

Progress in Biomedical Photonics 2024

December 13, 2024 from 09:30 to 16:30

Hörsaal OST HOER B5, University Hospital Zurich

Program

09:30-09:50: Registration, coffee and hang up posters in front of the HOER B5.

Presentations (Room HOER B5) Chair:

09:50:-10:00: Welcome and introduction Martin Wolf, President BMPN.

10:00-10:15: D. Kavungal, P. Magalhães, S. Kumar, R. Kolla, H. Lashuel and H. Altug: Nanoplasmonic Infrared Biosensor Coupled with Deep Learning for the Detection of Structural Protein Biomarkers in Neurodegenerative Diseases
BioNanoPhotonic Systems Laboratory, EPFL

10:15-10:30: Yen-Cheng Liu, Saeid Ansaryan, Jiayi Tan, Nicolas Broguiere, Luis Francisco Lorenzo-Martín, Krisztian Homicsko, George Coukos, Matthias P. Lütolf, Hatice Altug: Nanoplasmonic Single-Tumoroid Microarray for Real-Time Secretion Analysis
BioNanoPhotonic Systems Laboratory, EPFL

10:30-10:45: Yahya Rabbani, Joey Bregy, Benjamin Rousseau, Sayyed Hashem Sajjadi, Lou De Benedittis, Sara Behjati, Mohammed Mouhib, Subhasis Dehury, Ardemis Anoush Boghossian: Designing Optical Nanobiosensors for Glucose Detection Based on Clustering and Deep Learning
Laboratory of Nanobiotechnology, EPFL

10:45-11:00: Kolja Lehmann, Tiziano A. Schweizer, Alexander Kalyanov, Heinrich Walt, Harald Essig : Zirconium Dental Implants as Optical Waveguides in Antimicrobial Photodynamic Therapy
Department of Cranio-Maxillo-Facial and Oral Surgery, UZH

Sponsors

11:00-11:15: Yan Liu, Jonathan Dong, Juan Augusto Maya, Francisco Balzarotti, Michael Unser: Point-Spread-Function Engineering in MINFLUX: Optimality of Donut and Half-Moon Excitation Patterns
Biomedical Imaging Group, EPFL

11:15-11:30: Letizia Lanini, Tong Li, Djazia Yacheur, Alexander Kalyanov, Meret Ackermann, Emanuele Russomanno, Aldo Di Costanzo Mata, Martin Wolf and Jingjing Jiang: Comparison of different phase functions in light propagation simulations for short source-detector distances
Biomedical Optics Research Laboratory (BORL), Department of Neonatology, UZH

11:30-11:45: András Bálint, Wilhelm Wimmer, Christian Rummel, Marco Caversaccio and Stefan Weder: Linking Brain Activation Patterns to Clinical Outcomes: fNIRS Study of Speech Understanding in Cochlear Implant Users and Normal Hearing Individuals
Hearing Research Laboratory, ARTORG Center, University of Bern, Switzerland

11:45-12:00: Camille Pescatore, Anna Nardello, Dominik Wyser, Roger Gassert: From Lab to Clinic: Advancing fNIRS for Enhancing Upper Limb Rehabilitation in Stroke with Novel Treatments
Rehabilitation Engineering Laboratory, Department of Health Sciences and Technology, ETH Zurich

12:00-12:15: Weneri Lindberg, Henning Richter, Fayez Alfayez, Killang Pratama, Olivier Bonny, Damien Terebenec, René Rossi, Antonia Neels, Robert Zboray: Adapting X-ray dark-field imaging for clinical practice: a path towards enhanced disease characterisation in routine healthcare
Department of Health Sciences and Technology, ETH Zürich

12:15-12:30: Burgat Benjamin: A New Era in Healthcare: Continuous Biomarkers Monitoring with Photoplethysmography CSEM.

12:30-14:30 Lunch break and poster viewing in front of HOER B5

Presentations (Room HOER B5) Chair:

14:30-15:05: Invited talk: Xosé Dean Ben “Bench-to-bedside multiscale optoacoustic imaging”, UZH and ETHZ

Sponsors

15:05-15:40: Invited talk: Ferda Canbaz “Intelligent Laser Systems for Surgical Applications”, Head of Center for Intelligent Optics, Department of Biomedical Engineering, University of Basel,

15:40-15:55: Emmanuel Gerelli, Georges Wagnières: Monte Carlo simulation of the light propagation in the skin during photobiomodulation based on the use of a multidiode light source.

Laboratory for functional and metabolic imaging, EPFL.

15:55-16:10: A. Kalyanov*, J. Jiang, M. Ackermann, L. Lanini, M. Wolf: Cerebral oxygenation imaging in neonates

Biomedical Optics Research Laboratory, Neonatology Dept., University Hospital Zurich and University of Zurich

16:10-16:30 Award ceremony and closing

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