

APMM 2019
16-19 September 2019
Dresden, Germany



Conference Program, Monday, 16.09.2019, Tutorials

10:30 - 12:50	Hydrogels: Materials, Applications, Modeling I
10:30 - 10:35	G. Gerlach: <i>Welcome</i>
10:35 - 11:20	D. Kuckling: <i>Tayloring of hydrogels for targeted sensor properties</i>
11:20 - 12:05	J. Vancso: <i>Smart, non-ergodic hydrogels</i>
12:05 - 12:50	A. Fery: <i>AFM for measuring interactions and mechanics</i>
12:50 - 14:00	Lunch Break
14:00 - 15:30	Hydrogels: Materials, Applications, Modeling II
14:00 - 14:45	A. Richter: <i>Technology, concepts and design of hydrogel-based microfluidics</i>
14:45 - 15:30	J. Thiele: <i>Microfluidics for polymer material design</i>
15:30 - 15:45	Coffee Break
15:45 - 18:05	Electroactive Polymers: Materials and Modeling
15:45 - 16:30	M. Henke: <i>Fundamentals of multifunctional dielectric elastomers</i>
16:30 - 17:15	M. Porfiri: <i>Modeling actuation and sensing of ionic polymer metal composites</i>
17:15 - 18:00	J. Madden: <i>Ion transport in gels and the effect of pressure</i>
18:00 - 18:30	T. Wallmersperger: <i>Chemo-electro-mechanical modeling of ionic EAP</i>
18:30 - 18:35	G. Gerlach: <i>Closing remarks</i>
18:50	Get Together (incl. snack) for all Participants

Conference Program, Tuesday, 17.09.2019

09:00 - 10:50	Active Polymeric Materials and Devices
09:00 - 09:10	G. Gerlach: <i>Welcome</i>
09:10 - 09:40	I. Anderson: <i>Capacitive strain sensors for robotics and humans (invited)</i>
09:40 - 10:10	M. Möller: <i>Can a material perform as an engine?</i>
10:10 - 10:30	M. Levien: <i>On the fabrication of stimuli-responsive hydrogel coatings by plasma polymerization</i>

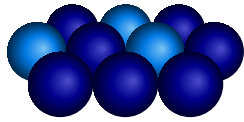
10:30 - 10:50	J. Erfkamp: <i>Piezoresistive chemical and biochemical sensors based on stimuli-responsive hydrogels</i>
10:50 - 11:20	Coffee Break
11:20 - 12:50	Active Polymeric Materials I
11:20 - 11:50	S. Seiffert: <i>Dynamics and relaxation of supramolecular polymer-network gels in view of their microstructure (invited)</i>
11:50 - 12:10	D. Franke: <i>Porous hydrogels from surfactant-based template solutions</i>
12:10 - 12:30	D. Eigel: <i>Microscale cryogels as devices for focal therapeutic delivery</i>
12:30 - 12:50	N. Hauck: <i>Droplet-assisted microfluidic fabrication and characterization of multifunctional polysaccharide microgels formed by ugi four-component reaction</i>
12:50 - 13:00	Group Picture at the Hotel Foyer
13:00 - 14:00	Lunch Break
14:00 - 15:30	Active Polymeric Materials II
14:00 - 14:30	C. Scholz: <i>Poly(amino acid)s as active polymeric materials in sensing and chromatographic applications (invited)</i>
14:30 - 14:50	S. Gupta: <i>Water desorption from hydrogel films: effect of geometrical confinement</i>
14:50 - 15:10	L. Selzer: <i>Analysis of the mechanical behavior and microstructure of a magnetorheological hydrogel</i>
15:10 - 15:30	K. Goh: <i>Modeling the catalytic activity of stimuli-responsive core-shell nanoreactors</i>
15:30 - 17:30	Poster Session

Conference Program, Wednesday, 18.09.2019

09:00 - 10:50	Microfluidics, Nanoreactors
09:00 - 09:30	A. Richter: <i>Chemo-fluidics - prospects and challenges</i>
09:30 - 09:50	F. Obst: <i>Enzymatic cascade reactions in compartmentalized microfluidic devices</i>
09:50 - 10:10	P. Berg: <i>Polymer networks as carrier for organocatalysts inside microfluidic devices</i>

10:10 - 10:30	M. Männel: <i>3D-printed microfluidic devices for emulsion formation</i>
10:30 - 10:50	A. Beck: <i>Hydrogel-based components and logic gates in planar microfluidic cascades</i>
10:50 - 11:20	Lunch Break
11:20 - 12:50	Modeling and Simulation
11:20 - 11:50	M. Porfiri: <i>Modeling ionic polymer metal composites: where we are and where we should be (invited)</i>
11:50 - 12:10	A. Ehrenhofer: <i>Modeling and simulation of stimulus-active polymeric composite membranes</i>
12:10 - 12:30	P. Mehner: <i>Lumped multi-domain model of microchemomechanical fluidic components</i>
12:30 - 12:50	B. Ehrke: <i>Numerical and experimental investigation of the volume fraction-dependent mechanical behavior of polyelectrolyte gels</i>
12:50 - 14:00	Lunch Break
14:00 - 15:40	Actuators and Sensors
14:00 - 14:30	H. Schlaak: <i>Maturity of dielectric elastomer transducers - technology, properties and applications (invited)</i>
14:30 - 15:00	J. Madden: <i>Pressure sensing gels: Piezo-ionic hindrance model (invited)</i>
15:00 - 15:20	A. Kumar: <i>Impact of tuning solvent characteristics on self-folding of biopolymer thin films</i>
15:20 - 15:40	S. Forg: <i>Mussel-inspired stimuli-responsive PNIPAM-microgels</i>
15:40 - 16:10	Coffee Break
16:10 - 17:20	Hydrogel Surfaces and Sensor Platforms
16:10 - 16:40	J. Vancso: <i>How can "smart" organometallic hydrogels learn and forget (invited)</i>
16:40 - 17:10	D. Kuckling: <i>Responsive dually cross-linked networks (invited)</i>
17:10 - 17:30	M. Rossi: <i>Analytical chemo-mechanical investigation of polymer gels under swelling/deswelling cycles</i>
18:30 - 22:00	Dinner at the Restaurant "Pulverturm"





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Conference Program, Thursday, 19.09.2019

09:00 - 10:30 Polymers for Actuator Applications

09:00 - 09:30 T. Hellweg: *Smart microgel based surfaces and free standing membranes (invited)*

09:30 - 09:50 S. Binder: *A force compensation sensor based on a bi-sensitve semi-interpenetrating polymer network*

09:50 - 10:10 P. Bakardjiev: *Modelling of dynamic dielectric elastomer actuators*

10:10 - 10:30 N. Gulnizkij: *Design and verification of a bistable humidity sensor switch*

10:30 - 11:00 Coffee Break

11:00 - 12:40 Hydrogel-based Sensors

11:00 - 11:30 M. Mailland: *An integrated microfluorimeter interface to fluorescent hydrogel-based analyte sensors (invited)*

11:30 - 11:50 B. Achour: *Analytical modelling and finite element simulation, a predicting and optimization tools for SAW sensor sensitivity enhancement*

11:50 - 12:10 S. Baroomand: *A smart hydrogel sensing concept based on optical image sensors*

12:10 - 12:30 C. Kroh: *Hydrogel-based plasmonic sensor substrate*

12:30 - 12:40 G. Gerlach: *Closing remarks*


Important Informations:

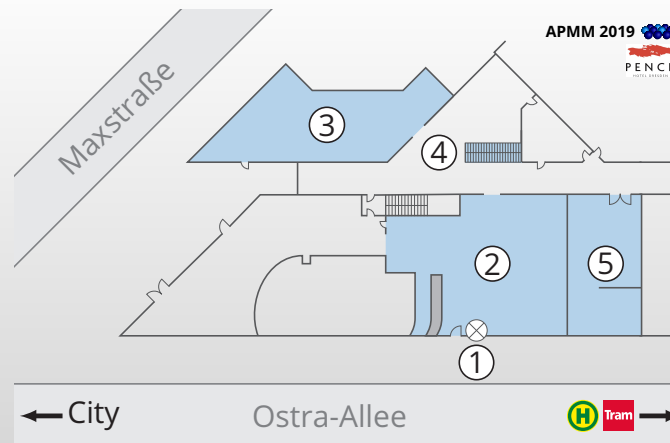
Both oral and poster presentations of the APMM conference can be published as extended papers in a special issue "Selected papers from the APMM 2019 - Active Polymeric Materials and Microsystems Conference" of the MDPI journal Micromachines (https://www.mdpi.com/journal/micromachines/special_issues/APMM_2019). We cordially invite you to make use of it. Deadline for manuscript submission is 01 December 2019.

On tutorial day, we are planning an art event. You can participate in the "Best Tutorial Notes Contest". We will award the best tutorial notes of our participants in two categories: best artistic design and best technical content. The art event is part of an exhibition opening on "Cribbing allowed - Simply beautiful crib sheets" in the Penck Hotel taking place in conjunction with our APMM Conference on that Monday at 19:30 h in Room Y. We continue to serve drinks and snacks.

The Abstract Book and Tutorial Material can be downloaded from our conference website (<https://tu-dresden.de/ing/elektrotechnik/ife/graduierntenkolleg/apmm-2019> or use QR-Code).



- ① Entrance: Ostra-Allee 33, 01067 Dresden
- ② Hotel Lobby: APMM Registration
- ③ Zoom Z: Lunch/Dinner
- ④ 1st floor: Tutorials, Conferences, Sessions
- ⑤ Room Y: Poster Session/Art Event
-  Public Transport: "Kongresszentrum/Haus der Presse"
Tram - Lines: 4, 6, 11



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Program

