

## Workshop on Noncontact and unobtrusive techniques for vital sign monitoring (with hands-on experience)

at the  
**14th International Conference on Wearable and Implantable Body Sensor Networks**

BSN2017, Eindhoven, The Netherlands

### Date & Venue

Tuesday, 09 May, 2017, 14:00 – 18:00

Auditorium Einstein, Conference Center, The High Tech Campus, Eindhoven, The Netherlands

### Organizers

Daniel Teichmann, Philips Chair for Medical Information Technology (MedIT), RWTH Aachen University, Aachen, Germany

Steffen Leonhardt, Philips Chair for Medical Information Technology (MedIT), RWTH Aachen University, Aachen, Germany

### Abstract

This workshop is intended to give an overview about measurement techniques that are well suited for unobtrusive monitoring of vital signs. It will provide information of strengths and drawbacks of individual techniques and their potential for wearable use.

A special focus of this workshop lies on providing hands-on experience during demonstration phases in which attendees can try prototypes of the presented measurement techniques. This includes e.g. instrumented seats, infrared cameras, and wearable devices.

Measurement techniques covered by this workshop are Magnetic induction monitoring, Capacitive electrocardiography (ECG), Infrared imaging, and Remote photoplethysmography (PPG). Each of these methods will be introduced by a presentation of theory, pros and cons, application examples, and studies. A further presentation will address potential solutions for processing and fusion of physiological signals recorded by unobtrusive sensors.

### Speakers

Daniel <b>Teichmann</b> , Dr.-Ing.	Philips Chair for Medical Information Technology, RWTH Aachen University, Germany
Lennart <b>Leicht</b> , Dipl.-Ing.	Philips Chair for Medical Information Technology, RWTH Aachen University, Germany
Xinchi <b>Yu</b> , M.Sc.	Philips Chair for Medical Information Technology, RWTH Aachen University, Germany
Michael <b>Paul</b> , M.Sc.	Philips Chair for Medical Information Technology, RWTH Aachen University, Germany
Carina <b>Pereira</b> , M.Sc.	Philips Chair for Medical Information Technology, RWTH Aachen University, Germany
Christoph <b>Hoog Antink</b> , Dipl.-Ing.	Philips Chair for Medical Information Technology, RWTH Aachen University, Germany

## Time Schedule

Introduction	14:00 – 14:41
Daniel Teichmann	
Magnetic induction monitoring	14:10 – 14:40
Daniel Teichmann	
Capacitive ECG	14:40 – 15:30
Lennart Leicht	
Hands-On 1	15:30 – 15:10
all	
Infrared thermography	15:50 – 16:20
Carina Pereira	
Remote PPG	16:20 – 16:50
Michaels Paul, Xinchu Yu	
Hands-On 2	16:50 – 17:10
all	
Sensor fusion	17:10 – 17:40
Christoph Hoog Antink	
Hands-On 3	17:40 – 18:00
all	