

# MATERIALS SCIENCE ENGINEERING



SEPTEMBER 27<sup>TH</sup> - 29<sup>TH</sup>, 2016

DARMSTADT, GERMANY

CALL FOR ABSTRACTS  
DEADLINE MARCH 31<sup>ST</sup>, 2016

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MSE  
2016

## MSE 2016

### Call for Abstracts

The organisers invite prospective authors to submit abstracts for lectures (12 min oral presentation / 3 min discussion) or posters relating to the congress topics. The abstracts will be evaluated and, if accepted, the authors will be informed about their assigned type of presentation (oral or poster). Especially young scientists and speakers from the elected guest country USA are welcome to actively contribute to the congress by submitting an abstract. The submission deadline for abstracts is **March 31<sup>st</sup>, 2016**.

#### Keydates:

**March 31<sup>st</sup>, 2016** – Deadline Submission of Abstracts

**May 2016** – Authors Confirmation

**August 2016** – Final Programme

**September 26<sup>th</sup>, 2016** – DGM Tag 2016, the DGM General Assembly

**September 27<sup>th</sup> - 29<sup>th</sup>, 2016** – MSE Congress 2016

## G Colloquium of Honour

Prof. Dr. Wolfgang Kaysser



## H USA-GERMAN Networking Symposium

#### Topic Coordinator

Oliver Kraft

MRS President & KIT Director



For more information on plenary lectures, side events, evening programs, student sessions and congress registration, please visit our congress homepage: [www.mse-congress.de](http://www.mse-congress.de)

#### Congress Venue

TU Darmstadt, karo5  
Karolinenplatz 5 | 64289 Darmstadt, Germany

#### Congress Office

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## A Functional Materials and Devices

**A01 – High-Temperature Functional Materials**  
Holger Fritze (Clausthal University of Technology, Germany);  
Osman Adiguzel (Firat University, Turkey)

**A02 – Advanced Materials for Lithium Ion Batteries**  
Hans J. Seifert (Karlsruhe Institute of Technology, Germany)

**A03 – Materials for Energy Engineering**  
Peter Schaaf (Ilmenau University of Technology, Germany);  
Wolfram Jaegermann (Darmstadt University of Technology, Germany);  
Olivier Guillon (Forschungszentrum Jülich GmbH, Germany)  
Teresa Andreu (Catalonia Institute for Energy Research, Spain)

**A04 – Thermo-Chemical Materials for long term compact heat storage**  
Henk Huinink (Technical University of Eindhoven, The Netherlands);  
Leo Pel (Technical University of Eindhoven, The Netherlands);  
Olaf Adan (TNO, The Netherlands)

**A05 – Semiconductor materials at the nano- and microscale for novel applications**  
Paloma Fernández (Ciudad Universitaria Madrid, Spain)

**A06 – Catalytic Materials and Processes for Energy Storage and Conversion**  
Monica Kosa (Bar-Ilan University, Israel);  
Clotilde S. Cucinotta (CRANN, Trinity College, Ireland)

**A07 – Advanced materials for Na-ion based energy storage devices**  
Maria Helena Braga (University of Porto, Portugal);  
John B. Goodenough (The University of Texas at Austin, USA)



**A08 – Material-integrated intelligent systems for real time condition awareness**

Axel von Hehl (IWT Bremen, Germany); Lothar Kroll (Chemnitz University of Technology, Germany); Stefan Bosse; Armin Lechleiter; Dirk Lehmkus (University of Bremen, Germany); Richard Fu (Northumbria University, UK)

**A09 – Shape Memory Alloys - Basics and Applications**  
Alexander Czechowicz (Zentrum für angewandte Formgedächtnistechnik, Germany)

**A10 – Ferroelectric and Multiferroic Materials**  
Michael J. Hoffmann (Karlsruhe Institute of Technology, Germany)

**A11 – Hierarchical Materials**  
Gerold Schneider (Hamburg University of Technology, Germany)

**A12 – Recent trends in shape memory alloys**  
Thomas Niendorf (University of Kassel, Germany);  
Hans Jürgen Maier (Leibniz University Hannover, Germany)

**A13 – Advances in Thermoelectricity : From Materials to Devices**  
Marie-Christine Record (Aix-Marseille University, France);  
Pascal Boulet (Aix-Marseille University, France)

#### Topic Coordinator

Michael J. Hoffmann  
Karlsruhe Institute of Technology, Germany



## B Structural Materials

**B01 – Very High Cycle Fatigue**  
Hans-Jürgen Christ (University Siegen, Germany);  
Martina Zimmermann (Dresden University of Technology, Germany)

**B02 – Hydrogen embrittlement and delayed cracking of steels**  
Thorsten Michler (Adam Opel AG, Ruesselsheim, Germany)

**B03 – Low cycle fatigue of fiber reinforced plastics**  
Thorsten Michler (Adam Opel AG, Ruesselsheim, Germany)

**B04 – Intermetallics: Physical Metallurgy, Processing and Characterisation**  
Fritz Appel (Helmholtz-Zentrum Geesthacht, Germany);  
Michael Oehring (Helmholtz-Zentrum Geesthacht, Germany);  
Jonathan Paul (Helmholtz-Zentrum Geesthacht, Germany)

**B05 – Advances in Light-Metal Alloys and their Processing**  
Wim Sillekens (ESA – European Space Agency, The Netherlands);  
Jürgen Hirsch (Hydro Aluminium Rolled Products GmbH, Germany)



**B06 – Advanced Steels for Structural Applications**  
Wolfgang Bleck (RWTH Aachen, Germany);  
Horst Biermann (Bergakademie Freiberg University of Technology, Germany)

**B07 – Bulk Ultrafine- and Nano-structured Materials**  
Martin Wagner (Chemnitz University of Technology, Germany);  
Philipp Frint (Chemnitz University of Technology, Germany)

**B08 – Hybrid Structures and Materials**  
Joachim Hausmann (Kaiserslautern University of Technology, Germany);  
Niels Modler (Dresden University of Technology, Germany)

**B09 – Mechanical Properties and Microstructure**  
Eberhard Kerscher (Kaiserslautern University of Technology, Germany);  
Frank Walther (Dortmund University of Technology, Germany)

**B10 – Surface Engineering and Functionalisation**  
Volker Schulze (Karlsruhe Institute of Technology, Germany);  
Carsten Gachot (Saarland University, Germany);  
Andres Fabian Lasagni (Fraunhofer Dresden, Germany)

**B11 – Third Generation Advanced High Strength Steels by Quenching and Partitioning**  
Roumen Petrov (Ghent University, Belgium);  
Maria J. Santofimia (Delft University of Technology, The Netherlands);  
Ilchat Sabirov (IMDEA Materials Institute, Madrid, Spain)

**B12 – Influence of the microstructure on corrosion properties of steel alloys**  
Maria J. Santofimia (Delft University of Technology, The Netherlands);  
Yaiza Gonzalez-Garcia (Delft University of Technology, The Netherlands)

**B13 – Tribology across length-scales: experiments and simulations**  
Christian Greiner (Karlsruhe Institute of Technology, Germany); Steffen Brinckmann (Max-Planck-Institut für Eisenforschung, Dusseldorf, Germany)

#### Topic Coordinator and Co-Coordinator:

Christoph Leyens  
Dresden University of Technology, Germany  
Martin Heilmaier  
Karlsruhe Institute of Technology, Germany



## C Synthesis and Processing

### C01 – Protective Coatings and Functional Thin Films

Monika Willert-Porada (University of Bayreuth, Germany);  
Michael Stüber (Karlsruhe Institute of Technology, Germany);  
Jörg Vetter (Oerlikon Balzers Coating Germany GmbH, Bergisch-Gladbach, Germany)

### C02 – Nanomaterials and Composites

Karl-Heinz Haas (Fraunhofer Institute for Silicate Research, Würzburg, Germany);  
Rainer Gadow (University of Stuttgart, Germany);  
Paul Olaru (IMNR-Academy of Romania, Romania)

### C03 – Materials for Additive Manufacturing Technologies

Jürgen Stampfl (Vienna University of Technology, Austria);  
Fernando A. Lasagni (Center for Advanced Aerospace Technologies, Seville, Spain)

### C04 – Wet Processed Functional Materials and Printed Electronics

Thomas Mayer (Darmstadt University of Technology, Germany)

### C05 – Joining and Integration Issues of Composites

Monica Ferraris (Politecnico di Torino, Italy)

### C06 – Tailored-Precursor Approaches to Nanocellular and Functional Ceramics

Samuel Bernard (CNRS-University Montpellier, France);  
Emanuel Ionescu (Darmstadt University of Technology, Germany);  
Gabriela Mera (Darmstadt University of Technology, Germany);  
Sanjay Mathur (University of Cologne, Germany)

### C07 – Laser, Plasmas and Hybrid Nano-technologies for Surface Processing

Xerman de la Fuente Leis (University of Zaragoza, Spain);  
Agustín Rodríguez González-Elipe (University of Sevilla, Spain)

### C08 – Advanced Paper-Based Materials

Markus Biesalski (Darmstadt University of Technology, Germany);  
Ralf Riedel (Darmstadt University of Technology, Germany)

### C09 – Functionalized few-layer graphene: production, study and applications

Arkady M. Ilyin (Kazakh National University, Kazakhstan);  
Uwe Bratzler (CERN, USA);  
Stanislav Pospisil (Czech Technical University, Czech Republic);  
Altynay Togambayeva (Stanford Linear Accelerator Center, USA)



#### Topic Coordinator and Co-Coordinator:

Ralf Riedel  
Darmstadt University of Technology, Germany  
Sanjay Mathur  
University of Cologne, Germany



## D Characterisation

### D01 – Advanced and In-Situ Microscopies in Materials Science and Engineering

Guillermo Solórzano (Pontifical Catholic University of Rio de Janeiro, Brazil);  
Joachim Mayer (GFE-RWTH Aachen University, Germany);  
Rafal E. Dunin-Borkowski (Ernst Ruska-Centre, Juelich, Germany);  
Wolfgang Jäger (Materials Science, Christian-Albrechts-University Kiel, Germany)

### D02 – Application of orientation contrast microscopy for the investigations of phase transformations and plastic deformation

Stefan Zaeferrer (Max-Planck-Institut für Eisenforschung, Dusseldorf, Germany);  
Roumen Petrov (Ghent University, Belgium);  
Leo Kestens (Ghent University, Belgium)

### D03 – Scanning Probe Techniques

Doru C. Lupascu (University of Duisburg – Essen, Germany);  
Vladimir Shvartsman (University of Duisburg – Essen, Germany)

### D04 – Small scale and in situ mechanical testing

Karsten Durst (Darmstadt University of Technology, Germany);  
Verena Maier-Kiener (Austrian Academy of Sciences, Austria);  
Thomas Niendorf (University of Kassel, Germany);  
Anja Weidner (Bergakademie Freiberg University of Technology, Germany)

### D05 – Process-microstructure-property relationships in additive manufacturing

Thomas Niendorf (University of Kassel, Germany);  
Frank Walther (Dortmund University of Technology, Germany)

### D06 – Analytical Methods for Thin Film Investigations

Susan Schorr (Helmholtz-Zentrum Berlin, Germany);  
Francesco Di Benedetto (University of Florence, Italy)

### D07 – High-resolution multiscale characterization

Steven van Petegem (Paul Scherrer Institut, Villigen, Switzerland);  
Julia Wagner (Karlsruhe Institute of Technology, Germany);  
Daniel Kiener (Montanuniversitaet Leoben, Austria)

### D08 – Multiscale Structure-Functional Characterization & Modeling of Musculoskeletal Mineralized Tissues

Quentin Grimal (Laboratoire d'Imagerie Biomédicale, France)

#### Topic Coordinator and Co-Coordinator:

Anke R. Kaysser-Pyzalla  
Helmholtz-Zentrum Berlin, Germany  
Cécile Hébert  
EPFL Lausanne, Switzerland



## E Modelling and Simulation

### E01 – Microstructure and property evolution in applied materials: Aspects of chemo-mechanical coupling in metals and polymers

Ingo Steinbach (Ruhr-University Bochum, Germany);  
Marina Grenzer (Leibniz Institute of Polymer Research Dresden, Germany)

### E02 – Experimental and Computational Thermodynamics and Kinetics

Hans J. Seifert (Karlsruhe Institute of Technology, Germany);  
Damian M. Cupid (Karlsruhe Institute of Technology, Germany)

### E03 – Multiscale description of advanced materials properties

Marcela Trybula (Institute of Metallurgy and Materials Science, Poland);  
Przemyslaw Fima (Institute of Metallurgy and Materials Science, Poland);  
Rafal Kozubski (Jagiellonian University, Poland)

### E04 – Atomistic to Mesoscale Modelling and Characterization of Materials for Energy Applications

Marie-Christine Record (Aix-Marseille University, France);  
Pascal Boulet (Aix-Marseille University, France);  
Maria Helena Braga (Engineering Faculty of the Porto University, Portugal);  
Anter El-Azab (Purdue University, West Lafayette, USA)



### E05 – Atomistic origin of ductility

Martin Friak (Institute of Physics of Materials of the Academy of Sciences of the Czech Republic, Brno, Czech Republic)

### E06 – Modelling Material Behaviour, Degradation and Reliability of Advanced Ceramics

Andreas Kailer (Fraunhofer IWM, Freiburg, Germany);  
Iyas Khader (German-Jordanian University, Jordan)

### E07 – Integrated Computational Materials Engineering (ICME) for Materials Design using Numerical Synchronized Approaches Linking Different Scale Algorithms

Ali Ramazani (University of Michigan-Ann Arbor, USA);  
Ulrich Prah (Steel Institute (IEHK) at RWTH Aachen University, Germany);  
Georg J. Schmitz (ACCESS e.V. at the RWTH Aachen, Germany);  
Matthias Schmidtchen (Bergakademie Freiberg University of Technology, Germany)



### E08 – Microstructural Evolution – recent advances in experiments and modelling

Heike Emmerich (University of Bayreuth, Germany);  
Ernst Gamsjäger (Montanuniversitaet Leoben, Austria);  
Markus Rettenmayr (Friedrich Schiller University Jena, Germany)

### E09 – Experimental characterization and modelling of nano-reinforced soft matters

Daniel Juhre (Otto-von-Guericke-University Magdeburg, Germany);  
Roozbeh Dargazany (Michigan State University, USA)



#### Topic Coordinator and Co-Coordinator:

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Ruhr-University, Bochum, Germany  
Peter Gumbsch  
Fraunhofer Institute for Mechanics of Materials  
IWM, Freiburg, Germany



## F Biomaterials

### F01 – Bio-Interfaces and Coatings

Thomas Keller (DESY-Deutsches Elektronen-Synchrotron, Hamburg, Germany);  
Klaus D. Jandt (Friedrich Schiller University Jena, Germany)

### F02 – Degradation Mechanisms and Characterization of Biodegradable Materials

Frank Feyerabend (Helmholtz-Zentrum Geesthacht, Germany);  
Daniela Zander (RWTH Aachen University, Germany)

### F03 – Biomaterials Applications

Aldo R. Boccaccini (University of Erlangen-Nuremberg, Germany);  
Jonny Blaker (University of Manchester, England)

### F04 – Bio-inspired Materials

Peter Fratzl (Max Planck Institute of Colloids and Interfaces, Potsdam, Germany);  
Ingo Burgert (ETH Zurich, Switzerland);  
Thomas Scheibel (University of Bayreuth, Germany)

### F05 – SPP 1569 Generation of Multifunctional Inorganic Materials by Molecular Bionics

Joachim Bill (University of Stuttgart, Germany)

### F06 – Biomaterials for Tissue Engineering

Bora Garipcan (Bogaziçi University, Istanbul, Turkey);  
Nuno Neves (Universidade do Minho, Braga, Portugal)

### F07 – Polymeric Materials

Hansgeorg Haupt (Darmstadt University of Technology, Germany)

### F08 – New generation biopolymers and biopolymer composites: Synthesis, characterization and applications

Athanassia Athanassiou (Istituto Italiano di Tecnologia, Genova, Italy);  
Ilker S. Bayer (Istituto Italiano di Tecnologia, Genova, Italy)

### F09 – Materials for Bone Tissue Regeneration

Christian Heiß (University Hospital of Giessen and Marburg, Germany);  
Volker Alt (University Hospital of Giessen and Marburg, Germany)

### F10 – Antimicrobial Biomaterials

Claudia Lüdecke-Beyer (Friedrich Schiller University Jena, Germany);  
Klaus D. Jandt (Friedrich Schiller University Jena, Germany)

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