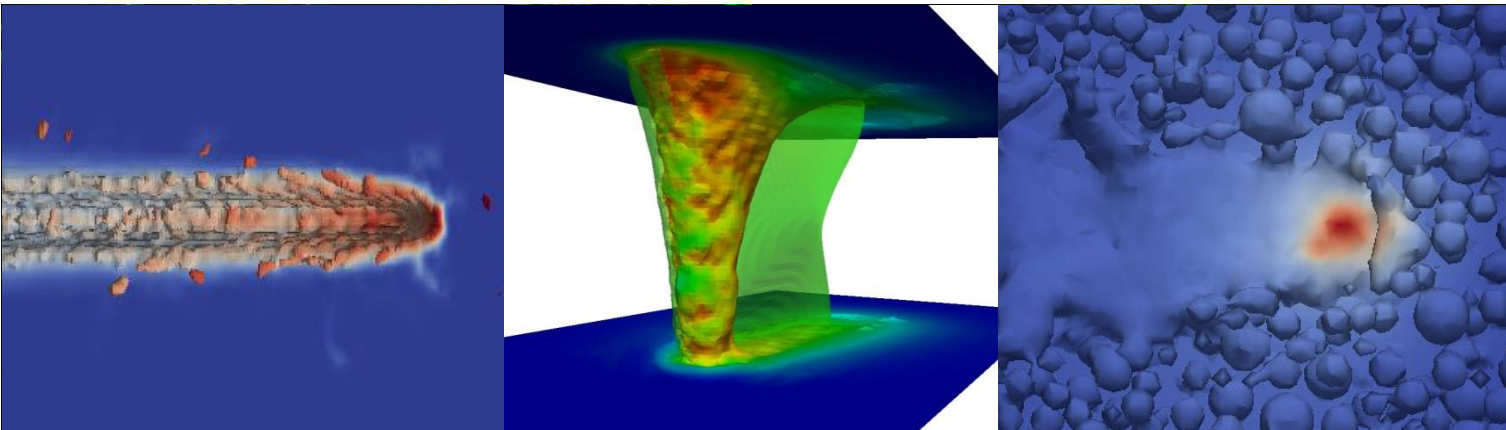


27th International SAOT Workshop on Modeling Laser Material Processing

December 12-13, 2016



Workshop Chair

Prof. Dr.-Ing. Michael Schmidt

Local Organizing Committee

Dipl.-Phys. Stefanie Kohl

Ms. Christina Ort

Ms. Anja Nelson

Program

**Monday
December 12**

8:30 **Registration**

9:00 **Schmidt, Michael** – Coordinator SAOT
Institute of Photonic Technologies, FAU Erlangen-Nürnberg, Germany
Welcome, Opening Remarks and Brief Introduction to SAOT

9:10 **Na, Suck-Joo** – Department of Mechanical Engineering,
Korea Advanced Institute of Science and Technology, Korea
Modeling and simulation issues in CFD simulations of keyhole laser welding

10:00 **Coffee break**

10:30 **Graf, Thomas** – Institut für Strahlwerkzeuge, University of Stuttgart, Germany
*Analytical model for the threshold of deep-penetration laser welding –
assumptions, consistencies, and limits*

11:20 **Fabbro, Rémy** – Processes and Engineering in Mechanics and Materials,
French National Centre for Scientific Research, France
*Physical processes in deep penetration laser welding under atmospheric or
reduced ambient pressure*

12:10 **Lunch break**

13:10 **Ploshikhin, Vasily** – Bremen Center for Computational Materials Science,
Germany
*Simulation based additive Manufacturing: new methods and perspectives for
application*

14:00 **Coffee break**

14:30 **Mergheim, Julia** – Chair of Applied Mechanics, FAU Erlangen-Nürnberg,
Germany
*Thermomechanical Modelling and Simulation of Selective Beam Melting
Processes*

15:20 **End of sessions – Day 1**

15:45 **Social Program**
Transfer to Nürnberg, Guided Tour and Free Time at the Christkindlesmarkt,
Dinner at the Restaurant Heilig-Geist-Spital, Transfer back to Erlangen

End of Day 1

**Tuesday
December 13**

9:00 **Rüde, Ulrich** – Chair for System Simulation, FAU Erlangen-Nürnberg, Germany
High Performance Simulation for Additive Manufacturing

9:50 **King, Wayne E.** – Accelerated Certification of Additively Manufactured Metals, Lawrence Livermore National Laboratory, USA
Accelerated Certification of Additively Manufactured Metals Project: Overcoming the barriers to material qualification

10:40 **Coffee break**

11:10 **Delanaye, Michel** – geonX, Belgium
Prediction of distortions and residual stresses for SLM manufactured parts using a multiscale modelling approach

12:00 **Lunch break**

13:00 **Kaplan, Alexander** – Chair of Manufacturing Systems Engineering, Luleå University of Technology, Sweden
Modelling of laser cutting

13:50 **Bachmann, Marcel** – Department of Component Safety, Bundesanstalt für Materialforschung und -prüfung, Germany
Multi-physical numerical investigation of the interaction of electromagnetic forces with a weld pool

14:40 **End of sessions – Day 2**

15:00 **Transfer to LPT and Lab Tour**
at the Institute of Photonic Technologies

16:15 **End of the workshop**

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Workshop Venue:

Hotel Novotel Erlangen
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