

28th March 2007

2nd Day

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

08:30 - 10:00 Applications (HS 3)

- C. Biermann: Future Perspectives of E-Health
- L.E. Dunne et al.: A System for Wearable Monitoring of Seated Posture in Computer Users
- J. Pansiot et al.: Ambient and Wearable Sensor Fusion for Activity Recognition in Healthcare Monitoring Systems
- R. Jafari et al.: Physical Activity Monitoring for Assisted Living at Home

10:00 - 10:30 Break

10:30 - 12:20 Wearable Computing (HS 3)

- G. Tröster: Wearable Computing - Quo Vadis ?
- J. Andersen et al.: BLIG: A New Approach for Sensor Identification, Grouping, and Authorization in BSN
- D. Jea et al.: Approximate Data Collection using Resolution Control based on Context
- D. Minnen et al.: Recognizing Soldier Activities in the Field
- O. Amft et al.: Probabilistic Parsing of Dietary Activity Events

12:20 - 13:45 Lunch

13:45 - 15:15 Communication II (HS 3)

- K. Tuan Le: Radio Transceivers: An Enabling Technology for Wireless Healthcare
- M. Melliti et al.: An All-detailed Architecture of a RF Wireless Transmitter
- L. Schmitt et al.: Towards Plug-and-Play Interoperability for Wireless Personal Telehealth Systems
- E. Reusens et al.: On-Body Measurements and Characterization of Wireless Communication Channel for Arm and Torso of Human

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15:15 - 15:45 Break

15:45 - 15:15 In-body Sensors (HS 3)

- B. Puers: Inductive powering and data transfer of a free moving camera capsule
- D. Hodgins et al.: Healthy Aims Overview
- N. Rodriguez et al.: Communication and Control for Reanimating Paralyzed Limbs via a Network of Wireless Micro-Implants
- Tammara Massey et al.: The Development of an In-Vivo Active Pressure Monitoring System

17:15

Corscience Young Investigator Award & Conclusions

Sponsors:

DGBMT DEUTSCHE GESELLSCHAFT FÜR
BIOMEDIZINISCHE TECHNIK IM VDE

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cor science



**Physiological
Measurement**



**4th Int. Workshop on
Wearable and Implantable
Body Sensor Networks**

March 26th - 28th, 2007
RWTH Aachen University, Germany

**RWTHAACHEN
UNIVERSITY**

PHILIPS

<http://bsn2007.rwth-aachen.de>

26th March 2007

Tutorials

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

09:00 - 17:00 BSN platform

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

13:00 - 17:00 Wearable Textile-based Sensor Systems

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

14:00 - 16:00 Cuffless Continuous Blood Pressure

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

14:00 - 16:00 Reliability in Light-weight Medical Monitoring Platforms

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

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1st Day

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

08:00 Registration Desk Opens

08:30 - 08:45 Welcome and Opening Remarks

08:45 - 10:15 Communication I (HS 3)

- S. Hailes: Challenges in developing body sensors for elite athletes
- A. Alomainy et al.: Modeling and Characterization of a Compact Sensor Antenna for Healthcare Applications
- D. Cavalcanti et al.: Performance Analysis of 802.15.4 and 802.11e for Body Sensor Network Applications
- H. Yoo et al.: Low Energy On-Body Communication for BSN

10:15 - 10:45 Break

10:45 - 12:15 Smart Textiles (HS 3)

- D. Diamond: Wearable Chemo/Bio-Sensors - The Calibration Issue
- G. Medrano et al.: Bioimpedance Spectroscopy with Textile Electrodes for a Continuous Monitoring Application
- T. Linz et al.: Contactless EMG Sensors Embroidered onto Textile
- S. Coyle et al.: Bio-sensing Textiles - Wearable Chemical Biosensors for Health Monitoring

12:15 - 12:45 Poster Session Teaser

12:45 - 14:00 Lunch

14:00 - 16:00 Poster Session (Seminar room)

- M. Barry et al.: Wearable Joint-Angle Measurement with Modulated Magnetic Field from L/C Oscillators
- H. Higgins: In-body Wireless Communication Made Real
- T. Pering et al.: The PSI Board: Realizing a Phone-Centric BSN
- A. Y. Benbasat et al.: Groggy Wakeup - Automated Generation of Power-Efficient Detection Hierarchies for Wearable Sensors
- H. Kim et al.: A Low Power Compression Processor for BSN System
- Y. Liu et al.: Path Loss for Short Range Telemetry
- S. Tejman-Yarden et al.: Acoustic Monitoring of Lung Sounds for the Detection of One Lung Intubation
- H. Ying et al.: Aut. Step Detection in the Accelerometer Signal
- S. Kärki et al.: EMFi in Wearable Audio Applications
- S. Loong Keoh et al.: Policy-based Management for Body-Sensor Networks

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- W.-Y. Chung et al.: Design Issues & Implementation of Query-driven Healthcare System Using Wireless Sensor Ad-hoc Network
- C. K. Lin et al.: The Development of an In-Vivo Active Pressure Monitoring System
- E. K. Reilly et al.: Optimizing On-Chip Piezoelectric Energy Scavenging for Integration of Medical Sensors with Low-Power Wireless Electronics
- M. J. Moron et al.: A Smart Phone-based Personal Area Network for Remote Monitoring of Biosignals
- B. Lo et al.: Real-Time Pervasive Monitoring for Postoperative Care
- E. Katsiri et al.: Embedded Real-Time Heart Variability Analysis
- L. Atallah et al.: Behaviour Profiling with Ambient and Wearable Sensing
- A. M. Bianchi et al.: Role of Signal Processing in Wearable Devices: Application to Sleep Evaluation
- J.-L. Weber et al.: Evaluation of a New, Wireless Pulse Oximetry Monitoring System in Infants: the BBA Bootee
- J. Riistama et al.: Electrochemical Noise Properties of Different Electrode Materials in Different Electrolytes
- E. Drean et al.: Smart Textiles for Automotive: Application to Airbag Development
- B. O'Flynn et al.: Celeritas - A Wearable Sensor System for Interactive Digital Dance Theatre
- J. Ilgner et al.: The Use of Telemetry-Evoked Compound Action Potentials (TECAP) in Cochlear Implantation
- N. Loew et al.: Medical Sensors of the BASUMA Body Sensor Network

16:00 - 17:25 On-body Sensors (HS 3)

- L. Wang et al.: Reflective Photoplethysmograph Earpiece Sensor for Ubiquitous Heart Rate Monitoring
- M. Trächtler et al.: Multi-Axis Inertial Measurement Units Measuring Human Posture and Motion
- O. Brodersen et al.: In-Ear Acquisition of Vital Signs Discloses New Chances for Preventive Continuous Cardiovascular Monitoring
- Li Zhao et al.: Micro Capacitive Tilt Sensor for Human Body Movement Detection

19:00 - 22:00 Dinner

Coronation Hall inside the historic Aachen Town Hall