

MATERIALS SCIENCE ENGINEERING



EUROPEAN CONGRESS AND EXHIBITION ON
ADVANCED MATERIALS AND PROCESSES

SEPTEMBER 26TH - 28TH, 2018
DARMSTADT, GERMANY

CONGRESS INFORMATION

WWW.MSE-CONGRESS.DE

ORGANIZING SOCIETY

DGM

GERMAN
MATERIALS
SOCIETY



Guest Country
Argentina

ENDORSED BY



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WELCOME ADDRESS



Frank Mücklich
Saarland University, Germany
Speaker of MSE Scientific Committee

10 years of successful and constantly growing MSE congresses in Germany – this is a thrilling key moment and the time to sharpen the profile of such an interdisciplinary “broadband” conference of Materials Science and Engineering. It is also the key moment for stopping and assessing the feedback from participants of all MSE conferences so far. Therefore, we have established a constantly renewing organization with a conference board and an international advisory board. Our goal is to present every two years and right between the well-established Euromat conferences an attractive event with a unique atmosphere and

brand for the manifold European materials community and beyond. It should be a kind of marketplace to discover the pioneering spirit of new and emerging trends and at the same time the chance to see beyond the own immediate task and to think out of the box. This may tighten our community and inspire new insights for all of us. Your constructive feedback is always welcome.

On behalf of the Scientific Committee, I am looking forward to seeing all of you at the MSE 2018 in Darmstadt.

MSE SCIENTIFIC COMMITTEE



Aldo R. Boccaccini
Friedrich-Alexander-Universität
Erlangen-Nürnberg (FAU),
Germany



Sanjay Mathur
University of Cologne,
Germany



Alexander Hartmaier
Ruhr-Universität Bochum,
Germany



Eckhard Quandt
Kiel University,
Germany



Klaus D. Jandt
Friedrich Schiller University Jena,
Germany



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Technische Universität Darmstadt,
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Technische Universität
Braunschweig,
Germany



Jürgen Rödel
Technische Universität Darmstadt,
Germany

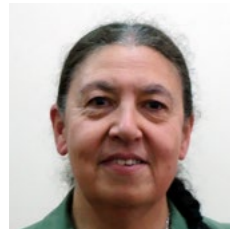


Oliver Kraft
Karlsruhe Institute of Technology,
Germany



Hans Jürgen Seifert
Karlsruhe Institute of Technology,
Germany

CONFIRMED PLENARY SPEAKERS



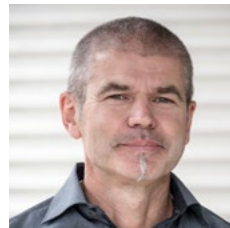
Mirta Inés Aranguren

Universidad Nacional de Mar del Plata,
Institute of Research in Materials Science and
Technology, Argentina



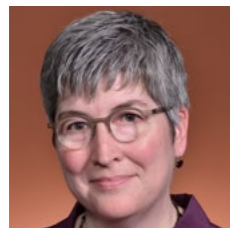
Hans-Jürgen Christ

Universität Siegen, Institute for Materials En-
gineering, Germany



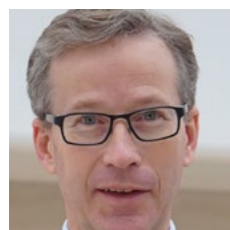
Oliver Gutfleisch

Technische Universität Darmstadt, Materials
Science Division - Functional Materials, Germany



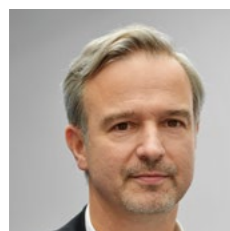
Elizabeth A. Holm

Carnegie Mellon University, Department of
Materials Science and Engineering, USA



Lars Hultman

Linköping University, Department of Physics,
Sweden



Dierk Raabe

Max-Planck-Institut für Eisenforschung GmbH,
Germany

INTERNATIONAL ADVISORY BOARD

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Science, China

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Swiss Federal Institute of Technology,
Switzerland

Xiaoli Tan

Iowa State University, USA

Manfred Wuttig

University of Maryland, USA

Sybrand van der Zwaag

Delft University of Technology, The Netherlands

KEYDATES & DEADLINES

Deadline Call for Abstracts	closed
Poster submission	still possible
Authors Confirmation	April 2018
Final Program	July 2018
MSE Congress	26 th - 28 th September 2018

Poster submission:

- Poster: presentation in the floor of the congress location every day of the congress

HOW TO SUBMIT A POSTER

We prepared a short and illustrated manual how to register and submit a poster for MSE 2018. You can find the instruction at: www.mse-congress.de/your-abstract

REGISTRATION FEES

Registration Category	Young Researchers up to 30 years (incl.)	Expert Researchers 31- 45 years (incl.)	Professional University	Industry
DGM*-member	275 €	400 €	550 €	780 €
Non-member	325 €	500 €	650 €	880 €

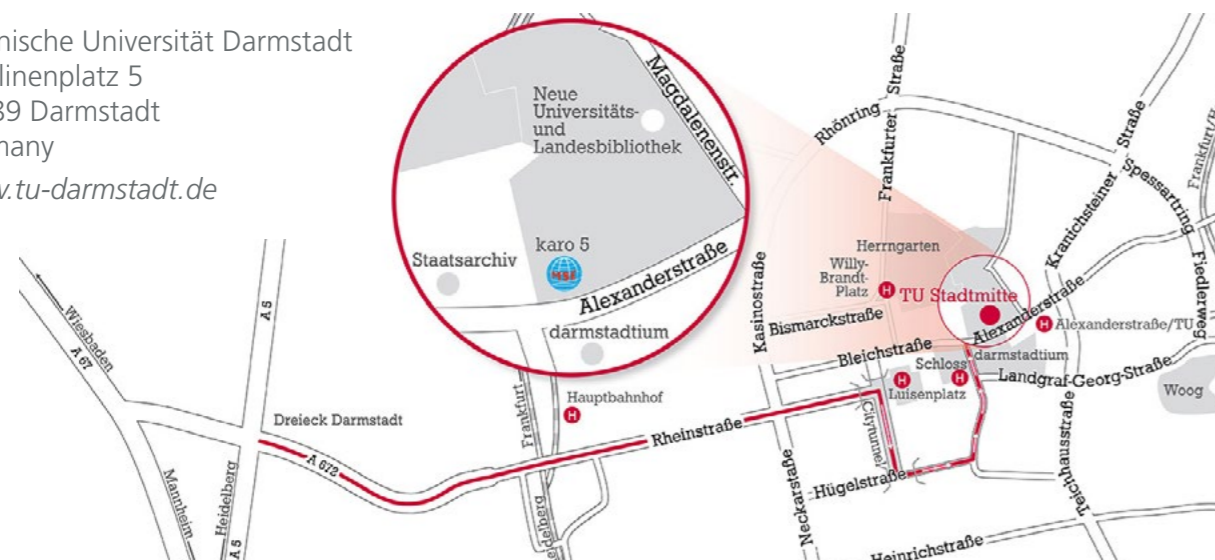
*member of the Deutsche Gesellschaft für Materialkunde e.V. // German Materials Society
Become a member: <https://www.dgm.de/en/about-dgm/membership/>

The registration includes:

- Access to all scientific, oral and poster sessions
- Access to the MSE exhibition
- Access to the MSE Side Events
- Access to the MSE Party
- Refreshments during the Coffee Breaks

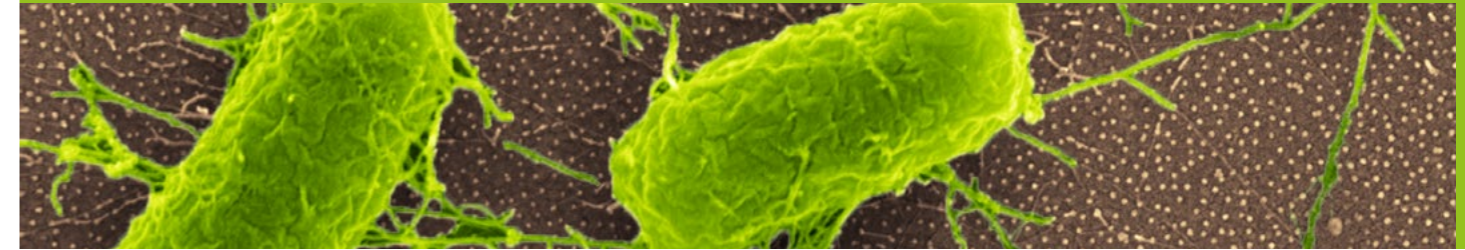
CONGRESS LOCATION

Technische Universität Darmstadt
Karolinenplatz 5
64289 Darmstadt
Germany
www.tu-darmstadt.de

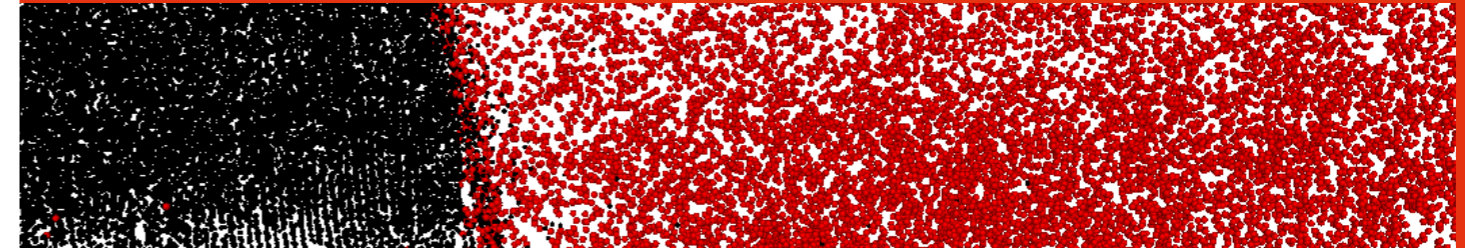


TOPICS

B: BIOMATERIALS



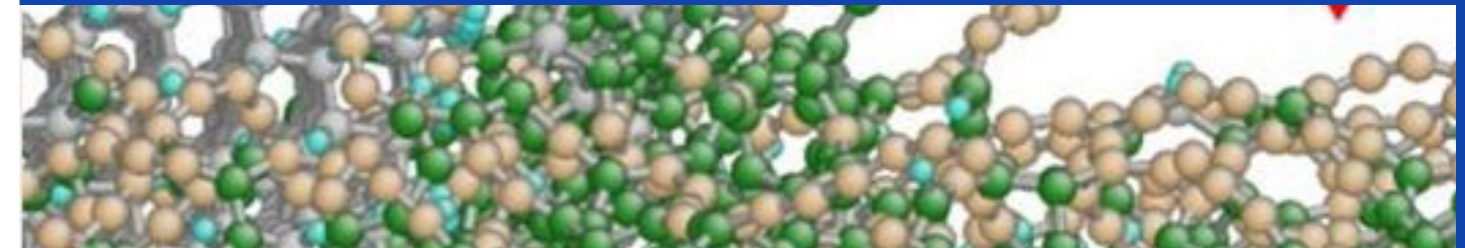
C: CHARACTERIZATION



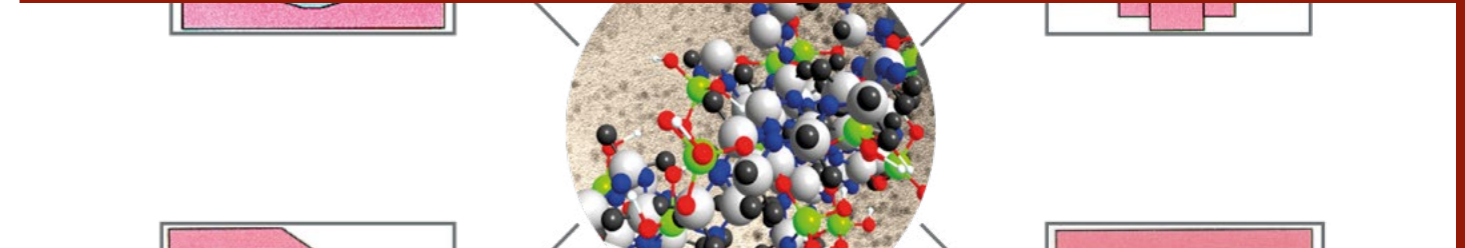
F: FUNCTIONAL MATERIALS, SURFACES AND DEVICES



M: MODELLING AND SIMULATION



P: PROCESSING AND SYNTHESIS



S: STRUCTURAL MATERIALS



BIOMATERIALS

TOPIC COORDINATORS



**ALDO R.
BOCCACCINI**



**KLAUS D.
JANDT**



**ENRICA
VERNE**



This topic addresses the growing interest of science and industry in the synthesis, characterization, testing, and application of biomaterials, as well as their closely related areas of medical devices, drug delivery, and tissue engineering. The motivation is not only the recent scientific progress in biomedical materials but also challenges on this exciting and strongly interdisciplinary field of science and engineering.

Materials scientists, physicists, chemists, and biologists in industrial R&D, as well as medical professionals are increasingly facing situations where materials are confronted with high performance requirements and a challenging biological environment at the same time.

SYMPOSIA

B01: Biomaterials for 3D Printing

Hermann Seitz - University of Rostock, Chair of Fluid Technology and Mikrofluidics, Germany
Juergen Stampfl - TU Wien, Institute of Materials Science and Technology, Austria

B02: Bioinscriptive Hydrogels

Cornelia Lee-Thedieck - Karlsruhe Institute of Technology, Institute of Functional Interfaces, Germany
Christine Selhuber-Unkel - Kiel University, Institute for Materials Science, Germany
Patrick van Rijn - University of Groningen, Faculty of Medical Sciences, The Netherlands

B03: Degradation Mechanisms and Characterization of Biodegradable Materials

Daniela Zander - RWTH Aachen University, Corrosion and Corrosion Protection, Germany
Frank Feyerabend - Helmholtz-Zentrum Geesthacht, Institute of Materials Research, Germany
Bert Müller - University of Basel, Medical Faculty, Switzerland

B04: From Old Creatures to New Concepts: Bioinspired Material Designs and Processing Strategies

Stephan E. Wolf - Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU), Institute of Glass and Ceramics, Germany
Fabio Nudelman - The University of Edinburgh, School of Chemistry, Great Britain
David Kisailus - University of California at Riverside, Department of Chemical and Environmental Engineering, Materials Science & Engineering, USA

B05: Biomaterials Applications



Aldo R. Boccaccini - Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU), Department of Materials Science and Engineering, Germany
Viviana Mourino - University of Buenos Aires, Pharmaceutical Technology, Argentina
Jonny Blaker - University of Manchester, School of Materials, Great Britain

B06: Biomaterials for Bone Substitution and Regeneration

Thomas Hanke - Technische Universität Dresden, Max Bergmann Center of Biomaterials, Germany
Christian Heiß - Universitätsklinikum Gießen, Germany
Anna Tampieri - National Research Council of Italy, Institute of Science and Technology for Ceramics, Italy

B07: Bioactive, Antibacterial Surfaces and Coatings

Enrica Verne - Polytechnic of Turin, Department of Applied Science and Technology, Italy
Klaus D. Jandt - Friedrich Schiller University Jena, Chair of Materials Science, Germany

B08: Biopolymers for Medical Applications

Ipsita Roy - University of Westminster, Faculty of Science and Technology, Great Britain
Gianluca Ciardelli - Politecnico di Torino, Department of Mechanical and Aerospace Engineering, Italy

CHARACTERIZATION

TOPIC COORDINATORS



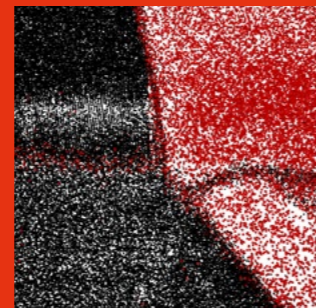
**NIK
CHAWLA**



**FRANK
MÜCKLICH**



**MARTINA
ZIMMERMANN**



The investigation of the origin and formation of material microstructures during processing and the effect that microstructure has on the properties of materials are questions of central importance in materials science and engineering. This topic covers symposia for presenting and discussing recent developments in this field, which focus on advancements of characterization techniques and its application in the macro, micro, nano as well as atomic scale of all kinds of materials.

Advances in characterization nowadays often mean the explicit consideration of the 3D nature of microstructures. In addition to this, in-situ characterization and in operando techniques are becoming increasingly important. And finally, high throughput characterization is growing more and more powerful.

SYMPOSIA

C01: Correlative Electron Microscopy / Atom Probe Tomography

Christian Liebscher - Max-Planck-Institut für Eisenforschung GmbH, Structure and Micro-/Nanomechanics of Materials, Germany

Michael Herbig - Max-Planck-Institut für Eisenforschung GmbH, Materials science of mechanical contacts, Germany

Sophie Primig - UNSW Sydney, School of Materials Science and Engineering, Australia

Peter Ercius - University of California, National Center for Electron Microscopy, USA

Williams Lefebvre - University of Rouen, Department of Physics, France

C02: Going 3D: From Image to Knowledge

Peter Felfer - Friedrich-Alexander-Universität Erlangen-Nürnberg (FAU), General Materials Properties, Germany

Kübel, Christian - Karlsruhe Institute of Technology, Electron Microscopy and Spectroscopy Laboratory, Germany

Frank Mücklich - Saarland University, Institute of Functional Materials, Germany

Michael Engstler - Saarland University, Institute of Functional Materials, Germany

Dominik Britz - Saarland University, Institute of Functional Materials, Germany

C03: Tomographic and Radiographic Imaging with Synchrotron X-rays and Neutrons: Exploiting Contrast and Time

Alexander Rack - European Synchrotron Radiation Facility, Experiments Division, France

Guillermo Requena - German Aerospace Center, Institute of Materials Research, Germany

C04: In-situ Techniques and Advanced Microscopy for High Resolution and Multi Scale Characterization of Materials

Hrishikesh Bale - Carl Zeiss Microscopy, USA

Ruth Schwaiger - Karlsruhe Institute of Technology, Institute for Applied Materials, Germany

Timo Bernthaler - Hochschule Aalen, Germany

C05: Small Scale and In-situ Mechanical Testing

Karsten Durst - Technische Universität Darmstadt, Physical Metallurgy, Germany

Verena Maier-Kiener - Montan Universität, Department Physical Metallurgy and Materials Testing, Austria

Rebecca Janisch - Ruhr-Universität Bochum, Interdisciplinary Centre for Advanced Materials Simulation, Germany

Afroz Barnoush - Norwegian University of Science and Technology, Department of Mechanical and Industrial Engineering, Norway

C06: Surface and Thin Film Analysis

Michael Kopnarski - Technische Universität Kaiserslautern, Institute for Surface and Thin Film Analysis, Germany

Tom Wirtz - Luxembourg Institute of Science and Technology, Department Materials Research and Technology, Luxembourg

Jens Kreisel - Luxembourg Institute of Science and Technology, Department Materials Research and Technology, Luxembourg

C07: Orientation Image Microscopy: The Evolution. EBSD, TKD, PED-TEM, ECCI + 3D world



Stefan Zaefferer - Max-Planck-Institut für Eisenhüttenforschung GmbH, Department Microstructure Physics and Alloy Design, Germany

Martina Avalos - National Scientific and Technical Research Council, Argentina

Raúl Bolmaro - National Scientific and Technical Research Council, Argentina

C08: Microstructure Characterization Strategies for the Digital Twin

Hans-Georg Herrmann - Fraunhofer Institute for Nondestructive Testing, Germany

Christoph Eberl - Fraunhofer Institute for Mechanics of Materials, Germany

Stefan Sandfeld - TU Bergakademie Freiberg, Micromechanical Materials Modelling, Germany

Babtiste Gault - Max-Planck-Institut für Eisenhüttenforschung GmbH, Atom Probe Tomography, Germany

C09: Mechanical Processing and Deformation Induced Microstructural Evolution, Damage Mechanisms and Failure Characterization from Micro to Macro Imaging

Martina Zimmermann - Technische Universität Dresden, Faculty of Mechanical Science and Engineering, Germany

Jens Freudenberger - Leibniz Institute for Solid State and Materials Research, Department of Metal Physics, Germany

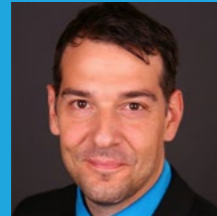
James E. Martinez - NASA, Johnson Space Center, USA

FUNCTIONAL MATERIALS, SURFACES AND DEVICES

TOPIC COORDINATORS



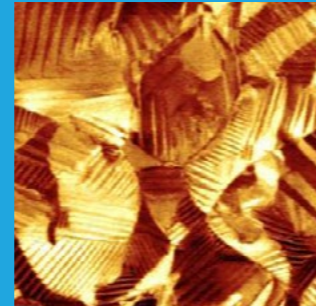
**MICHAEL J.
HOFFMANN**



**ANDRÉS FABIÁN
LASAGNI**



**SONIA
BRÜHL**



Creating functionality of materials, surfaces and devices is the focus of the topic and its symposia covering recent developments on nano- and microstructured surfaces and materials for energy conversion, water treatment, transportation and storage, catalysts, shape memory alloys, as well as ferroelectric and multiferroic materials.

SYMPOSIA

F01: High-Temperature Functional Materials

Holger Fritze - TU Clausthal, Institute of Energy Research and Physical Technologies, Germany
Philippe Knauth - Aix-Marseille University, CNRS, France



F02: Surface Engineering and Functionalisation

Andrés Lasagni - Technische Universität Dresden, Chair for Large Area Laser Based Surface Structuring, Germany
Carsten Gachot - TU Wien, Institute for Engineering Design and Logistics Engineering, Austria
Sonia Brühl - Universidad Tecnológica Nacional, Argentina

F03: Advances in Thermoelectricity: From Materials to Devices

Marie-Christine Record - Aix-Marseille University, CNRS, France
Pascal Boulet - Aix-Marseille University, CNRS, France
Kornelius Nielsch - Leibniz Institute for Solid State and Materials Research Dresden, Institute for Metallic Materials, Germany



F04: Mixed Ionic-Electronic Conductors: Novel Oxide Materials and Engineered Microstructures

Matias Acosta - Energy Research at the University of Cambridge, Great Britain
Till Frömling - Technische Universität Darmstadt, Nonmetallic-Inorganic Materials, Germany
Ian S. Metcalfe - Newcastle University, School of Chemical Engineering, Great Britain
Liliana Moggi - National Atomic Energy Commission, Bariloche Atomic Centre, Argentina



F05: Ferromagnetic Memory Alloys

Oswaldo Agustín Lambri - National Scientific and Technical Research Council and National University, Argentina
Bernd Weidenfeller - TU Clausthal, Institute of Electrochemistry, Department of Materials Science, Germany

F06: Materials Design for Electrochemical Energy Storage

Joachim Binder - Karlsruhe Institute of Technology, Ceramic Materials and Technologies, Germany
Marc Kamlah - Karlsruhe Institute of Technology, Institute for applied Materials, Germany
Jürgen Janek - Justus-Liebig Universität Gießen, Physical Chemistry of Solids, Germany
Linda F. Nazar - University of Waterloo, Department of Chemistry, Canada

F07: The Great Transition – The Importance of Critical Metals for Green Energy Technologies

Oliver Gutfleisch - Technische Universität Darmstadt, Functional Materials, Germany
Gilles Dennler - IMRA Europe, France

F08: Advanced Materials for Lithium Ion Batteries

Hans Jürgen Seifert - Karlsruhe Institute of Technology, Applied Materials Physics, Germany
Maria Helena Braga - University of Porto, Faculty of Engineering, Portugal
John B. Goodenough - The University of Texas, Mechanical Engineering, USA

F09: Superconducting Materials for Energy Applications

Jens Hänisch - Karlsruhe Institute of Technology, Institute for Technical Physics, Germany
Bernhard Holzapfel - Karlsruhe Institute of Technology, Institute for Technical Physics, Germany
John H. Durrell - University of Cambridge, Bulk Superconductivity Group, Great Britain

F10: Interfaces in Microstructural Evolution: Structure, Properties, Anisotropy and Modelling

Wolfgang Rheinheimer - Karlsruhe Institute of Technology, Institut für Keramik im Maschinenbau, Germany
Michael Hoffmann - Karlsruhe Institute of Technology, Institut für Keramik im Maschinenbau, Germany
John Blendell - Purdue University, School of Materials Engineering, USA
Klaus van Benthem - University of California, Department of Materials Science and Engineering, USA

MODELLING AND SIMULATION

TOPIC COORDINATORS



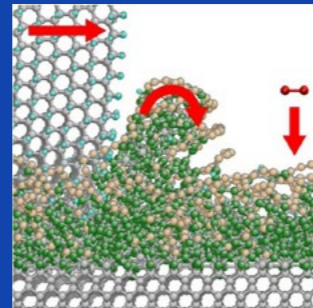
ALEXANDER
HARTMAIER



JÖRG
NEUGEBAUER



BRITTA
NESTLER



Modeling and simulation methods play an increasingly important role in academic research as well as in industrial applications. This topic provides a platform for presenting and discussing the current developments in linking processing, microstructure evolution and functional and mechanical properties of materials. Various methods for material modeling will be covered, with a special emphasis on scalebridging materials modeling. With metals, ceramics, glasses, polymers and composites, all classes of materials will be covered, with a wide spectrum of applications as functional, lightweight and high-strength materials.

SYMPOSIA

M01: Experimental and Computational Thermodynamics and Kinetics

Hans Jürgen Seifert - Karlsruhe Institute of Technology, Applied Materials Physics, Germany
Damian Cupid - AIT Austrian Institute of Technology GmbH, Center for Low-Emission Transport, Austria
Torsten Markus - HS Mannheim, Faculty of Mechanical Engineering, Germany
Yong Du - Central South University, State Key Laboratory of Powder Metallurgy, China
Rainer Schmid-Fetzer - TU Clausthal, Institute of Metallurgy, Germany

M02: Atomistic Methods for Designing

Pascal Boulet - Aix-Marseille University, CNRS, France
Marie-Christine Record - Aix-Marseille University, France
Sybille Gemming - Technische Universität Dresden, Department of Chemistry and food Chemistry, Germany

M03: Microstructure Evolution in Applied Materials: Process to Property

Ingo Steinbach - Ruhr Universität Bochum, Interdisciplinary Centre for Advanced Materials Simulation, Germany
Marc G.D. Geers - Eindhoven University of Technology, Department of Mechanical Engineering, The Netherlands

M04: Predicting Interface Structure and Dynamics – From Atomic- to Meso-Scale

Marcela E. Trybula - Polish Academy of Science, Institute of Metallurgy and Materials Science PAS, Poland
Sherri Hadian - Max-Planck-Institut für Eisenforschung, Department Computational Materials Design, Germany
Pavel A. Korzhavyi - KTH Royal Institute of Technology, Materials Technology, Sweden
Yuri N. Gornostyrev - Ural Federal University, Institute of Quantum Materials Science, Russia
Mikhail I. Katsnelson - Radboud University of Nijmegen, Institute for Molecules and Materials, The Netherlands

M05: Plasticity Across the Scales – From Microstructure Changes to Bulk Mechanical Behavior

Nina Gunkelmann - TU Clausthal, Institute of Applied Mechanics, Germany
Benoît Appolaire - Université de Lorraine, Institut Jean Lamour, France
Yann Le Bouar - Laboratoire d'Etude des Microstructures, CNRS, France
Daniel Schneider - Karlsruhe Institute of Technology, IAM - Computational Materials Science, Germany
Markus A. Stricker - Karlsruhe Institute of Technology, IAM - Computational Materials Science, Germany

M06: Cellular and Granular Porous Microstructures: Computational Design and Application

Britta Nestler - Karlsruhe Institute of Technology, IAM - Computational Materials Science, Germany
Anastasia August - Karlsruhe Institute of Technology, IAM - Computational Materials Science, Germany
Christoph Hilgers - Karlsruhe Institute of Technology, Institute of Applied Geosciences, Germany
Norbert Jost - HS Pforzheim, Material Development and Testing, Germany
Yuksel C. Yabansu - Georgia Institut of Technology, MINED Group, USA

M07: Modeling and Process Simulation of Fiber-Reinforced Polymers

Luise Kärger - Karlsruhe Institute of Technology, Institute of Automotive Engineering, Germany
Andy Hrymak - University of Western Ontario, Chemical & Biochemical Engineering, Canada
Thomas Böhlke - Karlsruhe Institute of Technology, Institute of Engineering Mechanics, Germany

M08: Integrated Computational Materials Engineering

Ulrich Prahl - TU Bergakademie Freiberg, Institute of Metal Forming, Germany
Alexander Hartmaier - Ruhr-Universität Bochum, Interdisciplinary Centre for Advanced Materials Simulation (ICAMS), Germany
Sybrand van der Zwaag - TU Delft, Faculty of Aerospace Engineering, The Netherlands
Ernst Kozeschnik - TU Wien, Institute of Materials Science and Technology, Austria
Grigorios Chaidemenopoulos - Khalifa University of Science and Technology, Department of Mechanical Engineering, United Arab Emirates

PROCESSING AND SYNTHESIS

TOPIC COORDINATORS



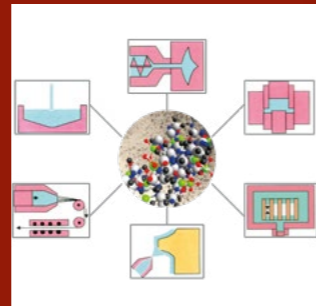
MONICA FERRARIS



SANJAY MATHUR



RALF RIEDEL



The emphasis of this topic is the development of new techniques to synthesize materials with desired microstructure-property relation; to understand the physical phenomena that underpin materials synthesis such as diffusion, nucleation, and phase transitions; and to develop in situ monitoring and diagnostic capabilities. The synthesis of complex thin films, nanoscale materials, composites, coatings are just a part of this comprehensive emphasis.

SYMPOSIA

P01: Manipulation of Matter by Electric and Magnetic Fields

Oliver Guillon - Forschungszentrum Jülich, Institute of Energy and Climate Research, Germany
Rishi Raj - University of Colorado Boulder, Materials Science & Engineering Program, USA

P02: Additive Manufacturing Technologies and Materials

Fernando Lasagni - Advanced Center for Aerospace Technologies, Materials & Processes Department, Spain
Christoph Leyens - Technische Universität Dresden, Institute for Materials Science, Germany
José Manuel Martín Márquez - Airbus Defence and Space, Additive Manufacturing, Spain

P03: Coatings and Thin Films for Structural and Functional Applications -

Monika Willert-Porada Memorial Symposium

Michael Stüber - Karlsruhe Institute of Technology, Applied Materials Physics, Germany
Karsten Woll - Karlsruhe Institute of Technology, Applied Materials Physics, Germany
Thorsten Gerdes - Universität Bayreuth, Lehrstuhl für Werkstoffverarbeitung, Germany
José L. García - Sandvik Coromant, R&D, Schweden
Haroldo Pinto - University of São Paulo, Department of Materials Engineering, Brasil
Flavio Soldera - Saarland University, European School of Materials, Germany

SYMPOSIA

P04: Nanocomposites and Nanolaminated Functional Coatings

Naureen Ghafoor - Linköping University, Department of Physics, Chemistry and Biology, Sweden
Grégory Abadias - Université de Poitiers, Department of Physics and Mechanics of Materials, France

P05: Advances in Atomic Layer Deposition Technologies:

Conformal Thin Films and Hybrid Materials for Energy, Electronics and Health

Mariona Coll - Institut de Ciència de Materials de Barcelona, Spain
Thomas Fischer - University of Cologne, Department für Chemistry, Germany
Mercedes Vila - CTECHnano, Spain
Changdeuck Bae - Sungkyunkwan University, Energy Materials Laboratory, Korea
Yakup Gönüllü - Schott AG, Mainz, Germany
Susanne Hoffmann-Eifert - Forschungszentrum Jülich, Peter Grünberg Institute Electronic Materials, Germany

P06: Molecular Preparative Approaches to Functional Materials

Emanuel Ionescu - Technische Universität Darmstadt, Department of Materials and Earth Sciences, Germany
Sanjay Mathur - University of Cologne, Inorganic and Materials Chemistry, Germany
Ralf Riedel - Technische Universität Darmstadt, Department of Materials and Earth Sciences, Germany
Aitana Tamayo - Instituto de Cerámica y Vidrio, Spain
Aivaras Kareiva - Vilnius University, Department of General and Inorganic Chemistry, Lithuania
Zhaoju Yu - Xiamen University, College of Materials, China

P07: Joining

Monica Ferraris - Politecnico di Torino, Department Applied Science and Technology, Italy
Mrityunjay J. Singh - NASA Glenn Research Center, Ohio Aerospace Institute, USA

P08: Damage in Metal Forming

Erman Tekkaya - TU Dortmund, Institute of Forming Technology and Lightweight Components, Germany
Till Clausmeyer - TU Dortmund, Institute of Forming Technology and Lightweight Components, Germany
Sebastian Münstermann - RWTH Aachen University, Faculty of Georesources and Materials Engineering, Germany

P09: Solution-Processed Absorber Materials for Photovoltaics and Solar Fuel Device Concepts

Trilok Singh - Toin University of Yokohama, School of Engineering, Japan
Silke Christiansen - Helmholtz Zentrum Berlin, Germany
Thomas Fischer - University of Cologne, University of Cologne, Department für Chemistry, Germany

P10: Wet Processing of Nanostructured Materials

Tobias Kraus - Leibniz Institute for New Materials, Structure Formation, Germany
Lola González-García - Leibniz Institute for New Materials, Structure Formation, Germany
Gabriel Lozano - Spanish National Research Council, Institute of Materials Science of Sevilla, Spain
Heiko Wolf - IBM Research-Zurich, Switzerland

P11: Thin Film Formation and Nano Structuring Through the Control of Geometry and Deposition Parameters

Bernd Rauschenbach - Leibniz Institute of Surface Modification, Germany
Agustín R. González-Elipe - University of Seville, Nanotechnology on Surfaces, Spain
Tansel Karabacak - University of Arkansas at Little Rock, Department of Physics and Astronomy, USA

STRUCTURAL MATERIALS

TOPIC COORDINATORS



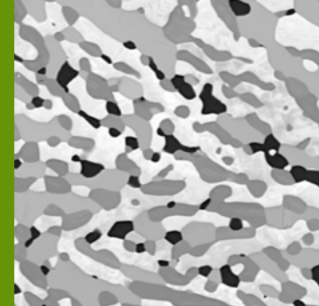
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This topic focuses on the relationships between the structure of materials and their properties and performance. Regardless of the material class being metallic, ceramic, polymeric or composite, an understanding of the structure-property relationships provides a scientific basis for developing engineering materials for advanced structural applications. Contributions are sought from both, fundamental and applied research in this field responding to the ever-increasing demand for improved and better-characterized materials.

SYMPOSIA



S01: Environmentally Assisted Cracking of High-Strength Alloys

Afroz Barnoush - Norwegian University of Science and Technology, Department of Mechanical and Industrial Engineering, Norway

Roy Johnsen - Norwegian University of Science and Technology, Department of Mechanical and Industrial Engineering, Norway

Mariano Iannuzzi - Curtin University, Department of Chemical Engineering, Australia

Mariano A. Kappes - National Scientific and Technical Research Council, Argentina

S02: Experiments and Simulations Towards Understanding Tribology Across Length-Scales

Christian Greiner - Karlsruhe Institute of Technology, Institute for Applied Materials, Germany

Steffen Brinckmann - Max-Planck-Institut für Eisenforschung GmbH, Experimental Nanotribology, Germany

Sylvie Descartes - Université de Lyon, LaMCoS, CNRS, INSA-Lyon UMR5259, France

Filippo Mangolini - University of Leeds, School of Mechanical Engineering, Great Britain

S03: Process-Microstructure-Property Relationships in High-Performance Alloys Produced by Additive Manufacturing

Christian Haase - RWTH Aachen University, Department of Ferrous Metallurgy, Germany

Thomas Niendorf - University of Kassel, Institute of Materials Engineering, Germany

Andrey Molotnikov - Monash University, Materials Science and Engineering, Australia

Moataz Attallah - University of Birmingham, School of Metallurgy and Materials, Great Britain

S04: Micro- and Nanoarchitected Materials

Jens Bauer - University of California, Irvine, USA

Tobias Schaedler - HRL Laboratories, USA

Christoph Eberl - Fraunhofer Institute for Mechanics of Materials, Germany

S05: Bulk Ultrafine- and Nano-Structured Materials

Martin Wagner - Technische Universität Chemnitz, Mechanical Engineering, Germany

Philipp Frint - Technische Universität Chemnitz, Mechanical Engineering, Germany

S06: Compositionally Complex Alloys – High Entropy Alloys

Uwe Glatzel - Universität Bayreuth, Faculty of Engineering Science, Germany

Bronislava Gorr - University Siegen, Department Maschinenbau, Germany

Anna Manzoni - Helmholtz Zentrum Berlin, Institute Applied Materials, Germany

S07: Mechanical Behavior of Advanced Structural Materials -

Reinhard Pippan Honorary Symposium

Andrea Bachmaier - Austrian Academy of Science, Erich-Schmid-Institute for Materials Science, Austria

Daniel Kiener - Montanuniversität Leoben, Department Material Physics, Austria

Bernd Gludovatz - University of New South Wales, School of Mechanical and Manufacturing Engineering, Australia

Christian Motz - Saarland University, Department of Materials Science and Engineering, Germany



S08: Advanced Steels

Pello Uranga - Ceit-IK4 and Tecnun, University of Navarra, Spain

Martin Valdez - Materials Department at TENARIS, Argentina

Roumen Petrov - Ghent University, Department of Electrical Energy, Systems and Automation, Belgium

Horst Biermann - TU Bergakademie Freiberg, Institute of Materials Engineering, Germany

Wolfgang Bleck - RWTH Aachen University, Department of Ferrous Metallurgy, Germany

Ulrich Prah - TU Bergakademie Freiberg, Institute of Metal Forming, Germany

DGM TMS S09: Light Weight Metals

Jürgen Hirsch - Consultant to Hydro Aluminium Rolled Products GmbH, Germany

David DeYoung - Alcoa Technical Center & TMS President, USA

EXHIBITION

The MSE has become the central worldwide platform for Material Science and Engineering experts. The knowledge exchange of the latest developments in the field of Material Science and Engineering as well as connected disciplines is a major feature of the MSE. Be a part of the MSE and present your products.

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Benefits & Conditions

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Exhibition Space	6 m ²	6 m ²
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Short company description incl. logo and hyperlink on MSE-homepage	✓	✓
Short company description incl. logo in the final program	✓	✓
2 exhibitor passes to join the scientific program	✓	✓
Prices excl. 19% VAT	2.500 €	2.000€

* 1 Building booth system (3 m back wall / 1 m sidewall (2,5 m high) 3 x 1 m), 1 power connection (220V), electric socket, 2 bar tables, 2 bar stools, 1 fascia, 2 spots 100 W, 1 waste basket, no carpet (!).

Be part of the MSE 2018 and send your request to:
exhibition@mse-congress.de



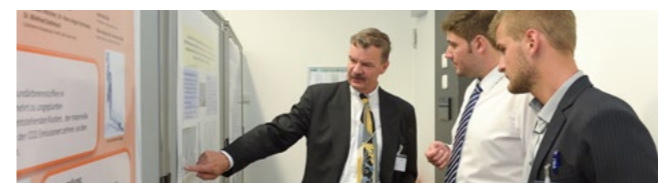
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The social highlight of the MSE offers numerous opportunities to present your company in a relaxed atmosphere.

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Poster exhibition and -evening

Your company logo will be displayed on all poster walls. Brochure holders and roll-up banners will be placed in the congress and catering area.

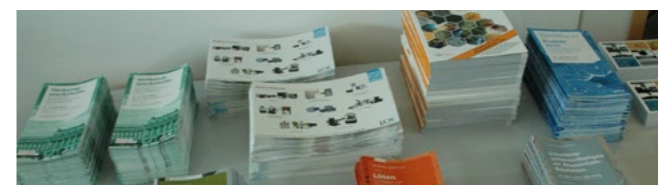
..... 2.000€



Poster award ceremony

A company representative will hand over the prizes sponsored by your company to the winners. The certificates will include your company logo. Additionally, a roll-up banner will be placed in the ceremony area.

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Promotional materials

Advertisements in the congress program, distribution of flyers or distribution of promotional material with your company logo: contact us to discuss the possibilities for presenting your company in an effective and sustainable manner.

- Flyer in the congress bags (1.500 pcs.)1.000€
- Flyer on the chairs at the opening (800 pcs.) 800€
- Distribution of flyer at the entrance (1.000 pcs.) 500€
- Distribution of giveaways at the entrance (1.000 pcs.) 500€
- Distribution of giveaways in the congress bags (1.500 pcs.) 1.000€



Catering

By sponsoring the coffee breaks you can place brochure holders and roll-up banners in the congress and catering area.

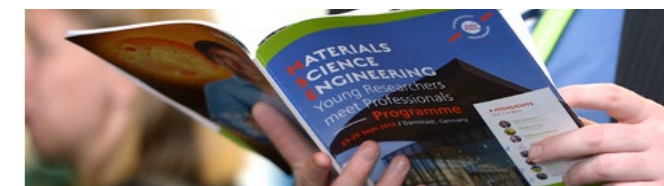
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Project your company logo on the screen of the sponsored symposia and place a roll-up banner in the plenary lecture hall.

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Please note that the general terms and conditions of the DGM e.V. are applied. All prices are in euros (€) and do not include VAT (19%). Promotional materials for presentation or distribution (for example, roll-ups, brochure stands, flyers) must be provided by you.

ABOUT DARMSTADT

ABOUT DARMSTADT

City of Science with a Strong Economy

Darmstadt has been officially dubbed a "City of Science" since 1997, which underscores the national and international significance of Darmstadt in fields of science and research. The recognition granted by the title signifies the great scientific potential contained within the city and its citizens as well as the great number of scientific institutions and companies performing research. This power is also evident in the workplace: in no other German city are there so many citizens employed in research and development as in Darmstadt. To ensure to carry on with this legacy in future the next generation of high level experts is being developed at the Technical University Darmstadt and two further colleges. Significant inventions such as the radio clock, electret and silicon microphones, which have been produced by the billions, the first enzyme based detergents and Plexiglas have all helped to make Darmstadt known beyond the state's borders.

Optimal Utilization of Economic Potential

Darmstadt is the site of four major corporations' headquarters and home to one of the most significant technology sites in the state. The scientific focus lies in the five fields of chemicals/pharmaceuticals/biotech, cosmetics, IT, machinery/electronics/mechatronics and space technology. Internationally renowned research-based

companies seated here include Deutsche Telekom AG, Software AG, Merck KGaA, Evonik, Coty/Wella, KAO, Schenck-Process as well as Schenck-Rotect and EUMETSAT. Darmstadt possesses all the attributes to make it an attractive retail trade location and it can claim a strong purchasing power level. To ensure an effective establishment of retail trade and a long-term market, the settling of retail shops in the inner city and the outer districts as well as in the 17 industrial parks is clearly regulated.

SPECIAL PLACES

Luisenplatz

The Luisenplatz is the centre of the city. Architect Georg Moller built the Ludwigs-Column (39m high) in 1844 in honour of the first Grand Duke Ludwig I. Located on the north side of the square is the council building, former seat of ministers (1781), today district council.

Hessian state museum Darmstadt

The museum, built by Alfred Messel in 1902, houses various interesting collections, e.g. history of art, cultural history, geology, palaeontology and zoology. It is considered as being one of the few universal museums in the world.

Residential Palace

The Old Renaissance Palace with its two Baroque wings, built by Remy de la Fosse

between 1716 and 1727, today replaces the old water fortress. The Bell Tower building houses the Palace Museum with a representative collection showing the history of the former Landgraviate and later Grand Dukedom.

Mathildenhöhe

In 1899 Grand Duke Ernst Ludwig invited seven artists to come to Darmstadt and, thus, the Artists' Colony Mathildenhöhe was founded. The first of four large art exhibitions took place in 1901. The artists presented their ideas of a new living and working world. They designed a colony, the focal point of which is the Studio House, the Ernst Ludwig House. Since 1990 it houses the Artists' Colony Museum. The homes of the artists, partly with original exteriors, are grouped around the Studio Building: House Olbrich, House Deiters, House Habich, the Glückert Houses and House Behrens. In 1908 the Exhibition Halls were built, together with the Wedding tower, which was a wedding present for the Grand Duke. Bernhard Hoetger artistically added his reliefs and sculptures to the Plane Tree Grove in 1914. Due to the family relationship between Hessen-Darmstadt and the Romanovs, the Russian Chapel was built in 1899, according to the design of the St. Petersburg architect Louis Benois and decorated by Victor Wasnezow.

CITY OF SCIENCE OR CENTRE OF CULTURE?

Jugendstilbad

Influenced by the late Jugendstil, the former "Central Bath" was built by August Buxbaum in 1909. In 2007 it was renovated to become a wellness centre.

The porcelain collection in Prince Gerog Palace

In 1907 the museum was set up by Grand Duke Ernst Ludwig. The collection includes, amongst others, rare pieces from the Hessian-Darmstadt Factory of Kelsterbach and the Russian Factory of St. Petersburg.

House of History

The former Court Theatre was built by Georg Moller in 1819. After complete destruction and renovation the "Mollerbuilding" was reopened in 1994. It houses the State and City Archives. A sight no-one should miss is the magnificent foyer, restored in the style of the 1870s.

White Tower

The White Tower is the landmark of the city centre. It was formerly a corner tower of the fortification wall. Today it is used as a gallery by the Fotoclub Darmstadt.

Main Railway Station

The station building of 1912, designed by Friedrich Pützer, displays characteristic elements of the late Jugendstil.

Kranichstein Hunting Lodge Museum

The Renaissance Hunting Lodge, built in 1578, is the centre of an extensive game park. The museum displays a large collection of hunting weapons and equipment as well as furnished noble salons.

The Waldspirale

This unusual building with 105 apartments, based on a design by Friedensreich Hundertwasser, was built in 2000. The outside area is open to the public.

DARMSTADT CARD

The Darmstadt Card is valid for 1 day at the price of 6 € or for 2 days at the price of 9 €.

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Free admission

Kunsthalle Darmstadt

Price reduction

for guided tours and for pedelec hire at the Darmstadt Marketing GmbH

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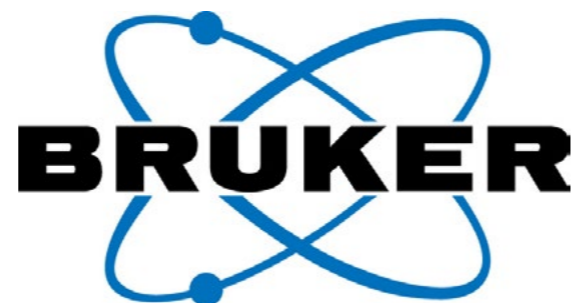


Accurion was founded in 1991 as „Nanofilm Technologie GmbH“. It was originally a spin-off from the Max Planck Institute for biophysical chemistry in Goettingen. The company started out with designing the Brewster angle microscope for the characterization of ultrathin films. Ever since Accurion supplies advanced instrumentation for challenging measurement tasks with its two divisions thin film characterization and active vibration isolation. Branch offices in the US, India and China and over 20 resellers provide a global sales and service structure. Imaging Ellipsometry allows precise measurement of optical properties and layer thicknesses down to 0.1 nm. It combines ellipsometry with microscopy to enable measurements on small structures with a lateral resolution down to 1 µm. All pixels are measured in parallel. Direct ellipsometric contrast images provide a fast detection of defects and contaminations. Application fields are 2D materials, MEMS, biochips, solar cells, flat panels, Langmuir-Blodgett films, polymers, etc. Within the field of quality control our referenced spectroscopic ellipsometer (RSE) combines high speed (100 spectra per second) with the accuracy of an ellipsometric measurement.

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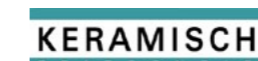
Thermo-Calc Software

Thermo-Calc Software AB of Stockholm, Sweden is a global leader in computational thermodynamics software tools within the area of material science. Its flagship software tool Thermo-Calc has been used for more than 25 years by leading industrial, governmental and academic researchers and engineers to create multi-component thermodynamic and phase diagram calculations, and more than 1,000 licenses of Thermo-Calc software are currently in place.

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