

On Wednesday the 11/03/20 the three-day workshop “Innovative Processing of Bioelectrical and Biomagnetical Signals” started at Kiel University. This workshop is a collaboration of the two expert committees “Biosignals” and “Magnetic Methods in Medicine” of the German Society for Biomedical Engineering in the VDE. Researchers working at the interface between medicine and technology were able to present their research during poster sessions and short scientific talks. The subjects included cardiological examinations, possible applications for biomagnetism, methods to analyse movement as well as neurological biosignals. Despite the broad field of discussions, a lively scientific exchange was achieved.



Eric Elzenheimer, Prof. Dr. Andreas Bahr and Prof. Dr. Gerhard Schmidt (from left to right) welcome the workshop’s participants.



Nicolas Pilia (KIT) answers questions about his poster.

The dean of Kiel University’s Faculty of Medicine, Prof. Dr. Ulrich Stephani, praised the work of the researchers, stating that no progress of medical diagnosis would be possible without technological research. This was also underlined by four keynotes given by Prof. Dr. Eckhard Quandt (Kiel University), PD Dr. Helmut Laufs (University Medical Center Schleswig-Holstein), Prof. Dr. Wilhelm Schulte-Mattler (University Medical Center Regensburg) und PD Dr. Philipp Hüllemann (University Medical Center Schleswig-Holstein, MediClin Klinikum Soltau). They provided insight in sensor systems, signal processing and diagnostic procedures within different medical contexts.

In the course of the workshop six junior scientists were honoured by the Young Investigator Award for excellent talks or posters. The best talk was given by Michael Kircher (KIT) about “Nonlinear and Piecewise Fitting of Indicator-Enhanced EIT-Signals: Comparison of Methods”. The talk about “Colour Spaces and Facial Regions for a Camera-Based Heart Rate Estimation” by Hannes Ernst (TU Dresden) was voted second best. Patricia Piepjohn (Kiel University) was awarded the third place for her talk concerning “Real-Time Classification of Tremor Patients’ Movement Patterns”. The price for the best poster was awarded to Nicolas Pilia (KIT) for his contribution about “Reconstruction of Potassium Concentrations with the ECG on Imbalanced Datasets”. The poster on the subject of “Active Shielding of Optically Pumped Magnetometer by Means of Helmholtz Coils” by Christin Bald (Kiel University) was honoured with the second place. Richard Hohmuth’ poster (TU Dresden) concerning “Applicability of Spectroscopy in Multispectral Photoplethysmography” was voted third best. The award winners will be supported in publishing their contributions to the workshop in the journal “Biomedical Engineering/ Biomedizinische Technik”.



Hannes Ernst (TU Dresden) reports about his research.

Owing to the precautionary measures which were taken due to the corona virus, several participants could not be part of the workshop. The organisers of the event, Prof. Dr. Gerhard Schmidt (Kiel University), Prof. Dr. Andreas Bahr (Kiel University) and Eric Elzenheimer (Kiel University) concluded that they are glad to have held the workshop in spite of the corona virus and they hope that the

participants could draw on the exchange with colleagues they have had during those three days for a while.

Cara Broß, IPN – Leibniz Institute for Science and Mathematics Education, Kiel, Germany