



Track A – AM 2

Track B – AM 3

8:30	Welcome			
	Biomedical Optics			Biomechanics
	Chair: Prof. Dr. Robert Huber			Chair: Dr. Robert Wendlandt
8:45	36	<i>F. Krabbe, D. Weng, J. P. Kolb, R. Huber</i> Expanding a fiber-based two-photon microscope to potential endoscopic applications using double-clad optical fiber	57	<i>C. Kapadia, S. Klein</i> Mechanical characterisation of Collagen Cell Carriers
8:57	85	<i>D. Kastner, T. Blömker, R. Huber</i> Measurement of the Inter-Sweep Phase of a Fourier Domain Mode Locked Laser with a Narrow-Band Tunable Ring Laser	86	<i>J. Jepsen, S. Siegler</i> Evaluation of Intra-Articular Joint Behaviour in Hindfoot Deformity
9:09	89	<i>S. Lotz, C. Grill, T. Pfeiffer, R. Huber</i> Cavity length control of a Fourier domain mode locking laser with a free space beam path	62	<i>N. Koch, P. Koch, A. Mertins</i> Design of an Underactuated Multi-Fingered Artificial Hand
9:21	90	<i>L. Gravel, M. Münst, P. Koch, H. Sudkamp, G. Hüttmann</i> Comparison of two methods to measure the lateral resolution of an off-axis full-field time-domain OCM	65	<i>H. Do, R. Wendlandt, R. Puts</i> Optimization of acoustic parameters in a Bio-Acoustic Levitational for engineering of multilayered, 3D Bone-Like Constructs
9:33	22	<i>P. Kleingarn, C. Kren, N. Koop, R. Brinkmann</i> Generation and characterization of laser-induced channels in borosilicate glass	78	<i>I. Bahrmann, R. Nassutt, H. Gehring, P. Wegerich</i> Planning, conduction and analysis of drill performance tests in the scope of a supplier initiated change request
9:45	Coffee Break			
	Biochemical Physics			Biomedical Engineering Part B1
	Chair: Prof. Dr. Christian Hübner			Chair: Dr. Thomas Friedrich
10:00	92	<i>M. Gienow, C. Nehls, T. Gutschmann</i> Preparation and characterization of solid-supported symmetric bilayers using biophysical methods	56	<i>J. Bade, D. Radant, C. Damiani</i> Pick and Place Automatisations for Dental Drills
10:12	87	<i>P. Pandey</i> Gene Expression and Purification of Protease of Emerging RNA Viruses	44	<i>T. Weichselgärtner, A. Nadorow, S. Müller</i> Simulation of Motor Loads for Product Verification
10:24	79	<i>O. Käferlein, Á. Escárcega Mendicuti, R. Macías-Rodríguez, R. Rahmānzadeh, C. García-Segundo</i> Optical Response of Diabetic Blood in a Random Laser Colloid	26	<i>I. Dibbern</i> Comparison of catalysts for gas detection sensors
10:36	42	<i>B. Lewke, T. Ishizuka, Y. Miura</i> Fluorescence Lifetime Imaging Ophthalmoscopy in mouse models of age-related macula degeneration	11	<i>A. Julius, P. Krause</i> Automation of the SpO ₂ -Sensor Defective Test: Development and Advantages



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Track A – AM 2

- 10:48 97 C. L. Mertineit, C. Bach, S. Przybylski-Wartner, J. Burkhardt
Establishment of a high-throughput, luminescence-based method for the evaluation of cancer therapeutics for the treatment of glioblastoma

11:00 Coffee Break

Biomedical Engineering Part A1

Chair: Prof. Dr. Stephan Klein

- 11:15 82 S. Risto, Y. Chen, F. von Haxthausen, F. Matysiak, F. Ernst, V. García-Vázquez
Development of HoloLens Mount for Third-Person Perspective and Augmented Reality Application for Endovascular Aortic Repair Procedures
- 11:27 59 Y. Chen, S. Risto, F. von Haxthausen, F. Ernst, V. García-Vázquez
HoloLens: Third-person Perspective
- 11:39 12 J. Richert, P. J. Hanberg, C. H. Nielsen, T. A. Anhøj, J. Michael-Lindhard
Optimized Fabrication Method for Microfluidic Devices with embedded Cell Traps by using DRIE, Electroplating and Injection Molding
- 11:51 6 S. Beier
Adaptation of a Test Stand for the Qualification of a new Touch Technology and Connection to a Test Framework
- 12:03 15 J. Uhlenberg, W. Risler, N. Rottmann, E. Rückert
Development of a high-performance and low-cost fraction collector

12:15 Lunch

Biomedical Engineering Part A2

Chair: Verónica García Vázquez, PhD

- 13:15 63 H. Awadah, A. Malhotra, J. Beuke, T. M. Buzug, K. Lüdtke-Buzug
A Spectrometer for Continuous Flow Synthesis Device for Production of Superparamagnetic Iron Oxide Nanoparticles used in Magnetic Particle Imaging
- 13:27 102 K. Falihzadeh, S. Müller, C. Stark, R. Behroozian
Building a RGB LED Photodiode setup for determination of the lactate concentration in the blood Plasma

Track B – AM 3

- 41 F. Lederbogen, S. Klein
Development of a gas-conveying hardware module for a medical ventilation device

Biomedical Engineering Part B2

Chair: Dr. Hossam Abbas

- 35 D. Frey, S. Müller
Development of a reliability test setup for a heating cartridge in a Desflurane vaporizer
- 45 A. Hunold, G. Männel
Development of H_∞-Controller for a Gas Blender of an Anaesthesia Machine
- 54 F. Bautsch, G. Männel, P. Rostalski
Conceptual Development of a Novel Low-cost Lung Simulation Test Bench for the Evaluation of Mechanical Ventilators
- 101 D. Taheri, T. Oechtering, T. Schaller, M. Scharfschwerdt
Optimization of a Heart Simulation Pump System for 4D Flow MRI Investigations
- 60 M. Garrandt, M. Hartz, S. Müller
Prediction of Useful Life of Aluminium Electrolytic Capacitors in the Power Supply Unit of a Medical Ventilator

E-Health 1

Chair: Hannes Ulrich, M. Sc.

- 20 L. Hartung, M. Alawi, H. Busch
Structural variation detection tools: an overview and evaluation of selected callers
- 19 B. Paulsen, B. Kordts, B. Gerlach, A. Schrader
Towards General-Purpose Sensing in Medical Care

Scientific Program
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Track A – AM 2

- 13:39 31 *A. Almashharawi, H. S. Abbas*
Modeling of an Atmospheric Pressure Plasma Jet Using Linear Parameter Varying Input/Output Identification
- 13:51 40 *C. Toogood, C. Fuchs, M. Beyerlein*
Design and development of an adjustment and positioning system for a Slit Lamp mounted Keratoscope
- 14:03 3 *J. Gruner, A. Hoffmann, M. Wehner, A. Vogel*
Modification of the Modular Stereolithography Setup

14:15 **Coffee Break**

Image Processing 1

Chair: Prof. Dr. Thorsten M. Buzug

- 14:30 16 *M. R. Mohamad, S. Fechner, D. Paulus, N. Linz*
Machine Vision and Deep Learning Methods for In-line Packaging Inspection Systems in Medical Device Industry: A Review Article
- 14:42 88 *N. Schreiner, M. Zvolsky, M. Wattenberg, M. Schaar, M. Rafecas*
Towards PET Imaging of Fish: Development of a Digital Atlas of Zebrafish
- 14:54 100 *L. F. Martinez Cruz*
Exploration of Next Generation and State-of-the-art Gait Analysis Systems
- 15:06 23 *P. Grothe, J. Haase*
Analog Implementation of a Decision Tree Using Memristors
- 15:18 28 *A. Harms, E. Slognat, F. Schwind, H. Münch, U. Engelmann*
Developing human body measurement tools for radiodiagnostics in a DICOM image viewer
- 15:30 5 *P. Amador, H. Scharf*
Measuring Ground Truth for 3D Reconstruction of Plants

Track B – AM 3

- 17 *J. Wiedekopf, T. Becker, J. Ingenerf*
Human-Readable Data Export of Medical Documentation
- 24 *K. C. Ho*
Innovations in Medical Technology -Data Analytics of Log Files-
- 32 *H. Bargel, A. Henschel, E. S. Cross*
The impact of social distractions on the reaction time
-How anthropomorphic are robots? -

E-Health 2

Chair: Björn Andersen, M. Sc.

- 14 *J. Wortmann, V. Westerhoff, F. Schenkat, J. Ingenerf*
Integration of Operational Data from Mobile Ambulances into the Digital Pre-Registration System
- 4 *S. Ververs, H. Ulrich, J. Ingenerf*
Concept for a Consent-Based Access Model for HAPI FHIR Servers
- 27 *N. Beitz, M. Heller, H. Kadi, J. Ingenerf*
Development of a HL7 FHIR based interface to connect a Healthcare Content Management system to a mobile device
- 47 *J. Schnell, B. R. Saurer*
Development of an Interface between Hospital Environment and SereNaWeb platform using HL7v2 and HL7 FHIR
- 30 *C. Leonhardt, T. Graßl, P. Rostalski*
Development of a Wireless Data-Transmitting Method of a Core Body Temperature Sensor
- 72 *N. Jobst, F. Thaeter*
Privately computing the intersection of two SNP sets