



New Frontiers in Materials Design for Laser Additive Manufacturing

May 12-15, 2025, Designhotel + Congresszentrum Wienecke XI., Hannover, Germany

<https://udue.de/matframeconf2025>



Monday, May 12, 2025

16:00–18:00	Arrival and Registration
18:00–20:00	Dinner
20:00–22:00	Welcome Reception

Tuesday, May 13, 2025

08:00–09:00	Breakfast
09:00–09:15	Welcome by Prof. habil. Dr.-Ing. Stephan Barcikowski on behalf of the program committee
09:15–10:45	Session I: Fundamentals and new materials for additive manufacturing (Chair: Prof. Dr. Bilal Gökce) • Dr. Yunhui Chen, RMIT, Australia, <i>New Frontiers in Materials Design for Laser Additive Manufacturing</i> • Prof. Dr.-Ing. Ludger Overmeyer, Laserzentrum Hannover, Germany, <i>New Process Parameter Spaces in Laser-Assisted Manufacturing Using the Example of Gravitation</i>
10:45–11:15	Coffee Break
11:15–12:45	Session II: Process development and simulation (Chair: Prof. Bai-Xiang Xu) • Dr. Claas Bierwisch, Fraunhofer IWM, Germany, <i>Polymer-specific Process Parameters for Laser Powder Bed Fusion: Insights from Experimentally Validated Simulations and Dimensional Analyses</i> • Prof. Dr. Stefan Nolte, Friedrich-Schiller-Universität Jena, Germany, <i>LPBF with Ultrashort Laser Pulses – Additive Manufacturing Beyond Current Limits</i>

12:45–13:00	Dr. Christiane Richter , International Funding Opportunities DFG
13:00–13:15	Dr. Tobias Böttcher , Funding Opportunities Humboldt Foundation
13:15–14:00	Lunch
14:00–16:30	Excursion Guided Tour Royal Gardens of Herrenhausen (optional, free of charge)
16:30–18:00	Poster Session I
18:00–19:30	Dinner
19:30–21:00	Session III: Metallic materials and alloys (Chair: Professor Dr.-Ing. Sebastian Weber) • Prof. Dr.-Ing. Ulrich Krupp, RWTH Aachen University, Germany, <i>Dispersoid-Strengthened Cu Alloys for Additive Manufacturing of High-Temperature Components</i> • Dr.-Ing. Anastasiya Tönjes, Leibniz-IWT Bremen, Germany, <i>Liquid In-situ Re-alloying in Additive Manufacturing</i>

Wednesday, May 14, 2025

08:00–09:00	Breakfast
09:00–11:15	Session IV: Process monitoring and characterization (Chair: Dr. Anna Ziefuß) • Prof. Edward Kinzel, University Notre Dame, USA, <i>In-situ Characterization of LPBF Using SWIR Imaging and OES</i> • Prof. Dr. Lutz Mädler, University Bremen, Germany, <i>Droplets and Particles are Key Ingredients in Any Cake</i> • Prof. Mark Dadmun, University Tennessee, USA, <i>Tailor Made Polymeric Feedstocks for Powder Bed Fusion Using Polymer Science Principles</i>
11:15–11:45	Coffee Break
11:45–13:15	Session V: Polymers and their processing (Chair: Dr. Claas Bierwisch) • Prof. Dr. Andreas Ostendorf, Ruhr University Bochum, Germany, <i>DED Process Development for Polymer Materials</i> • Prof. Dr. Michael Schmidt, Friedrich-Alexander-Universität Erlangen-Nürnberg, Germany, <i>Understanding the effects and potentials of nano-additives in NIR diode-based PBF-LB/P</i>
13:15–14:00	Lunch
14:00–16:30	Excursion Guided Tour Laserzentrum Hannover (optional, free of charge)
16:30–18:00	Poster Session II
18:00–19:30	Dinner
19:30–21:00	Session VI: Innovative applications and future prospects (Chair: Dr. Silja-Katharina Rittinghaus) • Dr. Maria Teresa Perez, IMDEA Materials Institute, Madrid, Spain, <i>Laser Additive Manufacturing of Soft Magnetic Fe-based Metallic Glasses</i> • Dr. Elaine Lee, Lawrence Livermore National Laboratory, USA, <i>Dynamically Responsive Shape Morphing of Printed Liquid Crystal Elastomers</i>
21:00	Reception with Instrumental Band Wildes Holz

Thursday, May 15, 2025

08:00–09:00	Breakfast
09:00–10:30	Session VII: Nanoparticles in additive manufacturing (Chair: Prof. Dr. Stefan Nolte) • Dr. Anna Rosa Ziefuß, University of Duisburg-Essen, Germany, <i>Boosting Coercivity of 3D Printed Hard Magnets Through Nano-Modification of the Powder Feedstock</i> • Prof. Dr.-Ing. habil. Olaf Keßler, University of Rostock, Germany, <i>Heat Treatability after Laser Powder Bed Fusion of Alloy Al10Si0.3Mg Without and With Nanoparticles</i>
10:30–11:00	Coffee Break
11:00–11:30	Session VIII: Conclusion and prospects (Chair: Prof. Dr. Stefan Nolte) • Prof. habil. Dr.-Ing. Stephan Barcikowski, University of Duisburg-Essen, Germany, <i>Large-Scale Interlaboratory Study along the Entire Process Chain of Laser Powder Bed Fusion: Bridging Variability, Standards, and Optimization Across Metals and Polymers</i>
11:30–12:00	Closing
12:00–13:00	Lunch
13:00–14:00	Departure