

Multiscale Simulation Day 2021

on 19th October 2021

powered by Leibniz-Institut für Verbundwerkstoffe

The digital Multiscale Simulation Day, organized by Leibniz-Institut für Verbundwerkstoffe, is intended to give scientists and engineers a forum to present and discuss their work, ideas and new solutions around the topic of multiscale simulation in the field of composite materials.

Digital event via Zoom

Participation is **free of charge**

Registration: Please send an email with your name and your organization/company to tim.schmidt@ivw.uni-kl.de. After registration you will receive the access information by email no later than 15th October 2021. We kindly ask participants to register separately.

Registration closing date: 15th October 2021

Conference language: English

Local Organizing Committee:

PD Dr.-Ing. habil. David May
Tim Schmidt

Contact:

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- Join our Multiscale Simulation Day 2021 -

OPENING		
09:00	Peter Mitschang IVW	Opening, Greeting and Introduction to the Topic
FLOW and PROCESS SIMULATION (Chair: David May, IVW)		
09:30	Andreas Wiegmann Math2Market	GeoDict - a Software Tool for Multiscale Modeling and Simulation
10:00	Tim Schmidt IVW	Modeling of the Microscopic and Mesoscopic Structure of Textiles for Numerical Permeability Determination
10:30	Elena Syerko, Christophe Binetruy GeM, EC Nantes	Benchmarking Virtual Permeability Prediction
<i>short break (11:00 – 11:10)</i>		
11:10	Jörg Dittmann IFB, University Stuttgart	Numerical Permeability Prediction of Multiscale Textile Architectures with OpenFOAM
11:40	Mateus Dias Ribeiro DLR	NN-based Methods for Order Reduction and Surrogate Modeling for Fluids
12:10	Frederic Masseria ESI	Manufacturing Process to Structure Simulation of Hybrid Material (Steel/ Organosheet/ Plastic-injection)
<i>Lunch break (12:40 – 13:30)</i>		
MECHANICS SIMULATION (Chair: Nicole Motsch-Eichmann, IVW)		
13:30	Martina Hümbert Math2Market	DamageDict – Micro Scale Approach to Predict Damage in Composites
14:00	Thomas Rief, Stefan Schmidt IVW	Microstructural Analysis of Fiber-Reinforced Injection Molding Material and its Influence on Mechanical Properties
14:30	Jonathan Köbler Fraunhofer ITWM	A Efficient Multiscale Method for Fatigue of Short Fiber Reinforced Polymers
<i>short break (15:00 – 15:10)</i>		
15:10	Martin Gurka, Max Kaiser IVW	Active Hybrid Composites on Different Length Scales - or: From the Crystal Structure in Shape Memory Metal to Aerodynamic Interfaces in Aircrafts
15:40	Sten van den Broek TU Eindhoven	Failure in Long Glass Fiber Reinforced Thermoplastics: Key Structural Features and how they Affect Performance
OPEN DISCUSSION		
16:10	David May IVW	Open Discussion on Potentials and Challenges of Multiscale Simulation