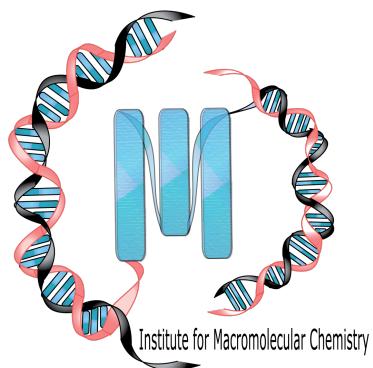


INSTITUT FÜR MAKROMOLEKULARE CHEMIE DER UNIVERSITÄT FREIBURG

Hermann – Staudinger – Haus



Bericht über die wissenschaftlichen Aktivitäten

2017

Stefan-Meier-Str. 31, 79104 Freiburg, Germany

**UNI
FREIBURG**

INHALTSVERZEICHNIS

PUBLIKATIONEN	1
PATENTE	7
DISSERTATIONEN	8
MASTERARBEITEN	9
BACHELORARBEITEN	10
VORTRÄGE UND POSTER	11
VERANSTALTUNGEN	18
WISSENSCHAFTLICHE LEITUNG UND MITARBEITENDE	19
DOKTORAND*INNEN	20
STUDIERENDE IM MASTERSTUDIUM.....	21
STUDIERENDE IM BACHELORSTUDIUM	21
GASTVORTRÄGE	22
GÄSTE DES INSTITUTS	26

PUBLIKATIONEN

1. AHRENS, L.
VONWIL, D.
CHRISTENSEN, J.
SHASTRI, V. P.

Gelatin device for the delivery of growth factors involved in endochondral ossification
PLoS ONE **12**, e0175095 (2017)
DOI: 10.1371/journal.pone.0175095
2. BENITEZ, A.
WALTHER, A.

Cellulose Nanofibril Nanopapers and Bioinspired Nanocomposites: A Review to Understand the Mechanical Property Space
J. Mater. Chem. A **5**, 16003 (2017)
3. BENITEZ, A.
WALTHER, A.

Counterion Size and Nature Control Structural and Mechanical Response in Cellulose Nanofibril Nanopapers
Biomacromolecules **18**, 1642 (2017)
4. BOSETTI, M.
BORRONE, A.
LEIGHEB, M.
SHASTRI, V. P.
CANNAS, M.

Injectable graft substitute active on bone tissue regeneration
Tissue Engineering Part A. **23**(23-24): 1413-1422 (2017)
DOI:10.1089/ten.tea.2016.0554
5. CECEN, V.
THOMANN, R.
MÜLHAUPT, R.
FRIEDRICH, C.

Thermal conductivity, morphology, and mechanical properties for thermally reduced graphite oxide-filled ethylene vinylacetate copolymers
Polymer **132**, 294-305 (2017)
6. DAS, P.
THOMAS, H.
MOELLER, M.
WALTHER, A.

Large-Scale, Thick, Self-Assembled, Nacre-Mimetic Brick-Walls as Fire Barrier Coatings on Textiles
Sci. Rep. **7**, 39910 (2017)
7. FODOR, C.
KALI, G.
THOMANN, R.
THOMANN, Y.
IVÁN, B.
MÜLHAUPT, R.

Nanophasic morphologies as a function of the composition and molecular weight of the macromolecular cross-linker in poly(N-vinyllimidazole)-I-poly(tetrahydrofuran)amphiphilic conetworks: bicontinuous domain structure in broad composition ranges
RSC Adv. **7**, 6827-6834 (2017)
8. FORGET, A.
BLÄSER, A.
MIESSMER, F.
KÖPF, M.
DUARTE CAMPOS, D. F.
VOELCKER, N. H.
BLENCOWE, A
FISCHER, H.
SHASTRI, V. P.

Mechanically Tunable Bioink for 3D Bioprinting of Human Cells
Adv Healthc Mater. **2017; 6** (20) (2017)
DOI:10.1002/adhm.201700255

9. GROESCHEL, A.
WALTHER, A.

Block Copolymer Micelles with Inverted Morphologies
Angew. Chem. Int. Ed. **56**, 1572 (2017)
10. HAN, K.
GO, D.
TIGGES, T.
RAHIMI, K.
KUEHNE, A. J. K.
WALTHER, A.

Social Self-Sorting of Colloidal Families in Co-Assembling Microgel Systems
Angew. Chem. Int. Ed. **56**, 1521 (2017)
11. HAN, K.
GO, D.
HOENDERS, D.
KUEHNE, A. J. K.
WALTHER, A.

Switchable Supracolloidal Coassembly of Microgels Mediated by Host/guest Interactions
ACS Macro Lett. **6**, 310 (2017)
12. HEES, T.
ZHONG, F.
RUDOLPH, T.
WALTHER, A.
MÜLHAUPT, R.

Nanocellulose Aerogels for Supporting Iron Catalysts and In Situ Formation of Polyethylene Nanocomposites
Adv. Funct. Mater. **27**, 1605586 (2017)
DOI: 10.1002/adfm.201605586
13. HEINEN, L.
HEUSER, T.
STEINSCHULTE, A.
WALTHER, A.

Antagonistic Enzymes in a Biocatalytic pH Feedback System Program Autonomous DANN Hydrogel Life Cycles
Nano Lett. **17**, 4989 (2017)
14. HEINEN, L.
WALTHER, A.

Temporal control of i-motif switch lifetimes for autonomous operation of transient DNA nanostructures
Chem. Sci. **8**, 4100 (2017)
15. HEUSER, T.
MERINDOL, R.
LOESCHER, S.
KLAUS, A.
WALTHER, A.

Photonic devices out of equilibrium: transient memory, signal propagation and sensing
Adv. Mater. **29**, 1521 (2017)
16. HOFMANN, D.
KUREK, A.
THOMANN, R.
SCHWABE, J.
MARK, S.
ENDERS, M.
HEES, T.
MÜLHAUPT, R.

Tailored Nanostructured HDPE Wax/UHMWPE Reactor Blends as Additives for Melt-Processable All-Polyethylene Composites and in Situ UHMWPE Fiber Reinforcement
Macromolecules **50**, 8129–8139 (2017)
DOI: 10.1021/acs.macromol.7b01891
17. HUBER, M.
MÜLHAUPT, R.

Surface-Functionalized White Sapphire α -Al₂O₃ Platelets as Nanofillers for Vinylester Composites and Heavy Duty Anchoring Systems
Macromol. Mat. Eng. **302** (1) (2017)
DOI: 10.1021/mame.201600420

18. JIA, G.
PLENTZ, J.
PRESSELT, M.
DELLITH, J.
DELLITH, A.
PATZE, S.
TÖLLE, F. J.
MÜLHAUPT, R.
ANDRÄ, G.
FALK, F.
DIETZEK, B.
19. KOZINA, A.
SAGAWE, D.
DIAZ-LEYVA, P.
BARTSCH, E.
PALBERG, T
20. LAZAR, I.-M.
ROSTAS, A. M.
STRAUB, P. S.
SCHLEICHER, E.
WEBER, S.
MÜLHAUPT, R.
21. LEJEUNE, J.
LE HOUÉREOU, V.
CHATEL, T.
PELLETIER, H.
GAUTHIER, C.
MÜLHAUPT, R.
22. LIGON, S. C.
LISKA, R.
STAMPFL, J.
GURR, M.
MÜLHAUPT, R.
23. MERINDOL, R.
WALTHER, A.
24. NOACK, M.
MERINDOL, R.
ZHU, B.
BENITEZ, A.
HACKELBUSCH, S.
BECKERT, F.
SEIFFERT, S.
MÜLHAUPT, R.
WALTHER, A.
- A Double Self-Assembly Process for Versatile Reduced-Graphene-Oxide Layer Deposition and Conformal Coating on 3D Structures
Adv. Mat. Interfaces (2017)
DOI: 10.1002/admi.201700758
- Polymer-enforced crystallization of a eutectic binary hard sphere mixture (vol 8, pg 627, 2012)
Soft Matter **13**, 2410 (2017)
DOI:10.1039/C7SM90034A
- Simple Covalent Attachment of Redox-Active Nitroxyl Radicals to Graphene via Diels-Alder Cycloaddition
Macromol. Chem. Phys. **218** (5) (2017)
DOI: 10.1002/Macp.201700050
- Creep and recovery analysis of polymeric materials during indentation tests
Europ. J. Mechanics – A/Solids **68**, 1-8, online (2017)
DOI: 10.1016/j.euromechsol.201710.003
- Polymers for 3D Printing and Customized Additive Manufacturing
Chem. Rev. **117** (15), 10212-10290 (2017)
DOI: 10.1021/acs.chemrev.7b00074
- Materials Learning from Life: Concepts for Active, Adaptive and Autonomous Molecular Systems
Chem. Soc. Rev. **46**, 5588 (2017)
- Light-Fueled, Spatiotemporal Modulation of Mechanical Properties and Rapid Self-Healing of Graphene-Doped Supramolecular Elastomers
Adv. Func. Mat. **27** (25) (2017)
DOI: 10.1002/adfm.201700767

25. NUEBLING, F.
KOMBER, H.
SOMMER, M.
All-Conjugated, All-Crystalline Donor-Acceptor Block
Copolymers P3HT-b-PNDIT2 via Direct Arylation
Polycondensation
Macromol. **50**, 5, 1909 (2017)
DOI: 10.1021/acs.macromol.7b00251
26. RATHER, A.
FORGET, A.
ROY, A.
CARBALLO, C.
MIEßMER, F.
DUKOR, R. K.
NAFIE, L. A.
JOHANNESSEN, CH.
SHASTRI, V. P.
LÜDEKE, ST.
Unravelling a Direct Role for Polysaccharide β -Strands
in the Higher Order Structure of Physical Hydrogels
Angew Chem Int Edit, 2017; **129** (16): 4674-4678
(2017)
DOI: 10.1002/ange.201701019
27. RATZSCH, K.-F.
FRIEDRICH, C.
WILHELM, M.
Low-field rheo-NMR: A novel combination of NMR
relaxometry with high end shear rheology
J. Rheol. **61**(5), 905-917 (2017)
28. RITTER, B. S.
MÜLHAUPT, R.
Isocyanate- and Solvent-Free Route to Thermoplastic
Poly(amide-urea) Derived from Renewable Resources
Macromol. Mat. Eng. **302** (3) (2017)
DOI: 10.1002/mame.201600338
29. SAREM, M.
VONWIL, D.
LÜDEKE, S.
SHASTRI, V. P.
*Direct quantification of dual protein adsorption dynamics
in three dimensional systems in presence of cells*
Acta. Biomater. **57**, 285-292 (2017)
30. SAREM, M.
LÜDEKE, S.
THOMANN, R.
SALAVEI, P.
ZOU, Z.
HABRAKEN, W.
MASIC, A.
SHASTRI, V. P.
*Disordered Conformation with Low Pii Helix in
Phosphoproteins Orchestrates Biomimetic Apatite
Formation*
Adv. Mater. **29**, 1701629 (2017)
DOI: 10.1002/adma.201701629
31. SCHIMPF, V.
RITTER, B. S.
WEIS, P.
PARISON, K.
MÜLHAUPT, R.
High Purity Limonene dicarbonate as Versatile Building
Block for Sustainable Non-Isocyanate
Polyhydroxyurethane Thermosets and Thermoplastics
Macromolecules **50** (3), 944-955 (2017)
DOI: 10.1021/acs.macromol.6b02460
32. SCHMIDT, S.
GATTI, F. J.
LUITZ, M.
RITTER, B. S.
BRUCHMANN, B.
MÜLHAUPT, R.
Erythritol Dicarbonate as Intermediate for Solvent- and
Isocyanate-Free Tailoring of Bio-Based
Polyhydroxyurethane Thermoplastics and
Thermoplastic Elastomers
Macromolecules **50** (6), 2296-2303 (2017)
DOI: 10.1021/acs.macromol.6b02787

33. SCHMIDT, S.
GÖPPERT, N. E.
BRUCHMANN, B.
MÜLHAUPT, R.
Liquid sorbitol ether carbonate as intermediate for rigid and segmented non-isocyanate polyhydroxyurethane thermosets
Europ. Polym. Journal **94**, 136-142 (2017)
DOI: 10.1016/j.eurpolymj.2017.06.043
34. SCHIMPF, V.
HECK, B.
REITER, G.
MÜLHAUPT, R.
Triple-Shape Memory Materials via Thermoresponsive Behavior of Nanocrystalline Non-Isocyanate Polyhydroxyurethanes
Macromolecules **50** (9), 3598-3606 (2017)
DOI: 10.1021/acs.macromol.7b00500
35. SCHMITZ, A.
SCHÜTTE, K.
ILIEVSKI, V.
BARTHEL, J.
BURK, L.
MÜLHAUPT, R.
YUE, J.
SMARSLY, B.
JANIAK, C.
Synthesis of metal-fluoride nanoparticles supported on thermally reduced graphite oxide
Beilstein J Nanotechnology **8**, 2474-2483
DOI: 10.3762/bjnano.8.247 (2017)
36. SCHNEIDER, J.
WIEMANN, M.
RABE, A.
BARTSCH, E.
On tuning microgel character and softness of cross-linked polystyrene particles
Soft Matter **13**, 445 (2017)
DOI: 10.1039/C6SM02007K
37. SZANTO, L.
VOGT, R.
MEIER, J.
AUHL, D.
VAN RUYMBEKE, E.
FRIEDRICH, C.
Entanglement relaxation time of polyethylene melts from high-frequency rheometry in the mega-hertz range
J. Rheol. **61**(5), 1023-1033 (2017)
38. SCHUBERT, C.
DREIER, P.
NGUYEN, T.
FRIEDRICH, C.
FREY, H.
Synthesis of linear polyglycerols with tailored degree of methylation and the effect on thermorheological behavior
Polymer **131** (2017), 328-339
39. TU, Z.
ACHAZI, K.
SCHULZ, A.
MÜLHAUPT, R.
THIERBACH, S.
RÜHL, E.
ADELI, M.
HAAG, R.
Combination of Surface Charge and Size Controls the Cellular Uptake of Functionalized Graphene Sheets
Adv.Func.Mat. **27**(33), 01837 (2017)
DOI: 10.1002/adfm.2017

40. WEDLER-JASINSKI, N.
LUECKERATH, T.
MUTLU, H.
WALTHER, A.
STENZEL, M. H.
BARNER-KOWOLLIK, C.
- Dynamic Covalent Single Chain Nanoparticles Based
on Hetero Diels-Alder Chemistry
Chem. Commun. **53**, 157 (2017)

PATENTE

1. FORGET, A.
VONWIL, A.
SHASTRI, V. P.

Methods for Purifying Polysaccharides and
Pharmaceutical Compositions and Medical Devices
Containing the Same
US Patent App. 15/183,077
2. LAUTH, M.
MÜLHAUPT, R.
BLATTMANN, H.

Non isocyanate polyurethane foams
US20170218124 A1, EP3199569A1
3. MICHEL, C.
MULHAUPT, R.
FRIEDRICH, C.
KERSCHER, B.
MATTHES, U.
HASIS, K.
SZANTO, L.
BURON, M.-P.

Method for recycling a paint-coated plastic article and
related paint film decomposition agent
WO2017108961A1, EP3184274A1
4. SHASTRI, V. P.

Compositions for detecting analytes by magnetic
resonance imaging
US Patent App. 15/602,539

DISSERTATIONEN

1. AHRENS, Lucas
Controlled Release Systems for Recapitulating Signal Gradients in Endochondral Ossification
2. BENITEZ, Alejandro
Cellulose Nanofibril Nanopapers and Bioinspired Nanocomposites
3. BLUMENTHAL, Nils Rene
The Role of Cellular Mechanotransduction in the Central Nervous System and Neural Development
4. HEUSER, Thomas
Self-Regulating Materials with transient lifetimes via internal feedback
5. HUBER, Michael Peter
Dispersion und Ausrichtung von Korund-Nanoplättchen in bioinspirierten Epoxid- und Vinylester-Harzsystemen und deren Anwendung als chemische Verbundanker
6. RATZSCH, Karl-Friedrich
Entwicklung einer Niederfeld-NMR-Rheologie-Kombination zur Untersuchung des Kristallisationsverhaltens von Polymeren, September 2017
7. SAMADI MOGHADDAM, Mariam
Macromolecules Derived from Cell Membrane Lipids and the Investigation of Interaction and Uptake Behavior of Nanoparticles Thereof with Epithelial and Endothelial Cells
8. SAREM, Melika
Role of Intrinsically Disordered Phosphoprotein Secondary Structure in Bone Biomineralization and Impact of Biomimetic Apatite on Endochondral Ossification
9. SCHLECHTENDAHL, Mark Dietrich
Kohlenstoffbasierte Nanofüllstoffe für Olefinblockcopolymer- und Mehrlagenkomposite
10. XIANG, Shengnan
Engineering Cell Membrane by Liposomal Treatment Modulates Endocytosis of Nanomaterials in Tumor Cells

MASTERARBEITEN

GATTI, Felix Joachim	Funktionalisierte Graphene als Füllstoff für epoxidbasierte Sprühbeschichtungen
GROSS, Lukas	Photo-cross-linking of transparent hybrid nanopapers (CNF/polymer nanocomposite) and their mechanical properties
HECKEL, Jonas	Light Scattering from aggregated polystyrene microgels
MAX, Johannes Bernhard	Isocyanatfreie Synthese biobasierter Polyhydroxyurethan-Blockcopolymere und thermoplastischer Elastomere
MÖNKEMEYER, Florian Joel	Endfunktionalisierte Polyisobutylene als Bausteine für Polyoazolin- <i>g</i> -Polyisobutlen-Kammpolymere und Polyhydroxyurethane
RIEDLER, Laura Marie	Permeation und Retention von Hydrogel-Kompositmembranen basierend auf photovernetzten bürstenartigen Polymeren
SEHL, Elmar Nikolas	Thermoresponsive Kammpolymere und Poly(vinylencarbonat) Partikel
WOLF, Michael	Charakterisierung der Fließeigenschaften und Extrusionsfähigkeit eines trimodalen PE-Blends
YAN, Wenqing	Bilayered polymer brushes with controlled topology
YANG, Yuan	Non-isocyanate polyurethane composites based on mechanochemically functionalized graphene and graphenated inorganic nanofillers
ZHANG, Chen	Sythesis and Charaterization of Photo-Cross-Linked Carboxylated Agarose Hydrogels
ZIMMERMANN, Marcel	Dispersionsblends auf Basis von Altpapier und mikrofibrillierter Cellulose für PP-Komposite

BACHELORARBEITEN

- | | |
|----------------------------|---|
| 1. BÖCHERER, David | Synthese und Charakterisierung thermosensitiver Hydrogеле aus PEHO und Pluronic® |
| 2. GROSS, Annalena | Hochgefüllte Kohlenstoff-Nanokomposite aus Polyethylen-Reaktorblend und Multilagen-Graphen |
| 3. HAMBITZER, Roland | Leitfähige, kratzfeste und sprühfähige Beschichtungen unter Verwendung von graphenisierten mineralischen Füllstoffen |
| 4. LÖSCH, Amelia | Synthese und Charakterisierung verschiedener telechelischer Ionomere aus bi-carboxyliertem Poly(cycloocten) |
| 5. SAUER, Mike | Variation der Partikelgröße und Implementierung einer Zulaufpolymerisation bei der Dispersionspolymerisation von Styrol |
| 6. SCHMIDT, Ricarda Sophia | Kern-Schale-Hydrogelpartikel und deren Kühlfähigkeit in Polyurethan-Schaumsystemen |
| 7. VON SEGGERN, Nils | Untersuchungen zum Kern-Schale-Aufbau PEGylierter Perfluoracrylate |

VORTRÄGE und POSTER

1. AHRENS, L.
TANAKA, S.
SHASTRI, V. P. The 4DGG: A Paradigm for Generating 3D and Temporal Soluble Signal Gradients
SFTI, International SGBM-BIOSS Symposium, Freiburg (Deutschland), Oktober 2017
2. BARTSCH, E. Experimental aspects of glass forming colloids
Workshop "Amorphous Solids and Viscoelasticity", Institut Charles Sadron, Strasbourg (Frankeich), 20.06.2017
3. BARTSCH, E. Bilden binäre Mischungen harter Kugeln MgZn₂ - und MgCu₂ -analoge kristalline Laves-Phasen?
Tag der Forschung der Fakultät für Chemie und Pharmazie, Freiburg (Deutschland), 14.07.2017
4. BURK, L Graphene as nanofiller: Tailoring the functionality for use in polymer nanocomposites
ACS Spring Meeting, San Francisco (USA), April 2017
5. BURK, L Mechanochemisch funktionalisierte Graphene als flammhemmende Füllstoffe in Polypropylen-Nanokompositen
Projektreffen, Berlin (Deutschland), September 2017
6. BURK, L Functionlized graphene as highly promising nanofiller for poylmer nanocomposites
Graphene Week, Athen (Griechenland), September 2017
7. BURK, L Mechanochemical route to polymeric nanocomposites
Industrial Nanocomposites, Stuttgart (Deutschland), Oktober 2017
8. BURK, L Additive Fertigungsverfahren und Materialien für innovative Energiespeicherzellen
Kickoff-Meeting Add-Spice. Freiburg (Deutschland), Dezember 2017
9. GISIN, J.
HERBSTRITT, S.
BARTSCH, E. A Simple Route for Photochemical Crosslinking at the Interface of Polystyrene Microgels
Makromolekulares Kolloquium Freiburg (Deutschland), Februar 2017

10. GISIN, J.
SCHMIDT, G.
HERBSTRITT, S.
BARTSCH, E.
- A Versatile Polystyrene Microgel System Which Fits Your Needs
13th Zsigmondy Colloquium, Saarbrücken (Deutschland), April 2017
11. GISIN, J.
- Polystyrene microgel colloids – a versatile model system for (soft) condensed matter physics
Vortrag 3rd UK Colloids, Manchester (UK), Juli 2017
12. GISIN, J.
HERBSTRITT, S.
SCHMIDT, G.
WERNER, M.
BARTSCH, E
- Polystyrene microgel colloids – a versatile model system for (soft) condensed matter physics
91st ACS Colloid & Surface Science Symposium New York City (USA), Juli 2017
13. GLEWITZ, R.
FRIEDRICH, C.
LABORIE, M.-P.
- Rheological behaviour of Organosol Lignin blended with HPV in solution
5th EPNOE International Polysaccharide Conference, Jena (Deutschland), August 2017
14. HEES, T.
STÜRZEL, M.
MÜLHAUPT, R.
- Tailoring Multisite Catalysts and In-situ Formation of Self-reinforcing All-Polyolefin Composites for Sustainable Light-weight Engineering
ACS Spring Meeting, San Francisco (USA), April 2017
15. HEES, T.
WALTHER, A.
MÜLHAUPT, R.
- Nanocellulose Aerogel-supported Iron Catalysts and Self-reinforcing Polyethylene Nanocomposites
European Polymer Federation Congress, Lyon (Franreich), Juli 2017
16. HEES, T.
MÜLHAUPT, R.
- Nanocellulose-aerogel supported iron catalysts and self-reinforcing all-polyethylene composites
DWI / RWTH Summer School und “LANXESS talent award”, Aachen (Deutschland), Juli 2017
17. HEES, T.
WALTHER, A.
MÜLHAUPT, R.
- Nanocellulose-supported iron catalysts producing self-reinforcing polyethylene
Tag der Forschung, Freiburg (Deutschland), Juli 2017
18. HEES, T.
MÜLHAUPT, R.
- Sustainable and Self-reinforcing All-Polyethylene Composites for Light-weight Engineering by Tailor-made Multisite Polymerization Catalysis
1st International Symposium on Catalysis for Sustainable Chemical Synthesis, Freiburg (Deutschland), September 2017

19. KUSHNIR, D.
HEBRAUD, P.
BARTSCH, E.
Dynamical properties of a glassy colloidal suspension
IRTG Summer School, Mittelwihr (Frankeich), Juli
2017
20. LÜDEKE, S.
SAREM, M.
SHASTRI, V. P.
The Role of Non-collagenous Protein Conformation in
Biomineralization
DPhG Annual meeting, Saarbrücken
(Deutschland), September 2017
21. MÜLHAUPT, R.
Makromolekulare Chemie: Von Hermann Staudinger
bis hin zu vielseitigen polymeren Stoffen und
Multifunktionalen Systemen
Schülertage Universität Freiburg (Deutschland),
April 2017
22. MÜLHAUPT, R.
Hermann Staudinger – Im Spannungsfeld zwischen
Chemie und Politik
GDCh Vortrag an der Universität Freiburg
(Deutschland), Juni 2017
23. MÜLHAUPT, R.
Polymeric systems for AM – trends and perspectives
Global 3D-P Team Meeting, Baden-Baden
(Deutschland), Juni 2017
24. MÜLHAUPT, R.
Multisite polymerization catalysis and self-reinforcing
polyolefins
16th EPF European Polymer Congress, Lyon
(Frankeich), Juli 2017
25. MÜLHAUPT, R.
3D-Druck an der Universität Freiburg
Info-Veranstaltung “Schnelle Teile aus der 3D-Fabrik
des wvib Baden, Freiburg (Deutschland), Juli 2017
26. MÜLHAUPT, R.
Neues von 3D-Drucken und 3D Zeichenstiften
Rotary Club Freiburg (Deutschland), August 2017
27. MÜLHAUPT, R.
Multifunctional polymeric carbon nanocomposites
1st European Conference on Chemistry of Two-
Dimensional Materials (Chem2DMat), Strasbourg
(Frankeich), August 2017
28. MÜLHAUPT, R.
Non-Isocyanate Polyurethane Chemistry and
Multifunctional Bio-Inspired Polyhydroxyurethanes
2nd Danube Vlatava Sava Polymer Meeting, Wien
(Österreich), September 2017
29. MÜLHAUPT, R.
Multisite Catalyst Mediated Nanostructure Formation
and Self-Reinforcing Polyolefins
GDCh Vortrag, Universität Bayreuth (Deutschland),
Dezember 2017

30. MÜLHAUPT, R.
Klimaneutrale Treibstoffe und alternative chemische Energiespeicher
Vortrag Rotary Club Freiburg (Deutschland), Dezember 2017
31. NÜBLING, F.
SOMMER, M.
Synthesis of all-conjugated all-crystalline block copolymers via direct C-H polycondensation
Makromolekulares Kolloquium Freiburg, Freiburg (Deutschland), Februar 2017
32. NÜBLING, F.
SOMMER, M.
Synthesis of block junction functionalized all-conjugated, all-crystalline donor-acceptor block copolymers for solar cells
Forschungstag der Baden-Württemberg-Stiftung, Stuttgart (Deutschland), Juni 2017
33. NÜBLING, F.
SOMMER, M.
Synthesis of block junction functionalized all-conjugated, all-crystalline donor-acceptor block copolymers for solar cells
IRTG Summer School, Mittelwihr (Frankeich), Juli 2017
34. PÁSZTÓI, B.
TRÖTSCHLER, T.
SZABÓ, Á.
KERSCHER, B.
IVÁN, B.
MÜLHAUPT, R.
Endfunctional Polyisobutylenes as Building Blocks of Multicomponent Macromolecular Assemblies
Makromolekulares Kolloquium Freiburg (Deutschland), Februar 2017
35. RATZSCH, K.-F.
FRIEDRICH, C.
WILHELM, M.
Benchtop Rheo-NMR
ICMRM, Halifax, August 2017
36. SAREM, M.
SHASTRI, V. P.
Bone-Like Microenvironment Modulates MSCs Fate SFTI
International SGBM-BIOSS Symposium, Freiburg (Deutschland), Oktober 2017
37. SCHÄRTL, N
PALBERG, T.
BARTSCH, E.
Formation of Laves Phases in Repulsive and Attractive Binary Mixtures of Buoyancy Matched Hard Spheres
European Colloid and Interface Society (ECIS) Conference, Madrid (Spanien), September 2017
38. SHASTRI, V. P.
Conformational Attributes of Non-Collagenous Proteins in Biomineralization
Bayreuth Polymer Symposium, Bayreuth (Deutschland), September 2017

39. SHASTRI, V. P. Opportunities and Challenges in Bioink Development
Cellink Miami Conference (USA), November 2017
40. SZANTO, L. Viscoelastic properties of 3-modal PE-Blends
ZHONG, F. Tagung der DRG, Berlin (Deutschland), März 2017
GLIEM, M.
FRIEDRICH, C.
41. WALTHER, A. Static and dynamic bioinspired self-assembled
material systems
SFB 986 Materials Science Colloquium, Münster
(Deutschland), Januar 2017
42. WALTHER, A. Static and dynamic bioinspired self-assembled
material systems
SFB 858 Colloquium, Hamburg(Deutschland),
Januar 2017
43. WALTHER, A. Colloidal Self-Assembly: From System Design to
Bioinspired Materials
Colloquium Lectures of the SFB 858, Hamburg
(Deutschland), Januar 2017
44. WALTHER, A. Static and dynamic bioinspired self-assembled
material systems
University of Sydney (Australien), UNSW, März
2017
45. WALTHER, A. Static and dynamic bioinspired self-assembled
material systems
Seminar, University of Sydney, Sydney (Australien),
März 2017
46. WALTHER, A. Static and dynamic bioinspired self-assembled
material systems
Distinguished Scientist Lectureship, Queensland
University of technology, Brisbane (Australien), März
2017
47. WALTHER, A. Molecular engineering and light adaptiveness in self-
assembled bioinspired nanocomposites
16th EPF European Polymer Congress, Lyon
(Frankeich), Juli 2017
48. WALTHER, A. Lernen von der Natur: bioinspirierte strukturelle
Materialien
Tag der Forschung der Albert-Ludwigs-Universität
Freiburg (Deutschland), Juli 2017

50. WALTHER, A.
Molecularly engineered, light-adaptive self-assembled
nacre-mimetics
16th International Clay Conference, Granada
(Spanien), Juli 2017
51. WALTHER, A.
Adaptive and autonomous bioinspired self-assembled
material systems
“Physical Aspects of Polymer Science” Conference
UK Polymer Group, Swansea University UK,
September 2017
52. WALTHER, A.
Static and Dynamic Bioinspired Self-Assembled
Material System
Seminar Universität Straßburg, Institut Charles
Sadron (Franreich), September 2017
53. WALTHER, A.
Molecular Motors meet Polymers: Towards Active
Plastics
FRIAS Retreat, Steigerhoech (Deutschland), Oktober
2017
54. WALTHER, A.
Static and Dynamic Bioinspired Self-Assembled
Material Systems
GDCh Vortrag Universität Duisburg-Essen
(Deutschland), Oktober 2017
55. WALTHER, A.
Static and Dynamic Bioinspired Self-Assembled
Material System
Adolphe Merkle Institut Fribourg (Schweiz),
November 2017
56. WALTHER, A.
Adaptive and Autonomous Bioinspired Material
Systems
GDCh Vortrag Universität Saarbrücken
(Deutschland), November 2017
57. WALTHER, A.
Autonom dynamische Materialsysteme
Physikalisches Kolloquium, TU Chemnitz
(Deutschland), November 2017
58. WALTHER, A.
Autonomous, out-of-equilibrium self-assemblies and
material systems with programmable lifetimes
Ringberg Castle Symposium on 4D Molecular
Systems Engineering (Deutschland), Dezember
2017
59. WERNER, M.
PFA-PEG particles: A colloidal model system for the
investigation of phase diagrams of PEGylated drug
carrier systems
Vortrag 91st ACS Colloid & Surface Science
Symposium, New York City (USA), Juli 2017

60. WERNER, M.
BURGER, S.
LINDNER, P.
BARTSCH, E.

Investigation of the osmotic deswelling of polystyrene
microgels by polymer addition
91st ACS Colloid & Surface Science Symposium
New York City (USA), Juli 2017
61. WERNER, M.
VON SEGGERN, N.
TAPPE, M.
WERNET, M.
BARTSCH, E.

PFA-PEG particles: A colloidal model system for the
investigation of phase diagrams of PEGylated drug
carrier systems
IRTG SOMAS Summer School, Mittelwihr,
Frankreich, Juli 2017
62. WERNER, M.

PFA-PEG particles: A colloidal model system for the
investigation of phase diagrams of PEGylated drug
carrier systems
Vortrag 31st Conference of the European Colloid and
Interface Society, Madrid, Spanien, September 2017
63. WERNER, M.
BURGER, S.
LINDNER, P.
BARTSCH, E.

Investigation of the osmotic deswelling of polystyrene
microgels by polymer addition
31st Conference of the European Colloid and
Interface Society, Madrid, Spanien, September 2017
64. WIEDMANN, S.
KERSCHER, B.
DECHER, G.
LUTZ, J-F.
MÜLHAUPT, R.

Compartmentalized Smart Polymer Ionic Liquids for
Responsive Systems
IRTG Summer School, Mittelwihr (Frankeich), Juli
2017
65. XIANG, S. N.
SAREM, M.
SHAH, S.
SHASTRI, V. P.

Altering nanoparticle uptake pathway by engineering
cell membrane stiffness
Cell Physics 2017, Saarland University,
Saarbrücken (Deutschland), Oktober 2017

VERANSTALTUNGEN

Makromolekulares Kolloquium Freiburg, 15 - 17 Februar 2017 (circa 700 Teilnehmer)

WISSENSCHAFTLICHE LEITUNG UND MITARBEITENDE DES INSTITUTS

PROFESSOREN	PROF. DR. ROLF MÜLHAUPT (DIREKTOR) PROF. DR. V. PRASAD SHASTRI (DIREKTOR) PROF. DR. ECKHARD BARTSCH PROF. DR. DR. CHRISTIAN FRIEDRICH PROF. DR. ANDREAS WALTHER
EMERITI	PROF. DR. WALTHER BURCHARD PROF. DR. DR. H.C. HANS-JOACHIM CANTOW PROF. DR. DR. H.C. HEINO FINKELMANN PROF. DR. WOLFRAM GRONSKI PROF. DR. DR. H.C. HANS ADAM SCHNEIDER

WISSENSCHAFTLICHE MITARBEITENDE

DR. LUCAS AHRENS
DR. XINLONG FAN
DR. RALF HANSELMANN
DR. MARKUS HEINY
DR. MARIAM SAMADI
DR. MELIKA SAREM
DR. RALF THOMANN
DR. PRADEEP WYSS

DOKTORAND*INNEN

ASMACHER, Anne	NÜBLING, Fritz
BURKARD, Jochen	PÖSSEL, Burkhardt
BURK, Laura	RUKEYAMU, Matztsidike
BLUMENTHAL, Nils	SCHÄRTL, Nicole
DRESLER, Christopher	SCHLECHTENDAHL, Mark
GISIN, Joshua	SCHIMPF, Vitalij
GLIEM, Matthias	SCHMIDT, Simon
GRÖER, Saskia	SCHMIDT, Stanislaus
HEGE, Cordula	STARCK, Laurent
HEES, Timo	STOLZ, Benjamin
HEINEN, Laura	TRÖTSCHLER, Tobias Michael
HERRERA, Laura Cecilia	WOLF, Jürgen Daniel
HUBER, Michael	WANG, Qian
JIAO, Dejin	XIANG, Shengnan
KOZUR, Alexander	YANG, Yuan
KIESSLING, Andy	YAO, Chunyan
LESNICHII, Vasilii	ZHANG, Weihai
LI, Aijun	ZHANG, Wenli
LOSSADA TORO, Francisco	ZHONG, Fan
MATLOUBI, Maziar	ZOU, Yuming
MÖNKEMEYER, Florian	

**STUDIERENDE IM
MASTERSTUDIUM**

GYARMATI-BUCHMÜLLER,
Fabian
CHEN, Yian
GÄBERT, Chris
GHRISI, Faycel
KEMPE, Fabian
KUNZ, Susanna
LENGEMANN, Adrian
MANGOLD, Mikel
SCHMIDT, Simon
SCHWARZ, Benjamin
SEHL, Elmar
STEGERER, Dominik
TRITSCHLER, Benedikt
XU, Liang
YANG, Yuan
YOUNGHUN, Shin
ZHANG, Chen

**STUDIERENDE IM
BACHELORSTUDIUM**

BUCHHEIT, Hannah
HALDA RIBEIRA, Anielen
LUITZ, Manuel
PAFFRATH, Lukas
PFOHL, PATRIZIA
REITENBACH, Julija
RIEHLE, Felix
RUSITOVA, Dennis
STEHLE, Philipp
STRAUB, Paula

GASTVORTRÄGE

im Institut für Makromolekulare Chemie der Universität Freiburg im Breisgau
(im Rahmen des Gemeinsamen Seminars über makromolekulare und physikalische
Chemie und des IRTG: Soft Matter Science)

1. 11.01.17. PROF. DR. TIMO BETZ
University of Münster
Learning from fluctuations: The mechanics of active and passive cellular assemblies
2. 18.01.17. PROF. WIEBKE DRENCKHAN & DR. MANISH KAUSHAL
CNRS & Institut Charles Sadron
Outstanding stability of free-standing co-polymer films above the glass transition
3. 25.01.17 PROF. DR. THOMAS VOIGTMANN
University of Düsseldorf
History dependent material properties of glasses
4. 01.02.17 DR. RAPHAËL VOITURIEZ
CNRS
First-passage times of Markovian and non Markovian random walks
5. 08.02.17 DIPL.-ING. JAN-GEORG ROSENBOOM
ETH Zurich
Ring-Opening Polymerization for 100 % Renewables-Based Polyethylene Furanoate (PEF) for the “Green Bottle”
6. 14.03.17 DR. TOORU OOYA
University of Kobe
Hydration-Controlled Design of Biomaterials Using Polyols
Invited guest talk
7. 05.04.17 PROF. DR. STEFAN U. EGELHAAF
University of Düsseldorf
Microscopic Structure and Dynamics of Colloids under Transient Shear
8. 26.04.17 Dr. KALOIAN KOYNOV
MPI Mainz
Fluorescence Correlation Spectroscopy as a Versatile Tool in Polymer, Colloid and Interface Science

9. 04.05.17 PROF. DR. STEFAN U. EGELHAAF
University of Düsseldorf
 Microscopic Structure and Dynamics of Colloids under Transient Shear
10. 10.05.17 PROF. DR. KARI DALNOKI-VERESS
McMaster University & CNRS
 Soft Materials at surfaces and interfaces: Elastocapillarity
11. 17.05.17 DR. FABIEN MONTEL
Ecole Normale Supérieure de Lyon
 Transport through the nuclear pore complex: two complementary approaches
12. 24.05.17 DR. DIDIER LONG
Laboratoire Polymère et Matériaux Avancés (LPMA), Solvay
 Strain hardening of glassy polymers: theory and simulation
13. 31.05.17 DR. VALERIY LUCHNIKOV
Institut de Science des Matériaux de Mulhouse (IS2M)
 Spontaneous folding and rolling of polymer films: a micromechanical phenomenon and a method of microfabrication
14. 14.06.17 DR. MAMATIMIN ABBAS
University of Bordeaux
 Interface engineering in Organic Field Effect Transistors
15. 19.06.17 PROF. Dr. BILL VAN MEGEN
Royal Melbourne Institute of Technology, RMIT University, Australia
 Collective modes in hard sphere systems; cage effect
16. 21.06.17 PROF. DR. MICHAEL MAYER
University of Fribourg, Switzerland
 Characterization of Single Proteins in Nanopores
17. 28.06.17 PROF. PHILIPPE GUÉGAN
Sorbonne Universités-UPMC, Institut Parisien de Chimie Moléculaire (IPCM), - UMR 8232 Chimie des Polymères, Paris, France
 New Prospects in Anionic Polymerization: New Initiator Families and Challenging Monomers
18. 19.07.17 PROF. DR. JAN BEHRENDTS
FU Berlin
 Spins in Solar Cells: Charge Separation from an EPR Perspective

19. 20.07.17 PROF. DR.-ING. HORST FISCHER
RWTH Aachen University Hospital
 Drop-on-demand 3D bioprinting of tailored cell-laden hydrogel blends
 Makro Series Seminar: Hot Topics in Polymers, Materials Science and Biophysics
20. 26.07.17 PROF. DR. MARCUS MÜLLER
University of Göttingen
 Kinetics of structure formation and defects in block copolymers
21. 01.08.17 DR. BERND BRUCHMANN
BASF
 Polyaddition and Polycondensation Polymers
 Seminar "Industrial Polymer Science" BASF SE
22. 02.08.17 DR. MARTIN WEBER
BASF
 Thermoplastic Materials
 Seminar "Industrial Polymer Science" BASF SE
23. 03.08.17 DR. ANDREAS KUENKEL
BASF
 Biodegradable and renewable polymers
 Seminar "Industrial Polymer Science" BASF SE
24. 20.09.17 PROF. DR. WEIAN ZHANG
East China University of Science and Technology
 Porphyrin-containing polymers for photodynamic therapy (PDT)
 Invited guest talk
25. 28.09.17 PROF. DR. MURUGAPPAN MUTHUKUMAR
University of Massachusetts & FRIAS
 Physics of Charged Macromolecules in Solution
26. 29.09.17 PROF. DR. MARK D. FOSTER
The University of Akron, USA
 Closed Loops: Their Impact on Melt Surface Fluctuations and Surface Segregation in Blends
27. 18.10.17 PROF. DR. MICHAL BORKOVEC
University of Geneva, Switzerland
 Interparticle Forces in Aqueous Solutions
28. 25.10.17 DR. ABRAHAM CHEMTOB
Institut de Science des Matériaux de Mulhouse (IS2M)
 In Situ Generated Ruthenium-Arene Catalyst for Ring-Opening Metathesis Photopolymerization Through Photolatent N-Heterocyclic Carbene (NHC) Ligand

29. 08.11.17 DR. MARTIN BRINKMANN
University of Strasbourg
Highly oriented and crystalline semi-conducting and conducting polymer films prepared by high-temperature rubbing
30. 15.11.17 PROF. DR. RAINER HAAG
FU Berlin
IRTG seminar: Multivalent Nanosystems as Potent Inhibitors for Pathogens
31. 22.11.17 PROF. DR. SANDRO KELLER
University of Kaiserslautern
Solubilization of Membrane Proteins into Functional Lipid-Bilayer Nano-discs Using Amphiphilic Copolymers
32. 23.11.17 PROF. DR. ROLAND NETZ
FU Berlin
A Highly Stretched Polymer in Water is an Energetic, not an Entropic Spring
33. 29.11.17 PROF. DR. MURUGAPPAN MUTHUKUMAR
University of Massachusetts & FRIAS
Virus Assembly: Organizing Principles from Polymer Physics
34. 06.12.17 PROF. DR. ALESSIO ZACCONE
University of Cambridge, United Kingdom
Towards predictive atomistic theory & simulations of dynamic mechanical response of glassy polymers based on the underlying vibrational spectrum
35. 13.12.17 DR. ANDREAS SPERLICH
University of Würzburg
The role of spin in organic solar cells and organic LEDs – insights from a magnetic resonance perspective
36. 20.12.17 PROF. DR. CECELIA CLEMENTI
Rice University, USA
Incorporating Experimental Data into Long Timescales Macromolecular Simulations

GÄSTE DES INSTITUTS

FORGET, A., DR.
QUEENSLAND UNIVERSITY OF TECHNOLOGY, SOUTH BRISBANE, AUSTRALIEN

FISCHER, H., PROF. DR.
DENTAL MATERIALS AND BIOMATERIALS RESEARCH, RWTH AACHEN UNIVERSITY
HOSPITAL, AACHEN, DEUTSCHLAND

IVÁN, B., PROF. DR.
DEPARTMENT OF POLYMER CHEMISTRY AND MATERIAL SCIENCE, CHEMICAL
RESEARCH CENTER, HUNGARIAN ACADEMY OF SCIENCES, BUDAPEST, UNGARN

OOYA, T., DR.
GRADUATE SCHOOL OF ENGINEERING, FACULTY OF ENGINEERING, KOBE
UNIVERSITY, KOBE, JAPAN