

DAY 1: September 30 (Mon)

8:00 - Registration

Room 1 (Dining Room)

Room 2 (Amherst Room)

8:15 - 8:30	Opening <i>Chair: Jun Suzuki (University of Massachusetts, Boston) and Honggang Wang (University of Massachusetts Dartmouth)</i>	
8:30 - 9:30	Keynote: Using Virtual Reality to Study RF Propagation, Interference & Kinetic Energy Harvesting in Body Area Networks <i>Speaker: Kamran Sayrafian (National Institute of Standards and Technology)</i> <i>Chair: Jun Suzuki (University of Massachusetts, Boston)</i>	
9:30 - 10:00	Coffee break	
10:00 - 12:00	Body Area Networks I (R5) <i>Chair: Honggang Wang (University of Massachusetts Dartmouth)</i> Wireless Body Area Networks: Challenges, Trends and Emerging Technologies <i>Bogdan Antonescu and Stefano Basagni (Northeastern University)</i> Energy Expenditure Estimation using Smartphone Body Sensors <i>Amit Pande (University of California, Davis), Yunze Zeng (University of California, Davis), Aveek Kumar Das (University of California, Davis), Prasant Mohapatra (University of California, Davis), Sheridan Miyamoto (UC Davis School of Medicine), Edmund Seto (University of California, Berkeley), Erik K. Henricson (UC Davis School of Medicine), and Jay J. Han (UC Davis School of Medicine)</i> Towards a Framework for Safety Analysis of Body Sensor Networks <i>Philip Asare (University of Virginia), John Lach (University of Virginia), John A. Stankovic (University of Virginia), Yi Zhang (U.S. Food and Drug Administration), Paul L. Jones (U.S. Food and Drug Administration), and Sandy Weininger (U.S. Food and Drug Administration)</i> See UV on Your Skin: An Ultraviolet Sensing and Visualization System	Antennas for Body Area Networks (R4, S1) <i>Chair: Dirk Plettemeier (Dresden University of Technology) and Albert Sabban (Ort Braude College)</i> A Review and Comparative Study of On- and Off-Body Performance of Platform-Tolerant UHF RFID Tag Antennas <i>Markus Gardill (University of Erlangen-Nuremberg), Klaus Finkenzeller (Giesecke & Devrient GmbH), Walter Hinz (Giesecke & Devrient GmbH), Georg Fischer (University of Erlangen-Nuremberg), Robert Weigel (University of Erlangen-Nuremberg) and Alexander Koelpin (University of Erlangen-Nuremberg)</i> Antenna and Radar Front-End Design for Heartbeat Detection for Triggering Purposes of Medical Devices <i>Ronny Hahnel, Mario Schiselski, Martin Laabs, Qiong Wang, Andre Henning and Dirk Plettemeier (Dresden University of Technology)</i> Wearable Antennas for Medical Applications <i>Albert Sabban (Ort Braude College)</i> Diversity Reception Evaluation for In-Body to On-Body Communication Channel in UWB Low Band

<p><i>Xiaoyi Zhang (University of California, Los Angeles), Wenyao Xu (State University of New York at Buffalo), Ming-Chun Huang (University of California), Navid Amini (University of California, Los Angeles), Fengbo Ren (University of California, Los Angeles)</i></p> <p>Design and Validation of a Virtual Environment for Experimentation inside the Small Intestine</p> <p><i>Liang Mi, Guanqun Bao and Kavah Pahlavan (Worcester Polytechnic Institute)</i></p>	<p><i>Qiong Wang, Ronny Hahnel and Dirk Plettemeier (Dresden University of Technology)</i></p> <p>Miniature Antenna Enabling Near-field Eye-to-eye Communication in the MICS Band (short paper)</p> <p><i>Christoph Beck, Jörg Nagel, Christian Rusch and Georg Bretthauer (Karlsruhe Institute of Technology)</i></p>
<p>12:00 - 1:30 Lunch</p>	
<p>1:30 - 2:30 Keynote: Towards Development of An underwater Dive Monitor for Early Detection of Decompression Sickness</p> <p><i>Speaker: Ki H. Chon (Worcester Polytechnic Institute)</i> <i>Chair: Honggang Wang (University of Massachusetts Dartmouth)</i></p>	
<p>2:30 - 4:00 Energy Harvesting (R2, S3)</p> <p><i>Chair: Gill Tsouri (Rochester Institute of Technology) and Aravind Kailas (University of North Carolina, Charlotte)</i></p> <p>Dynamic Routing Trees with Energy Harvesting Constraints for Wireless Body Area Networks</p> <p><i>Gill R. Tsouri and Nikhil Argade (Rochester Institute of Technology)</i></p> <p>A Markovian Model for Harvested Power from Human Motion</p> <p><i>Shenqiu Zhang (University of Rochester) and Alireza Seyedi (University of Central Florida)</i></p> <p>Enhancing throughput performance under an energy efficient multiplexing access scheme using time-of-failure prognosis (short)</p> <p><i>Claudio Estevez (Universidad de Chile), Marcos Orchard (Universidad de Chile) and Aravind Kailas (University of North Carolina, Charlotte)</i></p> <p>Modeling Energy Harvesting Sensors using Accelerometer in Body Sensor Networks (short)</p> <p><i>Muhannad Quwaider (Jordan University of Science and Technology)</i></p> <p>Adaptive Queue Management Scheme for Body Area Network with Energy Harvesting (short)</p>	<p>Body Area Networks II (S7)</p> <p><i>Chair: Raúl Chávez-Santiago (Oslo University Hospital)</i></p> <p>MPSG: A Generic Context Management Framework in Mobile Spaces (short)</p> <p><i>Penghe Chen, Shubhabrata Sen, Hung Keng Pung and Wai Choong Wong (National University of Singapore)</i></p> <p>Experimental Characterisation of an IEEE 802.15.6-Based Body Area Network (short)</p> <p><i>Alfonso Panunzio, Marco Pietro Caria, Stefan Mijovic, Riccardo Cavallari and Chiara Buratti (University of Bologna)</i></p> <p>SAR Computation and Channel Modeling of Body Area Network (short)</p> <p><i>Yu Pang (Chongqing University of Posts and telecommunications), Qian Lei (Chongqing University of Posts and telecommunications), Jinzhao Lin (Chongqing University of Posts and telecommunications), Zhiyong Luo (Chongqing University of Posts and telecommunications), Zhangyong Li (Chongqing University of Posts and telecommunications), Zeljko Zilic (McGill University) and Katarzyna Radecka (McGill University)</i></p> <p>A Monitoring System enhanced by means of Situation-Awareness for Cognitive Impaired People (short)</p> <p><i>Giovanni Paragliola, Antonio Coronato and Giuseppe De Pietro (ICAR-CNR)</i></p> <p>Unobtrusive Assessment of Bipedal Balance Performance (short)</p>

	<p><i>Young Rok Jang, Yongok Kim, Jang-Won Lee, Daesik Hong and Sooyong Choi (Yonsei University)</i></p>	<p><i>Rolf Adelsberger and Gerhard Tröster (ETH Zurich)</i></p> <p>uLocate: A Ubiquitous Location Tracking System for People Aging with Disabilities (short) <i>Ke-Yu Chen, Mark Harniss, Justin Haowei Lim, Youngjun Han, Kurt L. Johnson and Shwetak N. Patel (University of Washington)</i></p> <p>Participatory Sensing for Fighting Food Deserts (short) <i>Ashley Yu (University of California, Los Angeles) and Ani Nahapetian (California State University, Northridge)</i></p>
<p>4:00-6:00</p>	<p>Coffee break & Poster presentations</p>	

DAY 2: October 1 (Tue)

8:00 - Registration

Room 1 (Dining Room)

Room 2 (Lowell Dartmouth Room)

8:00 - 9:00	<p>Keynote: Garment Device: Challenges to Fabrication of Wearable Technology <i>Speaker: Geneviève Dion (Drexel University)</i> <i>Chair: Jun Suzuki (University of Massachusetts, Boston)</i></p>	
9:00 - 10:00	<p>Keynote: Molecular Communication and Networking <i>Speaker: Tadashi Nakano (Osaka University)</i> <i>Chair: Jun Suzuki (University of Massachusetts, Boston)</i></p>	
10:00 - 10:30	<p>Coffee break</p>	
10:30 - 12:30	<p>Cloud Computing and BAN (R4, S2) <i>Chair: Giancarlo Fortino (University of Calabria)</i></p> <p>Toward Sensor-Cloud Integration as a Service: Optimizing Three-tier Communication in Cloud-integrated Sensor Networks <i>Dung Phan (University of Massachusetts, Boston), Junichi Suzuki (University of Massachusetts, Boston), Shingo Omura (OGIS International, Inc.) and Katsuya Oba (OGIS International, Inc.)</i></p> <p>Engineering Large-Scale Body Area Networks Applications <i>Giancarlo Fortino (University of Calabria), Raffaele Gravina (University of Calabria), Antonio Guerrieri (University of Calabria) and Giuseppe Di Fatta (University of Reading)</i></p> <p>Information Delivery in Tetherless Healthcare <i>PJ Dillon and Taieb Znati (University of Pittsburgh)</i></p> <p>Real-time Tracking of Stress Propagation using Distributed Granger Causality <i>Dario Pompili, Parul Pandey and Eun Kyung Lee (Rutgers University)</i></p> <p>Modeling of WBAN and Cloud Integration for Secure and Reliable Healthcare (short)</p>	<p>Energy Efficiency and UWB (R1, S6) <i>Chair: Gill Tsouri (Rochester Institute of Technology)</i></p> <p>Energy Efficient Cooperative Communication for UWB Based In-Body Area Networks <i>Jie Ding (Macquarie University), Eryk Dutkiewicz (Macquarie University) and Xiaojing Huang (CSIRO ICT Center)</i></p> <p>Energy Efficient Body Area Networking Based on Off-the-shelf Wireless Sensors (short) <i>Sema Dumanli Oktar, Sedat Gormus and Ian J. Craddock (Toshiba Research Europe Limited)</i></p> <p>Increasing the Life-time of 802.15.4-based Wireless Sensor Networks (short) <i>Seokwon Lee (Yonsei University), Sungwoo Weon (Yonsei University), Sooyong Choi (Yonsei University), Jang-won Lee (Yonsei University), Changsoon Park (Samsung Advanced Institute of Technology), Youngsoo Kim (Samsung Advanced Institute of Technology), Young-jun Hong (Samsung Advanced Institute of Technology) and Daesik Hong (Yonsei University)</i></p> <p>An Adaptive Energy Efficient Emergency Packet Transmission Scheme in Medical Implant Communication (short) <i>Kyung Sup Kwak (Inha University), Anup Thapa (Inha University) and Daehan Kwak (Rutgers University)</i></p> <p>BER Performance Analysis of MRC Receive Diversity with Optimal and Rectangular Templates in UWB Off-Body Wireless Body Area Networks (short)</p>

	<p><i>Kalyani Divi and Hong Liu (University of Massachusetts Dartmouth)</i></p> <p>ROCHAS: Robotics and Cloud-assisted Healthcare System for Empty Nester (short) <i>Min Chen (Huazhong University of Science and Technology), Yujun Ma (Huazhong University of Science and Technology), Sana Ullah (King Saud University), Wei Cai (University of British Columbia) and Enmin Song (Huazhong University of Science and Technology)</i></p>	<p><i>Mohamad Abou El-Nasr and Heba Shaban (Arab Academy for Science)</i></p> <p>Efficient synchronization technique for non-coherent IR-UWB receiver targeting IEEE 802.15.6 wireless BAN (short) <i>Houcine Chougrani and Jean Schwoerer (Orange Labs)</i></p> <p>Finger Blood Flow Monitoring Using Smart Phones (short) <i>Shanti Thiyagaraja and Ram Dantu (University of North Texas)</i></p>
12:30 - 2:00	Lunch	
2:00 - 3:00	<p>Keynote: Business Breakthrough and New Research Fields by Regulatory Science for Body Area Networks</p> <p><i>Speaker: Ryuji Kohno (Yokohama National University)</i> <i>Chair: Jun Suzuki (University of Massachusetts, Boston)</i></p>	
3:00 - 4:30	<p>Nanoscale Communications and Networking (R1, S5) <i>Chair: Tadashi Nakano (Osaka University) and Michael Moore (Pennsylvania State University)</i></p> <p>A Generalized Strength-Based Signal Detection Model for Concentration-Encoded Molecular Communication <i>Mohammad Upal Mahfuz, Dimitrios Makrakis and Hussein T. Mouftah (University of Ottawa)</i></p> <p>Robustness in TDMA Scheduling for Neuron-based Molecular Communication (short) <i>Junichi Suzuki and Harry Budiman (University of Massachusetts, Boston)</i></p> <p>dMCS: Distributed Molecular Communication Simulator (short) <i>Ali Akkaya and Tuna Tugcu (Bogazici University)</i></p> <p>Addressing by Concentrations of Receptor Saturation in Bacterial Communication (short) <i>Michael Moore (Pennsylvania State University) and Tadashi Nakano (Osaka University)</i></p> <p>Single Target Tracking in Bionanosensor Networks: Preliminary Simulation Results (short) <i>Yutaka Okaie, Tadashi Nakano, Takahiro Hara, Shojiro Nishio (Osaka University)</i></p>	<p>Privacy, Security and Trust (R3, S2) <i>Chair: Yongmei Sun (Beijing University of Posts and Telecommunications)</i></p> <p>Invited Paper: BDK: Secure and Efficient Biometric based Deterministic Key Agreement in Wireless Body Area Networks <i>Jun Zhou, Zhenfu Cao and Xiaolei Dong (Shanghai Jiao Tong University)</i></p> <p>A Trust Evaluation Framework for Sensor Readings in Body Area Sensor Networks <i>Vinh Bui, Richard Verhoeven, Johan Lukkien and Rafal Kocielnik (Eindhoven University of Technology)</i></p> <p>A Generic Authentication Protocol for Wireless Body Area Networks <i>Mohammed Raza Kanjee and Hong Liu (University of Massachusetts Dartmouth)</i></p> <p>Channel Information based Cryptography and Authentication in Wireless Body Area Networks (short) <i>Zhaoyang Zhang (University of Massachusetts Dartmouth), Honggang Wang (University of Massachusetts Dartmouth), Athanasios Vasilakos (University of Western Macedonia), Hua Fang (University of Massachusetts Medical School)</i></p> <p>Analysis of the applicability of Wireless Sensor Networks attacks to Body Area Networks (short) <i>Mariana Segovia, Eduardo Grampín and Javier Baliosian (Universidad de la República)</i></p>

	<p>A Biologically-inspired Intrabody Nanonetwork: Design Considerations (short) <i>Tadashi Nakano, Kazufumi Hosoda, Yutaka Nakamura, Kojiro Ishii (Osaka University)</i></p>	
4:30 - 5:00	<p>Coffee break</p>	
5:00 - 6:30	<p>Wireless Capsule Endoscopy and MAC Protocols (R4) <i>Chair: Tadashi Nakano (Osaka University)</i></p> <p>Localization of an RF source inside the Human body for Wireless Capsule Endoscopy <i>Rohit Chandra, Anders Johansson and Fredrik Tufvesson (Lund University)</i></p> <p>A Video Aided RF Localization Technique for the Wireless Capsule Endoscope (WCE) inside Small Intestine <i>Guanqun Bao, Liang Mi and Kaveh Pahlavan (Worcester Polytechnic Institute)</i></p> <p>Allocation Slot Arrangement for Flexible Polling-based TDMA in Wireless Body Area Networks <i>Mohammad Nekoui, Rongsheng Huang and Lichung Chu (Olympus Communication Technology of America)</i></p> <p>Configurable MAC Layer Access Modes for Challenging Environments in Body Area Networks <i>Siva Subramani, Woon Hau Chin and Mahesh Sooriyabandara (Toshiba Research Europe Limited)</i></p>	<p>Human Body Communications (S6) <i>Chair: Yuichi Kado (Kyoto Institute of Technology) and Jianqing Wang (Nagoya Institute of Technology)</i></p> <p>A Scalable Human Body Channel Modeling Technique for Networked Body Implants (short) <i>Aftab Ahmad (Norfolk State University)</i></p> <p>Development of Impulse Radio HBC Transceiver for Vital Signal Monitoring of Drivers (short) <i>Jianqing Wang, Takuya Fujiwara and Daisuke Anzai (Nagoya Institute of Technology)</i></p> <p>Signal Analysis of Wearable Transmitter for Intra-body Communication (short) <i>Ryo Sugiyama (Hosei University), Yuki Hayashida (Hosei University), Jun Katsuyama (Hosei University), Kazuki Matsumoto (Hosei University), Yusuke Ido (Hosei University), Mitsuru Shinagawa (Hosei University) and Yuichi Kado (Kyoto Institute of Technology)</i></p> <p>Signal Propagation Characteristics between Transceivers on Human Body for MHz-Band Near-Field Coupling Communication (short) <i>Masaki Ishida (Kyoto Institute of Technology), Tomonori Nakamura (Kyoto Institute of Technology), Mami Nozawa (Kyoto Institute of Technology), Naoto Watanabe (Kyoto Institute of Technology), Hitoshi Shimasaki (Kyoto Institute of Technology), Yuichi Kado (Kyoto Institute of Technology) and Mitsuru Shinagawa (Hosei University)</i></p> <p>Analysis of the HBC Path Loss Occurred in Arm-Waving Motion for Healthcare Monitoring (short) <i>Roslina Abdul Razak, Takehiro Sugo and Toshiyuki Maeyama (Takushoku University)</i></p> <p>Cerebral Autoregulation Assessment using Electroencephalograms (short) <i>Garima Bajwa and Ram Dantu (University of North Texas)</i></p>
8:00 - 10:00	<p>Banquet</p>	

DAY 3: October 2 (Wed)

8:00 - Registration

Room 1 (Dining Room)

Room 2 (Amherst Room)

8:00 - 9:00	<p>Keynote: Reshaping Electronics for the Human Body <i>Speaker: Benjamin Schlatka (MC10, Inc.)</i> <i>Chair: Jun Suzuki (University of Massachusetts, Boston)</i></p>	
9:00 - 9:30	<p>Coffee break</p>	
9:30 - 12:30	<p>Healthcare Applications and Challenges (R5, S5) <i>Chair: Dalei Wu (Massachusetts Institute of Technology)</i></p> <p>Pattern Recognition of Big Nutritional Data in RCT <i>Jin Wang (University of Massachusetts Dartmouth), Hua Fang (University of Massachusetts Medical School), Honggang Wang (University of Massachusetts Dartmouth), Gin-Fei Olendzki (University of Massachusetts Medical School), Chonggang Wang (Interdigital) and Yunsheng Ma (University of Massachusetts Medical School)</i></p> <p>A BSN based service for post-surgical knee rehabilitation at home <i>Laura Contin (Telecom Italia), Roberto Nerino (CNR-IEIIT), Giuseppe Massazza (Università degli Studi di Torino), Walter Jose Gonçalves da Silva Pinto (Telecom Italia), Maria Vittoria Actis (Università degli Studi di Torino), Patrizia Capacchione (Università degli Studi di Torino), Antonio Chimienti (CNR-IEIIT) and Giuseppe Pettiti (CNR-IEIIT)</i></p> <p>Monitoring System for Sports Activities Using Body Area Networks <i>Yu Fu (Southwest University for Nationalities) and Jian Liu (University of Science and Technology Beijing)</i></p> <p>Reliable and Secure Body fall Detection Algorithm in a Wireless Mesh Network <i>Sanjana Rakhecha and Kenneth Hsu (Rochester Institute of Technology)</i></p> <p>Inertial Measurement System for Human Gait Analysis <i>Dmitry Korotkin and Artem Kuznetsov (NRU ITMO)</i></p>	<p>Posture/Activity Monitoring and Recognition (R2, S10) <i>Chair: Aftab Ahmad (Norfolk State University)</i></p> <p>Proper Running Posture Guide: A Wearable Biomechanics Capture System <i>Xiaoyi Zhang (University of California, Los Angeles), Ming-Chun Huang (University of California, Los Angeles), Fengbo Ren (University of California, Los Angeles), Wenyao Xu (State University of New York at Buffalo), Nan Guan (Northeastern University, China) and Wang Yi (Northeastern University, China)</i></p> <p>Classification of Daily Life Activities by Decision Level Fusion of Inertial Sensor Data <i>Dominik Schuldhuis, Heike Leutheuser and Bjoern M. Eskofier (University Erlangen-Nuremberg)</i></p> <p>Cost-Effective Activity Recognition on Mobile Devices (short) <i>Jian Cui (Tsinghua University)</i></p> <p>Evaluating Daily Life Activity Using Smartphones as Novel Outcome Measure for Surgical Pain Therapy (short) <i>Julia Seiter (ETH Zurich), Lucian Macrea (University Hospital Zurich), Oliver Amft (TU Eindhoven), Sebastian Feese (ETH Zurich), Bert Arnrich (Bogazici University Istanbul), Konrad Maurer (University Hospital Zurich) and Gerhard Tröster (ETH Zurich)</i></p> <p>COOLING VEST SYSTEM TO ASSIST REGULATION OF CORE BODY TEMPERATURE (short) <i>Douglas E. Dow, Jefry Z. Lopes, William J. Williams, Devin D. Richard, Logen M. Johnson and Mansour Zenouzi (Wentworth Institute of Technology)</i></p>

Wireless Gateway Recorder Supporting Medical Information Exchange between Zigbee Nodes and Bluetooth Devices (short)

Wang Guojing, Weidong Wang and Zhengbo Zhang (Chinese People's Liberation Army General Hospital)

Towards a Mobile Galvanic Skin Response Measurement System for Mentally Disordered Patients (short)

Franz Gravenhorst (ETH Zurich), Amir Muaremi (ETH Zurich), Agnes Gruenerbl (DFKI GmbH), Bert Arnrich (Bogazici University) and Gerhard Troester (ETH Zurich)

Emerging Wearable Medical Devices towards Personalized Healthcare (short)

Jiewen Zheng (The Quartermaster Research Institute of the General Logistic Department), Yuhong Shen (The Quartermaster Research Institute of the General Logistic Department), Zhengbo Zhang (Chinese PLA general hospital), Taihu Wu (Academy of military medical science, Institute of medical equipment), Guang Zhang (Academy of military medical science, Institute of medical equipment) and Hengzhi Lu (Academy of military medical science, Institute of medical equipment)

Design and Implementation of a Wireless Chest Compression Monitoring and Feedback System (short)

Guang Zhang (Academy of military medical science, Institute of medical equipment), Jiewen Zheng (The Quartermaster Research Institute of the General Logistic Department), Hengzhi Lu (Academy of military medical science, Institute of medical equipment), Chunfei Wang (NO.174 Hospital instrument department), Yalin Wang (Navy General Hospital of Chinese PLA instrument department) and Taihu Wu (Academy of military medical science, Institute of medical equipment)

Enhancement of a Body Area Network to support Smart Health monitoring at the digital home (short)

Laura Vadillo (Universidad Politécnica de Madrid), Miguel Ángel Valero (Universidad Politécnica de Madrid) and Gema Gil (Primary Care Service of Perales de Tajuña)

Monitor Pilgrims: Prayer Activity Recognition using Wearable Sensors (short)

Amir Muaremi (ETH Zurich), Julia Seiter (ETH Zurich), Franz Gravenhorst (ETH Zurich), Agon Bexheti (EPFL), Bert Arnrich (Bogazici University) and Gerhard Troester (ETH Zurich)

Can You Form Healthy Habit? Predicting Habit Forming States through Mobile Phone (short)

Bin Xu (Tsinghua University), Yin Bai (Tsinghua University), Haifeng Yang (Hainan University), Jian Cui (Tsinghua University) and Shuyang Jiang (Tsinghua University)

A Mobile Food Intake Monitoring System based on Breathing Signal Analysis (short)

Subir Biswas (Michigan State University), Bo Dong (Michigan State University), Robert Gernhardt (Technische Universität Kaiserslautern) and Janik Schlemminger (Technische Universität Kaiserslautern)

Nonlinear Feature for Gait Speed Estimation using Inertial Sensors (short)

Shanshan Chen and John Lach (University of Virginia)

PCA & HMM Based Arm Gesture Recognition Using Inertial Measurement Unit (short)

Yinlong Zhang (Chinese Academy of Sciences), Wei Liang (Chinese Academy of Sciences), Jindong Tan (The University of Tennessee), Yang Li (Chinese Academy of Sciences) and Ziming Zeng (Shenyang Jianzhu University)

Inertial Sensor Based Motion Trajectory Visualization and Quantitative Quality Assessment of Hemiparetic Gait (short)

Yan Wang, James Xu, Xiaoyu Xu, Xiaoxu Wu, Gregory Pottie and William Kasier (University of California, Los Angeles)

A generic approach to inertial tracking of arbitrary kinematic chains (short)

Markus Miezal, Gabriele Bleser, Norbert Schmitz and Didier Stricker (DFKI)

12:30 - 2:00	Lunch	
2:00 - 3:00	Keynote: Body Sensor Networks and Their Role in Transforming Healthcare <i>Speaker: Paolo Bonato (Harvard Medical School)</i> <i>Chair: Jun Suzuki (University of Massachusetts, Boston)</i>	
3:00 - 4:00	<p>Brain and Body Computing based on Embodied Knowledge I (R3) <i>Chair: Isao Hayashi (Kansai University) and Yinlai Jiang (Kochi University of Technology)</i></p> <p>Speed Control of an Omnidirectional Walker by Forearm Pressures: Considering Features in Force Exertion with Forearms <i>Yinlai Jiang (Kochi University of Technology), Shuoyu Wang (Kochi University of Technology), Rempeng Tan (Kochi University of Technology), Kenji Ishida (Kochi University), Yo Kobayashi (Waseda University) and Masakatsu G. Fujie (Waseda University)</i></p> <p>Fuzzy Bio-Indicator: Evaluation of Logicality and Connectivity for Living Neuronal Network <i>Isao Hayashi (Kansai University), Koki Mitsumoto (Kansai University) and Suguru N. Kudoh (Kwansei Gakuin University)</i></p> <p>Extraction of Cognitive Index for Dynamic Parameter in Human Motion <i>Hiroaki Nakanishi (Kyoto University) and Sayaka Kanata (Osaka Prefecture University)</i></p>	<p>Body Area Networks III (S4) <i>Chair: Ilangko Balasingham (Oslo University Hospital and Norwegian University of Science and Technology)</i></p> <p>A Data Analysis Driven Streaming Framework for Body Sensor Area Networks (short) <i>Yu Cao (University of Massachusetts Lowell), Ming Li (California State University, Fresno) and B. Prabhakaran (The University of Texas at Dallas)</i></p> <p>BodySim: A Multi-Domain Modeling and Simulation Framework for Body Sensor Networks Research and Design (short) <i>Philip Asare (University of Virginia), Robert F. Dickerson (University of Virginia), Xianyue Wu (University of Birmingham), John Lach (University of Virginia) and John A. Stankovic (University of Virginia)</i></p> <p>Reliability of LT Codes under Dynamic Channel Conditions in Wearable Body Area Network (short) <i>Yang Li, Kai Wang, Shuanglong Qin, Yongmei Sun and Yuefeng Ji (Beijing University of Posts and Telecommunications)</i></p> <p>A Computing-Efficient Algorithm for Accelerometer-Based Real-Time Activity Recognition Systems (short) <i>Pejman Ghorbanzade (K. N. Toosi University of Tech), Ali Khaleghi (K. N. Toosi University of Tech) and Ilangko Balasingham (Norwegian University of Science and Technology)</i></p>
4:00 - 4:30	Coffee break	
4:30 - 6:30	<p>Sports Applications and Systems (R2, S1) <i>Chair: Mohamad Abou El-Nasr (Arab Academy for Science, Technology and Maritime Transport)</i></p> <p>Estimation of the Knee Flexion-Extension Angle During Dynamic Sport Motions Using Body-worn Inertial Sensors <i>Carolin Jakob, Patrick Kugler, Felix Hebenstreit, Samuel Reinfelder, Ulf Jensen, Dominik Schuldhaus, Matthias Lochmann, Bjoern M. Eskofier (University of Erlangen-Nuremberg)</i></p>	<p>Brain and Body Computing based on Embodied Knowledge II (S6) <i>Chair: Isao Hayashi (Kansai University) and Yinlai Jiang (Kochi University of Technology)</i></p> <p>Neuro-robot Vitroid - Living neuronal network with physical embodiment by a miniature moving robot (short) <i>Suguru Kudoh, Yasuhiro Hukui and Hidekatsu Ito (Kwansei Gakuin University)</i></p>

Activity Classification With Empirical RF Propagation Modeling in Body Area Networks

Ruijun Fu, Guanqun Bao and Kaveh Pahlavan (Worcester Polytechnic Institute)

Study of Radio Channel for Biomedical Sensors in Spacesuits (short)

Mohammed Taj-Eldin, William Kuhn and Balasubramaniam Natarajan (Kansas State University)

Body Area Networks IV (S4)

Chair: Mohamad Abou El-Nasr (Arab Academy for Science, Technology and Maritime Transport)

GPU-Based Simulations of Wireless Body Area Network (short)

Dion Paul, Hongmei Chi and Clement Allen (Florida A&M University)

A Personal Body Area Network as a Pre-Screening Surrogate to the Polysomnography (short)

Sheryl LaFleur and Imad Mahgoub (Florida Atlantic University)

An XOR Encoding for Wireless Body Area Networks (short)

Keigo Yokota, Akiko Manada and Hiroyoshi Morita (The University of Electro-Communications)

Predicting and Modeling Biological functions in Body Area Network

Suryadip Chakraborty, Andrew Knox and Dharma Agrawal (University of Cincinnati)

Semi-artificial living neuronal network consists of neuronal units derived from different species (short)

Alice Shuta and Suguru N. Kudoh (Kwansei Gakuin University)

The Stability and Periodicity of neuronal network activity pattern repertory (short)

Suguru N. Kudoh, Keisuke Izutani and Hidekatsu Ito (Kwansei Gakuin University)

Air brain – the easy telemetric system with smartphone for EEG signal and human behavior (short)

Alice Shuta and Suguru N. Kudoh (Kwansei Gakuin University)

Camera Modeling Technique of 3D Sensing Based on Tile Coding for Computer Vision (short)

Toshihiko Watanabe and Yuichi Saito (Osaka Electro-Communication University)

ROWING TRAINING SYSTEM FOR ON-THE-WATER

REHABILITATION AND SPORT (short)

Douglas E. Dow, Ryan P. Andrews, Alejandra P. Garcia, Brandon R. Dryer, Scott F. Bonney (Wentworth Institute of Technology)

BodyNets Workshops: October 2 (Wed)

Room 3 (Boston Room)

International Workshop on Perspectives and Future Trends for Body Area Networks (PFT-BAN)

Organizers: Raúl Chávez-Santiago and Ilangko Balasingham (Oslo University of Hospital & Norwegian University of Science and Technology)

9:15 - 10:00	<p>Keynote 1: Ultra Wideband Technology for Healthcare and Welfare <i>Speker: Huan-Bang Li (National Institute of Information and Communication Technology (NICT))</i> <i>Chair: Ilangko Balasingham (Oslo University of Hospital & Norwegian University of Science and Technology)</i></p>
10:00-10:45	<p>Keynote 2: Nano-to-Neuron Interfaces and Communications <i>Speaker: Ilangko Balasingham (Oslo University of Hospital & Norwegian University of Science and Technology)</i> <i>Chair: Raúl Chávez-Santiago (Oslo University of Hospital & Norwegian University of Science and Technology)</i></p>
10:45 - 12:45	<p>Workshop Paper Presentations <i>Chair: Raúl Chávez-Santiago and Ilangko Balasingham (Oslo University of Hospital & Norwegian University of Science and Technology)</i></p> <p>Technical Considerations in Medical Radar <i>Ram Narayanan (The Pennsylvania State University)</i></p> <p>Low-Complexity Video Coding for Wireless Image Transmission in Capsule Endoscopy <i>Kenichi Takizawa and Ryu Miura (NICT)</i></p> <p>System for Simultaneous Measurement of Breathing Rate and Heart Rate using Photoplethysmogram <i>Toshinori Kagawa (NICT), Atsuko Kawamoto (The University of Electro-Communications) and Nobuo Nakajima (The University of Electro-Communications)</i></p> <p>A Modified Particle Filter Algorithm for Wireless Capsule Endoscope Location Tracking <i>Takahiro Ito, Daisuke Anzai and Jianqing Wang (Nagoya Institute of Technology)</i></p> <p>Consideration for Polarization of Antennas in Dynamic Body Area Networks at 400 MHz narrow band <i>Takahiro Aoyagi (Tokyo Institute of Technology)</i></p> <p>A Dual-Band MAC Protocol for Indoor Cognitive Radio Networks: An e-Health Case Study <i>Raul Chavez-Santiago (Oslo University of Hospital & Norwegian University of Science and Technology), Dainius Jankunas (Vytautas Magnus University), Vladislav V. Fomin (Vytautas Magnus University) and Ilangko Balasingham (Oslo University of Hospital & Norwegian University of Science and Technology)</i></p>

The Second Ultra Wideband for Body Area Networking Workshop (UWBAN-2013)

Organizers: Matti Hämäläinen (University of Oulu), Jari Linatti (University of Oulu), Muzaffer Kanaan (Erciyes University) and Alberto Rabbachin (Massachusetts Institute of Technology)

1:30 - 2:00	<p>Plenary I: Body-SLAM: Simultaneous Localization and Mapping of Inside the Human Body <i>Speaker: Kaveh Pahlavan (Worcester Polytechnic Institute)</i> <i>Chair: Jari Linatti (University of Oulu)</i></p>
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2:10-4:00	<p>Phy & Channels <i>Chair: Jari Linatti (University of Oulu)</i></p> <p>On The Bandwidth Dependency of Near-Field Effects in UWB Implant Body Area Networks <i>Muzaffer Kanaan, Memduh Suveren and Ömer Galip Saraçoğlu (Erciyes University)</i></p> <p>Path loss and interference shadowing model for a real city hospital <i>Lorenzo Mucchi and Alessio Carpini (University of Florence)</i></p> <p>A Study of On-Off Keying Performance for Body Area Networks <i>Igor Dotlic and Ryu Miura (NICT)</i></p> <p>Generic Small Scale Channel Model for On-Body UWB WBAN Communications <i>Timo Kumpulainen, Matti Hämäläinen, Tommi Tuovinen, Kanya Yekeh Yazdandoost, Jari Linatti (University of Oulu)</i></p> <p>Energy Efficiency Optimization for IR-UWB WBAN Based on the IEEE 802.15.6 Standard <i>Heikki Karvonen, Jari Linatti and Matti Hämäläinen (University of Oulu)</i></p>
4:00-4:20	<p>Coffee break</p>
4:20-4:50	<p>Plenary II: Network Localization and Navigation <i>Speaker: Moe Win (Massachusetts Institute of Technology)</i> <i>Chair: Jari Linatti (University of Oulu)</i></p>
5:00-6:00	<p>Performance and Applications <i>Chair: Muzaffer Kanaan (Erciyes University)</i></p> <p>Multiplexing and Error Control Scheme with Modified Hybrid ARQ for Body Area Network employing IEEE 802.15.6 in UWB-PHY <i>Kento Takabayashi, Hirokazu Tanaka, Chika Sugimoto and Ryuji Kohno (Yokohama National University)</i></p> <p>Imaging for Detecting Breast Cancers Using UWB Radar Technology <i>Yuta Okuyama, Thanh Hiep Pham, Kotaro Yamasue, Chika Sugimoto and Ryuji Kohno (Yokohama National University)</i></p> <p>Application of High-band UWB Body Area Network to Medical Vital Sensing in Hospital <i>Yuya Obinata (Yokohama National University), Kotaro Yamasue (Yokohama City University and Yokohama National University), Thanh Hiep Pham (Yokohama National University), Akinobu Nemoto (Yokohama City University and Yokohama National University), Chika Sugimoto (Yokohama National University) and Ryuji Kohno (Yokohama National University)</i></p>