

MACROMOLECULAR COLLOQUIUM FREIBURG

20 – 22 FEBRUARY 2019

WEDNESDAY, 20 FEBRUARY 2019

Registration desk opens at 11 a.m.

14:00 Opening Remarks

PRASAD SHASTRI

Meeting Chair

Director of the Institute for Macromolecular Chemistry, University of Freiburg

SPECIAL SESSION

Polymers and the Digital Age

Chair: Rolf Mülhaupt

14:10 PAOLO SAMORI (University of Strasbourg, France)

Taming Complexity in Polymer Opto-Electronics: Tailoring Multifunctional Devices and Chemical Sensors

14:40 MAGNUS BERGGREN (Linköping University, Sweden)

Organic Bioelectronics – Nature Connected

15:10 JEAN-FRANCOIS LUTZ (University of Strasbourg, France)

Digital Polymers: Emergence of a New Class of Synthetic Macromolecules

15:30 COFFEE BREAK

16:30 BIRGIT ESSER (University of Freiburg, Germany)

Redox Polymers as Electrode-Active Materials for Organic Batteries

16:50 MICHAEL SOMMER (Chemnitz University of Technology, Germany)

N-type Conjugated Polymers for Organic Transistors, Solar Cells and Thermoelectrics

17:10 KLAUS MEERHOLZ (University of Cologne, Germany)

Solution-Processed Organic Semiconductors and their Applications

17:30 PAUL BLOM (Max Planck Institute for Polymer Research Mainz, Germany)

Charge Transport in Organic Semiconductors

17:50 COVESTRO LECTURE

BERNHARD RIEGER (Technical University of Munich, Germany)

Catalytic Precision Polymerization: Sustainable Materials from Simple Monomers

18:30 GET TOGETHER (Foyer)

THURSDAY, 21 FEBRUARY 2019

Chair: Prasad Shastri

- 9:00 JOHN ROGERS (Northwestern University, USA)
Materials for Flexible, Bio-Integrated Electronics
- 9:40 ALEXANDER BÖKER (Fraunhofer Institute for Applied Polymer Research Potsdam-Golm, Germany)
Programmable Soft Matter: From Active Membranes to Self-Replication
- 10:00 DOMINIK WÖLL (RWTH Aachen University, Germany)
Superresolution Fluorescence Microscopy of Polymer Structures

10:20 INTRODUCTION OF POSTERS

Chair: Felix Schacher

- 1 I. ILIC (MPI of Colloids and Interfaces Potsdam), S. Chaleawler-Umpon, M. Antonietti, C. Liedel
Batteries from Lobster and Vanilla: Polymers from Chitosan and Vanillin as Active Material in Sustainable Batteries
- 2 CH. BAUMANN (DWI - Leibniz Institute for Interactive Materials Aachen), R. Göstl
Tailor-Made Force Probes for Wavelength-Orthogonal Stress-Sensing
- 3 N. HAUCK (Leibniz Institute of Polymer Research Dresden), N. Seixas, S. P. Centeno, R. Schlüßler, G. Cojoc, J. Guck, D. Wöll, L. A. Wessjohann, J. Thiele
Droplet-Assisted Microfluidic Fabrication and Characterization of Multifunctional Polysaccharide Microgels Formed by Ugi Four-Component Reaction
- 4 D. KLINGER (Freie Universität Berlin)
From Striped Ellipsoids to Janus Nanoparticles: Controlling Colloid Shape, Morphology and Function via Phase Separation of Functional Polymers
- 5 Y. BOURGAT (TU Braunschweig), P. Klahn, H. Menzel
Hydrogels for Triggered Drug Release
- 6 A. SCHMID (University of Applied Sciences Dresden), S. Hecht, C. Henning, K. Harre
Influence of Additives on the Properties of Biopolymers
- 7 ST. WIEDMANN (University of Freiburg), T. Trötschler, M. Luitz, M. Werner, S. Gröer, B. Pásztói, B. Kerscher, A. Szabó, J.-F. Lutz, B. Iván, R. Mülhaupt
Thermoresponsive Micelle-Inspired Polymer Ionic Liquids as Compartmentalized Nanosystems and Molecular Shuttles
- 8 T. WALTHER (Chemnitz University of Technology), K. Trommler, A. Seifert, H.-J. Hähnle, Ch. Hamers, St. Spange
Inter- and Intramolecular Reactions of Amino Bearing Polymers in Aqueous Solutions

- 9 R. HOFFMANN (Fraunhofer IFAM, University of Bremen), S. O. Schopf, H. Naatz, V. Baric, L. Mädler, A. Hartwig
Inverse Nanocomposites – High Particle Percolation without Running into Viscosity Problems
- 10 T. GLEEDE (Max Planck Institute for Polymer Research Mainz), Th. Kuckhoff, E. Rieger, M. Wagner, F. Wurm
Living Anionic Polymerization of Aziridines Tolerates Water and Gives Fast Access to Amphiphilic Multi-Block Copolymers
- 11 M. RAISCH (Chemnitz University of Technology), F. Kempe, O. Brüchner, M. Walter, Ch. Gualandi, M. Sommer
Transient Mechanochromic Polymers for Highly Sensitive and Anisotropic Stress Sensors
- 00 INDUSTRY PRESENTATION: MALVERN PANALYTICAL GmbH
- 00 INDUSTRY PRESENTATION: TOSOH BIOSCIENCE
- 12 F. SOBOTTA (Friedrich Schiller University Jena), F. Hausig, J. C. Brendel
Polymerization-Induced Self-Assembly (PISA): Efficient Synthesis of Functional Micelles
- 13 P. HUMMEL (University of Bayreuth), D. S. Reig, Z. Wang, S. Rosenfeldt, B. Graczykowski, G. Fytas, M. Retsch
One Component Silver-Polystyrene Nanocomposites: The Interplay of Thermoplasmonics and Elastic Mechanical Properties
- 14 E. STEIERT (Johannes Gutenberg University Mainz), L. Radi, M. Fach, M. Konhäuser, B. Breitenbach, D. Bamberger, P. Wich
Polysaccharides and Proteins as Versatile Biopolymer Material for Nanoparticles
- 15 S. PEPLAU (Humboldt-Universität zu Berlin), N. ten Brummelhuis
Preparation of Sequence-Controlled Polymers Using Traceless Protecting Groups
- 16 A. KOLBERG (University of Freiburg), Ch. Wenzel, K. Hackenstrass, R. Schwarzl, Ch. Rüttiger, M. Gallei, R. Netz, Th. Hugel, B. N. Balzer
Stretch Me If You Can! Temperature-Dependent Hydration Effects of Stretched Polymers
- 17 M. MÜLLER (Leibniz Institute for Polymer Research Dresden), B. Urban, S. Schwarz, D. Vehlow, B. Reis, H. Schmidt
Water Based Concepts to Deposit Polyelectrolyte Coatings at Model and Applied Substrates for Biomedical Applications
- 18 E. M. SCHOENEBERGER (University of Hamburg), G. A. Luinstra
Innovative Filament for FFF 3D Printing based on Diblock Copolymers
- 19 F. BRANDL (Clausthal University of Technology), F. Lederle, C. Härter, A. F. Thünemann, S. Beuermann
From Gaseous Vinylidene Fluoride to Electroactive Poly(vinylidene fluoride) – Inducing β -Phase Crystallinity by Formation of Block Copolymers and Composite Materials
- 20 L. FRITZE (RWTH Aachen University), O. Ayhan, A. Lik, Th. Lorenz, M. Crumbach, N. A. Riensch, H. Helten
Silicon/Boron Exchange Routes to Conjugated Organoboron Polymers

Chair: Manfred Wilhelm

12:30 MARIE WEINHART (Freie Universität Berlin, Germany)
Thermoresponsive Polyglycidyl Ether Coatings for Tissue Culture Applications

12:45 KATJA LOOS (University of Groningen, The Netherlands)
Poly(vinylidene fluoride) Based Multiferroic Composites

13:00 MARTIN van DUIN (Arlanxeo GmbH, Germany)
Morphology and Micro-Mechanics of Nano-Dispersed Rubber Blends

13:20 LUNCH BREAK

Chair: Günter Reiter

15:00 UWE BUNZ (Heidelberg University, Germany)
Small Libraries of Poly(paraphenyleneethynylene)s as “Universal” Chemical Tongues

15:20 CHRISTIAN PESTER (The Pennsylvania State University, USA)
Patterned Polymer Brushes for Solution-Processable OLEDs

15:40 PETER KRIMMER (stAPPtronics GmbH, Austria)
Smart Footwear – Innovative Textile Sensors for More and Healthier Movement in your Everyday Life

16:00 THOMAS FRÖIS (Texible GmbH, Austria)
Opportunities of Smart Textiles due to Digitalization

16:20 COFFEE BREAK

Chair: Andreas Walther

17:00 ANDRÉ GRÖSCHEL (University of Duisburg-Essen, Germany)
Block Copolymer Nanostructures Directed by Curvature and Topological Defects

17:20 MANFRED WILHELM (Karlsruhe Institute of Technology, Germany)
On-Line Benchtop Correlation of Molecular Weight Distribution and Chemical Composition via SEC-IR/-NMR and -QCL

17:40 KERSTIN BLANK (Max Planck Institute of Colloids and Interfaces Potsdam, Germany)
Coiled Coils as Mechanoresponsive Material Building Blocks: Towards Molecular Control of Smart Biomimetic Hydrogels

18:00 HANS BÖRNER (Humboldt-Universität zu Berlin, Germany)
From Sequence to Precise Functions: Translating Peptides to Precision Polymers

18:20 End of the Session

19:30 DINNER (Mensa Rempartstrasse) Doors open 19:15

FRIDAY, 22 FEBRUARY 2019

Chair: Michael Sommer

9:00 ROLF MÜLHAUPT (University of Freiburg, Germany)
Tailoring All-Hydrocarbon Composites for Circular Economy

9:30 PIETER in't VELD (BASF SE, Germany)
Modeling of Complex Formulations and Polymer Systems

9:50 INTRODUCTION OF POSTERS

Chair: Michael Sommer

- 1 D. KLEINSCHMIDT (RWTH Aachen University), M. Fernandes, M. Mork, M. Rueping, A. Pich
Switchable Colloidal Catalysts Based on Temperature-Responsive Microgels
- 2 B. HAEHNLE (University of Ulm), A. Kuehne
New Organic Light-Emitting Capacitors Based on π -Conjugated Polymer Particles
- 3 J. GAITZSCH (University of Basel), P. C. Welsch, J. Folini, W. Murad, J. C. Anderson, W. Meier
Refitting Radical Ring-Opening Polymerisation for Biodegradable and Responsive Nanoparticles
- 4 J.-H. KRUSE (Friedrich Schiller University Jena), I. Romanenko, J. Eichhorn, M. Lechner,
C. Streb, F.H. Schacher
Towards Catalysis under Flow Conditions in Block Copolymer Membranes
- 5 J. MARKWART (Johannes Gutenberg University Mainz), A. Battig, B. Schartel, F. Wurm
Structural Variation in Phosphorus-Containing Polymeric Flame Retardants: P-N vs. P-O
- 6 X. YAO (University of Freiburg), J. Wang, H. Chen, X. Ma, H. Tian, A. Walther
Stimuli-Responsive Luminescent Supramolecules and Polymers
- 7 J. KIRSCHNER (L'Institut de Science des Matériaux de Mulhouse), M. Bouzrati-Zerelli, Ch. P.
Fick, M. Maier, C. Dietlin, F. Morlet-Savary, J. P. Fouassier, J.-M. Becht, J. E. Klee, J. Lalevée
Silyl Glyoxylates and Derivatives as a New Class of High Performance Visible Light
Photoinitiators
- 8 M. FRÖLICH (Karlsruhe Institute of Technology), M. A. R. Meier
Reading the Sequence of Monodisperse Sequence-Defined Oligomers
- 9 M. HOFFMANN (Heinrich Heine University Düsseldorf), T. Freichel, D. Laaf, R. Wawrzinek, Ch.
Rademacher, S. Sarafova, L. Elling, N. L. Snyder, L. Hartmann
Lactose-Functionalized Precision Glycomacromolecules for Understanding the Role of Galectin-
3 in Tumor Migration
- 10 P. KLEIN (University of Wuppertal), U. Scherf
Polycyclic Ladder Polymers made by Reductive Dehalogenation Polycondensation of AA-, AB-
and AA/BB-type Monomer Systems as Novel Class of Polymers of Intrinsic Microporosity (PIMs)
- 11 R. OTTER (Johannes Gutenberg University Mainz), P. Besenius
Regulated Supramolecular Assembly of Peptide-Functionalized Polymers into Core-Shell

Nanorods

- 12 W. ZHANG (University of Freiburg), M. Samadi, N. Teske, V. P. Shastri
Synthesis and Uptake Behavior of Cyclic-(arginine-glycine-aspartic) Acid (cRGD) Modified
Polymeric Nanoparticles
- 00 INDUSTRY PRESENTATION: LS INSTRUMENTS
- 00 INDUSTRY PRESENTATION: POSTNOVA ANALYTICS
- 13 C. HENSCHHEL (University of Potsdam), Ch.-H. Ko, A. Laschewsky, Ch. M. Papadakis
Self-Assembly and Co-nonsolvency of Hydrophobic / Thermoresponsive Block Copolymers:
Influence of Chemical Structure and Block Lengths
- 14 T. LEBHERZ (University of Stuttgart/Daimler AG), M. Frey, A. Hintennach, M. R. Buchmeiser
Influence of Morphology on Electrochemical Performance of Monolithic Sulfur-Poly(acrylonitrile)
Composites Used as Cathode Materials in Lithium-Sulfur Batteries
- 15 J. HÖHNER (RWTH Aachen University), J. Köhler, H. Keul, C. Rodriguez-Emmenegger, M.
Möller
Arborescent Polymers via Living Radical Polymerization
- 16 T. JOHANN (Johannes Gutenberg University Mainz), M. Bros, H.Frey
Hydroxamic Acid Functional Polyethers: A Versatile Class of Polymeric Chelators for Surface
Coating and Medical Application
- 17 I. K. TENNIE (University of Fribourg), P. Liu, A. F. M. Kilbinger
Switchable ¹⁹F Magnetic Resonance Imaging Contrast Agents Prepared by Ring-Opening
Metathesis Polymerisation
- 18 PH. JÖCKLE (Karlsruhe Institute of Technology), Ph.W. Kamm, I. Lamparth, N. Moszner, A.-N.
Unterreiner, Ch. Barner-Kowollik
Comparing Overall Initiation Efficiencies of (para-substituted) Mono-, Bis- and Tetraacylgermane
Radical Initiators
- 19 T. WINTER (Technische Universität Darmstadt), Chr. Rüttiger, S. Schöttner, X. Su, T.A. Hatton,
M. Gallei
Metallopolymer Architectures for the Preparation of Redox-Responsive Materials
- 20 A. FAHMI (Rhein-Waal University of Applied Sciences), V. Nirwan, N. Herman
Electrospun Hybrid Nanofibers

11:30 COFFEE AND POSTERS

Chair: N.N.

- 12:15 FELIX SCHACHER (Friedrich Schiller University Jena, Germany)
Polymeric Photoacids - Monomer Design, Photostability, and First Steps Towards Light-
Mediated Release
- 12:30 MALTE WINNACKER (Technical University of Munich, Germany)
Sustainable Biopolymers from Terpenes and Novel Functional Biomaterials

12:45 KAREN LIENKAMP (University of Freiburg, Germany)
Antimicrobially Active Polyzwitterions - a Paradigm Change?

13:00 LUNCH BREAK

Chair: Prasad Shastri

14:15 XINLIANG FENG (Technische Universität Dresden, Germany)
Polymer Synthesis Enabled by Interfaces: Towards a World of Organic 2D Materials

14:35 BERNHARD SCHMIDT (Max Planck Institute of Colloids and Interfaces Potsdam, Germany)
Novel Self-Assemblies via Double Hydrophilic Block Copolymers in Aqueous Solution

14:50 AXEL NEFFE (Universität Hamburg, Germany)
Fe-Catalyzed Ring-Opening Polymerization of Bio-Based Monomers

15:05 STEFAN NAUMANN (University of Stuttgart, Germany)
Polarized Olefins as (Organo-)Catalysts for the Controlled Polymerization of O-Heterocyclic Monomers

15:20 KATHARINA KOSCHEK (Fraunhofer Institute for Manufacturing Technology and Advanced Materials Bremen, Germany)
Chemical Approaches to Fiber Reinforced Polymers with Integrated Functions

15:35 **POSTER AWARDS donated by WILEY**

15:40 **Closing Remarks**
PRASAD SHASTRI
Meeting Chair
Director of the Institute for Macromolecular Chemistry, University of Freiburg

15:45 End of the Colloquium