

International Workshop

PARTICULATE COMPOSITES:

MANUFACTURING, CHARACTERIZATION, AND MODELING

Darmstadt University of Applied Science, December 8, 2023

The purpose of this workshop is to evaluate the state of the art and identify challenges associated with the manufacturing, characterization, and numerical modeling of the particulate composite materials with complex microstructures. In particular, composites with irregularly shaped inclusions, multiscale material systems, and materials with damage will be considered. The workshop will include individual presentations of the participants as well as a panel discussion focused on new and emerging techniques in modeling and characterization of composites.

Acknowledgements

The financial support of the University of Applied Sciences Darmstadt (Research Center MPT) and DFG is gratefully acknowledged.



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HOCHSCHULE DARMSTADT
UNIVERSITY OF APPLIED SCIENCES

Program

C10, 9.01

8:30 Opening

- ... 8:40 Martin Moneke (h-da) "Natural fibers as fillers for polymers"
- 9:00 Eva Langhammer (Granula Polymer GmbH) "Compounding of inorganic additives in thermoplastics using twin-screw extrusion"
- 9:20 Herz Jonas, Dirk Muscat, Strübbe Nicole (University of Applied Sciences Rosenheim) "Polymer fibers for concrete reinforcement"
- 9:40 Karl Otto Hilbig, Thomas Vietor (University Braunschweig) "Resistance networks in additively manufactured structures"
- ... 10:00 Albrecht Gilka-Bötzow (h-da) "The granular system "concrete" in the fresh and hardened state from the perspective of a concrete technologist"

10:20 Coffee Brake in 9.01

- 10:50 Stefan Dietrich (KIT) "Nondestructive evaluation of composite microstructures and mechanical properties using computed tomography and ultrasonic techniques"
- ... 11:00 Maria Kashtalyan (University of Aberdeen, UK) "Modelling of composites with graded interphases"
- 11:20 Igor Tsukrov (University of New Hampshire, USA) " μ CT-Based modeling of Ultra-High-Molecular-Weight-Polyethylene reinforced by conductive carbon nano Inclusions"
- 11:40 Vinit Deshpande, Pascal Alexander Happ, Alberto M. Dominguez Salguero, Sebastian Schätter, Tabea Geyer, Bardiya Behzadi, Romana Piat (h-da) "Algorithms for microstructure reconstruction and characterization of conducting polymer composites"
- 12:00 Romana Piat, Alexander Happ (h-da) "Correlation between particle shape and elastic properties of the particle reinforced composites"