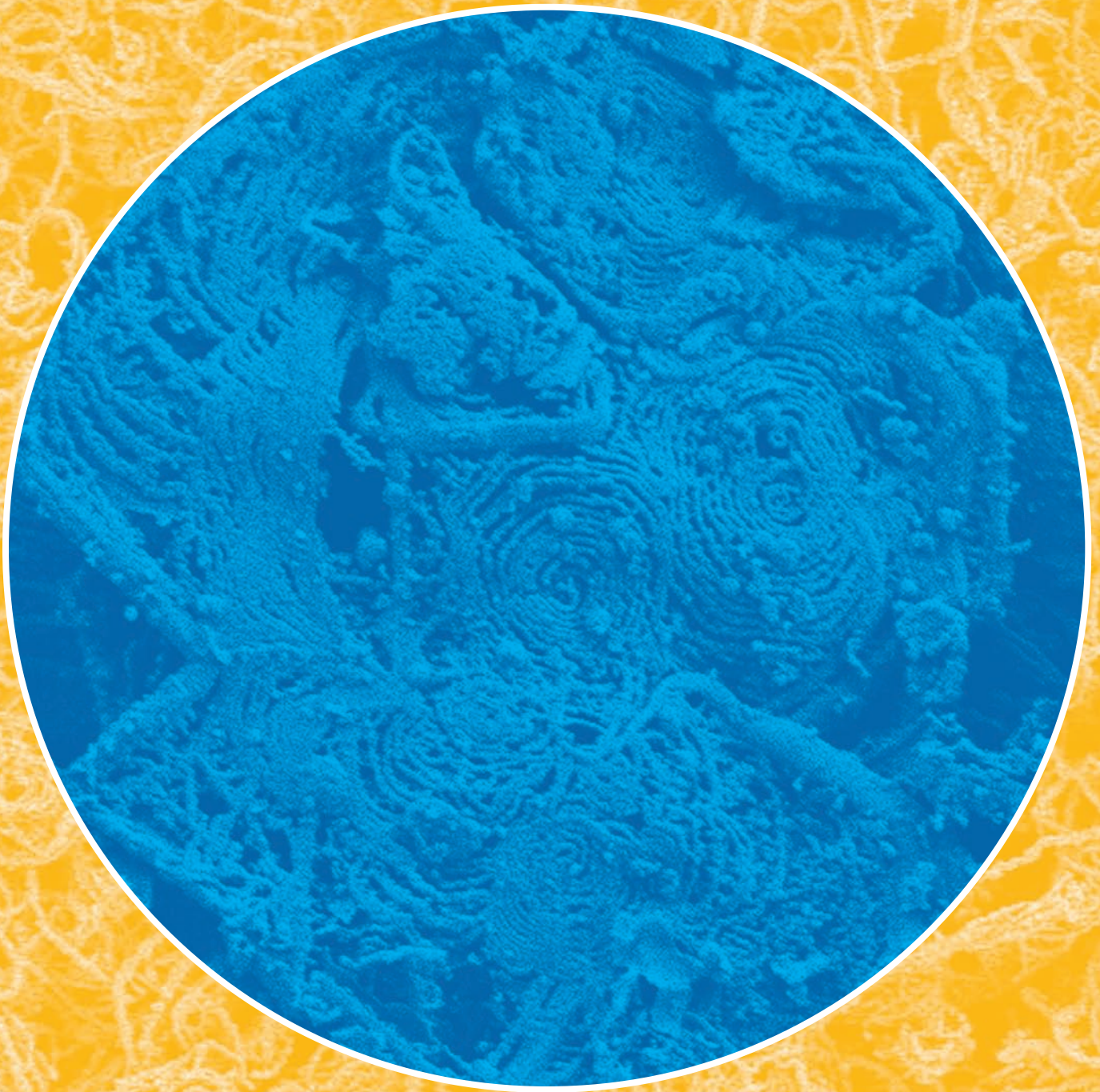


APPENDIX





Organigramm

Organization Chart

Biomaterials Director: Prof. Peter Fratzl · Secretary: Kerstin Gabbe

- Biological Materials**
 - Mineralized Tissues/Dr. Himadri S. Gupta
 - Bone Regeneration/Dr. Inderchand Manjubala
 - Mechanobiology/Dr. Richard Weinkamer
 - Plant System Biomechanics/Dr. Ingo Burgert
 - Bone Material Quality and Osteoporosis Research/Prof. Peter Fratzl
- Biological and Bioinspired Materials**
 - Biological and Bio-Inspired Materials/Dr. Barbara Aichmayer, Dr. Rivka Elbaum, Dr. Paul Zaslansky, Prof. Peter Fratzl
- Bio-Inspired Materials**
 - Mesoscale Materials and Synchrotron Research/Dr. Oskar Paris

Colloid Chemistry Director: Prof. Markus Antonietti · Secretary: Annette Pape

- Heterophase Polymerization**
 - Heterophase Polymerizations – Polymer Dispersions/Dr. Klaus Tauer
- Self-organizing Polymers**
 - Biohybrid Polymers/Dr. Helmut Schlaad
 - Polymer-Bioconjugates as Macromolecular LEGO[®]-Bricks/Dr. Hans G. Börner
 - Biomimetic Mineralization/Dr. Helmut Cölfen
- Mesoporous Materials and Nanoparticles**
 - Organic Chemistry Meets Inorganic Materials Synthesis/Dr. Markus Niederberger
Since January 2007 Assistant Professor (Tenure Track) for Multifunctional Materials at the ETH Zürich
 - Synthesis and Characterization of Self-assembled Inorganic Materials/Dr. Bernd Smarsly
From October 2007 Professor (W2) in Physical Chemistry at the University of Gießen
 - Mesoporous "Non-Oxidic" Materials/Dr. Arne Thomas
 - Hydrothermal Carbon and Modern Separation Materials/Dr. M. Titirici
- Modern Techniques of Colloid Analysis**
 - Fractionating Colloid Analytics/Dr. Helmut Cölfen
 - Electron Microscopic Studies of Colloidal Systems and Biomaterials/Dr. Jürgen Hartmann
 - Light Scattering at Interfaces/Dr. Reinhard Sigel

Interfaces Director: Prof. Helmuth Möhwald · Secretary: Karin Kreßler

- (Quasi) Planar Interfaces-Fluid Interfaces**
 - Interactions at Interfaces: Langmuir Monolayers as Model Systems/Dr. Gerald Brezesinski
 - Dilational Rheology of Mixed Protein-Surfactant Adsorption Layers/Dr. Reinhard Müller
 - Thin Soft Films/Dr. Rumen Krastev
 - Ion Distribution at Interfaces/Dr. Hubert Motschmann
- Solid Interfaces**
 - Nucleation, Interfacial Molecular Mobility and Ordering of Alkanes at Solid/Vapor Interfaces/Dr. Hans Riegler
- Non-Planar Interfaces**
 - Nanoscale Membranes: Narrowing the Gap between Materials Science and Biology/Dr. Andreas Fery
Since March 2006 Professor (W2) in Physical Chemistry at the University Bayreuth
 - Multifunctional Polymer Microcapsules/Dr. Gleb Sukhorukhov
Since March 2005 Chair in Biopolymers at the Queen Mary University of London
 - From Molecular Modules to Modular Materials/Dr. Dirk G. Kurth
 - Active Coatings Based on Incorporated Nanocontainers/Dr. Dmitry Shchukin
 - Bioinspired Control of Electrical and Optical Properties of Interfaces/Prof. Helmuth Möhwald
 - Ordering of Functional Nanoparticles/Dr. Dayang Wang
- International Joint Laboratories**
 - Molecular Assembly of Biomimetic Systems and Nanostructures/Prof. Junbai Li
- Research Group Nanotechnology for Life Science**
 - Research Group Nanotechnology for Life Science/Dr. Jean-Francois Lutz

Managing Director (2005-2006)

Prof. Peter Fratzl

Theory & Bio-Systems Director: Prof. Reinhard Lipowsky · Secretary: Gudrun Conrad

- Polymers and Proteins**
 - Charged Polymers and Polymer Brushes/Dr. Christian Seidel
 - Peptide Folding, Peptide Aggregation/Dr. Volker Knecht
 - Protein Folding and Folding Kinetics/Dr. Thomas Weikl
- Molecular Motors**
 - Chemomechanical Coupling and Motor Cycles/Prof. Reinhard Lipowsky
 - Cooperative Transport and Motor Traffic/Prof. Reinhard Lipowsky
- Rods and Filaments**
 - Semiflexible Rods and Filaments/Dr. Jan Kierfeld
 - Phase Behavior of Rigid Rods/Dr. Thomas Gruhn
- Membranes and Vesicles**
 - Membrane Lab/Dr. Rumiana Dimova
 - Molecular Dynamics of Membranes/Dr. Volker Knecht
 - Multicomponent Membranes/Dr. Thomas Weikl
- Networks in Bio-Systems**
 - Activity Patterns/Prof. Reinhard Lipowsky
 - Network Theories of Evolution/Dr. Angelo Valleriani

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Renate Müller, Kerstin Wagner

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Hagen Hannemann, Dirk Nast, Heinz Schmidt,

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Prof. Dr. Steve Weiner	Department of Structural Biology (Weizmann Institute of Science)

Special thanks to Prof. Gerhard D. Findenegg, Prof. Toyoki Kunitake, Prof. Dominique Langevin, Prof. Wolfgang v. Rybinski and Prof. Erich Sackmann for their many years of work in the Scientific Advisory Board.

Drittmittelprojekte

Third Party Funds

Öffentliche Zuwendungsgeber

Zuwendungsgeber	Thema	Projektleiter	Bewilligungszeitraum	Zusammenarbeit mit
BMBF	Polymere Haftvermittler zur Verbesserung der Eigenschaften funktionaler Papiere	Dr. Riegler GF	01.04.2002-31.03.2005	SCA Hygiene Products GmbH, Fraunhofer-Gesellschaft f. Angewandte Forschung e.V., Capsolution Nanoscience AG
BMBF	Nanobiotechnologie-Verbundprojekt: Multifunktionale künstliche Zellen als Transporter, Sensoren und Nanoreaktoren	Prof. Sukhorukov GF	01.05.2002-30.04.2005	Universität Leipzig, Capsolution Nanoscience AG
BMBF	Bionik (2): Übertragung des Konzepts der Matrixeinbettung von Pflanzenfasern auf technische Faserverbundwerkstoffe	Dr. Burgert BM	01.07.2006-31.03.2007	Institut für Textil- und Verfahrenstechnik Denkendorf, Botanischer Garten der Universität Freiburg
BMWA/AIF	Entwicklung neuartiger Detektions- und Messmethoden für die Analytik von Kolloiden; Detektorentwicklung und Anwendung für die Analytik von Kolloiden	Prof. Antonietti Dr. Cölfen KC	03.01.2005-31.12.2006	
FWF Wien	Charakterisierung unbehandelter und modifizierter Holzfasern	Dr. Burgert BM	01.11.2003-31.10.2006	
HMI Bln.GmbH	Wissenschaftliche und technische Zusammenarbeit auf dem Gebiet der Untersuchung von Oberflächen und dünnen Schichten mit Neutronenstreuung	Prof. Möhwald GF	01.01.1999-	
DFG	Mesoskopisch strukturierte Verbundsysteme; Hierarchische Architekturen aus Modulen mit metallosupramolekularen Koordinations-Polyelektrolyten	Prof. Möhwald Dr. Kurth GF	01.01.2001-	
DFG	Mesoskopisch strukturierte Verbundsysteme; Strukturbildung und Dynamik in selbstorganisierenden Blockcopolymer-Tensid-Mischsystemen	Dr. Schlaad KC	01.01.2004-	Technische Universität Berlin
DFG	Mesoskopisch strukturierte Verbundsysteme; Ordnungsstrukturen in Systemen aus stäbchenförmigen Molekülen	Dr. Gruhn Prof. Lipowsky TH	01.01.2004-	
HMI Berlin	Mesoskopisch strukturierte Verbundsysteme; Strukturbildung von Polyelektrolyten und Kolloiden an flüssigen Grenzflächen und in dünnen Filmen	Prof. v. Klitzing GF	01.01.2004-	

BM – Abteilung Biomaterialien/Department of Biomaterials

GF – Abteilung Grenzflächen/Department of Interfaces

KC – Abteilung Kolloidchemie/Department of Colloid Chemistry

TH – Abteilung Theorie & Bio-Systeme/Department of Theory & Bio-Systems

Öffentliche Zuwendungsgeber

Zuwendungsgeber	Thema	Projektleiter	Bewilligungszeitraum	Zusammenarbeit mit
DFG	Mesoskopisch strukturierte Verbundsysteme; Molekulare Prozesse in mesoskopisch strukturierten Polyelektrolytsystemen	Prof. Möhwald GF	01.01.2004-	Technische Universität Berlin
DFG	Emmy-Noether-Programm: Bioorganische und biometrische Polymere: Synthese, Charakterisierung und Anwendung der Polymerhybridsysteme – Nachwuchsgruppe	Dr. Börner KC	01.04.2003-31.12.2006	
DFG	Emmy-Noether-Programm: Bioorganische und biomimetische Polymere zur programmierbaren Strukturierung synthetischer Polymermaterialien: Synthese, Charakterisierung und Anwendung der Polymerhybridsysteme	Dr. Börner KC	01.04.2005-	
DFG	Emmy-Noether-Programm: Modelling forces and signalling in cell adhesion – Nachwuchsgruppe	Dr. Schwarz TH	01.01.2004-31.01.2005	
DFG	Kombination von Reflektions-Interferenz-Kontrast-Mikroskopie mit kraftmikroskopischen Methoden zur Untersuchung von Adhäsion und mechanischen Eigenschaften von Polyelektrolyt-Hohlkörpern	Dr. Fery GF	01.05.2003-30.04.2005	
DFG	Higher Levels of Self-Assembly of Ionic Amphiphilic Copolymers (SONS-AMPHI)	Dr. Schlaad KC	01.10.2003-	
DFG	Synthese von Nanodrähten und Nanoröhren durch kontrollierte Organisation oberflächenfunktionalisierter Metalloxid-Nanopartikel	Dr. Niederberger KC	15.07.2004-14.04.2007	
DFG	Spektroskopische ellipsometrische Lichtstreuung an Flüssigkristall-Miniemulsionen	Dr. Sigel KC	01.01.2005-31.08.2007	
DFG	Kombination von Reflektions-Interferenz-Kontrast Mikroskopie mit kraftmikroskopischen Methoden zur Untersuchung von Adhäsion und mechanischen Eigenschaften von Polyelektrolyt-Hohlkörpern	Dr. Fery GF	01.05.2006-	
DFG	Retrosynthese von Biomineralien über mesoskopische Transformation von amorphen Precursorpartikeln in natürlichen organischen Matrizen	Dr. Cölfen KC	01.01.2006-	
DFG	Structure Elucidation of shear oriented ionic self-assembled materials (SISAM)	Prof. Antonietti KC	09.09.2003-	
DFG	Adhäsion und Fusion von Lipid-Membranen	Dr. Dimova, Prof. Lipowsky TH	01.01.2004-	
DFG	Amyloidprotein-Lipid-Wechselwirkung an Grenzflächen	Dr. Brezesinski GF	01.03.2003-28.02.2005	

Öffentliche Zuwendungsgeber

Zuwendungsgeber	Thema	Projektleiter	Bewilligungszeitraum	Zusammenarbeit mit
DFG	Untersuchung der spezifischen Wechselwirkung maßgeschneiderter Blockcopolymere und Polypeptide mit Mineraloberflächen in AFM-Desorptionmessungen	Dr. Cölfen KC	01.11.2003-31.12.2005	
DFG	Kristallisation von Calciumcarbonat und -phosphat über mesoskopische Transformation von Precursorpartikeln in natürlichen organischen Matrizen als Template und Modellsysteme für Biomaterialien	Dr. Cölfen KC	15.10.2003-31.12.2005	
DFG	Entwicklung von katalytisch aktiven Dendrizen mit enzymanalogem Struktur-Wirkungsprofil	Dr. Kurth GF	15.07.2004-14.06.2006	
DFG	Counterion Distribution in aligned Lamellar Phases and on Monolayers at the air/water Interface	Prof. Möhwald GF	01.11.2004-	
DFG	Controlled Precipitation of Biominerals using Catanionic Surfactant Self-Assembly Structures	Dr. Cölfen KC	15.08.2004-	
DFG	Complex fluids: From 3 to 2 Dimensions (Deutsch-Französisches Netzwerk)	Prof. Möhwald GF	01.01.2003-	
DFG	Adsorptionsdynamik von Tensiden an Grenzflächen zwischen zwei Flüssigkeiten in Anwesenheit von Lösungsmittelgradienten	Dr. Miller GF	01.10.2004-30.09.2006	
DFG	Molecular magnetism of metallo-supramolecular, hierarchically ordered materials containing periodically arranged metal-ligand-complexes	Dr. Kurth GF	01.06.2005-	
DFG	Controlled Radical Polymerization (CRP) in aqueous heterophase systems	Dr. Tauer KC	01.11.2004-04.09.2005	
DFG	Structure-mechanical property relations of polyelectrolyte multilayer and free-standing membranes	Dr. Fery GF	01.05.2006-	
DFG	Finanzierung von Gastaufenthalten ost- und mitteleuropäischer Wissenschaftler	Dr. Vollhardt GF	01.03.2006-31.05.2006	
DFG	Remote (microwave) activated release from composite nanoparticle/polymer microcapsules (Deutsch-Russisches Kooperationsprojekt)	Prof. Möhwald GF	17.10.2006-	
DFG/RFBR	Remote (microwave) activated release from composite nanoparticle/polymer microcapsules	Prof. Sukhorukov, Dr. Shchukin GF	09.2006-2008	Institute of Regio-engineering and Electronics (RAN) Moscow
DAAD	Projektbezogener Austausch mit Portugal	Dr. Brezesinski GF	01.01.2006-31.12.2007	
DAAD	Projektbezogener Austausch mit Griechenland	Dr. Sigel KC	01.01.2006-31.12.2007	
DAAD	Projektbezogener Austausch mit Bulgarien	Dr. Miller GF	01.01.2005-31.12.2006	

EU

Zuwendungs- geber	Thema	Projektleiter	Bewilligungszeitraum	Zusammenarbeit mit
ESA	Bone Structure, Changes in Microgravity	Dr. Saporin BM	01.10.2004-30.09.2005	Charité, Berlin Universität Potsdam ZIB Berlin University of Aarhus Scaco Medical AG Siemens AG Indeed Visual Concepts GmbH
ESA/ESTEC	FASES - Fundamental and applied studies of emulsion stability	Dr. Miller GF	01.10.2003-31.12.2008	IENI, Genua, Italien Universität Aix-Marseille Universität Compiègne, France Universität Complutense Madrid Universität Florenz IPF, Dresden Aristotele Universität Thessaloniki
ESA/ESTEC	Topical Team: Foam and Emulsion Technologies- Concerted Action Team	Dr. Miller GF	01.10.2003-30.09.2007	CNR, Genua, Italien Universität Lorence, Italien Universität Marseille, Frankreich Universität Compiègne, Frankreich IPF Dresden
EU	Self-organized nanostructures of amphiphilic copolymers	Prof. Antonietti KC	01.01.2004-31.12.2007	Technische Universität Berlin Wageningen Universiteit, Niederlande Commissariat a l'énergie atomique, Paris Centre National de la Recherche Scientifique, Paris Univerzita Karlova v Praze, Prag BASF AG, Ludwigshafen Rhodia Recherches S.A., Frankreich Universität Basel, Schweiz Moscow State University, Russland
EU	Nanocapsules for Targeted Controlled Delivery of Chemicals	Prof. Sukhorukov Prof. Möhwald GF	01.03.2004-28.02.2007	SINTEF, Norwegen UFC, Frankreich ICSC, Poland CERTH/CPERI, Griechenland PlasmaChem, Mainz Coventya, Frankreich IFP, Frankreich KeraNor, Norwegen Coatex, Frankreich ICB, Polen

EU

Zuwendungs- geber	Thema	Projektleiter	Bewilligungszeitraum	Zusammenarbeit mit
EU	Early Stage Research Training on Biomimetic Systems	Prof. Lipowsky Dr. Valleriani TH	01.09.2004-31.08.2008	University of Copenhagen Politecnico di Milano Universite Paul Sabatier Toulouse University of Edinburgh University of Leoben
EU	Self-Organisation under Confinement	Dr. von Klitzing GF	01.01.2005-31.12.2008	Kungliga tekniska Högskolan, Stockholm Sofijski Universitet Kliment Ohridski, Sofia Universitas Vilnensis, Vilnius University of Oxford Akzo Nobel Surface Chemistry AB, Schweden Eotvoes Lorand University, Budapest Aarhus Universitet, Dänemark Universite de Paris, Frankreich Lunds Universitet, Schweden
EU	Nanoengineered chemical Synthesis Inside Restricted Volume of Nano- and Microsized Polyelectrolyte Capsules	Prof. Möhwald Prof. Sukhorukov GF	01.05.05-30.04.07	
EU	Active Biomemetic Systems	Prof. Lipowsky Dr. Valleriani TH	01.05.2005-30.04.2008	Stiching voor Fundamenteel Onderzoek der Materie, Niederlande BASF AG, Deutschland Institute Curie Section Recherche, Frankreich European Molecular Biology Laboratory, Deutschland Institut für Molekulare Biotechnologie, Deutschland Centre National de la Recherche Scientifique, Frankreich Politecnico di Milano, Italien Universität Leipzig, Deutschland
EU	Development of Multifunctional Nanometallic Particles using a new ProcessSono-electrochemistry	Prof. Möhwald, Prof. Sukhorukov GF	01.03.2005-28.02.2008	Universität Padua, Italien Coventry University, UK University of Kent, UK Hebrew University of Jerusalem, Israel POMETON S.p.A., Italien INKSURE Ltd., Israel BASF AG, Deutschland O.S.M.-DAN Ltd., Israel

EU

Zuwendungs- geber	Thema	Projektleiter	Bewilligungszeitraum	Zusammenarbeit mit
EU	Open ToK: On Process and Engineering of Nanoporous Materials	Prof. Möhwald Dr. Fery GF	01.03.2006-28.02.2010	Universität Tarragona, Spanien Univeristé Henri Poincaré, Nancy University of Liverpool, UK Academy of Sciences of Czech Republic Virginia Commonwealth University, USA Centre National de la Recherche Scientifique, Frankreich
EU	System for in-situ theranostic using micro-particles triggered by ultrasound	Dr. Fery GF	01.10.2006-30.09.2009	Consorzio Roma Ricerche, Rom Universita degli Studi die Roma, Italien Kungliga tekniska Högskolan, Stockholm University of Ireland, Dublin Karolinska Institute, Stockholm Istituto Nazionale per lo stu- dio e la cura die Tumori, Mailand Medtronic bakken Reserach Center B. V., Niederlande Capsulation NanoScience AG EBIT AET S.P.A., Italien
EU	Novel Materials for Silicate-Based Fuel Cells	Prof. Möhwald Dr. Shchukin GF	01.12.2006-30.11.2009	University of Averio, Portugal Foundation of Research and Technology Hellas, Griechenland Katholieke Universiteit Leuven, Belgien Borakov Institute of Catalysis, Russland Ceramics and Refractories Technological Development Company, Griechenland Technische Universität Clausthal Ceramics Techniques et Industrielles, Frankreich

Stiftungen

Zuwendungsgeber	Thema	Projektleiter	Bewilligungszeitraum	Zusammenarbeit mit
VW-Stiftung	Polyoxometalate clusters in self-assembling hierarchical architectures: from discrete nanoscopic structures to extended liquid crystalline mesophases	Dr. Kurth GF	01.09.2002-31.08.2005	Universität Bielefeld Humboldt-Universität Berlin
VW-Stiftung	Biocomposite capsules as artificial viruses	Dr. Brezesinski GF	01.01.2003-31.12.2005	Universität Leipzig Universität Bochum
VW-Stiftung	Nanoengineered polymer capsules: tools for detection, controlled delivery and site specific manipulation	Dr. Sukhorukov GF	01.07.2004-30.06.2007	Universität München Internationale Universität Bremen
VW-Stiftung	Blockcopolymer vesicles with controlled uptake/release functions for drugs and genes	Prof. Antonietti KC	15.07.2004-14.07.2007	Universität Hamburg Universität Duisburg Universität Freiburg
A.v.H.	Sofia Kovalevskaja- Preis	Prof.Sukhorukov GF	01.12.2001-31.12.2005	
NCSU	Single-Step Protein Surface-Attachment to Electrospun Fibers	Dr. Börner KC	01.05.2004-30.04.2007	
GIF	Understanding the Toughness of Biological Mineralised Tissues	Prof. Fratzl BM	01.01.2005-31.12.2007	Weizmann Institute of Science, Rehovot
LIKAT	Unterauftrag zum AIF-Projekt: Mesoporöse Hybridsysteme	Prof. Antonietti Dr. Smarsly KC	01.09.2006-31.08.2008	Leibniz-Institut für Katalyse, Rostock
Forsyth Institute	Forsyth Institute	Prof. Fratzl BM	01.08.2005-31.07.2007	
Human Frontier Science Program (HFSP)	Theoretical Modelling of Actin Polymerization	Prof. Lipowsky TH	01.04.04-31.03.07	

Industrie

Zuwendungs- geber	Thema	Projektleiter	Bewilligungszeitraum	Zusammenarbeit mit
Degussa	Entwicklung, Herstellung und Charakterisierung von mittels Miniemulsionspolymerisation verkapselten Pigmenten	Prof. Antonietti KC	01.01.2004-01.01.2006	
Merck	Improvement and development of new monolithic sol-gel materials/Investigation of model systems for thin films of hierachical meso-structured pore systems and transfer to open tubular campilar systems for nano-LC	Prof. Antonietti Dr. Smarsly KC	01.03.2004-31.10.2008	
Clariant	Steuerung von Kristallisationsprozessen bei Pigmenten durch polymere Additive	Prof. Antonietti Dr. Cölfen KC	01.10.2004-30.09.2006	
BASF	Mesoporöse Hybridsysteme	Prof. Antonietti Dr. Smarsly KC	01.05.2006-30.04.2007	
Servier	Bone Material characteristic after 3 years of strontium ranelate treatment	Prof. Fratzl BM	01.09.2006-30.08.2009	I.R.I.S., Frankreich
Henkel	Funktionale Biohybridpolymersysteme	Dr. Börner KC	01.12.2006-30.11.2007	

Ausgewählte Veranstaltungen

Selected Events

- **12. Januar 2005 Poster Session**
- **27. April 2005 Girl's Day**
- **22.-26. May 2005 Wilhelm und Else Heraeus-Seminar 347: Dynamics of Cell and Tissue Structure**
Physikzentrum Bad Honneff
- **27. May 2005 Alumni Meeting and Poster Session**
Trends in Colloids and Interface Science
- **11.-16. Juni 2005 Wissenschaftsmarkt im Potsdamer Lustgarten**
im Rahmen des Wissenschaftssommers 2005 vom 11.-25. June
- **16. August 2005 "A Workbench for Single Macromolecules"**
Prof. Jürgen Rabe (Humboldt-Universität zu Berlin)
- **27. August 2005 Open Day/Tag der Offenen Türen**
Research Campus Golm
- **30. November-2. Dezember 2005 Meeting of the Scientific Committee/Fachbeirat and Poster Session**
- **2.-6. July 2006 6th European Conference on Foams, Emulsions and Applications (EUFOAM 2006)**
- **27. April 2006 Girl's Day**
- **10. June 2006 Open Day/Tag der Offenen Türen**
University Potsdam
- **16. June 2006 Alumni Meeting and Poster Session**
Trends in Colloids and Interface Science
- **26. June-29. June 2006 Marie-Curie EST Conference "Bio-Systems" Berlin 2006**
Organized by: Marie-Curie EST on Biomimetic Systems
- **25. September-6. October 2006 Bio-Systems Summer School, Beijing 2006**
Max Planck Institute of Colloids and Interfaces & Institute of Theoretical Physics of the Chinese Academy of Sciences
- **6. December 2006 From Diffraction to Imaging: International Symposium on Scanning Microbeam Small- and Wide-Angle Scattering of Hierarchically Structured Materials**
BESSY Adlershof

Wissenschaftliche Abschlüsse

Scientific Degrees

Diploma Theses

Department of Colloid Chemistry:

- Barth, A.: Synthese und Strukturänderung von Chromophoren auf der Basis von Retinal. Technische Universität Chemitz (2005).
- Hahn, H.: Rezeptorvermittelte Blockcopolymersynthese. Universität Potsdam (2006).
- Hentschel, J.: Synthese und Charakterisierung von schaltbaren Peptid-Polymerkonjugaten zur peptidgelenkten Organisation synthetischer Polymere. Universität Potsdam (2006).
- Oertel, A.: Abtrennung und Aufkonzentration von polymerstabilisierten Nanopartikeln. Universität Potsdam (2006).

Department of Interfaces:

- Dönch, I.: Rasterkraftmikroskopie und Polyelektrolyt Multilagen. Freie Universität Berlin (2005).
- Leinweber, C.: Droplet formation in microstructured porous polymeric materials. Universität Potsdam (2005).
- Reinhold, B.: In-situ Untersuchungen zur Abscheidung kolloidaler Schichten auf vorstrukturierten Substraten. Universität Potsdam (2006).
- Sievers, T.: Multischichten ausvernetzten Koordinationspolyelektrolyten. Berlin (2005).

Master Theses

Department of Interfaces:

- Nazaran, P.: Mobility of polyelectrolyte multilayer: Influence of external stimuli. Freie Universität Berlin, Humboldt Universität zu Berlin, Technische Universität Berlin, Universität Potsdam (2005).

Department of Biomaterials:

- Kanawka, K.: Ultrastructural Deformation in the Fibrillar Matrix of Demineralised Bone, AGH University of Science and Technology Krakow (2006).

PhD Theses

Department of Biomaterials:

- Hartmann, M.: Lattice Models in Material Science Diffusion, Trabecular Bone Remodelling and Linear Elastic Networks. Humboldt Universität zu Berlin (2006).
- Wagermaier, W.: Synchrotron X-ray diffraction studies of bone structure and deformation. Montanuniversität Leoben (2006).
- Zickler, G.: Structure and Mechanical Properties of Carbon- and Silica-based Nanomaterials. Montanuniversität Leoben, September (2006).
- Ali, A. Md. I.: **Department of Colloid Chemistry:**
Morphology Control in Nanoscopic Composite Polymer Particles. Universität Potsdam (2005).
- Brezesinski, T.: Herstellung und Charakterisierung Funktioneller Mesostrukturierter Metalloxidfilme. Universität Potsdam (2005).
- Eckhardt, D.: Rationales Design von Oligopeptid-Organisatoren zur Bildung von nanostrukturierten Polyethylenoxid-Fasern. Universität Potsdam (2005).
- Garnweitner, G.: Nonaqueous Synthesis of Transition Metal Oxide Nanoparticles and Their Formation Mechanism. Universität Potsdam (2005).
- Groenewolt, M.: Nanostrukturierte Materialien durch Neue Templatsysteme und Nutzung Mesoporöser Silikate als Nano-Reaktoren. Universität Potsdam (2005).
- Holtze, C.: Neue Einflüsse und Anwendungen von Mikrowellenstrahlung auf Miniemulsionen und ihre Kompositpolymere. Universität Potsdam (2005).
- Justynska, J.: Towards a Library of Functional Block Copolymers – Synthesis and Colloidal Properties. Universität Potsdam (2005).

- Kozempel, S.: Emulgatorfreie Emulsionspolymerisation – Monomerlösungszustand und Teilchenbildung. Universität Potsdam (2005).
- Nozari, S.: Towards Understanding RAFT Aqueous Heterophase Polymerization. Universität Potsdam (2005).
- Polleux, J.: Ligand-Mediated Synthesis and Assembly of Crystalline Metal Oxide Nanoparticles. Universität Potsdam (2005).
- Voß, R.: Mesoporous organosilica materials with aminefunctions: surface characteristics and chirality. Universität Potsdam (2005).
- Ba, J.: Nonaqueous Synthesis of Metal Oxide Nanoparticles and Their Assembly into Mesoporous Materials. Universität Potsdam (2006).
- Bhattacharyya, S. K.: Detector Development for Analytical Ultracentrifuge. Universität Potsdam (2006).
- Franke, D.: Novel Surfactants for the Production of Functional Nanostructured Materials via the Ionic Self Assembly (ISA) Route. Universität Potsdam (2006).
- Gehrke, N.: Retrosynthese von Perlmutter. Universität Potsdam (2006).
- Meyer, M.: PIPOX-PEP: Kontrollierte Synthese und Aggregationsverhalten von Blockcopolymeren mit schaltbarer Hydrophilie. Universität Potsdam (2006).
- Rettig, H.: Methoden zur Synthese von definierten bioorganisch-synthetischen Blockcopolymeren. Universität Potsdam (2006).
- Duan, H.: **Department of Interfaces:** Functional Nanoparticles as Self-Assembling Building Blocks and Synthetic Templates. Universität Potsdam (2005).
- Elsner, N.: Nanomechanik und Adhäsion von Polyelektrolytmultischicht-Hohlkapseln. Universität Potsdam (2005).
- Kölsch, P.: Static and dynamic properties of soluble surfactants to the air/water interface. Universität Potsdam (2005).
- Kubowicz, S.: Design and Characterization of Multicompartment Micelles in Aqueous Solution. Universität Potsdam (2005).
- Lazar, P.: Transport mechanisms and wetting dynamics in molecularly thin films of long-chain alkanes at solid/vapour interface: relation to the solid-liquid phase transition. Universität Potsdam (2005).
- Maltseva, E.: Model membrane interactions with ions and peptides at the air/water interface". Universität Potsdam (2005).
- Mishra, N. C.: Interactions in and Stability of Thin Liquid Films. Universität Potsdam (2005).
- Pinto da Rocha, S. C.: Interface Controlled Secondary Changes of the Fibril Forming Peptides B18 and Amyloid. Universidade do Porto (2005).
- Sieverling, N.: Kationische Copolymere für den rezeptvermittelten Gentransfer. Universität Potsdam (2005).
- Andersen, A.: Surfactants Dynamics at Interfaces – A series of Second Harmonic Generation experiments. Universität Potsdam (2006).
- Delajon, C. B.: Wechselwirkung von Lipidmembranen mit Polyelektrolytmultischichten. Universität Potsdam (2006).
- Gromelski, S.: Wechselwirkungen zwischen Lipiden und DNA – Auf dem Weg zum künstlichen Virus. Universität Potsdam (2006).
- Köhler, R.: Phasen- und Transportverhalten von Triacontansubmonolagen an der Grenzfläche zwischen Luft und Siliziumoxid/Silizium. Universität Potsdam (2006).
- Nolte, M.: Integration of freestanding polyelectrolyte multilayer membranes in large scale structures. Universität Potsdam (2006).
- Prevot, M. E.: Introduction of a Thermo-sensitive Non-polar Species into Polyelectrolyte Multilayer Capsules for Drug Delivery. Universität Potsdam (2006).

Sczech, R.: Haftvermittlung von Polyelektrolyten zwischen Celluloseoberflächen. Universität Potsdam (2006).

Symietz, C.: Kopplung von Polyelektrolyten und geladenen Lipid-Monoschichten an der Wasser/Luft-Grenzfläche. Universität Potsdam (2006).

Department of Theory and Bio-Systems:

Asfaw Taye, M.: Adhesion of multi-component membranes and strings. Universität Potsdam (2005).

Boroudjerdi, H.: Charged polymer-macroion complexes. Universität Potsdam (2005).

Erdmann, T.: Stochastic dynamics of adhesion clusters under force. Universität Potsdam (2005).

Haluska, C.: Interactions of funktionalized vesicles in the presence of europium (III) chloride. Universität Potsdam (2005).

Kraikivski, P.: Non-equilibrium dynamics of absorbed polymers and filaments. Universität Potsdam (2005).

Kumar N., A.: Molecular dynamics simulations of polyelectrolyte brushes. Universität Potsdam (2006).

Linke, G. T.: Eigenschaften fluider Vesikeln bei endlichen Temperaturen. Universität Potsdam (2005).

Habilitations

Department of Interfaces:

Fery, A.: Micro-Mechanics and Adhesion of Artificial Capsules from Method-development to Understanding Structure-property Relations. Universität Potsdam (2006).

Department of Theory and Bio-Systems:

Kierfeld, J.: Strings and filaments: from vortices to biopolymers. Universität Potsdam (2006).

Personalien

Appointments and Honors

2005

Ehrungen/Mitgliedschaften/Honorarprofessuren Honors/Memberships/Honorary Professorships

- Professor Dr. Dr. h. c.
Markus Antonietti Director of the Colloid Chemistry Department, was appointed as Turner Alfrey Visiting Professor by the Michigan Molecular Institute (MMI).
- Dr. Helmut Schlaad Group Leader in the Department of Colloid Chemistry obtained the Hermann-Schnell Award of the GDCh for the best Junior Faculty Work in Polymer Science.
- Dr. Torsten Brezesinski PhD Student at the Department of Colloid Chemistry obtained the Dieter-Rampacher Award. The Award is annually awarded to the youngest Ph.D. student of the Max Planck Society.

2006

Ruf an eine Universität Appointments

- Dr. Andreas Fery Group Leader in the Department of Interfaces, accepted a position as Professor (W2) in Physical Chemistry at the University Bayreuth.
- Dr. Markus Niederberger Group Leader in the Department of Colloid Chemistry accepted a position as Assistant Professor (Tenure Track) for Multifunctional Materials at the ETH Zürich.

Ehrungen/Mitgliedschaften/Honorarprofessuren Honors/Memberships/Honorary Professorships

- Professor Dr. Dr. h. c.
Markus Antonietti Director of the Department of Colloid Chemistry, was appointed as Honorary Professor at the University of Science & Technology of China.
- Prof. Dr. Reinhard
Lipowsky Director of the Department of Theory & Bio-Systems, was appointed as Honorary Professor at the Humboldt University Berlin.
- Prof. Dr. Helmuth
Möhwald Director of the Department of Interfaces, was appointed as Honorary Professor at the Chinese Academy of Sciences.
- Dr. Bernd Smarsly Group Leader in the Department of Colloid Chemistry obtained the Heinz Maier Leibnitz Award 2006.
- Dr. Georg Garnweitner Scientist in the Department of Colloid Chemistry obtained the Publication Award of the Leibniz Kolleg at the University Potsdam.

2007

Ruf an eine Universität Appointments

- Dr. Bernd Smarsly Group Leader in the Department of Colloid Chemistry accepted a position as Professor (W2) in Physical Chemistry at the University Gießen.

Ehrungen/Mitgliedschaften/Honorarprofessuren Honors/Memberships/Honorary Professorships

- Prof. Dr. Helmuth
Möhwald Director of the Department of Interfaces, obtained the Prix-Gay-Lussac, which is awarded by the French Ministry for Research and Technology in collaboration with the Alexander Humboldt Foundation.
- Prof. Peter Fratzl Director of the Department of Biomaterials, was appointed as Corresponding Member of the Austrian Academy of Sciences.

Wissenschaftliche Veröffentlichungen und Patente

Publications and Patents

Biomaterials 2005

- Abasolo, W. P., Yoshida, M., Yamamo, H. and Okuyama, T.: Influence of structure and chemical composition on thermal softening of Palasan canes (*Calamus merrillii*). *Iawa Journal* 26, 363-374 (2005).
- Aichmayer, B., Margolis, H. C., Sigel, R., Yamakoshi, Y., Simmer, J. P. and Fratzl, P.: The onset of amelogenin nanosphere aggregation studied by small-angle X-ray scattering and dynamic light scattering. *Journal of Structural Biology* 151, 239-249 (2005).
- Aizenberg, J., Weaver, J. C., Thanawala, M. S., Sundar, V. C., Morse, D. E. and Fratzl, P.: Skeleton of *Euplectella* sp.: Structural hierarchy from the nanoscale to the macroscale. *Science* 309, 275-278 (2005).
- Alemdar, A., Iridag, Y. and Kazanci, M.: Flow behavior of regenerated wool-keratin proteins in different mediums. *International Journal of Biological Macromolecules* 35, 151-153 (2005).
- Burgert, C. and Fratzl, P.: The stick-slip mechanism in wood: evidence for a critical role of hemicelluloses in the mechanical performance. *Christchurch New Zealand*, 69-75 (2005).
- Burgert, I., Eder, M., Frühmann, K., Keckes, J., Fratzl, P. and Stanzl-Tschegg, S.: Properties of chemically and mechanically isolated fibres of spruce (*Picea abies* L. Karst.). Part 3: Mechanical characterisation. *Holzforschung* 59, 354-357 (2005).
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- Fratzl, P., Fischer, F. D. and Svoboda, J.: Energy dissipation and stability of propagating surfaces. *Phys. Rev. Lett.* 95, Art. No. 195702 (2005).
- Fratzl, P., Gupta, H. S., Paris, O., Valenta, A., Roschger, P. and Klaushofer, K.: Diffracting stacks of cards: some thoughts about small-angle scattering from bone. *Progress in Colloid and Polymer Science* 130, 32-38 (2005).
- Gierlinger, N., Hansmann, C., Roder, T., Sixta, H., Gindl, W. and Wimmer, R.: Comparison of UV and confocal Raman microscopy to measure the melamine-formaldehyde resin content within cell walls of impregnated spruce wood. *Holzforschung* 59, 210-213 (2005).
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- Grabner, M., Muller, U., Gierlinger, N. and Wimmer, R.: Effects of heartwood extractives on mechanical properties of larch. *Iawa Journal* 26, 211-220 (2005).
- Grabner, M., Wimmer, R., Gierlinger, N., Evans, R. and Downes, G.: Heartwood extractives in larch and effects on X-ray densitometry. *Canadian Journal of Forest Research-Revue Canadienne de Recherche Forestiere* 35, 2781-2786 (2005).
- Gupta, H. S., Schratte, S., Tesch, W., Roschger, P., Berzlanovich, A., Schoeberl, T., Klaushofer, K. and Fratzl, P.: Two different correlations between nanoindentation modulus and mineral content in the bone-cartilage interface. *Journal of Structural Biology* 149, 138-148 (2005).
- Gupta, H. S., Wagermaier, W., Zickler, G. A., Aroush, D. R. B., Funari, S. S., Roschger, P., Wagner, H. D. and Fratzl, P.: Nanoscale deformation mechanisms in bone. *Nano Letters* 5, 2108-2111 (2005).
- Hartmann, M. A., Weinkamer, R., Fratzl, P., Svoboda, J. and Fischer, F. D.: Onsager's coefficients and diffusion laws - a Monte Carlo study. *Philosophical Magazine* 85, 1243-1260 (2005).
- Keckes, J., Burgert, I., Müller, M., Kölln, K., Hamilton, M., Burghammer, M., Roth, S. V., Stanzl-Tschegg, S. and Fratzl, P.: In-situ WAXS studies of structural changes in wood foils and in individual wood cells during microtensile tests. *Fibre Diffraction Review* 13, 48-51 (2005).
- Loidl, D., Paris, O., Burghammer, M., Riekkel, C. and Peterlik, H.: Direct observation of nanocrystallite buckling in carbon fibers under bending load. *Phys. Rev. Lett.* 95, Art. No. 225501 (2005).
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- Mueller, R., Köhler, K., Weinkamer, R., Sukhorukov, G. and Fery, A.: Melting of PDADMAC/PSS capsules investigated with AFM force spectroscopy. *Macromolecules* 38, 9766-9771 (2005).
- Paris, O., Zollfrank, C. and Zickler, G. A.: Decomposition and carbonisation of wood biopolymers - a microstructural study of softwood pyrolysis. *Carbon* 43, 53-66 (2005).
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- Saparin, P. I., Thomsen, J. S., Prohaska, S., Zaikin, A., Kurths, J., Hege, H. C. and Gowin, W.: Quantification of spatial structure of human proximal tibial bone biopsies using 3D measures of complexity. *Acta Astronautica* 56, 820-830 (2005).
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- Thomsen, J. S., Morukov, B. V., Vico, L., Alexandre, C., Saparin, P. I. and Gowin, W.: Cancellous bone structure of iliac crest biopsies following 370 days of head-down bed rest. *Aviation Space and Environmental Medicine* 76, 915-922 (2005).
- Valenta, A., Roschger, P., Fratzl-Zelman, N., Kostenuik, P. J., Dunstan, C. R., Fratzl, P. and Klaushofer, K.: Combined treatment with PTH (1-34) and OPG increases bone volume and uniformity of mineralization in aged ovariectomized rats. *Bone* 37, 87-95 (2005).
- Weber, M., Schoeberl, T., Roschger, P., Klaushofer, K. and Fratzl, P.: Relating local bone stiffness and calcium content by combined nanoindentation and backscattered electron imaging. *Materials Research Society Symposium Proceedings* 874, L1.9, 67-72 (2005).
- Weinkamer, R., Hartmann, M. A., Brechet, Y. and Fratzl, P.: Architectural changes of trabecular bone caused by the remodeling process. *Materials Research Society Symposium Proceedings* 874, L5.11, 79-84 (2005).
- Woesz, A., Rumpler, A., Stampfl, J., Varga, F., Fratzl-Zelman, N., Roschger, P., Klaushofer, K. and Fratzl, P.: Towards bone replacement materials from calcium phosphates via rapid prototyping and ceramic gelcasting. *Materials Science & Engineering C-Biomimetic and Supramolecular Systems* 25, 181-186 (2005).
- Woesz, A., Rumpler, M., Manjubala, I., Pilz, C., Varga, F., Stampfl, J. and Fratzl, P.: The influence of the thermal treatment of hydroxylapatite scaffolds on the physical properties and the bone cell in growth behaviour. *Materials Research Society Symposium Proceedings* 874, L7.9.1 (2005).
- Biomaterials 2006**
- Aichmayer, B., Mertig, M., Kirchner, A., Paris, O. and Fratzl, P.: Small-angle scattering of S-layer metallization. *Advanced Materials* 18, 915-919 (2006).
- Burgert, I.: Exploring the micromechanical design of plant cell walls. *American Journal of Botany* 93, 1391-1401 (2006).
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- Deshpande, A. S., Burgert, I. and Paris, O.: Hierarchically structured ceramics by high-precision nanoparticle casting of wood. *Small* 2, 994-998 (2006).
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- Gierlinger, N. and Schwanninger, M.: Chemical imaging of poplar wood cell walls by confocal Raman microscopy. *Plant Physiol.* 140, 1246-1254 (2006).
- Gierlinger, N., Schwanninger, M., Reinecke, A. and Burgert, I.: Molecular changes during tensile deformation of single wood fibers followed by Raman microscopy. *Biomacromolecules* 7, 2077-2081 (2006).
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- Schmidt, M., Gierlinger, N., Schade, U., Rogge, T. and Grunze, M.: Polarized infrared microspectroscopy of single spruce fibers: Hydrogen bonding in wood polymers. *Biopolymers* 83, 546-555 (2006).
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- Svoboda, J., Fischer, F. D. and Fratzl, P.: Diffusion and creep in multi-component alloys with non-ideal sources and sinks for vacancies. *Acta Materialia* 54, 3043-3053 (2006).
- Sykacek, E., Gierlinger, N., Wimmer, R. and Schwanninger, M.: Prediction of natural durability of commercial available European and Siberian larch by near-infrared spectroscopy. *Holzforschung* 60, 643-647 (2006).
- Weber, M., Roschger, P., Fratzl-Zelman, N., Schoberl, T., Rauch, F., Glorieux, F. H., Fratzl, P. and Klaushofer, K.: Pamidronate does not adversely affect bone intrinsic material properties in children with osteogenesis imperfecta. *Bone* 39, 616-622 (2006).
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