

WEDNESDAY, SEPT. 18

EIC ELMs Portfolio Symposium

Chair: Wilfried Weber and Marie-Eve Aubin-Tam

08:25	Welcome and Introduction Wilfried Weber (Scientific Director of INM) and Orsolya Symmons (EIC Health Biotech Programme Manager)
08:35	Keynote Engineered living materials: options for agency Jamie Davies; University of Edinburgh, GB
09:05	Microbially-grown living therapeutic and living regenerative materials Marie-Eve Aubin; Delft University of Technology, NL and Tom Ellis; Imperial College London, GB (NextSkins Project)
09:25	Towards ELMs for the built environment – opportunities, challenges and applications Phil Ayres; Royal Danish Academy – Architecture, Design, Conservation, Kopenhagen, DK (Fungateria Project)
09:45	3D Bioprinting as a Tool for Developing Engineered Living Materials and Extending the Concept to Mycelium-Based Bioinks Achim Weber; Fraunhofer Institute for Interfacial Engineering and Biotechnology IGB, DE (LoopOfFun Project)
10:05	Coffee Break
10:20	3D printed symbiotic materials for living tissues manufacturing Laura Martinelli; IN society, IT and Massimo Vassalli; James Watt School of Engineering, University of Glasgow, GB (PRISM-LT Project)
10:40	Progress on making a human Mini-Heart Jeroen Leijten; University of Twente, Enschede, NL (BioRobot-Miniheart Project)
11:00	Supervised Morphogenesis: Engineering stem cell derived embryo models Stefan Krauss; Oslo University Hospital, NO (SUMO Project)
11:20	Engineering advanced tissue models from live and artificial cells Oliver Castell; Cardiff University, GB (BioHhOst Project)
11:40	Keynote Living Materials Programmed by Life Chao Zhong; Shenzhen Institute of Synthetic Biology, CN
12:10	Closing remarks and Group Photo Wilfried Weber and Barbara Gerratana (EIC Pathfinder Programme Coordination Manager)
12:15	Lunch on-site

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12:50 Welcome by the Organizers

SESSION 1: 'Living Therapeutic Materials' Chair: Aránzazu del Campo

13:00 **Microbially-driven Materials Manufacture and Responsiveness**
Neel S. Joshi; Northeastern University, Boston, US

13:30 **Engineering Cyborg Cells as Dynamic Micromachines**
Cheemeng Tan; UC Davis, US

14:00 **Development and Application of Microbial Therapeutics against Viral Infections**
Irina Spacova; University of Antwerp, BE

14:15 **Living Therapeutic Skin: A Responsive Engineered Living Material for Skin Infection Detection**
Koray Malci; Imperial College London, GB

14:30 **C O F F E E B R E A K**

14:45 **Harnessing probiotic Lactobacillus for Recombinant Protein secretion from Living Therapeutic Materials (LTMs)**
Varun Sai Tadimarri + Marc Blanch Asensio; INM, Saarbrücken, DE

15:00 **Bacteria-based Materials in Cell Engineering**
Manuel Salmerón-Sanchez; University of Glasgow, GB

15:30 **Self-lubricating Living Contact Lens**
Lara Luana Teruel Enrico; INM, Saarbrücken, DE

15:45 **Synthetic Biology as a New Tool in Targeted Therapies: from Nanotechnology to Artificial Cells**
Avi Schroeder; Technion, Haifa, IL

16:15 **A Living Bacterial Patch for Topical Application**
Louise Dupont, Université catholique de Louvain, BE

16:30 **C O F F E E B R E A K**

SESSION 2: 'Microbes in Confinement' Chair: Aránzazu del Campo

17:00 **Emergent functions of bacterial biofilms**
Knut Drescher; Basel University, CH

17:30 **Advanced fluorescence microscopy to understand the interactions between bacteria and materials**
Cristina Flors; IMDEA Nanoscience, Madrid, ES

17:45 **Geometry and Mechanics of Bacterial Microcolonies**
Luca Giomi; Leiden University, NL

18:15 **P O S T E R S E S S I O N W I T H F I N G E R F O O D**
19:30

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SESSION 2: 'Microbes in Confinement (contd.)' Chair: Wilfried Weber

9:00	Getting Cells into Engineered Living Materials and Keeping them Alive Christopher J. Hernandez; UC San Francisco, USA
9:30	How mechanical forces shape the structure and dynamics of bacterial biofilms Isabelle Wielert; University of Cologne, DE
9:45	Molecular Assembly of Living Materials Seunghyun Sim; University of California, Irvine, USA
10:15	C O F F E E B R E A K

SESSION 3: 'ELM Co - Cultures' Chair: Thorsten Mascher

10:30	Synthesis of Artificial Cells and Engineering of Living Cells by Biocatalytic Radical Polymerizations Nico Bruns; Technical University of Darmstadt, DE
11:00	Fabrication of Self-Dyeing Bacterial Cellulose Leather through a One-Pot Co-Culturing Approach Katie Gilmour; Northumbria University, UK
11:15	Bioprinting Functional Living Materials based on Granular Hydrogels Ziyi Yu; Nanjing Tech University, CN
11:45	Fabrication of Living Materials by Programmed Bacteria Zhoujun Dai; SIAT, Shenzhen, CN
12:15	Engineering Layered Mixed-Trophy Microbial Consortia in Hydrogel Scaffolds to Mimic and Analyze Metabolic State in Microbial Mats Christian Danneberg; University Leipzig, DE
12:30	L U N C H B R E A K

SESSION 4: 'Enhanced Functions with ELM' Chair: Marie-Eve Aubin-Tam

13:30	Using Synthetic Biology to Engineer Living Electronics across Scales Joshua Atkinson; Princeton University, US
14:00	Engineering Bacteria to Grow into and Communicate with Materials Caroline Ajo-Franklin; Rice University, Houston, US
14:30	Bacterially Grown Materials with Dormant Programmable Functionality Franka van der Linden; Delft University of Technology, NL
14:45	Improving Control of Biomineralization in Engineered Living Materials Chelsea Heveran; State University, Montana, US
15:15	User-friendly ELM Biosensors to Monitor Agroindustrial Processes Lorenzo Pasotti, University of Pavia, IT
15:45	C O F F E E B R E A K

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Roundtable on driving change towards Living Materials adoption

16:30 18:30	Moderation: Elena Bondareva, Founder Vivit Group Worldwide; San Fransisco, USA & Shrikrishnan Sankaran, Head Research Group Bioprogrammable Materials; Saarbrücken, GER <ul style="list-style-type: none">– Michael Firgens, Founder MF Biotech, Berlin DE– Melanie Fessel, Principal of TerreformX Europe and Professor at the RheinMain University of Applied Sciences, Wiesenbaden, DE– Johann Bauerfeind, Burg-Halle Biolab and Co-Founder Solaga; Berlin, DE– Caroline Kurtz, CDO Synlogic Therapeutics, Cambridge, US– Scott Walper, Science Director, US Office of Naval Research Global, London, GB– Martyn Dade-Robertson, Professor for Architecture and Built Environment, Northumbria University, Newcastle upon Tyne, GB
19:30	CONFERENCE DINNER – Saarrondo

FRIDAY, SEPT. 20

SESSION 5: 'Algal ELMs' Chair: Shrikrishnan Sankaran

9:00	Engineered Living Devices and Materials for Ultrasensitive Mechanoluminescence Shengqian Cai; UC San Diego, US
9:30	Overcoming Gas-cell Mass transfer Limitations during Gas Treatment via Engineered Biofilms Raúl Muñoz; University of Valladolid, ES
10:00	Engineering Living Solar Cells Jenny Zhang; University of Cambridge, GB
10:30	Engineering Phototrophic (and other) Biofilms Robin Gerlach; State University Montana, US
11:00	ELM's Driven by Cyanobacterial Engineering Debika Datta; UC San Diego, US
11:15	COFFEE BREAK

SESSION 6: 'ELM fabrication' Chair: Aránzazu del Campo

11:45	Proliferation-Driven Function in Engineered Living Materials Taylor Ware; Texas A&M, College Station, US
12:15	Genetic Design of Living Materials Anton Igorevich Kan; ETH Zurich, CH
12:30	De Novo Engineered Living Materials from Bacteria Sara Molinari; University of Maryland, US
13:00	Directed Evolution of Microorganisms for Engineered Living Materials Julie Laurent; ETH Zurich, CH
13:15	Poster Award and Closing Remarks
13:30	LUNCH ON SITE OR TO GO