Scientific Program of IBCA 2023

Mon 4th Sept. 2023 10:00 – 11:00	Speaker	Title
10:00 – 10:20	**Prof. Dr. Sven Ingebrandt** (Host of IBCA 2023)	*Welcome and Introduction*
10:20 – 11:00	Plenary **Prof. Dr. Charles R. Keese** Applied BioPhysics Inc, USA	*Electric Cell-substrate Impedance Sensing: From early days to modern applications*
Session 1: 11:00-12:30	**Filter**	
K-1.1 (11:00 – 11:30)	Keynote Talk **Prof. Dr. Joachim Wegener** Regensburg University, Germany	*Impedance of cells on filters: Teaching new tricks to an old dog*
O-1.2 (11:30 – 11:50) P-1	Oral Talk **Eyad Alsaedi** University of Oldenburg, Germany	*Activation of melanocortin-1 receptor improves the blood-brain barrier integrity in murine brain microvascular endothelial cells*
O-1.3 (11:50 – 12:10) P-2	Oral Talk **Dr. Grégoire Boullier** HEPIA, Genève, Switzerland	*Dynamic measurement of bio-impedance on in vitro breathable lung-on-chip system for long-term cell barrier integrity assessment*
O-1.4 (12:10 – 12:30) P-3	Oral Talk **Tobias Naber** Regensburg University, Germany	*TER-Ox: Simultaneous monitoring of epithelial barrier function (TER) and respiration (Ox)*
Session 2: 13:30-14:30	**Single Cell Detection**	
K-2.1 (13:30 – 14:00)	Keynote Talk **Prof. Dr.-Ing. Uwe Schnakenberg** RWTH Aachen, Germany	*Electrical Impedance Analysis of Oocytes*
K-2.2 (14:00 – 14:30)	Keynote Talk **Prof. Dr. Carlotta Guiducci** EPFL Lausanne, Switzerland	*Tri-dimensional microelectrodes for cell detection and manipulation*
Session 3: 15:00-16:10	**Modelling**	
K-3.1 (15:00 – 15:30)	Keynote Talk **Prof. Dr. Fabian Bonetto** Universidad Nacional de Cuyo Mendoza, Argentina	*Presentation of a three dimensional monolayer model and its comparison in wound healing (2D), oncological drugs and gamma radiation (3D) experimental and theoretical conditions.*
O-3.2 (15:30 – 15:50) P-4	Oral Talk **Esteban Acerbo** Universidad Nacional de Cuyo Mendoza, Argentina	*Determining mammalian cells state by fractal micromotion*
O-3.3 (15:50 – 16:10) P-5	Oral Talk **Wei-Chih Chiu** National Yang Ming Chiao Tung University, Taiwan	*Modeling and Cellular Parameter Analysis for Electric Cell-substrate Impedance Sensing*
K-3.2 (16:10 – 16:40)	Keynote Talk **Ronja Binder** TU Munich, Germany	*ECIS helps to tackle the conundrum of nanoplastic effects*
Poster Session 1: 16:40 – 18:30	**All presenters** (Oral Talks/Poster & Poster only)	*Poster Session: All topics combined with reception*

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Tue 5th Sept. 2023	Speaker	Title
Session 4: 09:00-10:30	**Cytotoxicity**	
K-4.1 (09:00 – 09:30)	Keynote Talk **Prof. Dr. Peter Ertl** TU Vienna, Austria	*Monitoring dynamic cellular responses and cell-to-cell interactions in microfluidic devices using integrated optical and electrical microsensors*
O-4.2 (09:30 – 09:50) P-6	Oral Talk **Dr. Orsolya Lang** Semmelweis University, Budapest, Hungary	*Cytotoxicity and apoptosis-inducing effects of novel aminophosphonate derivatives on pancreatic tumor cells*
O-4.3 (09:50 – 10:10) P-7	Oral Talk **Lena Schaller** Ludwig Maximilians University, Munich, Germany	*Transient Receptor Potential (TRP) channels mediate toxicant-induced pulmonary barrier dysfunction, as detected by Electrical Cell Impedance Sensing (ECIS)*
O-4.4 (10:10 – 10:30) P-8	Oral Talk **Dr. Nemanja Milicevic** Tampere University, Finland	*The circadian clock regulates barrier permeability in epithelial cells*

Session 5: 11:00-12:30	**Signal Transduction**	
K-5.1 (11:00 – 11:30)	Keynote Talk **Fabienne Podieh** Amsterdam UMC, Netherlands	*Ubiquitination of Rho GTPases regulates endothelial barrier function*
O-5.2 (11:30 – 11:50) P-9	Oral Talk **Dr. Jos P.H. Smits** Radboud Institute, Nijmegen, Netherlands	*Electrical impedance spectroscopy evaluates organotypic epidermis formation and skin barrier function in vitro*
O-5.3 (11:50 – 12:10) P-10	Oral Talk **Julia Erl** Regensburg University, Germany	*Monitoring the Reversibility of GPCR Signaling by Combining Photochromic Ligands with Label-free Impedance Analysis*
O-5.4 (12:10 – 12:30) P-11	Oral Talk **Dr. Zhong Yu** Axion BioSystems, USA	*GD2 CAR-T cells engineered using retroviral transduction or CRISPR editing exhibit strong cytolytic potency against glioma stem cells*

Session 6: 13:30-15:30	**Company Session**	
6.1 (13:30 – 14:00)	**ibidi GmbH**, Germany, and **Applied Biophysics Inc.**, USA	**Dr. Judith Stolwijk** *Cells in Focus & Quantifying Cell Behavior*
6.2 (14:00 – 14:15)	**Sciospec GmbH**, Germany	**Sebastian Wegner** *Sciospec – Electrical impedance. At its best.*
6.3 (14:15 – 14:30)	**nanoAnalytics GmbH**, Germany	**Dr. Boris Anczykowski** *Impedance-based analysis of adherent cells with the cellZscope - going above and beyond measuring TER*
6.4 (14:30 – 14:45)	**Zürich Instruments**, Switzerland	**Dr. Dominik Berndt** *Zurich Instruments MFIA Impedance Analyzer – Meeting the challenges of bio-impedance and microfluidics*
6.5 (14:45 – 15:00)	**Nanion Technologies GmbH**, Germany	**Dr. Giovanna De Filippi** *Accelerating cellular analysis with Nanion´s high-throughput electrical impedance spectroscopy-based AtlaZ system*
6.6 (15:00 – 15:15)	**AMO GmbH**, Germany	**Florian Schlachter** *AMO - A nanotechnology research institute*
6.5 (15:15 – 15:30)	**aixACCT Systems GmbH**, Germany	**Dr.-Ing. Tom Kremers** *aixACCT - Customized high-tech metrology solutions made in Aachen*
Poster Session 2 and Coffee: 15:30 – 16:30	**All presenters** (Oral Talks/Poster & Poster only)	*All topics*

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Wed 6th Sept. 2023	Speaker	Title
Session 7: 09:00-10:00	**Differentiation**	
K-7.1 (09:00 – 09:30)	Keynote Talk **Prof. Dr. Laszlo Kohidai** Semmelweis University, Budapest, Hungary	*Impedance-based analyses is a non-invasive and time-saving method for monitoring of PDLSCs viability, adhesion and differentiation*
K-7.2 (9:30 – 10:00)	Keynote Talk **Prof. Dr. Alexander Dietrich** Ludwig Maximilians University, Munich, Germany	*Impedance Sensing of Primary Lung Fibroblast to Myofibroblast Differentiation during Pulmonary Fibrosis*

Session 8: 10:30-12:10	**Transistors and CMOS devices**	
K-8.1 (10:30 – 11:00)	Keynote Talk **Prof. Dr. Sven Ingebrandt** RWTH Aachen, Germany	*Electric Cell-substrate Impedance Sensing with field-effect transistor arrays: Towards single-cell and sub-cellular resolution*
K-8.2 (11:00 – 11:30)	Keynote Talk **Prof. Dr. Luca Selmi** University of Modena e Reggio Emilia, Modena, Italy	*Experiments, Modeling and Simulation with CMOS Micro / Nanoelectrode Array Biosensors: from decananometer scale objects to cells*
O-8.3 (11:30 – 11:50) P-12	Oral Talk **Maximilian Friedrich Ell** TU Vienna, Austria	*Stability of Cell Adhesion Noise Analysis for Chemotherapeutic Treatment on Cancer Cells*
O-8.4 (11:50 – 12:10) P-13	Oral Talk **Dr. Mario Saravia** Buenos Aires Macula Clinical Research, Buenos Aires, Argentina	*Electrical Cell Impedance Spectroscopy (ECIS) in Retina and Cornea: Differences between pathological and healthy human subjects*

Session 9: 13:10-14:30	**Alternative Methods**	
O-9.1 (13:10 – 13:30) P-14	Oral Talk **Dr. Dua Özsoylu** Aachen University of Applied Sciences, Germany	*Impedance-based bacteria detection by probing the relationship between the engineered surfaces and bacterial adhesion*
O-9.2 (13:30 – 13:50) P-15	Oral Talk **Andrea Kauth** RWTH Aachen, Germany	*Low-cost alternative to commercial ECIS devices*
O-9.3 (13:50 – 14:10) P-16	Oral Talk **Anne-Kathrin Mildner** Regensburg University, Germany	*Impedance-Based Monitoring of Titration and Neutralization Assays of VSV and SARS Pseudo Viruses*
O-9.4 (14:10 – 14:30) P-17	Oral Talk **Dr. Stefanie Michaelis** Fraunhofer EMFT Regensburg, Germany	*A Novel Impedance Platform based on Printed Polymer Electrodes for Automated Virus Neutralization Assays*
14:30 – 14:45 **Conference Closing**	Prof. Dr. Sven Ingebrandt and Prof. Dr. Joachim Wegener	**Conference Closing, Best Poster Award and Announcement of IBCA 2025**