

# MSE 2024

24 - 26 Sep 2024 (Darmstadt)

dgm.de

Topic F: Functional Materials, Surfaces and Devices

## F02: High Performance Materials for Sustainable Energy Applications

Energy intensive industries require a radical transformation of their production processes to reach carbon neutrality by 2050. Future low-carbon technologies and processes should be designed to address fluctuating and extreme conditions, such as high temperatures or corrosive environments. The materials and components used in these technologies must be able to withstand sustained exposure to these conditions. In the same way, they also need to be specifically designed for high-energy performance and processible in order to manufacture industrial components.

This symposium will address recent advances in the field of novel high performance materials and components (according to aims of projects under the Horizon 2020 framework under, call LC-SPIRE-08-2020 ) by addressing materials design concepts, new materials as bulk materials or as coatings(metallic and ceramic), and technologies for their development, with the final aim of manufacturing components for the industrial applications. Topics of interest include but are not restricted to

- Advanced alloy development (also including modelling approaches) for applications under extreme conditions, e.g. high temperatures, corrosive environments, high wear and/or mechanical loads.
- LCA for novel high-temperature alloys.
- Manufacturing technologies to increase sustainability in materials and components in terms of energy efficiency and resources consumption e.g. ablation, LMD, HVOF.
- ICT technologies fostering a faster approach in scientific interpretation and industrial solutions development for materials manufacturing and components life extension.
- Modelling of materials degradation and lifetime estimation

### Symposium Organizer



Daniel Benitez  
Deutsches Zentrum für Luft- und Raumfahr...



Mathieu Boidot  
Commissariat à l'énergie atomique et aux ...



Dr.-Ing. Frederike Brasche  
RWTH Aachen University



Prof. Dr.-Ing. habil. Ulrich Krupp  
RWTH Aachen University



Fernando Santos  
AZTERLAN Aliendalde Auzunea nº6

