



Scientific Program  
Friday March 9, 2018

Track A – AM 2

**Biomedical Optics I**

Chair: Dr. Ramtin Rahmzadeh

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|------|----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 8:30 | 22 | <i>P. Ahrari, A. Link, R. Rahmzadeh</i><br>Light-induced Permeabilization of Liposomes                                                                                                                                                                 |
| 8:45 | 56 | <i>A. Hutfilz, B. Lewke, Y. Miura</i><br>Fluorescence Lifetime Imaging Ophthalmoscopy of the Retinal Pigment Epithelium during Wound Healing after Selective Retina Treatment                                                                          |
| 9:00 | 69 | <i>S. Burhan, C. Pfäffle, D. Hillmann, B. Kabuth, H. Spahr, F. Hilge, Y. Miura, G. Hüttmann</i><br>Ex-vivo Optical Imaging and Measurements of Intrinsic Optical Signals from Porcine Retina with Full-Field Swept-Source Optical Coherence Tomography |
| 9:15 | 13 | <i>P. Enzian, A. Link, R. Rahmzadeh</i><br>Cellular localization of the epithelial cell adhesion molecule (EpCAM) in synchronized cell culture                                                                                                         |
| 9:30 | 43 | <i>F. Hilge, H. Spahr, C. Pfäffle, D. Hillmann, S. Burhan, G. Hüttmann</i><br>In-vivo examination of retinal vessel pulsation during light stimulation by phase-sensitive full-field swept-source optical coherence tomography                         |

9:45 **Coffee Break**

**Biomedical Optics II**

Chair: Dr. Hendrik Spahr

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| 10:00 | 19 | <i>G. Bulz, T. Mukashev, F. Fiedler, S. Müller</i><br>Development of an Acoustophoretic Flow Cell for Processing Undiluted Whole Blood at High Flow Rates |
| 10:15 | 51 | <i>M. Münst, P. Koch, H. Sudkamp, M. vom Endt, J. Franke, E. Brockmüller, G. Hüttmann</i><br>A compact handheld OCT-System for homecare applications      |
| 10:30 | 70 | <i>T. Mukashev, G. Bulz, F. Fiedler, S. Müller</i><br>Numerical Simulation of Acoustofluidic Flow Cells with Particles                                    |
| 10:45 | 84 | <i>E. Rybczyk, A. Link, R. Rahmzadeh</i><br>Investigations of Intracellular Transport of Photoimmunconjugates                                             |

Track B – AM 3

**Safety and Quality I**

Chair: Prof. Folker Spitzenberger

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| 34 | <i>S. Schonebeck, A. Rupp, S. Hauttmann, M. Leucker</i><br>Problem Solving Methods in Medical Quality Management                                                                                                                             |
| 2  | <i>T. Aldag, G. Buntrock</i><br>On the Way to Realize a Zero Defect Production with a new Quality Gate Concept at the Electro Manufacturing Service Prettl Electronics Lübeck                                                                |
| 75 | <i>S. Keser, A. Madany Mamlouk</i><br>ChessNet – Learning to play chess by seeing grand master games –                                                                                                                                       |
| 41 | <i>E. Vothknecht, F. Coleca, S. Klement, H. Handels</i><br>Head-to-Steering-Wheel Distance Estimation Based on a Monocular RGB Camera with Convolutional Neuronal Networks                                                                   |
| 23 | <i>O. Amasiatu, F. Spitzenberger</i><br>Regulatory requirement for Point-of-Care Testing (PoCT) Devices - Comparison of major regulatory systems and implications for an international regulatory strategy for market access of PoCT devices |

**Safety and Quality II**

Chair: Dr. Gerhard Buntrock

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| 74 | <i>L. Preuße, J. Haase</i><br>Integration of a label printer into the software system of a cleaning and disinfection device for hygiene documentation                               |
| 89 | <i>P. Nama, F. Spitzenberger</i><br>Preparation of a concept for the provision of effective medical equipment maintenance in the emergency health cluster region of Syria by Dräger |
| 14 | <i>N. Blum, A. Petersik, B. Hofstätter</i><br>Validation of software Stryker Anatomy Analysis Tool                                                                                  |
| 49 | <i>K. Hüvel, S. Sebesta, P. Rostalski</i><br>Evaluation of a calotte membrane as a part in the execution of system tests of a peritoneal dialysis machine                           |



Track A – AM 2

Track B – AM 3

11:00		<b>Coffee Break</b>			
		<b>Biomedical Optics III</b> Chair: Dr. Yoko Miura		<b>Safety and Quality III</b> Chair: Prof. Folker Spitzenberger	
11:15	15	<i>M. Schmidt, R. von Elm</i>	Measurement setup to detect the threshold fluence/abrasion of reflective surfaces	88	<i>S. Mueller</i> General Client-Server Software Architecture for Medical Robotics (written in C++)
11:30	45	<i>P. Lamminger, M. Eibl, D. Weng, R. Huber</i>	Frequency doubling of near infrared sub-nanosecond pulses for two photon microscopy applications	21	<i>M. L. Wiegel, C. Oelze, J. Meyer, M. Leucker</i> Work instruction for replacement deliveries in case of commercial DEfective On Arrival
11:45	60	<i>C. Riesenberger, M. L. Torres-Mapa, N. Linz, D. Heinemann, A. Heisterkamp</i>	Setup and calibration of a commercial optical tweezers system	36	<i>D. Zahnow, Ch. Hübner, D. Wladow</i> Improvement of the recall process at Olympus Winter & Ibe GmbH
12:00	18	<i>K. Rewerts, J. Klee, J. P. Kolb, R. Huber</i>	Detection and Removal of Artifacts in Ultra-widefield MHz OCT En Face Images of the Human Retina	78	<i>N. Razavirad, J. Lane</i> Development of a verification process for software of medical devices
12:15		<b>Lunch</b>			
		<b>Biomedical Optics IV</b> Chair: Prof. Christian Hübner		<b>E-Health I</b> Chair: Dr. Michael Sengpiel	
13:15	24	<i>A. Britten, S. Meinkuss, P. Reimer</i>	Spectral Characteristics of KINEVO® 900 from ZEISS	8	<i>N. Deppenwiese, H. Ulrich, J. Ingenerf</i> Connecting MOLGENIS to HL7 FHIR: Transformation from Questionnaires to EMX
13:30	64	<i>K. Nadj, S. Freidank, A. Vogel, N. Linz</i>	Interferometric detection of laser induced nano- and micro bubble dynamics in water and tissue	40	<i>C. Drenkhahn, H. Ulrich, P. Duhm-Harbeck, J. Ingenerf</i> Mapping of Laboratory Services included in an Internal Catalog to SNOMED CT using the UMLS
13:45	20	<i>C. A. Carvajal Arrieta, C. Stark, R. Behroozian, S. Müller</i>	Investigation of Influences on Measurement Accuracy of Glucose with a Faraday Modulated Polarimeter	65	<i>P. Prieß, R. Allner</i> A Testbed Design Approach for Teleoperative Medical Treatment
14:00	50	<i>C. Stehmar, H. Schulz-Hildebrandt, T. Jüngst, M. Ahrens, T. Eixmann, M. Münter, J. Groll, G. Hüttmann</i>	Characterization of 3D Printed Scaffolds with Microscopic Optical Coherence Tomography (mOCT)	80	<i>M. Ortac, T. Graßl, P. Rostalski</i> Development of an Android Application to Monitor the Core Body Temperature
14:15		<b>Coffee Break</b>			



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**Biochemical Physics**

Chair: Dr. Kerstin Lüdtke-Buzug

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| 14:30 | 11 | <i>M. Göb, Y. Z. Ng, H. Itoh, Y. Miura, E. B. Lane</i><br>The Dynamics of Mutant Keratin 14 in Response to Thermal Stress in Human Keratinocytes                                                          |
| 14:45 | 62 | <i>F. Mütel, C. Nehls, T. Gutschmann</i><br>Characterization of the interaction between a lipid monolayer and nebulized substances by using a film balance                                                |
| 15:00 | 25 | <i>A. Kruse, K. Lettau, C. Hübner</i><br>Development of an Immunoassay for the Detection of Tetrahydrocannabinol and Methamphetamine                                                                      |
| 15:15 | 31 | <i>A. Steuer, M. Klinger, R. Pries, K. Lüdtke-Buzug</i><br>Hypotonic swelling as a procedure of encapsulating fluorescence labelled superparamagnetic iron oxide nanoparticles into human red blood cells |

15:30 **Poster-Session**

16:00 **Farewell and Award Presentation**

Track B – AM 3

**E-Health II**

Chair: Björn Andersen, M. Sc.

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| 39 | <i>A. Vandereike, S. Burgsmüller, J. P. Kopetz, M. Sengpiel, N. Jochems</i><br>Interaction Paradigms of a Ball-Shaped Input Device for Intensive Care Patients          |
| 58 | <i>P. Kling, R. Allner</i><br>Systematic Analysis of the Communication in Medical Care for the Development of Design Recommendations for Telemedical Applications       |
| 72 | <i>S. Burgsmüller, A. Vandereike, J. P. Kopetz, M. Sengpiel, N. Jochems</i><br>Study of Desirable Characteristics of a Communication Device for Intensive Care Patients |
| 87 | <i>J. Oehm, H. Ulrich, D. Simon, J. Ingenerf</i><br>An Investigation on Automated Consolidation for Medical Database Schemata                                           |