

# MSE 2024

24 - 26 Sep 2024 (Darmstadt)

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## P: Processing and Synthesis

Dive deep into the world of processing and synthesis, a field that promises to redefine the boundaries of material science. This topic underscores the development of innovative techniques to synthesize materials with desired microstructure-property relations, delving deep into the physical phenomena that govern materials synthesis such as diffusion, nucleation, and phase transitions. From complex thin films to nanoscale materials and coatings, this comprehensive focus promises to foster rich dialogues and collaborations. Join us as we navigate the future of material synthesis, paving the way for transformative innovations.

### Topic coordinator



Prof. Dr. Sanjay Mathur  
University of Cologne



Prof. Dr. Ralf Riedel  
Technische Universität Darmstadt

#### P01: Synthesis Reimagined: Pioneering Techniques in Material Creation - General Symposium Topic P

Prof. Dr. Sanjay Mathur (University of Cologne), Prof. Dr. Ralf Riedel (Technische Universität Darmstadt)

#### P02: Inline monitoring of laser material processing

Dr. Yunhui Chen (MIT University), Univ.-Prof. Dr. techn. Guillermo Requena (German Aerospace Center (DLR)), Klaus Matthias Schrickler (Technical University of Ilmenau)

#### P03: Synthesis, Processing and Properties of Polymeric Materials

Hansgeorg Haupt (Technische Universität Darmstadt)

#### P04: International Symposium on Functional Nanomaterials and Carbon-neutral Fuels

Dr. Jessica Ariane de Oliveira (Brazilian Agriculture Research Corp (Embrapa)), Prof. Dr. Ji-Hyun Jang (UNIST), Prof. Dr. Sanjay Mathur (University of Cologne), Prof. Dr. Shashank Mishra (University Claude Bernard Lyon 1), Dr. Caue Ribeiro (Brazilian Agriculture Research Corp (Embrapa)), Prof. Dr. Ahsan Ul Haq Qurashi (Khalifa University of Science, Technology & Research), Dr. Dong Wang (Technical University of Ilmenau), Prof. Dr. Gunnar Westin (Uppsala University)

#### P05: Molecular Preparative Approaches to Functional Materials

Dr. Samuel Bernard (National Center for Scientific Research (CNRS)), Dr. Emanuel Ionescu (Technische Universität Darmstadt), Peter Kroll (UT Arlington), Prof. Dr. Ravi Kumar (Indian Institute of Technology Madras), Prof. Dr. Sanjay Mathur (University of Cologne), Dr. Günter Motz (University of Bayreuth), Prof. Dr. Gurpreet Singh (Kansas State University)

#### P06: Additive Manufacturing Technologies and Materials

Prof. Dr.-Ing. Fernando Lasagni (Center for Advanced Aerospace Technologies - CATEC), Prof. Dr.-Ing. Christoph Leyens (Fraunhofer Institute for Material and Beam Technology IWS Dresden), Prof. Dr.-Ing. Ilya Okulov (Leibniz Institute for Materials Engineering - IWT), Dr. Iliya Radulov (Technische Universität Darmstadt), Univ.-Prof. Dr. techn. Guillermo Requena (German Aerospace Center (DLR)), Bijaya Bikram Samal (Indian Institute of Technology Kharagpur)

#### P07: Reactive nano-systems for advanced joining and disassembly - From fundamentals to applications

Prof. Dr. Jean Pierre Bergmann (Technical University of Ilmenau), Prof. Dr.-Ing. Frank Mücklich (Saarland University), Prof. Dr. Jens Müller (Technical University of Ilmenau), Prof. Dr. Britta Nestler (Karlsruhe Institute of Technology (KIT)), Prof. Dr. Peter Schaaf (Technical University of Ilmenau)

