



INTEGRATION SMART MATERIALS IN SOFT ROBOTICS

16 – 18 MARCH 2021, SMART TRAINING EVENT 2@EMPA

TALKS
DISCUSSIONS
PRESENTATIONS

16 March 2021

WELCOME TO SMART TRAINING EVENT 2

9:00 – 09:15 **Frank Clemens:** Welcome and short overview EMPA

9:15 – 09:30 **Bram Vanderborgh:** SMART Project

SESSION 1 'ELASTOMERS': Frank Clemens

9:30 – 10:30 **Dorina Opris:** Functional elastomers

10:30 – 11:30 Coffee Break

11:30 – 12:30 **Frank Nüesch:** Printable and stretchable electronics

12:30 – 13:30 Lunch

SESSION 2 'NANOPARTICLES AND FUNCTIONAL FILTERS': Guy Van Assche

13:30 – 14:30 **Thomas Graule:** Synthesis of Nanoparticles and surface modification

14:30 – 15:30 **Frank Clemens:** Introduction to Sensing Materials Part II – Magnetic Soft Sensors and Actuators

15:30 – 16:00 Coffee Break

Session 3 'EAP BASED APPLICATIONS': Dorina Opris

16:00 – 17:00 **Gabor Kovacs:** Industrial manufacturing of EAP transducers

17:00 – 18:00 **Herb Shea:** Soft Machines Driven by Electrostatic Forces

SESSION 7 'SOFT ROBOT CONTROLLING': Fumiya Iida

09:00 – 10:00 **Egidio Falotico:** Model-free controllers for soft manipulators

10:00 – 10:30 Coffee Break

10:30 – 11:30 **Thomas George:** Learning based modelling and control of nonlinear time-variant materials

11:30 – 12:30 **Robert Shepherd:** Self-healing Photomechanical Systems

12:30 – 13:30 Lunch

REGISTRATION WEB-SITE:

<http://www.smartitn.eu/training-events/smart-workshop-2/>

17 March 2021

SESSION 4 'SELF-HEALING MATERIALS AND ROBOT APPLICATIONS': Sandra Schlögl

9:00 – 10:00 **Sandra Schlögl:** Additive manufacturing with vitrimers

10:00 – 10:30 Coffee Break

10:30 – 11:30 **Bilge Baytekin:** Stimuli responsive materials for plant robots

11:30 – 12:30 **Joost Brancart/ Seppe Terry:** Combined mechanisms for self healing soft sensors and actuators

12:30 – 13:30 Lunch

SESSION 5 'SCIENTIFIC SKILLS 1': Bilge Baytekin

13:30 – 14:30 **Jochen Bihn:** Open Access Publications

14:30 – 15:30 **Anusch Bachofner:** FAIR Data principle and openBIS system – Data management requested from public funding agencies

15:30 – 16:00 Coffee Break

SESSION 6 'SCIENTIFIC SKILLS 2': Tonny Bosman

16:00 – 17:00 **Andreas Kündig:** Basics on patent applications

17:00 – 18:00 **Pietro Lura/Manfred Heuberger:** Bibliometrics and writing a good paper

18 March 2021

SESSION 8 'SOFT AND BIOMIMETIC ROBOTS 1': Matteo Cianchetti

13:30 – 14:30 **Mirko Kovac:** Physical artificial intelligence

14:30 – 15:30 **Ardian Jusufi:** Soft active materials enable transport in/of fluids, proprioceptive sensing, and mechanical feedback in biomimetic robots

15:30 – 16:00 Coffee Break

SESSION 8 'SOFT AND BIOMIMETIC ROBOTS 1': Maarja Kruusmaa

16:00 – 17:00 **Gilles Decroly:** Programmable Stimuli-Responsive Actuators for Complex Motions in Soft Robotics

17:00-18:00 **Christoph Keplinger:** HASEL Artificial Muscles—Versatile High-Performance Actuators for Bioinspired Robotics

NOTE THE TIMINGS GIVEN IN CEST
(Central European Summer Time)

