEn): A Complexity Measure to Detect Arrhythmia from Short Length RR Interval Time Series 5207-5210
 Karmakar, Chandan* *Deakin Univ.*; Udhayakumar, Radhagayathri *Univ. of Melbourne*; Palaniswami, Marimuthu *The Univ. of Melbourne*

18:45-19:00 ThGT5.6
Discriminative Sparse Coding of ECG during Ventricular Arrhythmias using a LC-KSVD Approach 5211-5214
 Kalaji, Iman *Ryerson Univ.*; Balasundaram, Krishnanand* *Ryerson Univ.*; Umapathy, Karthikeyan *Ryerson Univ.*

ThGT6: 17:30-19:00 Amber 3
2.16 Imaging in Radiation Therapy (Invited Session)
Chair: Rizzo, Giovanna *National Research Council (CNR)*
Co-Chair: Acosta, Oscar *Univ. of Rennes 1*

17:30-17:45 ThGT6.1
Roles of Deformable Image Registration in Adaptive RT: From Contour Propagation to Dose Monitoring ... 5215-5218
 Simon, Antoine* *Univ. of Rennes*; Nassef, Mohamed *Univ. of Rennes 1*; Rigaud, Bastien *Univ. of Rennes 1*; Cazoulat, Guillaume *Univ. of Rennes 1*; Castelli, Joël *Univ. of Rennes 1*; Lafond, Caroline *Univ. of Rennes 1*; Acosta, Oscar *Univ. of Rennes 1*; Haigrón, Pascal *Univ. of Rennes 1*; De Crevoisier, Renaud *INSERM, U1099, Rennes, F-35000, France - Univ. de Rennes 1*,

17:45-18:00 ThGT6.2
Texture Analysis to Assess Structural Modifications Induced by Radiotherapy 5219-5222
 Scalco, Elisa* *National Research Council*; Moriconi, Stefano *National Research Council*; Rizzo, Giovanna *National Research Council (CNR)*

18:00-18:15		ThGT6.3
An Innovative Multimodal/Multispectral Image Registration Method for Medical Images based on the Expectation-Maximization Algorithm	5223-5226	
Arce-Santana, Edgar Roman* <i>Facultad de Ciencias; Campos-Delgado, Daniel U. Univ. Autonoma de San Luis Potosi; Mejia-Rodriguez, Aldo Rodrigo Univ. Autonoma de San Luis Potosi; Reducindo, Isnardo Univ. Autonoma de San Luis Potosi</i>		
18:15-18:30		ThGT6.4
Challenges and Opportunities in Image Guided Particle Therapy	5227-5230	
Riboldi, Marco* <i>Politecnico di Milano; Baroni, Guido Politecnico di Milano</i>		
18:30-18:45		ThGT6.5
Recent Advancements in Toxicity Prediction Following Prostate Cancer Radiotherapy	5231-5234	
Ospina, Juan David* <i>LTSI - Univ. of Rennes 1; Fargeas, Auréline LTSI - Univ. of Rennes 1; Drean, Gael LTSI - Univ. of Rennes 1; Simon, Antoine Univ. of Rennes; Acosta, Oscar Univ. of Rennes 1; De Crevoisier, Renaud INSERM, U1099, Rennes, F-35000, France - Univ. de Rennes 1,</i>		
18:45-19:00		ThGT6.6
Analysis of Serial CT Images for Studying the RT Effects in Head-Neck Cancer Patients	5235-5238	
Belli, Maria Luisa* <i>Scientific Institute San Raffaele; Broggi, Sara Scientific Institute San Raffaele; Scalco, Elisa National Research Council; Cattaneo, Giovanni Mauro Scientific Institute San Raffaele; Dell'Oca, Italo Scientific Institute San Raffaele; Logghe, Gerlinde Ghent Univ., Ghent, Belgium and Free Univ. of Brussels; Moriconi, Stefano National Research Council; Sanguineti, Giuseppe Dept. of Radiation Oncology, Regina Elena National Cancer I; Valentini, Vincenzo Univ. Cattolica del Sacro Cuore; Di Muzio, Nadia Scientific Institute San Raffaele, Milano, Italy; Fiorino, Claudio Scientific Institute San Raffaele; Calandrino, Riccardo Scientific Institute San Raffaele</i>		
ThGT7: 17:30-19:00		Amber 4
2.17 Retinal and Ophthalmic Imaging I (Oral Session)		
Chair: Ruggeri, Alfredo <i>University of Padua</i>		
Co-Chair: Chen, Xiangyu <i>Institute for Infocomm Research, A*STAR</i>		
17:30-17:45		ThGT7.1
Automated Retinal Vessel Recognition and Measurements on Large Datasets	5239-5242	
Welikala, Roshan A <i>Kingston Univ.</i> ; Fraz, Muhammad M <i>National Univ. of Sciences and Technology, Islamabad; Hayat, Shabina Univ. of Cambridge; Rudnicka, Alicja R St. George's, Univ. of London; Foster, Paul J Univ. College London; Whincup, Peter H St. George's, Univ. of London; Owen, Chris G St. George's, Univ. of London; Strachan, David P St. George's, Univ. of London; Barman, Sarah A* Kingston Univ.</i>		
17:45-18:00		ThGT7.2
Improving the Performance of an Ensemble-Based Exudate Detection System using Stochastic Parameter Optimization	5243-5246	
Toth, Janos* <i>Univ. of Debrecen, Faculty of Informatics; Toman, Henrietta Univ. of Debrecen; Hajdu, Andras Univ. of Debrecen</i>		
18:00-18:15		ThGT7.3
Retinal Image Registration for Eye Movement Estimation	5247-5250	
Kolar, Radim* <i>Brno Univ. of Tech.</i> ; Tornow, Ralf-Peter <i>Univ. of Erlangen; Odstrcilik, Jan Brno Univ. of Tech.</i>		
18:15-18:30		ThGT7.4
Automatic Gunn and Salus Sign Quantification in Retinal Images	5251-5254	
Wigdahl, Jeffrey* <i>Univ. of Padova; Guimarães, Pedro Univ. of Padova; Leontidis, Georgios Univ. of Lincoln; Triantafyllou, Areti 3rd Internal Medicine clinic of Papageorgiou Hospital, Thessalon; Ruggeri, Alfredo Univ. of Padua</i>		
18:30-18:45		ThGT7.5
Evaluation of Geometric Features as Biomarkers of Diabetic Retinopathy for Characterizing the Retinal Vascular Changes during the Progression of Diabetes	5255-5259	
Leontidis, Georgios* <i>Univ. of Lincoln; Al-Diri, Bashir The Univ. of Lincoln; Wigdahl, Jeffrey Univ. of Padova; Hunter, Andrew Univ. of Lincoln</i>		

18:45-19:00 ThGT7.6
Multiple Ocular Diseases Detection based on Joint Sparse Multi-Task Learning 5260-5263
 Chen, Xiangyu* *Institute for Infocomm Research, A*STAR*; Xu, Yanwu *Institute for Infocomm Research*; Yin, Fengshou *Institute for Infocomm Research*; Zhang, Zhuo *A*STAR*; Wong, Damon *Institute for Infocomm Research*; Wong, Tien Yin *National Univ. of Singapore*; Liu, Jiang *Institute for Infocomm Research, A STAR*

ThGT8: 17:30-19:00 Amber 5
8.8 Surgical Robotics I (Oral Session)
Chair: Ferrigno, Giancarlo *Politecnico di Milano*

17:30-17:45 ThGT8.1
A Surgical Parallel Continuum Manipulator with a Cable-Driven Grasper 5264-5267
 Orekhov, Andrew *Univ. of Tennessee*; Bryson, Caroline* *Univ. of Tennessee Knoxville*; Till, John *Univ. of Tennessee, Knoxville*; Chung, Scotty *Univ. of Tennessee*; Rucker, Daniel Caleb *Univ. of Tennessee*

17:45-18:00 ThGT8.2
Estimating the Configuration of a Continuum Dexterous Manipulator with Variable Curvature Bending using Partial Shape-Sensing 5268-5271
 Murphy, Ryan J.* *Johns Hopkins Univ. Applied Physics Laboratory*; Armand, Mehran *Johns Hopkins Univ. Applied Physics Laboratory*

18:00-18:15 ThGT8.3
Markerless Surgical Robotic System for Intracerebral Hemorrhage Surgery 5272-5275
 Shin, Sangkyun *Korea Institute of Science and Technology*; Cho, Hyunchul *Korea Institute of Science and Technology*; Yoon, Siyeop *Univ. of Science and Technology*; Park, Kyusic *Korea Institute of Science and Technology*; Kim, Youngjun *KIST*; Park, Sehyung *Korea Institute of Science and Technology*; Kim, Laehyun *Korea Institute of Science and Technology*; Lee, Deukhee* *Korea Institute of Science and Technology*

18:15-18:30 ThGT8.4
Recognition of User's Activity for Adaptive Cooperative Assistance in Robotic Surgery 5276-5279
 Nessi, Federico *Politecnico di Milano*; Beretta, Elisa *Politecnico di Milano*; Ferrigno, Giancarlo* *Politecnico di Milano*; De Momi, Elena *Politecnico di Milano*

18:30-18:45 ThGT8.5
Biometry-Based Concentric Tubes Robot for Vitreoretinal Surgery 5280-5284
 Lin, Fang-Yu *Univ. College London*; Bergeles, Christos* *Imperial College London*; Yang, Guang-Zhong *Imperial College London*

18:45-19:00 ThGT8.6
Development of the SAIT Single-Port Surgical Access Robot -Slave Arm based on RCM Mechanism - ... 5285-5290
 Roh, Se-gon* *Samsung Advanced Institute of Technology, Samsung Electronics Co*

ThGT9: 17:30-19:00 Amber 6
8.9 Mechanics of Locomotion and Balance I (Oral Session)
Chair: Micera, Silvestro *Scuola Superiore Sant'Anna*
Co-Chair: Pedotti, Antonio *Politecnico di Milano*

17:30-17:45 ThGT9.1
Effects of Aging and Perturbation Intensities on Temporal Parameters during Slipping-Like Perturbations .. 5291-5294
 Tropea, Peppino* *Scuola Superiore Sant'Anna*; Martelli, Dario *The BioRobotics Institute, Scuola Superiore Sant'Anna, Pisa(I)*.; Aprigliano, Federica *The BioRobotics Institute of Scuola Superiore Sant'Anna, Pisa*; Micera, Silvestro *Scuola Superiore Sant'Anna*; Monaco, Vito *Scuola Superiore Sant'Anna, Pisa*

17:45-18:00 ThGT9.2
Effects of Slipping-Like Perturbation Intensity on the Dynamical Stability 5295-5298
 Aprigliano, Federica* *The BioRobotics Institute of Scuola Superiore Sant'Anna, Pisa*; Martelli, Dario *The BioRobotics Institute, Scuola Superiore Sant'Anna, Pisa(I)*.; Tropea, Peppino *Scuola Superiore Sant'Anna*; Micera, Silvestro *Scuola Superiore Sant'Anna*; Monaco, Vito *Scuola Superiore Sant'Anna, Pisa*

18:00-18:15		ThGT9.3
Walking on Uneven Terrain with a Powered Ankle Prosthesis: A Preliminary Assessment	5299-5302	
Shultz, Amanda* <i>Vanderbilt Univ.</i> ; Lawson, Brian <i>Vanderbilt Univ.</i> ; Goldfarb, Michael <i>Vanderbilt Univ.</i>		
18:15-18:30		ThGT9.4
Local Dynamic Stability of the Trunk Segments and Lower Extremity Joints during Backward Walking .	5303-5306	
Wu, Yu <i>Shanghai Jiao Tong Univ.</i> ; Xiao, Fei <i>Ninth People's Hospital, Shanghai Jiao Tong Univ. School of</i> ; Gu, Dong-Yun* <i>Ninth People's Hospital, Shanghai Jiao Tong Univ. School of</i>		
18:30-18:45		ThGT9.5
Metabolics of Stair Ascent with a Powered Transfemoral Prosthesis	5307-5310	
Ledoux, Elissa Danielle* <i>Vanderbilt Univ.</i> ; Lawson, Brian <i>Vanderbilt Univ.</i> ; Shultz, Amanda <i>Vanderbilt Univ.</i> ; Bartlett, Harrison Logan <i>Vanderbilt Univ.</i> ; Goldfarb, Michael <i>Vanderbilt Univ.</i>		
18:45-19:00		ThGT9.6
Measuring Body Sway of Bipedally Standing Rat and Quantitative Evaluation of Its Postural Control	5311-5314	
Sato, Yota <i>The Univ. of Electro-Communications</i> ; Funato, Tetsuro* <i>The Univ. of Electro-Communications</i> ; Yanagihara, Dai <i>The Univ. of Tokyo</i> ; Sato, Yamato <i>Teikyo Heisei Univ.</i> ; Aoi, Shinya <i>Kyoto Univ.</i> ; Fujiki, Soichiro <i>Kyoto Univ.</i> ; Nakano, Kazushi <i>The Univ. of Electro-Communications</i> ; Tsuchiya, Kazuo <i>Kyoto Univ.</i>		
ThGT10: 17:30-19:00		Amber 7
5.5 Advanced Engineering Methods for Respiratory Medicine (Invited Session)		
Chair: Chbat, Nicolas W. <i>Philips Research North America</i>		
Co-Chair: Das, Anup <i>University of Warwick</i>		
17:30-17:45		ThGT10.1
Automated Logging of Inspiratory and Expiratory Non-Synchronized Breathing (ALIEN) for Mechanical Ventilation	5315-5318	
Chiew, Yeong Shiong <i>Univ. of Canterbury</i> ; Pretty, Christopher G.* <i>Univ. of Canterbury</i> ; Beatson, Alexander <i>Univ. of Canterbury</i> ; Glassenbury, Daniel <i>Univ. of Canterbury</i> ; Major, Vincent <i>Univ. of Canterbury</i> ; Corbett, Simon <i>Univ. of Canterbury</i> ; Redmond, Daniel <i>Univ. of Canterbury</i> ; Szlavec, Akos <i>Budapest Univ. of Technology and Economics</i> ; Shaw, Geoffrey M <i>Christchurch Hospital</i> ; Chase, J. Geoffrey <i>Univ. of Canterbury</i>		
17:45-18:00		ThGT10.2
Development of an Integrated Model of Cardiovascular and Pulmonary Physiology for the Evaluation of Mechanical Ventilation Strategies	5319-5322	
Das, Anup <i>Univ. of Warwick</i> ; Haque, Mainul <i>Univ. of Nottingham</i> ; Chikhani, Marc <i>Univ. of Nottingham</i> ; Wang, Wenfei <i>Univ. of Warwick</i> ; Ali, Tayyba <i>Univ. of Nottingham</i> ; Cole, Oana <i>Univ. of Nottingham</i> ; Hardman, Jonathan G. <i>Univ. of Nottingham</i> ; Bates, Declan Gerard* <i>Univ. of Warwick</i>		
18:00-18:15		ThGT10.3
Steps Towards 3D Electrical Impedance Tomography	5323-5326	
Schullcke, Benjamin* <i>Furtwangen Univ.</i> ; Gong, Bo <i>Furtwangen Univ.</i> ; Moeller, Knut <i>Furtwangen Univ.</i>		
18:15-18:30		ThGT10.4
Constrained Optimization for Noninvasive Estimation of Work of Breathing	5327-5330	
Vicario, Francesco* <i>Philips Research North America</i> ; Albanese, Antonio <i>Philips Research North America</i> ; Wang, Dong <i>Philips Research North America</i> ; Karamolegkos, Nikolaos <i>Columbia Univ.</i> ; Chbat, Nicolas W. <i>Philips Research North America</i>		
18:30-18:45		ThGT10.5
Model-Based Advice for Mechanical Ventilation: From Research (INVENT) to Product (Beacon Caresystem)	5331-5334	
Rees, Stephen Edward* <i>Aalborg Univ.</i> ; Karbing, Dan Stieper <i>Aalborg Univ.</i>		
18:45-19:00		ThGT10.6
Creating Clinical Decision Support Systems for Respiratory Medicine	5335-5338	
Tams, Carl* <i>Convergent Engineering</i> ; Euliano, Neil <i>Convergent Engineering</i>		

ThGT11: 17:30-19:00	Amber 8
6.17 Engineering Approaches to Understanding Orofacial Functions (Invited Session)	
Chair: Takahashi, Kazutaka <i>University of Chicago</i>	
Co-Chair: Slutzky, Marc <i>Northwestern University</i>	

17:30-17:45	ThGT11.1
Decoding of Articulatory Gestures during Word Production using Speech Motor and Premotor Cortical Activity	
	5339-5342
Mugler, Emily <i>Northwestern Univ.</i> ; Goldrick, Matthew <i>Northwestern Univ.</i> ; Rosenow, Joshua <i>Northwestern Univ.</i> ; Tate, Matthew <i>Northwestern Univ.</i> ; Slutzky, Marc* <i>Northwestern Univ.</i>	
17:45-18:00	ThGT11.2
Recurrence Network Analysis of Multiple Local Field Potential Bands from the Orofacial Portion of Primary Motor Cortex	
	5343-5346
Puthanmadam Subramaniam, Narayan <i>Tampere Univ. of Technology</i> ; Hyttinen, Jari* <i>Tampere Univ. of Technology</i> ; Hatsopoulos, Nicholas <i>Univ. of Chicago</i> ; Ross, Callum <i>Univ. of Chicago</i> ; Takahashi, Kazutaka <i>Univ. of Chicago</i>	
18:00-18:15	ThGT11.3
Semiautomatic Marker Tracking of Tongue Positions Captured by Videofluoroscopy during Primate Feeding	
	5347-5350
Best, Matthew <i>Univ. of Chicago</i> ; Nakamura, Yuki <i>Univ. of Chicago</i> ; Kijak, Nicoletta <i>Univ. of Chicago</i> ; Allen, Mitchell <i>Univ. of Missouri School of Medicine</i> ; Lever, Teresa <i>Univ. of Missouri</i> ; Hatsopoulos, Nicholas <i>Univ. of Chicago</i> ; Ross, Callum <i>Univ. of Chicago</i> ; Takahashi, Kazutaka* <i>Univ. of Chicago</i>	
18:30-18:45	ThGT11.5
Infant-Caregiver Interactions Affect the Early Development of Vocalization	
	5351-5354
Asada, Minoru* <i>Osaka Univ.</i> ; Endo, Nobutsuna <i>Osaka Univ.</i>	

ThGT16: 17:30-19:00	White 2
4.6 Cell Modeling (Oral Session)	
Chair: Manchanda, Rohit <i>IIT Bombay</i>	
Co-Chair: Amato, Francesco <i>Università degli Studi Magna Graecia di Catanzaro</i>	

17:30-17:45	ThGT16.1
A Control-Theoretical Approach to the Identification of a Commitment Switch in B Lymphopoiesis Cell Fate Determination	
	5355-5358
Salerno, Luca* <i>Univ. degli Studi Magna Graecia di Catanzaro</i> ; Cosentino, Carlo <i>Univ. degli Studi Magna Graecia di Catanzaro</i> ; Morrone, Giovanni <i>Univ. degli Studi Magna Graecia di Catanzaro</i> ; Bilotta, Mariaconcetta <i>Univ. Magna Graecia di Catanzaro</i> ; Amato, Francesco <i>Univ. degli Studi Magna Graecia di Catanzaro</i>	
17:45-18:00	ThGT16.2
A Mathematical Model of the Calcium Transient in Urinary Bladder Smooth Muscle Cells	
	5359-5362
Dave, Vijay* <i>Indian Institute of Technology Bombay, Mumbai</i> ; Mahapatra, Chitaranjan <i>Indian Institute of Technology Bombay</i> ; Manchanda, Rohit <i>IIT Bombay</i>	
18:00-18:15	ThGT16.3
Impairment of Energy Metabolism in Cardiomyocytes Caused by 5-FU Catabolites can be Compensated by Administration of Amino Acids	
	5363-5366
Lischke, Julia* <i>Univ. of Stuttgart</i> ; Lang, Christine <i>Univ. of Stuttgart</i> ; Sawodny, Oliver <i>Institute for System Dynamics, Univ. of Stuttgart</i> ; Feuer, Ronny <i>Univ. of Stuttgart</i>	
18:15-18:30	ThGT16.4
Dynamics of Cancer Progression and Suppression: A Novel Evolutionary Game Theory based Approach	
	5367-5371
Banerjee, Jeet <i>Indian Institute of Technology Kharagpur</i> ; Ranjan, Tanvi <i>Indian Institute of Technology Kharagpur</i> ; Layek, Ritwik* <i>Indian Institute of Technology Kharagpur</i>	

18:30-18:45 ThGT16.5
Epithelial Mesenchymal Transition in Lung Cancer Cells: A Quantitative Analysis 5372-5375
Sarkar, Atasi *IIT Kharagpur*; Barui, Ananya *Centre for Healthcare Science and Technology, Indian Institute of Technology*; Sengupta, Sanghamitra *Dept. of Biochemistry, Univ. of Calcutta, Kolkata, WB*; Chatterjee, Jyotirmoy *Indian Institute of Technology Kharagpur*; Ghorai, Santanu *Dept. of Applied Electronics & Instrumentation Engineering*; Mukherjee, Anirban* *Indian Institute of Technology Kharagpur*

18:45-19:00 ThGT16.6
Computational Studies on Bladder Small Dorsal Root Ganglion Neurons: Modelling BK Channels 5376-5379
Mandge, Darshan* *Indian Institute of Technology Bombay, Mumbai, India*; Manchanda, Rohit *IIT Bombay*

ThGT17: 17:30-19:00 Space 1
1.23 Brain Connectivity: Methodological Advancements and Future Challenges (Invited Session)
Chair: Astolfi, Laura *University of Rome Sapienza*
Co-Chair: Faes, Luca *University of Trento*

17:30-17:45 ThGT17.1
Identification of Whole-Brain Network Modules based on a Large Scale Granger Causality Approach 5380-5383
Pester, Britta* *Jena Univ. Hospital; Friedrich Schiller Univ. Jena*; Schmidt, Christoph *Jena Univ. Hospital; Friedrich Schiller Univ. Jena*; Schmid-Hertel, Nicole *Jena Univ. Hospital, Friedrich Schiller Univ. Jena*; Witte, Herbert *Jena Univ. Hospital Friedrich Schiller Univ.*; Wismueller, Axel *Dept. of Biomedical Engineering, Univ. of Rochester, N*; Leistriz, Lutz *Jena Univ. Hospital, Friedrich Schiller Univ. Jena*

17:45-18:00 ThGT17.2
Investigating the Neural Basis of Empathy by EEG Hyperscanning during a Third Party Punishment 5384-5387
Astolfi, Laura* *Univ. of Rome Sapienza*; Toppi, Jlenia *Univ. of Rome "Sapienza"*; Mattia, Donatella *Fondazione Santa Lucia IRCCS*; Babiloni, Fabio *Univ. of Rome*; Ciaramidaro, Angela *Dept. of Child and Adolescent Psychiatry, Psychosomatics, a*; Siniatchkin, Michael *Univ. of Kiel*

18:00-18:15 ThGT17.3
Partial Directed Coherence Statistical Performance Characteristics in Frequency Domain 5388-5391
Sameshima, Koichi* *Univ. de Sao Paulo, Faculdade de Medicina*; Takahashi, Daniel *Yasumasa Univ. of São Paulo*; Baccala, Luiz Antonio *Escola Politecnica*

18:15-18:30 ThGT17.4
Spectrally Weighted Granger-Causal Modeling: Motivation and Applications to Data from Animal Models and Epileptic Patients 5392-5395
Plomp, Gijs* *Univ. of Fribourg*; Astolfi, Laura *Univ. of Rome Sapienza*; Coito, Ana *Institute for Systems and Robotics*; Michel, Christoph *Univ. of Geneva*

18:30-18:45 ThGT17.5
Investigating Dynamical Information Transfer in the Brain Following a TMS Pulse: Insights from Structural Architecture 5396-5399
Amico, Enrico *Univ. of Liège and Univ. of Ghent*; van Mierlo, Pieter *Ghent Univ. - IBBT*; Marinazzo, Daniele* *Faculty of Psychology and Educational Sciences, Dept. of Da*; Laureys, Steven *Cyclotron Research Center, Univ. of Liege in Belgium*

18:45-19:00 ThGT17.6
On Neural Connectivity Estimation Problems 5400-5403
Baccala, Luiz Antonio* *Escola Politecnica*; Sameshima, Koichi *Univ. de Sao Paulo, Faculdade de Medicina*

ThGT18: 17:30-19:00 Space 2
1.24 Time-Frequency Analysis of Biosignals III (Oral Session)
Chair: Mainardi, Luca *Politecnico di Milano*
Co-Chair: Kahya, Yasemin P. *Bogazici University*

17:30-17:45 ThGT18.1
Reverse Bi-Orthogonal Wavelets and Fuzzy Classifiers for the Automatic Detection of Spike Waves in the EEG of the Hypoxic Ischemic Pre-Term Fetal Sheep 5404-5407
Abbasi, Hamid* *Univ. of Auckland*; Gunn, Alistair Jan *Univ. of Auckland*; Bennet, Laura *The Univ. of Auckland*; Unsworth, Charles Peter *Univ. of Auckland*

17:45-18:00	ThGT18.2
Fast Under-Determined BSS Architecture Design Methodology for Real Time Applications	5408-5411
Mopuri, Suresh <i>Indian Institute of Tech. Hyderabad</i> ; Pidala, Sreenivasa Reddy <i>Indian Institute of Tech. Hyderabad</i> ; Acharyya, Amit* <i>Indian Institute of Tech. Hyderabad</i> ; Naik, Ganesh R <i>Univ. of Tech. Sydney</i>	
18:00-18:15	ThGT18.3
Feature Extraction using Time-Frequency Analysis for Monophonic-Polyphonic Wheeze Discrimination ..	5412-5415
Ulukaya, Sezer* <i>Bogazici Univ.</i> ; Sen, Ipek <i>Electrosalus Inc.</i> ; Kahya, Yasemin P. <i>Bogazici Univ.</i>	
18:15-18:30	ThGT18.4
Estimation of Sleep Status in Sleep Apnea Patients using a Novel Head Actigraphy Technique	5416-5419
Hummel, Richard <i>BresoTec Inc.</i> ; Bradley, T. Douglas <i>Univ. of Toronto</i> ; Fernie, Geoff <i>Univ. of Toronto</i> ; Chang, Sung Jae <i>Univ. of Toronto</i> ; Alshaer, Hisham* <i>Toronto Rehabilitation Inst, UHN</i>	
18:30-18:45	ThGT18.5
Automatic Identification of Cyclic Alternating Pattern (CAP) Sequences based on the Teager Energy Operator	5420-5423
Machado, Fátima <i>Univ. of Coimbra</i> ; Bento, Conceição <i>Centro Hospitalar e Univ. de Coimbra</i> ; Sales, Francisco <i>Hospitais da Univ. de Coimbra</i> ; Dourado, António <i>FCTUC, Univ. of Coimbra</i> ; Teixeira, César* <i>Univ. of Coimbra</i>	
18:45-19:00	ThGT18.6
Inertial Sensor based and Shoe Size Independent Gait Analysis Including Heel and Toe Clearance Estimation	5424-5427
Kanzler, Christoph Matthias* <i>Digital Sports Group, Pattern Recognition Lab, Friedrich-Alexand</i> ; Barth, Jens <i>ASTRUM IT GmbH</i> ; Rampp, Alexander <i>ASTRUM IT GmbH</i> ; Schlarb, Heiko <i>Adidas AG</i> ; Rott, Franz <i>Adidas AG</i> ; Klucken, Jochen <i>Univ. Hospital Erlangen</i> ; Eskofier, Bjoern M <i>Friedrich-Alexander-Univ. Erlangen-Nürnberg</i>	

ThGT19: 17:30-19:00	Space 3
2.18 MR Neuroimaging (Oral Session)	
Chair: Tong, Shanbao <i>Shanghai Jiao Tong University</i>	

17:30-17:45	ThGT19.1
High-Resolution Quantitative Imaging of the Substantia Nigra	5428-5431
Trujillo, Paula* <i>Politecnico di Milano</i> ; Smith, Alex K. <i>Vanderbilt Univ. Institute of Imaging Science, Vanderbilt U</i> ; Summers, Paul E. <i>Dept. of Neuroradiology, Fondazione IRCCS Ca' Granda - Ospede</i> ; Mainardi, Luca <i>Politecnico di Milano</i> ; Cerutti, Sergio <i>Politecnico di Milano</i> ; Smith, Seth A. <i>Vanderbilt Univ. Institute of Imaging Science, Vanderbilt U</i> ; Costa, Antonella <i>Dept. of Neuroradiology, Fondazione IRCCS Ca' Granda - Ospede</i>	
17:45-18:00	ThGT19.2
The Impact of Data Preprocessing in Traumatic Brain Injury Detection using Functional Magnetic Resonance Imaging	5432-5435
Vergara, Victor Manuel* <i>The Mind Research Network</i> ; Damaraju, Eswar <i>The Mind Research Network & LBERI, Albuquerque, New Mexico, USA</i> ; Mayer, Andrew <i>Mind Research Network, Albuquerque, NM</i> ; Miller, Robyn <i>The Mind Research Network</i> ; Cetin, Mustafa S. <i>Univ. of New Mexico, The Mind Research Network, Albuquerque</i> ; Calhoun, Vince <i>The Mind Research Network/Univ. of New Mexico</i>	
18:00-18:15	ThGT19.3
Brain Tissues Atrophy is Not Always the Best Structural Biomarker of Physiological Aging: A Multimodal Cross-Sectional Study	5436-5440
Cherubini, Andrea* <i>IBFM-CNR, Magna Graecia Univ.</i> ; Caligiuri, Maria Eugenia <i>National Research Council</i> ; Péran, Patrice <i>INSERM 825 unit, Toulouse</i> ; Sabatini, Umberto <i>IRCCS Fondazione Santa Lucia</i> ; Cosentino, Carlo <i>Univ. degli Studi Magna Graecia di Catanzaro</i> ; Amato, Francesco <i>Univ. degli Studi Magna Graecia di Catanzaro</i>	
18:15-18:30	ThGT19.4
Improved Partial Volume Correction Method for Detecting Brain Activation in Disease using Arterial Spin Labeling (ASL) fMRI	5441-5444
Bruening, Dylan <i>Rochester Institute of Technology</i> ; Dharssi, Shazia <i>Johns Hopkins Univ. Medical School</i> ; Lazar, Roland M <i>Columbia Univ. Medical Center</i> ; Marshall, Randolph S <i>Columbia Univ. Medical Center</i> ; Asllani, Iris* <i>Rochester Institute of Technology</i>	

18:30-18:45 ThGT19.5
Spontaneous Neuronal Activity in Insula Predicts Symptom Severity of Unmedicated Obsessive Compulsive Disorder Adults 5445-5448
 Zhu, Yajing *School of Biomedical Engineering and Med-X Research Institute, S; Fan, Qing Shanghai Mental Health Center, Shanghai Jiao Tong Univ. Sch;* Zhang, Zongfeng *Shanghai Mental Health Center, Shanghai Jiao Tong Univ. Sch;* Zhang, Haiyin *Shanghai Mental Health Center, Shanghai Jiao Tong Univ. Sch;* Tong, Shanbao *Shanghai Jiao Tong Univ.;* Li, Yao* *Shanghai Jiao Tong Univ.*

18:45-19:00 ThGT19.6
Combining EPI and Motion Correction for FMRI Human Brain Images with Big Motion 5449-5452
 Lu, Zhongkang* *Institute for Infocomm Research;* Phua, Kok Soon *Institute for Infocomm Research;* Huang, Weimin *Institute for Infocomm Research, Agency for Science Technology and;* Hong, Xin *Singapore Bioimaging Consortium;* Nasrallah, Fatima Ali *Clinical Imaging Research Centre;* Chuang, Kai Hsiang *Singapore Bioimaging Consortium;* Guan, Cuntai *Institute for Infocomm Research*

ThGT20: 17:30-19:00 Space 4
3.6 RF Technologies for Medical Implants II (Invited Session)
Chair: Balasingham, Ilangko *Oslo University Hospital and Norwegian University of Science and Technology*
Co-Chair: Chavez-Santiago, Raul *Oslo University Hospital*

17:30-17:45 ThGT20.1
Wireless Power Transmission for Biomedical Implants: The Role of Near-Zero Threshold CMOS Rectifiers ... 5453-5456
 Mohammadi, Ali* *Monash Univ.;* Redouté, Jean-Michel *Monash Univ.;* Yuce, Mehmet *Monash Univ.*

17:45-18:00 ThGT20.2
Experimental UWB Frequency Analysis for Implant Communications 5457-5460
 Garcia-Pardo, Concepcion* *Univ. Politècnica de València;* Chavez-Santiago, Raul *Oslo Univ. Hospital;* Cardona, Narcis *Univ. Politècnica de València;* Balasingham, Ilangko *Oslo Univ. Hospital and Norwegian Univ. of Science and*

18:00-18:15 ThGT20.3
Investigation of In-Body Path Loss in Different Human Subjects for Localization of Capsule Endoscope 5461-5464
 Ara, Perzila* *Macquarie Univ. ,Sydney;* Cheng, Shaokoon *Macquarie Univ. ,Sydney;* Heimlich, Michael *Macquarie Univ. ,Sydney;* Dutkiewicz, Eryk *Macquarie Univ. ,Sydney*

18:15-18:30 ThGT20.4
Reconfigurable Antenna Options for 2.45/5 GHz Wireless Body Area Networks in Healthcare Applications .. 5465-5468
 Abbas, Syed Muzahir* *Macquarie Univ.;* Ranga, Yogesh *Macquarie Univ.;* Esselle, Karu *Macquarie Univ.*

18:30-18:45 ThGT20.5
Performance Comparison between UWB-IR and MB-OFDM with Transmit Diversity in Implant Communications 5469-5472
 Shimizu, Yuto* *Naogoya Institute of Technology;* Furukawa, Tomofumi *Nagoya Institute of Technology;* Anzai, Daisuke *Nagoya Institute of Technology;* Wang, Jianqing *Nagoya Institute of Technology*

18:45-19:00 ThGT20.6
Efficiency Optimization of Class-D Biomedical Inductive Wireless Power Transfer Systems by Means of Frequency Adjustment 5473-5476
 Schormans, Matthew James* *Univ. College London;* Valente, Virgilio *Univ. College London;* Demosthenous, Andreas *Univ. College London*

ThGT21: 17:30-19:00 Suite 8
12.1 Innovations to Support Elderly in a Multi-Residential Setting (Invited Session)
Chair: Zhang, Qing *CSIRO ICT Centre*
Co-Chair: Karunanithi, Mohanraj *CSIRO Digital Productivity Flagship*

17:30-17:45 ThGT21.1
Context Aware Falls Risk Assessment: A Case Study Comparison 5477-5480
 Reginatto, Brenda* *Univ. College Dublin;* Taylor, Kenneth *Univ. College Dublin;* Patterson, Matt *Univ. College Dublin;* Power, Dermot *Mater Misericordiae Univ. Hospital;* Komaba, Yusuke *Fujitsu Ireland Ltd.;* Maeda, Kazuho *Fujitsu Laboratories Ltd.;* Inomata, Akihiro *Fujitsu Japan;* Caulfield, Brian *UCD*

17:45-18:00	ThGT21.2
Multi-Resident Identification using Device-Free IR and RF Fingerprinting	5481-5484
Schafermeyer, Erich <i>Portland State Univ.</i> ; Wan, Eric* <i>Portland State Univ.</i> ; Samin, Shadman <i>Portland State Univ.</i> ; Zentzis, Noah <i>Portland State Univ.</i> ; Nicholas, Preiser <i>Oregon Health and Science Univ.</i> ; Condon, John P <i>Advanced Medical Electronics</i> ; Folsom, Jon <i>MotioSens</i> ; Jacobs, Peter G. <i>Oregon Health & Science Univ.</i>	
18:00-18:15	ThGT21.3
Remote Health Coaching for Interactive Exercise with Older Adults in a Home Environment	5485-5488
Jimison, Holly* <i>Northeastern Univ.</i> ; Hagler, Stuart <i>Oregon Health and Science Univ.</i> ; Kurillo, Gregorij <i>Univ. of California, Berkeley</i> ; Bajcsy, Ruzena <i>UC Berkeley, CITRIS</i> ; Pavel, Misha <i>Northeastern Univ.</i>	
18:15-18:30	ThGT21.4
Preliminary Study of a New Home Healthcare Monitoring to Prevent the Recurrence of Stroke	5489-5492
Tamura, Toshiyo* <i>Osaka Electro-Communication Univ.</i> ; Sekine, Masaki <i>Osaka Electro-Communication Univ.</i> ; Tang, Zunyi <i>Osaka Electro-Communication Univ.</i> ; Yoshida, Masaki <i>Osaka Electro-Communication Univ.</i> ; Takeuchi, Yoshinori <i>Osaka Univ.</i> ; Imai, Masaharu <i>Osaka Univ.</i>	
18:30-18:45	ThGT21.5
Pervasive Health Monitor and Analysis based on Multi-Parameter Smart Armband	5493-5496
Yu, Yang <i>Tsinghua Univ.</i> ; Wang, Qian <i>Chinese Academy of Sciences</i> ; Liu, Jing* <i>Tsinghua Univ.</i>	
18:45-19:00	ThGT21.6
Unsupervised Daily Routine and Activity Discovery in Smart Homes	5497-5500
Yin, Jie* <i>CSIRO</i> ; Zhang, Qing <i>CSIRO ICT Centre</i> ; Karunanithi, Mohanraj <i>CSIRO Digital Productivity Flagship</i>	

Friday, 28 August 2015

FrAT1: 08:30-10:00	Brown 1
8.10 New Technologies and Methodologies in Human Movement Analysis I (Oral Session)	
Chair: Della Croce, Ugo <i>University of Sassari</i>	
Co-Chair: Durfee, William <i>University of Minnesota</i>	
08:30-08:45	FrAT1.1
A Stereophotogrammetric-Based Method to Assess Spatio-Temporal Gait Parameters on Healthy and Parkinsonian Subjects	5501-5504
Maranesi, Elvira* <i>Univ. Politecnica delle Marche</i> ; Capitanelli, Leonardo <i>Univ. Politecnica delle Marche</i> ; Capecci, Marianna <i>Univ. Politecnica delle Marche</i> ; Ghetti, Giacomo <i>Giuseppe Posture and Movement Analysis Laboratory, INRCA Geriatric Hospit</i> ; Mercante, Oriano <i>Posture and Movement Analysis Laboratory, INRCA Geriatric Hospit</i> ; Di Nardo, Francesco <i>Polytechnic Univ. of Marche</i> ; Burattini, Laura <i>Univ. Politecnica delle Marche</i> ; Ceravolo, Maria Gabriella <i>Dept. of Experimental and Clinical Medicine, Univ. Pol</i> ; Fioretti, Sandro <i>Univ. Politecnica delle Marche</i>	
08:45-09:00	FrAT1.2
Foot Clearance Estimation during Overground Walking and Vertical Obstacle Passing using Shank-Mounted MIMUs in Healthy and Pathological Subjects	5505-5508
Trojaniello, Diana <i>Univ. of Sassari</i> ; Cereatti, Andrea* <i>Univ. of Sassari</i> ; Della Croce, Ugo <i>Univ. of Sassari</i>	
09:00-09:15	FrAT1.3
The Effects of an Ankle Foot Orthosis on Cerebral Palsy Gait: A Multiple Regression Analysis	5509-5512
Wahid, Md. Ferdous <i>The Univ. of Melbourne</i> ; Begg, Rezaul* <i>Victoria Univ.</i> ; Sangeux, Morgan <i>The Royal Children's Hospital</i> ; Halgamuge, Saman <i>Univ. of Melbourne</i> ; Ackland, David <i>Univ. of Melbourne</i>	
09:15-09:30	FrAT1.4
Preliminary Design of a New Device to Measure Muscle Function	5513-5516
Durfee, William* <i>Univ. of Minnesota</i> ; Lind, Jeffrey <i>Univ. of Minnesota</i>	
09:30-09:45	FrAT1.5
Measurement of Biomechanical Interactions at the Stump-Socket Interface in Lower Limb Prostheses	5517-5520
Noll, Veronika* <i>TU Darmstadt</i> ; Wojtusich, Janis <i>Technische Univ. Darmstadt</i> ; Schuy, Jochen <i>TU Darmstadt</i> ; Grimmer, Martin <i>Technische Univ. Darmstadt</i> ; Beckerle, Philipp <i>Technische Univ. Darmstadt, Institute for Mechatronic Syst</i> ; Rinderknecht, Stephan <i>TU Darmstadt, Institute for Mechatronic Systems in Mechanical En</i>	

09:45-10:00 FrAT1.6
Disposable Soft 3 Axis Force Sensor for Biomedical Applications 5521-5524
 Katudampe Vithanage, Damith Suresh Chathuranga* *Ritsumeikan Univ.*; Wang, Zhongkui *Ristumeikan Univ.*;
 Noh, Yohan *King's College London*; Nanayakkara, Thrishantha *King's College London*;
 Hirai, Shinichi *Ristumeikan Univ.*

FrAT2: 08:30-10:00 Brown 2
9.8 Medical Systems Design and Development (Oral Session)
Co-Chair: Dong, Tao *Buskerud and Vestfold University College - HBV, TekMar, IMST*

08:30-08:45 FrAT2.1
A Blood Viscosity Estimation Method based on Pressure-Flow Characteristics of an Oxygenator during Cardiopulmonary Bypass and Its Clinical Application 5525-5528
 Okahara, Shigeyuki* *Graduate School of Engineering, Hiroshima Univ.*; Tsuji, Toshio *Hiroshima Univ.*; Soh, Zu
Dept. of System Cybernetics, Institute of Engineering, Hiro; Takahashi, Shinya *Dept. of Cardiovascular Surgery,*
Hiroshima Univ. Hospi; Sueda, Taijiro *Dept. of Cardiovascular Surgery, Hiroshima Univ. Hospi*

08:45-09:00 FrAT2.2
Seven Phases of Gait Detected in Real-Time using Shank Attached Gyroscopes 5529-5532
 Behboodi, Ahad* *Univ. of Delaware*; Wright, Henry *Univ. of Delaware*; Zahradka, Nicole *Univ. of Delaware*;
 Lee, Samuel *Shriners Hospital for Children*

09:00-09:15 FrAT2.3
Analysis of Gold Nanoparticles as Carriers for Different Molecular Dye Type Photosensitizers in Photodynamic Therapy Applied to Carcinomas 5533-5536
 Salas-García, Irene *Univ. of Cantabria*; Fanjul-Vélez, Félix* *Univ. of Cantabria*;
 Arce-Diego, José L. *Univ. of Cantabria*

09:15-09:30 FrAT2.4
Development of Diagnostic Sensors for Infant Dehydration Assessment using Optical Methods 5537-5540
 Kieser, Eduard *Stellenbosch Univ.*; Dellimore, Kiran* *Philips Research*; Scheffer, Cornie *Stellenbosch Univ.*;
 Jacobus, Visser *Stellenbosch Univ.*; Smith, Johan *Faculty of Medicine, Stellenbosch Univ.*

09:30-09:45 FrAT2.5
A Single Element 3D Ultrasound Tomography System 5541-5544
 Zhang, Xiang* *Massachusetts Institute of Technology*; Fincke, Jonathan *Massachusetts Institute of Technology*;
 Kuzmin, Andrey *Skolkovo Institute of Science and Technology*; Lempitsky, Victor *Skolkovo Institute of Science*
and Technology; Anthony, Brian W. *Massachusetts Institute of Technology*

09:45-10:00 FrAT2.6
Rapid Detection of E. Coli Cells from Urine Samples using a Self-Capacitance Touchscreen Device 5545-5548
 Bergstrøm, Jennifer Panugan *Vestfold Univ. College*; Dong, Tao* *Buskerud and Vestfold Univ.*
College - HBV, TekMar, IMST

FrAT3: 08:30-10:00 Brown 3
6.18 Local Field Potentials in Movement Disorders (Invited Session)
Chair: Ince, Nuri Firat *University of Houston*
Co-Chair: Marceglia, Sara *Università degli Studi di Trieste*

08:30-08:45 FrAT3.1
Application of Higher-Order Spectral Analysis to Local Field Potentials Recorded in Patients Treated with Deep Brain Stimulation 5549-5552
 Marceglia, Sara* *Univ. degli Studi di Trieste*; Bianchi, Anna Maria *Politecnico di Milano*; Guglielmo, Foffani
Drexel Univ.; Priori, Alberto *Univ. di Milano, Fondazione IRCCS Ospedale MaggiorePoliclin*; Cerutti, Sergio
Politecnico di Milano

08:45-09:00 FrAT3.2
Motor Task Event Detection using Subthalamic Nucleus Local Field Potentials 5553-5556
 Niketeghad, Soroush *Univ. of Denver*; Hebb, Adam O. *Univ. of Washington*; Nedrud, Joshua *Colorado*
Neurological Institute; Hanrahan, Sara *Univ. of Utah*; Mahoor, Mohammad H.* *Univ. of Denver*

09:00-09:15 FrAT3.3
Spatial Distribution of Nonlinear Interactions in Subthalamic Nucleus Local Field Potentials in Parkinson's Disease 5557-5560
 Meloni, Gianluca* *Univ. of Houston*; Sen, Anish *Baylor College of Medicine*; Abosch, Aviva *Univ of Minnesota*; Ince, Nuri Firat *Univ. of Houston*

09:15-09:30 FrAT3.4
Spatio-Spectral Characterization of Local Field Potentials in the Subthalamic Nucleus via Multitrack Microelectrode Recordings 5561-5564
 Telkes, Ilknur* *Univ. of Houston*; Ince, Nuri Firat *Univ. of Houston*; Onaran, Ibrahim *Univ. of Houston*; Abosch, Aviva *Univ of Minnesota*

09:30-09:45 FrAT3.5
Time-Frequency Characterization of Local Field Potential in a Decision Making Task 5565-5568
 Loncar-Turukalo, Tatjana* *Univ. of Novi Sad*; Mijatovic, Gorana *Faculty of technical Sciences, Univ. of Novi Sad*; Bozanic, Nebojsa *Institute of Complex Systems, National Research Council (CNR), F*; Stoll, Frederic *INSERM U846, Stem Cell and Brain Research Institute*; Bajic, Dragana *Univ. of Novi Sad*; Procyk, Emmanuel *INSERM U846, Stem Cell and Brain Research Institute*

FrAT4: 08:30-10:00 Amber 1
1.25 Signal Processing in Physiological Systems I: Speech (Oral Session)
Chair: de Carvalho, Paulo *University of Coimbra - NIF*
Co-Chair: Tognola, Gabriella *IEIIT CNR*

08:30-08:45 FrAT4.1
Detection of Mild Alzheimer's Disease and Mild Cognitive Impairment from Elderly Speech: Binary Discrimination using Logistic Regression 5569-5572
 Kato, Shohei* *Nagoya Institute of Technology*; Homma, Akira *Tokyo Dementia Care Research and Training Center*; Sakuma, Takuto *Nagoya Institute of Technology*; Nakamura, Munehiro *Nagoya Institute of Technology*

08:45-09:00 FrAT4.2
Pronunciation Analysis for Children with Speech Sound Disorders 5573-5576
 Dudy, Shiran* *CSLU/OHSU*; Asgari, Meysam *CSLU/OHSU*; Kain, Alexander *CSLU/OHSU*

09:00-09:15 FrAT4.3
Objective Measures of Perceptual Quality for Predicting Speech Intelligibility in Sensorineural Hearing Loss 5577-5580
 Chiaramello, Emma* *IEIIT Institute of Electronics, Computers and Telecommunication*; Moriconi, Stefano *National Research Council*; Tognola, Gabriella *IEIIT CNR*

09:15-09:30 FrAT4.4
Detection of Wheezes using Their Signature in the Spectrogram Space and Musical Features 5581-5584
 Mendes, Luis* *Univ. of Coimbra*; Vogiatzis, Ioannis *General Hospital of Imathia - Health Unit of Naoussa*; Perantoni, Eleni G.H. *G.Papanikolaou, Thessaloniki Greece*; Kaimakamis, Evangelos *Aristotle Univ. of Thessaloniki*; Chouvarda, Ioanna *Aristotle Univ.*; Maglaveras, Nikolaos *Aristotle Univ. of Thessaloniki*; Tsara, Venetia G.H. *G.Papanikolaou, Thessaloniki Greece*; Teixeira, César *Univ. of Coimbra*; de Carvalho, Paulo *Univ. of Coimbra - NIF*; Henriques, Jorge *Univ. of Coimbra - NIF*; Paiva, Rui Pedro *Univ. of Coimbra*

09:30-09:45 FrAT4.5
Parameter-Based Binaural Hearing Aid Algorithms to Improve Speech Intelligibility and Localization in Complex Environments 5585-5588
 Lee, Young Woo* *Samsung Electronics*; Moore, Brian Cecil Joseph *Univ. of Cambridge*

09:45-10:00 FrAT4.6
Computerised Objective Measurement of Strain in Voiced Speech 5589-5592
 Jalalinajafabadi, Farideh* *The Univ. of Manchester*; Gadepalli, Chaitanya *NHS*; Ghasempour, Mohsen *The Univ. of Manchester*; Lujan, Mikel *The Univ. of Manchester*; Cheetham, Barry *The Univ. of Manchester*; Homer, Jarrod *NHS*

1.26 Biomedical Signal Classification VII: Epilepsy Studies (Oral Session)

08:30-08:45

FrAT5.1

Using Wearable Sensors for Semiology-Independent Seizure Detection – Towards Ambulatory Monitoring of Epilepsy

5593-5596

Heldberg, Beeke E* *Friedrich-Alexander Univ. Erlangen-Nürnberg (FAU)*; Kautz, Thomas *Friedrich-Alexander-
Univ. Erlangen-Nürnberg*; Leutheuser, Heike *Digital Sports Group, Pattern Recognition Lab, Dept. of Com*;
Hopfengärtner, Rüdiger *Epilepsy Center, Dept. of Neurology, Univ. Hospital Er*; Kasper, Burkhard *Epilepsy
Center, Dept of Neurology, Univ. Hospital E*; Eskofier, Bjoern M *Friedrich-Alexander-Univ. Erlangen-Nürnberg*

08:45-09:00

FrAT5.2

Online Detection of Tonic-Clonic Seizures in Pediatric Patients using ECG and Low-Complexity Incremental Novelty Detection

5597-5600

De Cooman, Thomas* *KU Leuven, Dept. of Electrical Engineering-ESAT, STADIUS*; Van de Vel, Anouk *Univ.
Hospital of Antwerp*; Ceulemans, Bertin *Univ. Hospital of Antwerp*; Lagae, Lieven *Univ. Hospital of Leuven*;
Vanrumste, Bart *Katholieke Univ. Leuven*; Van Huffel, Sabine *Katholieke Univ. Leuven*

09:00-09:15

FrAT5.3

Analysis of Epileptic Seizure Count Time Series by Ensemble State Space Modelling

5601-5605

Galka, Andreas* *Christian-Albrechts-Univ. of Kiel*; Boor, Rainer *Dept. of Neuropediatrics, Univ. of Kiel*; Doege,
Corinna *Dept. of Neuropediatrics, Univ. of Kiel*; von Spiczak, Sarah *Dept. of Neuropediatrics, Univ. of Kiel*;
Stephani, Ulrich *Christian-Albrechts-Univ. of Kiel*; Siniatchkin, Michael *Univ. of Kiel*

09:15-09:30

FrAT5.4

Support Vector Machines using EEG Features of Cross-Frequency Coupling Can Predict Treatment Outcome in Mecp2-Deficient Mice

5606-5609

Colic, Sinisa* *Univ. of Toronto*; Wither, Rob *Univ. of Toronto*; Lang, Min *Univ. of Toronto*; Zhang, Liang *Univ. of
Toronto*; Eubanks, James *Univ. of Toronto*; Bardakjian, Berj *Luther Univ. of Toronto*

09:30-09:45

FrAT5.5

Identification of Epileptogenic Networks from Dense EEG: A Model-Based Study

5610-5613

Hassan, Mahmoud *Univ. de Rennes 1*; Mheich, Ahmad *Univ. of Rennes1*; Biraben, Arnaud *CHU Rennes*;
Merlet, Isabelle* *INSERM - Univ. de Rennes 1*; Wendling, Fabrice *INSERM - Univ. de Rennes 1*

09:45-10:00

FrAT5.6

A Neural Network based Infant Monitoring System to Facilitate Diagnosis of Epileptic Seizures

5614-5617

Ogura, Yuya* *Hiroshima Univ.*; Hayashi, Hideaki *Hiroshima Univ.*; Nakashima, Shota *Hiroshima Univ.*; Soh, Zu
Dept. of System Cybernetics, Institute of Engineering, Hiro; Shibanoki, Taro *Ibaraki Univ.*; Shimatani, Koji
Prefectural Univ. of Hiroshima; Takeuchi, Akihito *National Hospital Organization Okayama Medical Center*;
Nakamura, Makoto *National Hospital Organization Okayama Medical Center*; Okumura, Akihisa *Aichi Medical
Univ.*; Kurita, Yuichi *Hiroshima Univ.*; Tsuji, Toshio *Hiroshima Univ.*

2.19 X-Ray Imaging I (Oral Session)**Chair:** Fotiadis, Dimitrios I. *University of Ioannina*

08:30-08:45

FrAT6.1

X-Ray CT Image Reconstruction from Few-Views via Total Generalized P-Variation Minimization

5618-5621

Zhang, Hanming* *National Digital Switching System Engineering & Technological R&*; Xi, Xiaoqi *National Digital
Switching System Engineering & Technological R&*; Yan, Bin *China National Digital Switching System
Engineering and Technolo*; Han, Yu *National Digital Switching System Engineering & Technological R&*; Li, Lei
National Digital Switching System Engineering & Technological R&; Chen, Jianlin *National Digital Switching
System Engineering & Technological R&*; Cai, Ailong *National Digital Switching System Engineering &
Technological R&*

08:45-09:00

FrAT6.2

Computed Tomography Image Source Identification by Discriminating CT-Scanner Image Reconstruction Process

5622-5625

Duan, Yuping *Telecom Bretagne*; Coatrieux, Gouenou* *Institute Telecom - Telecom Bretagne - Inserm*; Shu,
Huazhong *Southeast Univ.*

09:00-09:15		FrAT6.3
X-Ray Microtomography of Collagen and Polylactide Scaffolds in Liquids		N/A
Hannula, Markus* <i>Tampere Univ. of Technology</i> ; Haaparanta, Anne-Marie <i>Tampere Univ. of Technology</i> ; Tamminen, Ilmari <i>Tampere Univ. of Technology</i> ; Aula, Antti <i>Tampere Univ. of Technology</i> ; Kellomäki, Minna <i>Tampere Univ. of Technology</i> ; Hyttinen, Jari <i>Tampere Univ. of Technology</i>		
09:15-09:30		FrAT6.4
Simulated Imaging of Atherosclerotic and Radiofrequency Ablation Lesions using Phase Subtraction ..	5630-5633	
Jameson, John <i>Mayo Clinic</i> ; David, Holmes <i>Mayo Clinic</i> ; Buhrow, Benjamin <i>Mayo Clinic</i> ; Daniel, Erik <i>Mayo Clinic College of Medicine</i> ; Gilbert, Barry <i>Mayo Clinic College of Medicine</i> ; Haider, Clifton* <i>Mayo Clinic</i>		
09:30-09:45		FrAT6.5
Optimization-Based Scatter Estimation using Semi-Transparent Beam Absorber Array	5634-5637	
Chen, Yi <i>Shanghai Jiao Tong Univ.</i> ; Song, Ying <i>Sichuan Univ., Chengdu, China.</i> ; Ma, Jingchen <i>Shanghai Jiao Tong Univ.</i> ; Zhao, Jun* <i>Shanghai Jiao Tong Univ.</i>		
09:45-10:00		FrAT6.6
Three-Dimensional Reconstruction of Coronary Arteries and Plaque Morphology using CT Angiography – Comparison and Registration using IVUS	5638-5641	
Athanasίου, Lambros <i>Univ. of Ioannina</i> ; Rigas, Georgios <i>Univ. of Ioannina</i> ; Sakellarios, Antonis <i>Univ. of Ioannina</i> ; Exarchos, Themis P. <i>Unit of Medical Tech & Intelligent Info</i> ; Siogkas, Panagiotis <i>FORTH-IMBB</i> ; Michalis, Lampros <i>Univ. of Ioannina</i> ; Parodi, Oberdan <i>CNR Clinical Physiology Institute - Milan</i> ; Vozzi, Federico <i>IFC-CNR</i> ; Fotiadis, Dimitrios I.* <i>Univ. of Ioannina</i>		
FrAT7: 08:30-10:00		Amber 4
2.20 Retinal and Ophthalmic Imaging II (Oral Session)		
Co-Chair: Ruggeri, Alfredo <i>University of Padua</i>		
08:30-08:45		FrAT7.1
Computer-Assisted Identification of Proliferative Diabetic Retinopathy in Color Retinal Images	5642-5645	
Gupta, Garima* <i>Indian Institute of Technology Madras, India</i> ; Selvaraj, Kulasekaran <i>Madras Christian College</i> ; Ram, Keerthi <i>International Institute of Information Technology-Hyderabad</i> ; Joshi, Niranjana <i>Healthcare Technology Innovation Centre</i> ; Sivaprakasam, Mohanasankar <i>Indian Institute of Technology Madras</i> ; Gandhi, Rashmin <i>Beyond Eyecare</i>		
08:45-09:00		FrAT7.2
Method for Segmentation of the Layers in the Outer Retina	5646-5649	
Novosel, Jelena* <i>Rotterdam Eye Hospital</i> ; Vermeer, Koenraad A. <i>Rotterdam Ophthalmic Institute, Rotterdam Eye Hospital</i> ; Pierrache, L.H.M. <i>Rotterdam Ophthalmic Institute, Rotterdam; Dept. of Ophtha</i> ; Klaver, C.C.W. <i>Dept. of Ophthalmology and the Dept. of Epidemiology</i> ; van den Born, L. I. <i>Rotterdam Eye Hospital and the Rotterdam Ophthalmic Institute, R</i> ; van Vliet, Lucas <i>TU Delft</i>		
09:00-09:15		FrAT7.3
Retinal Image Registration based on Keypoint Correspondences, Spherical Eye Modeling and Camera Pose Estimation	5650-5654	
Hernandez-Matas, Carlos* <i>FORTH</i> ; Zabulis, Xenophon <i>Foundation for Resrch & Technology</i> ; Argyros, Antonis <i>Univ. of Crete</i>		
09:15-09:30		FrAT7.4
Combining Efficient Hand-Crafted Features with Learned Filters for Fast and Accurate Corneal Nerve Fibre Centreline Detection	5655-5658	
Annunziata, Roberto* <i>Univ. of Dundee</i> ; Kheirkhah, Ahmad <i>Harvard Medical School</i> ; Hamrah, Pedram <i>Massachusetts Eye and Ear Infirmary, Harvard Medical School</i> ; Trucco, Emanuele <i>Univ. of Dundee</i>		
09:30-09:45		FrAT7.5
Age-Related Changes of the Corneal Speckle by Optical Coherence Tomography	5659-5662	
Jesus, Danilo Andrade* <i>Wroclaw Univ. of Technology</i> ; Iskander, D Robert <i>Wroclaw Univ. of Technology</i>		

09:45-10:00 FrAT7.6
Red Lesion Detection in Retinal Fundus Images using Frangi-Based Filters 5663-5666
 Srivastava, Ruchir* *Institute for Infocomm Research*; Wong, Damon *Institute for Infocomm Research*; Duan, Lixin *Institute for Infocomm Research*; Liu, Jiang *Institute for Infocomm Research, A STAR*; Wong, Tien Yin *National Univ. of Singapore*

FrAT8: 08:30-10:00 Amber 5
5.6 Cardiac Electrophysiology I (Oral Session)
Chair: Dokos, Socrates *University of New South Wales*
Co-Chair: Panescu, Dorin *Advanced Cardiac Therapeutics*

08:30-08:45 FrAT8.1
ICD Lead Failure Detection in Chronic Soaked Leads 5667-5671
 Kollmann, Daniel *Koronis Biomedical Technologies*; Swerdlow, Charles *Univ. of California Los Angeles*; Kroll, Mark *Univ. of Minnesota*; Seifert, Gregory John *Advanced Medical Electronics*; Lichter, Patrick *Koronis Biomedical Technologies*; Hedin, Daniel *Advanced Medical Electronics*; Panescu, Dorin* *Advanced Cardiac Therapeutics*

08:45-09:00 FrAT8.2
Analytical Description of the Slope of the APD-Restitution Curve to Assess the Interacting Contribution of Conduction and Repolarization Dynamics 5672-5675
 Orini, Michele* *Univ. College London*; Taggart, Peter *Univ. College London*; Hayward, Martin *Univ. College London Hospital*; Lambiase, Pier *Univ. College London Hospital*

09:00-09:15 FrAT8.3
On How 2: 1 Conduction Block Can Induce T-Wave Alternans in the Unipolar Intracavitary Electrogram: Modelling In-Vivo Human Recordings from an Ischemic Heart 5676-5679
 Orini, Michele* *Univ. College London*; Taggart, Peter *Univ. College London*; Hayward, Martin *Univ. College London Hospital*; Lambiase, Pier *Univ. College London Hospital*

09:15-09:30 FrAT8.4
Far-Field Effect in Unipolar Electrograms Revisited: High-Density Mapping of Atrial Fibrillation in Humans ... 5680-5683
 Podziemski, Piotr* *Warsaw Univ. of Technology*; Kuklik, Pawel *Centre for Heart Rhythm Disorders, South Australian Health and M*; van Hunnik, Arne *Maastricht Univ.*; Zeemering, Stef *Maastricht Univ.*; Maesen, Bart *Maastricht Univ. Hospital*; Schotten, Ulrich *Maastricht Univ.*

09:30-09:45 FrAT8.5
Electromechanics Modeling of the Effects of Myocardial Infarction on Left Ventricular Function 5684-5687
 Leong, Chin Neng* *Univ. of Malaya*; Al Abed, Amr *Univ. of New South Wales*; Lim, Einly *Univ. of Malaya*; Lovell, Nigel H. *Univ. of New South Wales*; Marasco, Silvana *The Alfred*; Hashim, Shahrul Amry *Univ. of Malaya*; Dokos, Socrates *Univ. of New South Wales*

09:45-10:00 FrAT8.6
Low-Energy Defibrillation with Multi-Electrodes Stimulation: A Simulation Study 5688-5691
 Jin, Lian *Fudan Univ.*; Wang, Jianfei *Fudan Univ.*; Song, Biao *Fudan Univ.*; Wu, Xiaomei* *Fudan Univ.*; Fang, Zuxiang *Fudan Univ.*

FrAT9: 08:30-10:00 Amber 6
5.7 Ubiquitous Blood Pressure and Heart Rate Monitoring (Oral Session)
Chair: Mukkamala, Ramakrishna *Michigan State University*
Co-Chair: Avolio, Alberto P *Macquarie University*

08:30-08:45 FrAT9.1
Carotid Arterial Blood Pressure Waveform Monitoring using a Portable Ultrasound System 5692-5695
 Seo, Joohyun* *Massachusetts Institute of Technology*; Pietrangelo, Sabino *Massachusetts Institute of Technology*; Lee, Hae-Seung *Massachusetts Institute of Technology*; Sodini, Charles G. *Massachusetts Institute of Technology*

08:45-09:00 FrAT9.2
Pulse Rate Variability Analysis by Video using Face Detection and Tracking Algorithms 5696-5699
 Melchor, Angel* *Univ. Politècnica de Catalunya*; Ramos-Castro, Juan *Univ. Politècnica de Catalunya*

09:00-09:15		FrAT9.3
Accuracy of Heart Rate Variability Estimation by Photoplethysmography using an Smartphone: Processing Optimization and Fiducial Point Selection	5700-5703	
Ferrer-Mileo, Víctor* <i>Univ. Politècnica de Catalunya</i> ; Guede-Fernandez, Federico <i>Univ. Politècnica de Catalunya</i> ; Fernandez-Chimeno, Mireya <i>Technical Univ. of Catalonia</i> ; Ramos-Castro, Juan <i>Univ. Politècnica de Catalunya</i> ; Garcia-Gonzalez, Miguel A. <i>Univ. Politècnica de Catalunya</i>		
09:15-09:30		FrAT9.4
Cuffless Blood Pressure Estimation using the Carotid Arterial Pulse	5704-5707	
Buxi, Dilpreet* <i>Monash Univ.</i> ; Redouté, Jean-Michel <i>Monash Univ.</i> ; Yuce, Mehmet <i>Monash Univ.</i>		
09:30-09:45		FrAT9.5
A Simplified Method for Quantifying the Subject-Specific Relationship between Blood Pressure and Carotid-Femoral Pulse Wave Velocity	5708-5711	
Butlin, Mark <i>Macquarie Univ.</i> ; Hathway, Peta J <i>Macquarie Univ.</i> ; Kouchaki, Zahra <i>Macquarie Univ.</i> ; Peebles, Karen <i>Macquarie Univ.</i> ; Avolio, Alberto P* <i>Macquarie Univ.</i>		
09:45-10:00		FrAT9.6
Arterial Compliance Probe for Local Blood Pulse Wave Velocity Measurement	5712-5715	
PM, Nabeel* <i>IITMADRAS</i> ; Joseph, Jayaraj <i>HTIC, Indian Institute of Technology Madras</i> ; Sivaprakasam, Mohanasankar <i>Indian Institute of Technology Madras</i>		
FrAT10: 08:30-10:00		Amber 7
6.19 Rehabilitation III (Oral Session)		
Co-Chair: Sanguineti, Vittorio <i>University of Genoa</i>		
08:30-08:45		FrAT10.1
A Novel Method for Quantifying Arm Motion Similarity	5716-5719	
Li, Zhi* <i>Duke Univ.</i> ; Hauser, Kris <i>Duke Univ.</i> ; Roldan, Jay Ryan <i>Univ. of California, Santa Cruz</i> ; Milutinovic, Dejan <i>UC Santa Cruz</i> ; Rosen, Jacob <i>Univ. of California - Santa Cruz</i>		
08:45-09:00		FrAT10.2
Kinect One-Based Assessment of Upper-Limb Functionality in Post-Stroke Patients: A Comparison with Clinical Scales	5720-5723	
Scano, Alessandro* <i>National Research Council - Institute of Industrial Technologies</i> ; Caimmi, Marco <i>ITIA-CNR and Ospedale Valduce</i> ; Chiavenna, Andrea <i>National Research Council of Italy</i> ; Malosio, Matteo <i>CNR</i> ; Molinari Tosatti, Lorenzo <i>CNR - National Research Council</i>		
09:00-09:15		FrAT10.3
Development of the RT-GAIT, a Real-Time Feedback Device to Improve Gait of Individuals with Stroke	5724-5727	
Hegde, Nagaraj* <i>The Univ. of Alabama</i> ; Fulk, George <i>Clarkson Univ.</i> ; Sazonov, Edward <i>Univ. of Alabama</i>		
09:15-09:30		FrAT10.4
Effect of Interface Type in the VR-Based Acquisition of Pedestrian Skills in Persons with ASD	5728-5731	
Saiano, Mario <i>Univ. of Genoa</i> ; Garbarino, Eleonora <i>ASL3 Genovese</i> ; Lumachi, Simonetta <i>Philos Counseling Academy</i> ; Solari, Silvano <i>Univ. of Genoa</i> ; Sanguineti, Vittorio* <i>Univ. of Genoa</i>		
09:30-09:45		FrAT10.5
Gait Generation for Powered Hip-Ankle-Linkage-Orthosis	5732-5735	
Lee, Jaeryoung* <i>Chubu Univ.</i> ; Mizumoto, Ryota <i>Nagoya Univ.</i> ; Obinata, Goro <i>Chubu Univ.</i> ; Genda, Eiichi <i>Minami Seikyo Hospital</i> ; Stefanov, Dimitar <i>Middlesex Univ. London</i> ; Aoki, Hirofumi <i>Nagoya Univ.</i> ; Pei, Yanling <i>Chubu Univ.</i>		
09:45-10:00		FrAT10.6
Smart Rehabilitation Garment for Posture Monitoring	5736-5739	
Wang, Qi* <i>Technology Univ. of Eindhoven</i> ; Chen, Wei <i>Eindhoven Univ. of Technology</i> ; Timmermans, Annick A.A. <i>Hasselt Univ.</i> ; Karachristos, Christopher <i>Dept. of Industrial Design, Eindhoven Univ. of Technol</i> ; Martens, Jean-Bernard <i>Eindhoven Univ. of Technology</i> ; Markopoulos, Panos <i>Eindhoven Univ. of Technology</i>		

FrAT11: 08:30-10:00	Amber 8
6.20 Brain Functional Imaging II (Oral Session)	
Chair: Shah, Adnan <i>University of Melbourne</i>	
Co-Chair: Parhi, Keshab <i>University of Minnesota</i>	

08:30-08:45 FrAT11.1
Improved Decoding of Attentional Selection in a Cocktail Party Environment with EEG via Automatic Selection of Relevant Independent Components 5740-5743
O'Sullivan, James* *Trinity College Dublin*; Reilly, Richard *Trinity College Dublin*; Lalor, Edmund *Trinity College Dublin*

08:45-09:00 FrAT11.2
A Highly Detailed FEM Volume Conductor Model based on the ICBM152 Average Head Template for EEG Source Imaging and TCS Targeting N/A
Haufe, Stefan* *Berlin Institute of Technology*; Huang, Yu *City College of New York*; Parra, Lucas C. *City College of New York*

09:00-09:15 FrAT11.3
Seizure Prediction using Polynomial SVM Classification 5748-5751
Zhang, Zisheng *Univ. of Minnesota*; Parhi, Keshab* *Univ. of Minnesota*

09:15-09:30 FrAT11.4
MR-Compatible Hand Exoskeleton for Monitoring Brain Activity during Active Assistance 5752-5755
Kim, Sangjoon Jonathan *KAIST*; Kim, Jung* *Korea Advanced Institute of Science and Technology*

09:30-09:45 FrAT11.5
Recovering HRFs from Overlapping ROIs in FMRI Data using Thresholding Correlations for Sparse Dictionary Learning 5756-5759
Shah, Adnan* *Univ. of Melbourne*; Khalid, Muhammad Usman *NICTA and The Australian National Univ.*; Seghouane, Abd-krim *The Univ. of Melbourne*

09:45-10:00 FrAT11.6
Distinction of Individual Finger Responses in Somatosensory Cortex using ECoG High-Gamma Activation Mapping 5760-5763
Prueckl, Robert* *g.tec Medical Engineering GmbH*; Kapeller, Christoph *g.tec Medical Engineering GmbH*; Kamada, Kyousuke *Asahikawa Medical Univ.*; Takeuchi, Fumiya *Asahikawa Medical Univ.*; Ogawa, Hiroshi *Asahikawa Medical Univ.*; Scharinger, Josef *Dept. of Computational Perception, Johannes Kepler Univ.*; Guger, Christoph *g.tec Medical Engineering GmbH*

FrAT12: 08:30-10:00	Suite 5
8.11 Tactile Displays and Perception (Oral Session)	
Chair: Noh, Yohan <i>King's College London</i>	
Co-Chair: Scilingo, Enzo Pasquale <i>University of Pisa</i>	

08:30-08:45 FrAT12.1
Study on the Human Perception of Incipient and Overall Slippages using A 2D FE Fingertip Model 5764-5767
Wang, Zhongkui* *Ristumeikan Univ.*; Katudampe Vithanage, Damith Suresh Chathuranga *Ritsumeikan Univ.*; Hirai, Shinichi *Ristumeikan Univ.*

08:45-09:00 FrAT12.2
Human Precision Manipulation Workspace: Effects of Object Size and Number of Fingers Used 5768-5772
Bullock, Ian* *Yale Univ.*; Feix, Thomas *Yale*; Dollar, Aaron *Yale Univ.*

09:00-09:15 FrAT12.3
An Ergonomic Handheld Ultrasound Probe Providing Contact Forces and Pose Information 5773-5776
Noh, Yohan* *King's College London*; Housden, Richard James *King's College London*; Gomez, Alberto *King's College London*; Knight, Caroline *King's College London*; Garcia, Francesca *King's College London*; Liu, Hongbin *Kings College London*; Razavi, Reza *King's College London*; Rhode, Kawal *King's College London*; Althoefer, Kaspar *King's College London*

09:15-09:30	FrAT12.4
Electrodermal Activity Analysis during Affective Haptic Elicitation	5777-5780
Greco, Alberto* <i>Univ. of Pisa</i> ; Valenza, Gaetano <i>Univ. of Pisa-MGH-Harvard Medical School</i> ; Nardelli, Mimma <i>Univ. of Pisa</i> ; Bianchi, Matteo <i>Univ. of Pisa</i> ; Lanata', Antonio <i>Univ. of Pisa</i> ; Scilingo, Enzo Pasquale <i>Univ. of Pisa</i>	
09:30-09:45	FrAT12.5
Micro-Needle Electro-Tactile Display	5781-5784
Tezuka, Mayuko* <i>Keio Univ.</i> ; Kitamura, Norihide <i>Keio Univ.</i> ; Miki, Norihisa <i>Keio Univ.</i>	
09:45-10:00	FrAT12.6
Rotational Ranges of Human Precision Manipulation When Grasping Objects with Two to Five Digits ...	5785-5790
Feix, Thomas* <i>Yale</i> ; Bullock, Ian <i>Yale Univ.</i> ; Gloumakov, Yuri <i>Yale Univ.</i> ; Dollar, Aaron <i>Yale Univ.</i>	

FrAT16: 08:30-10:00	White 2
4.7 Medical Device Modeling (Oral Session)	
Chair: Husar, Peter <i>Ilmenau University of Technology</i>	
Co-Chair: Maharbiz, Michel <i>University of California, Berkeley</i>	

08:30-08:45	FrAT16.1
Finite-Element-Modeling of Egg White as a Substitute for Tissue Coagulation during Bipolar Radiofrequency-Induced Thermofusion	5791-5796
Wagenpfeil, Jay* <i>Univ. of Stuttgart</i> ; Schöllig, Christina <i>Institute for System Dynamics</i> ; Volker, Mayer <i>ERBE Elektromedizin GmbH</i> ; Nold, Bernhard <i>ERBE Elektromedizin GmbH</i> ; Ederer, Michael <i>Institute for System Dynamics, Univ. of Stuttgart</i> ; Neugebauer, Alexander <i>ERBE Elektromedizin GmbH</i> ; Rothmund, Ralf <i>Univ. Hospital Tübingen</i> ; Krämer, Bernhard <i>Univ. Hospital Tübingen</i> ; Schwentner, Christian <i>Univ. Hospital Tübingen</i> ; Schenk, Martin <i>Univ. Hospital Tübingen</i> ; Wallwiener, Diethelm <i>Univ. Hospital Tübingen</i> ; Stenzl, Arnulf <i>Univ. Hospital Tübingen</i> ; Enderle, Markus <i>ERBE Elektromedizin GmbH</i> ; Sawodny, Oliver <i>Institute for System Dynamics, Univ. of Stuttgart</i> ; Feuer, Ronny <i>Univ. of Stuttgart</i>	
08:45-09:00	FrAT16.2
Analysis of Power Deposition and Temperature Rise Due to Presence of an Implant Inside a 1.5 T MRI Coil ...	5797-5800
Kozlov, Mikhail* <i>Max Planck Institute for Human Cognitive and Brain Sciences</i> ; Schaefers, Gregor <i>MR:comp GmbH</i>	
09:00-09:15	FrAT16.3
Modeling the Impact of Spinal Cord Stimulation Paddle Lead Position on Impedance, Stimulation Threshold, and Activation Region	5801-5804
Min, Xiaoyi* <i>St. Jude Medical, Inc.</i> ; Kent, Alexander R. <i>St. Jude Medical, Inc.</i>	
09:15-09:30	FrAT16.4
Unintentional Heating at Implants When using Electrosurgery	5805-5808
Pettersen, Fred Johan* <i>Oslo Univ. Hospital HF, Oslo and Univ. of Oslo</i> ; Martinsen, Tormod <i>Oslo Univ. Hospital HF</i> ; Høgetveit, Jan Olav <i>Oslo Univ. Hospital</i> ; Martinsen, Ørjan G <i>Univ. of Oslo</i>	
09:30-09:45	FrAT16.5
Fast and Stable Guidewire Simulator for Minimally Invasive Vascular Surgery	5809-5812
Gao, Zhan-Jie <i>Institute of Automation Chinese Academy of Science</i> ; Xie, Xiao-Liang <i>Chinese Academy of Sciences</i> ; Bian, Gui-Bin <i>Institute of Automation, Chinese Academy of Sciences</i> ; Hao, Jian-Long <i>Institute of Automation Chinese Academy of Sciences</i> ; Feng, Zhen-Qiu <i>Institute of Automation, Chinese Academy of Sciences</i> ; Hou, Zeng-Guang* <i>Institute of Automation, Chinese Academy of Sciences</i>	
09:45-10:00	FrAT16.6
Design of Site-Directed Magnetic Targeting System in Acute Spinal Cord Injury	5813-5816
Zhang, Guanghao <i>Institute of Electrical Engineering, Chinese Academy of Sciences</i> ; Wang, Aihua <i>Chinese Academy of Sciences</i> ; Zhang, Cheng <i>Chinese Academy of Sciences, Beijing</i> ; Wu, Changzhe <i>Chinese Academy of Sciences</i> ; Huo, Xiaolin* <i>Chinese Academy of Sciences</i>	

FrAT17: 08:30-10:00	Space 1
1.27 Biomedical Signal Classification II: Cardiovascular Applications (Oral Session)	
Chair: Yana, Kazuo <i>Hosei University</i>	

08:30-08:45	FrAT17.1
Sudden Cardiac Arrest Risk Stratification based on 24-hour Holter ECG Statistics	5817-5820
Kasahara, Keisuke <i>Hosei Univ.</i> ; Shiobara, Masahito <i>Hosei Univ. Graduate school</i> ; Nakamura, Saya <i>Hosei Univ. Graduate School</i> ; Yamashiro, Koichiro <i>Hosei Univ.</i> ; Yana, Kazuo* <i>Hosei Univ.</i> ; Ono, Takuya <i>Nippon Medical School</i>	
08:45-09:00	FrAT17.2
Ventricular Ectopic Beats Classification using Sparse Representation and Gini Index	5821-5824
Baali, Hamza <i>International Islamic Univ. Malaysia</i> ; Mesbah, Mostefa* <i>Univ. of Queensland</i>	
09:00-09:15	FrAT17.3
A Supervised Learning Approach for the Robust Detection of Heart Beat in Plethysmographic Data	5825-5828
Grisan, Enrico* <i>Univ. of Padova</i> ; Cantisani, Giorgia <i>Univ. of Padova</i> ; Tarroni, Giacomo <i>Univ. of Padova</i> ; Yoon, Seung Keun <i>Samsung Advanced Institute of Technology</i> ; Rossi, Michele <i>Univ. of Padova</i>	
09:15-09:30	FrAT17.4
Large-Scale Physiological Waveform Retrieval via Locality-Sensitive Hashing	5829-5833
Kim, Yongwook Bryce* <i>Massachusetts Institute of Tech.</i> ; O'Reilly, Una-May <i>Massachusetts Institute of Tech.</i>	
09:30-09:45	FrAT17.5
A Morphological Classification Algorithm of ST Segment based on Multi-Feature	N/A
Fan, Shuqiong <i>Shenzhen Institutes of Advanced Tech.</i> ; Miao, Fen <i>Key Laboratory for Health Informatics of the Chinese Academy of</i> ; Ma, Ruiqing <i>Shenzhen Institutes of Advanced Tech., Chinese Academy of Sc</i> ; Li, Ye* <i>Shenzhen Institutes of Advanced Tech., Chinese Academy of S</i> ; Huang, Xuhui <i>Nanchang Univ.</i>	
09:45-10:00	FrAT17.6
ECG Biometric Identification: A Compression based Approach	5838-5841
Bras, Susana* <i>Univ. de Aveiro</i> ; Pinho, Armando <i>IEETA, DETI, Univ. de Aveiro</i>	

FrAT18: 08:30-10:00	Space 2
1.28 Signal Processing in Physiological Systems VI: Fetal and Neonatal (Oral Session)	
Chair: Signorini, Maria G. <i>Politecnico di Milano</i>	
Co-Chair: Van Huffel, Sabine <i>Katholieke Universiteit Leuven</i>	

08:30-08:45	FrAT18.1
Fetal Heart Rate Feature Extraction from Cardiotocographic Recordings through Autoregressive Model's Power Spectral and Pole-Based Analysis	5842-5845
Illanes-Manriquez, Alfredo <i>Univ. Austral de Chile</i> ; Haritopoulos, Michel* <i>Institute PRISME</i>	
08:45-09:00	FrAT18.2
Monitoring the Fetal Heart Rate Variability during Labor	5846-5850
Moslem, Bassam* <i>Hariri Canadian Univ.</i> ; Ali, Mohydeen <i>Lebanese Univ.</i> ; Bazzi, Oussama <i>Lebanese Univ.</i>	
09:00-09:15	FrAT18.3
Electrohysterographic Detection of Uterine Contractions in Term Pregnancy	5851-5854
Bajlekov, Galin Ivanov* <i>Eindhoven Univ. of Technology</i> ; Rabotti, Chiara <i>Eindhoven Univ. of Technology</i> ; Oei, S. Guid <i>Maxima Medisch Centrum, Veldhoven</i> ; Mischi, Massimo <i>Eindhoven Univ. of Technology</i>	
09:15-09:30	FrAT18.4
Uncovering Statistical Features of Bradycardia Severity in Premature Infants using a Point Process Model ...	5855-5858
Gee, Alan* <i>Hansjörg Wyss Institute at Harvard Univ.</i> ; Barbieri, Riccardo <i>MGH-Harvard Medical School-MIT</i> ; Paydarfar, David <i>Univ. of Massachusetts medical School</i> ; Indic, Premananda <i>Univ. of Massachusetts Medical School</i>	

09:30-09:45 FrAT18.5
Improvement of an Automated Neonatal Seizure Detector using a Post-Processing Technique 5859-5862
 Ansari, Amir Hossein* *KULeuven*; Matic, Vladimir *Dept. of Electrical Engineering (ESAT-SCD), Katholieke Univ;*
 De Vos, Maarten *Univ. of Oxford*; Naulaers, Gunnar *Univ. Hospitals Leuven*; Cherian, Perumpillichira Joseph
Clinical Neurophysiology, Dept. of Neurology, Erasmus MC, Rot; Van Huffel, Sabine *Katholieke Univ. Leuven*

09:45-10:00 FrAT18.6
Assessment of Quality of ECG for Accurate Estimation of Heart Rate Variability in Newborns 5863-5866
 Gholinezhadasnefistani, Shima* *Univ. College Cork*; Temko, Andriy *Univ. College Cork*; Stevenson, Nathan
Univ. College Cork; Boylan, Geraldine *Univ. College Cork*; Lightbody, Gordon *Univ. College Cork*; Marnane,
 Liam *Univ. College Cork*

FrAT19: 08:30-10:00 Space 3
2.21 Optical Imaging (Oral Session)
Chair: Dacso, Clifford C *Baylor College of Medicine*
Co-Chair: Tong, Shanbao *Shanghai Jiao Tong University*

08:30-08:45 FrAT19.1
Rapid Three Dimensional Two Photon Neural Population Scanning 5867-5870
 Schuck, Renaud* *Imperial College London*; Quicke, Peter *Imperial College London*; Copeland, Caroline
Imperial College London; Garasto, Stefania *Imperial College London*; Anecchino, Luca Antonello *Imperial*
College London; Hwang, June Kyu *Imperial College London*; Schultz, Simon R *Imperial College London*

08:45-09:00 FrAT19.2
Low-Cost Surface Reconstruction for Aesthetic Results Assessment and Prediction in Breast Cancer Surgery 5871-5874
 Lacher, Rene Michel* *Centre for Medical Image Computing, Univ. College London*; Hipwell, John *UCL*; Williams,
 Norman R. *Clinical Trials Group, Univ. College London*; Keshtgar, Mohammed *Royal Free Hospital and Univ.*
College London (UCL); Hawkes, David J *Univ. College London*; Stoyanov, Danail *Univ. College London*

09:00-09:15 FrAT19.3
Compact Laser Illumination System for Endoscopic Interventions 5875-5878
 Blase, Bastian* *Technische Univ. Berlin, Dept. of Electromechanical a*

09:15-09:30 FrAT19.4
Spectral Study of Metabolism-Based Autofluorescence and White-Light Reflectance for Endoscopic Tumor Imaging 5879-5883
 Ozaki, Masashi *Shizuoka Univ.*; Kagawa, Keiichiro* *Shizuoka Univ.*; Arimoto, Hidenobu *Natl Inst of Advd*
Industrial Sci & Tech; Kominami, Yoko *Hiroshima Univ.*; Sanomura, Yoji *Dept. of Endoscopy, Hiroshima Univ.*;
 Yoshida, Shigeto *Hiroshima General Hospital of West Japan Railway Company*; Seo, Min-Woong *Shizuoka*
Univ.; Kawahito, Shoji *Shizuoka Univ.*; Tanaka, Shinji *Hiroshima Univ. Hospital*

09:30-09:45 FrAT19.5
Self-Contained Diffuse Optical Imaging System for Real-Time Detection and Localization of Vascular Occlusions 5884-5887
 Pollonini, Luca* *Univ. of Houston*; Forseth, Kiefer *Univ. of Texas Medical School at Houston*; Dacso, Clifford C
Baylor College of Medicine; Parzynski, Scott *Arizona State Univ.*; Friedman, J. *Houston Methodist Hospital*

09:45-10:00 FrAT19.6
The Cerebral Blood Flow Response Dependency on Stimulus Pulse Width is Affected by Stimulus Current Amplitude – A Study of Activation Flow Coupling 5888-5891
 Zhao, Linna *Shanghai Jiao Tong Univ.*; Li, Yao* *Shanghai Jiao Tong Univ.*; Li, Hangdao *Shanghai Jiao Tong*
Univ.; Omire-Mayor, Daryl *School of Biomedical Engineering, Science & Health Systems, Drex*; Tong, Shanbao
Shanghai Jiao Tong Univ.

3.7 Microfluidic Techniques, Methods and Systems I (Oral Session)**Co-Chair:** Ahluwalia, Arti *Pisa University*

- 08:30-08:45 FrAT20.1
Microfluidic Paper-Based Analytical Devices for Colorimetric Detection of Urinary Tract Infection Biomarkers on Adult Diapers 5892-5895
 Chen, Chaohao *Faculty of Technology and Maritime Sciences, Buskerud and Vestfo*; Dong, Tao* *Buskerud and Vestfold Univ. College - HBV, TekMar, IMST*
- 08:45-09:00 FrAT20.2
Development of Hydrogel Microtubes for Enclosing and Culturing Microbe in Any Environment 5896-5899
 Ogawa, Miho* *Keio Univ.*; Higashi, Kazuhiko *Keio Univ.*; Miki, Norihisa *Keio Univ.*
- 09:00-09:15 FrAT20.3
Toad's Egg-Like Cultivation Process for Forming Microcarriers from Nanofibrous Hydrogel 5900-5903
 Higashi, Kazuhiko* *Keio Univ.*; Miki, Norihisa *Keio Univ.*
- 09:15-09:30 FrAT20.4
Monitoring Time Course of Human Whole Blood Coagulation using a Microfluidic Dielectric Sensor with a 3D Capacitive Structure 5904-5907
 Maji, Debnath *Case Western Reserve Univ.*; Suster, Michael *Case Western Reserve Univ.*; Stavrou, Evi *Case Western Reserve Univ.*; Gurkan, Umut A. *Case Western Reserve Univ.*; Mohseni, Pedram* *Case Western Reserve Univ.*
- 09:30-09:45 FrAT20.5
Manufacturing of Microcirculation Phantoms using Rapid Prototyping Technologies 5908-5911
 Buchoux, Anthony* *The Univ. of Edinburgh*; Valluri, Prashant *The Univ. of Edinburgh*; Smith, Stewart *The Univ. of Edinburgh*; Stokes, Adam A. *The Univ. of Edinburgh*; Hoskins, Peter *The Univ. of Edinburgh*; Sboros, Vassilis *Heriot Watt Univ.*
- 09:45-10:00 FrAT20.6
Controlled Thermal-Sensitive Liposomes Release on a Disposable Microfluidic Device 5912-5915
 Meng, Long* *Shenzhen Institutes of Advanced Technology, Chinese Academy of S*; Deng, Zhiting *Shenzhen Institutes of Advanced Technology, Chinese Academy of S*; Niu, Lili *Shenzhen Institute of Advanced Technology, Chinese Academy of Scie*; Cai, Feiyan *Shenzhen Institutes of Advanced Technology, Chinese Academy of S*; Zheng, Hairong *Shenzhen Inst of Advanced Tech*

1.49 Signal Processing in Physiological Systems I (Poster Session)

- 10:00-11:30 FrBPoT1.1
Analysis of Uterine Activity in Nonpregnant Women by Electrohysterography: A Feasibility Study 5916-5919
 Rabotti, Chiara* *Eindhoven Univ. of Technology*; Sammali, Federica *Eindhoven Univ. of Technology*; Kuijsters, Nienke Pertronella *Maria Catharina Hospital Eindhoven*; Kortenhorst, Madeleine Susanne Quirine *Catharina Hospital Eindhoven*; Schoot, Benedictus Christiaan *Catharina Hospital Eindhoven*; Mischi, Massimo *Eindhoven Univ. of Technology*
- 10:00-11:30 FrBPoT1.2
Real-Time Feedback based Control of Cardiac Restitution using Optical Mapping 5920-5923
 Kulkarni, Kanchan *Univ. of Minnesota*; Tolkacheva, Elena* *Univ. of Minnesota*
- 10:00-11:30 FrBPoT1.3
Heart Rate Calculation from Ensemble Brain Wave using Wavelet and Teager-Kaiser Energy Operator 5924-5927
 Jayaraman, Srinivasan* *TATA Consultancy Services*; V, Adithya *TATA Consultancy Services*
- 10:00-11:30 FrBPoT1.4
Stream Computing for Biomedical Signal Processing: A QRS Complex Detection Case-Study 5928-5931
 Murphy, Brian Michael* *Univ. College Cork*; O'Driscoll, Cillian *Univ. College Cork*; Boylan, Geraldine *Univ. College Cork*; Lightbody, Gordon *Univ. College Cork*; Marnane, Liam *Univ. College Cork*

10:00-11:30	FrBPoT1.5
Multi-Channel Audio-Based Estimation of the Pre-Ejection Period	5932-5935
Paiva, Rui Pedro* <i>Univ. of Coimbra</i> ; Sapata, Tiago <i>CISUC, Dept. of Informatics Engineering, Univ. of Coim</i> ; Henriques, Jorge <i>Univ. of Coimbra - NIF</i> ; Quintal, Isabel <i>Centro Hospitalar de Coimbra</i> ; Baptista, Romeu <i>Centro Hospitalar de Coimbra</i> ; Gonçalves, Lino <i>Centro Hospitalar de Coimbra</i> ; de Carvalho, Paulo <i>Univ. of Coimbra - NIF</i>	
10:00-11:30	FrBPoT1.6
A Low-Complex Multi-Channel Methodology for Noise Detection in Phonocardiogram Signals	5936-5939
Nunes, Diogo <i>Univ. of Coimbra</i> ; Leal, Adriana* <i>Univ. of Coimbra</i> ; Couceiro, Ricardo <i>Univ. of Coimbra</i> ; Henriques, Jorge <i>Univ. of Coimbra - NIF</i> ; Mendes, Luis <i>Univ. of Coimbra</i> ; de Carvalho, Paulo <i>Univ. of Coimbra - NIF</i> ; Teixeira, César <i>Univ. of Coimbra</i>	
10:00-11:30	FrBPoT1.7
QRS Complex Detection in ECG Signal for Wearable Devices	5940-5943
Arefin, M. Riadh <i>Univ. of North Dakota</i> ; Tavakolian, Kouhyar <i>Assistant Professor</i> ; Fazel-Rezai, Reza* <i>Univ. of North Dakota</i>	
10:00-11:30	FrBPoT1.8
Heart Rate Variability in Cyclic Alternating Pattern during Sleep in Healthy and Nocturnal Front Lobe Epilepsy Patients	5944-5947
Dorantes Méndez, Guadalupe* <i>Univ. Autónoma de San Luis Potosí</i> ; Mendez, Martin Oswaldo <i>Univ. Autónoma de San Luis Potosí</i> ; Alba, Alfonso <i>Univ. Autónoma de San Luis Potosí</i> ; Gonzalez, Jose Saul <i>Univ. Autónoma de San Luis Potosí</i> ; Parrino, Liborio <i>Sleep Disorders Centre, Dept. of Neurology, Univ. of P</i> ; Milioli, Giulia <i>Sleep Disorders Centre, Dept. of Neurology, Univ. of P</i>	
10:00-11:30	FrBPoT1.9
Is 50 Hz High Enough ECG Sampling Frequency for Accurate HRV Analysis?	5948-5951
Mahdiani, Shadi* <i>Tampere Univ. of Technology</i> ; Jeyhani, Vala <i>Tampere Univ. of Technology</i> ; Peltokangas, Mikko <i>Tampere Univ. of Technology</i> ; Vehkaoja, Antti <i>Tampere Univ. of Technology</i>	
10:00-11:30	FrBPoT1.10
Comparison of HRV Parameters Derived from Photoplethysmography and Electrocardiography Signals ..	5952-5955
Jeyhani, Vala* <i>Tampere Univ. of Technology</i> ; Mahdiani, Shadi <i>Tampere Univ. of Technology</i> ; Peltokangas, Mikko <i>Tampere Univ. of Technology</i> ; Vehkaoja, Antti <i>Tampere Univ. of Technology</i>	
10:00-11:30	FrBPoT1.11
Breathing Sounds Characteristics Correlates with Structural Changes of Upper Airway in Obstructive Sleep Apnea	5956-5959
Moussavi, Zahra* <i>Univ. of Manitoba</i> ; Elwali, Ahmed Khalil <i>Univ. of Manitoba</i> ; Soltanzadeh, Ramin <i>Univ. of Manitoba</i> ; MacGregor, Cameron Andrew <i>Univ. of Manitoba</i> ; Lithgow, Brian <i>Univ. of Manitoba</i>	
10:00-11:30	FrBPoT1.12
Identifying Stable Phase Coupling Associated with Cerebral Autoregulation using the Synchrosqueezed Cross-Wavelet Transform and Low Oscillation Morlet Wavelets	5960-5963
Addison, Paul* <i>Medtronic</i>	
10:00-11:30	FrBPoT1.13
Non-Invasive Measurement of Blood Pressure – Why We Should Look at BP Traces Rather than Listen to Korotkoff Sounds	5964-5967
Celler, Branko George* <i>Univ. of New South Wales</i> ; Basilakis, Jim <i>Univ. of Western Sydney</i> ; Goozee, Kathryn <i>Macquarie Univ., Faculty of Medical Science</i> ; Ambikairajah, E <i>Univ. of New South Wales</i>	
10:00-11:30	FrBPoT1.14
An Improved Artifact Removal Algorithm for Continuous Cardiac Output and Blood Pressure Recordings ..	5968-5972
Tronstad, Christian* <i>National Hospital of Norway</i> ; Omenås, Ivar Nagelgaard <i>Dept. of Acute Medicine, Oslo Univ. Hospital, Oslo, No</i> ; Rosseland, Leiv Arne <i>Dept. of Acute Medicine, Oslo Univ. Hospital and Univ.</i>	

10:00-11:30	FrBPoT1.15
Effects of Cuff Inflation and Deflation on Pulse Transit Time Measured from ECG and Multi-Wavelength PPG	5973-5976
Liu, Jing <i>the Chinese Univ. of Hong Kong</i> ; Li, Yao <i>Chinese Univ. of Hong Kong</i> ; Ding, Xiao-Rong <i>The Chinese Univ. of Hong Kong</i> ; Dai, Wenxuan <i>Chinese Univ. of Hong Kong</i> ; Zhang, Yuan-Ting* <i>The Chinese Univ. of Hong Kong</i>	
10:00-11:30	FrBPoT1.16
Recording System and Data Fusion Algorithm for Enhancing the Estimation of the Respiratory Rate from Photoplethysmogram	5977-5980
Cernat, Roxana Alexandra* <i>Univ. Politehnica of Bucharest</i> ; Ciorecan, Silvia Ionela <i>Univ. Politehnica of Bucharest</i> ; Ungureanu, Constantin <i>Eindhoven Univ. of Tech.</i> ; Arends, Johan B.A.M. <i>Epilepsy Center Kempenhaeghe</i> ; Strungaru, Rodica <i>Politehnica Univ. of Bucharest</i> ; Ungureanu, G. Mihaela <i>Politehnica Univ. of Bucharest</i>	
10:00-11:30	FrBPoT1.17
Breathing Rate Estimation during Sleep using Audio Signal Analysis	5981-5984
Dafna, Eliran <i>Ben-Gurion Univ. of the Negev</i> ; Rosenwein, Tal <i>Dept. of Biomedical Engineering, Ben-Gurion Univ. of t</i> ; Tarasiuk, Ariel <i>Ben-Gurion Univ.</i> ; Zigel, Yaniv* <i>Ben-Gurion Univ. of the Negev</i>	
10:00-11:30	FrBPoT1.18
Rapid and Stable Measurement of Respiratory Rate from Doppler Radar Signals using Time Domain Autocorrelation Model	5985-5988
Sun, Guanghao* <i>Tokyo Metropolitan Univ.</i> ; Matsui, Takemi <i>Tokyo Metropolitan Univ.</i>	
10:00-11:30	FrBPoT1.19
Real-Time Obstructive Sleep Apnea Detection from Frequency Analysis of EDR and HRV using Lomb Periodogram	5989-5992
Fan, Shu-Han <i>National Chiao Tung Univ.</i> ; Chou, Chia-Ching <i>National Chiao Tung Univ.</i> ; Chen, Wei-Chen <i>National Chiao Tung Univ.</i> ; Fang, Wai-Chi* <i>National Chiao Tung Univ.</i>	
10:00-11:30	FrBPoT1.20
Automatic Characterization of Sleep Need Dissipation Dynamics using a Single EEG Signal	5993-5997
Garcia-Molina, Gary Nelson* <i>Philips Research North America</i> ; Bellesi, Michele <i>Univ. of Wisconsin-Madison</i> ; Riedner, Brady <i>Univ. of Wisconsin</i> ; Pastoor, Sander <i>Philips Research</i> ; Pfundtner, Stefan <i>Philips Research</i> ; Tononi, Giulio <i>Univ. of Wisconsin</i>	
10:00-11:30	FrBPoT1.22
Modeling Sleep Apnea Severity using Bioimpedance Measurements	5998-6001
Gavrilovic, Bojan <i>Univ. of Toronto/Toronto Rehabilitation Institute</i> ; Popovic, Milos R. <i>Univ. of Toronto</i> ; Yadollahi, Azadeh* <i>Univ. of Toronto</i>	
10:00-11:30	FrBPoT1.23
Quantification of Muscle Activity during Sleep for Patients with Neurodegenerative Diseases	6002-6005
Hanif, Umaer* <i>Technical Univ. of Denmark</i> ; Trap, Lotte <i>Technical Univ. of Denmark</i> ; Jennum, Poul <i>Univ. of Copenhagen, Demnar</i> ; Zoetmulder, Marielle <i>Danish Centre for Sleep Medicing</i> ; Sorensen, Helge B D <i>Technical Univ. of Denmark</i>	
10:00-11:30	FrBPoT1.24
A New Method for Attenuation of Respiration Artifacts in Electrogastrographic (EGG) Signals	6006-6009
Komorowski, Dariusz, Waldemar* <i>Silesian Univ. of Technology</i> ; Tkacz, Ewaryst <i>Silesian Univ of Tech, Faculty of Biomedical Engineering</i>	
10:00-11:30	FrBPoT1.25
Multi-Sources Data Analysis with Sympatho-Vagal Balance Estimation Toward Early Bruxism Episodes Detection	6010-6013
Kostka, Pawel Stanislaw* <i>Found. for Cardiac Surgery Dev.</i> ; Tkacz, Ewaryst <i>Silesian Univ of Tech, Faculty of Biomedical Engineering</i>	

1.50 Signal Processing in Physiological Systems II (Poster Session)

- 10:00-11:30 FrBPoT2.1
An Open-Source Toolbox for Standardized use of PhysioNet Sleep EDF Expanded Database 6014-6017
 Imtiaz, Syed Anas* *Imperial College London*; Rodriguez-Villegas, Esther *Imperial College London*
- 10:00-11:30 FrBPoT2.2
SoC-Based Architecture for Biomedical Signal Processing 6018-6021
 Gutiérrez, Raquel* *Univ. of Alcalá*; Hernández, Álvaro *Univ. of Alcalá*; Garcia, J. Jesus *Univ. of Alcalá*; Marnane, Liam *Univ. College Cork*
- 10:00-11:30 FrBPoT2.3
Non-Parametric Frequency Response Function Tissue Modeling in Bipolar Electrosurgery 6022-6025
 Barbé, Kurt* *Vrije Univ. Brussel*; Ford, Carolyn *Covidien*; Bonn, Kenlyn *Covidien*; Gilbert, James *Covidien*
- 10:00-11:30 FrBPoT2.4
Field Programmable Gate Arrays Implementation of Dual Tree Complex Wavelet Transform 6026-6029
 Canbay, Ferhat* *Yildiz Technical Univ.*; Levent, Vecdi Emre *Ozyegin Univ.*; Serbes, Gorkem *Yildiz Technical Univ.*; Goren, Sezer *Yeditepe Univ.*; Aydin, Nizamettin *Yildiz Technical Univ.*
- 10:00-11:30 FrBPoT2.5
Recognizing Emotions from EEG Subbands using Wavelet Analysis 6030-6033
 Candra, Henry* *Univ. of Technology Sydney*; Yuwono, Mitchell *Univ. of Technology Sydney*; Handojoseno, Aluysius Maria Ardi *Univ. of Technology, Sydney*; Chai, Rifai *Univ. of Technology, Sydney*; Su, Steven Weidong *Univ. of Technology, Sydney*; Nguyen, Hung T. *Univ. of Technology, Sydney*
- 10:00-11:30 FrBPoT2.6
Detection of Stress/anxiety State from EEG Features during Video Watching 6034-6037
 Giannakakis, Giorgos* *Institute of Computer Science (ICS), Foundation for Research and*; Grigoriadis, Dimitris *Dept. of Informatics Engineering, Technological Educational*; Tsiknakis, Manolis *ICS-FORTH*
- 10:00-11:30 FrBPoT2.7
Experimental Evidence for the Effects of the Demand-Control Model on the Cognitive Arousal: An EEG based Study 6038-6041
 Subhani, Ahmad Rauf *Univ. Teknologi Petronas*; Malik, Aamir Saeed* *Univ. Teknologi Petronas*; Kamel, Nidal *Technical Univ. of Petronas*; Saad, Naufal *Univ. Teknologi Petronas*; Nandagopal, N. *Univ. of South Australia*
- 10:00-11:30 FrBPoT2.8
Recognition and Regionalization of Emotions in the Arousal-Valence Plane 6042-6045
 Bustamante, Paola Andrea* *Univ. Nacional de San Juan*; López, Natalia M *Univ. Nacional de San Juan*; Perez Berenguer, Maria Elisa *UNSJ*; Quintero Montoya, Olga Lucia *Univ. EAFIT*
- 10:00-11:30 FrBPoT2.9
Brain Activities during Synchronized Tapping Task 6046-6049
 Murakami, Akiho* *Doshisha Univ.*; Hiroyasu, Tomoyuki *Doshisha Univ.*; Goto, Mao *Doshisha Univ.*; Yokouchi, Hisatake *Doshisha Univ.*
- 10:00-11:30 FrBPoT2.10
Retrieving the Hemodynamic Response Function in Resting State fMRI: Methodology and Application 6050-6053
 Wu, Guorong *Faculty of Psychology and Educational Sciences, Dept. of Da*; Deshpande, Gopikrishna *AU MRI Research Center*; Laureys, Steven *Cyclotron Research Center, Univ. of Liege in Belgium*; Marinazzo, Daniele* *Faculty of Psychology and Educational Sciences, Dept. of Da*
- 10:00-11:30 FrBPoT2.11
Temporal Fluctuation Analysis of Tremor Signal in Parkinson's Disease and Essential Tremor Subjects 6054-6057
 Thanawattano, Chusak* *National Electronics and Computer Technology Center, Anan, Chanawat Chulalongkorn Univ.*; Pongthornseri, ronachai *National Electronics and Computer Technology Center, Dumnin, Songphon National Electronics and Computer Technology Center*; Bhidayasiri, Roongroj *Chulalongkorn Univ.*

10:00-11:30	FrBPoT2.12
Spatial Analysis of Muscular Activation Patterns in Stroke Survivors	6058-6061
Rasool, Ghulam* <i>Rehabilitation Institute of Chicago</i> ; Afsharipour, Babak <i>Northwestern Univ.</i> ; Suresh, Nina <i>Rehabilitation Institute of Chicago</i> ; Hu, Xiaogang <i>Rehabilitation Institute of Chicago</i> ; Rymer, William Zev <i>Northwest. & Rehab Inst of Chicago</i>	
10:00-11:30	FrBPoT2.13
Assessment of the Activation Patterns of the Muscles Involved in the FR Test in Diabetic Neuropathic Patients	6062-6065
Maranesi, Elvira* <i>Univ. Politecnica delle Marche</i> ; Di Nardo, Francesco <i>Polytechnic Univ. of Marche</i> ; Ghetti, Giacomo Giuseppe <i>Posture and Movement Analysis Laboratory, INRCA Geriatric Hospit</i> ; Mercante, Oriano <i>Posture and Movement Analysis Laboratory, INRCA Geriatric Hospit</i> ; Rabini, Rosa Anna <i>Diabetology Dept., INRCA Geriatric Hospital</i> ; Burattini, Laura <i>Univ. Politecnica delle Marche</i> ; Fioretti, Sandro <i>Univ. Politecnica delle Marche</i>	
10:00-11:30	FrBPoT2.14
Evaluation of Gender-Related Differences in Co-Contraction Activity of Shank Muscles during Gait	6066-6069
Mengarelli, Alessandro <i>Univ. Politecnica delle Marche</i> ; Maranesi, Elvira <i>Univ. Politecnica delle Marche</i> ; Barone, Vinicio <i>Univ. Politecnica delle Marche</i> ; Burattini, Laura <i>Univ. Politecnica delle Marche</i> ; Fioretti, Sandro <i>Univ. Politecnica delle Marche</i> ; Di Nardo, Francesco* <i>Polytechnic Univ. of Marche</i>	
10:00-11:30	FrBPoT2.15
The Occurrence Frequency: A Suitable Parameter for the Evaluation of the Myoelectric Activity during Walking	6070-6073
Di Nardo, Francesco* <i>Polytechnic Univ. of Marche</i> ; Agostini, Valentina <i>Politecnico di Torino</i> ; Knaflitz, Marco <i>Politecnico di Torino</i> ; Mengarelli, Alessandro <i>Univ. Politecnica delle Marche</i> ; Maranesi, Elvira <i>Univ. Politecnica delle Marche</i> ; Burattini, Laura <i>Univ. Politecnica delle Marche</i> ; Fioretti, Sandro <i>Univ. Politecnica delle Marche</i>	
10:00-11:30	FrBPoT2.16
Wearable Real-Time ECG Monitoring with Emergency Alert System for Scuba Diving	6074-6077
Cibis, Tobias* <i>Digital Sport Group, Friedrich-Alexander Univ. Erlangen-Nü</i> ; Groh, Benjamin <i>Friedrich-Alexander Univ. Erlangen-Nürnberg</i> ; Gatermann, Heike <i>German Association of Sport Divers (VDST)</i> ; Leutheuser, Heike <i>Digital Sports Group, Pattern Recognition Lab, Dept. of Com</i> ; Eskofier, Bjoern M <i>Friedrich-Alexander-Univ. Erlangen-Nürnberg</i>	
10:00-11:30	FrBPoT2.17
Muscle Fatigue Detection during Dynamic Contraction under Blood Flow Restriction: Improvement of Detection Sensitivity using Multivariable Fatigue Indices	6078-6081
Ito, Kenichi* <i>Niigata Institute of Technology</i> ; Korakata, Yuki <i>Niigata Institute of Technology</i> ; Hotta, Yu <i>Niigata Institute of Technology</i>	
10:00-11:30	FrBPoT2.18
Effect of Muscular Fatigue on Fractal Upper Limb Coordination Dynamics and Muscle Synergies	6082-6085
R. Bueno, Diana* <i>Univ. of Zaragoza</i> ; Lizano, José Maria <i>Univ. of Zaragoza</i> ; Montano Gella, Luis <i>Univ. of Zaragoza</i>	
10:00-11:30	FrBPoT2.19
On Optimal Electrode Configuration to Estimate Hand Movements from Forearm Surface ElectroMyoGraphy	6086-6089
Paleari, Marco* <i>Fondazione Istituto Italiano di Tecnologia</i> ; Michela, Di Girolamo <i>Fondazione Istituto Italiano di Tecnologia</i> ; Celadon, Nicolò <i>Fondazione Istituto Italiano di Tecnologia</i> ; Favetto, Alain <i>Fondazione Istituto Italiano di Tecnologia</i> ; Ariano, Paolo <i>Fondazione Istituto Italiano di Tecnologia</i>	
10:00-11:30	FrBPoT2.20
Age-Related Motor Unit Remodeling in the Tibialis Anterior	6090-6093
Siddiqi, Ariba* <i>RMIT Univ.</i> ; Kant Kumar, Dinesh <i>RMIT Univ.</i> ; Poosapadi Arjunan, Sridhar <i>RMIT Univ.</i>	
10:00-11:30	FrBPoT2.21
Detection of the Recovery Phase of in Vivo Gastric Slow Wave Recordings	6094-6097
Paskaranandavavel, Niranchan* <i>The Univ. of Auckland</i> ; Pan, Xingzheng <i>Univ. of Auckland</i> ; Du, Peng <i>The Univ. of Auckland</i> ; O'Grady, Gregory <i>Univ. of Auckland</i> ; Cheng, Leo K <i>The Univ. of Auckland</i>	

10:00-11:30	FrBPoT2.22
A System for Automated Quantification of Cutaneous Electrograms	6098-6101
Paskaranandavivel, Niranchan* <i>The Univ. of Auckland</i> ; Bull, Simon H. <i>Univ. of Auckland</i> ; Parsell, Doug <i>Univ. of Mississippi</i> ; Cheng, Leo K <i>The Univ. of Auckland</i> ; Abell, Thomas <i>The Division of Digestive Diseases, Univ. of Mississippi Me</i>	
10:00-11:30	FrBPoT2.23
Correlational Analysis of Electroencephalographic and End-Tidal Carbon Dioxide Signals during Breath-Hold Exercise	6102-6105
Morelli, Maria Sole <i>Scuola Superiore Sant'Anna (Pisa)</i> ; Vanello, Nicola* <i>Univ. of Pisa</i> ; Giannoni, Alberto <i>Fondazione Gabriele Monasterio, Pisa</i> ; Frijia, Francesca <i>Fondazione Gabriele Monasterio, Pisa</i> ; Hartwig, Valentina <i>Univ. of Pisa</i> ; Maestri, Michelangelo <i>Univ. of Pisa, Pisa</i> ; Bonanni, Enrica <i>Univ. of Pisa, Pisa</i> ; Carnicelli, Luca <i>Univ. of Pisa, Pisa</i> ; Positano, Vincenzo <i>Fondazione G. Monasterio, CNR-Regione Toscana, Pisa, PI, Italy</i> ; Passino, Claudio <i>Fondazione Gabriele Monasterio, Pisa</i> ; Emdin, Michele <i>Fondazione Gabriele Monasterio, Pisa</i> ; Landini, Luigi <i>Univ. of Pisa</i>	
10:00-11:30	FrBPoT2.24
Voice Quality in Patients Suffering from Bipolar Disease	6106-6109
Guidi, Andrea <i>Univ. of Pisa</i> ; Schoentgen, Jean L.I.S.A. <i>Faculté des Sciences Appliquées, Univ. Libre de Br</i> ; Bertschy, Gilles <i>Dept. of Psychiatry and Mental Health, Strasbourg Univ.</i> ; Gentili, Claudio <i>Univ. of Pisa</i> ; Landini, Luigi <i>Univ. of Pisa</i> ; Scilingo, Enzo Pasquale <i>Univ. of Pisa</i> ; Vanello, Nicola* <i>Univ. of Pisa</i>	
10:00-11:30	FrBPoT2.25
Arousal Recognition System based on Heartbeat Dynamics during Auditory Elicitation	6110-6113
Nardelli, Mimma* <i>Univ. of Pisa</i> ; Valenza, Gaetano <i>Univ. of Pisa-MGH-Harvard Medical School</i> ; Greco, Alberto <i>Univ. of Pisa</i> ; Lanata', Antonio <i>Univ. of Pisa</i> ; Scilingo, Enzo Pasquale <i>Univ. of Pisa</i>	
10:00-11:30	FrBPoT2.26
Unobtrusive Heart Rate Estimation during Physical Exercise using Photoplethysmographic and Acceleration Data	6114-6117
Mullan, Patrick Johannes* <i>Digital Sports Group, Pattern Recognition Lab, Friedrich-Alexand</i> ; Kanzler, Christoph Matthias <i>Digital Sports Group, Pattern Recognition Lab, Friedrich-Alexand</i> ; Lorch, Benedikt <i>Digital Sports Group, Pattern Recognition Lab, Friedrich-Alexand</i> ; Schröder, Lea <i>Pattern Recognition Lab, Friedrich-Alexander-Univ. Erlange</i> ; Winkler, Ludwig <i>FAU Erlangen-Nürnberg</i> ; Laich, Larissa Heike <i>Univ. of Stuttgart</i> ; Riedel, Frederik <i>Univ. of Stuttgart</i> ; Richer, Robert <i>Friedrich-Alexander-Univ. Erlangen-Nürnberg (FAU), Germany</i> ; Luckner, Christoph <i>Digital Sports Group, Pattern Recognition Lab, Friedrich-Alexand</i> ; Leutheuser, Heike <i>Digital Sports Group, Pattern Recognition Lab, Dept. of Com</i> ; Eskofier, Bjoern M <i>Friedrich-Alexander-Univ. Erlangen-Nürnberg</i> ; Pasluosta, Cristian Federico <i>Friedrich-Alexander-Univ. Erlangen-Nürnberg</i>	
FrBPoT3: 10:00-11:30	Gold Room
1.51 Time-Frequency and Time-Scale Analysis of Biosignals (Poster Session)	
10:00-11:30	FrBPoT3.1
Non-Contact and Noise Tolerant Heart Rate Monitoring using Microwave Doppler Sensor and Range Imagery	6118-6121
Matsunaga, Daichi* <i>Kobe Univ.</i> ; Okuno, Keisuke <i>Kobe Univ.</i> ; Izumi, Shintaro <i>Kobe Univ.</i> ; Kawaguchi, Hiroshi <i>Kobe Univ.</i> ; Yoshimoto, Masahiko <i>Kobe Univ.</i>	
10:00-11:30	FrBPoT3.3
Temporal and Spectral Analysis of Internal Carotid Artery Doppler Signal for Normal and Abnormal Flow Detection	6122-6125
Palanisamy, Krishnamoorthy <i>Philips Research India</i> ; Patil, Ravindra* <i>Philips Research India</i> ; Ravi, Vidya <i>Philips</i>	
10:00-11:30	FrBPoT3.4
Smartwatch-Based Driver Alertness Monitoring with Wearable Motion and Physiological Sensor	6126-6129
Lee, Boon-Giin <i>Keimyung Univ.</i> ; Lee, Boon-Leng <i>Dept. of Electronic Engineering, Pukyong National Univ.</i> ; Chung, Wan-Young* <i>Pukyong National Univ.</i>	

10:00-11:30	FrBPoT3.5
A Constrained Two-Layer Compression Technique for ECG Waves	6130-6133
Byun, Kyungguen* <i>Dept. of Electrical and Electronic Engineering, Yonsei Univ</i> ; Song, Eunwoo <i>Yonsei Univ.</i> ; Shim, Hwan <i>Digital Media & Communication R&D Center, Samsung Electronics Co</i> ; Lim, Hyungjoon <i>Digital Media & Communication R&D Center, Samsung Electronics Co</i> ; Kang, Hong-Goo <i>Yonsei Univ.</i>	
10:00-11:30	FrBPoT3.6
Human Emotion Recognition using Heart Rate Variability Analysis with Spectral Bands based on Respiration	6134-6137
Valderas, María Teresa* <i>Zaragoza Univ. and Univ. Politècnica de Catalunya</i> ; Bolea, Juan <i>Instituto de Investigación en Ingeniería de Aragón (I3A) Univ.</i> ; Laguna, Pablo <i>Zaragoza Univ. and CIBER-BBN</i> ; Vallverdu, Montserrat <i>Univ. Politècnica de Catalunya</i> ; Bailon, Raquel <i>Univ. of Zaragoza</i>	
10:00-11:30	FrBPoT3.7
Bayesian Fusion of Algorithms for the Robust Estimation of Respiratory Rate from the Photoplethysmogram	6138-6141
Clifton, David* <i>Univ. of Oxford</i> ; Zhu, Tingting <i>Univ. of Oxford</i> ; Pimentel, Marco A.F. <i>Univ. of Oxford</i> ; Clifford, Gari <i>Univ. of Oxford</i>	
10:00-11:30	FrBPoT3.8
Heart Rate Variability during Plateau Waves of Intracranial Pressure: A Pilot Descriptive Study	6142-6145
Lopes Luís, Ana Isabel <i>Interna de Neurocirurgia do Centro Hospitalar de Lisboa Ocident</i> a; Seromenho e Santos, Alexandra <i>Interna de Neurocirurgia do Centro Hospitalar de Lisboa Ocident</i> a; Dias, Celeste <i>Faculty of Medicine of the Univ. of Porto</i> ; Almeida, Rute* <i>Faculty of Science of the Univ. of Porto</i> ; Rocha, Ana Paula <i>Univ. do Porto, Faculdade de Ciências</i>	
10:00-11:30	FrBPoT3.9
Characterization and Reduction of Motion Artifacts in Photoplethysmographic Signals from a Wrist- Worn Device	6146-6149
Tautan, Alexandra-Maria* <i>Holst Centre/imec</i> ; Young, Alex <i>Holst Centre/imec</i> ; Wentink, Eva <i>imec/Holst Centre</i> ; Wieringa, Fokko van 't Hoff <i>Program of TNO</i>	
10:00-11:30	FrBPoT3.10
Estimating Instantaneous Respiratory Rate from the Photoplethysmogram	6150-6153
Kheirkhah Dehkordi, Parastoo* <i>Univ. of British Columbia</i> ; Garde, Ainara <i>Univ. of British Columbia</i> ; Molavi, Behnam <i>Univ. of British Columbia</i> ; Petersen, Christian <i>British Columbia Children's Hospital</i> ; Ansermino, J. Mark <i>British Columbia's Children's Hospital</i> ; Dumont, Guy <i>Univ. of British Columbia</i>	
10:00-11:30	FrBPoT3.11
Spectral Decomposition of Pupillary Unrest using Wavelet Entropy	6154-6157
Schumann, Andy* <i>Psychiatric Brain & Body Research Group Jena, Dept. of Psyc</i> ; Kralisch, Caroline <i>Psychiatric Brain & Body Research Group Jena, Dept. of Psyc</i> ; Bär, Karl-Jürgen <i>Friedrich-Schiller-Univ. of Jena</i>	
10:00-11:30	FrBPoT3.12
Analysis of Sympathovagal Balance in Patients with Major Depressive Disorder using Wavelet Packet Transform	6158-6161
Akdemir Akar, Saime* <i>Fatih Univ.</i> ; Kara, Sadik <i>Fatih Univ.</i> ; Bilgic, Vedat <i>Bakirkoy Mental Health Research and Training Hospital</i>	
10:00-11:30	FrBPoT3.13
Autonomic Nervous System Response to L-Dopa in Patients with Advanced Parkinson's Disease	6162-6165
Ruonala, Verner Matias <i>Univ. of Eastern Finland</i> ; Tarvainen, Mika* <i>Univ. of Eastern Finland</i> ; Karjalainen, Pasi, A <i>Univ. of Eastern Finland</i> ; Pekkonen, Eero <i>Helsinki Univ. Central Hospital</i> ; Rissanen, Saara Mirjami <i>Univ. of Eastern Finland</i>	
10:00-11:30	FrBPoT3.14
Heart Rate Monitoring during Physical Exercise using Wrist-Type PPG Signals	6166-6169
Karimi, Sajjad* <i>Sharif Univ. of Technology</i> ; Shamsollahi, Mohammad Bagher <i>Sharif Univ. of Technology</i> ; Malihi, Mahan <i>Sharif Univ. of Technology, Iran, Tehran</i> ; Moradi, Parsa <i>Sharif Univ. of Technology, Iran, Tehran</i> ; Khas Ahmadi, Amirhosein <i>Sharif Univ. of Technology, Iran, Tehran</i>	

10:00-11:30	FrBPoT3.15
SSVEP-Based BCI: A "Plug and Play" Approach	6170-6173
Mora, Niccolo* <i>Univ. of Parma</i> ; De Munari, Ilaria <i>Univ. of Parma</i> ; Ciampolini, Paolo <i>Univ. of Parma</i>	
10:00-11:30	FrBPoT3.16
A New Approach for SSVEP Detection using PARAFAC and Canonical Correlation Analysis	6174-6177
Godinez Tello, Richard Junior Manuel* <i>Univ. Federal do Espirito Santo</i> ; Pouryazdian, Saeed <i>Ryerson Univ.</i> ; Ferreira, Andre <i>Federal Univ. of Espirito Santo</i> ; Beheshti, Soosan <i>Ryerson Univ.</i> ; Krishnan, Sridhar <i>Ryerson Univ.</i> ; Bastos, Teodiano <i>Federal do Espirito Santo</i>	
10:00-11:30	FrBPoT3.17
P300 Latency Jitter Occurrence in Patients with Disorders of Consciousness: Toward a Better Design for Brain Computer Interface Applications	6178-6181
Schettini, Francesca* <i>Fondazione Santa Lucia, IRCCS Neuroelectrical Imaging and BCI Labo</i> ; Risetti, Monica <i>Fondazione Santa Lucia, Rome</i> ; Arico, Pietro <i>Fondazione Santa Lucia</i> ; Formisano, Rita <i>IRCCS Fondazione Santa Lucia, Rome, Italy</i> ; Babiloni, Fabio <i>Univ. of Rome</i> ; Mattia, Donatella <i>Fondazione Santa Lucia IRCCS</i> ; Cincotti, Febo <i>Sapienza Univ. of Rome</i>	
10:00-11:30	FrBPoT3.18
Avionic Technology Testing by using a Cognitive Neurometric Index: A Study with Professional Helicopter Pilots	6182-6185
Borghini, Gianluca <i>Univ. of Rome Sapienza</i> ; Arico, Pietro* <i>Fondazione Santa Lucia</i> ; Di Flumeri, Gianluca <i>Univ. of Rome Sapienza</i> ; Salinari, Serenella <i>La Sapienza Univ. of Rome</i> ; Colosimo, Alfredo <i>Univ. of Rome "Sapienza"</i> ; Bonelli, Stefano <i>deep blue</i> ; Napoletano, Linda <i>deep blue</i> ; Ferreira, Ana <i>deep blue</i> ; Babiloni, Fabio <i>Univ. of Rome</i>	
10:00-11:30	FrBPoT3.19
A Lossless Data Reduction Technique for Wireless EEG Recorders and Its use in Selective Data Filtering for Seizure Monitoring	6186-6189
Dai, Chengliang* <i>Univ. of York</i> ; Bailey, Christopher <i>Univ. of York</i>	
10:00-11:30	FrBPoT3.20
Local Spatial Correlation Analysis of Hand Flexion/Extension using Intraoperative High-Density ECoG	6190-6193
Jiang, Tianxiao* <i>Univ. of Houston</i> ; Ince, Nuri Firat <i>Univ. of Houston</i> ; Jiang, Tao <i>Tian Tan Hospital</i> ; Mei, Shenshen <i>Haidian Hospital</i> ; Li, Yunlin <i>Haidian Hospital</i> ; Xiaofei, Wang <i>Haidian Hospital</i> ; Sujit, Prabhu <i>MD Anderson Cancer Center</i> ; Sha, Zhiyi <i>Univ. of Minnesota, Dept. of Neurology</i>	
10:00-11:30	FrBPoT3.21
Automatic Localization of Epileptic Spikes in EEGs of Children with Infantile Spasms	6194-6197
Traitsuengsakul, Supachan <i>Rochester Institute of Tech.</i> ; Seltzer, Laurie E. <i>Univ. of Rochester Medical Center</i> ; Paciorkowski, Alex R. <i>Univ. of Rochester Medical Center</i> ; Ghoraani, Behnaz* <i>Rochester Institute of Tech.</i>	
10:00-11:30	FrBPoT3.22
Using Bio-Signals to Evaluate Multi Discomfort in Image Viewing – Balancing Visually Induced Motion Sickness and Field of View -	6198-6201
Kobayashi, Naoki* <i>Saitama Medical Univ.</i> ; Iinuma, Ryo <i>Saitama Medical Univ., Faculty of Health and Medical Care</i> ; Suzuki, Yuta <i>Saitama Medical Univ., Faculty of Health and Medical Care</i> ; Shimada, Tetsuya <i>Saitama Medical Univ., Faculty of Health and Medical Care</i> ; Ishikawa, Masahiro <i>Saitama Medical Univ.</i>	
10:00-11:30	FrBPoT3.23
An ERP Study about the Effects of Different Spatial Frequencies and Orientations on Human Brain Activity	6202-6205
Yang, Lingling* <i>City Univ. of Hong Kong</i> ; Chan, Leanne <i>LH City Univ. of Hong Kong</i>	
10:00-11:30	FrBPoT3.24
EEG Time and Frequency Domain Analyses of Primary Insomnia	6206-6209
Tmar-Ben Hamida, Sana* <i>Texas A&M Univ. at Qatar</i> ; Penzel, Thomas <i>Charite Univ. Hospital</i> ; Ahmed, Beena <i>Texas A&M Univ. at Qatar</i>	
10:00-11:30	FrBPoT3.25
Multiscale AM-FM Methods on EEG Signals for Motor Task Classification	6210-6214
Flores Vega, Christian Humberto* <i>Univ. de Ingeniería y Tecnología UTEC</i> ; Murray, Victor <i>Univ. of New Mexico</i>	

- 10:00-11:30 FrBPoT3.26
A Quantitative Evaluation of Alcohol Withdrawal Tremors 6215-6218
 Aarabi, Parham* *Dept. of Electrical and Computer Engineering, Univ. of Toronto*; Norouzi, Narges *Univ. of Toronto*; Dear, Taylor *Mount Sinai Hospital, Toronto, Ontario*; Bromberg, Simon *Division of Engineering Science, Univ. of Toronto*; Gray, Sara *Emergency Medicine and Critical Care, St. Michael's Hospital*; Kahan, Mel *Dept. of Family and Community Medicine, Women's College Hos*; Borgundvaag, Bjug *Schwartz-Reisman Emergency Centre, Mount Sinai Hospital*
- 10:00-11:30 FrBPoT3.27
Amplitude and Frequency Changes in Surface EMG of Biceps Femoris during Five Days Bruce Protocol Treadmill Test 6219-6222
 Jamaluddin, Nurul Fauzani* *UPM*; Siti Anom, Ahmad *Univ. Putra Malaysia*; Md Ali, Sawal Hamid *National Univ. of Malaysia*
- 10:00-11:30 FrBPoT3.28
Wavelet-Based Motion Artifact Removal for Electrodermal Activity 6223-6226
 Chen, Weixuan* *Massachusetts Institute of Tech.*; Jaques, Natasha *Massachusetts Institute of Tech.*; Taylor, Sara *Massachusetts Institute of Tech.*; Sano, Akane *Massachusetts Institute of Tech.*; Fedor, Szymon *Massachusetts Institute of Tech.*; Picard, Rosalind *Massachusetts Institute of Tech.*
- 10:00-11:30 FrBPoT3.29
Differentiating Tremor Patients using Spiral Analyses 6227-6230
 Koirala, Nabin* *Johannes Gutenberg Univ., Dept. of Neurology Mainz*; Muthuraman, Muthuraman *Christian Albrechts Univ.*; Anjum, Tauqeer *Univ. of Kiel, Digital Signal Processing and System Theory*; Chirumamilla, Venkata Chaitanya *Johannes Gutenberg Univ., Dept. of Neurology Mainz*; Helmolt, Friederike von *Dept. of Neurology, Christian Albrechts Univ. Kiel, 24*; Mideksa, Kidist Gebremariam *Univ. of Kiel*; Lange, Katrin *Dept. of Neurology, Christian Albrechts Univ. Kiel, 24*; Schmidt, Gerhard *Univ. of Kiel, Digital Signal Processing and System Theory*; Schneider, Sussane *Dept. of Neurology, Christian Albrechts Univ. Kiel, 24*; Gunther, Deuschl *Dept. of Neurology*
- 10:00-11:30 FrBPoT3.30
Effect of Downsampling and Compressive Sensing on Audio-Based Continuous Cough Monitoring 6231-6235
 Casaseca-de-la-Higuera, Pablo* *Univ. of the West of Scotland*; Lesso, Paul *Cirrus Logic*; McKinstry, Brian *Univ. of Edinburgh*; Pinnock, Hilary *Univ. of Edinburgh*; Rabinovich, Roberto *Univ. of Edinburgh*; McCloughan, Lucy *Univ. of Edinburgh*; Monge, Jesús *Biomedical Engineering Group, Univ. of Valladolid*
- 10:00-11:30 FrBPoT3.31
Automatic Assessment of Voice Quality in the Context of Multiple Annotations 6236-6239
 Gil González, Julián* *Univ. Tecnológica de Pereira*; Alvarez, Mauricio A. *Univ. Tecnológica de Pereira*; Orozco, Alvaro *Univ. Tecnológica de Pereira*

FrBPoT4: 10:00-11:30	Gold Room
2.40 Optical Imaging and Image Analysis (Poster Session)	

- 10:00-11:30 FrBPoT4.1
Single Pixel Camera: An Acquisition Strategy based on the Non-Linear Wavelet Approximation 6240-6243
 Rousset, Florian* *CREATIS - CNRS UMR5220 - INSERM U1044 - Univ. de Lyon - INS*; Ducros, Nicolas *INSA Lyon, CREATIS*; D'Andrea, Cosimo *Politecnico di Milano, Istituto Italiano di Tecnologia*; Peyrin, Françoise *CNRS UMR 5220, INSERM U1044, INSA Lyon, Univ. de Lyon*
- 10:00-11:30 FrBPoT4.2
Probabilistic Graphical Modeling of Speckle Statistics in Laser Speckle Contrast Imaging for Noninvasive and Label-Free Retinal Angiography 6244-6247
 Basak, Kausik *Mahindra Ecole Centrale*; Dey, Goutam *Indian Institute of Technology Kharagpur*; Sheet, Debdoot* *Indian Institute of Technology Kharagpur*; Mahadevappa, Manjunatha *Indian Institute of Technology*; Mandal, Mahitosh *Indian Institute of Technology Kharagpur*; Dutta, P.K. *School of Medical Science and Technology, IIT Kharagpur, India*

10:00-11:30		FrBPoT4.3
Detection and Density Estimation of Goblet Cells in Confocal Endoscopy for the Evaluation of Celiac Disease	.....	6248-6251
Boschetto, Davide* <i>IMT Institute for Advanced Studies Lucca</i> ; Mirzaei, Hadis <i>Univ. of New South Wales</i> ; Leong, Rupert <i>Univ. of New South Wales</i> ; Grisan, Enrico <i>Univ. of Padova</i>		
10:00-11:30		FrBPoT4.4
Hot-Spot Selection and Evaluation Methods for Whole Slice Images of Meningiomas and Oligodendrogliomas	.....	6252-6256
Swiderska, Zaneta* <i>Warsaw Univ. of Technology</i> ; Markiewicz, Tomasz <i>Warsaw Univ. of Technology</i> ; Grala, Bartlomiej <i>Military Institute of Medicine</i> ; Slodkowska, Janina <i>Military Institute of Medicine</i>		
10:00-11:30		FrBPoT4.5
A Spectral Approach for the Quantitative Description of Cardiac Collagen Network from Nonlinear Optical Imaging	.....	6257-6260
Masè, Michela* <i>Univ. of Trento</i> ; Cristoforetti, Alessandro <i>Univ. of Trento</i> ; Avogaro, Laura <i>Dept. of Physics and Centre for Integrative Biology, Univ.</i> ; Tessarolo, Francesco <i>Univ. of Trento</i> ; Piccoli, Federico <i>Azienda Provinciale per i Servizi Sanitari</i> ; Caola, Iole <i>Azienda Provinciale per i Servizi Sanitari</i> ; Pederzoli, Carlo <i>Santa Chiara Hospital, Trento</i> ; Graffigna, Angelo <i>Division of Cardiac Surgery, S. Chiara Hospital, Trento</i> ; Ravelli, Flavia <i>Univ. of Trento</i>		
10:00-11:30		FrBPoT4.6
Corneal Deformation Dynamics in Normal and Glaucoma Patients Utilizing Scheimpflug Imaging	.....	6261-6264
Rogowska, Marta Ewa* <i>Wroclaw Univ. of Technology</i> ; Iskander, D Robert <i>Wroclaw Univ. of Technology</i>		
10:00-11:30		FrBPoT4.7
Neurotransmitter Vesicle Movement Dynamics in Living Neurons	.....	6265-6268
Moreira, Hélder <i>Faculty of Engineering Univ. of Porto</i> ; Silva, Ivo <i>Faculdade de Engenharia da Univ. do Porto</i> ; Sousa, Monica <i>IBMC, Univ. of Porto</i> ; Sampaio, Paula <i>IBMC - Instituto de Biologia Molecular e Celular, Univ. d</i> ; Cunha, João Paulo Silva* <i>Univ. of Porto and INESC TEC</i>		
10:00-11:30		FrBPoT4.8
Proof of Concept of an Automatic Tool for Bioluminescence Imaging Data Analysis	.....	6269-6272
Mastropietro, Alfonso* <i>Consiglio Nazionale delle Ricerche (CNR)</i> ; Tennstaedt, Annette <i>In-vivo NMR lab, Max Planck Institute for Neurological Research</i> ; Beyrau, Andreas <i>In-vivo NMR lab, Max Planck Institute for Neurological Research</i> ; Henn, Nadine <i>In-vivo NMR lab, Max Planck Institute for Neurological Research</i> ; Hoehn, Mathias <i>In-vivo NMR lab, Max Planck Institute for Neurological Research</i> ; Baselli, Giuseppe <i>Politecnico di Milano</i>		
10:00-11:30		FrBPoT4.9
Motion Reduction and Multidimensional Denoising in Voltage-Sensitive Dye Imaging	.....	6273-6276
Romero Santiago, Alejandro E.* <i>Saarland Univ.</i> ; Schwerdtfeger, Karsten <i>Saarland Univ. Hospital</i> ; Szczygielski, Jacek <i>Saarland Univ. Hospital, Neurosurgery Dept.</i> ; Flotho, Philipp <i>Systems Neuroscience and NeuroTechnology Unit</i> ; Schubert, J. Kristof <i>SNN-Unit</i> ; Haab, Lars <i>Saarland Univ. Hospital</i> ; Hmila, Mehdi <i>Systems Neuroscience and NeuroTechnology Unit</i> ; Strauss, Daniel J. <i>Saarland Univ., Medical Faculty</i>		
10:00-11:30		FrBPoT4.10
Reduction of Light Source Noise from Optical Intrinsic Signals of Mouse Neocortex by using Independent Component Analysis	.....	6277-6280
Yoshida, Yuto <i>Graduate School of Information Sciences, Tohoku Univ.</i> ; Nakagawa, Daiki <i>Graduate School of Information Sciences, Tohoku Univ.</i> ; Karashima, Akihiro <i>Tohoku Univ.</i> ; Nakao, Mitsuyuki <i>Tohoku Univ.</i> ; Katayama, Norihiro* <i>Tohoku Univ</i>		
10:00-11:30		FrBPoT4.11
A Comparison of Signal Processing Techniques for Intrinsic Optical Signal Imaging in Mice	.....	6281-6284
Turley, Jordan Alexander* <i>Univ. of Newcastle</i> ; Nilsson, Michael <i>Univ. of Newcastle</i> ; Walker, Frederick Rohan <i>Univ. of Newcastle</i> ; Johnson, Sarah J <i>Univ. of Newcastle</i>		
10:00-11:30		FrBPoT4.12
Estimation of Neuronal Activity based on Voltage-Sensitive Dye Imaging in a Moving Preparation	.....	6285-6288
Fathiazar, Elham <i>Univ. of Oldenburg</i> ; Kretzberg, Jutta* <i>Computational Neuroscience, Univ. of Oldenburg</i>		

10:00-11:30	FrBPoT4.13
Measuring Blood Flow Velocity from Intravital Video Recordings	6289-6292
Guimarães, Pedro* <i>Univ. of Padova</i> ; Xiang, Weiwei <i>Dept. Physiology, Charité</i> ; Wigdahl, Jeffrey <i>Univ. of Padova</i> ; Reglin, Bettina <i>Dept. Physiology, Charité</i> ; Pries, Axel <i>Dept. Physiology, Charité</i> ; Ruggeri, Alfredo <i>Univ. of Padua</i>	
10:00-11:30	FrBPoT4.14
Measurement of Vital Sign in Chick Embryo using Multi-Channel Diffuse Speckle Contrast Analysis	6293-6296
Yeo, Chaebom <i>DGIST</i> ; Park, Hyun-cheol <i>DGIST</i> ; Lee, Kijoon <i>DGIST</i> ; Song, Cheol* <i>DGIST (Univ.)</i>	
10:00-11:30	FrBPoT4.15
Spatial Localization of Ryanodine Receptors in Human Cardiac Cells	6297-6300
Vallmitjana, Alex <i>Automatic Control Dept., Univ. Politecnica de Catalun</i> ; Nolla, Carme <i>Univ. Politècnica de Catalunya</i> ; Herrainz, Adela <i>Cardiovascular Research Center from the Spanish National Research</i> ; Hove-Madsen, Leif <i>Cardiovascular Research Center from the Spanish National Research</i> ; Benitez, Raul* <i>Univ. Politecnica de Catalunya</i>	
10:00-11:30	FrBPoT4.16
A New Modality of Bidimensional Compton Camera	6301-6304
Cebeiro, Javier* <i>Univ. Nacional de San Martin</i> ; Lebailly, Quentin <i>École Nationale Supérieure de l'Electronique et de ses Applicati</i> ; Morvidone, Marcela Alejandra <i>Univ. Nacional de San Martin</i> ; Nguyen, Mai K. <i>Univ. of Cergy-Pontoise</i>	
10:00-11:30	FrBPoT4.17
Tuning of a Deformable Image Registration Procedure for Skin Component Mechanical Properties Assessment	6305-6308
Montin, Eros <i>Politecnico di Milano</i> ; Cutri, Elena <i>Dept. of Chemistry, Materials and Chemical Engineering Depa</i> ; Spadola, Giuseppe <i>Dermatological Surgery Division, Istituto Europeo di Oncologia</i> ; Testori, Alessandro <i>Dermatological Surgery Division, Istituto Europeo di Oncologia</i> ; Pennati, Giancarlo <i>Dept. of Chemistry, Materials and Chemical Engineering Depa</i> ; Mainardi, Luca* <i>Politecnico di Milano</i>	

FrBPoT5: 10:00-11:30	Gold Room
2.41 Ultrasound Imaging (Poster Session)	

10:00-11:30	FrBPoT5.1
Intrinsic Elastography and Its Dependence on Arterial Flow Volume	6309-6312
Nagaoka, Ryo <i>Tohoku Univ.</i> ; Kobayashi, Kazuto <i>Honda Electronics Co., Ltd.</i> ; Yoshizawa, Shin <i>Tohoku Univ.</i> ; Umemura, Shin-ichiro <i>Tohoku Univ.</i> ; Saijo, Yoshifumi* <i>Tohoku Univ.</i>	
10:00-11:30	FrBPoT5.2
Using Ultrasound Image Analysis to Evaluate the Role of Elastography Imaging in the Diagnosis of Carotid Atherosclerosis	6313-6316
Xenikou, Monika Filitsa* <i>National Technical Univ. of Athens</i> ; Golemati, Spyretta <i>National Kapodistrian Univ. of Athens</i> ; Gastouniotti, Aimilia <i>National Technical Univ. of Athens</i> ; Tzortzi, Marianna <i>National Technical Univ. of Athens</i> ; Moraitis, Nektarios <i>National Technical Univ. of Athens</i> ; Charalampopoulos, Georgios <i>Vascular Ultrasound Laboratory "Evroiatriki Psychico", Athens</i> ; Liasis, Nicolaos <i>Vascular Ultrasound Laboratory "Evroiatriki Psychico", Athens</i> ; Dedes, Athanasios <i>Dept. of Vascular Surgery, General Hospital of Athens "Korg</i> ; Besias, Nicolaos <i>Dept. of Vascular Surgery, General Hospital of Athens "Korg</i> ; Maras, Dimitrios <i>Dept. of Vascular Surgery, General Hospital of Athens "Korg</i> ; Nikita, Konstantina <i>National Technical Univ. of Athens</i>	
10:00-11:30	FrBPoT5.3
A Texture Analysis Approach for Objective Uniformity Evaluation in Diagnostic Ultrasound Imaging: A Preliminary Study	6317-6320
Scorza, Andrea <i>Roma Tre Univ.</i> ; Conforto, Silvia* <i>Univ. Roma TRE</i> ; Lupi, Giulia <i>Univ. of Rome "ROMA TRE"</i> ; Sciuto, Salvatore <i>Andrea Univ. of Rome "ROMA TRE"</i>	
10:00-11:30	FrBPoT5.4
Breast Tumor Classification in Ultrasound Images using Neural Networks with Improved Generalization Methods	6321-6325
Deodoro, Sergio <i>Federal Univ. of Amazonas</i> ; Costa, Marly G. F. <i>Federal Univ. of Amazonas - UFAM</i> ; Coelho de Albuquerque Pereira, Wagner <i>Univ. Federal do Rio de Janeiro</i> ; Costa Filho, Cicero F. F.* <i>Fundacao de Apoio Inst Rio Solimoes</i>	

10:00-11:30	FrBPoT5.5
HoG Feature based Detection of Tissue Deformations in Ultrasound Data	6326-6329
Czajkowska, Joanna* <i>Silesian Univ. of Technology</i> ; Pyciński, Bartłomiej <i>Silesian Univ. of Technology</i> ; Pietka, Ewa <i>Silesian Univ. of Technology</i>	
10:00-11:30	FrBPoT5.6
A Semi-Automatic Process for Estimating Fetus Velocity using Ultrasound Imaging and Videos	6330-6333
Mitrou, Michalis* <i>TU Berlin</i> ; Agrafiotis, Panagiotis <i>National Technical Univ. of Athens</i> ; Georgopoulos, Andreas <i>National Technical Univ. of Athens</i> ; Sideris, Apostolos <i>MITERA Maternity/Gynecological Clinic</i>	
10:00-11:30	FrBPoT5.7
High-Contrast and Low-Computational Complexity Medical Ultrasound Imaging using Beamspace Capon Method	6334-6337
Okumura, Shigeaki* <i>Kyoto Univ.</i> ; Taki, Hirofumi <i>Tohoku Univ.</i> ; Sato, Toru <i>Kyoto Univ.</i>	
10:00-11:30	FrBPoT5.8
Carotid Ultrasound Segmentation using Radio-Frequency Derived Phase Information and Gabor Filters ..	6338-6341
Azzopardi, Carl* <i>Univ. of Malta</i> ; Camilleri, Kenneth Patrick <i>Univ. of Malta</i> ; Hicks, Yulia A. <i>Univ. of Cardiff</i>	
10:00-11:30	FrBPoT5.9
Clutter Rejection Methods in Doppler Color Flow Imaging: Single-Ensemble vs. Multi-Ensemble	6342-6345
Zhiyuan, Shen* <i>Nanjing Univ. of Aeronautics and Astronautics</i> ; Feng, Naizhang <i>Harbin Institute of Technology</i>	
10:00-11:30	FrBPoT5.10
A Simulation Study on the Choice of Regularization Parameter in L2-Norm Ultrasound Image Restoration .	6346-6349
Chen, Zhouye* <i>Univ. de Toulouse</i> ; Basarab, Adrian <i>Univ. de Toulouse</i> ; Kouamé, Denis <i>Univ. de Toulouse, IRIT UMR CNRS 5505</i>	
10:00-11:30	FrBPoT5.11
Scatterer Reconstruction and Parametrization of Homogeneous Tissue for Ultrasound Image Simulation ..	6350-6353
Mattausch, Oliver* <i>ETH Zurich</i> ; Goksel, Orcun <i>ETH Zurich</i>	
10:00-11:30	FrBPoT5.12
Dynamic Estimation of Myocardial Deformation using Ultrasound RF-Data a Preliminary Study	6354-6357
Shan, Zhirui <i>Southern Medical Univ.</i> ; Li, Xuan <i>Southern Hospital, Southern Medical Univ., Guangzhou, Guang</i> ; Wang, Yinong <i>Institute of Medical Information, School of Biomedical Engineering</i> ; Wang, Qing* <i>Institute of Medical Information, School of Biomedical Engineering</i>	
10:00-11:30	FrBPoT5.13
Measurement of Ultrasonic Diaphragmatic Motion	6358-6361
Chrysostomou, Constantinos <i>Univ. of Thessaly, School of Sciences</i> ; Loizou, Christos <i>InterCollege</i> ; Minas, George <i>Intensive Care Unit, General Hospital of Nicosia</i> ; Delibasis, Konstantinos <i>Univ. of Central Greece</i> ; Pattichis, Constantinos* <i>Univ. of Cyprus</i>	

FrBPoT6: 10:00-11:30	Gold Room
2.42 X-Ray Imaging II (Poster Session)	

10:00-11:30	FrBPoT6.1
Weighted Locality-Constrained Linear Coding for Lesion Classification in CT Images	6362-6365
Yuan, Yixuan* <i>The Chinese Univ. of Hong Kong</i> ; Hoogi, Assaf <i>Stanford Univ.</i> ; Beaulieu, Christopher <i>Stanford Univ.</i> ; Meng, Max Q.-H. <i>The Chinese Univ. of Hong Kong</i> ; Rubin, Daniel <i>Stanford Univ.</i>	
10:00-11:30	FrBPoT6.2
Correlations between X-Ray Attenuation and GAG Content of Different Cartilage Layers based on Contrast Agent Enhanced Micro-CT	6366-6369
Fan, Fan <i>Beihang Univ.</i> ; Li, Xiaofei <i>Beihang Univ.</i> ; Ren, Pengling <i>Beihang Univ.</i> ; Cai, Xiran <i>Beihang Univ.</i> ; Yan, Yan <i>Beihang Univ.</i> ; Fan, Yubo <i>Beihang Univ.</i> ; Niu, Haijun* <i>Beihang Univ.</i>	

10:00-11:30		FrBPoT6.3
Development and Analysis of a Finite Element Model to Simulate Pulmonary Emphysema in CT Imaging	6370-6373	
Diciotti, Stefano* <i>Alma Mater Studiorum, Univ. of Bologna</i> ; Nobis, Alessandro <i>Univ. of Florence</i> ; Ciulli, Stefano <i>Univ. of Florence</i> ; Landini, Nicholas <i>Univ. of Florence</i> ; Mascalchi, Mario <i>Univ. of Florence</i> ; Sverzellati, Nicola <i>Univ. of Parma</i> ; Innocenti, Bernardo <i>Ecole polytechnique de Bruxelles, ULB Univ. Libre de Bruxelles</i>		
10:00-11:30		FrBPoT6.4
Combined Bone Lesion Analysis in 3D CT Data of Vertebrae	6374-6377	
Jan, Jiri* <i>Brno Univ. of Technology</i> ; Novosadová, Michaela <i>Brno Univ. of Technology</i> ; Demel, Jan <i>Brno Univ. of Technology</i> ; Ourednicek, Petr <i>Philips Nederland</i> ; Chmelík, Jiří <i>Brno Univ. of Technology</i> ; Jakubíček, Roman <i>Brno Univ. of Technology</i>		
10:00-11:30		FrBPoT6.5
Quantitative Study of Osteoporosis Model based on Synchrotron Radiation	6378-6381	
Xu, Wangyang <i>Shanghai Jiao Tong Univ.</i> ; Xu, Jun <i>Shanghai No. 6 People's Hospital</i> ; Zhao, Jun <i>Shanghai Jiao Tong Univ.</i> ; Sun, Jianqi* <i>Shanghai Jiao Tong Univ.</i>		
10:00-11:30		FrBPoT6.6
Detection of Microcalcification with Top-Hat Transform and the Gibbs Random Fields	6382-6385	
Bharadwaj, Akshay <i>Ohio Univ.</i> ; Celenk, Mehmet* <i>Ohio Univ.</i>		
10:00-11:30		FrBPoT6.7
Algorithm for Automatic Angles Measurement and Screening for Developmental Dysplasia of the Hip (DDH)	6386-6389	
Al-Bashir, Areen* <i>Jordan Univ. of Science and Technology</i> ; Al-Abed, Mohammad <i>Hashemite Univ.</i>		
10:00-11:30		FrBPoT6.8
Alterations of Diaphragm and Rib Cage Morphometry in Severe COPD Patients by CT Analysis	6390-6393	
Salito, Caterina <i>Politecnico di Milano</i> ; Luoni, Eleonora <i>Politecnico di Milano</i> ; Aliverti, Andrea* <i>Politecnico di Milano</i>		
10:00-11:30		FrBPoT6.9
A New Computer-Aided Detection Scheme based on Assessment of Local Bilateral Mammographic Feature Asymmetry – A Preliminary Evaluation	6394-6397	
Kelder, Adam* <i>Ben-Gurion Univ. of the Negev</i> ; Zigel, Yaniv <i>Ben-Gurion Univ. of the Negev</i> ; Lederman, Dror <i>Holon Institute of Technology</i> ; Zheng, Bin <i>Univ. of Oklahoma</i>		
FrBPoT7: 10:00-11:30		Gold Room
3.25 Optical and Photonic Sensors and Systems II (Poster Session)		
10:00-11:30		FrBPoT7.1
A Survey of Remote Optical Photoplethysmographic Imaging Methods	6398-6404	
McDuff, Daniel Jonathan <i>Massachusetts Institute of Tech.</i> ; Estep, Justin Ronald* <i>Air Force Research Lab.</i> ; Piasecki, Alyssa <i>Air Force Research Lab.</i> ; Blackford, Ethan <i>Ball Aerospace & Technologies Corp.</i>		
10:00-11:30		FrBPoT7.2
Peripheral Venous Blood Oxygen Saturation can be Non-Invasively Estimated using Photoplethysmography	6405-6408	
Khan, Musabbir* <i>Univ. of Canterbury</i> ; Pretty, Christopher G. <i>Univ. of Canterbury</i> ; Amies, Alexander C. <i>Univ. of Canterbury</i> ; Elliott, Rodney B. <i>Univ. of Canterbury</i> ; Suhaimi, Fatanah <i>Univ. Sains Malaysia</i> ; Shaw, Geoffrey M <i>Christchurch Hospital</i> ; Chase, J. Geoffrey <i>Univ. of Canterbury</i>		
10:00-11:30		FrBPoT7.3
Development of a Photon-Cell Interactive Monte Carlo Simulation for Non-Invasive Measurement of Blood Glucose Level by Raman Spectroscopy	6409-6412	
Sakota, Daisuke* <i>National Institute of Advanced Industrial Science and Technology</i> ; Kosaka, Ryo <i>AIST</i> ; Nishida, Masahiro <i>National Institute of Advanced Industrial Science and Technology</i> ; Maruyama, Osamu <i>National Institute of Advanced Industrial Science and Technology</i>		
10:00-11:30		FrBPoT7.4
Surface Plasmon Resonance Biosensor as a Tool for the Measurement of Complex Refractive Indices	6413-6416	
Filion-Côté, Sandrine* <i>McGill Univ.</i> ; Tabrizian, Maryam <i>McGill Univ.</i> ; Kirk, Andrew G. <i>McGill Univ.</i>		

10:00-11:30 FrBPoT7.5
Investigation of Photoplethysmography, Laser Doppler Flowmetry and Near Infrared Spectroscopy during Induced Thermal Stress 6417-6420
 Budidha, Karthik* *City Univ.*; Ysehak Abay, Tomas *City Univ. of London*; Kyriacou, Panayiotis *City Univ. London*

10:00-11:30 FrBPoT7.6
Discrete Wavelength Selection for the Optical Readout of a Metamaterial Biosensing System for Glucose Concentration Estimation via a Support Vector Regression Model 6421-6424
 Teutsch, Tanja* *Univ. of Stuttgart*; Mesch, Martin *Univ. of Stuttgart*; Giessen, Harald *Univ. of Stuttgart*; Tarín, Cristina *Univ. of Stuttgart*

FrBPoT8: 10:00-11:30 Gold Room
3.26 Physiological Monitoring III (Poster Session)

10:00-11:30 FrBPoT8.1
Pulse Wave Registration from Radial Artery using Photoplethysmographic Method 6425-6428
 Pilt, Kristjan* *Technical Univ. of Tallinn*; Leier, Mairo *Tallinn Univ. of Technology*; Silluta, Sandra *Tallinn Univ. of Technology*; Temitski, Kristina *Tallinn Univ. of Technology*; Meigas, Kalju *Tallinn Univ. of Technology*; Viigimaa, Margus *Technomedicum of the Tallinn Institute of Technology*

10:00-11:30 FrBPoT8.2
Noninvasive Pulse Transit Time Measurement for Arterial Stiffness Monitoring in Microgravity 6429-6432
 McCall, Corey* *Stanford Univ.*; Rostovsky, Rea *Stanford Univ.*; Wiard, Richard M. *Stanford Univ.*; Inan, Omer *Georgia Institute of Technology*; Giovangrandi, Laurent *Stanford Univ.*; Cuttino, Charles M. *Orbital Medicine, Inc.*; Kovacs, Gregory T.A. *Stanford Univ.*

10:00-11:30 FrBPoT8.3
Feasibility of an Electrodermal Activity Ring Prototype as a Research Tool 6433-6436
 Torniaainen, Jari* *Finnish Institute of Occupational Health*; Cowley, Benjamin *Finnish Institute of Occupational Health*; Henelius, Andreas *Finnish Institute of Occupational Health*; Lukander, Kristian *Finnish Institute of Occupational Health*; Pakarinen, Satu *Finnish Institute of Occupational Health*

10:00-11:30 FrBPoT8.4
Stress of Kindergarten Teachers: How we Tried to Detect and to Reduce It by using a Small and Wearable ECG and Acceleration Measuring Device? 6437-6440
 Shirouzu, Shigenori* *Japanese Research Institute of Healthcare and Education*; Seno, Yumeka *Nazareth Kindergarten*; Tobioka, Ken *Institute of Man and Science*; Sugano, Hlsanobu *Emeritus professor of Univ. of Occupational and Environment*; Masaki, Takeo *Japanese Research Institute of Healthcare and Education*; Mishima, Norio *Ikemi Memorial Clinic of Mind-Body MMedicine*; Yasumatsu, Kiyotaka *Medical Corporation Megumi-Kai, Fykuoka Megumi Hospital*

10:00-11:30 FrBPoT8.5
Ambient Light Cancellation in Photoplethysmogram Application using Alternating Sampling and Charge Redistribution Technique 6441-6444
 Kim, Jong Pal *Samsung Advanced Institute of Technology*; Lee, Tak Hyung *Future IT Research Center, Samsung Advanced Institute of Technolog*; Kim, Ji-Hoon *Chungnam National Univ.*; Ko, Hyoungho* *Chungnam National Univ.*

10:00-11:30 FrBPoT8.6
pH Measurements of FET-Based (bio)Chemical Sensors using Portable Measurement System 6445-6448
 Voitsekhivska, Tetiana* *TU Dresden*; Zörgiebel, Felix *TU Dresden, Max-Bergmann-Center for Materials Science and Center*; Suthau, Eike *TU Dresden / ZMP*; Wolter, Klaus-Juergen *Technische Univ. Dresden*; Bock, Karlheinz *TU Dresden*; Cuniberti, Gianarelio *TU Dresden, Max-Bergmann-Center for Materials Science and Center*

10:00-11:30 FrBPoT8.7
Visualization Method based Stiffness Sensing System for Endoscopes 6449-6452
 Iwai, Takanobu *Kanazawa Univ.*; Koyama, Toshio *Kanazawa Univ.*; Kagawa, Hiroyuki *Kanazawa Univ.*; Yoneyama, Takeshi *Kanazawa Univ.*; Watanabe, Tetsuyou* *Kanazawa Univ.*

4.16 Analysis of High-throughput Systems Biology Data (Poster Session)

- 10:00-11:30 FrBPoT9.1
Performance Comparison of Next Generation Sequencing Platforms 6453-6456
 Ergüner, Bekir* *Advanced Genomics and Bioinformatics Research Center, BILGEM - T*; Sağiroğlu, Mahmut Şamil *Advanced Genomics and Bioinformatics Research Center, BILGEM - T*; Üstek, Duran *Medical Genetics Dept., Istanbul Medipol Univ., Istanbul*
- 10:00-11:30 FrBPoT9.2
Genome-Based Microorganism Classification using Coalition Formulation Game 6457-6460
 Chung, Byung Chang* *Korea Advanced Institute of Science and Technology (KAIST)*; Han, Gyu-Bum *Korea Advanced Institute of Science and Technology (KAIST)*; Cho, Dong-Ho *Korea Advanced Institute of Science and Technology (KAIST)*
- 10:00-11:30 FrBPoT9.3
Effect of Low-Expression Gene Filtering on Detection of Differentially Expressed Genes in RNA-Seq Data ... 6461-6464
 Sha, Ying *Georgia Institute of Technology*; Phan, John H. *Georgia Institute of Technology*; Wang, May D.* *Georgia Tech and Emory Univ.*
- 10:00-11:30 FrBPoT9.4
An Optimal Method to Segment Piecewise Poisson Distributed Signals with Application to Sequencing Data 6465-6468
 Duan, Junbo *Xi'an Jiaotong Univ.*; Soussen, Charles *Univ. of Lorraine, Centre de Recherche en Automatique de Na*; Brie, David *Univ. de Lorraine*; IDIER, Jérôme *CNRS*; Wang, Yu-Ping *Tulane Univ.*; Wan, Mingxi* *Xi'an Jiaotong Univ.*
- 10:00-11:30 FrBPoT9.5
A Multi-Fold String Kernel for Sequence Classification 6469-6472
 Maiti, Aniruddha *Dept. of Computer and Information Sciences, Temple Univ.*; Ghorai, Santanu *Dept. of Applied Electronics & Instrumentation Engineering*; Mukherjee, Anirban* *Indian Institute of Technology Kharagpur*
- 10:00-11:30 FrBPoT9.6
Tracking Single-Cells in Overcrowded Bacterial Colonies 6473-6476
 Balomenos, Athanasios* *Univ. of Athens*; Tsakanikas, Panagiotis *Agricultural Univ. of Athens*; Manoloakos, Elias *Univ. of Athens*
- 10:00-11:30 FrBPoT9.7
Metabolite Analysis in Sepsis through Conditional Independence Maps 6477-6480
 Ribas Ripoll, Vicent J.* *Research Director Llenguatges i Sistemes Informàtics CSE*; Romay, Eduardo *Hospital Mutua de Terrassa*; Brunelli, Laura *IRCCS - Istituto di Ricerche Farmacologiche Mario Negri*; Pastorelli, Roberta *IRCCS - Istituto di Ricerche Farmacologiche Mario Negri*; Goma, Gemma *Critical Care Center. Sabadell Hospital. Corporación Sanitària U*; Navas, Ana *Critical Care Center. Sabadell Hospital. Corporación Sanitària U*; Ferrer, Ricard *Hospital Mutua de Terrassa*; Artigas, Antoni *Critical Care Center. Sabadell Hospital. Corporación Sanitària U*
- 10:00-11:30 FrBPoT9.8
SRIdent: A Novel Pipeline for Real-Time Identification of Species from High-throughput Sequencing Reads in Metagenomics and Clinical Diagnostic Assays 6481-6484
 Karimi, Ramin* *Univ. of Debrecen*; Hajdu, Andras *Univ. of Debrecen*
- 10:00-11:30 FrBPoT9.9
C. Elegans Locomotion Analysis using Algorithmic Information Theory 6485-6488
 Skandari, Roghieh* *The Univ. of Melbourne*; LE BIHAN, Nicolas *CNRS*; Manton, Jonathan *The Univ. of Melbourne*
- 10:00-11:30 FrBPoT9.10
DNA Assembly with De Bruijn Graphs on FPGA 6489-6492
 Poirier, Carl *Laval Univ.*; Gosselin, Benoit* *Laval Univ.*; Fortier, Paul *Laval Univ.*

4.17 Modeling Molecular/Cellular Pathways and Networks (Poster Session)

- 10:00-11:30 FrBPoT10.1
Modeling HPV Early Promoter Regulation 6493-6496
 Giarretta, Alberto *Univ. of Padova, Dept. of Information Engineering*; Di Camillo, Barbara *Univ. of Padova*;
 Barzon, Luisa *Univ. of Padova, Dept. of Molecular Medicine*; Toffolo, Gianna* *Univ. of Padova*
- 10:00-11:30 FrBPoT10.2
A Network-Based Approach to Enrich Gene Signatures for the Prediction of Breast Cancer Metastases ... 6497-6500
 Sfakianakis, Stelios* *Foundation for Research and Technology Hellas*; Bei, Ekaterini *Technical Univ. of Crete*;
 Zervakis, Michalis *Technical Univ. of Crete, Greece*; Kafetzopoulos, Dimitris *FORTH*
- 10:00-11:30 FrBPoT10.3
An Approach for Optimally Extending Mathematical Models of Signaling Networks using Omics Data ... 6501-6504
 Bianconi, Fortunato* *Univ. of Perugia*; Patiti, Federico *Univ. of Perugia*; Baldelli, Elisa *Center for Applied
 Proteomics and Molecular Medicine, George Mas*; Crinò, Lucio *Dept of Medical Oncology, Santa Maria della
 Misericordia Hospita*; Valigi, Paolo *Univ. of Perugia*
- 10:00-11:30 FrBPoT10.4
A Computational Model of Dopamine and Acetylcholine Aberrant Learning in Basal Ganglia 6505-6508
 Baston, Chiara* *Univ. of Bologna*; Ursino, Mauro *Univ. of Bologna*
- 10:00-11:30 FrBPoT10.5
**Identifying Gene Subnetworks Associated with Clinical Outcome in Ovarian Cancer using Network
 based Coalition Game** 6509-6513
 Razi, Abolfazl* *Case Western Reserve Univ.*; Afghah, Fatemeh *North Carolina A&T State Univ.*;
 Varadan, Vinay *Philips Research North America*
- 10:00-11:30 FrBPoT10.6
**Non-Linear Bayesian Framework to Determine the Transcriptional Effects of Cancer-Associated
 Genomic Aberrations** 6514-6518
 Razi, Abolfazl *Case Western Reserve Univ.*; Banerjee, Nilanjana *Philips Research North America*;
 Dimitrova, Nevenka *Philips Research*; Varadan, Vinay* *Philips Research North America*
- 10:00-11:30 FrBPoT10.7
**Differentiating Disease Subtypes by using Pathway Patterns Constructed from Gene Expressions and
 Protein Networks** 6519-6522
 Hung, Fei-Hung *Taipei Medical Univ.*; Chiu, Hung-Wen* *Taipei Medical Univ.*

5.16 Cardiac Mechanics (Poster Session)

- 10:00-11:30 FrBPoT11.1
Effect of Fibre Orientation on Diastolic Mechanics of Human Ventricle 6523-6526
 Palit, Arnab* *The Univ. of Warwick*; Bhudia, Sunil *Univ. Hospitals Coventry and Warwickshire*; Arvanitis,
 Theodoros *IDH, WMG, The Univ. of Warwick*; Sherwood, Victoria *Univ. Hospitals Coventry and Warwickshire*;
 Wayte, Sarah *Univ. Hospitals Coventry and Warwickshire*; Turley, Glen *WMG, The Univ. of Warwick*; Williams,
 Mark *WMG, The Univ. of Warwick*
- 10:00-11:30 FrBPoT11.2
Can We Hear Ventricle Dyssynchrony? Yes, We Can 6527-6530
 Jurak, Pavel* *Inst of Scientific Instruments Academy*; Halamek, Josef *Institute of Scientific Instruments*;
 Plesinger, Filip *Institute of Scientific Instruments of the ASCR, v.v.i.*; Reichlova, Tereza *International Clinical
 Research Center - Center of Biom*; Vondra, Vlastimil *Institute of Scientific Instruments AS CR*; Viscor, Ivo
Institute of Scientific Instruments, Czech Academy of Sciences; Leinveber, Pavel *St. Anne's Univ. Hospital*
- 10:00-11:30 FrBPoT11.3
Automatic Segmentation of the Left Ventricle into 17 Anatomical Regions in Cardiac MR Imaging 6531-6535
 Liang, Xi *IBM Melbourne Research Lab*; Garnavi, Rahil* *IBM Research Australia*; Wail, Simon *IBM Melbourne
 Research Lab*; Liang, Sisi *IBM Melbourne Research Lab*; Prasanna, Prasanth *IBM Research - Almaden*

10:00-11:30 FrBPoT11.4
Computer-Based Assessment of Ventricular Mechanical Synchrony from Magnetic Resonance Imaging ... 6536-6539
Zhao, Xiaodan *National Heart Centre Singapore*; Leng, Shuang *National Heart Centre Singapore*;
Tan, Ru San *National Heart Center*; Zhong, Liang* *National Heart Centre Singapore*

10:00-11:30 FrBPoT11.5
Automatic Localization of Mitral Valve Orifice in Three-Dimensional Left Cardiac Model 6540-6543
Wan, Min* *Nanchang Univ.*; Zhong, Liang *National Heart Centre Singapore*; Zhang, Jun-Mei *National Heart Center*; Zhao, Xiaodan *National Heart Centre Singapore*; Tan, Ru San *National Heart Center*; Huang, Wei *Nanchang Univ.*; Wan, Xiaofeng *Nanchang Univ.*

10:00-11:30 FrBPoT11.6
Modelling of the Nonlinear End-Systolic Pressure-Volume Relation and Volume at Zero Pressure in Porcine Experiments 6544-6547
Davidson, Shaun* *Univ. of Canterbury*; Kannangara, Don Oliver *Univ. of Canterbury*; Pretty, Christopher G. *Univ. of Canterbury*; Kamoi, Shun *Univ. of Canterbury*; Pironet, Antoine *Univ. of Liège (ULg), GIGA-Cardiovascular Sciences, Liège*; Desai, Thomas *Univ. of Liege*; Chase, J. Geoffrey *Univ. of Canterbury*

10:00-11:30 FrBPoT11.7
Myocardial Contractility Assessed by Dynamic Electrical Impedance Measurements during Dobutamine Stress 6548-6551
García-Sánchez, Tomás* *Univ. Politècnica de Catalunya*; Jorge, Esther *Cardiology Unit, Hospital Santa Creu i Sant Pau (HSCSP)*; Amorós-Figueras, Gerard *Cardiology Unit, Hospital Santa Creu i Sant Pau (HSCSP)*; Bragos, Ramon *Technical Univ. of Catalonia (UPC)*; Cinca, Joan *Cardiology Unit, Hospital Santa Creu i Sant Pau (HSCSP)*; Rosell-Ferrer, Javier *Technical Univ. of Catalonia*

FrBPoT12: 10:00-11:30 Gold Room
5.17 Cardiovascular Modeling and Signal Processing (Poster Session)

10:00-11:30 FrBPoT12.1
A Proof-of-Concept Study for Predicting the Region of Atherosclerotic Plaque Development based on Plaque Growth Modeling in Carotid Arteries 6552-6555
Sakellarios, Antonis *Univ. of Ioannina*; Bizopoulos, Paschalis *National Technical Univ. of Athens*; Stefanou, Kostas *FORTH-BRI*; Athanasiou, Lambros *Univ. of Ioannina*; Papafaklis, Michail *Medical School, Univ. of Ioannina*; Bourantas, Christos *Dept. of Academic Cardiology, Castle Hill Hospital, Cottingham, HU*; Naka, Katerina *Univ. of Ioannina*; Michalis, Lampros *Univ. of Ioannina*; Fotiadis, Dimitrios I.* *Univ. of Ioannina*

10:00-11:30 FrBPoT12.2
Prediction of Atheromatic Plaque Evolution in Carotids using Features Extracted from the Arterial Geometry 6556-6559
Bizopoulos, Paschalis *National Technical Univ. of Athens*; Sakellarios, Antonis *Univ. of Ioannina*; Koutsouris, Dimitrios *Biomedical Engineering Laboratory, School of Electrical and Comp*; Kountouras, Jannis *Dept. of Medicine, Second Medical Clinic, Aristotle Univ.*; Kostretzis, Lazaros *First Orthopaedic Dept., G.Papanikolaou Hospital, GR 5701 E*; Karagergou, Stella *Obstetrics and Gynecology Dept., General Hospital of Serre*; Michalis, Lampros *Univ. of Ioannina*; Fotiadis, Dimitrios I.* *Univ. of Ioannina*

10:00-11:30 FrBPoT12.3
A Particle Filter Framework for the Estimation of Heart Rate from ECG Signals Corrupted by Motion Artifacts 6560-6565
Nathan, Viswam* *Univ. of Texas at Dallas*; Akkaya, Ilge *Univ. of California at Berkeley*; Jafari, Roozbeh *Univ. of Texas at Dallas*

10:00-11:30 FrBPoT12.4
Constructing Energy Expenditure Regression Model using Heart Rate with Reduced Training Time 6566-6569
Xu, Zhen *Univ. of Texas at Dallas*; Zong, Chengzhi *Univ. of Texas at Dallas*;
Jafari, Roozbeh* *Univ. of Texas at Dallas*

10:00-11:30 FrBPoT12.5
Estimation of Respiratory Rates based on Photoplethysmographic Measurements at the Sternum 6570-6573
Chreiteh, Shadi* *Dept. of Micro- and NanoTechnology, Technical Univ. of Denmark*; Belhage, Bo *Univ. of Copenhagen*; Hoppe, Karsten *DELTA*; Branebjerg, Jens *DELTA*; Haahr, Rasmus G *Delta Microelectronics*; Duun, Sune *Technical Univ. of Denmark*; Thomsen, Erik V *Technical Univ. of Denmark*

10:00-11:30 FrBPoT12.6
Method for Classifying Cardiac Arrhythmias using Photoplethysmography 6574-6577
Polania, Luisa F. *Univ. of Delaware*; Mestha, Lalit, K.* *Palo Alto Research Center - A Xerox Company*;
Huang, David *Univ. of Rochester Medical Center*; Couderc, Jean-Philippe *Univ. of Rochester*

FrBPoT13: 10:00-11:30 Gold Room
6.38 Neurological Disorders II (Poster Session)

10:00-11:30 FrBPoT13.1
Seizure Detection using Regression Tree based Feature Selection and Polynomial SVM Classification .. 6578-6581
Zhang, Zisheng *Univ. of Minnesota*; Parhi, Keshab* *Univ. of Minnesota*

10:00-11:30 FrBPoT13.2
Detection of Seizures in Intracranial EEG: UPenn and Mayo Clinic's Seizure Detection Challenge 6582-6585
Temko, Andriy* *Univ. College Cork*; Sarkar, Achintya Kumar *Univ. College Cork, Ireland*;
Lightbody, Gordon *Univ. College Cork*

10:00-11:30 FrBPoT13.3
Transcranial Focal Electrical Stimulation Reduces Seizure Activity and Hippocampal Glutamate Release during Status Epilepticus 6586-6589
Santana-Gómez, César E. *Dept. of Pharmacobiology, Center for Research and Advanced Studi*; Alcántara-González, David *Dept. of Pharmacobiology, Center for Research and Advanced Studi*; Luna-Munguía, Hiram *Center for Research and Advanced Studies*; Bañuelos-Cabrera, Ivette *Dept. of Pharmacobiology, Center for Research and Advanced Studi*; Magdaleno-Madrigal, Víctor *Division for Neuroscience Research, National Institute of Psychi*; Tamayo, Mikhail *The Univ. of Sydney*; Rocha, Luisa *Center for Research and Advanced Studies*; Besio, W. G.* *Univ. of Rhode Island*

10:00-11:30 FrBPoT13.4
Identification of Brain Regions of Interest for Epilepsy Surgery Planning using Support Vector Machines .. 6590-6593
Dian, Joshua Adam* *Univ. of Toronto*; Colic, Sinisa *Univ. of Toronto*; Chinvarun, Yotin *Director of Comprehensive Epilepsy Program and Neurology Unit, P*; Carlen, Peter L. *Univ. of Toronto*; Bardakjian, Berj Luther *Univ. of Toronto*

10:00-11:30 FrBPoT13.5
Locomotion and Eye Behaviour under Controlled Environment in Individuals with Alzheimer's Disease 6594-6597
Suzuki, Tatsuto* *Univ. College London*; Yong, Keir *Univ. College London*; Yang, Biao *Univ. College London*;
Carton, Amelia *Univ. College London*; McCarthy, Ian *Univ. College London*; Papadosifos, Nikolaos *Univ. College London*; Boamong, Derrick *Univ. College London*; Holloway, Catherine *Univ. College London*; Nick, Tyler *Univ. College London*; Crutch, Sebastian *Univ. College London*

10:00-11:30 FrBPoT13.6
Quantitative EEG Markers in Severe Post-Resuscitation Brain Injury with Therapeutic Hypothermia 6598-6601
Deng, Ruoxian *Johns Hopkins Univ.*; Young, Leanne *Johns Hopkins Univ.*; Jia, Xiaofeng* *Univ. of Maryland School of Medicine, Johns Hopkins Univ.*

10:00-11:30 FrBPoT13.7
Investigation of Automatically Detected High Frequency Oscillations (HFOs) as an Early Predictor of Seizure Onset Zone 6602-6605
Liu, Su* *Univ. of Houston*; Ince, Nuri Firat *Univ. of Houston*; Abosch, Aviva *Univ of Minnesota*; Henry, Thomas *Univ. of Minnesota, Dept. of Neurology*; Sha, Zhiyi *Univ. of Minnesota, Dept. of Neurology*

10:00-11:30 FrBPoT13.8
Optogenetic Control of Thalamus as a Tool for Interrupting Penicillin Induced Seizures 6606-6609
Han, Yechao *Qiushi Academy for Advanced Studies(QAAS) and College of Biomed*; Ma, Feiqiang *Dept. of Emergency, Second Affiliated Hospital, School of M*; Wang, Yueming *Zhejiang Univ.*; Li, Hongbao *Zhejiang Univ.*; Xu, Kedi* *Zhejiang Univ., Qiushi Academy for Advanced Studies*

10:00-11:30 FrBPoT13.9
Monitoring of Cognitive State on Mental Retardation Child using EEG, ECG and NIRS in Four Years Study .. 6610-6613
Zennifa, Fadilla* *Kyushu Univ.*; Iramina, Keiji *Kyushu Univ., Japan*; Ide, Junko *Seinan Gakuin Univ.*;
Noguchi, Yukihiko *Seinan Gakuin Univ.*

10:00-11:30 FrBPoT13.10
Pilot Study of the Cortical Correlates and Clinical Effects of Passive Ankle Mobilisation in Children with Upper Motorneuron Lesions 6614-6617
 Garavaglia, Lorenzo *Institute for Energetics and Interphases, National Research Coun*; Molteni, Erika *Scientific Institute, IRCCS E. Medea*; Beretta, Elena *IRCCS "E. Medea", Associazione La Nostra Famiglia, Bosisio Parini*; Vassena, Elena *IRCCS E Medea La Nostra Famiglia*; Strazzer, Sandra *IRCCS*; Pittaccio, Simone* *National Research Council of Italy*

10:00-11:30 FrBPoT13.11
An EEG Study of Turning Freeze in Parkinson's Disease Patients: The Alteration of Brain Dynamic on the Motor and Visual Cortex 6618-6621
 Handojoseno, Aluysius Maria Ardi* *Univ. of Technology, Sydney*; Gilat, Moran *Parkinson's Disease Research Clinic, Brain and Mind Research Ins*; Ly, Quynh Tran *Univ. of Technology Sydney*; Chamtie, Hayat *Univ. of Sydney*; Shine, James M. *Parkinson's Disease Research Clinic, Brain and Mind Research Ins*; Nguyen, Tuan Nghia *Univ. of Technology, Sydney*; Tran, Yvonne *Univ. of Technology, Sydney*; Lewis, Simon J.G. *Parkinson's Disease Research Clinic, Brain and Mind Research Ins*; Nguyen, Hung T. *Univ. of Technology, Sydney*

FrBPoT14: 10:00-11:30	Gold Room
6.39 Brain Functional Imaging III (Poster Session)	

10:00-11:30 FrBPoT14.1
A Look at the Strength of Micro and Macro EEG Analysis for Distinguishing Insomnia within an HIV Cohort 6622-6625
 Gunnarsdottir, Kristin* *Johns Hopkins Univ.*; Kang, Yu Min *Johns Hopkins Univ.*; Kerr, Matthew *Johns Hopkins Univ.*; Sarma, Sridevi V. *Johns Hopkins Univ.*; Ewen, Joshua *Kennedy Krieger Institute*; Allen, Richard *Johns Hopkins*; Gamaldo, Charlene *Johns Hopkins Univ., School of Medicine*; Salas, Rachel *Johns Hopkins Univ., School of Medicine*

10:00-11:30 FrBPoT14.2
To Score or Not to Score? A Look at the Distinguishing Power of Micro EEG Analysis on an Annotated Sample of PSG Studies Conducted in an HIV Cohort 6626-6629
 Kang, Yu Min *Johns Hopkins Univ.*; Gunnarsdottir, Kristin* *Johns Hopkins Univ.*; Kerr, Matthew *Johns Hopkins Univ.*; Salas, Rachel *Johns Hopkins Univ., School of Medicine*; Ewen, Joshua *Kennedy Krieger Institute*; Allen, Richard *Johns Hopkins*; Gamaldo, Charlene *Johns Hopkins Univ., School of Medicine*; Sarma, Sridevi V. *Johns Hopkins Univ.*

10:00-11:30 FrBPoT14.3
Modulation of ERD/S by having a Conscious Target during Lower-Extremity Motor Imagery 6630-6633
 Kitahara, Kosuke* *Tokyo Univ. of Agriculture and Tech.*; Kondo, Toshiyuki *Tokyo Univ. of Agriculture and Tech.*

10:00-11:30 FrBPoT14.4
A Novel Approach for Multiscale Source Analysis and Modeling of Epileptic Spikes 6634-6637
 Dümpelmann, Matthias* *Univ. Medical Center Freiburg*; Cosandier-Rimélé, Delphine *Bernstein Center Freiburg*; Ramantani, Georgia *Univ. Medical Center Freiburg, Epilepsy Center*; Schulze-Bonhage, Andreas *Univ. Hospital Freiburg*

10:00-11:30 FrBPoT14.5
Toward Non-Hair-Bearing Brain-Computer Interfaces for Neurocognitive Lapse Detection 6638-6641
 Wei, Chun-Shu* *Univ. of California, San Diego*; Wang, Yu-Te *Univ. of California San Diego*; Lin, Chin-Teng *National Chiao-Tung Univ.*; Jung, Tzyy-Ping *Univ. of California San Diego*

10:00-11:30 FrBPoT14.6
Extracting Patterns of Single-Trial EEG using an Adaptive Learning Algorithm 6642-6645
 Lin, Chin-Teng *National Chiao-Tung Univ.*; Wang, Yu-Kai* *National Chiao Tung Univ.*; Fang, Chieh-Ning *National Chiao Tung Univ.*; You, Yi-Sin *National Chiao Tung Univ.*; King, Jung-Tai *Brain Research Center of National Chiao Tung Univ.*

10:00-11:30 FrBPoT14.7
Activity in the Left Auditory Cortex is Associated with Individual Impulsivity in Time Discounting 6646-6649
 Han, Ruokang *Hokkaido Univ.*; Takahashi, Taiki *Hokkaido Univ.*; Miyazaki, Akane *Hokkaido Univ.*; Kadoya, Tomoka *Hokkaido Univ.*; Kato, Shinya *Hokkaido Univ.*; Yokosawa, Koichi* *Hokkaido Univ.*

10:00-11:30 FrBPoT14.8
Acoustic Pressure Reduction at Rhythm Deviants Causes Magnetoencephalographic Response 6650-6653
Takeshita, Yuya *Hokkaido Univ.*; Yokosawa, Koichi* *Hokkaido Univ.*

10:00-11:30 FrBPoT14.9
Responses in Posterior Parietal Cortex to Movement Intention Task with Visual and Tactile Cues 6654-6657
Kamikawa, Yusuke *Tokyo Univ. of Agriculture and Technology*; Tanaka, Toshihisa* *Tokyo Univ. of Agriculture and Technology*

FrBPoT15: 10:00-11:30 Gold Room
6.40 Human Performance II (Poster Session)

10:00-11:30 FrBPoT15.1
A Saliency based Motion Detection Model of Visual System Considering Visual Adaptation Properties 6658-6661
Kodama, Mitsuhiro* *Kinki Univ.*; Kohama, Takeshi *Faculty of Biology-Oriented Science and Technology, Kinki Univ.*; Yoshida, Hisashi *Kinki Univ.*

10:00-11:30 FrBPoT15.2
Estimation of the Reaction Times in Tasks of Varying Difficulty from the Phase Coherence of the Auditory Steady-State Response using the Least Absolute Shrinkage and Selection Operator Analysis ... 6662-6666
Yokota, Yusuke *National Institute of Information and Communications Technology*; Igarashi, Yasuhiko *The Univ. of Tokyo*; Okada, Masato *The Univ. of Tokyo*; Naruse, Yasushi* *National Institute of Information and Communications Technology*

10:00-11:30 FrBPoT15.3
The Observation of Theta Wave Modulation on Brain Training by 5 Hz-Binaural Beat Stimulation in Seven Days 6667-6670
Yamsa-ard, T. *Mahidol Univ.*; Wongsawat, Yodchanan* *Mahidol Univ.*

10:00-11:30 FrBPoT15.4
The Effect of Lymph Drainage on the Myoelectric Manifestation of Vastus Lateralis Fatigue: Preliminary Results 6671-6674
Vieira, Taian *Politecnico di Torino*; Read, Nathalli *Società Canottieri ARMIDA*; Schwarcke, Lorenzo *Univ. Federal de Santa Maria*; Botter, Alberto* *Politecnico di Torino*

10:00-11:30 FrBPoT15.5
Difficulty-Dependent Trajectory Planning during Target-Reaching Movements 6675-6678
Yang, Yuan *Sun Yat-sen Univ.*; Song, Rong* *Sun Yat-sen Univ.*

10:00-11:30 FrBPoT15.6
Gait Assessment using the Kinect RGB-D Sensor 6679-6683
Zhao, Jingbo* *York Univ.*; Bunn, Frank *PH.D. Associates Inc.*; Perron, Jacob Michael *Simon Fraser Univ.*; Shen, Edward *Bubl Technology Inc.*; Allison, Robert *York Univ.*

10:00-11:30 FrBPoT15.7
A Basic Study on Quantitative Evaluation of 3-Dimensional Foot Contact with an Inertial Sensor for FES Foot Drop Correction 6684-6687
Shiotani, Maho* *Tohoku Univ.*; Watanabe, Takashi *Tohoku Univ.*

10:00-11:30 FrBPoT15.8
Designing Adaptive Integral Sliding Mode Control for Heart Rate Regulation during Cycle-Ergometer Exercise using Bio-Feedback 6688-6691
Argha, Ahmadreza* *Univ. of Technology, Sydney*; Su, Steven Weidong *Univ. of Technology, Sydney*; Nguyen, Hung T. *Univ. of Technology, Sydney*; Celler, Branko George *Univ. of New South Wales*

10:00-11:30 FrBPoT15.9
Ambiguity Involving Two Illusory Melodies Induced by a Simple Configuration of Tones 6692-6695
Nemoto, Iku* *Tokyo Denki Univ.*; Yuhara, Ryosuke *Tokyo Denki Univ.*

10:00-11:30 FrBPoT15.10
Development of the Obstacle Detection System Combining Orientation Sensor of Smartphone and Distance Sensor 6696-6699
Tange, Yutaka* *Maizuru National College of Tech*; Takeno, Shunuke *Nagaoka Univ. of Technology*;
Hori, Junichi *Niigata Univ.*

10:00-11:30 FrBPoT15.11
EEG Feature Variations under Stress Situations 6700-6703
Merino, Manuel* *Univ. of Seville*; Molina, Alberto *Univ. of Seville*; Gomez Gonzalez, Isabel Maria *Univ. de Sevilla*

FrBPoT16: 10:00-11:30 Gold Room
8.22 New Technologies and Methodologies in Human Movement Analysis II (Poster Session)

10:00-11:30 FrBPoT16.1
Effect of Homogenous Object Stiffness on Tri-Digit Grasp Properties 6704-6707
Godfrey, Sasha Blue* *Istituto Italiano di Tecnologia*; Altobelli, Alessandro *Istituto Italiano di Tecnologia*;
Rossi, Matteo *Istituto Italiano di Tecnologia*; Bicchi, Antonio *Univ. of Pisa*

10:00-11:30 FrBPoT16.2
Machine Learning Methods for Credibility Assessment of Interviewees based on Posturographic Data 6708-6711
Saripalle, Sashi* *Univ. of Missouri - Kansas City*; Vemulapalli, Spandana *Univ. of Missouri - Kansas City*;
King, Gregory *Univ. of Missouri Kansas City*; Burgoon, Judee *Univ. of Arizona*; Derakhshani, Reza *Univ. of Missouri Kansas City*

10:00-11:30 FrBPoT16.3
3D Position Estimation using a Single Coil and Two Magnetic Field Sensors 6712-6715
Tadayon, Puian* *Dortmund Univ. of Applied Sciences and Arts*; Staude, Gerhard *AF Munich*;
Felderhoff, Thomas *Dortmund Univ. of Applied Sciences and Arts*

10:00-11:30 FrBPoT16.4
Lumbar Joint Torque Estimation based on Motion Measurement using Multiple Inertial Sensors 6716-6719
Miyajima, Saori* *Hokkaido Univ.*; Tanaka, Takayuki *Hokkaido Univ.*; Imamura, Yumeko *The National Institute of Advanced Industrial Science and Techno*; Kusaka, Takashi *Hokkaido Univ.*

10:00-11:30 FrBPoT16.5
Development and Preliminary Testing of an Instrumented Object for Force Analysis during Grasping ... 6720-6723
Romeo, Rocco Antonio* *Univ. Campus Bio-Medico di Roma*; Cordella, Francesca *Univ. of Naples Federico II*;
Zollo, Loredana *Univ. Campus Bio-Medico*; Formica, Domenico *Campus Bio-Medico Univ.*; Saccomandi, Paola
Univ. Campus Bio-Medico of Rome; Schena, Emiliano *Univ. of Rome Campus Bio-Medico*; Carpino, Giorgio
Campus Bio-Medico Univ.; Davalli, Angelo *INAIL Prosthesis Center*; Sacchetti, Rinaldo *Centro Protesi INAIL*,
Budrio; Guglielmelli, Eugenio *Campus Bio-Medico Univ.*

FrBPoT17: 10:00-11:30 Gold Room
8.23 Joint Biomechanics (Poster Session)

10:00-11:30 FrBPoT17.1
A Kicking Simulator to Investigate the Foot-Ball Interaction during a Rugby Place Kick 6724-6727
Minnaar, Nick *Stellenbosch Univ.*; Van Den Heever, Dawie* *Stellenbosch Univ.*

10:00-11:30 FrBPoT17.2
Statically vs Dynamically Balanced Gait, Analysis of a Robotic Exoskeleton Compared with a Human 6728-6731
Barbareschi, Giulia* *Univ. College London*; Richards, Rosie *VU Univ. Medical Centre*; Thornton, Matt *Royal National Orthopaedic Hospital, NHS Trust Brockley Hill St*; Carlson, Tom *Univ. College London*; Holloway, Catherine *Univ. College London*

10:00-11:30 FrBPoT17.3
EMG-Based Learning Approach for Estimating Wrist Motion 6732-6735
El-Khoury, Sahar *EPFL*; Batzianoulis, Iason* *EPFL*; Antuvan, Chris Wilson *Nanyang Technological Univ.*;
Contu, Sara *NTU*; Masia, Lorenzo *Nanyang Technological Univ.*; Micera, Silvestro *Scuola Superiore Sant'Anna*;
Billard, Aude *EPFL, LASA*

10:00-11:30	FrBPoT17.4
Development of a Phantom Mimicking the Functional and Structural Behaviors of the Thigh Muscles Characterized with Magnetic Resonance Elastography Technique	6736-6739
Bensamoun, Sabine* <i>UTC</i> ; Chakouch, Mashhour <i>Univ. of Technology of Compiègne</i> ; Charleux, Fabrice <i>ACRIM-Polyclinique St Côme</i>	
10:00-11:30	FrBPoT17.5
Time-Varying Identification of Ankle Dynamic Joint Stiffness during Movement with Constant Muscle Activation	6740-6743
Guarin, Diego Luis* <i>McGill Univ.</i> ; Kearney, Robert Edward <i>McGill Univ.</i>	
10:00-11:30	FrBPoT17.6
Identification of Time-Varying Dynamics of Reflex EMG in the Ankle Plantarflexors during Time-Varying, Isometric Contractions	6744-6747
Golkar, Mahsa* <i>McGill Univ.</i> ; Jaleddini, Kian <i>McGill Univ.</i> ; Sobhani Tehrani, Ehsan <i>McGill Univ.</i> ; Kearney, Robert Edward <i>McGill Univ.</i>	

FrBPoT18: 10:00-11:30	Gold Room
8.24 Mechanics of Locomotion and Balance II (Poster Session)	

10:00-11:30	FrBPoT18.1
Recovery Response Latencies to Tripping Perturbations during Gait Decrease with Practice	6748-6751
Forner-Cordero, Arturo* <i>Polytechnic School. Univ. of Sao Paulo</i> ; van der helm, Frans C.T. <i>Delft Univ. of Technology</i> ; Koopman, Bart <i>Univ. of Twente</i> ; Duysens, Jacques <i>KU-Leuven, FABER</i>	
10:00-11:30	FrBPoT18.2
Predicting Daily Gait Behaviors after Anterior Cruciate Ligament Surgery: A Case Study	6752-6755
Wade, Eric* <i>Univ. of Tennessee</i> ; Lin, Paige E. <i>Univ. of Southern California</i> ; Hemmati, Sadra <i>Univ. of Tennessee at Knoxville</i> ; Sigward, Susan <i>Division of Biokinesiology & Physical Therapy at the Univ.</i>	
10:00-11:30	FrBPoT18.3
Investigation of Adaptive Split-Belt Treadmill Walking by the Hindlimbs of Rats	6756-6759
Fujiki, Soichiro* <i>Kyoto Univ.</i> ; Aoi, Shinya <i>Kyoto Univ.</i> ; Yanagihara, Dai <i>The Univ. of Tokyo</i> ; Funato, Tetsuro <i>The Univ. of Electro-Communications</i> ; Sato, Yota <i>The Univ. of Electro-Communications</i> ; Senda, Kei <i>Kyoto Univ.</i> ; Tsuchiya, Kazuo <i>Kyoto Univ.</i>	
10:00-11:30	FrBPoT18.4
Classification of Older Adults with/without a Fall History using Machine Learning Methods	6760-6763
Zhang, Lin* <i>New Mexico State Univ.</i> ; Ma, Ou <i>New Mexico State Univ.</i> ; Fabre, Jennifer <i>New Mexico State Univ.</i> ; Wood, Robert <i>New Mexico State Univ.</i> ; Garcia, Stephanie <i>New Mexico State Univ.</i> ; Ivey, Kayla <i>New Mexico State Univ.</i> ; McCann, Evan <i>New Mexico State Univ.</i>	

FrBPoT19: 10:00-11:30	Gold Room
10.15 Personal Health Systems (Poster Session)	

10:00-11:30	FrBPoT19.1
Design of a Breathing Mattress based on the Respiratory Movement of Kangaroo Mother Care for the Development of Neonates	6764-6767
Chen, Wei* <i>Eindhoven Univ. of Technology</i> ; Bambang Oetomo, Sidarto <i>Máxima Medical Center</i> ; Schets, Marjolein <i>Eindhoven Univ. of Technology</i>	
10:00-11:30	FrBPoT19.2
Respiratory Signal Derived from the Smartphone Built-In Accelerometer during a Respiratory Load Protocol	6768-6771
Estrada, Luis* <i>Univ. Politècnica de Catalunya</i> ; Torres, Abel <i>Univ. Politècnica de Catalunya</i> ; Sarlabous, Leonardo <i>Univ. Politècnica de Catalunya (UPC)</i> ; Jané, Raimon <i>Institute de Bioenginyeria de Catalunya (IBEC)</i>	

10:00-11:30	FrBPoT19.3
Implementation of a Smartphone Wireless Accelerometer Platform for Establishing Deep Brain Stimulation Treatment Efficacy of Essential Tremor with Machine Learning	6772-6775
LeMoyné, Robert* <i>Northern Arizona Univ.</i> ; Tomycz, Nestor <i>Univ. of Pittsburgh</i> ; Mastroianni, Timothy <i>Independent</i> ; McCandless, Cyrus <i>Sentient Decision Science</i> ; Cozza, Michael <i>Converge Robotics Corporation</i> ; Peduto, David <i>Special Psychological Applications</i>	
10:00-11:30	FrBPoT19.4
Visual Methods to Assess Cold Fingers and Experimental Verification	6776-6779
Ishikawa, Kyoko <i>Seikei Univ.</i> ; Shimoyama, Natsuki <i>Seikei Univ.</i> ; Mannen, Hiromi <i>Seikei Univ.</i> ; Kuwabara, Kei <i>Nippon Telegraph and Telephone Corporation</i> ; Matsuoka, Hiroto <i>Nippon Telegraph and Telephone Corporation</i> ; Oguchi, Kimio* <i>Seikei Univ.</i>	
10:00-11:30	FrBPoT19.5
Portable Electrocardiograph through Android Application	6780-6783
Balbinot, Alexandre <i>Federal Univ. of Rio Grande do Sul (UFRGS)</i> ; Oliveira, Igor H. de <i>UFRGS</i> ; Cene, Vinicius H.* <i>UFRGS</i>	
10:00-11:30	FrBPoT19.6
Online and Automated Reliable System Design to Remove Blink and Muscle Artefact in EEG	6784-6787
Bhardwaj, Swati <i>Indian Institute of Technology Hyderabad</i> ; Jadhav, Pranit <i>IIT Hyderabad</i> ; Adapa, Bhagyaraja <i>Indian Institute of Technology Hyderabad</i> ; Acharyya, Amit* <i>Indian Institute of Technology Hyderabad</i> ; Naik, Ganesh R <i>Univ. of Technology Sydney</i>	
10:00-11:30	FrBPoT19.7
Designing a Patient Monitoring System for Bipolar Disorder using Semantic Web Technologies	6788-6791
Thermolia, Chryssa <i>TUC</i> ; Bei, Ekaterini <i>Technical Univ. of Crete</i> ; Petrakis, Euripides <i>Technical Univ. of Crete</i> ; Kritsotakis, Vangelis <i>Foundation for Research and Technology - Hellas (FORTH)</i> ; Tsiknakis, Manolis <i>ICS-FORTH</i> ; Sakkalis, Vangelis* <i>ICS-FORTH</i>	
10:00-11:30	FrBPoT19.8
Improvement of Emotional Healthcare System with Stress Detection from ECG Signal	6792-6795
Tivatansakul, Somchanok* <i>Shibaura Institute of Technology</i> ; Ohkura, Michiko <i>Shibaura Institute of Technology</i>	
FrBPoT20: 10:00-11:30 Gold Room	
10.16 Data Mining (Poster Session)	
10:00-11:30	FrBPoT20.1
Prediction of Happy-Sad Mood from Daily Behaviors and Previous Sleep History	6796-6799
Sano, Akane* <i>Massachusetts Institute of Technology</i> ; Yu, Amy Zhao <i>Massachusetts Institute of Technology</i> ; McHill, Andrew <i>Brigham and Women's Hospital/Harvard Medical School</i> ; Phillips, Andrew J. K. <i>Brigham and Women's Hospital, Harvard Medical School</i> ; Taylor, Sara <i>Massachusetts Institute of Technology</i> ; Jaques, Natasha <i>Massachusetts Institute of Technology</i> ; Klerman, Elizabeth B. <i>Division of Sleep Medicine, Brigham and Women's Hospital -Harvar</i> ; Picard, Rosalind <i>Massachusetts Institute of Technology</i>	
10:00-11:30	FrBPoT20.2
Assessment of Cardiovascular Risk based on a Data-Driven Knowledge Discovery Approach	6800-6803
Mendes, Diana* <i>Univ. de Coimbra</i> ; Paredes, Simao <i>Instituto Politécnico de Coimbra</i> ; Rocha, Teresa <i>Inst Superior de Eng de Coimbra</i> ; de Carvalho, Paulo <i>Univ. of Coimbra - NIF</i> ; Henriques, Jorge <i>Univ. of Coimbra - NIF</i> ; Cabiddu, Ramona <i>Politecnico di Milano</i> ; Morais, João <i>Hospital de Santo André, Leiria</i>	
10:00-11:30	FrBPoT20.3
Automated Information Extraction from Free-Text EEG Reports	6804-6807
Biswal, Siddharth <i>MGH</i> ; Nip, Zarina <i>MGH</i> ; Moura Junior, Valdery <i>MGH</i> ; Bianchi, Matt T. <i>Dept. of Neurology, Massachusetts General Hospital -Harvard</i> ; Rosenthal, Eric <i>MGH</i> ; Westover, Brandon* <i>Massachusetts General Hospital</i>	
10:00-11:30	FrBPoT20.4
Post-Surgical Complication Prediction in the Presence of Low-Rank Missing Data	6808-6811
Wu, Hang <i>Georgia Institute of Technology</i> ; Cheng, Chihwen <i>Georgia Institute of Technology</i> ; Han, Xiaoning <i>Peking Univ. First Hospital</i> ; Huo, Yong <i>Peking Univ. First Hospital</i> ; Ding, Wenhui <i>Peking Univ. First Hospital</i> ; Wang, May D.* <i>Georgia Tech and Emory Univ.</i>	

10:00-11:30 FrBPoT20.5
How to Extract Clinically Useful Information from Large Amount of Dialysis Related Stored Data 6812-6815
Vito, Domenico* *Politecnico di Milano*; Casagrande, Giustina *Politecnico di Milano*; Bianchi, Camilla *Politecnico di Milano*; Costantino, MariaLaura *Politecnico di Milano*

10:00-11:30 FrBPoT20.6
A Proposal for Improvement of Genotyping Performance for Ethnically Homogeneous Population using DNA Microarray 6816-6819
Fukushima, Arika* *Toshiba Corporation*; Paul, Topon *Toshiba Corporation*; Shingaki, Ryusei *Toshiba*; Koiso, Takashi *Toshiba Corporation*; Umeno, Shinya *Toshiba Corp.*; Ueno, Ken *Toshiba Corporation, Japan*.

10:00-11:30 FrBPoT20.7
Comparison between Decision Tree and Genetic Programming to Distinguish Healthy from Stroke Postural Sway Patterns 6820-6823
Marrega, Luiz Henrique Giovanini *Pontificia Univ. Católica do Paraná*; Silva, Simone Massaneiro *Pontificia Univ. Católica do Paraná*; Manfra, Elisangela F.* *Pontificia Univ. Católica Do Paraná*; Nievola, Julio Cesar *Pontificia Univ. Católica do Paraná*

10:00-11:30 FrBPoT20.8
Clustering Emergency Department Patients – An Assessment of Group Normality 6824-6829
Schmidt, Thomas* *Univ. of Southern Denmark*; Lassen, Annmarie *Odense Univ. Hospital*; Hallam, John *Univ. of Southern Denmark*; Wiil, Uffe Kock *Univ. of Southern Denmark*

10:00-11:30 FrBPoT20.9
Explicu: A Web-Based Visualization and Predictive Modeling Toolkit for Mortality in Intensive Care Patients 6830-6833
Chen, Robert* *Georgia Institute of Technology*; Kumar, Vikas *Georgia Institute of Technology*; Fitch, Natalie *Georgia Institute of Technology*; Jagadish, Jitesh *Georgia Institute of Technology*; Zhang, Lifan *Emory Univ.*; Dunn, William *Emory Univ.*; Chau, Duen Horng *Georgia Institute of Technology*

FrBPoT21: 10:00-11:30 Gold Room
10.17 eHealth (Poster Session)

10:00-11:30 FrBPoT21.1
Using a Generalised Identity Reference Model with Archetypes to Support Interoperability of Demographics Information in Electronic Health Record Systems 6834-6839
Chen, Xu* *Dublin Institute of Technology*; Berry, Damon *Dublin Institute of Technology*; Stephens, Gaye *Trinity College Dublin*

10:00-11:30 FrBPoT21.2
Analysis of Daily Oxygen Saturation for Detecting Deterioration in the Condition of COPD Patients 6840-6843
Clarke, Malcolm* *Brunel Univ.*; Gokalp, Hulya *Brunel Univ.*

10:00-11:30 FrBPoT21.3
Future Trends in Picture Archiving and Communication System (PACS) 6844-6847
Alhajeri, Mona *Brunel Univ.*; Clarke, Malcolm* *Brunel Univ.*

10:00-11:30 FrBPoT21.4
An Mhealth System for Toxicity Monitoring of Paediatric Oncological Patients using Near Field Communication Technology 6848-6851
Duregger, Katharina* *AIT Austrian Institute of Technology*; Hayn, Dieter *AIT Austrian Institute of Technology*; Morak, Jürgen Markus *AIT Austrian Institute of Technology*; Ladenstein, Ruth *Children's Cancer Research Institute*; Schreier, Guenter *AIT Austrian Institute of Technology GmbH*

10:00-11:30 FrBPoT21.5
Impact of Hierarchies of Clinical Codes on Predicting Future Days in Hospital 6852-6855
Xie, Yang *The Univ. of New South Wales*; Neubauer, Sandra *Austrian Institute of Technology*; Schreier, Guenter *AIT Austrian Institute of Technology GmbH*; Redmond, Stephen James *Univ. of New South Wales*; Lovell, Nigel H.* *Univ. of New South Wales*

10:00-11:30 FrBPoT21.6
Human-Centered Design of a Cyber-Physical System for Advanced Response to Epidemics 6856-6859
 Dimitrov, Velin *Worcester Polytechnic Institute*; Jagtap, Vinayak *Worcester Polytechnic Institute*; Skorinko, Jeanine *Worcester Polytechnic Institute*; Chernova, Sonia *Worcester Polytechnic Institute*; Gennert, Michael *Worcester Polytechnic Institute*; Padir, Taskin* *Worcester Polytechnic Institute*

10:00-11:30 FrBPoT21.7
A Reliability Assessment Software using Kinect to Complement the Clinical Evaluation of Parkinson's Disease 6860-6863
 Navarro, Andres* *Univ. Icesi*; Arango Paredes, Juan David *Univ. Icesi*; Munoz, Beatriz *Fundacion Clinica Valle del Lili*; Agredo, Wilfredo *Univ. Autonoma de Occidente*; Ariza, Yoseth *Univ. Icesi*; Orozco, Jorge Luis *Fundacion Clinica Valle del Lili*

FrBPoT22: 10:00-11:30 Gold Room
9.18 Surgery and Robotics (Poster Session)

10:00-11:30 FrBPoT22.1
Implementation of New Dry Electrodes and Comparison with Conventional Ag/AgCl Electrodes for Whole Body Electrical Bioimpedance Application 6864-6867
 Dassonville, Yohan* *Univ. Savoie Mont Blanc- SYMME*; Barthod, Christine *SYMME*; Passard, Michelle *Univ. Savoie Mont Blanc- SYMME*

10:00-11:30 FrBPoT22.2
Development of an Excretion Care Support Robot with Human Cooperative Characteristics 6868-6871
 Wang, Yina* *Kochi Univ. of Tech. , School of System Engineering*; Wang, Shuoyu *Kochi Univ. of Tech.*

10:00-11:30 FrBPoT22.3
Surgical Energy Device using Steam Jet for Robotic Assisted Surgery 6872-6875
 Hitoshi, Yoshiki* *Tokyo Institute of Technology*; Tadano, Kotaro *Tokyo Institute of Technology*; Ban, Daisuke *Tokyo Medical and Dental Univ.*; Ohuchi, Katsuhiko *Tokyo Medical and Dental Univ.*; Tanabe, Minoru *Tokyo Medical and Dental Univ.*; Kawashima, Kenji *Tokyo Medical and Dental Univ.*

10:00-11:30 FrBPoT22.4
A Multi-Techniques Approach to Assess Reprocessing of Single-Use Electrosurgical Pencils 6876-6879
 Tessarolo, Francesco *Univ. of Trento*; Torres, Sebastian *Antioquia School of Engineering – CES Univ.*; Ballesteros, Luis *Antioquia School of Engineering – CES Univ.*; Rigoni, Marta *Bruno Kessler Foundation*; Piccoli, Federico *Azienda Provinciale per i Servizi Sanitari*; Caola, Iole *Azienda Provinciale per i Servizi Sanitari*; Montoya, Yesid *Antioquia School of Engineering – CES Univ.*; Nollo, Giandomenico* *Univ. of Trento*

10:00-11:30 FrBPoT22.5
Design, Development and Characterization of a Modular End Effector for MIS Procedures 6880-6883
 Izzo, Antonio *The BioRobotics Institute, Scuola Superiore Sant'Anna*; Tortora, Giuseppe* *Scuola Superiore Sant'Anna*; Dario, Paolo *Scuola Superiore Sant'Anna*; Menciassi, Arianna *Scuola Superiore Sant'Anna*

10:00-11:30 FrBPoT22.6
3D vs 2D Laparoscopic Systems: Development of a Performance Quantitative Validation Model 6884-6887
 Ghedi, Andrea* *Azienda Ospedaliera Treviglio*; Donarini, Erica *Azienda Ospedaliera Treviglio*; Lamera, Roberta *Azienda Ospedaliera Treviglio*; Sgroi, Giovanni *Azienda Ospedaliera Treviglio*; Turati, Luca *Azienda Ospedaliera Treviglio*; Ercole, Cesare *Azienda Ospedaliera Treviglio*

FrBPoT23: 10:00-11:30 Gold Room
9.19 Cancer Therapies: Radiation, Photodynamic Therapies and Electric Fields (Poster Session)

10:00-11:30 FrBPoT23.1
Modelling Tumor Treating Fields for the Treatment of Lung-Based Tumors 6888-6891
 Bomzon, Ze'ev* *Novocure*; Urman, Noa *Novocure*; Wenger, Cornelia *Faculty of Science, Univ. of Lisbon*; Giladi, Moshe *Novocure*; Weinberg, Uri *Novocure*; Wasserman, Yoram *Company*; Kirson, Eilon David *Novocure*; Miranda, Pedro *Faculty of Science, Univ. of Lisbon*; Palti, Yoram *Novocure*

10:00-11:30 FrBPoT23.2
Modeling Tumor Treating Fields (TTFields) Application in Single Cells during Metaphase and Telophase . 6892-6895
Wenger, Cornelia* *Faculdade de Ciências, Univ. de Lisboa*; Giladi, Moshe *Novocure*; Bomzon, Ze'ev *Novocure*;
Salvador, Ricardo *Univ. of Lisbon*; Basser, Peter *NIH*; Miranda, Pedro *Faculty of Science, Univ. of Lisbon*

10:00-11:30 FrBPoT23.3
Neutron Distribution and Induced Activity Inside a Linac Treatment Room 6896-6899
Juste, Belen* *Polytechnic Univ. of Valencia*; Miró, Rafael *Polytechnic Univ. of Valencia*; Verdú, Gumersindo
Polytechnic Univ. of Valencia; Díez, Sergio *Hospital Clínic de València*; Campayo, Juan Manuel *Hospital Clínic
de València*

10:00-11:30 FrBPoT23.4
**Analysis of Low Intensity Laser Therapy as Adjuvant to Photodynamic Therapy in Nonmelanoma
Skin Cancer** 6900-6903
Fanjul-Vélez, Félix *Univ. of Cantabria*; Salas-García, Irene *Univ. of Cantabria*; Torre-Celeizábal, Claudia *Univ.
of Cantabria*; Zverev, Mihail *Univ. of Cantabria*; Arce-Diego, José L.* *Univ. of Cantabria*

10:00-11:30 FrBPoT23.5
A Dual-Use Imaging System for Pre-Clinical Small Animal Radiation Research 6904-6907
Li, Meng* *Johns Hopkins Univ.*; He, Xingchi *Johns Hopkins Univ.*; Eslami, Sohrab *Johns Hopkins Univ.*; Wang,
Ken Kang-Hsin *Johns Hopkins Univ.*; Zhang, Bin *Johns Hopkins Univ.*; Wong, John W *Johns Hopkins Univ.*;
Iordachita, Iulian *Johns Hopkins Univ.*

FrBPoT24: 10:00-11:30 Gold Room
9.20 Stimulation Technologies (Poster Session)

10:00-11:30 FrBPoT24.1
Preclinical Evaluation of a Miniaturized Deep Brain Stimulation Electrode Lead 6908-6911
Villalobos, Joel* *Bionics Institute*; Fallon, James *Bionics Institute*; McNeill, Peter Malcolm *St Vincent's Hospital
Melbourne*; Allison, Rachel Kim *Monash Univ., Bionics Institute*; Bibari, Olivier *CEA*; Williams, Chris E. *Bionics
Institute*; McDermott, Hugh *Bionics Institute*

10:00-11:30 FrBPoT24.2
A Microfabricated Coil for Implantable Applications of Magnetic Spinal Cord Stimulation 6912-6915
Fu, Yu-Min *National Chiao Tung Univ.*; Chen, Che-Yu *National Chiao Tung Univ.*; Qian, Xin-Hong *National
Chiao Tung Univ.*; Cheng, Yu-Ting* *National Chiao Tung Univ.*; Wu, Chung-Yu *National Chiao Tung Univ.*; Sun,
Jui-Sheng *National Taiwan Univ. Hospital*; Huang, Chien-Chun *National Chiao Tung Univ.*; Hu, Chao-Kai
MacKay Memorial Hospital

10:00-11:30 FrBPoT24.3
**Low-Latency System for Evaluation of Image-Enhancement-Algorithms on Patients using
Subretinal Implants** 6916-6919
Rieger, Viola* *Univ. of Ulm*; Buntz, Fabian *Institute of Microelectronics, Univ. of Ulm*; Feller, Christian *Institute of
Microelectronics, Univ. of Ulm*; Rothermel, Albrecht *Univ. of Ulm*

10:00-11:30 FrBPoT24.4
Study of Intracranial Pressure in Human Brain during Transcranial Magnetic Stimulation 6920-6923
Honrath, Marc *Wilkes Univ.*; Sabouni, Abas* *Wilkes Univ.*

10:00-11:30 FrBPoT24.5
How Electrode Montage Affects Transcranial Direct Current Stimulation of the Human Motor Cortex 6924-6927
Salvador, Ricardo* *Institute of Biophysics and Biomedical Engineering (IBEB), Univ.*; Wenger, Cornelia
Faculdade de Ciências, Univ. de Lisboa; Nitsche, Michael A. *Georg-August-Univ., Goettingen*; Miranda, Pedro
Cavaleiro *Faculdade de Ciências, Univ. de Lisboa*

10:00-11:30 FrBPoT24.6
**Optimization of Coil Geometries for Bone Fracture Healing via Dielectrophoretic Force Stimulation – A
Simulation Study** 6928-6934
Kibritoğlu, Erman* *Boğaziçi Univ.*; Gülçür, Halil Özcan *Boğaziçi Univ.*

FrET2: 14:30-16:00 Brown 2
12.2 Technologies for Detecting, Managing and Preventing Falls I (Oral Session)
Chair: Becker, Clemens *Robert Bosch Hospital, Stuttgart*
Co-Chair: Chiari, Lorenzo *University of Bologna*

14:30-14:45 FrET2.1
Automatic vs. Clinical Assessment of Fall Risk in Older Individuals: A Proof of Concept 6935-6938

Rivolta, Massimo *Walter Univ. degli studi di Milano*; Aktaruzzaman, Md *Univ. degli Studi di Milano*; Rizzo, Giovanna *National Research Council (CNR)*; Lafortuna, Claudio *Istituto di Bioimmagini e Fisiologia Molecolare (IBFM)*; Ferrarin, Maurizio *Foundation Don Carlo Gnocchi Onlus*; Bovi, Gabriele *Fondazione Don Carlo Gnocchi Onlus*; Bonardi, Daniela Rita *INRCA IRCCS Casatenovo*; Sassi, Roberto* *Univ. degli Studi di Milano*

14:45-15:00 FrET2.2
Gait Analysis and Estimation of Changes in Fall Risk Factors 6939-6942

Similä, Heidi* *VTT Technical Research Centre of Finland Ltd*; Immonen, Milla *Sinikka VTT Technical Research Centre of Finland*; Merilahti, Juho *Markus VTT*; Petäkoski-Hult, Tuula *VTT*

15:00-15:15 FrET2.3
Context Focused Older Adult Mobility and Gait Assessment 6943-6946

Taylor, Kenneth* *Univ. College Dublin*; Reginatto, Brenda *Univ. College Dublin*; Patterson, Matt *Univ. College Dublin*; Power, Dermot *Mater Misericordiae Univ. Hospital*; Komaba, Yusuke *Fujitsu Ireland Ltd.*; Maeda, Kazuho *Fujitsu Laboratories Ltd.*; Inomata, Akihiro *Fujitsu Japan*; Caulfield, Brian *UCD*

15:15-15:30 FrET2.4
Camera-Based Fall Detection using a Particle Filter 6947-6950

Debard, Glen* *Thomas More Kempen*; Baldewijns, Greet *KU Leuven campus Geel, AdvISe Technology Lab, Belgium*; Goedemé, Toon *KU Leuven, Campus De Nayer, EAVISE Research Group*; Tuytelaars, Tinne *ESAT-PSI, KU Leuven*; Vanrumste, Bart *Katholieke Univ. Leuven*

15:30-15:45 FrET2.5
Can a Visual Biofeedback System based on Predictive Information Improve Postural Performance? 6951-6954

D'Anna, Carmen* *Roma TRE Univ.- Engineering Dept.*; Schmid, Maurizio *Roma Tre Univ.*; Scorza, Andrea *Roma Tre Univ.*; Goffredo, Michela *Engineering Dept. Univ. Roma TRE*; Sciuto, Salvatore *Andrea Univ. of Rome "ROMA TRE"*; Conforto, Silvia *Univ. Roma TRE*

15:45-16:00 FrET2.6
Angular Sway Propagation in One Leg Stance and Quiet Stance with Inertial Measurement Units for Older Adults 6955-6958

Kong, Weisheng* *Waseda Univ.*; Sessa, Salvatore *Waseda Univ.*; Zhang, Di *Waseda Univ.*; Zecca, Massimiliano *Loughborough Univ.*; Cosentino, Sarah *Waseda Univ.*; Ishii, Hiroyuki *Waseda Univ.*; Magistro, Daniele *Loughborough Univ.*; Takeuchi, Hikaru *Tohoku Univ.*; Kawashima, Ryuta *Tohoku Univ.*; Takanishi, Atsuo *Waseda Univ.*

FrET3: 14:30-16:00 Brown 3
6.21 Neurological Disorders I (Oral Session)
Chair: Zouridakis, George *University of Houston*
Co-Chair: Tong, Shanbao *Shanghai Jiao Tong University*

14:30-14:45 FrET3.1
Low Frequency Overactivation in Dyslexia: Evidence from Resting State Magnetoencephalography 6959-6962

Pagnotta, Mattia *Federico La Sapienza - Univ. of Rome*; Zouridakis, George* *Univ. of Houston*; Li, Lianyang *Univ. of Houston*; Lizarazu, Mikel *Basque Center on Cognition, Brain and Language*; Lallier, Marie *Basque Center on Cognition, Brain and Language*; Molinaro, Nicola *Basque Center on Cognition, Brain and Language*; Carreiras, Manuel *Basque Center on Cognition, Brain and Language*

14:45-15:00 FrET3.2
Brain Activation Profiles in mTBI: Evidence from Combined Resting-State EEG and MEG Activity 6963-6966

Li, Lianyang *Univ. of Houston*; Pagnotta, Mattia *Federico La Sapienza - Univ. of Rome*; Arakaki, Xianghong *Huntington Medical Research Institutes*; Tran, Thao *Huntington Medical Research Institutes*; Strickland, David *Huntington Medical Research Institutes*; Harrington, Michael *Huntington Medical Research Institutes*; Zouridakis, George* *Univ. of Houston*

15:00-15:15 FrET3.3
Analysis of Upper Limb Movement in Multiple Sclerosis Subjects during Common Daily Actions 6967-6970
 Pellegrino, Laura* *Univ. of Genoa*; Stranieri, Giorgia *Univ. degli Studi di Genova - DIBRIS*;
 Tiragallo, Elena *Univ. degli Studi di Genova - DIBRIS*; Tacchino, Andrea *Italian MS Foundation*;
 Bricchetto, Giampaolo *Italian MS Foundation*; Coscia, Martina *TNE Lab Ecole Polytechnique
 Federale de Lausanne*; Casadio, Maura *Univ. of Genova*

15:15-15:30 FrET3.4
Real-Time Monitoring of Cerebral Blood Flow by Laser Speckle Contrast Imaging after Cardiac Arrest in Rat 6971-6974
 He, Junyun *Univ. of Maryland*; Lu, Hongyang *Shanghai Jiao Tong Univ.*; Deng, Ruoxian *Johns Hopkins Univ.*;
 Young, Leanne *Johns Hopkins Univ.*; Tong, Shanbao *Shanghai Jiao Tong Univ.*; Jia, Xiaofeng* *Univ. of
 Maryland School of Medicine, Johns Hopkins Univ.*

15:30-15:45 FrET3.5
Development of a Robotic Evaluation System for the Ability of Proprioceptive Sensation in Slow Hand Motion 6975-6978
 Tanaka, Yoshiyuki* *Nagasaki Univ.*; Mizoe, Genki *Nagasaki Univ.*; Kawaguchi, Tomohiro *Nagasaki Univ.*

15:45-16:00 FrET3.6
Brain-Computer Interfacing in Amyotrophic Lateral Sclerosis: Implications of a Resting-State EEG Analysis 6979-6982
 Jayaram, Vinay* *Max Planck Institute for Intelligent Systems, Tuebingen*; Grosse-Wentrup, Moritz *Max Planck
 Institute for Biological Cybernetics*; Hohmann, Matthias *Max Planck Institute for Intelligent Systems*; Fomina,
 Tatiana *Max Planck Institute for Intelligent Systems*; Schölkopf, Bernhard *MPI for Biological Cybernetics*;
 Schöls, Ludger *Hertie Institute for Clinical Brain Research*; Synofzik, Matthis *Hertie Institute for Clinical Brain
 Research*; Müller vom Hagen, Jennifer *Hertie Institute for Clinical Brain Research*; Widmann, Natalie *Max
 Planck Institute for Intelligent Systems, Tübingen*; Förster, Christian *Eberhard Karls Univ. Tübingen*

FrET4: 14:30-16:00	Amber 1
1.29 Tensor Methods for Biomedical Signal and Data Analysis (Invited Session)	
Chair: Van Huffel, Sabine <i>Katholieke Universiteit Leuven</i>	
Co-Chair: Zarzoso, Vicente <i>Université Nice Sophia Antipolis - CNRS</i>	

14:30-14:45 FrET4.1
Multimodal Approach to Estimate the Ocular Movements during EEG Recordings: A Coupled Tensor Factorization Method 6983-6986
 Rivet, Bertrand* *Grenoble Univ.*; Duda, Marc *GIPSA-lab*; Guerin-Dugue, Anne *GIPSA-lab*; Jutten, Christian
Univ. of Grenoble; Comon, Pierre *UNSA/CNRS*

14:45-15:00 FrET4.2
Atrial Signal Extraction in Atrial Fibrillation Electrocardiograms using a Tensor Decomposition Approach .. 6987-6990
 Ribeiro, Lucas* *Federal Univ. of Ceará*; Hidalgo-Muñoz, Antonio R. *Univ. of Nice Sophia Antipolis*;
 Zarzoso, Vicente *Univ. Nice Sophia Antipolis - CNRS*

15:00-15:15 FrET4.3
Tensor-Based Detection of T Wave Alternans using ECG 6991-6994
 Goovaerts, Griet* *KU Leuven*; Vandenberk, Bert *KU Leuven*; Willems, Rik *KU Leuven*;
 Van Huffel, Sabine *Katholieke Univ. Leuven*

15:15-15:30 FrET4.4
Localization of Spatially Distributed Brain Sources after a Tensor-Based Preprocessing of Interictal Epileptic EEG Data 6995-6998
 Albera, Laurent* *Univ. de Rennes 1 and INSERM*; Becker, Hanna *Technicolor SA, Cesson-Sévigné F-35576,
 France*; Karfoul, Ahmad *Al-Baath Univ.*; Gribonval, Rémi *Inria, Centre Inria Rennes - Bretagne Atlantique,
 Rennes, F-3500*; Kachenoura, Amar *Univ. de Rennes1 and INSERM*; Bensaid, Siouar *LTSI, UMR Inserm 1099*;
 Senhadji, Lotfi *Univ. de Rennes 1 and INSERM*; Hernández, Alfredo I *Univ. of Rennes 1 and INSERM U1099*;
 Merlet, Isabelle *INSERM - Univ. de Rennes 1*

15:30-15:45 FrET4.5
Complex Tensor based Blind Source Separation of EEG for Tracking P300 Subcomponents 6999-7002
Kouchaki, Samaneh* *Dept. of Computing, Univ. of Surrey*; Enshaeifar, Shirin *Dept. of Computing, Univ. of Surrey*; Cheong Took, Clive *Univ. of Surrey*; Sanei, Saeid *Univ. of Surrey*

15:45-16:00 FrET4.6
Tensor based Tumor Tissue Type Differentiation using Magnetic Resonance Spectroscopic Imaging ... 7003-7006
Halandur Nagaraja, Bharath *KU Leuven*; Sima, Diana *Katholieke Univ. Leuven*; Sauwen, Nicolas *ESAT-STADIUS, KU Leuven, Leuven*; Himmelreich, Uwe *KU LEUVEN*; De Lathauwer, Lieven *KU LEUVEN*; Van Huffel, Sabine* *Katholieke Univ. Leuven*

FrET5: 14:30-16:00 Amber 2
1.30 Pattern Recognition Methods and Data Mining for Biosignals (Oral Session)
Chair: Magenes, Giovanni *University of Pavia*
Co-Chair: Clifton, David *University of Oxford*

14:30-14:45 FrET5.1
Detection of G-Induced Loss of Consciousness (G-LOC) Prognosis through EMG Monitoring on Gastrocnemius Muscle in Flight 7007-7010
Choi, Booyong *Air Force Academy*; Lee, Yongkyun *Air Force Academy*; Cho, Taehwan *Air Force Academy*; Koo, Hyojin *Air Force Academy*; Kim, Dongsoo* *Air Force Academy*

14:45-15:00 FrET5.2
On Sweat Analysis for Quantitative Estimation of Dehydration during Physical Exercise 7011-7014
Ring, Matthias* *Digital Sports Group, Pattern Recognition Lab, Friedrich-Alexand; Lohmüller, Clemens Univ. Hospital Erlangen*; Manfred, Rauh *Dept. of Paediatrics, Friedrich-Alexander-Univ. Erlan*; Eskofier, Bjoern M *Friedrich-Alexander-Univ. Erlangen-Nürnberg*

15:00-15:15 FrET5.3
Efficient Estimation of Tissue Thicknesses using Sparse Approximation for Gaussian Processes 7015-7018
Wissel, Tobias* *Univ. of Luebeck*; Stueber, Patrick *Univ. of Luebeck*; Wagner, Benjamin *Univ. of Luebeck*; Schweikard, Achim *Univ. of Luebeck, Germany*; Ernst, Floris *Univ. of Luebeck*

15:15-15:30 FrET5.4
Classification Strategies for a Single-Trial Binary Brain Computer Interface based on Remembering Unpleasant Odors 7019-7022
Placidi, Giuseppe* *Univ. of L'Aquila - ITALY*; Petracca, Andrea *Univ. of L'Aquila*; Spezialetti, Matteo *Univ. of L'Aquila*; Iacoviello, Daniela *Sapienza Univ. of Rome*

15:30-15:45 FrET5.5
Phenotypic Characterisation of Crohn's Disease Severity 7023-7026
Clifton, David* *Univ. of Oxford*; Niehaus, Katherine *Univ. of Oxford*; Uhlig, Holm *Univ. of Oxford*

15:45-16:00 FrET5.6
Effective Compression and Reconstruction of Human Skin Hyperspectral Reflectance Databases 7027-7030
Chen, Tenn Francis* *Univ. of Waterloo*; Baranoski, Gladimir *Univ. of Waterloo*

FrET6: 14:30-16:00 Amber 3
2.22 Image Reconstruction (Oral Session)
Co-Chair: Corsi, Cristiana *University of Bologna*

14:30-14:45 FrET6.1
Frame-Based Compressive Sensing MR Image Reconstruction with Balanced Regularization 7031-7034
Xie, Shoulie* *Institute for Infocomm Research*; Guan, Cuntai *Institute for Infocomm Research*; Huang, Weimin *Institute for Infocomm Research, Agency for Science Technology and*; Lu, Zhongkang *Institute for Infocomm Research*

14:45-15:00	FrET6.2
Analysis of the Electrical Patterns and Structural Remodeling in Atrial Fibrillation	7035-7038
Valinoti, Maddalena* <i>Univ. of Bologna</i> ; Lozupone, Graziano Vito <i>School of Engineering and Architecture, Cesena campus</i> ; Sabbatani, Paolo <i>Cardiology-Cardiological Intensive Care Unit, Bufalini Hospital</i> ; Mantovan, Roberto <i>Cardiology-Cardiological Intensive Care Unit, Bufalini Hospital</i> ; Severi, Stefano <i>Univ. of Bologna</i> ; Corsi, Cristiana <i>Univ. of Bologna</i>	
15:00-15:15	FrET6.3
Backprojection Regularization with Weighted Ramp Filter for Tomographic Reconstruction	7039-7042
Wang, Zhenglin <i>The Univ. of South Australia</i> ; Lee, Ivan* <i>The Univ. of South Australia</i>	
15:15-15:30	FrET6.4
Algorithm for Simulation of Craniotomies Assisted by Peripheral for 3D Virtual Navigation	7043-7046
Duque, Sara Isabel* <i>Univ. Pontificia Bolivariana-Univ. of Antioquia</i> ; Ochoa, John Fredy <i>Univ. of Antioquia</i> ; Botero, Andres Felipe <i>Univ. of Antioquia</i> ; Ramirez, Mateo <i>Univ. of Antioquia</i>	
15:30-15:45	FrET6.5
A Partial Reconstruction Scheme for Continuous Wave Diffuse Optical Tomography with Reflection Geometry	7047-7050
Patra, Rusha* <i>Indian Institute of Technology Kharagpur</i> ; Dutta, P.K. <i>School of Medical Science and Technology, IIT Kharagpur, India</i>	
15:45-16:00	FrET6.6
Dual-Dictionary Learning based MR Image Reconstruction with Self-Adaptive Dictionaries	7051-7054
Li, Jiansen <i>Shanghai Jiao Tong Univ.</i> ; Song, Ying <i>Sichuan Univ., Chengdu, China.</i> ; Zhao, Jun* <i>Shanghai Jiao Tong Univ.</i>	

FrET7: 14:30-16:00	Amber 4
2.23 Emerging Imaging Method (Oral Session)	

14:30-14:45	FrET7.1
Multiple-Instance Learning for Breast Cancer Detection in Mammograms	7055-7058
Sanchez de la Rosa, Ruben <i>Institute Mines-Telecom/Telecom Bretagne</i> ; Lamard, Mathieu <i>Univ. de Bretagne Occidentale</i> ; Cazuguel, Guy <i>Institute Mines-Telecom/Telecom Bretagne</i> ; Coatrieux, Gouenou <i>Institute Telecom - Telecom Bretagne - Inserm</i> ; Cozic, Michel <i>MEDECOM</i> ; Quelled, Gwenole* <i>Inserm</i>	
14:45-15:00	FrET7.2
Examining the Feasibility of a Microsoft Kinect™ based Game Intervention for Individuals with Anterior Cruciate Ligament Injury Risk	N/A
Huo, Zhiyu* <i>Univ. of Missouri Columbic</i> ; Griffin, Joesph Gregory <i>Univ. of Missouri</i> ; Babiuch, Ryan <i>Univ. of Missouri</i> ; Gray, Aaron <i>Univ. of Missouri - Columbia</i> ; Willis, Bradley <i>Missouri Orthopaedic Institute</i> ; Skubic, Marjorie <i>Univ. of Missouri</i> ; Sun, Shining <i>Univ. of Missouri</i>	
15:00-15:15	FrET7.3
Breast Tumor Detection using UWB Circular-SAR Tomographic Microwave Imaging	7063-7066
Oloumi, Daniel* <i>Univ. of Alberta</i> ; Boulanger, Pierre <i>Univ. of Alberta</i> ; Kordzadeh, Atefeh <i>Univ. of Alberta, bio-Medical Engineering and ECE departmen</i> ; Karumudi, Rambabu <i>Univ. of Alberta, ECE Dept.</i>	
15:15-15:30	FrET7.4
High Resolution Depth-Resolved Imaging from Multi-Focal Images for Medical Ultrasound	7067-7070
Diamantis, Konstantinos <i>Heriot-Watt Univ.</i> ; Dalgarno, Paul <i>Heriot-Watt Univ.</i> ; Greenaway, Alan <i>Heriot-Watt Univ.</i> ; Anderson, Tom <i>Univ. of Edinburgh</i> ; Jensen, Jorgen <i>Technical Univ. of Denmark</i> ; Sboros, Vassilis* <i>Heriot Watt Univ.</i>	
15:30-15:45	FrET7.5
Biomagnetic Measurement System for Supine Subjects with Expanded Sensor Array and Real-Time Noise Reduction	7071-7074
Adachi, Yoshiaki* <i>Kanazawa Institute of Technology</i> ; Kawabata, Shigenori <i>Tokyo Medical and Dental Univ.</i> ; Sasano, Tetsuo <i>Tokyo Medical and Dental Univ.</i> ; Haruta, Yasuhiro <i>Kanazawa Institute of Techonlogy</i> ; Oyama, Daisuke <i>Kanazawa Institute of Technology</i> ; Uehara, Gen <i>Kanazawa Institute of Technology</i> ; Sekihara, Kensuke <i>Tokyo Metropolitan Univ.</i>	

15:45-16:00 FrET7.6
Toward Development of Mobile Application for Hand Arthritis Screening 7075-7078
 Akhbardeh, Farhad *Univ. of North Dakota*; Vasefi, Fartash *Simon Fraser Univ.*; Tavakolian, Kouhyar *Assistant Professor*; David, Bradley *Univ. of North Dakota*; Fazel-Rezai, Reza* *Univ. of North Dakota*

FrET8: 14:30-16:00 Amber 5
3.8 Label Free Live Cell Monitoring (Invited Session)
Chair: Wiest, Joachim *cellasys GmbH*
Co-Chair: Brischwein, Martin *Technische Universität München*

14:30-14:45 FrET8.1
Impedance Analysis of Different Cell Monolayers Grown on Gold-Film Electrodes 7079-7082
 Wegener, Joachim* *Univ. Regensburg*; Reiss, Bjoern *Univ. Regensburg*

14:45-15:00 FrET8.2
Sensor-Based Microphysiometry 7083-7086
 Brischwein, Martin* *Technische Univ. München*

15:00-15:15 FrET8.3
In-Vivo Cell and Tissue Monitoring with Active Implants 7087-7090
 Clauss, Johannes F.* *Technische Univ. München*; Wirths, Walter *Technische Univ. München*; Roos, Michael Markus *Technische Univ. München*; Wöhrle, Budi *Technische Univ. München*; Brischwein, Martin *Technische Univ. München*; Wolf, Bernhard *Technische Univ. München*

15:15-15:30 FrET8.4
Online, Label-Free Monitoring of Organ-on-a-Chip Models: The Case for Microphysiometry 7091-7094
 Alexander, Frank *cellasys GmbH*; Wiest, Joachim* *cellasys GmbH*

15:30-15:45 FrET8.5
Dynamic Monitoring of Cellular Metabolic Activity in Combination with Live Cell Imaging 7095-7098
 Pfister, Cornelia* *HP Medizintechnik GmbH*; Wolf, Peter *HP Medizintechnik GmbH*

15:45-16:00 FrET8.6
Application of Algae-Biosensor for Environmental Monitoring 7099-7102
 Umar, Lazuardi* *Univ. of Riau*; Alexander, Frank *cellasys GmbH*; Wiest, Joachim *cellasys GmbH*

FrET9: 14:30-16:00 Amber 6
3.9 Advanced Bioelectronic Interfaces (Invited Session)
Chair: Gosselin, Benoit *Laval University*
Co-Chair: Mohseni, Pedram *Case Western Reserve University*

14:30-14:45 FrET9.1
Impulse Radio Ultra Wideband Wireless Transmission of Dopamine Concentration Levels Recorded by Fast-Scan Cyclic Voltammetry 7103-7106
 Ebrazeah, Ali *Case Western Reserve Univ.*; Bozorgzadeh, Bardia *Case Western Reserve Univ.*; Mohseni, Pedram* *Case Western Reserve Univ.*

14:45-15:00 FrET9.2
Dual-Path NMR Receiver using Double Transceiver Microcoils 7107-7110
 Pourmodheji, Hossein *York Univ.*; Ghafar-Zadeh, Ebrahim* *York Univ.*; Magierowski, Sebastian *York Univ.*

15:00-15:15 FrET9.3
An Ultra Low Power Feature Extraction and Classification System for Wearable Seizure Detection 7111-7114
 Page, Adam *Univ. of Maryland Baltimore County*; Pramod, Siddharth *Univ. of Maryland Baltimore County*; Oates, Tim *Univ. of Maryland Baltimore County*; Mohsenin, Tinoosh* *Univ. of Maryland Baltimore County*

15:15-15:30 FrET9.4
Ultra Low-Power Transceiver with Novel FSK Modulation Technique and Efficient FSK-to-ASK Demodulation 7115-7118
 Zgaren, Mohamed* *Polytechnique Montreal*; Moradi, Arash *Polytechnique Montreal*; Sawan, Mohamad *Polytechnique Montreal*

15:30-15:45 FrET9.5
Integrated Electronic System for Implantable Sensory NFC Tag 7119-7122
Zaher, Ali* *Oslo Univ.*; Særsten, Joar *Oslo Univ.*; Nguyen, Thanh Trung *Oslo Univ.*;
Häfliger, Philipp *Univ. of Oslo, Dept. of Informatics*

15:45-16:00 FrET9.6
Multichannel Spike Detector with an Adaptive Threshold based on a Sigma-Delta Control Loop 7123-7126
Gagnon-Turcotte, Gabriel *Univ. Laval*; Dufresne Camaro, Charles-Olivier *Univ. Laval*;
Gosselin, Benoit* *Laval Univ.*

FrET10: 14:30-16:00 Amber 7
6.22 Neural Interfaces I (Oral Session)

14:30-14:45 FrET10.1
Microfabricated Multi-Electrode Device for Detecting Oligodendrocyte-Regulated Changes in Axonal Conduction Velocity 7127-7130
Sakai, Koji* *Univ. of Tokyo*; Shimba, Kenta *Univ. of Tokyo*; Kotani, Kiyoshi *Univ. of Tokyo*;
Jimbo, Yasuhiko *Univ. of Tokyo*

14:45-15:00 FrET10.2
Comparison of Foam-Based and Spring-Loaded Dry EEG Electrodes with Wet Electrodes in Resting and Moving Conditions 7131-7134
Yeung, Arnold* *Univ. of British Columbia*; Garudadri, Harinath *Univ. of California, San Diego*; Van Toen, Carolyn *MEA Forensic Engineers & Scientists*; Mercier, Patrick P. *Univ. of California, San Diego*; Balkan, Ozgur *Univ. of California San Diego*; Makeig, Scott *Univ. of California San Diego*; Virji-Babul, Naznin *Univ. of British Columbia*

15:00-15:15 FrET10.3
A New Generation of Double-Sided Intramuscular Electrodes for Multi-Channel Recording and Stimulation .. 7135-7138
Poppendieck, Wigand* *Fraunhofer Institute für Biomedizinische Technik*; Muceli, Silvia *Univ. Medical Center Göttingen*; Dideriksen, Jakob *Univ. Medical Center Goettingen*; Rocon, Eduardo *CSIC*; Pons, Jose Luis *Cajal Institute, Spanish Research Council*; Farina, Dario *Bernstein Center for Computational Neuroscience, Univ. Medic*; Hoffmann, Klaus-Peter *Fraunhofer Institut*

15:15-15:30 FrET10.4
Design of a Flexible Parylene-Based Multi-Electrode Array for Multi-Region Recording from the Rat Hippocampus 7139-7142
Xu, Huijing* *Univ. of Southern California*; Hsiao, Min-Chi *Univ. of Southern California*; Meng, Ellis *Univ. of Southern California*; Berger, Theodore *Univ. of Southern California*; Song, Dong *Univ. of Southern California*

15:30-15:45 FrET10.5
Fused Silica Microlenses for Hermetic Packages as Part of Implantable Optrodes 7143-7146
Rudmann, Linda* *Univ. of Freiburg*; Huber, Sebastian Dominik *Dept. of Microsystems Engineering - IMTEK, Univ. of Fr*; Ordonez, Juan Sebastian *Univ. of Freiburg*; Stieglitz, Thomas *Univ. of Freiburg*

15:45-16:00 FrET10.6
Topographical Strategies to Control Neural Outgrowth 7147-7150
Morana Roccasalvo, Iolanda *The BioRobotics Institute, Scuola Superiore Sant'Anna, Pisa*; Sergi, Pier Nicola *Scuola Superiore Sant'Anna*; Tonazzini, Ilaria *NEST Istituto Nanoscienze CNR, Pisa*; Cecchini, Marco *NEST, Istituto Nanoscienze-CNR*; Micera, Silvestro* *Scuola Superiore Sant'Anna*

14:45-15:00 FrET11.2
The Ninapro Database: A Resource for Semg Naturally Controlled Robotic Hand Prosthetics 7151-7154
Atzori, Manfredo* *Univ. of Applied Sciences Western Switzerland (HES-SO Valai)*;
Müller, Henning *Univ. of Applied Sciences Western Switzerland (HES-SO)*

15:00-15:15 FrET11.3
Towards Low-Dimensional Proportional Myoelectric Control 7155-7158
Krasoulis, Agamemnon* *The Univ. of Edinburgh*; Nazarpour, Kianoush *Newcastle Univ.*;
Vijayakumar, Sethu *The Univ. of Edinburgh*

15:30-15:45 FrET11.5
A Multi-Channel Biomimetic Neuroprosthesis to Support Treadmill Gait Training in Stroke Patients 7159-7162
Chia Bejarano, Noelia *Politecnico di Milano*; Ambrosini, Emilia *Politecnico di Milano*; Baccinelli, Walter *Politecnico di Milano*; Nardone, Antonio *Scientific Institute of Veruno, Fondazione Salvatore Maugeri.*; Monticone, Marco *Fondazione Salvatore Maugeri*; Ferrigno, Giancarlo *Politecnico di Milano*; Pedrocchi, Alessandra *Politecnico di Milano*; Ferrante, Simona* *Politecnico di Milano*

FrET12: 14:30-16:00 Suite 5
3.10 Signal Treatment and Feature Extraction from Ballistocardiogram and Seismocardiogram (Invited Session)
Chair: Di Rienzo, Marco *Fondazione Don Carlo Gnocchi*
Co-Chair: Inan, Omer *Georgia Institute of Technology*

14:30-14:45 FrET12.1
Moving Toward Automatic and Standalone Segmentation of Seismocardiogram Signal 7163-7166
Khosrow-khavar, Farzad *Simon Fraser Univ.*; Tavakolian, Kouhyar* *Assistant Professor*;
Menon, Carlo *Simon Fraser Univ.*

14:45-15:00 FrET12.2
Ballistocardiogram of Baby during Sleep 7167-7170
Lee, Won Kyu *Seoul National Univ.*; Yoon, Heenam *Seoul National Univ.*; Jung, Dawoon *Seoul National Univ.*;
Hwang, Suhwan *Seoul National Univ.*; Park, Kwang S.* *Seoul National Univ.*

15:00-15:15 FrET12.3
MRI-Based Aortic Blood Flow Model in 3D Ballistocardiography 7171-7174
Lejeune, Laurent* *Univ. Libre de Bruxelles*; Prisk, Gordon Kim *Univ. of California, San Diego*; Nonclercq, Antoine *Univ. Libre de Bruxelles*; Migeotte, Pierre-François *Univ. libre de Bruxelles - Hôpital Erasme*

15:15-15:30 FrET12.4
Robust Heartbeat Detection from In-Home Ballistocardiogram Signals of Older Adults using a Bed Sensor ... 7175-7179
Lydon, Katy *Rock Bridge Senior High School*; Su, Bo-Yu *Univ. of Missouri-Columbia*; Rosales, Licet *Univ. of Missouri*; Enayati, Moein *Univ. of Missouri*; Ho, K.C. *Univ. of Missouri*; Rantz, Marilyn *Univ. of Missouri*; Skubic, Marjorie* *Univ. of Missouri*

15:30-15:45 FrET12.5
BioPhone: Physiology Monitoring from Peripheral Smartphone Motions 7180-7183
Hernandez, Javier* *Massachusetts Institute of Technology*; McDuff, Daniel Jonathan *Massachusetts Institute of Technology*; Picard, Rosalind *Massachusetts Institute of Technology*

15:45-16:00 FrET12.6
Use of Seismocardiogram for the Beat-to-Beat Assessment of the Pulse Transit Time: A Pilot Study 7184-7187
Di Rienzo, Marco* *Fondazione Don Carlo Gnocchi*; Vaini, Emanuele *Polo Tecnologico, Fondazione Don Carlo Gnocchi*; Lombardi, Prospero *Fondazione Don Carlo Gnocchi ONLUS*

FrET15: 14:30-16:00 White 1
9.9 Stimulation and Implantable Technologies (Oral Session)
Co-Chair: Panescu, Dorin *Advanced Cardiac Therapeutics*

14:30-14:45 FrET15.1
Hardware-In-The-Loop Simulation and Energy Optimization of Cardiac Pacemakers 7188-7191
Barker, Chris *Univ. of Southampton*; Kwiatkowska, Marta *Univ. of Oxford*; Mereacre, Alexandru *Univ. of Oxford*;
Paoletti, Nicola* *Univ. of Oxford*; Patane', Andrea *Univ. of Catania*

14:45-15:00 FrET15.2
Vestibular Implants: Hope for Improving the Quality of Life of Patients with Bilateral Vestibular Loss 7192-7195
Guinand, Nils* *Univ. Hospitals of Geneva*; van de Berg, Raymond *Maastricht Univ. Medical Centre*; Ranieri, Maurizio *Univ. Hospitals of Geneva*; Cavuscens, Samuel *Univ. Hospitals of Geneva*; DiGiovanna, Jack *École Polytechnique Fédérale de Lausanne (EPFL)*; Nguyen, Thuy Anh Khoa *EPF Lausanne*; Micera, Silvestro *Scuola Superiore Sant'Anna*; Stokroos, Robert *Maastricht Univ. Medical Centre*; Kingma, Herman *Univ. Hospital Maastricht*; Guyot, Jean-Philippe *ENT Dept., Geneva Univ. Hospital*; Pérez-Fornos, Angelica *Cochlear Implant Center for French Speaking Switzerland, Service*

15:00-15:15 FrET15.3
Intersubject Assessment of Implantable Antenna Performance for Intracranial Pressure Monitoring 7196-7199
Psathas, Konstantinos* *National Technical Univ. of Athens*; Karathanasis, Konstantinos *National Technical Univ. of Athens*; Nikita, Konstantina *National Technical Univ. of Athens*

15:15-15:30 FrET15.4
Wrong Detection of Ventricular Fibrillation in an Implantable Cardioverter Defibrillator Caused by the Movement Near the MRI Scanner Bore 7200-7203
Mattei, Eugenio *Italian National Institute of Health*; Censi, Federica *Italian National Institute of Health*; Triventi, Michele *Italian National Institute of Health*; Mancini, Matteo* *Univ. degli Studi di Roma Tre*; Napolitano, Antonio *Bambino Gesù Children's Hospital, IRCCS, Rome, Italy.*; Genovese, Elisabetta *Bambino Gesù Children's Hospital, IRCCS.*; Cannatà, Vittorio *Clinical-Technological Innovations Research Unit, Bambino Gesù C*; Falsaperla, Rosaria *Italian National Workers Compensation Authority (INAIL)*; Calcagnini, Giovanni *Italian National Institute of Health*

15:30-15:45 FrET15.5
Motion Compensation in a Tomographic Ultrasound Imaging System: Toward Volumetric Scans of a Limb for Prosthetic Socket Design 7204-7207
Ranger, Bryan* *Massachusetts Institute of Technology*; Feigin, Micha *Massachusetts Institute of Technology*; Pestrov, Nikita *Skolkovo Institute of Technology*; Zhang, Xiang *Massachusetts Institute of Technology*; Lempitsky, Victor *Skolkovo Institute of Science and Technology*; Herr, Hugh *MIT*; Anthony, Brian W. *Massachusetts Institute of Technology*

15:45-16:00 FrET15.6
Transthoracic Ventricular Fibrillation Charge Thresholds 7208-7213
Panescu, Dorin* *Advanced Cardiac Therapeutics*; Kroll, Mark *Univ. of Minnesota*; Andrews, Chris *Univ. of Queensland*; Pratt, Hugh *CPLSO*

FrET16: 14:30-16:00 White 2
4.8 Medical Decision Making (Invited Session)
Chair: Seker, Huseyin *The University of Northumbria at Newcastle*
Co-Chair: Sugimoto, Masahiro *Keio University*

14:30-14:45 FrET16.1
Pigment Network-Based Skin Cancer Detection 7214-7217
Alfed, Naser* *Univ. of Northumbria at Newcastle*; Khelifi, Fouad *Northumbria Univ.*; Bouridane, Ahmed *Northumbria Univ. Univ. Belfast*; Seker, Huseyin *The Univ. of Northumbria at Newcastle*

14:45-15:00 FrET16.2
Texture Analysis for Colorectal Tumour Biopsies using Multispectral Imagery 7218-7221
Peyret, Rémy *Northumbria Univ.*; Bouridane, Ahmed* *Northumbria Univ. Univ. Belfast*; Al-maadeed, Somaya *Qatar Univ.*; Kunhoth, Suchithra *Qatar Univ.*; Khelifi, Fouad *Northumbria Univ.*

15:00-15:15 FrET16.3
Ensemble Learning Approaches to Predicting Complications of Blood Transfusion 7222-7225
Murphree, Dennis* *Mayo Clinic*; Ngufor, Che *Mayo Clinic*; Upadhyaya, Sudhindra *Mayo Clinic*; Madde, Nageswar *Mayo Clinic*; Clifford, Leanne *Mayo Clinic*; Kor, Daryl *Mayo Clinic*; Pathak, Jyotishman *Mayo Clinic*

15:15-15:30 FrET16.4
Robust Automatic Breast Cancer Staging using a Combination of Functional Genomics and Image-Omics ... 7226-7229
Su, Hai *Univ. of Florida*; Shen, Yong *Univ. of Florida, Genetics Institute*; Xing, Fuyong *Univ. of Florida*; Hirshfield, Kim M. *Robert Wood Johnson Medical School, Dept. of Medicine-Medical On*; Yang, Lin *Univ. of Florida*; Qi, Xin *Rutgers Univ.*; Foran, David J.* *Rutgers Cancer Institute of New Jersey*

15:30-15:45 FrET16.5
Improving Medical Diagnosis Reliability using Boosted C5.0 Decision Tree Empowered by Particle Swarm Optimization 7230-7233
Pashaei, Elnaz *Yildiz Technical Univ.*; Ozen, Mustafa *Biruni Univ.*; Aydin, Nizamettin* *Yildiz Technical Univ.*

15:45-16:00 FrET16.6
Towards a Predictive Model for Guillain-Barre Syndrome 7234-7237
 Hernandez-Torruco, Jose *Univ. Juárez Autónoma de Tabasco*; Canul-Reich, Juana* *Univ. Juárez Autónoma de Tabasco*; Frausto-Solis, Juan *Instituto Tecnológico de Ciudad Madero*; Mendez-Castillo, Juan Jose *Hospital General de Especialidades Dr. Javier Buenfil Osorio*

FrET17: 14:30-16:00 Space 1
1.31 Biomedical Signal Classification: III: EEG Signal Analysis (Oral Session)
Chair: Babiloni, Fabio *University of Rome*
Co-Chair: Nguyen, Hung T. *University of Technology, Sydney*

14:30-14:45 FrET17.1
Low-Complexity EEG-Based Eye Movement Classification using Extended Moving Difference Filter and Pulse Width Demodulation 7238-7241
 Hsieh, Chi-Hsuan* *National Tsing-Hua Univ.*; Huang, Yuan-Hao *National Tsing Hua Univ.*

14:45-15:00 FrET17.2
Reliability Over Time of EEG-Based Mental Workload Evaluation during Air Traffic Management (ATM) Tasks 7242-7245
 Arico, Pietro* *Fondazione Santa Lucia*; Borghini, Gianluca *Univ. of Rome Sapienza*; Di Flumeri, Gianluca *Univ. of Rome Sapienza*; Colosimo, Alfredo *Univ. of Rome "Sapienza"*; Graziani, Ilenia *Dept. di Fisiologia e Farmacologia, BrainSigns*; Imbert, Jean-Paul *enac*; Granger, Geraud *enac*; Benhacene, Railane *enac*; Terenzi, Michela *deep blue*; Pozzi, Simone *deep blue*; Babiloni, Fabio *Univ. of Rome*

15:00-15:15 FrET17.3
Single Trial EEG Classification Applied to a Face Recognition Experiment using Different Feature Extraction Methods 7246-7249
 Li, Yudu *Tsinghua Univ.*; Ma, Sen *Tsinghua Univ.*; Hu, Zhongze *Tsinghua Univ.*; Chen, Jiansheng* *Tsinghua Univ.*; Su, Guangda *Tsinghua Univ.*; Dou, Weibei *Tsinghua Univ.*

15:15-15:30 FrET17.4
Investigation of Window Size in Classification of EEG-Emotion Signal with Wavelet Entropy and Support Vector Machine 7250-7253
 Candra, Henry* *Univ. of Technology Sydney*; Yuwono, Mitchell *Univ. of Technology Sydney*; Chai, Rifai *Univ. of Technology, Sydney*; Handojoseno, Aluysius Maria Ardi *Univ. of Technology, Sydney*; Elamvazuthi, Iraivan *Univ. Teknologi Petronas, Dept. of Electrical and Electroni*; Nguyen, Hung T. *Univ. of Technology, Sydney*; Su, Steven Weidong *Univ. of Technology, Sydney*

15:30-15:45 FrET17.5
A Comparison of ERP Spatial Filtering Methods for Optimal Mental Workload Estimation 7254-7257
 Roy, Raphaëlle N. *CEA-LETI*; Bonnet, Stéphane *CEA Léti MINATEC*; Charbonnier, Sylvie *Gipsa-Lab*; Jallon, Pierre* *CEA Grenoble*; Campagne, Aurélie *Laboratoire de Psychologie et Neurocognition, Grenoble*

15:45-16:00 FrET17.6
Clustering Analysis to Identify Distinct Spectral Components of Encephalogram Burst Suppression in Critically Ill Patients 7258-7261
 Zhou, David Wei *Massachusetts General Hospital*; Westover, Brandon *Massachusetts General Hospital*; McClain, Lauren M. *Massachusetts General Hospital*; Nagaraj, Sunil Belur *Massachusetts General Hospital*; Bajwa, Ednan K. *Massachusetts General Hospital*; Quraishi, Sadeq A. *Massachusetts General Hospital*; Akeju, Oluwaseun *Massachusetts General Hospital*; Cobb, J. Perren *Massachusetts General Hospital*; Purdon, Patrick L* *Massachusetts General Hospital*

FrET18: 14:30-16:00 Space 2
1.32 Biomedical Signal Classification IV: Myoelectric Signal Analysis (Oral Session)
Co-Chair: Al-Jumaily, Adel *University of Technology Sydney*

14:30-14:45 FrET18.1
Enhanced Robustness of Myoelectric Pattern Recognition to Across-Day Variation through Invariant Feature Extraction 7262-7265
 Liu, Jianwei *Shanghai Jiao Tong Univ.*; Zhang, Dingguo *Shanghai Jiao Tong Univ.*; Sheng, Xinjun* *Shanghai Jiao Tong Univ.*; Zhu, Xiangyang *Shanghai Jiao Tong Univ.*

14:45-15:00	FrET18.2
A Robust Myoelectric Pattern Recognition using Online Sequential Extreme Learning Machine for Finger Movement Classification	7266-7269
Anam, Khairul <i>Univ. of Technology Sydney</i> ; Al-Jumaily, Adel* <i>Univ. of Technology Sydney</i>	
15:00-15:15	FrET18.3
Residuals of Autoregressive Model Providing Additional Information for Feature Extraction of Pattern Recognition-Based Myoelectric Control	7270-7273
Pan, Lizhi* <i>Shanghai Jiao Tong Univ.</i> ; Zhang, Dingguo <i>Shanghai Jiao Tong Univ.</i> ; Sheng, Xinjun <i>Shanghai Jiao Tong Univ.</i> ; Zhu, Xiangyang <i>Shanghai Jiao Tong Univ.</i>	
15:15-15:30	FrET18.4
Unsupervised Learning Technique for Surface Electromyogram Denoising from Power Line Interference and Baseline Wander	7274-7277
Niegowski, Maciej* <i>Public Univ. of Navarra</i> ; Zivanovic, Miroslav <i>Univ. Publica de Navarra</i> ; Gómez, Marisol <i>Univ. Publica de Navarra</i> ; Lecumberri, Pablo <i>Univ. Publica de Navarra</i>	
15:30-15:45	FrET18.5
A Comparison of Classification based Confidence Metrics for use in the Design of Myoelectric Control Systems	7278-7283
Scheme, Erik <i>Univ. of New Brunswick</i> ; Englehart, Kevin* <i>Univ. of New Brunswick</i>	
15:45-16:00	FrET18.6
Individual Finger Classification from Surface EMG: Influence of Electrode Set	7284-7287
Celadon, Nicolò* <i>Fondazione Istituto Italiano di Tecnologia</i> ; Dosen, Strahinja <i>Univ. Medical Center, UMG, Goettingen</i> ; Paleari, Marco <i>Fondazione Istituto Italiano di Tecnologia</i> ; Farina, Dario <i>Bernstein Center for Computational Neuroscience, Univ. Medic</i> ; Ariano, Paolo <i>Fondazione Istituto Italiano di Tecnologia</i>	

FrET19: 14:30-16:00	Space 3
2.24 Cardiac Imaging and Image Analysis (Oral Session)	
Co-Chair: Redmond, Stephen James <i>University of New South Wales</i>	

14:30-14:45	FrET19.1
Automated Cardiac Time Interval Measurement for Modified Myocardial Performance Index Calculation of Right Ventricle	7288-7291
Wang, Jingjing* <i>Univ. of New South Wales</i> ; Henry, Amanda <i>Univ. of New South Wales</i> ; Welsh, Alec <i>Univ. of New South Wales</i> ; Redmond, Stephen James <i>Univ. of New South Wales</i>	
14:45-15:00	FrET19.2
Classification of LV Wall Motion in Cardiac MRI using Kernel Dictionary Learning with a Parametric Approach	7292-7295
Mantilla, Juan* <i>Univ. de Rennes 1</i> ; Paredes, José-Luis, Paredesj <i>Univ. de los Andes (ULA), Mérida Venezuela</i> ; Bellanger, Jean-Jacques <i>LTSI-INSERM U1099</i> ; Donal, Erwan <i>INSERM U642 LTSI.</i> ; Leclercq, Christophe <i>CHU Rennes, INSERM U642, LTSI, Univ. of Rennes 1</i> ; Medina, Rubén <i>Univ. de Los Andes</i> ; Garreau, Mireille <i>INSERM, U642, Univ. de Rennes 1</i>	
15:00-15:15	FrET19.3
A Technique for Visualising Three-Dimensional Left Atrial Cardiac Activation Data in Two Dimensions with Minimal Distance Distortion	7296-7299
Roney, Caroline <i>Imperial College London</i> ; Tzortzis, Konstantinos N <i>Imperial College London</i> ; Cantwell, Chris <i>Imperial College London</i> ; Qureshi, Norman <i>Imperial College London</i> ; Ali, Rheeda* <i>Imperial College London</i> ; Lim, Phang Boon <i>Imperial College London</i> ; Siggers, Jennifer <i>Imperial College London</i> ; Ng, Fu Siong <i>Imperial College London</i> ; Peters, Nicholas <i>Imperial College London</i>	
15:15-15:30	FrET19.4
Quantification of Velocity Reduction After Flow Divorter Placement in Intracranial Aneurysm: An Ex Vivo Study with 3D Printed Replicas	7300-7303
Anderson, Jeff* <i>Houston Methodist Research Institute</i> ; Klucznik, Richard <i>The Methodist Hospital</i> ; Diaz, Orlando <i>The Methodist Hospital</i> ; Zhang, Jonathon <i>The Methodist Hospital</i> ; Britz, Gavin <i>Houston Methodist Research Institute</i> ; Grossman, Robert <i>The Methodist Hospital</i> ; Karmonik, Christof <i>The Methodist Hospital Neurological Inst</i>	

15:30-15:45 FrET19.5
Segmentation of the Left Ventricle in Cardiac MRI using a Probabilistic Data Association Active Shape Model 7304-7307
 Santiago, Carlos* *IST-ID*; Nascimento, Jacinto *Instituto Superior Técnico*;
 Marques, Jorge *Instituto Superior Tecnico*

15:45-16:00 FrET19.6
Automated Quantification of Epicardial Adipose Tissue in Cardiac Magnetic Resonance Imaging 7308-7311
 Cristobal-Huerta, Alexandra* *Univ. Rey Juan Carlos*; Torrado-Carvajal, Angel *Univ. Rey Juan Carlos*;
 Malpica, Norberto *Univ. Rey Juan Carlos*; Luaces, Maria *Fuenlabrada Univ. Hospital*;
 Hernandez-Tamames, Juan Antonio *Univ. Rey Juan Carlos*

FrET20: 14:30-16:00	Space 4
10.8 Mobile Health (Oral Session)	

14:30-14:45 FrET20.1
Towards a Workflow Driven Design for mHealth Devices within Temporary Eye Clinics in Low-Income Settings 7312-7315
 Bolster, Nigel Magnus* *Univ. of Strathclyde*; Bastawrous, Andrew *London School of Hygiene and Tropical Medicine*;
 Giardini, Mario Ettore *Univ. of Strathclyde*

14:45-15:00 FrET20.2
The use of Technology in Suicide Prevention 7316-7319
 Larsen, Mark Erik* *Univ. of New South Wales*; Cummins, Nicholas *Univ. of New South Wales*; Boonstra, Tjeerd
Univ. of New South Wales; O'Dea, Bridianne *Univ. of New South Wales*; Tighe, Joe *Univ. of New South Wales*;
 Nicholas, Jennifer *Univ. of New South Wales*; Shand, Fiona *Univ. of New South Wales*; Epps, Julien *The Univ. of New South Wales*;
 Christensen, Helen *Univ. of New South Wales*

15:00-15:15 FrET20.3
Monitoring of Compliance on an Individual Treatment through Mobile Innovations 7320-7323
 Anastasiou, Athanasios* *Biomedical Engineering Laboratory, National Technical Univ.*; Giokas, Kostas
Biomedical Engineering Laboratory, National Technical Univ.; Koutsouris, Dimitrios *Biomedical Engineering Laboratory, School of Electrical and Comp*

15:15-15:30 FrET20.4
Real-Time Multimedia Communications in Medical Emergency – The CONCERTO Project Solution 7324-7327
 Martini, Maria* *Kingston Univ. London*; Mazzotti, Matteo *Univ. of Bologna*; Eeriwarawe Ranasinghe Hewage,
 Chaminda Thushara *Kingston Univ.-London*; Iacobelli, Lorenzo *Thales Communications & Security*; Bergeron,
 Cyril *Thales Communications and Security*; Amon, Peter *Siemens Corporate Technology*; Savino, Ketty
Cardiology Univ. of Perugia

15:30-15:45 FrET20.5
An Environment for Representing and using Medical Checklists on Mobile Devices 7328-7331
 Losiouk, Eleonora* *Univ. degli studi di Pavia*; Lanzola, Giordano *Univ. of Pavia*; Visetti, Enrico *AUSL Valle d'Aosta*;
 Quaglioni, Silvana *Univ. of Pavia*

15:45-16:00 FrET20.6
Real Time Heart Rate Variability Assessment from Android Smartphone Camera Photoplethysmography: Postural and Device Influences 7332-7335
 Guede-Fernandez, Federico* *Univ. Politècnica de Catalunya*; Ferrer-Mileo, Víctor *Univ. Politècnica de Catalunya*;
 Ramos-Castro, Juan *Univ. Politècnica de Catalunya*; Fernandez-Chimeno, Mireya *Technical Univ. of Catalonia*;
 Garcia-Gonzalez, Miguel A. *Univ. Politècnica de Catalunya*

FrET21: 14:30-16:00

Suite 8

9.10 Interventional Technologies (Oral Session)

Chair: Hunter, Ian *Massachusetts Institute of Technology*

Co-Chair: Werahera, Priya N. *University of Colorado Anschutz Medical Campus*

14:30-14:45

FrET21.1

Jet Injection of a Monoclonal Antibody: A Preliminary Study 7336-7340

Hogan, N. Catherine* *Massachusetts Institute of Technology*; Cloutier, Alison *Georgia Institute of Technology*;
Hunter, Ian *Massachusetts Institute of Technology*

14:45-15:00

FrET21.2

A Compound Ampoule for Large-Volume Controllable Jet Injection 7341-7344

Ruddy, Bryan* *Univ. of Auckland*; Mckeage, James William *Auckland Bioengineering Institute*;
Williams, Rhys Matthew James *Univ. of Auckland*; Nielsen, Poul *The Univ. of Auckland*;
Taberner, Andrew *The Univ. of Auckland*

15:00-15:15

FrET21.3

Adaptive Controller for a Needle Free Jet-Injector System 7345-7349

Modak, Ashin* *Massachusetts Institute of Technology*; Hogan, N. Catherine *Massachusetts Institute of Technology*;
Hunter, Ian *Massachusetts Institute of Technology*

15:15-15:30

FrET21.4

The Effect of Jet Shape on Jet Injection 7350-7353

Park, Geehoon* *Massachusetts Institute of Technology*; Modak, Ashin *Massachusetts Institute of Technology*;
Hogan, N. Catherine *Massachusetts Institute of Technology*; Hunter, Ian *Massachusetts Institute of Technology*

15:30-15:45

FrET21.5

Optimization of Drug Viscosity used in Gas-Powered Liquid Jet Injectors 7354-7357

Portaro, Rocco* *Concordia Univ.*; Nakayama, Haruka *Concordia Univ.*; Ng, Hoi Dick *Concordia Univ.*

15:45-16:00

FrET21.6

Human Feasibility Study of Fluorescence Spectroscopy Guided Optical Biopsy Needle for Prostate Cancer Diagnosis 7358-7361

Werahera, Priya N.* *Univ. of Colorado Anschutz Medical Campus*; Jasion, Edward *Precision Biopsy LLC*; Liu, Yongjun *Univ. of Colorado Anschutz Medical Campus*; Daily, John W. *Univ. of Colorado Boulder*; Arangua, Paul *Univ. of Colorado Anschutz Medical Campus*; Jones, Cliffod *Univ. of Colorado Anschutz Medical Campus*;
Nash, S. Russell *Centennial Pathologist, PC*; Morrell, Michael *Precision Biopsy, LLC*; Crawford, E. David *Univ. of Colorado Anschutz Medical Campus*

FrGT2: 17:30-19:00

Brown 2

5.8 Microcirculation: New Methods for Gathering Information about Peripheral Blood Flow (Invited Session)

Chair: Bocchi, Leonardo *Università degli Studi di Firenze, Firenze, Italy*

Co-Chair: Humeau-Heurtier, Anne *University of Angers*

17:30-17:45

FrGT2.1

Analysis of the Microcirculatory Pulse Wave: Age-Related Alterations 7362-7365

Straface, Giada *Univ. of Pisa*; Landini, Luigi *Univ. of Pisa*; Barrella, Massimo *Sacco Hospital*; Bevilacqua, Maurizio L. *Sacco Hospital, Milan*; Evangelisti, Attilio *Univ. of Florence*; Bocchi, Leonardo* *Univ. degli Studi di Firenze, Firenze, Italy*

17:45-18:00

FrGT2.2

Ageing of the Couplings between Cardiac, Respiratory and Myogenic Activity in Humans 7366-7369

Ticcinelli, Valentina* *Lancaster Univ.*; Stankovski, Tomislav *Lancaster Univ.*; McClintock, Peter V. E. *Lancaster Univ.*; Stefanovska, Aneta *Lancaster Univ.*

18:00-18:15

FrGT2.3

Analysis of Microvascular Perfusion with Multi-Dimensional Complete Ensemble Empirical Mode Decomposition with Adaptive Noise Algorithm: Processing of Laser Speckle Contrast Images Recorded in Healthy Subjects, at Rest and during Acetylcholine Stimulation 7370-7373

Humeau-Heurtier, Anne* *Univ. of Angers*; Marche, Pauline *Hospital of Angers*; Dubois, Severine *Hospital of Angers*; Mahé, Guillaume *Univ. Hospital of Rennes*

18:15-18:30		FrGT2.4
Wavelet Analysis of the Laser Doppler Signal to Assess Skin Perfusion		7374-7377
Bagno, Andrea* <i>Univ. of Padova</i> ; Martini, Romeo <i>UOC of Angiology, Azienda Ospedale Univ. di Padova</i>		
18:30-18:45		FrGT2.5
Monitoring the Microcirculation at the Bedside using Hand-Held Imaging Microscopes: Automatic Tracking of Erythrocytes		7378-7381
Sorelli, Michele* <i>Dept. of Information Engineering, Univ. of Florence/Dept. o</i> ; Bocchi, Leonardo <i>Univ. degli Studi di Firenze, Firenze, Italy</i> ; Ince, Can <i>Dept. of Intensive Care, Erasmus MC Univ. Medical Center, R</i>		
18:45-19:00		FrGT2.6
Skin Blood Flow and Temperature Oscillations during Cold Pressor Test		7382-7385
Mizeva, Irina* <i>Institute of Continuous Media Mechanics UB RAS</i> ; Frick, Peter <i>Institute of Continuous Media Mechanics</i> ; Podtaev, Sergey <i>FM Diagnostics</i>		
FrGT3: 17:30-19:00		Brown 3
6.24 New Technological Platforms to Study Children Development (Invited Session)		
Co-Chair: Cecchi, Francesca <i>Scuola Superiore Sant'Anna</i>		
17:30-17:45		FrGT3.1
An Automated System for Quantitative Analysis of Newborns' Oral-Motor Behavior and Coordination during Bottle Feeding		7386-7389
Tamilia, Eleonora* <i>Univ. Campus Bio Medico di Roma</i> ; Formica, Domenico <i>Campus Bio-Medico Univ.</i> ; Anna Maria, Visco <i>Neonatal Care Unit of Santa Maria Goretti Hospital</i> ; Scaini, Alberto <i>Neonatal Care Unit of Santa Maria Goretti Hospital</i> ; Taffoni, Fabrizio <i>Campus Bio-Medico Univ.</i>		
17:45-18:00		FrGT3.2
Sensorized Toys for Measuring Manipulation Capabilities of Infants at Home		7390-7393
Passetti, Giovanni <i>Scuola Superiore Sant'Anna, the BioRobotics Institute</i> ; Cecchi, Francesca* <i>Scuola Superiore Sant'Anna</i> ; Baldoli, Ilaria <i>Scuola Superiore Sant'Anna, the BioRobotics Institute</i> ; Sgandurra, Giuseppina <i>Scuola Superiore Sant'Anna</i> ; Beani, Elena <i>Stella Maris Scientific Institute, Dept. of Developmental N</i> ; Cioni, Giovanni <i>Stella Maris Scientific Institute</i> ; Laschi, Cecilia <i>Scuola Superiore Sant'Anna</i> ; Dario, Paolo <i>Scuola Superiore Sant'Anna</i>		
18:00-18:15		FrGT3.3
Sensorized Graspable Devices for the Study of Motor Imitation in Infants		7394-7397
Baldoli, Ilaria <i>Scuola Superiore Sant'Anna, the BioRobotics Institute</i> ; Cecchi, Francesca* <i>Scuola Superiore Sant'Anna</i> ; Guzzetta, Andrea <i>Stella Maris Scientific Institute, Dept. of Developmental N</i> ; Laschi, Cecilia <i>Scuola Superiore Sant'Anna</i>		
18:15-18:30		FrGT3.4
Sensorized Pacifier to Quantify the Rhythmicity of Non-Nutritive Sucking: A Preliminary Study on Newborns		7398-7401
Grassi, Angela <i>Scuola Superiore Sant'Anna, the BioRobotics Institute</i> ; Cecchi, Francesca* <i>Scuola Superiore Sant'Anna</i> ; Guzzetta, Andrea <i>Stella Maris Scientific Institute, Dept. of Developmental N</i> ; Laschi, Cecilia <i>Scuola Superiore Sant'Anna</i>		
18:30-18:45		FrGT3.5
Artificial Nociception and Motor Responses to Pain, for Humans and Robots		7402-7405
Bagnato, Carlo <i>Imperial College of Science, Technology and Medicine</i> ; Takagi, Atsushi <i>Imperial College of Science, Technology and Medicine</i> ; Burdet, Etienne* <i>Imperial College of Science, Technology and Medicine</i>		
18:45-19:00		FrGT3.6
Gait Rehabilitation with a High Tech Platform based on Virtual Reality Conveys Improvements in Walking Ability of Children Suffering from Acquired Brain Injury		7406-7409
Biffi, Emilia* <i>Scientific Institute Eugenio Medea, Bosisio Parini</i> ; Beretta, Elena <i>IRCCS "E. Medea", Associazione La Nostra Famiglia, Bosisio Parini</i> ; Diella, Eleonora <i>Scientific Institute Eugenio Medea, Bosisio Parini</i> ; Panzeri, Daniele <i>Scientific Institute Eugenio Medea, Bosisio Parini</i> ; Cristina, Maghini <i>Scientific Institute Eugenio Medea, Bosisio Parini</i> ; Turconi, Anna Carla <i>Scientific Institute Eugenio Medea, Bosisio Parini</i> ; Strazzer, Sandra <i>IRCCS</i> ; Reni, Gianluigi <i>IRCCS</i>		

FrGT4: 17:30-19:00	Amber 1
1.33 Nonlinear Analysis of EEG and MEG Signals (Oral Session)	
Chair: Witte, Herbert <i>Jena University Hospital Friedrich Schiller University</i>	
Co-Chair: Zouridakis, George <i>University of Houston</i>	

17:30-17:45	FrGT4.1
Nonlinear Analysis of EEG in Major Depression with Fractal Dimensions	7410-7413
Akdemir Akar, Saime* <i>Fatih Univ.</i> ; Kara, Sadik <i>Fatih Univ.</i> ; Agambayev, Sümeyra <i>Fatih Univ.</i> ; Bilgic, Vedat <i>Bakirkoy Mental Health Research and Training Hospital</i>	
17:45-18:00	FrGT4.2
Volume Conduction Effects on Bivariate Lempel-Ziv Complexity of Alzheimer's Disease Electroencephalograms	7414-7417
Simons, Samantha* <i>Univ. of Surrey</i> ; Abasolo, Daniel <i>Univ. of Surrey</i> ; Sauseng, Paul <i>Ludwig-Maximilian-Univ. Munich</i>	
18:00-18:15	FrGT4.3
Convergent Cross Mapping: Basic Concept, Influence of Estimation Parameters and Practical Application ...	7418-7421
Schiecke, Karin* <i>Jena Univ. Hospital. Friedrich Schiller Univ. Jena</i> ; Pester, Britta <i>Jena Univ. Hospital; Friedrich Schiller Univ. Je</i> ; Feucht, Martha <i>Epilepsy Monitoring Unit, Dept. of Child and Adolescent Neu</i> ; Leistriz, Lutz <i>Jena Univ. Hospital, Friedrich Schiller Univ. Jena</i> ; Witte, Herbert <i>Jena Univ. Hospital Friedrich Schiller Univ.</i>	
18:15-18:30	FrGT4.4
Evaluation of Resting-State Magnetoencephalogram Complexity in Alzheimer's Disease with Multivariate Multiscale Permutation and Sample Entropies	7422-7425
Azami, Hamed <i>Univ. of Edinburgh</i> ; Smith, Keith <i>Univ. of Edinburgh</i> ; Fernandez, Alberto <i>Univ. Complutense de Madrid</i> ; Escudero, Javier* <i>Univ. of Edinburgh</i>	
18:30-18:45	FrGT4.5
Comparison of Brain Network Models using Cross-Frequency Coupling and Attack Strategies	7426-7429
Antonakakis, Marios* <i>Technical Univ. of Crete</i> ; Dimitriadis, Stavros <i>Aristotle Univ.</i> ; Zervakis, Michalis <i>Technical Univ. of Crete, Greece</i> ; Rezaie, Roozbeh <i>Univ. of Texas Medical School</i> ; Babajani-Feremi, Abbas <i>The Univ. of Tennessee Health Science Center</i> ; Micheloyannis, Sifis <i>Univ. of Crete</i> ; Zouridakis, George <i>Univ. of Houston</i> ; Papanicolaou, Andrew <i>Univ. of Texas Medical School</i>	
18:45-19:00	FrGT4.6
Spatial Variation in Automated Burst Suppression Detection in Pharmacologically Induced Coma	7430-7433
An, Jingzhi* <i>MIT</i> ; Jonnalagadda, Durga <i>Massachusetts General Hospital</i> ; Moura Junior, Valdery <i>MGH</i> ; Purdon, Patrick L <i>Massachusetts General Hospital</i> ; Brown, Emery N <i>MGH-Harvard Medical School-MIT</i> ; Westover, Brandon <i>Massachusetts General Hospital</i>	

FrGT5: 17:30-19:00	Amber 2
1.34 Independent Component Analysis (Oral Session)	
Co-Chair: Rejer, Izabela <i>West Pomeranian University of Technology, Szczecin</i>	

17:30-17:45	FrGT5.1
Benefits of ICA in the Case of a Few Channel EEG	7434-7437
Rejer, Izabela* <i>West Pomeranian Univ. of Tech., Szczecin</i> ; Górski, Paweł <i>West Pomeranian Univ. of Tech.</i>	
17:45-18:00	FrGT5.2
Clusters of Mu Rhythm from EEG Data: A Comparative Study between 61 and 19 Channel Datasets	7438-7441
Tacchino, Giulia* <i>Politecnico di Milano</i> ; Bianchi, Anna Maria <i>Politecnico di Milano</i>	
18:00-18:15	FrGT5.3
Neurophysiological Correlates in Mild Cognitive Impairment Detected using Group Independent Component Analysis	7442-7445
Ochoa, John Fredy* <i>Univ. of Antioquia</i> ; Ruiz Vélez, Leidy Mariana <i>Univ. de Antioquia</i> ; Valle Lopera, Diego Andrés <i>Univ. de Antioquia</i> ; Duque-Grajales, Jon <i>Univ. de Antioquia</i> ; Tobon, Carlos Andrés <i>Univ. de Antioquia</i> ; Alonso, Joan Francesc <i>Univ. Politècnica de Catalunya (UPC)</i> ; Hernandez, Alher Mauricio <i>Univ. of Antioquia</i> ; Mañanas, Miquel Angel <i>Technical Univ. of Catalonia (UPC)</i>	

18:15-18:30	FrGT5.4
Comparison between Different Similarity Measure Functions for Optimal Clustering AEPs Independent Components	7446-7449
Castaneda-Villa, Norma* <i>Univ. Autónoma Metropolitana-Izt</i> ; Cornejo-Cruz, Juan Manuel <i>Univ. Autónoma Metropolitana</i> ; Granados Trejo, María del Pilar <i>Univ. Autónoma Metropolitana-Iztapalapa</i>	
18:30-18:45	FrGT5.5
Non-Parametric Group-Level Statistics for Source-Resolved ERP Analysis	7450-7453
Lee, Clement* <i>Univ. of California San Diego</i> ; Miyakoshi, Makoto <i>Swartz Center for Computational Neuroscience, INC, UCSD</i> ; Delorme, Arnaud <i>UCSD</i> ; Cauwenberghs, Gert <i>Univ. of California San Diego</i> ; Makeig, Scott <i>Univ. of California San Diego</i>	
18:45-19:00	FrGT5.6
Accurate Heart Rate Estimation from Camera Recording via MUSIC Algorithm	7454-7457
Fouladi, Seyyed Hamed* <i>Norwegian Univ. of Science and Technology</i> ; Balasingham, Ilango <i>Oslo Univ. Hospital and Norwegian Univ. of Science and</i> ; Ramstad, Tor <i>Dept. of Electronics and Telecommunications, NTNU</i> ; Kansanen, Kimmo <i>Norwegian Univ. of Science and Technology</i>	
FrGT6: 17:30-19:00	Amber 3
2.25 Image Classification and Feature Extraction I (Oral Session)	
Co-Chair: Zubiolo, Alexis <i>University of Nice Sophia Antipolis</i>	
17:30-17:45	FrGT6.1
Bacterial Colony Counting by Convolutional Neural Networks	7458-7461
Ferrari, Alessandro <i>Univ. of Brescia, Copan Italia SpA</i> ; Lombardi, Stefano <i>Univ. of Brescia</i> ; Signoroni, Alberto* <i>Univ. of Brescia</i>	
17:45-18:00	FrGT6.2
A Clinically Oriented System for Melanoma Diagnosis using a Color Representation	7462-7465
Barata, Catarina* <i>Instituto Superior Tecnico</i> ; Celebi, M. Emre <i>Louisiana State Univ in Shreveport</i> ; Marques, Jorge <i>Instituto Superior Tecnico</i>	
18:00-18:15	FrGT6.3
Morphological Analysis and Feature Extraction of Neurons from Mouse Cortices Multiscale 3D Microscopic Images	7466-7469
Zubiolo, Alexis* <i>Univ. of Nice Sophia Antipolis</i> ; Harb, Kawssar <i>Univ. of Nice Sophia Antipolis</i> ; Studer, Michèle <i>Univ. of Nice Sophia Antipolis</i> ; Debreuve, Eric <i>CNRS</i> ; Descombes, Xavier <i>INRIA</i>	
18:15-18:30	FrGT6.4
Analysis of White Blood Cell Dynamics in Nailfold Capillaries	7470-7473
Bourquard, Aurelien* <i>Massachusetts Institute of Technology</i> ; Butterworth, Ian Richard <i>M+Vision / MIT</i> ; Sanchez-Ferro, Alvaro <i>MIT</i> ; Giancardo, Luca <i>Univ. of Burgundy - Oak Ridge National Lab</i> ; Soenksen, Luis Ruben <i>Hopkins Univ.</i> ; Cerrato, Carolina <i>Hospital Univ. de Fuenlabrada</i> ; Flores, Rafael <i>Hospital Univ. de Fuenlabrada</i> ; Castro-Gonzalez, Carlos <i>MIT</i>	
18:30-18:45	FrGT6.5
The Detection of Breathing Behavior using Eulerian-Enhanced Thermal Video	7474-7477
Bennett, Stephanie Louise* <i>Carleton Univ.</i> ; Goubran, Rafik A. <i>Carleton Univ.</i> ; Knoefel, Frank-Dietrich <i>Bruyere Continuing Care, Univ. of Ottawa, Carleton Univ.</i>	
18:45-19:00	FrGT6.6
Analyzing Dynamic Cellular Morphology in Time-Lapsed Images Enabled by Cellular Deformation Pattern Recognition	7478-7481
Li, Heng* <i>Beijing Institute of Tech.</i> ; Liu, Zhiwen <i>Beijing Institute of Tech.</i> ; Pang, Fengqian <i>Beijing Institute of Tech.</i> ; Fan, Zheyi <i>Beijing Institute of Tech.</i> ; Shi, Yonggang <i>Beijing Institute of Tech.</i>	

FrGT7: 17:30-19:00	Amber 4
2.26 Sparsity-based Imaging and Analysis (Oral Session)	
Chair: Santarelli, Maria Filomena CNR	
Co-Chair: Sutton, Bradley P. <i>University of Illinois at Urbana-Champaign</i>	

17:30-17:45 FrGT7.1
High Temporal Resolution Functional MRI with Partial Separability Model 7482-7485
 Ngo, Giang Chau *Univ. of Illinois at Urbana-Champaign*; Holtrop, Joseph *Univ. of Illinois at Urbana-Champaign*;
 Fu, Maojing *Univ. of Illinois at Urbana-Champaign*; Lam, Fan *Univ. of Illinois at Urbana-Champaign*;
 Sutton, Bradley P.* *Univ. of Illinois at Urbana-Champaign*

17:45-18:00 FrGT7.2
Fast Reference based MRI 7486-7489
 Weizman, Lior *Technion, Israel Institute of Technology*; Eldar, Yonina *The Technion, Israel Institute of Technology*;
 Eilam, Alon *Technion Israel Institute of Technology*; Londner, Samuel* *Technion Israel Institute of Technology*;
 Artzi, Moran *Tel Aviv Medical Center*; Ben Bashat, Dafna *Tel Aviv Sourasky Medical Center*

18:00-18:15 FrGT7.3
An Easily-Achieved Time-Domain Beamformer for Ultrafast Ultrasound Imaging based on Compressive Sensing 7490-7493
 Wang, Congzhi* *Shenzhen Institutes of Advanced Technology, Chinese Academy of S*; Peng, Xi *Shenzhen Institutes of Advanced Technology*;
 Liang, Dong *Shenzhen Institutes of Advanced Technology*; Xiao, Yang *the Paul C. Lauterbur Research Center for Biomedical Imaging, the Insti*;
 Qiu, Weibao *Shenzhen Institutes of Advanced Technology, Chinese Academy of S*; Qian, Ming *Chinese Academy of Sciences*;
 Zheng, Hairong *Shenzhen Inst of Advanced Tech*

18:15-18:30 FrGT7.4
A Compressed Sensing based Approach on Discrete Algebraic Reconstruction Technique 7494-7497
 Demircan Tureyen, Ezgi* *Istanbul Kultur Univ.*; Kamasak, Mustafa *Istanbul Technical Univ.*

18:30-18:45 FrGT7.5
Reference Guided CS-MRI with Gradient Orientation Priors 7498-7501
 Peng, Xi* *Shenzhen Institutes of Advanced Technology*; Zhu, Qingyong *Shenzhen Institutes of Advanced Technology*;
 Wang, Shanshan *Shenzhen Institutes of Advanced Technology*; Liang, Dong *Shenzhen Institutes of Advanced Technology*

18:45-19:00 FrGT7.6
A Novel 3D Cartesian Random Sampling Strategy for Compressive Sensing Magnetic Resonance Imaging ... 7502-7505
 Valvano, Giuseppe* *Univ. of Pisa, Pisa (PI)*; Martini, Nicola *Univ. of Pisa*; Santarelli, Maria Filomena CNR;
 Chiappino, Dante *Fondazione G. Monasterio, CNR-Regione Toscana, Pisa, PI, Italy*; Landini, Luigi *Univ. of Pisa*

FrGT8: 17:30-19:00	Amber 5
3.11 Bioelectric Sensing Methods (Oral Session)	

17:30-17:45 FrGT8.1
The Effects of Temperature Changes on Retinal Ganglion Cell Responses to Electrical Stimulation 7506-7509
 Maturana, Matias *Univ. of Melbourne*; Apollo, Nicholas V.* *Univ. of Melbourne*; Garrett, David J. *Univ. of Melbourne*;
 Kameneva, Tatiana *The Univ. of Melbourne*; NICTA; Meffin, Hamish *National ICT Australia*;
 Ibbotson, Michael R *Australian College of Optometry*; Cloherty, Shaun L. *National Vision Research Institute*;
 Grayden, David B. *The Univ. of Melbourne*

17:45-18:00 FrGT8.2
High-Channel-Count, High-Density Microelectrode Array for Closed-Loop Investigation of Neuronal Networks 7510-7513
 Tsai, David* *Columbia Univ.*; John, Esha *Columbia Univ.*; Chari, Tarun *Columbia Univ.*;
 Yuste, Rafael *Columbia Univ.*; Shepard, Kenneth *Columbia Univ.*

18:00-18:15 FrGT8.3
A Method for Voltage Measurements of Cancerous vs Non-Cancerous Omentum 7514-7517
Wu, Wen *Imperial College London*; Vitharana, Kalpani *Imperial College London*; Gorgy, Tommy *Imperial College London*; Paterson, Andrew *Imperial College London*; Cunnea, Paula *Imperial College London*; Gabra, Hani *Imperial College London*; Fotopoulou, Christina *Imperial College London*; Boutelle, Martyn G. *Imperial College London*; Drakakis, Emmanuel M.* *Imperial College*

18:15-18:30 FrGT8.4
A Miniaturized Monitoring System for Electrochemical Biosensing using *Shewanella Oneidensis* in Environmental Applications 7518-7521
Zhou, Alyssa* *Univ. of California, Berkeley*; Zajdel, Tom *Univ. of California, Berkeley*; TerAvest, Michaela *Univ. of California, Berkeley*; Maharbiz, Michel *Univ. of California, Berkeley*

18:30-18:45 FrGT8.5
Electrochemistry Provides a Simple Way to Monitor *Pseudomonas Aeruginosa* Metabolites 7522-7525
Oziat, Julie* *CEA*; Elsen, Sylvie *UMR1036 INSERM-CEA-UJF /CNRS ERL5261*; Owens, Roisin M. *Dept of Bioelectronics, Ecole Nationale Supérieure des Mi*; Malliaras, George *Ecole Nationale Supérieure des Mines, CMP-EMSE, MOC*; Mailley, Pascal *CEA LETI*

18:45-19:00 FrGT8.6
An RFID-Based On-Lens Sensor System for Long-Term IOP Monitoring 7526-7529
Hsu, Shun-Hsi* *National Chiao Tung Univ.*; Chiou, Jin-Chern *National Chiao-Tung Univ.*; Liao, Yu-Te *National Chiao Tung Univ.*; Yang, Tzu-Sen *National Chiao Tung Univ.*; Kuei, Cheng-Kai *National Chiao Tung Univ.*; Wu, Tsung-Wei *National Chiao Tung Univ.*; Huang, Yu-Chieh *National Chiao Tung Univ.*

FrGT9: 17:30-19:00 Amber 6
3.12 Bioelectric Sensors (Oral Session)
Chair: Neuman, Michael *Michigan Technological University*
Co-Chair: Martinsen, Ørjan G *University of Oslo*

17:30-17:45 FrGT9.1
CMOS Dielectrophoretic Lab-On-Chip Platform for Manipulation and Monitoring of Cells 7530-7533
Park, Kyoungchul *Tufts Univ.*; Kabiri, Shideh *Tufts Univ.*; Sonkusale, Sameer* *Tufts Univ.*

17:45-18:00 FrGT9.2
A CMOS Sensor for Rapid Testing of Pathogen Susceptibility to Pore-Forming Antibiotics 7534-7537
Nikkhoo, Nasim* *Univ. of Toronto*; Gulak, Glenn *Univ. of Toronto*; Maxwell, Karen *Univ. of Toronto*

18:00-18:15 FrGT9.3
Comparative Testing of Piezoelectric and Printed Strain Sensors in Characterization of Chewing 7538-7541
Farooq, Muhammad *Univ. of Alabama*; Sazonov, Edward* *Univ. of Alabama*

18:15-18:30 FrGT9.4
Effects of Stray Capacitance to Ground in Three Electrode Monopolar Needle Bioimpedance Measurements 7542-7545
Kalvøy, Håvard* *Rikshospitalet, Oslo Univ. Hospital, Oslo, Norway*; Aliau-Bonet, Carles *Univ. Politècnica de Catalunya, BarcelonaTech (UPC), Caste*; Pallas-Areny, Ramon *Univ. Politecnica de Catalunya*; Martinsen, Ørjan G *Univ. of Oslo*

18:30-18:45 FrGT9.5
Thin-Film Microelectronic Wearable Body Sensors 7546-7549
Neuman, Michael* *Michigan Technological Univ.*

18:45-19:00 FrGT9.6
Detection and Classification of Tastants in Vivo using a Novel Bioelectronic Tongue in Combination with Brain-Machine Interface 7550-7553
Qin, Zhen *Zhejiang Univ.*; Zhang, Bin *Zhengjiang Univ.*; Hu, Ning *Zhejiang Univ.*; Wang, Ping* *Zhejiang Univ.*

FrGT10: 17:30-19:00 Amber 7
6.25 Brain Functional Imaging I (Oral Session)
Chair: Hadjileontiadis, Leontios *Aristotle University of Thessaloniki*

17:30-17:45 FrGT10.1
Design of an Implantable Artificial Dural Window for Chronic Two-Photon Optical Imaging in Non-Human Primates 7554-7557
Trautmann, Eric* *Stanford*; O'Shea, Dan *Stanford Univ.*; Shrestha, Shikhar *Stanford Univ.*; Lin, Steven *Stanford Univ.*; Ryu, Stephen *Stanford Univ.*; Shenoy, Krishna V. *Stanford Univ.*

17:45-18:00 FrGT10.2
Beamformer-Based Imaging of Phase-Amplitude Coupling using Electromagnetic Brain Activity 7558-7561
Chan, Hui-Ling* *National Chiao Tung Univ.*; Chen, Yong-Sheng *National Chiao Tung Univ.*; Chen, Li-Fen *National Yang-Ming Univ.*; Baillet, Sylvain *McGill Univ.*

18:00-18:15 FrGT10.3
An Extendable Simulation Framework for Benchmarking EEG-Based Brain Connectivity Estimation Methodologies 7562-7565
Haufe, Stefan* *Berlin Institute of Technology*

18:15-18:30 FrGT10.4
Identification of the Default Mode Network with Electroencephalography 7566-7569
Fomina, Tatiana* *Max Planck Institute for Intelligent Systems*; Hohmann, Matthias *Max Planck Institute for Intelligent Systems*; Schölkopf, Bernhard *MPI for Biological Cybernetics*; Grosse-Wentrup, Moritz *Max Planck Institute for Biological Cybernetics*

18:30-18:45 FrGT10.5
Predicting Hand Forces from Scalp Electroencephalography during Isometric Force Production and Object Grasping 7570-7573
Paek, Andrew* *Univ. of Houston*; Gailey, Alycia *Arizona State Univ.*; Parikh, Pranav *Arizona State Univ.*; Santello, Marco *Arizona State Univ.*; Contreras-Vidal, José *Univ. of Houston*

18:45-19:00 FrGT10.6
Gender Effect in Human Brain Responses to Bottom-Up and Top-Down Attention using the EEG 3D-Vector Field Tomography 7574-7577
Kosmidou, Vasiliki *Information Technologies Institute, CERTH*; Adam, Aikaterini *Information Technologies Institute, CERTH*; Papadaniil, Chrysa* *Aristotle Univ. of Thessaloniki*; Tsolaki, Magda *Aristotle Univ. of Thessaloniki*; Hadjileontiadis, Leontios *Aristotle Univ. of Thessaloniki*; Kompatsiaris, Ioannis (Yannis) *Information Technologies Institute, CERTH*

FrGT11: 17:30-19:00 Amber 8
6.26 Human Performance I (Oral Session)
Chair: Knaflitz, Marco *Politecnico di Torino*
Co-Chair: Nguyen, Hung T. *University of Technology, Sydney*

17:30-17:45 FrGT11.1
Deducing the Reachable Space from Fingertip Positions 7578-7581
Pham, Hai Trieu* *Deakin Univ.*; Pathirana, Pubudu N. *Deakin Univ.*

17:45-18:00 FrGT11.2
Shifting the Balance of Human Standing: Inter-Limb Coordination for the Control of a Robotic Balance Simulation 7582-7585
Wang, Philip *Univ. of British Columbia*; Forbes, Patrick *Delft Univ. of Technology*; Croft, Elizabeth Anne *Univ. of British Columbia*; Van der Loos, H. F. Machiel *Univ. of British Columbia*; Blouin, Jean-Sébastien* *Univ. of British Columbia*

18:00-18:15 FrGT11.3
The Effect of Behavioral Preferences on Skill Acquisition in Determining Unspecified, Suitable Action Patterns to Control Humanoid Robots 7586-7589
Takayama, Taiki* *Kanazawa Univ.*; Watanabe, Tetsuyou *Kanazawa Univ.*

18:15-18:30	FrGT11.4
Evaluation of Passive Polarized Stereoscopic 3D Display for Visual and Mental Fatigues	7590-7593
Amin, Hafeez Ullah <i>Univ. Teknologi Petronas</i> ; Malik, Aamir Saeed* <i>Univ. Teknologi Petronas</i> ; Wajid, Mumtaz <i>Univ. Teknologi Petronas</i> ; Badruddin, Nasreen <i>Univ. Teknologi Petronas</i> ; Kamel, Nidal <i>Technical Univ. of Petronas</i>	
18:30-18:45	FrGT11.5
Comparing Features Extractors in EEG-Based Cognitive Fatigue Detection of Demanding Computer Tasks	7594-7597
Chai, Rifai* <i>Univ. of Technology, Sydney</i> ; Smith, Mitchell Robert <i>Univ. of Technology, Sydney</i> ; Nguyen, Tuan Nghia <i>Univ. of Technology, Sydney</i> ; Ling, Steve <i>Univ. of Technology Sydney</i> ; Coutts, Aaron James <i>Univ. of Technology, Sydney (UTS)</i> ; Nguyen, Hung T. <i>Univ. of Technology, Sydney</i>	
18:45-19:00	FrGT11.6
Dependence of Gait Parameters on Height in Typically Developing Children	7598-7601
Agostini, Valentina* <i>Politecnico di Torino</i> ; Nascimbeni, Alberto <i>Rehabilitation Unit, S. Croce Hospital, A.S.L. TO5, Moncalieri</i> (; Di Nardo, Francesco <i>Polytechnic Univ. of Marche</i> ; Fioretti, Sandro <i>Univ. Politecnica delle Marche</i> ; Burattini, Laura <i>Univ. Politecnica delle Marche</i> ; Knaflitz, Marco <i>Politecnico di Torino</i>	
FrGT12: 17:30-19:00	Suite 5
3.13 Physiological Monitoring I (Oral Session)	
Chair: Leonhardt, Steffen <i>RWTH Aachen University</i>	
Co-Chair: Ferrario, Manuela <i>Politecnico di Milano</i>	
17:30-17:45	FrGT12.1
Estimation of Physiological Sub-Millimeter Displacement with CW Doppler Radar	7602-7605
Xu, Jia <i>Univ. of Hawaii at Manoa</i> ; Gao, Xiaomeng <i>Univ. of Hawaii at Manoa</i> ; Padasdao, Bryson* <i>Univ. of Hawaii at Manoa</i> ; Boric-Lubecke, Olga <i>Univ. of Hawaii Manoa</i>	
17:45-18:00	FrGT12.2
Sleep Stage Classification by Body Movement Index and Respiratory Interval Indices using Multiple Radar Sensors	7606-7609
Kagawa, Masayuki* <i>Tokyo Metropolitan Univ.</i> ; Noriyuki, Sasaki <i>Tokyo Metropolitan Univ.</i> ; Suzumura, Kazuki <i>Tokyo Metropolitan Univ.</i> ; Matsui, Takemi <i>Tokyo Metropolitan Univ.</i>	
18:00-18:15	FrGT12.3
Distributed Pressure Sensors for a Urethral Catheter	7610-7613
Ahmadi, Mahdi <i>Univ. of Minnesota</i> ; Rajamani, Rajesh* <i>Univ. of Minnesota</i> ; Timm, Gerald W. <i>Univ. of Minnesota</i> ; Sezen, A. Serdar <i>St. Cloud State Univ.</i>	
18:15-18:30	FrGT12.4
Capacitive ECG Recording and Beat-to-Beat Interval Estimation after Major Cardiac Event	7614-7617
Leicht, Lennart* <i>RWTH Aachen Univ.</i> ; Skobel, Erik <i>Rosenquelle Clinic</i> ; Mathissen, Marcel <i>Ford Motor Company</i> ; Leonhardt, Steffen <i>RWTH Aachen Univ.</i> ; Weyer, Sören <i>RWTH Aachen</i> ; Wartzek, Tobias <i>RWTH Aachen, Chair of Medical Information Technology</i> ; Reith, Sebastian <i>Dept. of Cardiology/ Medical Clinic I, Univ. Hospital</i> ; Möhler, Werner <i>Sachverständigenbüro Dr. Möhler & Görtz / IKA, RWTH Aachen Univ.</i> ; Teichmann, Daniel <i>RWTH Aachen Univ.</i>	
18:30-18:45	FrGT12.5
A Breath Sampling System Assessing the Influence of Respiratory Rate on Exhaled Breath Composition ...	7618-7621
Lomonaco, Tommaso <i>Univ. of Pisa, Dept. of Chemistry and Industrial Chemi</i> ; Salvo, Pietro* <i>Univ. of Pisa</i> ; Ghimienti, Silvia <i>Univ. of Pisa, Dept. of Chemistry and Industrial Chemi</i> ; Biagini, Denise <i>Univ. of Pisa, Dept. of Chemistry and Industrial Chemi</i> ; Bellagambi, Francesca <i>Univ. of Pisa, Dept. of Chemistry and Industrial Chemi</i> ; Fuoco, Roger <i>Univ. of Pisa, Dept. of Chemistry and Industrial Chemi</i> ; Di Francesco, Fabio <i>Univ. of Pisa</i>	
18:45-19:00	FrGT12.6
Noninvasive Ambulatory Measurement System of Cardiac Activity	7622-7625
Pino, Esteban J* <i>Univ. de Concepcion</i> ; Chávez, Javier A. P. <i>Univ. de Concepción</i> ; Aqueveque, Pablo <i>Univ. of Concepcion</i>	

FrGT15: 17:30-19:00	White 1
12.3 Technologies for Promoting Health and Wellbeing (Oral Session)	
Chair: Pavel, Misha <i>Northeastern University</i>	
Co-Chair: Similä, Heidi <i>VTT Technical Research Centre of Finland Ltd</i>	

17:30-17:45	FrGT15.1
Collecting a Citizen's Digital Footprint for Health Data Mining	7626-7629
Gencoglu, Oguzhan* <i>Tampere Univ. of Technology</i> ; Similä, Heidi <i>VTT Technical Research Centre of Finland Ltd</i> ; Honko, Harri <i>Tampere Univ. of Technology</i> ; Isomursu, Minna <i>Univ. of Oulu</i>	
17:45-18:00	FrGT15.2
Pattern of Active and Inactive Sequences of Diabetes Self-Monitoring in Mobile Phone and Paper Diary Users	7630-7633
Padhye, Nikhil* <i>Univ of Texas Health Science Center</i> ; Wang, Jing <i>The Univ. of Texas Health Science Center at Houston</i>	
18:00-18:15	FrGT15.3
Textual Summarization of Events Leading to Health Alerts	7634-7637
Jain, Akshay <i>Univ. of Missouri-Columbia</i> ; Keller, James M* <i>Univ. of Missouri</i>	
18:15-18:30	FrGT15.4
The Shape of Health: A Comparison of Five Alternative Ways of Visualizing Personal Health and Wellbeing	7638-7641
Ledesma, Andres* <i>Tampere Univ. of Technology</i> ; Nieminen, Hannu <i>Tampere Univ. of Technology</i> ; Valve, Päivi <i>Marianna Tampere Univ. of Technology, Univ. of Tampere</i> ; Ermes, Miikka <i>VTT Technical Research Centre</i> ; Pavel, Misha <i>Northeastern Univ.</i> ; Jimison, Holly <i>Northeastern Univ.</i>	
18:30-18:45	FrGT15.5
Predicting Energy Expenditure from Photo-Plethysmographic Measurements of Heart Rate under Beta Blocker Therapy: Data Driven Personalization Strategies based on Mixed Models	7642-7646
Bonomi, Alberto* <i>Philips Research</i> ; Goldenberg, Sharon <i>Philips Research</i> ; Papini, Gabriele <i>Philips Research</i> ; Kraal, Jos <i>Univ. of Amsterdam</i> ; Stut, Wim <i>Philips Research</i> ; Sartor, Francesco <i>Philips Research</i> ; Kemps, Harel <i>Mxima Medical Center</i>	
18:45-19:00	FrGT15.6
Experimental Evaluation of a Smartphone based Step Length Estimation	7647-7650
Pepa, Lucia* <i>Univ. Politecnica delle Marche-Dij</i> ; Verdini, Federica <i>Univ. Politecnica delle Marche</i> ; Spalazzi, Luca <i>Univ. Politecnica delle Marche</i>	

FrGT16: 17:30-19:00	White 2
4.9 Biomedical Data-Driven Modeling (Invited Session)	
Chair: Seker, Huseyin <i>The University of Northumbria at Newcastle</i>	
Co-Chair: Chrysostomou, Charalambos <i>University of Leicester</i>	

17:30-17:45	FrGT16.1
The Quantitative Prediction of HLA-B2705 Peptide Binding Affinities using Support Vector Regression to Gain Insights into Its Role for the Spondyloarthropathies	7651-7654
Uslan, Volkan <i>De Montfort Univ.</i> ; Seker, Huseyin* <i>The Univ. of Northumbria at Newcastle</i>	
18:00-18:15	FrGT16.3
Extension to Distributed Annotation System: Summary and Summaryplot Commands	7655-7658
Chrysostomou, Charalambos* <i>Univ. of Leicester</i> ; Brookes, Anthony <i>Univ. of Leicester</i>	
18:15-18:30	FrGT16.4
Metabolomic Pathway Visualization Tool Outsourcing Editing Function	7659-7662
Sugimoto, Masahiro* <i>Keio Univ.</i>	
18:30-18:45	FrGT16.5
A Bayesian Network-Based Approach for Discovering Oral Cancer Candidate Biomarkers	7663-7666
Kourou, Konstantina <i>Unit of Biological Applications and Technology, Univ. of Io</i> ; Exarchos, Konstantinos <i>Univ. of Ioannina</i> ; Papaloukas, Costas <i>Univ. of Ioannina</i> ; Fotiadis, Dimitrios I.* <i>Univ. of Ioannina</i>	

18:45-19:00 FrGT16.6
Dynamic Partial Reconfiguration Implementation of the SVM/KNN Multi-Classifer on FPGA for Bioinformatics Application 7667-7670
 Hussain, Hanaa* *The Public Authority of Applied Education and Training*; Benkrid, Khaled *Univ. of Edinburgh*;
 Seker, Huseyin *The Univ. of Northumbria at Newcastle*

FrGT17: 17:30-19:00 Space 1
1.35 Biomedical Signal Classification VI: Sleep Apnea Studies (Oral Session)
Chair: de Chazal, Philip *University of Sydney*
Co-Chair: Zigel, Yaniv *Ben-Gurion University of the Negev*

17:30-17:45 FrGT17.1
An ECG Oximetry System for Identifying Obstructive and Central Apnoea Events 7671-7674
 de Chazal, Philip* *Univ. of Sydney*; Sadr, Nadi *Univ. of Sydney*; Jayawardhana, Madhuka *Univ. of Sydney*

17:45-18:00 FrGT17.2
Sleep Apnoea Episodes Recognition by a Committee of Elm Classifiers from ECG Signal 7675-7678
 Sadr, Nadi* *Univ. of Sydney*; de Chazal, Philip *Univ. of Sydney*; van Schaik, André *The Univ. of Sydney*;
 Breen, Paul *Univ. of Western Sydney*

18:00-18:15 FrGT17.3
Sleep Apnea Detection using Time-Delayed Heart Rate Variability 7679-7682
 Nano, Marina-Marina *Delft Univ. of Technology*; Long, Xi* *Eindhoven Univ. of Technology and Philips Research*;
 Werth, Jan *Philips Research*; Aarts, Ronald M. *Philips*; Heusdens, Richard *Delft Univ. of Technology*

18:15-18:30 FrGT17.4
A Gender-Aware Framework for the Daytime Detection of Obstructive Sleep Apnea 7683-7687
 Samy, Lauren* *Univ. of California, Los Angeles*; Macey, Paul M. *Univ. of California, Los Angeles*; Sarrafzadeh,
 Majid *Univ. of California Los Angeles*

18:30-18:45 FrGT17.5
Breath-By-Breath Detection of Apneic Events for OSA Severity Estimation using Non-Contact Audio Recordings 7688-7691
 Rosenwein, Tal *Dept. of Biomedical Engineering, Ben-Gurion Univ. of t*; Dafna, Eliran *Ben-Gurion Univ. of the Negev*;
 Tarasiuk, Ariel *Ben-Gurion Univ.*; Zigel, Yaniv* *Ben-Gurion Univ. of the Negev*

18:45-19:00 FrGT17.6
Pulse Oximetry Recorded from the Phone Oximeter for Detection of Obstructive Sleep Apnea Events with and without Oxygen Desaturation in Children 7692-7695
 Garde, Aina* *Univ. of British Columbia*; Kheirkhah Dehkordi, Parastoo *Univ. of British Columbia*;
 Wensley, David *BC Children's Hospital*; Ansermino, J. Mark *British Columbia's Children's Hospital*;
 Dumont, Guy *Univ. of British Columbia*

FrGT18: 17:30-19:00 Space 2
1.36 Nonlinear Analysis of Cardiovascular Signals (Oral Session)
Chair: Jané, Raimon *Institut de Bioenginyeria de Catalunya (IBEC)*
Co-Chair: Kasprovicz, Magdalena *Wroclaw University of Technology*

17:30-17:45 FrGT18.1
Blood Pressure and Pulse Interval Coupling: A Copula Approach 7696-7699
 Bajic, Dragana* *Univ. of Novi Sad*; Loncar-Turukalo, Tatjana *Univ. of Novi Sad*; Skoric, Tamara *Univ. of Novi Sad*,
 Dept. of Communications and Signal; Japundzic-Zigon, Nina *Univ. of Belgrade*

17:45-18:00 FrGT18.2
Complexity of Cerebral Blood Flow Velocity and Arterial Blood Pressure in Subarachnoid Hemorrhage using Time-Frequency Analysis 7700-7703
 Placek, Michal Marcin* *Wroclaw Univ. of Technology*; Wachel, Pawel *Wroclaw Univ. of Technology, Poland*;
 Czosnyka, Marek *Univ. of Cambridge*; Soehle, Martin *Dept. of Anaesthesiology and Intensive Care Medicine, Univ.*;
 Smielewski, Peter *Dept. of Clinical Neurosciences, Univ. of Cambridge*; Kasprovicz, Magdalena *Wroclaw Univ. of Technology*

18:00-18:15 FrGT18.3
Recurrence Quantification Analysis Applied to Spatiotemporal Pattern Analysis in High-Density Mapping of Human Atrial Fibrillation 7704-7707
 Zeemering, Stef* *Maastricht Univ.*; Bonizzi, Pietro *Maastricht Univ.*; Maesen, Bart *Maastricht Univ. Hospital*; Peeters, Ralf *Maastricht Univ.*; Schotten, Ulrich *Maastricht Univ.*

18:15-18:30 FrGT18.4
Cardiorespiratory Phase Synchronization in OSA Subjects during Wake and Sleep States 7708-7711
 Solà-Soler, Jordi* *Univ. Politècnica de Catalunya*; Giraldo, Beatriz *Univ. Politècnica de Catalunya*; Fiz Fernandez, José Antonio *Navarra Hospital*; Jané, Raimon *Institute de Bioenginyeria de Catalunya (IBEC)*

18:30-18:45 FrGT18.5
Dynamic Response of Cardiac Autonomic Nervous System Activity to Habitual Exercise during Gradual Variation of Breathing Frequency 7712-7715
 Nakamura, Hideo* *Osaka Electro-Communication Univ*

FrGT19: 17:30-19:00 Space 3
2.27 Large Data in Image Analysis (Oral Session)

17:30-17:45 FrGT19.1
Large Scale Fusion of Brain Imaging Modalities and Features using Markov-Style Dynamics in a Feature Meta-Space 7716-7719
 Miller, Robyn* *The Mind Research Network*; Vergara, Victor Manuel *The Mind Research Network*; Calhoun, Vince *The Mind Research Network/Univ. of New Mexico*

17:45-18:00 FrGT19.2
High-Sensitive and High-Efficient Biochemical Analysis Method using a Bionic Electronic Eye in Combination with a Smartphone-Based Colorimetric Reader System 7720-7723
 Su, Kaiqi *Zhejiang Univ.*; Quchao Zou, Cnqczou *Zhejiang Univ.*; Hu, Ning *Zhejiang Univ.*; Wang, Ping* *Zhejiang Univ.*

18:00-18:15 FrGT19.3
Computer-Based Automatic Identification of Neurons in Gigavoxel-Sized 3D Human Brain Images 7724-7727
 Soda, Paolo* *Univ. Campus Bio-Medico*; Acciai, Ludovica *Univ. Campus Bio-Medico di Roma*; Cordelli, Ermanno *Univ. Campus Bio-Medico di Roma*; Costantini, Irene *LENS - Univ. of Florence*; Sacconi, Leonardo *National Institute of Optics*; Pavone, Francesco Saverio *LENS - Univ. of Florence*; Conti, Valerio *Pediatric Neurology and Neurogenetics Unit and Laboratories, Dep*; Guerrini, Renzo *Pediatric Neurology and Neurogenetics Unit and Laboratories, Dep*; Frasconi, Paolo *Univ. degli Studi di Firenze*; Iannello, Giulio *Univ. Campus Bio-Medico di Roma*

18:15-18:30 FrGT19.4
An Automated and High-Throughput Photomotor Response Platform for Chemical Screens 7728-7731
 Marcato, Daniel* *Karlsruhe Institute of Technology*; Alshut, Rüdiger *Karlsruhe Institute of Technology*; Helmut, Breitwieser *Karlsruhe Institute of Technology*; Mikut, Ralf *Karlsruhe Institute of Technology*; Strähle, Uwe *Karlsruhe Institute of Technology*; Pylatiuk, Christian *Karlsruhe Institute of Technology*; Peravali, Ravindra *Karlsruhe Institute of Technology*

18:30-18:45 FrGT19.5
High-Throughput Analysis of Tissue-Based Biomarkers in Digital Pathology 7732-7735
 Van Eycke, Yves-Rémi *CMMI, Univ. Libre de Bruxelles*; Debeir, Olivier *Univ. Libre de Bruxelles*; Verset, Laurine *Erasmus Hospital, Univ. Libre de Bruxelles*; Demetter, Pieter *Erasmus Hospital, Univ. Libre de Bruxelles*; Salmon, Isabelle *Erasmus Hospital, Univ. Libre de Bruxelles*; Decaestecker, Christine* *Univ. Libre de Bruxelles*

18:45-19:00 FrGT19.6
Leveraging the Crowd for Annotation of Retinal Images 7736-7739
 Leifman, George* *MIT*; Swedish, Tristan *MIT*; Roesch, Karin *MIT*; Raskar, Ramesh *MIT*

FrGT20: 17:30-19:00	Space 4
10.9 Wearable and Mobile Technologies for Active Living and Healthy Ageing: From Concerns and Pilots to Best Practice and Evidence (Invited Session)	
Chair: Amor, James <i>University of Warwick</i>	
Co-Chair: James, Christopher <i>University of Warwick</i>	

17:30-17:45	FrGT20.1
Wearable Technology and ECG Processing for Fall Risk Assessment, Prevention and Detection	7740-7743
Melillo, Paolo* <i>Univ. of Bologna</i> ; Castaldo, Rossana <i>Univ. of Warwick</i> ; Sannino, Giovanna <i>Institute of High Performance Computing and Networking (ICAR)-CN</i> ; Orrico, Ada <i>Second Univ. of Naples</i> ; De Pietro, Giuseppe <i>Institute of High Performance Computing and Networking (ICAR)-CN</i> ; Pecchia, Leandro <i>Univ. of Warwick</i>	

17:45-18:00	FrGT20.2
Maintaining Patients' Social Contacts through Displaying Nonverbal Awareness Information on Mobile Devices	7744-7747
Ruschin, Detlef* <i>Fraunhofer Heinrich Hertz Institute</i>	

18:00-18:15	FrGT20.3
Wearable Devices from Healthy Lifestyle to Active Ageing	7748-7751
Lewy, Hadas* <i>Maccabi Health Care Services</i>	

18:15-18:30	FrGT20.4
Setting the Scene: Mobile and Wearable Technology for Managing Healthcare and Wellbeing	7752-7755
Amor, James* <i>Univ. of Warwick</i> ; James, Christopher <i>Univ. of Warwick</i>	

18:30-18:45	FrGT20.5
Building Neuroscientific Evidence and Creating Best Practices for Active and Healthy Aging through Ubiquitous Exergaming and Living Labs	7756-7759
Bamidis, Panagiotis* <i>Aristotle Univ.</i>	

18:45-19:00	FrGT20.6
Smartphone-Based System to Improve Transportation Access for the Cognitively Impaired	7760-7763
Anderson, Shane <i>Koronis Biomedical Technologies</i> ; Riehle, Timothy H <i>Koronis Biomed. Technologies Corp.</i> ; Lichter, Patrick <i>Koronis Biomedical Technologies</i> ; Brown, Allen <i>Mayo Clinic, Rochester MN</i> ; Panescu, Dorin* <i>Advanced Cardiac Therapeutics</i>	

Saturday, 29 August 2015

SaAT1: 08:30-10:00	Brown 1
8.12 New Technologies and Methodologies in Medical Robotics and Biomechanics (Oral Session)	
Chair: Pedotti, Antonio <i>Politecnico di Milano</i>	
Co-Chair: Fioretti, Sandro <i>Università Politecnica delle Marche</i>	

08:30-08:45	SaAT1.1
Novel Method to Form Adaptive Internal Impedance Profiles in Walkers	7764-7767
Escudero Morland, Maximiliano Francisco* <i>King's College London</i> ; Althoefer, Kaspar <i>King's College London</i> ; Nanayakkara, Thrishantha <i>King's College London</i>	

08:45-09:00	SaAT1.2
A Novel Approach to Low Cost, Wide Range Motion Capture System: Validation and Application to Human Behavior Analysis	7768-7771
Enriquez, Guillermo* <i>Waseda Univ.</i> ; Destephe, Matthieu <i>Waseda Univ.</i> ; Hashimoto, Shuji <i>Waseda Univ.</i> ; Takanishi, Atsuo <i>Waseda Univ.</i>	

09:00-09:15	SaAT1.3
Active Catheter Driven by a Thermo-Hydraulic Actuation	7772-7775
Horovitz, Yonatan* <i>Tel Aviv Univ.</i> ; Kosa, Gabor <i>Tel Aviv Univ., School of Mechanical Engineering</i>	

09:15-09:30 SaAT1.4
Toward Hybrid Force/Position Control for the Cerberus Epicardial Robot 7776-7779
Breault, Macauley S. *Muhlenberg College*; Costanza, Adam *Carnegie Mellon Univ., Robotics Institute*;
Wood, Nathan *Carnegie Mellon Univ.*; Passineau, Michael J. *Allegheny General Hospital*;
Riviere, Cameron N.* *Carnegie Mellon Univ.*

09:30-09:45 SaAT1.5
A Novel Gastroscope Intervention Mechanism with Circumferentially Pneumatic-Driven Clamping Function 7780-7783
Li, Yanmin *Shenyang Institute of Automation, Chinese Academy of Sciences*; Liu, Hao* *Shenyang Institute of Automation, Chinese Academy of Sciences*; Wang, Hengzhi *Shenyang Institute of Automation, Chinese Academy of Sciences*; Yang, Zhenda *Shenyang Institute of Automation, Chinese Academy of Sciences*; Li, Hongyi *State Key Laboratory of Robotic, Shenyang Institute of Automatio*; Yang, Yunsheng *Chinese PLA General Hospital*

09:45-10:00 SaAT1.6
Characterization of Corneal Indentation Hysteresis 7784-7787
Ko, Match Wai Lun* *Nazarbayev Univ.*; Wei, Dongming *Nazarbayev Univ.*; Leung, Christopher K. S. *Chinese Univ. of Hong Kong*

SaAT2: 08:30-10:00 Brown 2
5.9 Cardio-Respiratory Regulation Modeling (Invited Session)
Chair: Ursino, Mauro *University of Bologna*
Co-Chair: Clark, John W. *Rice University*

08:30-08:45 SaAT2.1
Cardiorespiratory Adaptation to Breath-Holding in Air: Analysis via a Cardiopulmonary Simulation Model ... 7788-7791
Albanese, Antonio* *Philips Research North America*; Cheng, Limei *Philips Research North America*; Ursino, Mauro *Univ. of Bologna*; Chbat, Nicolas W. *Philips Research North America*

08:45-09:00 SaAT2.2
Modeling of Deep Breath Vasoconstriction Reflex 7792-7795
Chalacheva, Patjanaporn* *Univ. of Southern California*; Khoo, Michael *Univ. of Southern California*

09:00-09:15 SaAT2.3
On the Roles of Vascular Smooth Muscle Contraction in Cerebral Blood Flow Autoregulation – A Modeling Perspective 7796-7799
Yang, Jin* *Chinese Academy of Sciences*; Clark, John W. *Rice Univ.*

09:15-09:30 SaAT2.4
A Simulation Model to Study the Role of the Extracranial Venous Drainage Pathways in Intracranial Hemodynamics 7800-7803
Gadda, Giacomo* *Univ. of Ferrara*; Taibi, Angelo *Univ. of Ferrara*; Sisini, Francesco *Univ. of Ferrara*; Gambaccini, Mauro *Univ. of Ferrara*; Sethi, Sean *MRI Institute of Biomedical Research*; Utriainen, David *The MRI Institute of Biomedical Research*; Haacke, Mark *Wayne State Univ.*; Zamboni, Paolo *Univ. of Ferrara*; Ursino, Mauro *Univ. of Bologna*

09:30-09:45 SaAT2.5
Verification and Validation of Physiology Simulators 7804-7807
van Oostrom, Johannes* *Univ. of Florida*; Wehry, Hillary *Univ. of Pittsburgh*

6.27 Neural Engineering and Neuro-Psychiatric Disorders: Integrated Algorithmic and Hardware Design of a Closed-Loop Brain Stimulation System (Invited Session)

Chair: Barbieri, Riccardo *MGH-Harvard Medical School-MIT*

Co-Chair: Faghih, Rose T. *MIT*

08:30-08:45

SaAT3.1

Estimating a Dynamic State to Relate Neural Spiking Activity to Behavioral Signals during Cognitive Tasks

7808-7813

Deng, Xinyi* *Boston Univ.*; Faghih, Rose T. *MIT*; Barbieri, Riccardo *MGH-Harvard Medical School-MIT*; Paulk, Angelique C *Massachusetts General Hospital*; Asaad, Wael F. *Brown Univ.*; Brown, Emery N *MGH-Harvard Medical School-MIT*; Dougherty, Darin *Massachusetts General Hospital*; Widge, Alik *Massachusetts General Hospital*; Eskandar, Emad *Massachusetts General Hospital*; Eden, Uri *Boston Univ.*

08:45-09:00

SaAT3.2

Characterization of Fear Conditioning and Fear Extinction by Analysis of Electrodermal Activity

7814-7818

Faghih, Rose T.* *MIT*; Stokes, Patrick *Massachusetts General Hospital*; Marin, Marie-France *Massachusetts General Hospital, Harvard Medical School*; Zsido, Rachel *Massachusetts General Hospital*; Zorowitz, Sam *Massachusetts General Hospital*; Rosenbaum, Blake *Massachusetts General Hospital*; Song, Huijin *Harvard Medical School, Massachusetts General Hospital*; Milad, Mohammed *Massachusetts General Hospital, Harvard Medical School*; Dougherty, Darin *Massachusetts General Hospital*; Eskandar, Emad *Massachusetts General Hospital*; Widge, Alik *Massachusetts General Hospital*; Brown, Emery N *MGH-Harvard Medical School-MIT*; Barbieri, Riccardo *MGH-Harvard Medical School-MIT*

09:00-09:15

SaAT3.3

Cognitive State Prediction using an Expectation-Maximization Algorithm Applied to Gamma

Distributed Data

7819-7824

Yousefi, Ali* *Massachusetts General Hospital and Harvard Medical School*; Paulk, Angelique C *Massachusetts General Hospital*; Deckersbach, Thilo *Massachusetts General Hospital*; Dougherty, Darin *Massachusetts General Hospital*; Eskandar, Emad *Massachusetts General Hospital*; Widge, Alik *Massachusetts General Hospital*; Eden, Uri *Boston Univ.*

09:15-09:30

SaAT3.4

Package Architecture and Component Design for an Implanted Neural Stimulator with Closed

Loop Control

7825-7830

Parks, Philip *Draper Laboratory*; Bjune, Caroline* *Charles Stark Draper Laboratory*; Marinis, Thomas *Charles Stark Draper Laboratory*; Sriram, Tirunelveli *CS Draper Laboratory*; Dougherty, Darin *Massachusetts General Hospital*; Moran, James *Draper Laboratory*; Brady, Jeanne *Charles Stark Draper Laboratory*; Widge, Alik *Massachusetts General Hospital*; Eskandar, Emad *Massachusetts General Hospital*; Wheeler, Jesse *Draper Laboratory*

09:30-09:45

SaAT3.5

Neural Signal Processing and Closed-Loop Control Algorithm Design for an Implanted Neural

Recording and Stimulation System

7831-7836

Hamilton, Lei *Charles Stark Draper Laboratory*; McConley, Marc *Draper Laboratory*; Angermueller, Kai *Draper Laboratory*; Goldberg, David *Draper Laboratory*; Corba, Massimiliano *Draper Laboratory*; Kim, Louis *Draper Laboratory*; Parks, Philip* *Draper Laboratory*; Chin, Sang *Boston Univ.*; Widge, Alik *Massachusetts General Hospital*; Dougherty, Darin *Massachusetts General Hospital*; Eskandar, Emad *Massachusetts General Hospital*; Moran, James *Draper Laboratory*

09:45-10:00

SaAT3.6

An Implantable 64-Channel Neural Interface with Reconfigurable Recording and Stimulation

7837-7840

Wheeler, Jesse* *Draper Laboratory*; Baldwin, Keith *Draper Laboratory*; Kindler, Alex *Draper Laboratory*; Guyon, Daniel *Draper Laboratory*; Nugent, Brian *Draper Laboratory*; Segura, Carlos Alejandro *Draper Laboratory*; Rodriguez, John *Draper Laboratory*; Czarniecki, Andrew *Draper Laboratory*; DiSpirito, Hailey *Worcester Polytechnic Institute*; Lachapelle, John *Draper Laboratory*; Moran, James *Draper Laboratory*; Parks, Philip *Draper Laboratory*; Widge, Alik *Massachusetts General Hospital*; Dougherty, Darin *Massachusetts General Hospital*; Eskandar, Emad *Massachusetts General Hospital*

SaAT4: 08:30-10:00 Amber 1
1.37 Parametric Filtering and Estimation (Oral Session)
Chair: Seppänen, Tapio *University of Oulu*
Co-Chair: Fasano, Antonio *Università Campus Bio-Medico di Roma*

08:30-08:45 SaAT4.1
Fast and Effective Estimation of Narrowband Components for Bioelectrical Signals 7841-7844
 Fasano, Antonio *Univ. Campus Bio-Medico di Roma*; Villani, Valeria* *Univ. degli Studi di Modena e Reggio Emilia*

08:45-09:00 SaAT4.2
Semi-Supervised Segmentation of EEG Data in BCI Systems 7845-7848
 Camilleri, Tracey* *Univ. of Malta*; Camilleri, Kenneth Patrick *Univ. of Malta*; Fabri, Simon G. *Univ. of Malta*

09:00-09:15 SaAT4.3
From Molecular Model to Sparse Representation of Chromatographic Signals with an Unknown Number of Peaks 7849-7852
 Bertholon, François *Univ. Grenoble Alpes, CEA, Leti, MINATEC Campus*; Harant, Olivier *Univ. Grenoble Alpes, CEA, Leti, MINATEC Campus*; Foan, Louise *CEA*; Vignoud, Séverine *CEA*; Jutten, Christian *Univ. of Grenoble*; Grangeat, Pierre* *Univ. Grenoble, Alpes, CEA, LETI, MINATEC CAMPUS*

09:15-09:30 SaAT4.4
A Parametric Probabilistic Context-Free Grammar for Food Intake Analysis based on Continuous Meal Weight Measurements 7853-7856
 Papapanagiotou, Vasileios* *Aristotle Univ. of Thessaloniki*; Diou, Christos *Aristotle Univ. of Thessaloniki*; Langlet, Billy *Karolinska Institute, NVS, Division of Applied Neuroendocrinolog*; Ioakimidis, Ioannis *Karolinska Institute, NVS, Division of Applied Neuroendocrinolog*; Delopoulos, Anastasios *Aristotle Univ. of Thessaloniki*

09:30-09:45 SaAT4.5
Accurate Measurement of Respiratory Airflow Waveforms using Depth Data 7857-7860
 Seppänen, Tiina Maarit* *Univ. of Oulu*; Kananen, Janne *Univ. of Oulu*; Noponen, Kai *Univ. of Oulu*; Alho, Olli-Pekka *Univ. of Oulu*; Seppänen, Tapio *Univ. of Oulu*

09:45-10:00 SaAT4.6
A Robust Heartbeat Detector not Depending on ECG Sampling Rate 7861-7864
 Augustyniak, Piotr* *AGH Univ. of Science and Tech*

SaAT5: 08:30-10:00 Amber 2
1.38 Entropy Measurements (Oral Session)
Co-Chair: Citi, Luca *University of Essex*

08:30-08:45 SaAT5.1
Transfer Entropy Analysis of Maternal and Fetal Heart Rate Coupling 7865-7868
 Marzbanrad, Faezeh* *The Univ. of Melbourne*; Kimura, Yoshitaka *Tohoku Univ*; Endo, Miyuki *Tohoku Univ.*; Palaniswami, Marimuthu *The Univ. of Melbourne*; Khandoker, Ahsan Habib *Khalifa Univ. of Science, Technology and Research*

08:45-09:00 SaAT5.2
Use of Multiscale Entropy to Facilitate Artifact Detection in Electroencephalographic Signals 7869-7872
 Mariani, Sara* *Wyss Institute for Biologically Inspired Engineering at Harvard*; Borges, Ana F. T. *Dept. of Integrative Neurophysiology, Center for Neurogenom*; Henriques, Teresa S. *Wyss Institute for Biologically Inspired Engineering at Harvard*; Goldberger, Ary L. *Wyss Institute for Biologically Inspired Engineering at Harvard*; Costa, Madalena D. *Wyss Institute for Biologically Inspired Engineering at Harvard*

09:00-09:15 SaAT5.3
Effect of the Average Delay and Mean Connectivity of the Kuramoto Model on the Complexity of the Output Electroencephalograms 7873-7876
 Escudero, Javier* *Univ. of Edinburgh*; Ibáñez-Molina, Antonio *Univ. de Jaén*; Iglesias-Parro, Sergio *Univ. of Jaén*

09:15-09:30 SaAT5.4
Effect of Data Length and Bin Numbers on Distribution Entropy (DistEn) Measurement in Analyzing Healthy Aging 7877-7880
 Udhayakumar, Radhagayathri *Univ. of Melbourne*; Karmakar, Chandan* *Deakin Univ.*;
 Palaniswami, Marimuthu *The Univ. of Melbourne*; Li, Peng *Shandong Univ.*

09:30-09:45 SaAT5.5
Analysis of Biceps Brachii Semg Signal using Multiscale Fuzzy Approximate Entropy 7881-7884
 Makaram, Navaneethakrishna* *Indian Institute of Technology Madras*; Periyamolapalayam Allimuthu, Karthick
Indian Institute of Technology Madras; Ramakrishnan, Swaminathan *IIT Madras, India*

09:45-10:00 SaAT5.6
Instantaneous Transfer Entropy for the Study of Cardio-Respiratory Dynamics 7885-7888
 Valenza, Gaetano* *Univ. of Pisa-MGH-Harvard Medical School*; Faes, Luca *Univ. of Trento*; Citi, Luca *Univ. of Essex*; Orini, Michele *Univ. College London*; Barbieri, Riccardo *MGH-Harvard Medical School-MIT*

SaAT6: 08:30-10:00	Amber 3
2.28 X-Ray and CT Imaging: Applications (Oral Session)	

08:30-08:45 SaAT6.1
Circular Particle Detection using Sectoring Ring Mask for Synchrotron PCXI Images 7889-7892
 Jung, Hye-Won* *UNISA*; Lee, Ivan *The Univ. of South Australia*; Lee, Sang-Heon *The Univ. of South Australia*

08:45-09:00 SaAT6.2
Feasibility Assessment of CT-Based Thermometry for Temperature Monitoring during Thermal Procedure: Influence of ROI Size and Scan Setting on Metrological Properties 7893-7896
 Schena, Emiliano *Univ. of Rome Campus Bio-Medico*; Fani, Federica *Univ. Bampus Bio-Medico di Roma*;
 Saccomandi, Paola *Univ. Campus Bio-Medico of Rome*; Massaroni, Carlo *Univ. Campus Bio-Medico di Roma*;
 Frauenfelder, Giulia* *Univ. Campus Bio-Medico di Roma*; Giurazza, Francesco *Univ. Campus Bio-Medico di Roma*; Silvestri, Sergio *Univ. Campus Bio-Medico di Roma*

09:00-09:15 SaAT6.3
Mooney-Rivlin Biomechanical Modeling of Lung with Inhomogeneous Material 7897-7900
 Nasehi Tehrani, Joubin* *Univ. of Texas Southwestern Medical Center*;
 Wang, Jing *Univ. of Texas Southwestern Medical Center*

09:15-09:30 SaAT6.4
Robust Catheter Identification and Tracking in X-Ray Angiographic Sequences 7901-7904
 Fazlali, Hamidreza *Isfahan Univ. of Technology*; Karimi, Nader *Isfahan Univ. of Technology*;
 Soroushmehr, S.M.Reza* *Univ. of Michigan, Ann Arbor*; Samavi, Shadrokh *McMaster Univ.*;
 Derksen, Harm *Univ. of Michigan, Ann Arbor*; Najarian, Kayvan *Univ. of Michigan - Ann Arbor*

09:30-09:45 SaAT6.5
Cone-Beam Computed Tomography Contrast Validation of an Artificial Periodontal Phantom for use in Endodontics 7905-7908
 Michetti, Jérôme* *Univ. of Toulouse*; Basarab, Adrian *Univ. de Toulouse*; Tran, Michel *Univ. of Toulouse*;
 Diemer, Franck *Clément Ader Institute, Univ. of Toulouse*; Kouamé, Denis *Univ. de Toulouse, IRIT UMR CNRS*

09:45-10:00 SaAT6.6
3D Riesz-Wavelet based Covariance Descriptors for Texture Classification of Lung Nodule Tissue in CT ... 7909-7912
 Cirujeda, Pol* *Univ. Pompeu Fabra*; Müller, Henning *Univ. of Applied Sciences Western Switzerland (HES-SO)*;
 Rubin, Daniel *Stanford Univ.*; Aguilera, Todd *Dept. of Radiology, Stanford Univ. School of Medicine*; Loo, Billy
W Stanford Univ. School of Medicine; Diehn, Maximilian *Stanford Univ. School of Medicine*; Binefa, Xavier *Univ. Pompeu Fabra*; Depeursinge, Adrien *Univ. of Applied Sciences Western Switzerland Sierre (HES-S)*

SaAT7: 08:30-10:00	Amber 4
2.29 MR Analysis and Quantification (Oral Session)	
Chair: Kozlov, Mikhail <i>Max Planck Institute for Human Cognitive and Brain Sciences</i>	
Co-Chair: Landini, Luigi <i>University of Pisa</i>	

08:30-08:45	SaAT7.1
Comparative Analysis of Different Hip Implants within a Realistic Human Model Located Inside a 1.5T MRI Whole Body RF Coil 7913-7916	
Kozlov, Mikhail* <i>Max Planck Institute for Human Cognitive and Brain Sciences</i> ; Noetscher, Gregory <i>Worcester Polytechnic Institute</i> ; Nazarian, Ara <i>Beth Israel Deaconess Medical Center</i> ; Makarov, Sergey <i>Electrical and Computer Engineering, Worcester Polytechnic Instit</i>	
08:45-09:00	SaAT7.2
Quantification of Errors in Cerebral Blood Flow Measurements Due to Dispersion in Arterial Spin Labelling 7917-7920	
Mehta, Rutej* <i>Univ. of Oxford</i> ; Chappell, Michael <i>Univ. of Oxford</i>	
09:00-09:15	SaAT7.3
Tag Removal in Cardiac Tagged MRI Images using Coupled Dictionary Learning 7921-7924	
Makram, Abram <i>Helwan Univ.</i> ; Rushdi, Muhammad* <i>Cairo Univ.</i> ; Khalifa, Ayman <i>Helwan Univ.</i> ; El-Wakad, Mohamed Tarek <i>Faculty of Engineering, Helwan Univ.</i>	
09:15-09:30	SaAT7.4
Mapping of Arterial Location for the Design of Automated Identification and Analysis Algorithms in Whole Body MRA 7925-7928	
McCormick, Lynne* <i>Univ. of Dundee</i> ; Weir-McCall, Jonathan <i>Univ. of Dundee</i> ; Gandy, Stephen <i>NHS Tayside</i> ; White, Richard <i>Univ. Hospital of Wales</i> ; McNeil, Andrew <i>Univ. of Dundee</i> ; Trucco, Emanuele <i>Univ. of Dundee</i> ; Houston, J Graeme <i>Univ. of Dundee</i>	
09:30-09:45	SaAT7.5
Investigation of the Performance of Variable-Density Z-Spectrum Acquisition Scheme in MR Chemical Exchange Saturation Transfer Effect Quantification 7929-7932	
Yang, Shasha <i>Shenzhen Institutes of Advanced Technology, Chinese Academy of S</i> ; Wu, Yin* <i>Shenzhen Institutes of Advanced Technology, Chinese Academy of S</i>	
09:45-10:00	SaAT7.6
Automatic Cerebral Microbleeds Detection from MR Images via Independent Subspace Analysis based Hierarchical Features 7933-7936	
Dou, Qi* <i>The Chinese Univ. of Hong Kong</i> ; Chen, Hao <i>The Chinese Univ. of Hong Kong</i> ; Yu, Lequan <i>Zhejiang Univ.</i> ; Shi, Lin <i>The Chinese Univ. of Hong Kong</i> ; Wang, Defeng <i>The Chinese Univ. of Hong Kong</i> ; Mok, Vincent <i>CT The Chinese Univ. of Hong Kong</i> ; Heng, Pheng Ann <i>The Chinese Univ. of Hong Kong</i>	

SaAT8: 08:30-10:00	Amber 5
3.14 Optical and Photonic Sensors and Systems I (Oral Session)	

08:30-08:45	SaAT8.1
2-DOF Auto-Calibration for a 3D Endoscope System based on Active Stereo 7937-7941	
Furukawa, Ryo* <i>Hiroshima City Univ.</i> ; Masutani, Ryunosuke <i>Hiroshima City Univ.</i> ; Miyazaki, Daisuke <i>Hiroshima City Univ.</i> ; Baba, Masashi <i>Hiroshima City Univ.</i> ; Hiura, Shinsaku <i>Hiroshima City Univ.</i> ; Visentini-Scarzanella, Marco <i>Kagoshima Univ.</i> ; Morinaga, Hiroki <i>Kagoshima Univ.</i> ; Kawasaki, Hiroshi <i>Kagoshima Univ.</i> ; Sagawa, Ryusuke <i>National Institute of Advanced Industrial Science and Technology</i>	
08:45-09:00	SaAT8.2
A Fiberoptic Sensor for Tissue Carbon Dioxide Monitoring 7942-7945	
Davenport, John* <i>City Univ., London</i> ; Hickey, Michelle <i>City Univ.</i> ; Phillips, Justin <i>City Univ. London</i> ; Kyriacou, Panayiotis <i>City Univ. London</i>	
09:00-09:15	SaAT8.3
Development of NIRS Probe based on LED Sensing That Enables Multimodal Integration 7946-7949	
Esaki, Shun* <i>Shizuoka Univ.</i> ; Yamakawa, Toshitaka <i>Kumamoto Univ.</i> ; Niwayama, Masatsugu <i>Shizuoka Univ.</i>	

09:15-09:30 SaAT8.4
Real-Time Biochemical Sensor based on Raman Scattering with CMOS Contact Imaging 7950-7953
Cao, Muyun *Univ. of Calgary*; Li, Yuhua *Univ. of Calgary*; Yadid-Pecht, Orly* *Univ. of Calgary*

09:30-09:45 SaAT8.5
Investigation of Photoplethysmography and Arterial Blood Oxygen Saturation from the Ear-Canal and the Finger under Conditions of Artificially Induced Hypothermia 7954-7957
Budidha, Karthik* *City Univ.*; Kyriacou, Panayiotis *City Univ. London*

SaAT9: 08:30-10:00 Amber 6
3.15 Bio-Sensing Techniques (Oral Session)
Chair: Bonfiglio, Annalisa *University of Cagliari*
Co-Chair: Menciacchi, Arianna *Scuola Superiore Sant'Anna*

08:30-08:45 SaAT9.1
Organic FET-Based DNA Hybridization Sensor with Sub-Picomolar Sensitivity 7958-7961
Lai, Stefano *Univ. of Cagliari*; Barbaro, Massimo *Univ. of Cagliari*; Bonfiglio, Annalisa* *Univ. of Cagliari*

08:45-09:00 SaAT9.2
An Electrochemical Biosensor based on Gold Microspheres Andanoporous Gold for Real-Time Detection of Superoxide Anion in Skeletal Muscle Tissue 7962-7965
Banan Sadeghian, Ramin* *Tohoku Univ.*; Ostrovidov, Serge *WPI-AIMR, Tohoku Univ.*; Salehi, Sahar *Tohoku Univ.*; Han, Jihui *WPI Advanced Institute for Materials Research, Tohoku Univ.*; Chen, Mingwei *Tohoku Univ.*; Khademhosseini, Ali *Harvard-MIT*

09:00-09:15 SaAT9.3
Measuring the Mechanical Efficiency of a Working Cardiac Muscle Sample at Body Temperature using a Flow-through Calorimeter 7966-7969
Taberner, Andrew* *The Univ. of Auckland*; Johnston, Callum Michael *The Univ. of Auckland*; Pham, Toan *Univ. of Auckland*; Han, June-Chiew *The Univ. of Auckland*; Ruddy, Bryan *Univ. of Auckland*; Loisel, Denis *The Univ. of Auckland*; Nielsen, Poul *The Univ. of Auckland*

09:15-09:30 SaAT9.4
A Magnetic Force Sensor on a Catheter Tip for Minimally Invasive Surgery 7970-7973
Chatzipirpiridis, George* *ETH Zürich*; Erne, Pascal *ETH Zurich*; Ergeneman, Olgac *ETH Zurich*; Pané Vidal, Salvador *ETH Zürich*; Nelson, Bradley *ETH Zurich*

09:30-09:45 SaAT9.5
Validation of Non-Invasive Monitoring Device to Evaluate Sleep Quality 7974-7977
Pino, Esteban J* *Univ. de Concepcion*; Morán, Alejandra A. *Univ. de Concepción*; Dörner De la Paz, Astrid *Univ. of Concepcion*; Aqueveque, Pablo *Univ. of Concepcion*

09:45-10:00 SaAT9.6
NIR Photoacoustic Spectroscopy for Non-Invasive Glucose Measurement 7978-7981
Pai, Praful P.* *Indian Institute of Tech. Kharagpur*; Kumar Sanki, Pradyut *Indian Institute of Tech. Kharagpur*; De, Arijit *Indian Institute of Tech. Kharagpur*; Banerjee, Swapna *Indian Institute of Tech. Kharagpur*

SaAT10: 08:30-10:00 Amber 7
6.28 Human Performance – Cognition (Oral Session)
Chair: Al-Nashash, Hasan *American University of Sharjah*
Co-Chair: Bianchi, Anna Maria *Politecnico di Milano*

08:30-08:45 SaAT10.1
An Analysis on Driver Drowsiness based on Reaction Time and EEG Band Power 7982-7985
Foong, Ruyi* *Agency for Science, Technology and Research (A*Star), Nanyang Te*; Ang, Kai Keng *Institute for Infocomm Research*; Quek, Chai *Nanyang Technological Univ.*; Guan, Cuntai *Institute for Infocomm Research*; Phyo Wai, Aung Aung *Institute for Infocomm Research*

08:45-09:00 SaAT10.2
Fundamental Study of Functional Changes to Female Brain Induced by Pregnancy and Childbirth 7986-7989
Kotani, Hiroko *Tokyo Future Univ.*; Matsuno, Maka *Tokyo Future Univ.*; Nakagawa, Hidenori* *Tokyo Denki Univ.*

09:00-09:15		SaAT10.3
The First Impression is What Matters: A Neuroaesthetic Study of the Cerebral Perception and Appreciation of Paintings by Titian	7990-7993	
Babiloni, Francesca* <i>Univ. of Rome Sapienza</i> ; Rossi, Dario <i>Univ. of Rome Sapienza</i> ; Picconi, Daniela <i>Azienda Speciale Palaexpo</i> ; Vecchiato, Giovanni <i>Univ. of Rome Sapienza</i> ; De Vico Fallani, Fabrizio <i>CRICM</i> ; Chavez, Mario <i>CNRS UMR7225 Paris, France</i> ; Trettel, Arianna <i>BrainSigns</i> ; Babiloni, Fabio <i>Univ. of Rome</i> ; Cherubino, Patrizia <i>Univ. of Rome Sapienza</i>		
09:15-09:30		SaAT10.4
Eye Tracking and EEG Synchronization to Analyze Microsaccades during a Workload Task	7994-7997	
Bodala, Indu Prasad* <i>National Univ. of Singapore</i> ; Kukreja, Sunil <i>National Univ. of Singapore</i> ; Li, Junhua <i>Shanghai Jiao Tong Univ.</i> ; Thakor, Nitish <i>Johns Hopkins Univ.</i> ; Al-Nashash, Hasan <i>American Univ. of Sharjah</i>		
09:30-09:45		SaAT10.5
Evaluation of the Audio Bracelet for Blind Interaction for Improving Mobility and Spatial Cognition in Early Blind Children – A Pilot Study	7998-8001	
Finocchietti, Sara* <i>Istituto Italiano di Tecnologia</i> ; Cappagli, Giulia <i>Istituto Italiano di Tecnologia</i> ; Porquis, Lope Ben <i>Istituto Italiano di Tecnologia</i> ; Baud-Bovy, Gabriel <i>Istituto Italiano di Tecnologia</i> ; Cocchi, Elena <i>Istituto David Chiossone</i> ; Gori, Monica <i>Istituto Italiano di Tecnologia</i>		
09:45-10:00		SaAT10.6
Handedness Change after Dominant Side Amputation: Evaluation from a Hand Laterality Judgment Task ...	8002-8005	
Guo, Xiaoli <i>Shanghai Jiao Tong Univ.</i> ; Lyu, Yuanyuan <i>Shanghai Jiao Tong Univ.</i> ; Bekrater-Bodmann, Robin <i>Dept. of Cognitive and Clinical Neuroscience, Central Insti</i> ; Flor, Herta <i>Central Institute of Mental Health/Medical Faculty Mannheim, Hei</i> ; Tong, Shanbao* <i>Shanghai Jiao Tong Univ.</i>		

SaAT12: 08:30-10:00	Suite 5
3.16 New Sensing Techniques I (Oral Session)	
Co-Chair: Fattah, Nabeel <i>Newcastle University</i>	

08:30-08:45		SaAT12.1
Wireless Data and Power Transfer of an Optogenetic Implantable Visual Cortex Stimulator	8006-8009	
Fattah, Nabeel* <i>Newcastle Univ.</i> ; Laha, Soumyasanta <i>Newcastle Univ.</i> ; Sokolov, Danil <i>Newcastle Univ.</i> ; Chester, Eric Graeme <i>Newcastle Univ.</i> ; Degenaar, Patrick <i>Newcastle Univ.</i>		
08:45-09:00		SaAT12.2
A Disposable Emulsion Droplet Generation Lab Chips Driven by Vacuum Module for Manipulation of Blood Cells	8010-8013	
Lee, Chia-Hung* <i>National Tsing Hua Univ.</i> ; Hong, Chien-Chong <i>National Tsing Hua Univ.</i>		
09:00-09:15		SaAT12.3
Stretchable Metal Oxide Thin Film Transistors on Engineered Substrate for Electronic Skin Applications	8014-8017	
Romeo, Alessia* <i>EPFL</i> ; Lacour, Stéphanie <i>EPFL</i>		
09:15-09:30		SaAT12.4
Surface Texture Detection with Artificial Fingers	8018-8021	
Mohamad Hanif, Noor Hazrin Hany* <i>Univ. of Southampton</i> ; Chappell, Paul <i>Univ. of Southampton</i> ; Cranny, Andy <i>Univ. of Southampton</i> ; White, Neil <i>Univ. of Southampton</i>		
09:30-09:45		SaAT12.5
A Novel Multiple Electrode Direct Current Technique for Characterisation of Tissue Resistance during Surgery	8022-8025	
Chandler, James* <i>The Univ. of Leeds</i> ; Jayne, David <i>Univ. of Leeds</i> ; Neville, Anne <i>Univ. of Leeds</i> ; Culmer, Peter <i>Leeds Univ.</i>		
09:45-10:00		SaAT12.6
Embedded Electro-Conductive Yarn for Shape Sensing of Soft Robotic Manipulators	8026-8029	
Wurdemann, Helge Arne* <i>King's College London</i> ; Sareh, Sina <i>King's College London</i> ; Shafti, Ali <i>King's College London</i> ; Noh, Yohan <i>King's College London</i> ; Faragasso, Angela <i>King's College London</i> ; Katudampe Vithanage, Damith Suresh Chaturanga <i>Ritsumeikan Univ.</i> ; Liu, Hongbin <i>Kings College London</i> ; Hirai, Shinichi <i>Ristumeikan Univ.</i> ; Althoefer, Kaspar <i>King's College London</i>		

12.4 Assistive Technology for the Ageing Population I (Oral Session)**Chair:** Tamura, Toshiyo *Osaka Electro-Communication University***Co-Chair:** Nef, Tobias *Gerontechnology and Rehabilitation, ARTORG Center for Biomedical Engineering Research, University of Bern, Switzerland*

08:30-08:45

SaAT15.1

Developing Technologies for the Elderly: To Whom are We Really Developing? 8030-8033Silva, Samuel* *Univ. of Aveiro*

08:45-09:00

SaAT15.2

A Tool for Home-Based Rehabilitation allowing for Clinical Evaluation in a Visual Markerless Scenario 8034-8037Capecci, Marianna *Univ. Politecnica delle Marche*; Ceravolo, Maria Gabriella *Dept. of Experimental and Clinical Medicine, Univ. Pol*; D'Orazio, Fabrizio *Univ. Politecnica delle Marche*; Ferracuti, Francesco* *Univ. Politecnica delle Marche*; Iarlori, Sabrina *Univ. Politecnica delle Marche*; Lazzaro, Giuseppe *Univ. Politecnica delle Marche*; Longhi, Sauro *Univ. Politecnica delle Marche*; Romeo, Luca *Univ. Politecnica delle Marche*; Verdini, Federica *Univ. Politecnica delle Marche*

09:00-09:15

SaAT15.3

Preliminary Exploration of the Measurement of Walking Speed for the Apoplectic People based on UHF RFID 8038-8041Huang, Hualin *Instrument Science and Engineering, Southeast Univ.*; Mo, Lingfei* *Univ. of Southeast, China*; Liu, Yingjie *Southeast Univ.*; Li, Chengyang *Instrument Science and Engineering, Southeast Univ.*; Xu, Qimeng *Instrument Science and Engineering, Southeast Univ.*; Wu, Zhitong *Instrument Science and Engineering, Southeast Univ.*

09:15-09:30

SaAT15.4

Passive Wireless Sensor Systems Can Recognize Activities of Daily Living 8042-8045Urwyler, Prabitha* *Univ. of Bern*; Stucki, Reto *Univ. of Bern, Gerontechnology and Rehabilitation Group*; Müri, René *Gerontechnology and Rehabilitation Group, Univ. Hospital of*; Mosimann, Urs Peter *Gerontechnology and Rehabilitation Group, Univ. Hospital of*; Nef, Tobias *Gerontechnology and Rehabilitation, ARTORG Center for Biomedical*

09:30-09:45

SaAT15.5

Augmenting White Cane Reliability using Smart Glove for Visually Impaired People 8046-8049Bernieri, Giuseppe *Univ. Roma Tre*; Faramondi, Luca *Univ. Roma Tre*; Pascucci, Federica* *Univ. Roma Tre*

09:45-10:00

SaAT15.6

Reduction in Time-to-Sleep through EEG based Brain State Detection and Audio Stimulation 8050-8053Zhang, Zhuo* *A*STAR*; Guan, Cuntai *Institute for Infocomm Research*; Chan, Ti Eu *Institute For Infocomm Research (A*STAR)*; Yu, Juanhong *Institute for Infocomm Research, Agency for Science, Technology and*; Phyo Wai, Aung Aung *Institute for Infocomm Research*; Wang, Chuanchu *Institute for Infocomm Research*; Zhang, Haihong *Institute for Infocomm Research***4.10 Models of Physiological Systems** (Oral Session)**Chair:** Cheng, Leo K *The University of Auckland***Co-Chair:** Signorini, Maria G. *Politecnico di Milano*

08:30-08:45

SaAT16.1

Computational Modelling of Fatty Acid Transport in the Human Placenta 8054-8057Perazzolo, Simone* *Univ. of Southampton*; Hirschmugl, Birgit *Medical Univ. of Graz*; Wadsack, Christian *Medical Univ. of Graz*; Desoye, Gernot *Medical Univ. of Graz*; Lewis, Rohan B. *Univ. of Southampton*; Sengers, Bram G. *Univ. of Southampton*

08:45-09:00

SaAT16.2

Mixed Model of Dietary Fat Effect on Postprandial Glucose-Insulin Metabolism from Carbohydrates in Type 1 Diabetes 8058-8061Yamamoto Noguchi, Claudia Cecilia* *Kyoto Univ.*; Kunikane, Noriaki *Kyoto Univ.*; Hashimoto, Shogo *Kyoto Univ.*; Furutani, Eiko *Kyoto Univ.*

09:00-09:15		SaAT16.3
Tissue Specific Simulations of Interstitial Cells of Cajal Networks using Unstructured Meshes	8062-8065	
Sathar, Shameer* <i>Univ. of Auckland</i> ; Trew, Mark L. <i>Univ. of Auckland</i> ; Cheng, Leo K <i>The Univ. of Auckland</i>		
09:15-09:30		SaAT16.4
Mathematical Analysis of Dermal Absorption Rate of Heavy Metals	8066-8069	
Batkin, Izmail <i>Ottawa Univ.</i> ; Bolic, Miodrag* <i>Univ. of Ottawa</i>		
09:30-09:45		SaAT16.5
Characterization of Parafoveal Hemodynamics Associated with Diabetic Retinopathy with Adaptive Optics Scanning Laser Ophthalmoscopy and Computational Fluid Dynamics	8070-8073	
Bernabeu, Miguel O.* <i>The Univ. of Edinburgh</i> ; Lu, Yang <i>Beetham Eye Institute, Joslin Diabetes Center, Boston, MA</i> ; Lammer, Jan <i>Medical Univ. of Vienna, Austria</i> ; Aiello, Lloyd P. <i>Beetham Eye Institute, Joslin Diabetes Center, Boston, MA</i> ; Peter, Coveney <i>Univ. College London</i> ; Sun, Jennifer K. <i>Beetham Eye Institute, Joslin Diabetes Center, Boston, MA</i>		
09:45-10:00		SaAT16.6
Spatiotemporal Dynamics of Synaptic Drive in Urinary Bladder Syncytium: A Computational Investigation ...	8074-8077	
Sengupta, Nilapratim* <i>Indian Institute of Technology Bombay</i> ; Brain, Keith L. <i>Univ. of Birmingham</i> ; Manchanda, Rohit <i>IIT Bombay</i>		
SaAT17: 08:30-10:00		Space 1
1.39 Signal Processing for Wearable Systems (Oral Session)		
Co-Chair: Korhonen, Ilkka <i>Tampere University of Technology</i>		
08:30-08:45		SaAT17.1
Robust Heart Rate Estimation using Wrist-Based PPG Signals in the Presence of Intense Physical Activities	8078-8082	
Zong, Chengzhi* <i>Univ. of Texas at Dallas</i> ; Jafari, Roozbeh <i>Univ. of Texas at Dallas</i>		
08:45-09:00		SaAT17.2
Accurate Walking and Running Speed Estimation using Wrist Inertial Data	8083-8086	
Bertschi, Mattia <i>CSEM</i> ; Celka, Patrick <i>CSEM</i> ; Delgado-Gonzalo, Ricard* <i>CSEM</i> ; Lemay, Mathieu <i>EPFL</i> ; Calvo, Enric <i>CSEM</i> ; Grossenbacher, Olivier <i>CSEM SA</i> ; Renevey, Philippe <i>CSEM</i>		
09:00-09:15		SaAT17.3
A Novel Method for Assessing the Severity of Levodopa-Induced Dyskinesia using Wearable Sensors	8087-8090	
Lee, Sunghoon Ivan <i>Univ. of California Los Angeles</i> ; Daneault, Jean-Francois <i>Harvard Medical School</i> ; Golabchi, Fatemeh Noushin <i>Northwestern Univ.</i> ; Patel, Shyamal <i>Harvard Medical School</i> ; Paganoni, Sabrina <i>Dept. of PM&R, Harvard Medical School</i> ; Shih, Ludy <i>Harvard Medical School</i> ; Bonato, Paolo* <i>Harvard Medical School</i>		
09:15-09:30		SaAT17.4
Physical Activity Profiling: Activity-Specific Step Counting and Energy Expenditure Models using 3D Wrist Acceleration	8091-8094	
Delgado-Gonzalo, Ricard* <i>CSEM</i> ; Celka, Patrick <i>CSEM</i> ; Renevey, Philippe <i>CSEM</i> ; Dasen, Stephan <i>CSEM</i> ; Sola, Josep <i>CSEM- Centre Suisse d'Electronique et Microtechnique</i> ; Bertschi, Mattia <i>CSEM</i> ; Lemay, Mathieu <i>EPFL</i>		
09:30-09:45		SaAT17.5
Detection of Essential Hypertension with Physiological Signals from Wearable Devices	8095-8098	
Ghosh, Arindam* <i>Univ. of Trento</i> ; Mayor Torres, Juan Manuel <i>Univ. of Trento</i> ; Danieli, Morena <i>Univ. of Trento</i> ; Riccardi, Giuseppe <i>Univ. of Trento</i>		
09:45-10:00		SaAT17.6
Evaluation of the Beat-to-Beat Detection Accuracy of PulseOn Wearable Optical Heart Rate Monitor	8099-8102	
Parak, Jakub* <i>Tampere Univ. of Technology</i> ; Tarniceriu, Adrian <i>PulseOn SA</i> ; Renevey, Philippe <i>CSEM</i> ; Bertschi, Mattia <i>CSEM</i> ; Delgado-Gonzalo, Ricard <i>CSEM</i> ; Korhonen, Ilkka <i>Tampere Univ. of Technology</i>		

SaAT18: 08:30-10:00	Space 2
1.40 Time-Frequency Analysis of Biosignals I: Electroencephalography (Oral Session)	
Chair: Siddique, Nazmul <i>Ulster University</i>	
Co-Chair: Tarvainen, Mika <i>University of Eastern Finland</i>	

08:30-08:45 SaAT18.1
3D Hand Movement Velocity Reconstruction using Power Spectral Density of EEG Signals and Neural Network 8103-8106
 Korik, Attila *Ulster Univ.*; Siddique, Nazmul* *Ulster Univ.*; Sosnik, Ronen *Holon Institute of Technology (HIT)*; Coyle, Damien *Univ. of Ulster*

08:45-09:00 SaAT18.2
Effect of Negative and Positive Emotions on EEG Spectral Asymmetry 8107-8110
 Orgo, Laura* *Tallinn Univ. of Technology*; Bachmann, Maie *Tallinn Univ. of Technology*; Lass, Jaanus *Tallinn Univ. of Technology*; Hinrikus, Hiie *Tallinn Univ. of Technology*

09:00-09:15 SaAT18.3
A Time-Frequency Respiration Tracking System using Non-Contact Bed Sensors with Harmonic Artifact Rejection 8111-8114
 Beattie, Zachary Todd* *Fitbit*; Jacobs, Peter G. *Oregon Health & Science Univ.*; Riley, Thomas *Oregon Health and Science Univ.*; Hagen, Chad *Oregon Health & Science Univ.*

09:15-09:30 SaAT18.4
Relating Tribological Stimuli to Somatosensory Electroencephalographic Responses 8115-8118
 Oezguen, Novaf* *Leibniz - Institute for New Materials*; Bennewitz, Roland *Leibniz- Institute for New Materials*; Strauss, Daniel J. *Saarland Univ., Medical Faculty*; Schubert, J. Kristof *SNN-Unit*; Bergmann, Ronny *Tech. Univ. Kaiserslautern*

09:30-09:45 SaAT18.5
Comparison of EEG and MEG in Source Localization of Induced Human Gamma-Band Oscillations during Visual Stimulus 8119-8122
 Mideksa, Kidist Gebremariam* *Univ. of Kiel*; Hogenboom, Nienke *Univ. of Duesseldorf*; Helge, Hellriegel *Dept. of Neurology*; Krause, Holger *Univ. of Duesseldorf*; Schnitzler, Alfons *Univ. of Duesseldorf*; Gunther, Deuschl *Dept. of Neurology*; Jan, Raethjen *Dept. of Neurology*; Heute, Ulrich *Univ. of Kiel*; Muthuraman, Muthuraman *Christian Albrechts Univ.*

09:45-10:00 SaAT18.6
Towards the Assessment of Listening Effort in Real Life Situations: Mobile EEG Recordings in a Multimodal Driving Situation 8123-8126
 Damian, Angela *Systems Neuroscience and NeuroTechnology Unit*; Corona-Strauss, Farah I. *Saarland Univ. Hospital*; Hannemann, Ronny *Siemens Audiologische Technik*; Strauss, Daniel J.* *Saarland Univ., Medical Faculty*

SaAT19: 08:30-10:00	Space 3
2.30 Optical Image Analysis (Oral Session)	
Co-Chair: Bocchi, Leonardo <i>Università degli Studi di Firenze, Firenze, Italy</i>	

08:30-08:45 SaAT19.1
Analyzing OCT Images of Age-Related Macular Degeneration Patients to Identify Spatial Health Correlations 8127-8130
 Go, Susannah* *Univ. of Nebraska - Omaha*; Chundi, Parvathi *Univ. of Nebraska-Omaha*; Subramaniam, Mahadevan *Univ. of Nebraska-Omaha*; Margalit, Eyal *Univ. of Nebraska Medical Center*

08:45-09:00 SaAT19.2
Morphological Analysis of Neurons: Automatic Identification of Elongations 8131-8134
 Cosentino, Angela *Univ. of Florence*; Boni, Enrico *Univ. of Florence*; Pacini, Stefania *Univ. of Florence*; Branca, Jacopo *Univ. of Florence*; Morucci, Gabriele *Univ. of Florence*; Ruggiero, Marco *Univ. of Florence*; Bocchi, Leonardo* *Univ. degli Studi di Firenze, Firenze, Italy*

09:00-09:15 SaAT19.3
Unsupervised HEP-2 Mitosis Recognition in Indirect Immunofluorescence Imaging 8135-8138
 Tonti, Simone *Politecnico di Torino*; Di Cataldo, Santa* *Politecnico di Torino*; Macii, Enrico *Politecnico di Torino*;
 Ficarra, Elisa *Politecnico di Torino*

09:15-09:30 SaAT19.4
Characterization of the Role of Collagen Network Structure and Composition in Cancer Cell Migration 8139-8142
 Anguiano, María* *Center for Applied Medical Research, Univ. of Navarra*; Castilla, Carlos *Center for Applied Medical Research, Univ. of Navarra*; Maška, Martin *Masaryk Univ.*; Ederra, Cristina *Center for Applied Medical Research, Univ. of Navarra*; Fernández-Marqués, Javier *Center for Applied Medical Research, Univ. of Navarra*; Peláez, Rafael *Center for Applied Medical Research, Univ. of Navarra*; Rouzaut, Ana *Center for Applied Medical Research, Univ. of Navarra*; Muñoz-Barrutia, Arrate *Univ. Carlos III de Madrid*; Kozubek, Michal *Masaryk Univ.*; Ortiz-de-Solorzano, Carlos *Centre for Applied Medical Research*

09:30-09:45 SaAT19.5
Semiautomatic Detection of Villi in Confocal Endoscopy for the Evaluation of Celiac Disease 8143-8146
 Boschetto, Davide* *IMT Institute for Advanced Studies Lucca*; Mirzaei, Hadis *Univ. of New South Wales*; Leong, Rupert *Univ. of New South Wales*; Tarroni, Giacomo *Univ. of Padova*; Grisan, Enrico *Univ. of Padova*

09:45-10:00 SaAT19.6
Simulation of Cellular Changes on Optical Coherence Tomography of Human Retina 8147-8150
 Santos, Miriam *AIBILI-Association for Innovation and Biomedical Research on Lig*; Araújo, Adérito *Faculty of Science and Technology, Univ. of Coimbra*; Barbeiro, Sílvia *Faculty of Science and Technology, Univ. of Coimbra*; Caramelo, Francisco *IBILI, FMUC*; Correia, António Luís *AIBILI*; Marques, Isabel *IBILI - Institute for Biomedical Imaging and Life Sciences*; Pinto, Luís *CMUC, Dept. of Mathematics, Faculty of Science and Technolo*; Serranho, Pedro *Mathematics Section, Dept. of Science and Technology, Univ.*; Bernardes, Rui *Faculty of Medicine, Univ. of Coimbra*; Morgado, Miguel* *Univ. of Coimbra*

SaAT20: 08:30-10:00	Space 4
10.10 Decision Support Methods and Systems (Oral Session)	
Chair: Traver, Vicente <i>Institute ITACA</i>	
Co-Chair: Quaglioni, Silvana <i>University of Pavia</i>	

08:30-08:45 SaAT20.1
A Decision Support System based on an Ensemble of Random Forests for Improving the Management of Women with Abnormal Findings at Cervical Cancer Screening 8151-8156
 Bountris, Panagiotis* *Biomedical Engineering Laboratory, School of Electrical and Comp*; Haritou, Maria *Biomedical Engineering Laboratory, School of Electrical and Comp*; Pouliakis, Abraham *Dept. of Cytopathology, "ATTIKON" Univ. Hospital, Univ*; Karakitsos, Petros *Dept. of Cytopathology, "ATTIKON" Univ. Hospital, Univ*; Koutsouris, Dimitrios *Biomedical Engineering Laboratory, School of Electrical and Comp*

08:45-09:00 SaAT20.2
Using Sequential Patterns as Features for Classification Models to Make Accurate Predictions on ICU Events N/A
 Ghosh, Shameek* *Advanced Analytics Institute, FEIT, Univ. of Technology Syd*;
 Li, Jinyan *Univ. of Technology Sydney (UTS) , Australia*

09:15-09:30 SaAT20.4
From Data to the Decision: A Software Architecture to Integrate Predictive Modelling in Clinical Settings .. 8161-8164
 Martínez-Millana, Antonio* *Univ. Politécnic de Valencia*; Fernandez-Llatas, Carlos *Univ. Politecnica de Valencia*; Sacchi, Lucia *Univ. of Pavia*; Segagni, Daniele *IRCCS Fondazione Salvatore Maugeri, Pavia*; Bellazzi, Riccardo *Univ. of Pavia*; Traver, Vicente *Institute ITACA*; Guillen, Sergio *Institute Itaca Valencia*

09:30-09:45 SaAT20.5
Development of Sleep Apnea Syndrome Screening Algorithm by using Heart Rate Variability Analysis and Support Vector Machine 8165-8168
 Nakayama, Chikao *Kyoto Univ.*; Fujiwara, Koichi* *Kyoto Univ.*; Matsuo, Masahiro *Shiga Univ. of Medical Science*; Kano, Manabu *Kyoto Univ.*; Kadotani, Hiroshi *Shiga Univ. of Medical Science*

09:45-10:00 SaAT20.6
Emergency Response Nurse Scheduling with Medical Support Robot by Multi-Agent and Fuzzy Technique 8169-8172
 Kono, Shinya* *Tottori Univ.*; Kitamura, Akira *Tottori Univ.*

SaAT21: 08:30-10:00 Suite 8
4.11 Algorithms and Computational Tools for Proteomics (Invited Session)
Chair: Seker, Huseyin *The University of Northumbria at Newcastle*

08:30-08:45 SaAT21.1
Comparison of Unsupervised Feature Selection Methods for High-Dimensional Regression Problems in Prediction of Peptide Binding Affinity 8173-8176
 Sarac, Ferdi *Northumbria Univ. at Newcastle*; Uslan, Volkan *De Montfort Univ.*; Seker, Huseyin* *The Univ. of Northumbria at Newcastle*; Bouridane, Ahmed *Northumbria Univ.*

08:45-09:00 SaAT21.2
Inference of Nonlinear Gene Regulatory Networks through Optimized Ensemble of Support Vector Regression and Dynamic Bayesian Networks 8177-8180
 Akutekwe, Arinze* *Univ. of Northumbria at Newcastle*; Seker, Huseyin *The Univ. of Northumbria at Newcastle*

09:00-09:15 SaAT21.3
Novel Protein Weight Matrix Generated from Amino Acid Indices 8181-8184
 Chrysostomou, Charalambos* *Univ. of Leicester*; Seker, Huseyin *The Univ. of Northumbria at Newcastle*

09:15-09:30 SaAT21.4
Integrative Analysis of LC-MS based Glycomic and Proteomic Data 8185-8188
 Wang, Minkun *Virginia Polytechnic Institute and State Univ.*; Yu, Guoqiang *Virginia Polytechnic Institute and State Univ.*; Resson, Habtom* *Georgetown Univ.*

09:30-09:45 SaAT21.5
Pan-Cancer Analysis for Studying Cancer Stage using Protein Expression Data 8189-8192
 Mishra, Sameer* *Georgia Institute of Technology*; Kaddi, Chanchala D. *Georgia Institute of Technology*; Wang, May D. *Georgia Tech and Emory Univ.*

09:45-10:00 SaAT21.6
A Visual Tool for DNA Repeats Screening 8193-8196
 Pop, Petre Gavril* *Technical Univ. of Cluj Napoca*; Vaida, Mircea-Florin *Technical Univ. of Cluj-Napoca*

13:00-13:15 SaDT8.2
Optical Detection of Carotenoids in Living Tissue as a Measure of Fruit and Vegetable Intake 8197-8200
 Whigham, Leah* *Paso del Norte Institute for Healthy Living*; Redelfs, Alisha H *Paso del Norte Institute for Healthy Living*

13:15-13:30 SaDT8.3
Mobile Evaluation of Human Energy Balance and Weight Control: Potential for Future Developments ... 8201-8204
 Heymsfield, Steven *Pennington Biomedical Research Center*; Kim, Justin *Younghyun Samsung Electronics*; Bhagat, Yusuf* *Samsung Research America*; Zheng, Jolene *Pennington Biomedical Research Center*; Kim, Insoo *Samsung Research America - Dallas*; Choi, Ahyoung *Samsung Electronics*; Jo, Seongwook *Samsung Electronics*; Cho, Jaegeol *Samsung Electronics*

13:30-13:45 SaDT8.4
Immediate Biofeedback for Energy Balance via Expired Breath δ ¹³CO₂ 8205-8208
 Butz, Daniel* *Univ. of Wisconsin - Madison*; Weidmann, Damien *Science & Technology Facilities Council, Rutherford Appleton Lab*; Brownsword, Richard *Science & Technology Facilities Council, Rutherford Appleton Lab*; Cook, Mark *Univ. of Wisconsin - Madison*; Schoeller, Dale *Univ. of Wisconsin - Madison*; Whigham, Leah *Paso del Norte Institute for Healthy Living*