MSE 2024

**24 - 26 Sep 2024 (Darmstadt)**

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# C: Characterization

Characterization remains at the core of materials science and engineering, propelling advancements and innovations in various sectors. This topic seeks to create a vibrant platform for discussions and presentations on the latest developments in this field, concentrating on the evolution and application of characterization techniques at macro, micro, nano, and atomic scales. As we stand at the cusp of a new era, the explicit consideration of the 3D nature of microstructures gains precedence. Simultaneously, in-situ characterization and in operando techniques are gaining solid ground, promising unprecedented insights into material science. High throughput characterization is emerging as a powerful tool, promising a transformative impact on the field. Dive deep into this interdisciplinary topic, fostering collaborations and insights that promise to shape the future of material science.

## Topic coordinator



Prof. Dr. Marta-Lena Antti
Luleå University of Technology


Prof. Dr.-Ing. Frank Mücklich
Saarland University


Prof. Dr. Ronald Schnitzer
Montanuniversität Leoben


### C01: Decoding Material Microstructures - The Future of Characterization - General Symposium Topic C

Prof. Dr. Marta-Lena Antti (Luleå University of Technology), Prof. Dr.-Ing. Frank Mücklich (Saarland University), Prof. Dr. Ronald Schnitzer (Montanuniversität Leoben)

### C02: Tomographic and radiographic imaging with X-rays, synchrotron radiation and neutrons: experimental techniques, applications and data

Dr. Yunhui Chen (RMIT University), Dr.-Ing. Alexander Rack (European Synchrotron Radiation Facility - ESRF), Univ.-Prof. Dr. techn. Guillermo Requena (German Aerospace Center (DLR))

### C03: 3D, Correlative, Multiscale and Multimodal Imaging for Advanced Material Science

Dr. Roland Brunner (Materials Center Leoben Forschung GmbH), Dr. Benjamin Tordoff (Carl Zeiss Microscopy Deutschland GmbH)

### C04: Software Tools for Processing and Contextualizing Materials Characterization Data for FAIR Research Data Management

Dr.-Ing. Markus Kühbach (Humboldt University)

### C05: In-situ mechanical testing and numerical modeling of small-scale mechanical behaviour – a COST MecaNano Symposium

Dr. André Clausner (Fraunhofer Institute for Ceramic Technologies and Systems IKTS), Prof. Dr. Karsten Durst (Technische Universität Darmstadt), PD Dr. habil. Rebecca Janisch (Ruhr-Universität Bochum), Dr. Verena Maier-Kiener (Montanuniversität Leoben)

### C06: In-situ microstructural analysis of composites and multiphase materials

Prof. Dr. Kurosch Rezwan (University of Bremen), Dr.-Ing. Renato Saint Martin Almeida (University of Bremen)

### C07: In-situ analysis of materials via X-ray, neutron or electron diffraction

Dr. Matthias Bönisch (KU Leuven), Christoph Gammer (Austrian Academy of Sciences), Dr. Steven Van Petegem (Paul Scherrer Institute PSI), Prof. Dr. Haoliang Wang (Dongguan University of Technology (DGUT))

### C08: Multi-Method High-Resolution Microscopy for Materials Science

Dr. Dipl.-Ing. Anna Sophie Jelinek (Montanuniversität Leoben), Dr. Irmgard Weißensteiner (Montanuniversität Leoben)

### C09: Multiscale Materials Characterization through 3D Diffraction Microstructure Imaging

Prof. Dr. Ashley Bucsek (University of Michigan), Dr. Can Yildirim (European Synchrotron Radiation Facility), Yubin Zhang (Technical University of Denmark)

### C10: Opto-thermal measurement techniques

Prof. Dr. Jürgen Hartmann (Technical University of Applied Science Würzburg-Schweinfurt), Dr. Jochen Manara (Center for Applied Energy Research e.V.)

### C11: Tribology: understanding mechanisms of friction and wear across scales and disciplines

Dr. Steffen Brinckmann (Max-Planck-Institut für Eisenforschung GmbH), Dr. Sylvie Descartes (INSA Lyon), Prof. Dr. Christian Greiner (Karlsruhe Institute of Technology (KIT)), Prof. Dr.-Ing. Stefanie Hanke (University of Duisburg-Essen)

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