

WORKSHOP

Innovative Product Development by Additive Manufacturing

20 - 21 September 2023



General information

Additive Manufacturing processes are already being used successfully in wide-ranging areas such as the automotive industry, mechanical and plant engineering and medical technology. Due to high flexibility, targeted variation of the machine parameters and the often contactless production, there is a considerable added value compared to conventional processes. A decisive factor in the process chain of additive manufacturing is the design. Components can be newly or differently designed and optimized, for example, with regard to their topology or the integration of functions and effects. For an evaluation of suitability, potentials and requirements must be specified, geometries must be designed and components must be simulated and validated. In addition, a close link between internal company processes, business models and the design are necessary.

Focus Topics

Design and Optimization for Additive Manufacturing

Contributions to the development and design of components. Ensuring functional requirements and manufacturability while integrating functions and effects. Application of methods and design tools for additive manufacturing.

School for Additive Manufacturing

Contributions to the integration of functions and effects by utilizing all dimensions of additive manufacturing. Developing graded materials and application-specific processes.

Printed Optics and Innovative Applications of Additive Manufacturing

Contributions to the additive manufacturing of optical components and other innovative applications in the field of direct manufacturing, rapid tooling and additive repair. Developing application-specific solutions and using mass customization.

Additive Manufacturing Process

Contributions to additive manufacturing processes, process control and quality assurance. Enabling new materials and production techniques.

The complete workshop papers will be published in cooperation with Springer Vieweg in an ISBN numbered book (full review).

Registration

Please fill in the [registration form](#) until **September 15, 2023** to participate in the workshop.

Workshop Location

Mechanical Engineering Campus - Leibniz University Hannover
Building 8143 - Room 0208
An der Universität 1
30823 Garbsen

Arrival

<https://www.maschinenbau.uni-hannover.de/en/contact>

Accommodation

If you are in need of accommodation during your stay in Hannover, we can recommend the following hotel:

[Löns Hotel](#) (Bed & Breakfast)
info@loenshotel.de

Please be sure to reserve your hotel room as soon as possible, as the EMO trade fair is taking place at the same time.

Chairs

Prof. Dr.-Ing. Roland Lachmayer (iPeG)
Prof. Dr.-Ing. Stefan Kaielerle (LZH)
Marcus Oel, M.Sc. (iPeG)

Contact

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Program

Wednesday, 20 September 2023

13.00	Come together & Registration		Session II: School for Additive Manufacturing (posters)	10.35 – 10.55	3D Printed Calcium Phosphate Bone Cement Scaffolds with Enhanced Anti-washout Properties Fahimeh Roshanfar, Dr. Leibniz University Hannover, IMP
13.30 – 13.40	Welcome Prof. Dr.-Ing. Roland Lachmayer Leibniz University Hannover, IPeG Prof. Dr.-Ing. Stefan Kaierle Laser Zentrum Hannover e.V.	16.00	Introduction School for Additive Manufacturing (SAM) Florian Nürnberger, Dr.-Ing. Leibniz University Hannover, IW	10.55 – 11.10	Break
	Session I: Design and Optimization for Additive Manufacturing	17.00 – 18.30	Coffee, Networking & SAM Poster*		Session III: Additive Manufacturing Process
13.40 – 14.00	Optimising Fatigue Quality Assurance in Additive Manufacturing: A Review and Simulation-Based Approach Sebastian Mansky, M. Sc. Fraunhofer IAPT	18.30	Tour IPeG AM Centre	11.10 – 11.30	Reduction of sintering distortion in metal binder jetting – A tribological approach Heiko Blunk, M. Sc. Fraunhofer IAPT
			Dinner & Networking		
		Thursday, 21 September 2023			
14.00 – 14.20	Microstructure simulation for additive manufacturing of Metals - an overview Shayan Kasiri Habibabadi TU Braunschweig		Session III: Printed Optics and Innovative Applications for Additive Manufacturing	11.30 – 11.50	Sustainable additive manufacturing for architecture with short and continuous natural fiber reinforced materials based on the Fused Filament Fabrication (FFF) process Matthias Henzler, M. Sc. Laser Zentrum Hannover e.V.
14.20 – 14.40	The Role or Rule of the Development Methodology for Additive Manufacturing Sebastian Magerkohl, M. Sc. Paderborn University, KAt, DMRC	09.00 – 09.20	Progress in Additive Manufacturing of Optical Elements Tobias Biermann, M. Sc. Leibniz University Hannover, IPeG	11.50 – 12.05	Break
14.40 – 14.55	Break	09.20 – 9.40	The interaction of printing conditions and thermal treatment for glass additive manufacturing with vat photopolymerization technology Sijia Liu, M. Sc. Karlsruhe Institute for Technology (KIT), IMVT	12.05 – 12.25	Development and Evaluation of a Compact Processing Head for Additive Manufacturing with Laser-Assisted Double-Wire Welding with Nontransferred Arc Kai Biester, M. Eng. Laser Zentrum Hannover e.V.
14.55 – 15.15	Knowledge-Based Postprocessing of Topology Optimized Components using Additive Manufacturing as an Example Ali Al-Zuhairi, M. Eng. RPTU Kaiserslautern-Landau (RPTU), iMAD	09.40 – 10.00	Glass-based Additive Manufacturing by Laser Glass Deposition for the Production of Optical Systems Katharina Rettschlag, M. Sc. Laser Zentrum Hannover e.V.	12.25 – 12.45	3D-Solder-Printing for electrical powerlines Michael Petk, MA, BSc FH Kufstein
15.15 – 15.35	An integrated design process for lightweight AM products using the DED process Tobias Hartwich, M. Sc. TU Hamburg, PKT	10.00 – 10.15	Break	12.45 – 13.05	tba Aconity3D GmbH
15.35 – 16:00	tba	10.15 – 10.35	Fused deposition modeling and its extension through metal-filled filaments as a means of self-help for individuals with physical disabilities Manuel Ott, M. Sc. Paderborn University, ILH, DMRC	13.05 – 13.15	Farewell

*Please find the titles of the posters on the [website](#).