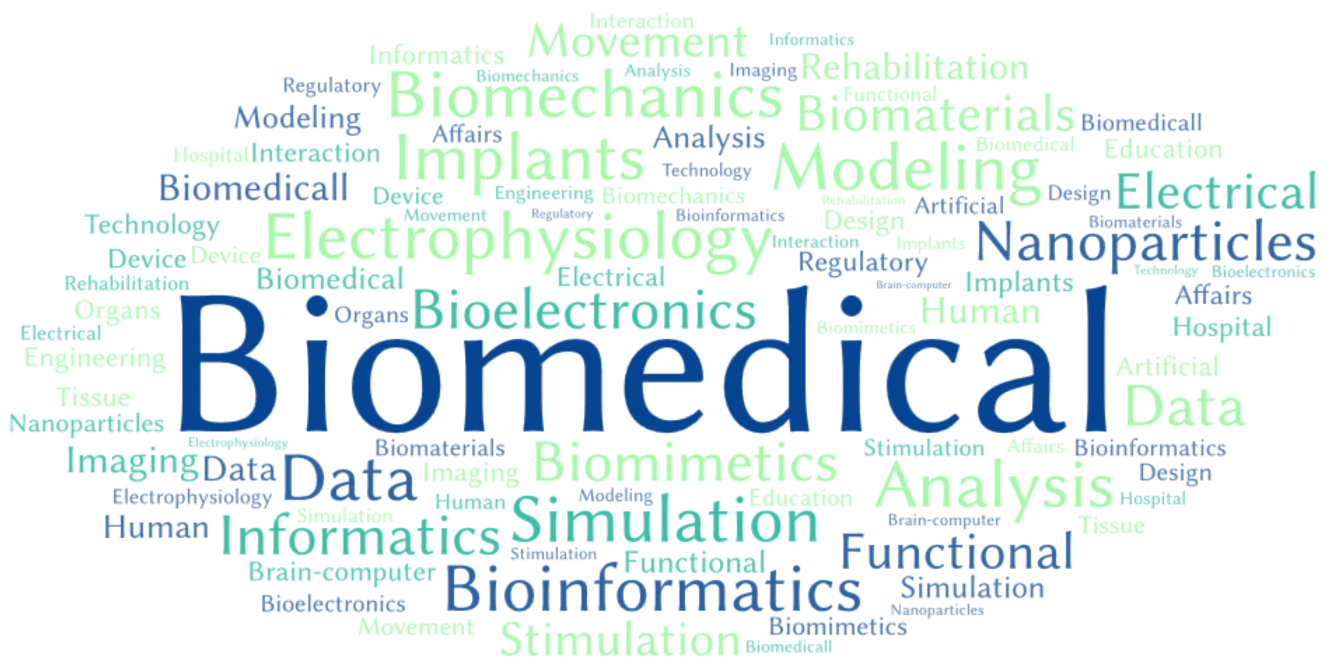


Annual Meeting of the Austrian Society for Biomedical Engineering (ÖGBMT)

October 24-25, 2024 | Graz



Keynotes / Sessions Day 1 (Thursday, October 24th)

Keynote 1: Clinical Keynote in collaboration with the ÖKG

09:45-10:30	Bridging the translational gap in cardiology Martin Manninger-Wünscher (Medical University of Graz, Austria)
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Session 1: Advanced Cardiovascular Analysis and Machine Learning & PhD Competition (*)

Chairs: Christian Baumgartner, Daniel Baumgarten

10:45-11:00	Cross-Species ECG Delineation: Applying Transfer Learning from Rabbits to Humans Laurenz Berger, Milica Ilic, Max Haberbusch, Lisa Aurora Bernardo, Laura Galassi, Calogero Oddo, Theodor Abart, Thomas Schlöglhofer, Julia Riebandt, Daniel Zimpfer and Francesco Moscato
11:00-11:15	Self-supervised learning for improved radial real-time MRI with NLINV-Net Moritz Blumenthal* and Martin Uecker
11:15-11:30	Experimental multiscale studies on the passive mechanical behavior of human aortas Anna Pukaluk*, Heimo Wolinski, Gerd Leitinger, Dagmar Kolb, Christian Viertler, Peter Regitnig, Kristian Bredies, Thomas Pock, Gerhard A. Holzapfel and Gerhard Sommer
11:30-11:45	Assessment of aortic dissection remodeling: results from an in silico study Malte Rolf-Pissarczyk*, Kathrin Bäumlner, Richard Schussnig, Alison L. Marsden, Dominik Fleischmann and Gerhard A. Holzapfel
11:45-12:00	Quantitative Multi-Parameter Mapping in Magnetic Resonance Imaging Nick Scholand* and Martin Uecker

Session 2: Neuroscience: From Cells to Systems Chairs: Kerstin Lenk, Winfried Mayr

13:15-13:30	A1 adenosine receptor evoked Ca ²⁺ signals in astrocytes Filip Kienleitner and Kerstin Lenk
13:30-13:45	Influence of Glutamate Transporter Densities on Calcium Dynamics in Astrocytes due to Aging Processes Melanie Anna Koch and Kerstin Lenk
13:45-14:00	T1 MRI Hippocampus Segmentation using T2 Information and Deep Convolutional Neural Networks Maximilian Sackl, Christian Tinauer, Martin Urschler, Rudolf Stollberger and Stefan Ropele
14:00-14:15	Performance of Quantitative Susceptibility Mapping in brain tissue with extreme iron content Christoph Birkl, Marlene Panzer, Christian Kames, Alexander Rauscher, Bernhard Glodny, Elke Gizewski and Heinz Zoller
14:15-14:30	Additively-Manufactured Flexible Electrodes for Extracellular Electrophysiology Amelie Ziller, Andreea-Elena Cojocaru and Günther Zeck
14:30-14:45	Ex ovo CAM assay: Applications in cancer research and bioengineering Nassim Ghaffari Tabrizi-Wizsy

Keynote 2

16:45-17:30	'Broadband' cortical neuronal ensembles Michele Giugliano (Univ. of Modena and Reggio Emilia, Italy)
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Keynotes / Sessions Day 2 (Friday, October 25th)

Keynote 3

09:00-09:45	Computational modeling at the molecular and cellular level: a Petri net approach to study in-silico knockouts and dynamics of Salmonella infection Ina Koch (Goethe University Frankfurt am Main, Germany)
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Session 3: Bioinformatics Approaches

Chair: Gerhard Thallinger

09:45-10:00	Gene regulatory potential of conserved non-coding elements Silvia Fibi-Smetana and Leila Taher
10:00-10:15	ENT3C for assessing the performance of computational models of chromatin contact matrices Xenia Lainscsek and Leila Taher
10:15-10:30	SplineOmics: An R package for streamlined analysis of time-series omics data Thomas Rauter, Veronika Schöpertöns, Wolfgang Esser-Skala and Nikolaus Fortelny
10:30-10:45	HerzMobil telehealth service utilizing TBM CareManager Solution for remote monitoring of heart failure patients Peter Kastner and Robert Modre-Osprian

Startup Session: 11:00-12:00

Chairs: Dietmar Rafolt, Michaela Malásková

Company / project	Topic	Presenter
SVAN FFG Spin-off Fellowship	Antraosseous access, neonatal resuscitation	Gunpreet Oberoi
DEWINE Labs GmbH	Safe BLE technology for medical applications	Michael Spörk
Biomotion Technologies	Automation in 3D bioprinting from research to production	Gregor Weisgrab
Lumetry	Home application of medical breath gas analysis & MDR	Christina Sommer
WAIBRO GmbH	Navigation belt for the visually impaired & Startup problems	Katerina Sedlakova
Lokahi Technology Systems	Therapy with feedback & Startup financing	Christian Veit-Sist

Session 4: Biomedical Signal Processing and Imaging Innovations

Chairs: Daniel Baumgarten, Kyriaki Kostoglou

13:15-13:30	EEG-based Incongruency Decoding in AR with sLDA, SVM, and EEGNet Michael Wimmer, Eduardo E. Veas and Gernot R. Müller-Putz
13:30-13:45	Improving Handwritten Letter Classification from EEG with Movement-Offset Information Markus Crell and Gernot R. Müller-Putz
13:45-14:00	A workflow for preprocessing incomplete segmentations as basis for inner ear stimulation models Michael Handler, Peter Baumhoff, Wiebke Konerding, Björn Michael Vey, Andrej Kral and Daniel Baumgarten
14:00-14:15	MR Magnetic Nanoparticle Imaging and Quantification Performance Study for Magnetic Hyperthermia Mishuk Mitra, Aaron Jaufenthaler, Christoph Birkl, Elke Ruth Gizewski and Daniel Baumgarten
14:15-14:30	Magnetic Kidney Stone Removal Sebastian Schwaminger, Thomas Amiel, Shyam Srinivasan, Chiara Turrina, Florian Ebel, Michael Straub and Madleen Busse

Program Overview

Thursday, October 24th

09:30	-	09:45	Opening ceremony
09:45	-	10:30	Keynote 1
10:30	-	10:45	Coffee break
10:45	-	12:00	Session 1 (5 talks): Advanced Cardiovascular Analysis and Machine Learning + PhD Competition
12:00	-	13:15	Lunch break
13:15	-	14:45	Session 2 (6 talks): Neuroscience: From Cells to Systems
14:45	-	16:45	Poster session + Cake/Drinks
16:45	-	17:30	Keynote 2
17:30	-	18:15	Stefan Schuy award
19:00	-	... : ...	Dinner at Landhauskeller

Friday, October 25th

09:00	-	09:45	Keynote 3
09:45	-	10:45	Session 3 (4 talks): Bioinformatics Approaches
10:45	-	11:00	Coffee break
11:00	-	12:00	Start-up session
12:00	-	13:15	Lunch break
13:15	-	14:30	Session 4 (5 Talks): Biomedical Signal Processing and Imaging Innovations
14:30	-	14:45	Award ceremony & Closing
14:45	-	15:30	General assembly
15:30	-	19:00	Buschenschank Sattler (wine tavern), Address: Rohrbachhöhe 20, 8010 Graz

Poster Session (Thursday, October 24th)

ÖGBMT award for the best Bachelor's thesis

1	Automatic detection of the stapedius reflex for an objective cochlear implant fitting Celine Desoyer, C. Baumgartner
2	Studying the porous behavior of brain tissue-mimicking hydrogels with microfluidic perfusion Marcel Horn, M. P. Kainz, M. Terzano, G. A. Holzapfel
3	Morphology Changes of Implantable Hydrogels Luca Kalchgruber, M. Polz, C. Baumgartner
4	A1 Adenosine Receptor evoked Ca ²⁺ Signals in Astrocytes Filip Kienleitner, K. Lenk
5	Influence of Glutamate Transporter Densities on Calcium Dynamics in Astrocytes due to Aging Processes Melanie Anna Koch, K. Lenk
6	MiRNA Prediction using Stochastic Context-Free Grammars Daniel Schulhofer
7	Compression-tension characteristics of PVA-based tissue-mimicking hydrogels Manuel Steinberger, M. P. Kainz, M. Terzano, G. A. Holzapfel
8	Computational Investigation of Cortical Stimulation with optoelectronic Implants in a Simplified Head Mode Vincent Thomas Valente, T. Rienmüller

ÖGBMT award for the best Master's thesis

9	Nonlinear Inversion of Multi-Pool Signal Models for Quantitative MRI Martin Juschitz, N. Scholand, M. Uecker
10	Bloch Equation Based Estimation of T2 Relaxation from Fast Spin-Echo MRI Datasets Christopher A. Ramirez Bedoya, N. Scholand, M. Blumenthal, M. Uecker
11	Simulation von Tiefer Hirnstimulation mit einem Mixed-FEM Ansatz Tobias Schwendinger, J. Vorwerk
12	Electro-Stimulation System with AI-based auricular-triggered Algorithm for Patients with Peripheral Facial Palsy Katharina Steiner
13	Simulation of neural activation and electrically evoked compound action potentials during combined cochlear-vestibular stimulation Björn Vey, M. Handler, R. Glueckert, D. Baumgarten

Regular Poster

14	Using continuous radial sampling to speed up arterial spin labeling Viktoria Buchegger, Philip Schaten, Ingmar Sorgenfrei, Martin Uecker
15	EEG in Clinical Practice: Optimizing an Underutilized Tool Jurij Dreo, Jan Jug, Barbara Aljaž, Tisa Pavlovčič, Ajda Ogrin, Anita Demšar and Filip Agatić
16	Towards adaptive decoding for temporal variations in EEG dynamics Johanna Egger, Gernot R. Müller-Putz
17	Identification of patients in early stages of neurodegeneration with deep learning Simon Feuerstein, Ambra Stefani, Raphael Angerbauer, Kristin Egger, Abubaker Ibrahim, Evi Holz knecht, Elisabeth Brandauer, Birgit Högl, Antonio Rodriguez-Sanchez, Matteo Cesari
18	Signal Quality Index Estimator for Complex-Lead type ECG beat detectors Christoph Hintermüller, Hermann Blessberger and Clemens Steinwender
19	Score-based generative priors for SENSE reconstruction with uncertainty estimation Tina Holliber, Moritz Blumenthal, Martin Uecker

20	<p>Simultaneous Measurement of CEST and T1 in 3D: Stack of Stars Multi-Pool-Lorentzian Look-Locker MRI</p> <p>Markus Huemer, Clemens Stilianu, Rudolf Stollberger</p>
21	<p>Investigating the role of mechanical properties for bioadhesion and biointegration of soft tissue-mimicking hydrogels</p> <p>Manuel P. Kainz, Mathias Polz, Daniel Ziesel, Marta Nowakowska, Muammer Üçal, Sabine Kienesberger, Sophie Hasiba-Pappas, Raimund Winter, Nassim Ghaffari Tabrizi-Wizsy, Sarah Kager, Theresa Rienmüller, Julia Fuchs, Michele Terzano, Christian Baumgartner, Gerhard Holzapfel</p>
22	<p>Rational Approximation of Golden Angle Sampling in Magnetic Resonance Imaging</p> <p>Nick Scholand, Philip Schaten, Christina Graf, Daniel Mackner, Hans Christian Martin Holme, Moritz Blumenthal, Andrew Mao, Jakob Assländer and Martin Uecker</p>
23	<p>Quackseq - open source vendor-independent pulse programming for low-cost educational magnetic resonance spectrometers</p> <p>Julia Pfitzer, Hermann Scharfetter</p>
24	<p>A low-cost arbitrary current pulse generator for use in neurostimulation</p> <p>Laurin Xaver Koppenwallner, Günther Zeck, Paul Werginz</p>
25	<p>Refining Time-Varying Autoregressive Models for Brain-Computer Interfaces</p> <p>Kyriaki Kostoglou, Gernot R. Müller-Putz</p>
26	<p>Lignin as a sustainable dielectric material for inkjet-printed electrode arrays</p> <p>Anna Hofbauer, Günther Zeck and Amelie Ziller</p>
27	<p>Single-Shot Whole-Heart T1 Mapping</p> <p>Daniel Mackner, Moritz Blumenthal, Martin Uecker</p>
28	<p>Exploring Surfactant Therapy and Ventilatory Support Strategies Using a Preterm Lung Simulation</p> <p>Richard Pasteka, Lisa Hufnagl, Tobias Werther, Michael Wagner</p>
29	<p>TGV Image Reconstruction for Dynamic ASL</p> <p>Ingmar Sorgenfrei, Stefan Spann, Rudolf Stollberger</p>
30	<p>Advancing Flexibility of Chemical Exchange Saturation Transfer MRI Pulses designed by Optimal Control</p> <p>Clemens Stilianu, Markus Huemer, Rudolf Stollberger</p>
31	<p>OPTIMIZING VISUAL CUES IN TRAINING DATA FOR ENHANCED SELF-PACED MOVEMENT DETECTION IN BCIs</p> <p>Patrick Suwandjieff, Gernot R. Müller-Putz</p>
32	<p>Clever Hans effect found in a widely used Alzheimer's Disease MRI dataset</p> <p>Christian Tinauer, Maximilian Sackl, Rudolf Stollberger, Stefan Ropele, Christian Langkammer</p>
33	<p>Enabling real-time interaction with an electrophysiological cancer cell model</p> <p>Peter Waldert, Theresa Rienmüller, Christian Baumgartner, Sonja Langthaler</p>
34	<p>Vascularized in vitro 3D models for cancer research</p> <p>Rui Zhou, Christian Baumgartner</p>