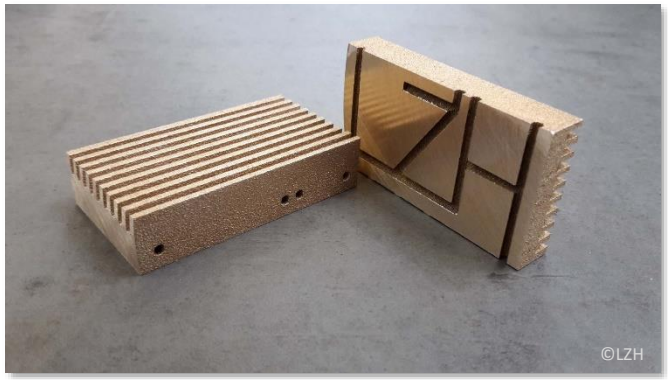
Additive Manufacturing processes are already being used successfully in wide-ranging areas such as automotive, aerospace, mechanical engineering, and medical technology. Due to high flexibility in production, there is a considerable added value compared to conventional processes. A decisive factor in the process chain of Additive Manufacturing is the design. With the added design freedom components can be newly designed and optimized. 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 and business models and design is necessary.

New Design: Heat Exchanger made with Selective Laser Sintering

Supported by:

WiGeP Wissenschaftliche Gesellschaft für Produktentwicklung

Niedersachsen ADDITIV



Heatsink with internal cooling channels made with LPBF

Chairs

Prof. Dr.-Ing. Roland Lachmayer (IPeG)
Prof. Dr.-Ing. Stefan Kaierle (LZH)
Behrend Bode, M. Sc. (IPeG)

Contact

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Institute for Product Development (IPeG)
Gottfried Wilhelm Leibniz Universität Hannover
An der Universität 1 - 30823 Garbsen

Location

Laser Zentrum Hannover e.V. (LZH)
Hollerithallee 8 - 30419 Hannover
https://www.lzh.de/en/contact-and-map

Registration

Please fill in the **registration form** to participate in the workshop.

iPeG Institut für Produktentwicklung & Gerätebau

LZH LASER ZENTRUM HANNOVER e.V.

Workshop

Innovative Product Development by Additive Manufacturing

27 September 2022

Leibniz Universität Hannover

Workshop Innovative Product Development by Additive Manufacturing
Tuesday, 27 September 2022

09:00 – 09:15 **Welcome**

Dr.-Ing. P. Gembarski
Leibniz Universität Hannover, IPeG
Prof. Dr.-Ing. S. Kaierle
Laser Zentrum Hannover e.V.

Session I: Design and Optimization for Additive Manufacturing

09:15 – 09:35 **Approach for rapid fabrication of individual bone replacement structures by modeling additively prefabricated CPC models**
Dr.-Ing. P. Sembdner,
Technische Universität Dresden

09:35 – 09:55 **Influence of joining zone geometry on material distribution in electrochemically produced component joints in additive manufacturing**
K. Rudolph, TU Darmstadt

09:55 – 10:15 **Characterization of additive manufactured structures for developing 3D printed cushions**
C. Steinnagel, Leibniz Universität Hannover

10:15 – 10:30 **Discussion**

10:30 – 11:00 **Coffee Break**

11:00 – 11:20 **Automation in Active Surface-based Design Generation for Additive Manufacturing**
M. Winkler, RWTH Aachen

11:20 – 11:40 **Product redesign for hybrid additive manufacturing driven by product architecture transformation - a methodological proposal**
V. Molina, TU Berlin

11:40 – 12:00 **PhotonHub Europe**
Dr.-Ing. J. Hermsdorf, M. Lammers
Laser Zentrum Hannover e.V.

12:00 – 12:15 **Discussion**

12:15 – 13:30 **Lunch Break**

Demonstration of Additive Manufacturing in the LZH's shop floor

Session II: Manufacturing and Process Chain

13:30 – 13:50 **Redesign and manufacture using WAAM technology of an aluminum component for the automotive sector**
A. Vandewynckèle, AIMEN Centro Tecnológio

13:50 – 14:10 **Powder Residuals in Metal Laser Powder Bed Fusion – Review: Kinds of Residuals and Consideration in Process**
L. Wirths, Universität der Bundeswehr München

14:10 – 14:30 **Active Mixing Printhead for Multi-Material Additive Manufacturing of Highly Viscous Materials**
S. Teves, Leibniz Universität Hannover

14:30 – 14:50 **Advanced temperature sense and control methods for selective laser sintering**
C. Zander, Laser Zentrum Hannover e.V.

14:50 – 15:05 **Discussion**

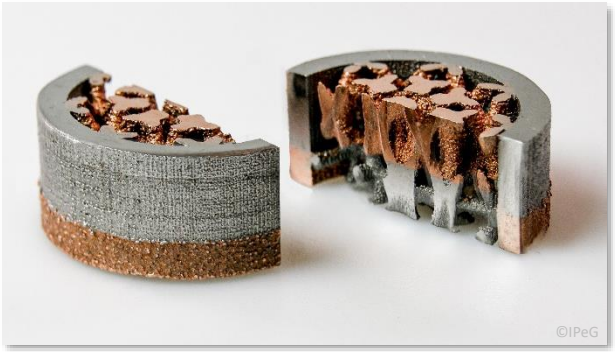
15:05 – 15:35 **Coffee Break**

15:35 – 15:55 **A Path to Ensure Quality in Additive Manufacturing**
Dr. M. Gieseke, Baker Hughes Company

15:55 – 16:15 **Challenges in quality management of additively manufactured metal spare parts in low-volume production**
P. Lurtz, Universität der Bundeswehr München

16:15 – 16:35 **Resource-efficient sintering supports for the metal binder jetting process**
H. Blunk, Fraunhofer IAPT

16:35 – 16:55 **Final Discussion & Farewell**



Additive Manufacturing using Multi-Metal LPBF