



International Workshop on Wearable and Implantable Body Sensor Networks

RWTHAACHEN
UNIVERSITY
PHILIPS

Tentative Program

26th March 2007 - Tutorials

Venue: Helmholtz Institute, RWTH Aachen University, Pauwelsstr. 20, 52074 Aachen (Building 541)

9.00am - 5.00pm BSN platform

Guang-Zhong Yang and Benny Lo (Imperial College London)

1.00pm - 5.00pm Wearable Textile-based Sensor Systems

Jörg Habetha (Philips Research Europe) and Andreas Lymberis (European Commission)

2.00pm - 4.00pm Cuffless Continuous Blood Pressure

Yuan-Ting Zhang (Chinese University of Hong Kong) and Jens Mühlsteff (Philips Research Europe)

2.00pm - 4.00pm Reliability in Light-weight Medical Monitoring Platforms

Roosbeh Jafari, V. Reggie Edgerton and Majid Sarrafzadeh (University of California at Los Angeles)

27th March 2007 - 1st Day

Venue: University Hospital Aachen, RWTH Aachen University, Pauwelsstr. 30, 52074 Aachen (Building 598)

8.00am Registration Desk Opens

8.30am - 8.45am Welcome and Opening Remarks

8.45am - 10.15am Communication I

Invited Talk: Challenges in developing body sensors for elite athletes

Stephen Hailes (University College of London)

Modelling and Characterisation of a Compact Sensor Antenna for Healthcare Applications

Akram Alomainy, Yang Hao (Queen Mary University of London) and Frank Pasveer (Philips Research Europe)

Performance Analysis of 802.15.4 and 802.11e for Body Sensor Network Applications

Dave Cavalcanti, Ruediger Schmitt and Amjad Soomro (Philips Research North America)

Low Energy On-Body Communication for BSN

Hoi-Jun Yoo, Seong-Jun Song, Namjun Cho and Hye-Jeong Kim (Korea Advanced Institute of Science and Technology)

10.15am - 10.45am Break

10.45am - 12.15pm Smart Textiles

Invited Talk: Wearable Chemo/Bio-Sensors - The Calibration Issue

Dermot Diamond (Dublin City University)

Bioimpedance Spectroscopy with Textile Electrodes for a Continuous Monitoring Application

Guillermo Medrano, Lisa Beckmann, Nadine Zimmermann, Tim Grundmann, Thomas Gries and Steffen Leonhardt (RWTH Aachen University)

Contactless EMG Sensors Embroidered onto Textile

Torsten Linz (Fraunhofer IZM), Lena Gourmelon and Geert Langereis (Philips Research Europe)

Bio-sensing textiles - Wearable Chemical Biosensors for Health Monitoring

Shirley Coyle, Yanzhe Wu, King-Tong Lau, Sarah Brady, Gordon Wallace and Dermot Diamond (Dublin City University)

12.15pm - 12.45pm Poster Session Teaser

12.45pm - 2.00pm Lunch

2.00pm - 3.45pm Poster Session

Wearable Joint-Angle Measurement with Modulated Magnetic Field from L/C Oscillators

Michael Barry, Agnes Grünerbl (University for Health Sciences, Medical Informatics and Technology) and Paul Lukowicz (University of Passau)

In-body Wireless Communication Made Real

Henry Higgins (Zarlink Semiconductor)

The PSI Board: Realizing a Phone-Centric Body Sensor Network

Trevor Pering (Intel Research), Pei Zhang (Princeton University), Rohit Chaudhri (Motorola Labs), Yaw Anokwa (University of Washington) and Roy Want (Intel Research)

Groggy Wakeup - Automated Generation of Power-Efficient Detection Hierarchies for Wearable Sensors

Ari Y. Benbasat and Joseph A. Paradiso (Massachusetts Institute of Technology)

A Low Power Compression Processor for Body Sensor Network System

Hyejung Kim, Sungdae Choi and Hoi-Jun Yoo (Korea Advanced Institute of Science and Technology)

Path Loss For Short Range Telemetry

Yong Liu, Kairaz Contractor (Philips Research East Asia) and Yunjuan Kang (East China Normal University)

Acoustic Monitoring of Lung Sounds for the Detection of One Lung Intubation

Shai Tejman-Yarden, Alex Zlotnik (Soroka Medical Center), Lior Weizman, Joseph Tabrikian, Arnon Cohen (Ben Gurion University of the Negev), Nathan Weksle and Gabriel Gurman (Soroka Medical Center)

Automatic Step Detection in the Accelerometer Signal

Hong Ying, Carmen Silex, Andreas Schnitzer (Research Centre Jülich), Steffen Leonhardt (RWTH Aachen University) and Michael Schiek (Research Centre Jülich)

EMFi in Wearable Audio Applications

Satu Kärki, Timo Salpavaara and Jukka Lekkala (Tampere University of Technology)

Policy-based Management for Body-Sensor Networks

Sye Loong Keoh, Kevin Twidle, Nathaniel Pryce, Alberto Egon Schaeffer-Filho, Emil Lupu, Naranker Dulay, Morris Sloman, Steven Heeps, Stephen Strowes, Joe Sventek and Eleftheria Katsiri (Imperial College London)

Design Issues and Implementation of Query-driven Healthcare System Using Wireless Sensor Ad-hoc Network

Wan-Young Chung, Gaurav Walia, Young-Dong Lee (Dongseo University) and Risto Myllylä (University of Oulu)

The Development of an In-Vivo Active Pressure Monitoring System

C.K. Lin, David Jea, Foad Dabiri, Tammara Massey, Robert Tan, Majid Sarrafzadeh, Mani Srivastava, Peter Schulam, Jacob Schmidt (University of California at Los Angeles) and Carlo D. Montemagno (University of Cincinnati)

Optimizing On-Chip Piezoelectric Energy Scavenging for Integration of Medical Sensors with Low-Power Wireless Electronics

Elizabeth K. Reilly, Lindsay M. Miller and Paul K. Wright (University of California at Berkeley)

A Smart Phone-based Personal Area Network for Remote Monitoring of Biosignals

Maria Jose Moron, Jose Rafael Luque, Antonio Angel Botella, Emilio Jesus Cuberos, Eduardo Casilari and Antonio Diaz-Estrella (University of Malaga)

Real-Time Pervasive Monitoring for Postoperative Care

Benny Lo, Louis Atallah, Omer Aziz, Mohammed El ElHew, Ara Darzi and Guang-Zhong Yang (Imperial College London)

Embedded Real-Time Heart Variability Analysis

Eleftheria Katsiri, Mel Ho, Lei Wang, Benny Lo and Chris Toumazou (Imperial College London)

Behaviour Profiling with Ambient and Wearable Sensing

Louis Atallah, Mohamed A. ElHelw, Julien Pansiot, Danaïl Stoyanov, Lei Wang, Benny Lo, and Guang-Zhong Yang (Imperial College London)

Role of Signal Processing in Wearable Devices: Application to Sleep Evaluation

Anna M. Bianchi, Omar Villantieri, Martin Mendez and Sergio Cerutti (Politecnico di Milano)

Evaluation of a New, Wireless Pulse Oximetry Monitoring System in Infants: the BBA Bootee

Jean-Luc Weber (TAM-Télésanté), Yves Rimet (Hospital Center of Aix-en-Provence), Eric Mallet (University Hospital Center of Rouen), Dominique Ronayette (University Hospital Center of Limoges), Caroline Rambaud (Raymond Poincaré Hospital), Christian Terlaud (Hospital Center of Saint-Junien), Yves Brusquet (Hospital Center of Aix-en-Provence), Christian Dageville (University Hospital Center of Nice), Marc Lubrano (University Hospital Center of Rouen), David Blanc, Jérôme Silve, Olivier Lerda, Francis Klefstad-Sillonville and Larissa I. Netchiporouk (TAM-Télésanté)

Electrochemical Noise Properties of Different Electrode Materials in Different Electrolytes

Jarno Riistama and Jukka Leikkala (Tampere University of Technology)

Smart textiles for Automotive: Application to Airbag Development

Emilie Drean, Laurence Schacher, Dominique Adolphe (Laboratoire de Physique et Mécanique Textile) and François Bauer (Piezotech S.A.)

Celeritas - A Wearable Sensor System for Interactive Digital Dance Theatre

Brendan O'Flynn (Tyndall National Institute), Giuseppe Torre, Mikael Fernstrom (University of Limerick), Todd Winkler (Brown University), Andy Lynch, John Barton, Philip Angove and S. Cian O'Mathuna (Tyndall National Institute)

The Use of Telemetry-Evoked Compound Action Potentials (TECAP) in Cochlear Implantation

Justus Ilgner, Wolfgang H. Döring and Martin Westhofen (RWTH Aachen University)

Medical Sensors of the BASUMA Body Sensor Network

Noya Loew (University of Potsdam), Klaus-Jürgen Winzer (Charité), Gunther Becher (FILT Lungen- und Thoraxdiagnostik), Dirk Schönfuß (BST Bio Sensor Technologie), Thomas Falck (Philips Research Europe), Günter Uhlrich (ABS Ges. für Automatisierung Bildverarbeitung und Software), Martin Katterle and Frieder Scheller (University of Potsdam)

3.45pm - 5.25pm On-body Sensors

Invited Talk

Simon Hoerstrup (University Hospital Zurich)

Reflective Photoplethysmograph Earpiece Sensor for Ubiquitous Heart Rate Monitoring

Lei Wang, Benny Lo and Guang-Zhong Yang (Imperial College London)

Multi-Axis Inertial Measurement Units Measuring Human Posture and Motion

Martin Trächtler (HSG-IMIT), Diana Hodgins (Codicote Innovation Centre), Laurence Kenney (University of Salford), Matthias Dienger, Thomas Link and Yiannos Manoli (HSG-IMIT)

In-Ear Acquisition of Vital Signs Discloses New Chances for Preventive Continuous Cardiovascular Monitoring

Olaf Brodersen, Dieter Römhild, Dietmar Starke, Arndt Steinke (CiS Institut für Mikrosensorik GmbH) and Stefan Vogel (RWTH Aachen University)

Micro Capacitive Tilt Sensor for Human Body Movement Detection

Li Zhao and Eric. M. Yeatman (Imperial College London)

7.00pm - 10.00pm Dinner

Venue: Coronation Hall inside the historic Aachen Town Hall, Markt, 52062 Aachen

28th March 2007 - 2nd Day

Venue: University Hospital Aachen, RWTH Aachen University, Pauwelsstr. 30, 52074 Aachen (Building 598)

8.30am - 10.00am Applications

Invited Talk: Future Perspectives of E-Health

Claus Biermann (Philips)

A System for Wearable Monitoring of Seated Posture in Computer Users

Lucy E. Dunne, Pauline Walsh, Barry Smyth and Brian Caulfield (University College Dublin)

Ambient and Wearable Sensor Fusion for Activity Recognition in Healthcare Monitoring Systems

Julien Pansiot, Danail Stoyanov, Douglas McIlwraith, Benny Lo and Guang-Zhong Yang (Imperial College London)

Physical Activity Monitoring for Assisted Living at Home

Roozbeh Jafari, Wenchao Li, Ruzena Bajcsy, Steven Glaser and Shakar Sastry (University of California at Berkeley)

10.00am - 10.30am Break

10.30am - 12.20pm Wearable Computing

Invited Talk

Gerhard Tröster (ETH Zurich)

BLIG: A New Approach for Sensor Identification, Grouping, and Authorisation in Body Sensor Networks

Jacob Andersen (University of Aarhus) and Jakob E. Bardram (University of Copenhagen)

Approximate Data Collection using Resolution Control based on Context

David Jea, Winston Wu, William Kaiser and Mani B. Srivastava (University of California at Los Angeles)

Recognizing Soldier Activities in the Field

David Minnen, Tracy Westeyn, Daniel Ashbrook, Peter Presti and Thad Starner (Georgia Institute of Technology)

Probabilistic Parsing of Dietary Activity Events

Oliver Amft, Martin Kusserow and Gerhard Tröster (ETH Zurich)

12.20pm - 1.45pm Lunch

1.45pm - 3.15pm Communication II

Invited Talk: Radio Transceivers: An Enabling Technology for Wireless Healthcare

Khanh Tuan Le (Texas Instruments)

An All-Detailed Architecture of a RF Wireless Transmitter

Mourad Melliti, Salem Hasnaoui (National School of Engineering of Tunisia)

Towards Plug-and-Play Interoperability for Wireless Personal Telehealth Systems

Lars Schmitt, Thomas Falck, Frank Wartena and David Simons (Philips Research Europe)

On-Body Measurements and Characterization of Wireless Communication Channel for Arm and Torso of Human

Elisabeth Reusens, Wout Joseph, Günter Vermeeren and Luc Martens (Ghent University)

3.15pm - 3.45pm Break

3.45pm - 5.15pm In-body Sensors

Invited Talk: Inductive powering and data transfer of a free moving camera capsule

Bob Puers (K.U.Leuven)

Healthy Aims Overview

Diana Hodgins (European Technology for Business Ltd)

Communication and Control for Reanimating Paralyzed Limbs via a Network of Wireless Micro-Implants

Nuria Rodriguez, Jack Weissberg and Gerald E. Loeb (Alfred E Mann Institute for Biomedical Engineering)

Minimizing Thermal Effects of In Vivo Body Sensors

Daniel Garrison (Virginia Polytechnic Institute and State University)

5.15pm Conclusions

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