

# MATERIALS' DAYS ROSTOCK 2007

May 3<sup>rd</sup> - May 4<sup>th</sup> 2007



Material Science at  
**ROSTOCK UNIVERSITY**  
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## Functional Materials and Nanotechnology

### General Information

This workshop represents parts of the growing Material Science activities promoted within the interdisciplinary research topic at Rostock University. Materials' Days Rostock 2007 are performed at the auditorium (Aula) in the main building of the University of Rostock. This location is in the city center of Rostock. There is free admittance to all sessions. Public is welcome. Participants should register their accommodation on their own.

Thursday, May 3<sup>rd</sup> 2007

#### Session: Introduction

Chairman: **Prof. Eberhard Burkel**  
Institute of Physics, Rostock University  
Funktionale Materialien Rostock e.V.

- 8:30 Opening / Grußworte**  
**Prof. Dr. Thomas Strothotte**, Rector of the Rostock University  
**Henry Tesch**, Minister of Education, Science and Culture of Mecklenburg-Vorpommern (invited)  
**Dr. Jürgen Seidel**, Minister of Economics Affairs of Mecklenburg-Vorpommern
- 9:15 The ScanBalt Initiative**  
Prof. Gustav Steinhoff,  
Clinic for Cardiac Surgery, University Rostock
- 9:30 Benefits and Risks from Nanotechnology or European Perspectives**  
NN.,  
European Commission, Brussels, Belgium (invited)
- 10:00 Biotribology of Artificial Hip Joints**  
Prof. Zhongmin Jin,  
School of Mechanical Engineering, University Leeds
- 10:45 Coffee Break**
- 11:15 Hierarchical Structure and Mechanical Properties of Biological Materials**  
Prof. Peter Fratzl,  
Max-Planck-Institut für Grenzflächenforschung, Potsdam

**12:00 Lunch Break**

#### Session: Nanostructured Materials

Chairman: **Prof. Alfred Leder**  
Dept. of Fluid Mechanics  
Faculty for Mechanical and Marine Engineering,  
Rostock University

- 13:00 Ceramic Matrix Composites (CMC) for Aerospace and Terrestrial Applications**  
Dr. Karin E. Handrick  
MT Aerospace AG, Augsburg
- 13:30 The Heat is on - New Materials and Concepts for Thermal Management.**  
Dr. Ludger Weber,  
Ecole Polytechnique Federale de Lausanne
- 14:15 Laser-Direct-Write Techniques for Printing Complex Materials**  
Dr. Pere Serra,  
University of Barcelona
- 15:00 Non-Pneumatic Tire Design - A Nano Perspective**  
Kundan Kumar (M.Sc.),  
Rostock University

**15:30 Coffee Break**

#### Session: Interface Functionality

Chairman: **Prof. Christoph Schick**  
Institute of Physics,  
Rostock University

- 15:50 Plasma-Sintering**  
Prof. Umberto Anselmi-Tamburini,  
University of Pavia, Italy
- 16:35 Sensing the Cell Material Interaction**  
P.D. Dr. Joachim Wegener,  
University of Münster
- 17:20 Nanostructured Implant Surfaces**  
Prof. Hans-Georg Neumann,  
DOT GmbH, Rostock
- 17:50 Nacre - a Model for New Materials**  
Prof. Monika Fritz,  
University of Bremen

**19:00 Buffet Harbor Cruise**

## Schedule

Friday, May 4<sup>th</sup> 2007

#### Session: Nanoparticles

Chairman: **Prof. Dr. Dieter G. Weiss**,  
Inst. of Biological Science, Rostock University

- 8:30 Patterning and Functionalization for Biological Interfaces**  
Dr. Hubert Rauscher,  
European Commission-DG Joint Research Center,  
Institute for Health and Consumer Protection Ispra, Italy
- 9:15 ... (title to be defined)**  
Dipl. Phys. Stefan Miltenyi,  
Managing Director, Miltenyi Biotec GmbH,  
Bergisch-Gladbach (invited)
- 9:45 Magnetic Nanoparticles**  
Karina Porath (M.Sc.),  
Rostock University

**10:15 Coffee Break**

#### Session: Nanotechnology through Biology

Chairman: **Prof. Joachim Rychly**  
Clinical Research, Dept. of Internal Medicine,  
Rostock University

- 10:35 Genetically Designed Molecular Materials for Technology and Medicine**  
Prof. Mehmet Sarikaya,  
University of Washington
- 11:20 Tissue Scaffolding: Design and Optimization**  
Prof. Peter Ma,  
University of Michigan

**12:05 Lunch Break**

#### Session: New Frontiers in Material Science

Chairman: **Prof. Arndt Rolfs**,  
Dept. of Neurology, Faculty of Medicine  
Rostock University and  
**Prof. Hermann Seitz**,  
Fluid Technique and Microfluid Technique,  
Faculty for Mechanical and Marine Engineering,  
Rostock University

- 13:00 Multi-Scale Modelling of Pharmaceutical tablet Compaction**  
Dr. James Elliott, Pfizer Institute, University of Cambridge
- 13:45 In-vivo Electron Microscopy of Nanoparticles**  
Prof. Heinrich Hohenberg,  
Heinrich Pette Institute for Experimental Virology and Immunology, Hamburg (invited)

**14:30 Closing Remarks**

#### Afternoon Offer: Possible Site Visits:

- Visit to the Research Center on Biosystems Technology and Biomaterials, Rostock-Warnemünde
- Visit to the Live Cell Imaging Center, University of Rostock, Inst. of Biological Sciences
- Visit to the Biomedical Research Center, Rostock

#### Location:

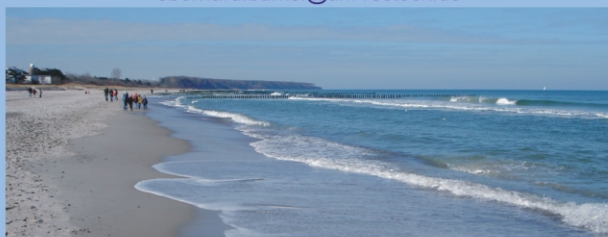
Aula, Main Building of the Rostock University, Universitätsplatz 1

#### Organizing Committee:

Prof. Eberhard Burkel, Prof. Joachim Rychly,  
Prof. Klaus-Peter Schmitz, Prof. Dieter G. Weiss,  
Prof. Gerhard Scharf, Prof. Hermann Seitz,  
Prof. Christoph Schick, Prof. Wolfram Mittelmeier

### Contact and further Information:

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(tram stop Lange Straße)



Aula inside the Main Building  
of the University of Rostock

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