

Kick-Off Workshop

Living, Adaptive and Energy-autonomous Materials Systems (livMatS)

Thursday, September 26th 2019

Program

09:00	Coffee and Informal Welcome
09:30	Prof. Dr. Jürgen Rühle Welcome and Short Overview of the Cluster
10:00	Research Area A: Energy Autonomy Prof. Dr. Stefan Kaskel, Technical University of Dresden (TUD) Porous Energy Materials: From Fundamentals to Applications
10:45	Prof. Dr. Birgit Esser, livMatS Organic Redox Polymers as Battery Cathode Materials with High Cycling Stabilities and Rate Performance
11:15	Coffee Break and Poster Session
11:30	Research Area B: Adaptivity Prof. Dr. Arri Priimägi, Tampere University of Technology Towards Autonomous, Adaptive, and (Re)programmable Photomechanical Actuators
12:15	Prof. Dr. Hans Zappe, livMatS LCEs for Tunable Optics
12:45	Lunch Break and Poster Session
13:45	Research Area C: Longevity Dr. Bas Overvelde, FOM Institute for Atomic and Molecular Physics (AMOLF) Embedding Fluidic Logic and Self-Learning in Soft Robotic Matter
14:30	Prof. Dr. Chris Eberl, livMatS Implementation of Adaption and Longevity by Means of Hierarchical Biological and Technical Materials
15:00	Prof. Dr. Gunther Neuhaus, University of Freiburg Welcome by Vice-President for Research and Innovation
15:15	Coffee and Poster Session
15:30	Research Area D : Sustainability and Societal Implications Dr. Peter Saling, Director Sustainability Methods at BASF Sustainability Assessment as Basis for Decision-Making in Materials Selection – Combining Social, Environmental and Costs Aspects
16:15	Prof. Dr. Rainer Grießhammer, livMatS Methodologies and Societal Background for Sustainability Analysis and Evaluation
16:45	Coffee and Poster Session
17:15	Research Areas A – D: Generation of Technology Demonstrators Prof. Dr. Barbara Mazzolai, Istituto Italiano di Tecnologia Robots that Grow Like Plants
18:30	Prof. Dr. Thomas Speck, livMatS Lessons from Plants for a New Generation of Soft Robots
19:00	Walking Dinner and Poster Session

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Guest Speakers

Prof. Dr. Stefan Kaskel

Stefan Kaskel studied chemistry and received his Ph.D. degree in 1997 at Eberhard Karls University, Tübingen, in solid state chemistry. As a Feodor-Lynen Fellow of the Alexander von Humboldt foundation he worked at Ames Laboratory, USA, on intermetallic compounds from 1998 to 2000. From 2000 to 2004 he was a group leader at the Max-Planck-Institut für Kohlenforschung in Mülheim a.d. Ruhr and completed his habilitation at Ruhr University Bochum in the area of heterogeneous catalysis. In 2004 he became full professor for Inorganic Chemistry at Technical University Dresden. Since 2008 he is also working part time for Fraunhofer IWS, Dresden as a business field manager Chemical Surface and Reaction Technology.

Prof. Dr. Arri Priimägi

Arri Priimägi received his Master of Science and Technology from the Tampere University of Technology, Finland, in 2004 and his Doctor of Science and Technology from the Helsinki University of Technology in 2009, both with distinction. After positions at the Tokyo Institute of Technology from 2010 to 2012 and the Politecnico di Milano, Italy, from 2012 to 2014, among others, he became a tenure track professor in the topical area of Supramolecular Chemistry at the Laboratory of Chemistry and Bioengineering at the Tampere University of Technology in 2014. Since 2019, he has been a Full Professor at the Faculty of Engineering and Natural Sciences at Tampere University.

Dr. Bas Overvelde

Johannes T.B. (Bas) Overvelde started as a tenure-track Group Leader at the FOM Institute for Atomic and Molecular Physics (AMOLF) in the Netherlands in 2016, where he started the Soft Robotic Matter Group. His group focusses on the design, fabrication and fundamental understanding of mechanical metamaterials that are capable of autonomously adapting to – and even harnessing – variations in their environment. Overvelde received both his BSc and MSc degrees at the TU Delft, Netherlands, cum laude, and after receiving a Fulbright grant in 2012, in April 2016 Overvelde finished his PhD in Applied Mathematics at Harvard University.

Dr. Peter Saling

Peter Saling is currently Director Sustainability methods at BASF. He studied chemistry at the University of Göttingen. After his PhD thesis in 1993, he joined BASF. After the first position as researcher, he changed within BASF to the division of environment, health and safety. He started there with the development of the Eco-Efficiency Analysis together with the German Consultant Roland Berger and Partners in 1997. He was project leader for the development and integration of social aspects into the sustainability analysis named SEEBalance. From 2007 to 2013 he was the Director of Eco-Efficiency Analysis and of Sustainability Evaluation within Sustainability Strategy department of BASF. Now he is responsible as Director for the Sustainability methods of BASF worldwide.

Prof. Dr. Barbara Mazzolai

Barbara Mazzolai is Director of the Center for Micro-BioRobotics (CMBR) since 2011. She graduated (MSc) in Biology with Honours at the University of Pisa, Italy, and received the Ph.D. in Microsystem Engineering from the University of Rome Tor Vergata. She was Assistant Professor in Biomedical Engineering at Scuola Superiore Sant'Anna (SSSA) in Pisa from 1999 to 2009. From 2009 to 2011 she was Team Leader at the CMBR. She was Deputy Director for the Supervision and Organization of the IIT Centers Network from 2012 to 2017. From January to July 2017 she was Visiting Faculty at Aerial Robotics Lab, Department of Aeronautics, of Imperial College of London.