

## Venue

Kardinal-Schulte-Haus  
Overather Str. 51, 51429 Bergisch Gladbach  
<https://tagen.erzbistum-koeln.de/ksh/>

## How to get there?

The closest airports are Cologne-Bonn, Düsseldorf and Frankfurt. Then take a train to Cologne Main Station and change to the suburban train 11 (S-Bahn) to Bergisch-Gladbach. After reaching Bergisch-Gladbach you take the bus 227 towards Overath / Moitzfeld. Get off at the bus stop ‚Thomas-Morus-Akademie‘. Taxi from Cologne Main Station: 40 - 50 €; Taxi from Bergisch-Gladbach Train Station: ~20 €

## Registration

The registration fee includes symposium participation, accommodation at the venue and meals (afternoon of April 15 - lunch on April 18, 2018).

Registration fee incl. single room: 550,22 €

Registration fee incl. double room: 450 €

Please visit [www.biogel-mariecurie.eu](http://www.biogel-mariecurie.eu) to register for the conference.

## Posters

We would like to encourage you to submit a poster abstract. We will select approximately 70 posters and 18 posters will be chosen to present their work with a rapid fire talk during the sessions. The posters will enable a good discussion between the senior and young scientists and several breaks will be included to stimulate the discussion. The three top posters will be selected for a poster award.

Please visit [www.biogel-mariecurie.eu](http://www.biogel-mariecurie.eu) to submit a poster abstract. The deadline for abstract submission is March 2, 2018.

## Organizers

Martin Möller, DWI – Leibniz Institute for Interactive Materials & RWTH Aachen University

Stefan Jockenhövel, Institute of Applied Medical Engineering, Helmholtz Institute of RWTH Aachen University & Uniklinik RWTH Aachen

Laura De Laporte, DWI – Leibniz Institute for Interactive Materials

Marie Skłodowska Curie International Training Network Biogel

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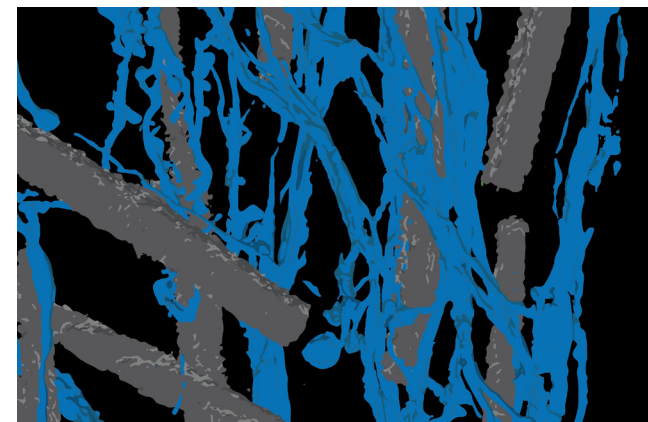


## Contact

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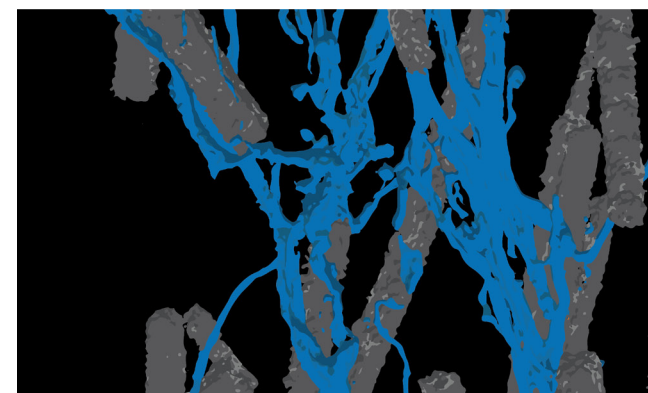
<http://www.biogel-mariecurie.eu>



A Theodore von Kármán  
Discussion Conference  
Materials for Life

# Bioinspired and Biomimetic Hydrogels

April 15 - 18, 2018  
Kardinal-Schulte-Haus  
Bergisch-Gladbach, Germany



# BIOGEL

## Materials for Life

The conference will bring together leading scientists from the fields of bioinspired materials engineering and molecular biology. The highly adaptive complexity of natural tissue remains a challenge, not only regarding the scientific understanding of the signaling pathways and the involved processes, but also for the bioinspired engineering and design of synthetic substitutes and novel active materials.

Natural tissue consists of living cells and an extracellular matrix. Within this network, the activity of the cells is regulated by the topological

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## How far can we proceed in the construction of fully synthetic and biohybrid tissue to engineer biomimetic systems and biomedical materials?

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structure, the transmission of mechanical clues, and the exchange of molecular signals. Synthetic advances in the engineering of hydrogels have provided the means to replace the extracellular matrix or components thereof by artificial hydrogels. The micro and meso-structure as well as the mechanical properties of such hydrogels can be tailored to provide the ligands and signals required for hybridization with living cells and the direction of cell behavior in a controlled manner. Thereby, they offer the advantage of presenting a reduced complexity compared to the natural extracellular matrix and prevent undesired biological reactions intrinsic to the multi-functionality of natural components.

Within this concept, bringing together the advanced knowledge on designing hierarchically

structured hydrogels to understand and mimic the mechanical and chemical signals is a particulate challenge. In addition, mastering spatiodynamic behavior is crucial to design controlled adaptive properties. Therefore, it is highly desired to combine advanced knowledge on the molecular cell signaling mechanisms on one side and synthetic skills, as well as physical understanding of the hydrogel properties on the other side.

## The Conference

This discussion conference will bring together a group of world-leading scientists in this interdisciplinary field of research to discuss and foster exchange of concepts and ideas.

The conference is organized within the tasks of the Marie Skłodowska Curie International Training Network Biogel, which contains academic and industrial partners from 9 different countries to educate young scientists in the development of innovative hydrogel chemistries and systems for biomedical applications.

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## The conference addresses a community of about 100 participants. Ample time will be allocated to discussions in an informal setting, including poster sessions for young scientists and other activities.

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## Confirmed Speakers

**Takuzo Aida**, University of Tokyo, Japan

**Mitsuru Akashi**, Osaka University, Japan

**Esther Amstad**, EPFL Lausanne, Switzerland

**Aránzazu del Campo Bécares**, INM – Leibniz-Institut für Neue Materialien, Saarbrücken, Germany

**Ovijit Chaudhuri**, Department of Mechanical Engineering, Stanford, USA

**Cole A. DeForest**, University of Washington, USA

**Dennis Discher**, University of Pennsylvania, USA

**Benny Geiger**, Weizmann Institute of Science, Rehovot, Israel

**Jürgen Groll**, University of Würzburg, Germany

**Sarah Christine Heilshorn**, Stanford University, USA

**Paul Kouwer**, Radboud Universiteit, Nijmegen, The Netherlands

**Sanjay Kumar**, University of California, Berkeley, USA

**Matthias Lutolf**, EPFL Lausanne, Switzerland

**Virgil Percec**, University of Pennsylvania, USA

**José Carlos Rodríguez Cabello**, BIOFORGE, Universidad de Valladolid, Spain

**Peter Seeberger**, Max-Planck-Institut für Kolloid- und Grenzflächenforschung, Potsdam, Germany

**Tatiana Segura**, University of California, Los Angeles, USA

**Sergei Sheiko**, University of North Carolina, USA

**Joachim Spatz**, Max-Planck-Institut für Intelligente Systeme, Stuttgart, Germany

**Britta Trappmann**, Max Planck Institute for Molecular Biomedicine, Münster, Germany

**Carsten Werner**, Leibniz-Institut für Polymerforschung Dresden e.V., Germany

**Hua Ye**, Institute of Biomedical Engineering, University of Oxford, UK