

International Colloquium on Interactive Fiber Rubber Composites

September 28-29, 2021

PROGRAM

ONLINE EVENT

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Organization & Coordination:

TU Dresden, Institute of Textile Machinery and High Performance Material Technology

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Research Training Group 2430 "Interactive Fiber Rubber Composites"

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09:15 – 09:30	Welcome address Prof. Dr. Chokri Cherif <i>TU Dresden, Institute of Textile Machinery and High Performance Material Technology, Germany</i>
09:30 – 10:00	Derivation of expressions for electrical induced stress states and deformations in dielectric materials Dipl.-Ing. Sascha Pfeil – <i>TU Dresden, Institute of Solid State Electronics, Germany</i>
10:00 – 10:30	Dielectric elastomer actuator (working title) Prof. Dr.-Ing. Stefan Seelecke <i>Universität des Saarlandes, Germany</i>
10:30 – 11:00	Development of filamentous actuators and sensors based on DEA Dipl.-Ing. Henriette Probst <i>TU Dresden, Institute of Textile Machinery and High Performance Material Technology, Germany</i>
11:00 – 11:30	COFFEE BREAK & NETWORKING
11:30 – 12:00	Electro-active soft actuators without using metals Prof. Mitsumi Kimura <i>Shinshu University, Ueda, Japan</i>
12:00 – 12:30	Textile integrated composites: Study on their sensoric and adaptive properties M.Sc. Vikram G. Kamble <i>TU Dresden, Institute of Materials Science & Leibniz Institute of Polymer Research Dresden e.V., Germany</i>
12:30 – 13:00	3D printing of magneto-active polymers Dr. Anil K Bastola <i>University Nottingham, United Kingdom</i>
13:00 – 13:30	Thermal conductivities of rubbers from molecular dynamics simulations and steady-state measurements M.Sc. Alexandr Vasilev <i>TU Dresden, Institute of Power Engineering, Germany</i>
13:30 – 15:00	LUNCH BREAK & POSTERSESSION & NETWORKING
15:00 – 15:30	Surface modification/interface engineering as tool for controlling active composite properties Prof. Jyrki Vuorinen <i>Tampere University, Finland</i>
15:30 – 16:00	Mechanics and wrinkling of soft dielectric plates Prof. Michel Destrade <i>National University of Ireland Galway, Ireland</i>
16:00 – 16:30	Computational modelling of thermo-electro-mechanical interactions in electro-active polymers M.Sc. Anas Kanan <i>TU Dresden, Institute of Structural Analysis, Germany</i>
16:30 – 17:00	Microscopic and macroscopic instabilities in magnetorheological elastomers with periodic microstructures M.Sc. Elten Polukhov <i>Universität Stuttgart, Germany</i>
17:00 – 18:00	GET TOGETHER & NETWORKING

09:00 – 09:30	<p>Development of interactive fiber rubber composites with integrated shape memory alloys Dipl.-Ing. Felix Lohse <i>TU Dresden, Institute of Textile Machinery and High Performance Material Technology, Germany</i></p>
09:30 – 10:00	<p>Dielectric elastomer transducers, from stretching brain cells to motion capture Dr. Samuel Rosset <i>The University of Auckland, New Zealand</i></p>
10:00 – 10:30	<p>Hydrogen gas-induced fracture of rubber materials Dr. Junichiro Yamabe – <i>Fukuoka University, Japan</i></p>
10:30 – 11:00	<p>Field-induced transversely isotropic behavior of ellipsoidal magnetoactive elastomers M.Sc. Sanket Chougale <i>TU Dresden, Institute of Materials Science & Leibniz Institute of Polymer Research Dresden e.V., Germany</i></p>
11:00 – 11:30	<p>COFFEE BREAK & NETWORKING</p>
11:30 – 12:00	<p>Tissue-mimetic mechanical properties of magnetoactive elastomers based on bottlebrush polymer networks Prof. Elena Kramarenko <i>Moscow State University, Russia</i></p>
12:00 – 12:30	<p>Identification, modeling and control of fiber-elastomer composites embedded with shape memory alloys M.Sc. Najmeh Keshtkar – <i>TU Dresden, Institute of Control Theory, Germany</i></p>
12:30 – 13:00	<p>Flexible structures from a control engineering point of view Prof. Frank Woittennek <i>Institute of Automation and Control Engineering, UMIT - Private University for Health Sciences, Medical Informatics and Technology GmbH, Hall in Tirol, Austria</i></p>
13:00 – 14:30	<p>LUNCH BREAK & POSTERSESSION & NETWORKING</p>
14:30 – 15:00	<p>Technical Applications of Shape Memory Actuators - Innovative Drive Concept Dr.-Ing. Paul Motzki <i>ZeMA, Zentrum für Mechatronik und Automatisierungstechnik gemeinnützige GmbH, Saarbrücken, Germany</i></p>
15:00 – 15:30	<p>Equivalent circuit models of interactive fiber rubber composites Dipl.-Ing. Johannes Mersch – <i>TU Dresden, Institute of Solid State Electronics & Institute of Textile Machinery and High Performance Material Technology, Germany</i></p>
15:30 – 16:00	<p>Multifunctional soft robotic transducers Dr. Majid Taghavi – <i>Imperial College London, United Kingdom</i></p>
16:00 – 16:30	<p>COFFEE BREAK & NETWORKING</p>
16:30 – 17:00	<p>Fabrication, characterization and validation of electrodes for dielectric elastomer actuators M.Sc. Konrad Katzer – <i>TU Dresden, Institute of Materials Science, Germany</i></p>
17:00 – 17:30	<p>4D Materials Science – Real-Time X-ray Microscopy for Characterizing and Understanding Material Behavior Prof. Nikhilesh Chawla <i>School of Materials Engineering, Purdue University, West Lafayette, IN, USA</i></p>
17:30 – 18:00	<p>Novel synthesis approach for path-generating compliant mechanisms with embedded shape memory alloys M.Sc. Joanna Wollmann <i>TU Dresden, Institute of Lightweight Engineering and Polymer Technology, Germany</i></p>
18:00 – 18:05	<p>Closing remarks Prof. Dr. Chokri Cherif <i>TU Dresden, Institute of Textile Machinery and High Performance Material Technology, Germany</i></p>