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V1_Dec21

International Conference on Programmable Materials

Hybrid Event, 12-14 July 2022, Berlin

Symposium: Polymers with Sequence Control
Chairs: Stefan Reinicke, Filip du Prez, Alexander Böker
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The attempt to realize emerging applications such as sophisticated data storage approaches, adaptive systems/materials or compartmentalized materials for next level catalysis will only be possible when having access to materials showing an enhanced level of functionality. Synthetic protocols to program desired features into polymeric materials thus become increasingly important.

Classic synthesis protocols are limited with respect to both precision and complexity of structure on the molecular level. Precision and complexity, however, are the prerequisites for materials being capable of storing encoded information or forming sophisticated superstructures via self-organization. In recent years, however, quite some progress has been made to overcome these limitations.

The symposium "Polymers with sequence control" will focus on synthetic principles and protocols for polymers with exact sequence control starting from blocks down to the monomeric unit (synthetic analogues to proteins and DNA). Analytic tools for the structural characterization of these polymers will be addressed such as nanopore sequencing and application scenarios such as encoding polymers will be covered, as well as structures showing complex but defined (multi step) self-assembly patterns in spatial and/or temporal dimensions. This will also include dynamic, non-equilibrium systems.

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CLUSTER OF EXCELLENCE PROGRAMMABLE MATERIALS

The Symposium aims at bringing together people from an international research community to present and discuss the latest trends in the field of programmable synthesis including current challenges and future perspectives. It intends to provide inspiration towards so far not realized, bio-inspired applications for synthetic polymeric materials.

Lectures or posters with a half-page abstract can be submitted, which will be evaluated in a scientific selection process.

Why attend?
– Top-class plenary talks
– Five symposia in three parallel sessions with invited talks on the following topics:
  - o Mechanical Metamaterials & Structural and Functional Optimization
  - o Polymers with sequence control
  - o Shape Memory Polymers & Programmable Property Profiles
  - o Design Ideas from nature
  - o Living Materials Systems
– Live and virtual poster presentations
– Panel discussions
– Conference Dinner

Registration and the call for poster presentations will start soon, we will keep you informed.

For further information please check our webpage at www.progmatcon.com

Conference Chairs:
– Prof. Dr. Peter Gumbsch, Fraunhofer IWM
– Prof. Dr. Alexander Böker, Fraunhofer IAP
– Prof. Dr. Chris Eberl, Fraunhofer IWM

Conference Organization: Fraunhofer Cluster of Excellence Programmable Materials, www.cpm.fraunhofer.de

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