



Polymer Brushes: New Developments and Perspectives in Experiment, Theory and Applications

October 11 to 13, 2021; Virtual Meeting

www.brushes-dresden.de

ABOUT THE CONFERENCE

Polymer brushes composed of macromolecules grafted to a substrate represent a unique way to modify surface properties such as lubrication, tack, and adhesion.

Typically, a thin polymer layer is obtained in the range of several ten to hundred nanometers for synthetic polymers and up to micrometers for biopolymers. Due to the unique feature of long flexible polymers, which combine liquid- and solid-state properties, such brush-layers form surface-bound liquid phases composed of the polymer and solvent, and may contain cosolvents, cosolutes, counter-ions and salt-ions and other molecules. Combining these properties in addition to polymer composition and architecture spawns a plethora of possible applications. On the other hand, the well-defined structure of the brush where each macromolecule is bound to the surface makes the system attractive for theoretical approaches and computer simulations.

Challenges for ongoing and future research are the understanding of the roles of chain architecture, chemical sequences, electrostatic interactions, volume phase transitions induced by solvent mixtures, the step from macroscopic flat substrates to other geometries and non-equilibrium properties of brushes.

TOPICS

- Stimuli-responsive and switchable brushes
- Phase transitions in polymer brushes
- The role of polymer architecture
- Applications of brushes in technology and in biological environments
- Chemistry and physical chemistry of polymer brushes
- The role of geometry and molecular brushes

CONFIRMED INVITED SPEAKERS

Matthias Ballauff (FU Berlin, Germany)
Sissi de Beer (University of Twente, The Netherlands)
Edmondo M. Benetti (ETH Zürich, Switzerland)
Oleg Borisov (Université de Pau et des Pays de l'Adour, France)
Anna Bratek-Skicki (Vrije Universiteit Brussel, Belgium)
Andrey Dobrynin (University of North Carolina, USA)
Jan Genzer (North Carolina State University, USA)
Harm Anton Klok (EPFL, Switzerland)
Holger Merlitz (IPF Dresden, Germany)
Lukas Michalek (Queensland University of Technology, Australia)
Fabien Montel (ENS de Lyon – CNRS, France)
Marcus Müller (Universität Göttingen, Germany)
Jaroslav Paturej (University of Silesia, Poland)
Jürgen Rühle (Universität Freiburg - IMTEK, Germany)
Friederike Schmid (Universität Mainz, Germany)
Sergei Sheiko (University of North Carolina, USA)
Philipp Vana (Universität Göttingen, Germany)
Regine von Klitzing (TU Darmstadt, Germany)

ORGANIZERS

Jens-Uwe Sommer (IPF Dresden, DE)
Andreas Fery (IPF Dresden, DE)
Sergiy Minko (University of Georgia, USA)

VENUE

The Polymer Brushes Conference 2021 will take place as a **web-based conference** organized by the Leibniz-Institut für Polymerforschung Dresden e. V.

IMPORTANT DATES

Abstract Submission Deadline: 16.08.2021
Early Registration Deadline: 13.09.2021

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