

ICBEM & RGC 2018 - Session schedule

Wednesday, May 23rd	
09:00-09:30	Welcome Notes
	<p>Steffen Leonhardt (Chair of ICBEM & RGC 2018) Wilfried Mokwa (Dean of Electrical Engineering Faculty, RWTH Aachen) Russian representatives (Founders of RGC) Jaakko Malmivuo (Secretary of ISBEM)</p>
09:30-10:15	Ragnar Granit Lecture: Petri Ala-Laurila
10:30-12:00	Poster I
	<p>95 Angelica Hernandez Rayas, Francisco Vargas Luna, Teodoro Cordova Fraga, Martha Hernández Gonzalez, Nicolás Padilla Raigoza and Octavio Jiménez Gonzalez. Pilot Characterization of Human Bones by Spectroscopic Techniques</p> <p>93 Vladislav Bukin and Andrey Briko. Tactile information analysis for forearm prosthesis feedback implementation</p> <p>92 Andrew Blinow and Sergey Shchukin. The electrical impedance method of the muscle blood supply definition in damaged intervertebral discs area</p> <p>78 Alexander Dmitriev and Sergey Shchukin. Evaluation of the P300 parameters with photic stimulation</p> <p>74 Viktoriya Kapralova, Nataliya Vaskova, Evgeniy Shadrin, Aleksandr Ilinsky, Oleksandr Gryshkov and Birgit Glasmacher. Cerebrospinal fluid thermoimpedancemetry as a method of brain diseases diagnostics</p> <p>70 Alissa Jell, Norbert Hüser, Suyu He, Dmitry Telyshev, Sergey Selishev and Hubertus Feußner. Longterm high resolution manometry (HRM) challenges and pitfalls of an automated motility analysis</p> <p>51 Levan Ichkitidze, Sergei Selishchev, Alexander Gerasimenko and Natali Demidenko. Artificial Muscles with the Possibility of Application in Medical Practice</p> <p>32 Aleksandr Kiselev and Evgenij Smirnov. Methods of investigation parameters of plasma of glow discharge lasers</p> <p>25 Evgeniia Litinskaia, Kirill Pozhar, Nikolai Bazaev, Pavel Rudenko, Viktor Grinvald and Andrey Chekasin. Closed-loop system for blood glucose level control</p> <p>18 Mugeb Al-Harosh. The occlusive multichannel electrical impedance system of peripheral vein detection</p> <p>94 Joël Niederhauser. An engineer's approach: How can 10-100 μT, 10-100 Hz magnetic field influence human cardiovascular regulation?</p> <p>90 Nicole Samm, Daniel Ostler, Thomas Vogel, Nils Marahrens, Dirk Wilhelm, Hubertus Feussner and Ralf Stauder. Analysis of physiological data to quantify stress and workload of surgeons with different levels of training during a laparoscopic cholecystectomy</p> <p>75 Igor Bondarenko, Oleg Avrunin, Oleksandr Gryshkov and Birgit Glasmacher. Possibilities of joint application of acoustic radiation and direct magnetic field for biomedical research</p> <p>67 Natalia Zhurbina, Alexander Gerasimenko, Olga Glukhova, Michail Slepchenkov, Michail Savelyev, Levan Ichkitidze, Vitalii Podgaetskii, Sergey Selishchev, Evgeniy Kitsyuk and Alexander Pavlov. The patterning of biostructures with carbon nanoframe in protein ma-trix</p> <p>53 Tao Chen, Sergey Suslov, Michael Schiek, Jürgen Dammers, N. Jon Shah and Stefan van Waasen. Real-time MEG data-processing unit for online medical imaging and brain-computer interface: a model-based approach</p> <p>42 Levan Ichkitidze, Sergei Selishchev and Michail Belodedov. Noninvasive Detection of Magnetic Particles in Biological Nanomaterials using Magnetic Field Sensors</p> <p>16 Valeriy Karpukhin, Kristina Mustafina and Georgy Klimiashvili. Computational modelling of electroaerosol flows during external therapy</p> <p>11 Leonid Akulenko and Alexander Kolpakov. Development of the infrared images processing algorithm for the automatic detection of the early stage of periodontal disease</p> <p>34 Anna Borde, Savrasov Gennady, Alexander Gavrilenko and Alexandera Ivanova. The study of biomechanical characteristics of the venous wall after ultrasound exposure</p> <p>50 Uwe Pliquett, Ngoc Duc Nguyen, Dinh Yen Trinh, Thi Thuong Nguyen and Le Manh Hai. Body impedance spectroscopy based on processing of step response</p>
12:00-13:00	Lunch
13:00-14:00	Bioimpedance I (Session chair: Mart Min)
13:00-13:15	84 Mart Min, Mari Lehti-Polojärvi and Jari Hyttinen. Bioimpedance spectro-tomography system using binary multifrequency excitation
13:15-13:30	64 Chris Gansauge, Danny Echtermeyer, Yahor Zaikou, Viktor Schroeder, Mario Saupe, Jörg Schemberg and Uwe Pliquett. Bio-Impedance Analysis using Minimalistic Hardware

13:30-13:45	57	Tobias Menden, Jakob Orschulik, Mazen Slimi, Steffen Leonhardt and Marian Walter. Development of an Electrical Phantom for Multi-Frequency Electrical Impedance Tomography based on the Visible Human Project
13:45-14:00	54	Michael Klum, Dennis Osterland, Alexandru-Gabriel Pielmus, Timo Tigges and Reinhold Orglmeister. Peripheral Vascular Impedance Plethysmography for Respiratory Rate Estimation using Beat-to-Beat Features
14:15-15:15	Biomedical Engineering I (Session chair: Andrey Samorodov)	
14:15-14:30	87	Akram Idrissi, Malte Kaiser, Simon Albrecht, Sebastian Richert, Thomas Gries and Andreas Blaeser. Development of a test bench for the characterization of movement artifacts in smart textile systems
14:30-14:45	52	Djamel Eddine Chafai, Ingrida Nemogová, Pavel Dráber and Michal Cifra. Zeta potential of cell surface – nanoenvironment interaction assessment
14:45-15:00	43	Bazaev Nikolay, Boris Putrya and Evgeniy Streltsov. Diamond and Platinum Electrodes For Urea Electrochemical Oxidation
15:00-15:15	37	Nikolay Bazaev, Natalia Dorofeeva, Victor Grinvald', Boris Putrya and Nikita Zhilo. Animal Trials of Wearable Apparatus for Peritoneal Dialysis
15:30-16:00	Bus Transfer	
	Bus schedule: SuperC -> Franziskushospital -> Campus Melaten (ITA) -> Worringer Weg (CellBio, MedIT)	
16:00-16:45	Institute Tours (Franziskushospital, ITA, CellBio)	
16:45-17:15	Bus Transfer	
	Bus schedule: Franziskushospital -> Campus Melaten (ITA) -> Worringer Weg (CellBio, MedIT)	
17:15-18:15	Institute Tours (MedIT)	
18:30-21:00	Welcome Reception	

Thursday, May 24th		
09:00-09:45	Keynote: Olaf Dössel	
09:45-10:45	Bioimpedance II (Session chair: Uwe Pliquett)	
09:45-10:00	65	Jakob Orschulik, Nadine Hochhausen, Susana Aguiar Santos, Michael Czaplik, Steffen Leonhardt and Marian Walter. Detection of Acute Respiratory Distress Syndrome using Sectoral Bioimpedance Spectroscopy - a Pilot Study
10:00-10:15	35	Abdul Hamid Ismail, Carlos Castelar and Steffen Leonhardt. Are Thigh and Calf Bioimpedance Spectroscopy less Susceptible to the Influence of Body Posture during Continuous Applications?
10:15-10:30	15	Hyeuknam Kwon, Seward Rutkove and Benjamin Sanchez. On the measurement of the dielectric properties of anisotropic biological tissues using electrical impedance
11:00-12:00	Vital Signs Monitoring I (Session chair: Sergey Shchukin)	
11:00-11:15	56	Anake Pomprapa, Waqar Ahmed, André Stollenwerk, Stefan Kowalewski and Steffen Leonhardt. Arrhythmia Analysis in a Non-contact cECG Chair using Convolutional Neural Network
11:15-11:30	62	Nabeel P M, Jayaraj Joseph and Mohanasankar Sivaprakasam. Variation in Local Pulse Wave Velocity over the Cardiac Cycle: In-Vivo Validation using Dual-MPG Arterial Compliance Probe
11:30-11:45	23	Scott B. Marrus, Menghao Zhang and R. Martin Arthur. Identification of acute coronary syndrome via body-surface mapping and inverse electrocardiography
11:45-12:00	66	Raj V, Nabeel Pm, Jayaraj Joseph and Mohanasankar Sivaprakasam. Non-Invasive Assessment of Arterial Incremental Elastic Modulus Variations within a Cardiac Cycle
12:00-13:00	Lunch	
13:00-13:45	ISBEM Meeting	
13:45-14:45	Smart Implants (Session chair: Martin Arthur)	
13:45-14:00	96	Samuel Müller, Clarence Janka, Lüder Alexander Kahrs and Tobias Ortmaier. Intraoperative Sterile Molding of Patient Specific Templates for Minimally Invasive Cochlear Implant Surgery
14:00-14:15	49	Konstantin Gurov and Arseny Danilov. Determination of the coupling-loss distance between the inductive coils in a transcutaneous energy transfer system
14:15-14:30	40	Rafael Aubakirov and Arseny Danilov. The influence of the antennas geometry on the stability of the inductive wireless power transfer systems

14:30-14:45	26	Andrey Porfiryev, Dmitry Telyshev, Aleksandr Pugovkin and Sergey Selishchev. Effect of thrombus formation on heat emission in Sputnik RBP
15:00-16:30	Poster II	
	91	Viacheslav Antsiperov. New Geometric Method of Heart Rate Variability Estimation based on the Multiscale Crelation Analysis Representation
	77	Maryna Prykhodko, Maksym Tymkovich, Oleg Avrunin, Vitalii Mutsenko, Oleksandr Gryshkov and Birgit Glasmacher. Image processing for automated microscopic analysis of ice recrystallization process during isothermal annealing
	76	Yana Nosova, Oleg Avrunin, Natalia Shusliapina, Oleksandr Gryshkov and Birgit Glasmacher. The distribution of the velocity and pressure fields in the nasal cavity at different respiration modes
	61	Elizaveta Lavrova and Andrey Samorodov. Biotechnical system for automatic assessment of facial nerve dysfunction rate
	58	Anake Pomprapa, Mohammad Salman Sayani, Toni Anwar, André Stollenwerk, Stefan Kowalewski and Steffen Leonhardt. Apnea Detection in a Contactless Multisensor System using Deep Learning Algorithm
	48	E.Yu. Latsheva, M.N. Pilipenko, A.A. Boiko, A.V. Samorodov, M.A. Omelchenko, A.O. Rummyantsev, A.M. Ivanova and D.D. Volovik. A Database with face video images of patients with schizophrenic disorders and control healthy group
	39	Sergey Permyakov, Lyudmila Sushkova and Artemiy Kuznetshov. Investigation of ECG amplitude-phase coupling mechanisms
	31	Nikolai Staroverov, Artem Gryaznov and Kholopova Ekaterina. Digital X-ray image processing with using adaptive histogram equalization and adaptive background correction
	30	Ivan Larionov, Vladimir Klonov and Victor Bessonov. Computer program for setting up a medical X-ray apparatus
	29	Vladimir Klonov, Ivan Larionov and Nikolay Potrahov. Specialized x-ray machine for neonatology
	28	Yuriy Potrahov and Nikolay Potrahov. Intraoral Microfocus X-ray radiography in veterinary medicine
	20	Dmitry Parpulov, Andrey Samorodov and Vladimir Iglovikov. Neural network approach to cell segmentation in immunocytochemical study
	41	Arseny Danilov, Eduard Mindubaev and Oleg Surkov. Calculation method for the class E power amplifier parameters for transcutaneous inductive energy transfer systems
	46	Elena Shachneva, Tatiana Istomina, Leonid Krivonogov, Aleksey Safronov, Sofia Карпицкая, Mihail Kramm and Nikita Kosenok. Multidiagnostics study of postoperative cognitive disorders
	45	Anna Krechetova, Lidia Komleva and Alexey Tikhomirov. Algorithm of physical activity detection according to the accelerometer data of implantable pacemaker with rate-adaptive pacing.
	21	Ilya Rodionov, Dmitry Telyshev and Igor Nesterenko. Display interfaces for implantable Cardiac Monitor
	17	Irina Khaydukova, Arina Rezvanova, Gennadiy Savrasov and Nikita Belikov. Experimental study of the mechanical properties of materials for physical modelling of biological tissues
	13	Onkar Jadhav, Cheng Dong Yuan, Evgenii Rudnyi, Dennis Hohlfeld and Tamara Bechtold. Nonlinear Model Order Reduction of Thermoelectric Generator for Electrically Active Implants.
	10	Boris Gorbunov, Vyacheslav Vostrikov, Igor Nesterenko and Dmitry Telyshev. Areas of Effectiveness of Defibrillating Pulse in the Energy/Phase Diagram for the Fibrillation Cycle on the Cardiomyocyte Model
	9	Chadapust Sudsiri and Raymond Jame Ritchie. Effect of temperature on electrical cell conductivity of human erythrocytes
	33	Marina Sayfutdinova. Study of the influence of the installation angle of the pedicular screw on its resistance to axial traction
16:45-18:45	Guided City Tours	
19:00-22:00	Conference Dinner	

Friday, May 25th		
08:30-09:00	Women in Engineering	
09:00-09:45	Keynote: Ferdinand Binkofski	
09:45-10:45	Biomedical Engineering II (Session chair: Dmitry Telyshev)	
09:45-10:00	88	Christos Frantzidis, Christina Plomariti, Sotiria Gilou, Polyxeni Gkivogkli, Dimitris Fotopoulos, Giorgos Ntakakis, Evangelos Paraskevopoulos, Chrysoula Kourtidou-Papadeli and Panagiotis Bamidis. Microgravity effect and efficacy of high intensity jump training on default mode network alterations during light sleep on extreme environments
10:00-10:15	81	Jochen Mau. Translation Dynamics in Holistic Analysis of Functional Human-body System

10:15-10:30	59	Souransu Nandi, Ye Zhan, Jun Xia, Tarunraj Singh and Lucy Mastrandrea. A Noninvasive Glucose Estimation based on Near Infrared Spectroscopy and Pulse-Echo Ultrasound
10:30-10:45	38	Ivan Kudashov and Sergey Igorevich Shchukin. The control method of peripheral venous catheters automatic insertion using force measurement
11:00-12:00	Innovative Surgery (Session chair: Hubertus Feußner)	
11:00-11:12	27	Hubertus Feussner and Dirk Wilhelm. Surgery in the year 2030: Surgery 4.0?
11:12-11:24	86	Daniel Ostler, Nils Marahrens, Nils Kohn, Sebastian Koller, Michael Kranzfelder, Hubertus Feussner and Dirk Wilhelm. IVAP 2025 – Towards the collaborative operating room
11:24-11:36	82	Thomas Vogel, Hubertus Feußner, Daniel Ostler, Sebastian Koller, Nils Marahrens, Michael Kranzfelder, Walter Weigel and Joseph Eichinger. Ready for the Future: 5G Data Transfer in Visceral Surgery
11:36-11:48	79	Nils Kohn, Daniel Ostler, Sebastian Koller, Nils Marahrens, Nicole Samm, Michael Kranzfelder, Thomas Vogel, Dirk Wilhelm and Hubertus Feußner. Telephone call management in the cognitive operating room
11:48-12:00	69	Nils Marahrens, Daniel Ostler, Juliane Weinzierl, Nils Kohn, Thomas Vogel, Dirk Wilhelm, Sebastian Koller and Hubertus Feußner. Mixed Reality applications for the collaborative operating room – a prototypical study
12:00-13:00	Lunch	
13:00-14:00	Tissue Engineering (Session chair: Birgit Glasmacher)	
13:00-13:15	89	Ulyana Kurilova, Natalya Zhurbina, Dmitry Ignatov, Dmitry Ryabkin, Alexander Polokhin, Evgeniy Pyankov and Alexander Gerasimenko. Creation of 3D nanocomposite bioconstructions using a layer-by-layer laser prototyping device
13:15-13:30	73	Fedaa Al Halabi, Oleksandr Gryshkov, Antonia Kuhn, Viktoria Kapralova and Birgit Glasmacher. Piezoelectric properties of PVDF and PVDF-TrFE electrospun materials for nerve regeneration
13:30-13:45	71	Yulia O. Fedorova, Alexander A. Polokhin, Denis T. Murashko, Mikhail S. Savelyev, Natalia O. Agafonova and Alexander Yu. Gerasimenko. Investigation of the spectral properties of media based on chitosan and carbon nanotubes
13:45-14:00	60	Pavel N. Vasilevsky, Alexander Yu. Gerasimenko, Mikhail S. Savelyev and Sergey A. Tereshchenko. Tissue layers three-dimensional structure formation by nanosecond laser pulses
14:15-15:15	Vital Signs Monitoring II (Session chair: Mohanasankar Sivaprakasam)	
14:15-14:30	47	Andrey Briko, Chvanova Julia, Alexander Kobelev and Sergey Shchukin. Evaluation of the electrode system pressure force influence on neuromuscular activity signals
14:30-14:45	98	Xinchi Yu, Wilko Neu, Pascal Vetter, Cornelius Bollheimer, Steffen Leonhardt and Daniel Teichmann. Inter-modal and Intra-modal interference in a Multi-Modal Sensor for Non-contact Monitoring of Vital Signs in Patient Beds
14:45-15:00	63	Nabeel P M, Surya Venkatramanan, Jayaraj Joseph and Mohanasankar Sivaprakasam. Hemodynamic Interventions for Inducing Blood Pressure Variation in Laboratory Settings
15:15-15:45	Closing Ceremony	