

# **8<sup>TH</sup> MATERIALS' DAYS**

## **INTERNATIONAL SYMPOSIUM**

NEW MATERIALS FOR ENERGY TECHNOLOGY  
AND BIOTECHNOLOGY

**7<sup>TH</sup> AND 8<sup>TH</sup> MAY 2012**

**RADISSON BLU HOTEL | ROSTOCK**

INFO AND REGISTRATION: **[WWW.MATERIALS-DAYS.EU](http://WWW.MATERIALS-DAYS.EU)**

# 8<sup>TH</sup> MATERIALS' DAYS ROSTOCK

are a specially focused symposium established to inform you about state-of-the-art functional materials, material composites and new efficient manufacturing processes including nanotechnology for applications in various fields. In the spirit of the Materials' Days experts from different application areas come together creating a stimulating atmosphere for further progress by interdisciplinary and across fields discussions. In this international symposium renowned speakers from companies and research institutes will focus on latest materials' innovations for energy technology, renewable energies and biotechnology.

Originally created by the University of Rostock the Materials' Days Rostock is a yearly symposium, which due to its significance is now supported by further regional partners.

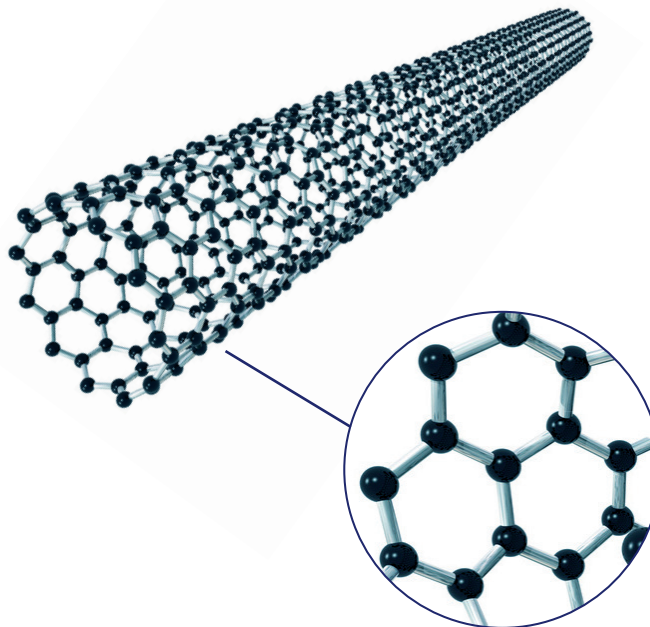
## THE TWO DAYS CONFERENCE WILL COVER TOPICS RELATED TO

- wind mills – structures, blades and generators
- fuel cells – conductors and membranes
- bio materials – implants and coatings
- lightweight materials – composites, foams

## HIGHLIGHTS WILL BE CONTRIBUTIONS ON

- micro batteries – the state of the art
- tribology – the latest achievements
- biofilms – the view as complex fluids

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## ORGANIZERS:



# MONDAY, 7<sup>TH</sup> MAY 2012

## 8.30 A.M. REGISTRATION & COFFEE

### 9.00 A.M.

#### WELCOME – OPENING 8<sup>TH</sup> MATERIALS' DAYS

Prof. Dr. Eberhard Burkel, University of Rostock

Prof. Dr. Ursula van Rienen, Prorektor University of Rostock

Christian Weiß, Managing Director, Rostock Business

### 9.10 A.M.

#### MORE EFFICIENT FUEL CELLS BASED ON CERAMIC PROTON CONDUCTORS

Prof. Truls Norby, Head of FERMiO

University of Oslo, Norway

### 9.50 A.M.

#### NEW MATERIALS AND COMPONENTS ON THE BASIS OF SELECTIVE ELECTRON BEAM MELTING

Prof. Dr. Carolin Körner, Chair Material Science and Technology of Metals, University of Erlangen-Nürnberg

## 10.30 A.M. REFRESHMENT BREAK & NETWORKING

### 10.50 A.M.

#### MATERIALS CHALLENGES IN WIND ENERGY

Anton Wolf, Corporate Technology / Chief Mechanical Engineer,

AMSC Austria GmbH, Austria

### 11.20 A.M.

#### THERMAL JOINT STRESSES OF SINTERED MAGNETS IN THE APPLICATION OF WIND POWER GENERATORS

Dr. Norbert Götschmann, Team Leader

Innovation Lloyd Dynamowerke GmbH & Co. KG, Bremen

### 11.45 A.M.

#### THE ROLE OF NANOSTRUCTURE IN BULK FUNCTIONAL OXIDES

Prof. Umberto Anselmi-Tamburini, Dipartimento di Chimica fisica Università di Pavia, Italia

### 12.10 P.M.

#### SELECTIVE LASER MELTING (SLM®) BECOMES MAINSTREAM TECHNOLOGY

Dr. Dieter Schwarze, Scientific Coordinator,

SLM Solution GmbH, Lübeck

## 12.30 P.M. LUNCH & NETWORKING

### 1.30 P.M.

#### REQUIREMENTS FOR FIBRES, RESINS AND COMPOSITE MATERIALS FOR WIND TURBINE BLADES

Dr. Povl Bronsted, Research Specialist, Risoe-DTU, Denmark

### 2.10 P.M.

#### MICROMECHANISMS OF CRYSTALLINE POLYMERS

Prof. Andrzej Galeski, Centre of Molecular and Macromolecular Studies, Polish Academy of Sciences, Poland

### 2.30 P.M.

#### CARBON NANOTUBES IN ROTOR BLADES OF WIND TURBINES

Benjamin Buchholz, Project Engineer, Competence Center Rotor Blade, Fraunhofer Institute for Wind Energy and Energy System Technology, Bremerhaven

### 2.50 P.M.

#### E-BEAM CROSSLINKED HIGH PERFORMANCE PLASTICS

Yves Kaufhold, Chief Operating Officer,

Herotron E-Beam Service GmbH, Bitterfeld-Wolfen

### 3.10 P.M.

#### NEW TECHNOLOGY CONCEPTS FOR WINDMILL SYSTEMS – WINDED TURBINE BLADES- AND FRAMEWORK STRUCTURES

Dr. Dirk Büchler, Managing Director, Baltico GmbH

## 3.30 P.M. REFRESHMENT BREAK & NETWORKING

### 4.00 P.M.

#### INSPECTION INTERVAL DEFINITION OF COMPONENTS AND STRUCTURES BY THE SIMULATION OF FATIGUE CRACK PROPAGATION

Prof. Sander J. Lebahn, Chair Structural Mechanics, University of Rostock

### 4.30 P.M.

#### ATOMISTIC INSIGHTS INTO THE TRIBOLOGICAL PROPERTIES OF CARBON MATERIALS

Dr. Gianpietro Moras, Fraunhofer Institute for Mechanics of Materials IWM

### 5.00 P.M.

#### NEW DEVELOPMENTS IN THE SIMULATION OF TRIBOLOGICAL PROCESSES

Prof. Martin Müser, Institute of Advanced Simulation, Jülich Supercomputing Centre (JSC)

**5.30 P.M.**

**IN SITU OBSERVATION OF WEAR PARTICLE FORMATION ON LUBRICATED SLIDING SURFACES**

Dr. Martin Dienwiebel, KIT, Karlsruhe Institute of Technology

**6.00 P.M.**

**PUBLIC LECTURE:**

**3D INTEGRATED ALL-SOLID-STATE BATTERIES: A CHALLENGING ROUTE TOWARDS SMALL AUTONOMOUS DEVICES**

Prof. Peter Notten, Group Energy Materials and Devices  
Eindhoven University of Technology, The Netherlands

**7.00 P.M.**

**CLOSING REMARKS OF THE CHAIRMAN AND END OF SYMPOSIUM**

**7.30 P.M. „SOUTH BALTIC OFFER“ BUSINESS RECEPTION AND GET-TOGETHER**

## **TUESDAY, 8<sup>TH</sup> MAY 2012**

**8.30 A.M. REGISTRATION & COFFEE**

**9.00 A.M.**

**LI-ION BATTERIES**

**– SYNCHROTRON STUDIES OF MATERIALS IN MOTION**

Prof. Kristina Edström, Angström Advanced Battery Centre,  
Uppsala Universitet, Sweden

**9.45 A.M.**

**CLEAN WATER AND HYDROGEN FROM SUNLIGHT**

Prof. Truls Norby, Head of FERMiO (Functional Energy Related Materials in Oslo), University of Oslo, Norway

**10.10 A.M.**

**TOWARDS THE SIMULATION OF REDOX REACTIONS**

Prof. Martin Müser, Institute of Advanced Simulation, Jülich Supercomputing Centre (JSC)

**10.30 A.M. REFRESHMENT BREAK & NETWORKING**

**11.00 A.M.**

**BIOFILMS AS COMPLEX FILMS**

Dr. Agnese Seminara, Institut Pasteur, Paris, France

**11.40 A.M.**

**CALCIUM PHOSPHATE COATINGS ON MAGNESIUM ALLOY FOR ORTHOPEDIC IMPLANTS**

Prof. Wei Lu, Tongji University, Shanghai, China

**12.10 P.M.**

**CAVITATION INDUCED CONSTRUCTION OF BIOACTIVE SURFACE**

Dr. Daria Andreeva, Physical Chemistry, University Bayreuth

**12.50 P.M. LUNCH & NETWORKING**

**1.45 P.M.**

**STABLE ELECTROCATALYSTS FOR PEM-FUEL CELLS WITH PT FROM RECYCLING SOURCES**

Dr. Elgar Fokkens, Hydrogen and Informatics Institute of Applied Technologies GmbH

**2.10 P.M.**

**PATTERNED CERAMIC FILMS AND NANOSTRUCTURES BY SOLUTION CHEMISTRY: AN EFFECTIVE APPROACH TOWARDS THE SYNTHESIS OF OXIDE MICRODEVICES**

Prof. Umberto Anselmi-Tamburini, Dipartimento di Chimica fisica  
Universita' di Pavia, Italia

**2.30 P.M.**

**FOAMING OF POLYPROPYLENE NANOCOMPOSITES**

Prof. Andrzej GALESKI, Centre of Molecular and Macromolecular Studies,  
Polish Academy of Sciences

**2.50 P.M. REFRESHMENT BREAK & NETWORKING**

**3.20 P.M.**

**THICKNESS REINFORCEMENT OF COMPOSITE MATERIALS WITH Z-PINS**

Prof. Gerhard Scharr | Dipl.Ing. Matthias Knaupp, University of Rostock

**3:40 P.M.**

**CHARACTERIZATION OF SPRAY-FORMED HYPEREUTECTIC ALUMINIUM-SILICON ALLOYS WITH UNEXPECTED CONDUCTIVITIES**

Prof. Biao Yan, Tongji University, Shanghai, China

**4:00 P.M.**

**FABRICATION AND PROPERTIES OF Ti6Al4V ALLOYS AND FOAMS BY RAPID COOLING-SPS**

Dr. Fames Zhang, Physics of New Materials, University of Rostock

**4:20 P.M.**

**CLOSING REMARKS OF THE CHAIRMAN & END OF SYMPOSIUM**

# EVENT INFORMATION

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## REGISTRATION

For registration please use the website **www.materials-days.eu**

The number of participants is limited. Early registration is recommended.

## CONFERENCE FEE (VAT-INCL. )

Conference delegate: 139,- €

Conference delegate: 119,- € (Members of network Norkun)

Registration fee includes printed conference documents, lunch, refreshments, reception and dinner.

The registration fee should be paid by **30<sup>th</sup> April 2012**.

## CONFERENCE VENUE

Radisson Blu Hotel Rostock

Conference Center „Ostseesaal 1“

Lange Straße 40 · 18055 Rostock

Booking hotline for hotel reservation:

+49 (0)381 - 37 50 35 00

## PAYMENT DETAILS (BANK TRANSFER ONLY)

Recipient: Gesellschaft für Wirtschafts- und Technologieförderung Rostock mbH

Bank: Deutsche Kreditbank AG

IBAN: DE 230366983

Account No.: 1001 5089 / BLZ: 120 300 00

Reference: 8th Materials Days / <Full Name>

## REGISTRATION CONDITIONS

After finishing your registration you will receive a confirmation of your registration and invoice.

Until 20<sup>th</sup> April 2012 there is a cancelling fee of 50%, no reimbursement of fee after this date.

Delegates may be substituted; this must be sent in writing and confirmed with the Materials Days Secretariat.

## CONFERENCE LANGUAGE:

English

# CONTACT

## UNIVERSITY OF ROSTOCK, PHYSICS OF NEW MATERIALS

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### ASSOCIATED PARTNERS



Mecklenburg-Vorpommern



Funktionale Materialien  
Rostock e.V.