



WORKSHOP

Innovative Product Development by Additive Manufacturing

20 - 21 September 2023



l l Leibniz l 0 2 Universität l 0 0 4 Hannover

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 technics. 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 028 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 Kaierle (LZH) Marcus Oel, M.Sc. (IPeG)

Contact

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supported by:



WiGeP Wissenschaftliche Gesellschaft für Produktentwicklung Program

Wednesday, 20 September 2023

13.00	Come together & Registration		Session I (Part II): Design and Optimization for Additive Manufacturing	09.55 – 10.15	Glass-based Additive Manufacturing by Laser Glass Deposition for the Production of Optical Systems
13.30 – 13.40	Welcome Prof. DrIng. Roland Lachmayer Leibniz University Hannover, IPeG	16.00 - 16.20	Knowledge-Based Postprocessing of Topology Optimized Components using Additive Manufacturing as an Example Ali Al-Zubairi M Eng	40.45 40.05	Katharina Rettschlag, M. Sc. Laser Zentrum Hannover e.V.
	Prof. DrIng. Stefan Kaierle Laser Zentrum Hannover e.V.		RPTU Kaiserslautern-Landau (RPTU), iMAD	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
	Session I (Part I): Design and Optimization for Additive Manufacturing	16.20 - 16.40	An integrated design process for lightweight AM products using the DED process Lukas Schwan, M. Sc.		Manuel Ott, M. Sc. Paderborn University, ILH, DMRC
13.40 - 14.00	Optimising Fatigue Quality Assurance in Additive Manufacturing: A Review and Simulation-Based Approach		Finn Christiansen, M. Sc. TU Hamburg, PKT	10.35 - 10.50	Break
	Stefan Grottker, M. Sc. Fraunhofer IAPT	16.40 - 17:00	Investigation of the adhesion behavior of calcium phosphate cement depending on geometric parameters		Session iV: Additive Manufacturing Process
14.00 - 14.20	Microstructure simulation for additive manufacturing of Metals - an overview		Philipp Sembdner, DrIng. TU Darmstadt	10.50 – 11.10	Reduction of sintering distortion in metal binder jetting – A tribological approach Heiko Blunk, M. Sc.
	Shayan Kasiri Habibabadi TU Braunschweig	17.00 - 18.30	Tour IPeG AM Centre		Fraunhofer IAPT
14.20 - 14.40	The Role or Rule of the Development Methodology for Additive Manufacturing	18.30	Dinner & Networking	11.10 – 11.30	3D-Solder-Printing for electrical powerlines Michael Petke, MA, BSc FH Kufstein
	Sebastian Magerkoni, M. Sc. Paderborn University KAt DMBC	Thursday, 21 S	eptember 2023		
	Padel born Oniversity, (At, DMite		Coopies III, Drinked Ontice and Inneustics Applications for	11.30 – 11.45	Break
14.40 - 14.55	Break		Additive Manufacturing	11.45 - 12.05	Development and Evaluation of a Compact Processing
	Session II: School for Additive Manufacturing (posters)	09.00 - 09.20	Progress in Additive Manufacturing of Optical Elements Tobias Biermann, M. Sc.		Double-Wire Welding with Nontransferred Arc Kai Biester, M. Eng.
14.55 – 16.00	Introduction School for Additive Manufacturing (SAM)				Laser Zentrum Hannover e.V.
	Leibniz University Hannover, IW	09.20 - 9.40	The interaction of printing conditions and thermal treatment for glass additive manufacturing with	12.05 - 12.25	AM Machine Technology as Endabling Factor for Innovative Products
	SAM Posters* & Networking		vat photopolymerization technology Sijia Liu, M. Sc. Karlsruhe Institute for Technology (KIT), IMVT		Florian Eibl, DrIng. Aconity3D GmbH
			3 7 · · ·	12.25	Farewell
*Please find the	*Please find the titles of the posters on the <u>website</u> .		Break		