2025 NanoBioTech-Montreux

Sunday, October 19 , 2025

18:00 - 20:00	*- Opening of the conference desk.* *- Distribution of badges and handbook* *- Welcome aperitif* *- Panels for posters are ready*	

Monday, October 20 , 2025

	Chair:Albert van den Berg	
09:00 - 09:05	***Opening and Welcome***	
09:05 - 09:45	***Keynote Opening Lecture:*** ***Yoon-Kyoung Cho, UNIST, KR*** *Centrifugal Discs and Droplet Microfluidics for Precision Diagnostics*	*M1*
09:45 - 10:05	***Trevor Kalkus, Heidelberg University, DE*** *Enabling the Next Generation of Soft Robotics by 3D Printing Complex Iontronics*	*M2*
10:05 - 10:25	***Elise Bou, Univ.Grenoble-Alpes, CNRS, GrenobleINP, LMGP & G2ELAB, FR*** *Fast, controlled magnetophoretic 2D transport of magnetic nanoparticles on simple micro-patterned substrates in passive micro-fluidic chips.*	*M3*

Coffee break

	Chair: Charles Baroud	
11:00 - 11:20	***Enrico Turato, Lund University, SE*** *Passive Viscoelastic Fluidic Components*	*M4*
11:20 - 11:40	***Jana Hecking, University of Twente, NL*** *Multi-Heart Plate – Tissue Engineered hiPSC based Cardiac Chambers for Volumetric Performance Measurements*	*M5*
11:40 - 12:00	***Poster snapshots, session A***	

Lunch break at the hotel ***(included in the registration)***

	Chair: Andrew deMello	
14:00 - 14:30	***Invited: David Issadore, University of Pennsylvania, USA*** *Optofluidic Droplet Assays for High-Throughput, Multiplexed Quantification and Sorting of Single Extracellular Vesicles at Single-Molecule Resolution*	*M6*
14:30 - 14:50	***Riccardo Reale, University of Rome Tor Vergata, IT*** *Tackling Syringe Sedimentation in Nano- and Bio- manufacturing: An Integrated Modelling and Hardware Approach*	*M7*
14:50 - 15:10	***Radhika Nambannor Kunnath, Chalmers University of Technology, SE*** *High-throughput Optical DNA Mapping for Bacterial Diagnostics*	*M8*

Coffee break

	Chair:Jonathan West	
15:50 - 16:30	***Keynote: Liesbet Geris, KU Leuven & Univ. de Lièges, BE*** *Modeling Complexity: In Silico–In Vitro Synergies for Understanding and Engineering Regeneration*	*M9*
16:30 - 17:00	***Poster snapshots, session B***	
17:00 - 18:30	***Poster Session in the poster area / Exhibition*** ***Reception / drinks***	
19:30 - 22:00	***Conference Dinner at Hotel Mona*** ***(included in the registration)***	

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Tuesday, October 21, 2025

	Chair : Jonas Tegenfeldt	
9:00- 9:30	***Poster snapshots, Session C***	
09:30 - 10:00	***Invited: Nako Nakastuka, EPFL, CH*** *Nanoscale DNA-Based Biosensors to Decode the Brain*	*T1*
10:00 - 10:20	***Fred Jordan, FinalSpark, CH*** *Neuroplatform: Internet access to Brain organoids for Research in Biocomputing*	*T2*
10:20 - 10:40	***Andrew Hanna, University of Pennsylvania, USA*** *Automated and Parallelized Microfluidic Generation of Large and Precisely-defined Lipid Nanoparticle Libraries*	*T3*

Coffee break

	Chair: Yegan Erdem	
11:10 - 11:30	***François-Xavier Gauci, Université Côte-d'Azur-CNRS-Inst. de Physique Nice, FR*** *Biomimetic Leaf-on-cheap to Investigate Embolism in Plants*	*T4*
11:30 - 11:50	***Etienne Boulais, MIT, USA*** *Precise Transport Models for Investigating Lipid Nanoparticle Self- Assembly in Microfluidic Mixers*	*T5*
11:50 - 12:20	***Poster snapshots, Session D***	

Lunch break at the hotel ***(included in the registration)***

	Chair: Séverine Le Gac	
14:00 - 14:30	***Invited: Ashleigh Theberge, Washington University, USA*** *Bioanalytical Systems forTranslational Research: From Microscale Cell Culture Platforms to Biofluid Self-sampling Tools*	*T6*
14:30 - 14:50	***Vladimir Sincari, Inst. of Macromolecular Chemistry CAS, CZ*** *Microfluidic Fabrication of Smart Gel-Core Giant Unilamellar Vesicles Responsive to Tumor Microenvironment pH (~6.7) for Biomedical Applications*	*T7*

Coffee break

	Chair: Bastien Venzac	
15:40 - 16:00	***Nicolai Winter-Hjelm, ETH Zürich, CH*** *Engineered Neural systems to Investigate Mechanisms and Network Adaptations in Neurodegenerative Diseases*	*T8*
16:00 - 16:30	***Poster snapshots, Session E***	
17:00 - 19:00	***Posters session in the poster area / Exhibition*** ***Reception / drinks***	

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Wednesday, October 22 , 2025

	Chair: David Lake	
09:00 - 09:20	***Sagar Agnihotri, Uppsala University, SE*** *Droplet Microfluidics with Image texture-based Detection of Bacterial Heteroresistance in Isolates from Bloodstream Infections*	*W1*
09:20 - 09:40	***Hans Wyss, TU Eindhoven, NL*** *Microfluidic Platform for Controlled Generation and Trapping of Membraneless Water-in-Water Droplets*	*W2*
09:40 - 10:00	***Muhammad Zia Ullah Khan, Technical University of Munich, DE*** *Single Immune-Cancer Cell Interaction Profiling in a Parallelized Multi- Trap Microfluidic Device*	*W3*

Coffee break

	Chair: Albert van den Berg	
10:40 - 11:00	***Annina Stuber, ETH Zürich, CH*** *Double-pore Aptamer-functionalized Nanopipettes Towards Multiplexed Neurotransmitter Sensing*	*W4*
11:00 - 11:20	***Simon Sayer, UpNano GmbH/TU Wien, AT*** *Immune Niche-on-a-chip Enabled by in Situ High-resolution 3D Printing*	*W5*
11:20 - 12:00	***Invited Keynote Closing Lecture:*** ***Marc Madou, Tecnológico de Monterrey, MX*** *Listening to Trees in the Myawaki Forest Using Redox Amplifiers*	*W6*
12:00 - 12:15	***Award ceremony for Poster Prizes and closing of the conference***	

Poster session A - Monday, October 20 , 2025		
		Title of abstract
A2	Laura de Heus University of Twente, NL	*Local oxygen levels in 3D vessel-on-chips as a function of chip materials, medium refreshment intervals and vascular architecture*
A4	Joanna Konopka Warsaw University of Technology, PL	*Vascularized Breast Tumor Models - in search of physiological relevance for angiogenesis studies*
A5	Kareem Al Nahas Max Planck Institute of Biochemistry, DE	*Automated Synthetic Cell-based Screening for Designed Proteins with Complex Functions*
A7	Nikita Norkin EPFL, CH	*Imaging-Guided Analysis of Tumor Tissue Dissection Using Microengineered Instruments*
A8	Rashin Mohammadi ETH Zürich, CH	*Ultra-High-Throughput Viscoelastic Squeezing for Mechanoporation and Efficient Intercellular Delivery*
A9	Alp Yetisgin Sabanci University, TR	*Thrombolytic Potential of "Hydrodynamic Cavitation on a Chip" Concept*
A10	Zuzanna Iwon-Szczawinska Warsaw University of Technology, PL	*Microfluidic platform for 2D and 3D culture and differentiation of human induced pluripotent stem cells into cardiomyocytes*
A11	Duomei Tian CPCV, Département de Chimie, Ecole Normale Supérieure, PSL University, Sorbonne Université, CNRS , FR	*Rocking- and diffusion-based culture of tumor spheroids-on-a-chip*
A12	Ianis Drobecq LAAS-CNRS, FR	*3D-printed nanofibrillar ECM models with tunable porosity and mechanics*
A13	Emmie Schoutens Eindhoven University of Technology, NL	*Enhancing organ-on-chip platforms with giant magneto-resistive flow sensors*

Posters without snapshot presentation :

A14	Mukesh Kumar Sivakumar Microfluidics Innovation Center, FR	*High-Precision Flow Control: Bringing New Possibilities for Compartmentalisation of Complex Chemical Systems*
A15	Xiangping Li RheinMain University of Applied Sciences, DE	*Lung Carcinoma on a Chip with Nano calorimetry*

Poster session B - Monday, October 20 , 2025		
		Title of abstract
B2	Yukina Partington ETH Zürich, CH	*Base Gap Switches as Transcriptional Regulators and Their Applications as Biosensors*
B3	Xinne Zhao Helmholtz Centrum Dresden Rossendorf, DE	*Nanoliter reactors for real time monitoring of the biomolecular markers in clinical diagnostics*
B4	Tommaso Bo Eindhoven University of Technology (TU/e), NL	*Multiplexed Microfluidic System for Continuous Sweat Monitoring in Athletes*
B5	Noah Al-Khulaifi Lund University, SE	*Optical biosensing in unprocessed fresh human blood using semiconductor nanowires*
B8	Martina Renggli CSEM SA, CH	*Versatile sensor packaging and integration for microfluidic diagnostics*
B9	Fadilah Sfouq Aleanizy King Saud University- College of Pharmacy, SA	*Antivirulence effect of mBTL loaded calcium alginate nanoparticles against Pseudomonas aeruginosa*
B10	Lotte Vermeulen Eindhoven University of Technology, NL	*Continuous particle-based biosensors with single-molecule resolution: how diffusion processes limit the signal*
B12	Luis Mario Leal Garza Chalmers University of Technology, SE	*De novo assembly of yeast genomes using Optical Genome Mapping*
B13	Zuzana Kadlecova HEPIA, HES-SO, CH	*Liposomes vs. LNPs: the encapsulation of peptides for the pulmonary treatment of respiratory syncytial virus*
B15	Yimin Yang Technical University of Munich, DE	*Lab on Capillary Towards Instrument-free Immunoassay*

Posters without snapshot presentation :

B14	Mohammad Danish Alhindi UPVD-Criobe/Laas-CNRS, FR	*Enhanced Graphene Biosensors via Optimized Tripodal Functionalization for Improved Stability and Sensitivity*

Poster session C - Tuesday, October 21, 2025		
		Title of abstract
C2	Hasti Honari Institut Curie, FR	*Droplet microfluidics for collagen-assisted breast cancer spheroid formation and nanoparticle-mediated photothermal therapy*
C3	Yasaman Asgari Tehran University of Medicine Sciences, IR	*Laser-CNC-Fabricated Microfluidic Systems Enable Cost-Effective and Enhanced Monodisperse Synthesis of Core–Shell Iron Oxide Nanoparticles*
C4	Emre Bukusoglu Middle East Technical University, TR	*Shear and Chemical Adsorption-Induced Structural Transitions in Aqueous Phase Interfaced Liquid Crystal Microfluidics*
C6	Kévin Maltez Cavalheiro University of Liège, BE	*Electric-field driven coalescence and electrospraying of trapped droplets in microfluidic well arrays*
C8	Tom Seltmann University Heidelberg, DE	*Droplet Microfluidics for Scalable Production of ECM Capsules*
C9	Domenico Catucci Université Paris-Cité, FR	*Nucleus deformation and recovery in microfluidic device: role of vimentin*
C10	Savitashva Shringi Ecole Normale Supérieure, FR	*Vascularized dermis-on-chip using cell sheet technology*
C11	Elizaveta Maksimova University of Basel, CH	*Quantification of Azides on the Surface of Nanoparticles: Toward Precise Bioconjugation*
C15	Thao Phuong Doan-Nguyen National Institute for Materials Science, JP	*Simple methods to produce ultrasmall nanoparticles in miniemulsions*

Posters without snapshot presentation

C13	Bushra Alquadeib King Saud University- College of Pharmacy, SA	*Fabrication and characterization of an oral nanopartilces Daclatasvir dihydrochloride*

Poster session D - Tuesday, October 21, 2025		
		Title of abstract
D1	Biranche Tandon EPFL, CH	*Exploring the potential of mechanical and electrical stimulation of the nasal cavity in people with olfactory impairment*
D3	Raul Flores Berdines Université Paris Cité, FR	*Soft thermoplastic elastomer compartmentalized chip for neurofluidics: a study to assess axonal growth in extracellular vesicle-based assays*
D4	Dariush Ashtiani TU Delft, NL	*Microfabricated sample carriers for cryo-electron tomography of neuronal cells*
D5	Hanna Karlsson-Fernberg Chalmers University of Technology, SE	*Micro- and Nanoscale Fabrication of Miniaturized High-Channel-Count Neuroprosthetic Implants: Enhancing Biocompatibility and Signal Fidelity in Peripheral Nerve Interfaces*
D6	Sara Falghera Université Paris Cité, FR	*Miniaturized Asymmetrical Flow Field Flow Fractionation (AF4) for size separation and purification of biotherapeutics*
D8	Alexandra Banbanaste EPFL, CH	*Aptamer integration via click chemistry into organic electrochemical transistors (OECTs)*
D9	Fulwah Yahya Alqahtani King Saud University- College of Pharmacy, SA	*Effect of C7-3 peptide-loaded chitosan nanoparticles against multidrug-resistant Neisseria gonorrhoea*
D10	Aurora De la O Espadas FEMTO-ST, FR	*Microfluidic methods to investigate particle corona formation*
D11	Xinyue Lan CPCV, Département de Chimie, Ecole Normale Supérieure, PSL University, Sorbonne Université, CNRS , FR	*Enhanced organ-on-chip culture by electrospinning and hot embossing*
D13	Pawel Romanczuk Warsaw University of Technology, PL	*A reproducible 3D Blood–Brain Barrier (BBB) model using double-VFP for inflammation and drug testing*
D14	Ghulam Destgeer Technical University of Munich, DE	*Single cell lactate secretion analysis using particle templated droplets*

Posters without snapshot presentation :

D15	Norah Alsaiari Najran University, SA	*Green-Synthesized Silver-Calcium Oxide Nanocomposites: Comparative Biological Activities of Marjoram and Purslane Extracts*

Poster session E - Tuesday, October 21, 2025		
		Title of abstract
E2	Adrien Botarelli Instrumat AG, CH	*Specific, versatile, fast and cost-effective method to characterize extracellular vesicle (EV) size and concentration using nanoparticle tracking analysis (NTA)*
E3	Federica Caselli University of Rome Tor Vergata, IT	*Real-time impedance-activated dielectrophoretic actuation for reconfigurable manipulation of single flowing particles*
E4	Arthur Salles Université Paris Cité,CNRS,UMR 8236 Laboratoire LIED, FR	*Microfluidics recirculation of cancer cells in a context of metastasis.*
E5	Micaela Siria Cristofori EPFL, CH	*Multi-fraction Cell Sorting Using Fluid Dynamics and Electrokinetics*
E7	Sandra Hernandez Escobar EPFL, CH	*Towards Flexible Aptamer-Field Effect Transistor Neuroprobes for Simultaneous Electrophysiology and Neurochemical Sensing*
E9	Anna Schreiber Université Paris Cité-NABI/UTCBS, FR	*Microwell-based thermoplastic microfluidic platform for parallelized colorectal cancer spheroids formation and high-content characterization*
E10	Elham Akbari Lund University, SE	*Shape and Softness Alter Particle sorting in deterministic lateral displacement: An experimental and simulation study*
E11	Esra Yilmaz Lund University, SE	*Unraveling Breast Cancer Heterogeneity: Microfluidic Sorting and Bioassay-Based Functional Analysis*
E12	Tao Zhang EPFL, CH	*Microfluidic synthesis of alumina particle-laden beads via capillary number tuning for varying particle concentrations*
E13	Yuwei Liu Microfluidics Innovation Center, FR	*Hydrodynamic flow focusing with feedback control for characterizing low-speed performance across variable viscosity liquids*

Posters without snapshot presentation :

E14	Suraj Maurya BFH and EPFL, CH	*Capillary-Driven Dual-Mode Imaging Flow Cytometry for Malaria Detection and Quantification*