

## **Martina Zimmermann**

Fraunhofer IWS | Technical University Dresden

Topic

### **AM-driven Material Screening**

The growing scarcity of raw materials makes recycling and reliance on secondary materials essential. Rising costs and supply chain uncertainties call for alternative materials. These challenges are addressed by a combinatorial material design approach. Simulations and accelerated testing strategies help explore new or adjusted material compositions, with the best candidates "in-situ alloyed" using advanced AM technologies developed at IWS, as shown in the FhG flagship project "ORCHESTER".

### **About the Speaker**

From 2004 to 2012, Prof. Dr. Martina Zimmermann served as an Assistant Professor at the Institute of Material Science at the University of Siegen. Through a DFG-grant she became a visiting fellow at the University of Michigan, USA, from 2009 to 2010. Following her time at Siegen, Prof. Zimmermann became Group Leader in Materials Characterization and Testing at the Fraunhofer Institute for Material and Beam Technology in Dresden from 2012 to 2015. Simultaneously, she held a professorship in Material Testing and Characterization at the Technical University of Dresden. Since 2015, she has taken on the role of Division Manager at Fraunhofer IWS while her Professorship at the Technical University was reassigned to Mechanics of Materials and Failure Analysis. Her research interests are diverse and encompass the deformation behavior and damage evolution of metallic materials and composites under mechanical loading, as well as fatigue behavior, particularly in very high cycle fatigue scenarios. She is also focused on material physics-based modeling for life-time prediction, the modification of structural features through advanced production processes, and the digital transformation in materials science. Besides her teaching and research activities Prof. Dr. Martina Zimmermann is also strongly involved in committee work, among others currently being a member of the Senate of the German Research Foundation and acting as spokesperson for the task area community interaction with the NFDI-Matwerk consortium. She is also a driving force of the women@DGM-network, which she called to life during her presidency of the German Material Society.