



Preliminary program

Wednesday 14 October

19:00 Welcome reception & Inaugural Talk

Bradley Nelson (ETH Zurich)
Clinically Ready Microrobots

Thursday 15 October

Translational Therapies & Medical Microrobotics

8:30 Registration

9:00 Welcome and opening remarks

9:10 Session 1

Advanced therapies and Nanomedicines

9:15 Keynote talk

Ander Izeta (IIS Biogipuzkoa)
Advanced therapies: from basic research to a paradigm change in clinical practice

9:55 Contributed talk

Ylenia Jabalera (CIC bioGUNE)
Evolution-Inspired Technologies for Precision Medicine

10:10 Contributed talk

Marek Grzelczak (Centro de Física de Materiales)
Membrane-targeted nanoparticles for neuronal photo-modulation

10:25 Contributed talk

Upashi Goswami (Polymat)
Charge-Engineered Nanogels as Drug Delivery Platforms against Staphylococcus aureus for Bovine Mastitis Therapy

10:40 Contributed talk

Yu Cheng (Tongji University)
An intracellular magnetic micromotor drives spatiotemporal mechano-immunotherapy

10:55 Coffee break & Posters

11:20 Session 2

Functional Materials for Nano-Microrobotics

11:25 Keynote talk

Salvador Pané (ETH Zurich)
Biomedical Magnetic Microrobots: A Materials Perspective

12:05 Invited talk

Ambarish Ghosh (IISc, Bangalore)
From Physics to Physiology with Magnetic Micro- and Nanobots

12:30 Contributed talk

Stefano Palagi (Sant'Anna School of Advanced Studies)
From cell mimicry to functional autonomy: celloid microrobots for in situ medicine



12:45 Contributed talk

Verónica Salgueiriño (Universidade de Vigo)

Biodegradable Tunable Magnetic Remanence in Hybrid Elongated Nanostructures for Adaptive Nanorobotic Navigation

13:00 Contributed talk

Kristin Fichna (IBEC)

Active Nanomotors Improve ADC Therapy in Bladder Cancer Tumors

13:15 Lunch & Posters & Tech demos open

14:20 Session 3

Medical Applications I

14:25 Keynote talk

Metin Sitti (Koç University)

Wireless medical milli/microrobots for theranostic applications

15:05 Featured talk

Hakan Ceylan (Mayo Clinic)

Preventive Endovascular Robots: A New Paradigm for Vascular Interventions

15:25 Featured talk

Giovanni Pittiglio (Worcester Polytechnic Institute)

Magnetic Robots for Cardiovascular Interventions

15:45 Coffee break & Posters

16:10 Session 4

In vivo Imaging

16:15 Invited talk

Veronica Iacovacci (Sant'Anna School of Advanced Studies)

Vision in Motion: a Perception-Action-Locomotion Framework for Medical Microrobots

16:40 Invited talk

Daniel Razansky (ETH Zurich)

In Vivo Optoacoustic Navigation of Labeled Microrobots and Cells for Image-Guided Therapy and Super-Resolution Angiography

17:05 Featured talk

Tian Qiu (DKFZ, Dresden)

Wireless Magnetic Localization of Microrobots Toward Clinical Interventions

17:25 Featured talk

Richard Nauber (TU Dresden)

Deep-Learning-Based Photoacoustic Feedback and Coded VCSEL Illumination for Translational Real-Time Microrobot Control

17:30 Poster Session

18:50 Taste of Gipuzkoa Experience

(Conference Networking dinner)



Friday 16 October Medical Microrobotics & Tech Transfer

9:00 Session 5 Cell-Based Microrobotics

9:05 Keynote talk

Li Zhang (CUHK)

Biophysics-informed design of biohybrid microrobots

9:45 Invited talk

Simone Schuerle (ETH Zurich)

Engineering Synthetic and Biohybrid Medical Microrobots for Targeted Delivery and Acoustic Sensing

10:10 Contributed talk

Sylain Martel (Ecole Polytechnique de Montreal)

Targeting tumour hypoxic zones with magneto-aerotactic bacterial microrobots

10:25 Contributed talk

Songsong Tang (University of Science and Technology of China)

Biohybrid Micro/Nanorobots for Precision Therapy

10:40 Featured talk

Rana Ajeeb (CIC nanoGUNE)

Magnetic CAR-TCell Microrobots to Enhance Cell Accumulation and Retention in Solid Tumors

11:00 Coffee break & Posters

11:25 Session 6 Medical Applications II

11:30 Invited talk

Wei Gao (Caltech)

Synthetic Medical Micro/Nanorobots for In Vivo Biomedical Applications

11:55 Contributed talk

Tohid Didar (McMaster University)

Medical Micro- and nano-robots for active and targeted phage delivery in respiratory infections

12:10 Contributed talk

Paul Wrede (ETH Zurich)

Biodegradable Acoustic Microrobots for Rapid Imaging-Guided Thrombotic Lesion Reperfusion

12:25 Contributed talk

Florian Fage (Movalife Microrobotics)

Bridging Microfluidics and Optical Microrobotics for Biomimetic Sperm Selection and Assisted Fertilization

12:40 Contributed talk

Hemin Pan (University of Bern)

Sonotweezers: Multiscale Reconfigurable In Vivo Manipulation in Model Organism

12:55 Lunch & Poster

14:15 Session 7 Medical Applications III

14:20 Keynote talk

Daniel Ahmed (University of Bern)

Translating Ultrasound Microrobots and Microtechnologies from Preclinical Models towards Clinical Applications



14:50 Contributed talk

Zesheng Li (Harbin Institute of Technology)

Magnetically Actuated and Enzyme-Functionalized Flask-Shaped Nanorobots for Active Mucus Penetration and Ferroptosis Blockade in Ulcerative Colitis

15:05 Contributed talk

Apabrita Mallick (VSB - Technical University of Ostrava)

Magnetically Actuated Micro/Nanorobots Enabling Biofilm Eradication and Catalytic Transformations Across Space, Biomedical, and Chemical Environments

15:20 Coffee break

15:45 Keynote talk

Samuel Sánchez (ICREA/IBEC)

Therapeutics in Motion

16:25 **Lightning start-up pitches**

- Edison Genera (Movalife Microrobotics)
- Shanmukh Srinivas (Theranautilus)
- Javier Plou (Prospect Biotech)
- Cornel Dillinger (SonoStent)
- Endika de la Iglesia (Gaiker Technology)
- Mato Knez (Novanano)
- Valentin Gantenbein (Swiss Vascular)

17:00 Awards / Wiley Intervention – Special Issue of the Conference

17:15 Matchmaking, brainstorming & roadmapping (Break-up groups on selected topics)

Tentative topics:

Group 1: From Lab to Patient: Clinical Translation of Medical Microrobots

What is needed to bring medical microrobots into first-in-human studies?

Group 2: Manufacturing, Scalability and Quality Assurance

How can we manufacture microrobotic technologies at clinically and commercially relevant scales?

Group 3: Regulatory Pathways and Market Access

How do we navigate regulation, reimbursement, and adoption?

Group 4: Synergies Between Medical Microrobotics and Advanced Therapies

How can microrobotics accelerate the clinical impact of cell, gene, and regenerative therapies?

Group 5: Innovation, Technology Transfer and Venture Creation

How do we transform promising research into successful clinical and commercial ventures?

18:15 Closing remarks

Visit to the Aquarium (included)