

Scientific Program
Wednesday March 4, 2020

Track A – AM 2

Biomedical Engineering A1

Chair: Prof. Dr. Stephan Klein

- 9:30 6 *A. C. Hennigs, O. Wallnewitz*
Development of a test stand to qualify the endurance life time of the Murata MZB1001T02 microblower
- 9:42 22 *J. Beidatsch, A. Freund, H.-U. Hansmann*
Conversion of an existing lung demand valve to a pressure reducer with an output of 50 mbar
- 9:54 10 *A. Leßmann, M. Kroh, P. Rostalski*
Conception of a Test Setup to Determine the Service Life of an Infrared Emitter Used for CO₂ Measurement
- 10:06 30 *M. Badran, W. Janik, S. Müller*
Development of a Dosing Unit Using Venturi Injector
- 10:18 23 *A. Freund, J. Beidatsch, H.-U. Hansmann*
Carbon dioxide measurement of different gas concentrations concerning its heat conductivity considering the system humidity
- 10:30 5 *M. Hünert, L. David, L. Tappehorn*
Reduction of Condensate in Electrically Heated Breathing Hoses

10:45 **Coffee Break**

E-Health

Chair: Prof. Dr. Marcin Grzegorzec

- 11:00 12 *L. Barkow, O. Meincke, H. Ulrich, J. Ingenerf*
Analysis of Data Loss when using the Archiving and Exchange Interface for Practice Management Systems
- 11:12 35 *M. Leemhuis, Ö. L. Özçep*
Multi-Label Learning with a Cone Based Geometric Model
- 11:24 81 *K. M. Vogl, H. Ulrich, J. Ingenerf*
Generation of message transformers based on HL7 FHIR StructureMaps within the interface engine Mirth Connect

Track B – AM 3

Biomedical Engineering B1

Chair: Dr. Milan Zvolský

- 79 *S. Melikov, M. Frerkes, S. Seeger, M. Zvolský, M. Rafecas*
Optimization of a Fish Holder for the Immobilization of Zebrafish
- 42 *I. Chaerony Siffa, T. Gerling, R. Wendlandt*
Development of a mobile sensory device to trace ambient and plasma treatment conditions
- 80 *C. Pottkämper, C. Nehls, T. Gutschmann*
Towards measurement of the deformation energy of softpellets: Design and Development of a Micro-Force-Spectroscope
- 69 *C. Chinchilla, A. Negash, A. Bakenecker, A. Tonyushkin*
Simulation of Field Free Line Translation for a Single-Sided Magnetic Particle Imaging-Scanner
- 18 *N. Kowalczyk, F. Sattler, J. Koch, S. Müller*
A non-invasive core body temperature measurement system for firefighters applied on the sternum
- 82 *M. Ali, J. Schröter*
Usage of the optical front tracking methods for the measurement of fast-changing micro flows of liquids

Medical Electronics

Chair: Prof. Dr. Stefan Müller

- 16 *D. A. Briceño Peniche, A. Rieß, C. Schleicher, T. Jürgens*
Analysis of current regulation circuits for solenoid valves in a bus communication architecture for a dialysis machine
- 74 *A. Dixit, R. Behroozian, S. Müller*
Development of a GUI-based Interface for the Optical Determination of Blood Flow Velocity
- 63 *X. Zhang, X. Chen, T. M. Buzug*
Design of a Temperature Control System for the Three-Dimensional Magnetic Particle Spectrometer

Track A – AM 2

- 11:36 3 *K. Schultz, A. Künstner, M. Olbrich, H. Busch*
Creating a model instance for detection of de novo germline mutations using a neural network
-
- 11:48 13 *N. Reimer, H. Busch, J. Ingenerf*
Deploying a molecular tumor board on an open platform
-
- 12:00 27 *A. Banach, A.-K. Kock-Schoppenhauer, H. Ulrich, J. Ingenerf*
MetaCheck – aWeb Application for the Automatic Evaluation of Metadata in Healthcare
-
- 12:12 36 *L. Liebenow, C. Twesten, M. Grzegorzek*
Transforming Nutrition Databases Towards Semantically Consistent Content Classification

12:30 **Lunch Break**

Safety and Quality A1

Chair: Prof. Dr. Josef Ingenerf

- 13:30 54 *B. Abel, G. Buntrock*
Design and implementation of a quality awareness process to reduce the cost of non-quality
-
- 13:42 26 *N. Kath, A. Seidel, J. Ingenerf*
Connecting Old Devices Safely To The Cloud
-
- 13:54 83 *G. Chavez Gomez, M. Timmermann*
Medical Packaging Recyclability and Environmental Impact Analysis
-
- 14:06 56 *R. Kensbock, P. Huß, G. Schildbach*
Trajectory Control with Lane Boundary Constraints for Autonomous Vehicles Using Model Predictive Control
-
- 14:18 47 *J. M. Goldyn, G. Männel, C. Brendle*
Modeling of a Failure Mode and Effects Analysis in SysML on a respiratory alcohol detector

Track B – AM 3

- 24 *C. Kaußler, E. Petersen, J. Sauer, P. Rostalski*
Experimental investigation of the sEMG-force relationship of the biceps brachii
-
- 58 *C. Ehlers, G. Männel*
Modelling of a PEEP-Valve for an Anaesthesia Workstation
-
- 46 *S. Ranasinghe, A. Levin, S. Müller*
Modification and re-customization of the firmware for the new version of the EEG amplifier
-
- Biomechanics**
Chair: Dr.-Ing. Robert Wendlandt
- 57 *J. Tiedemann, N. Röhner, A. P. Schulz*
Using two in-house developed test methods to characterise medical tapes regarding their resistance to shear and friction under load
-
- 20 *D. Grollmisch, F. Mutter, R. Wendlandt*
Mechanical 4-Point-Bending test and simulation of known material
-
- 65 *R. Meyer, C. Nehls, T. Gutschmann*
Structural changes in the design of a device that allows the formation of artificial lipid Montal & Mueller membranes combined with electrical and optical measurements
-
- 33 *F. Allerding, A. Diercks, N. Bade, L. Röhrich, R. Wendlandt*
Case study: Influence of electrical thigh stimulation on physiological and pathological gait
-
- 53 *T. Burkhanova, S. Klein, C. Damiani, K. Krajewski*
Development of an in-vitro brain model for diffuse axonal injury occurrence simulation



Track A – AM 2

Track B – AM 3

14:30 Coffee Break

Safety and Quality A2

Chair: PD Dr. Hauke Paulsen

- 14:45 4 *L. Luers, T. Matthews*
Evaluation of Measurement Methods for Determining the Humidification Output of a Humidifier System
-
- 14:57 61 *A. Momin*
Literature analysis of the competitive landscape of minimally invasive treatments for benign prostate hyperplasia
-
- 15:09 62 *W. Łuczak*
Systematic review on comparative effectiveness of high cut-off membrane haemodialysis to haemodialysis with other types of membrane
-
- 15:21 31 *H. Schönmuth, L. Aulmann*
Selection and implementation of a data pipeline to display the test results of automated tests in a user-defined dashboard

Image Processing B1

Chair: Prof. Dr. Georg Schildbach

- 67 *T.-C. Çallar, S. Böttger, E. Rückert*
Generation of 3D Body Models from Single-View Range Images for Robotic Applications in Medicine
-
- 45 *R. Pallenberg, M. Fleitmann, K. Soika, H. Handels*
Automatic anatomical structure detection in aortic CT angiography
-
- 28 *V. Bühler, A. Wartak, M. S. Schenk, G. J. Tearney, R. Birngruber*
Automatic layer segmentation of corneal μ OCT images for subbasal nerve tracking
-
- 32 *J. Zillmann, F. Coleca, E. Barth*
Gesture Recognition with Deep Learning