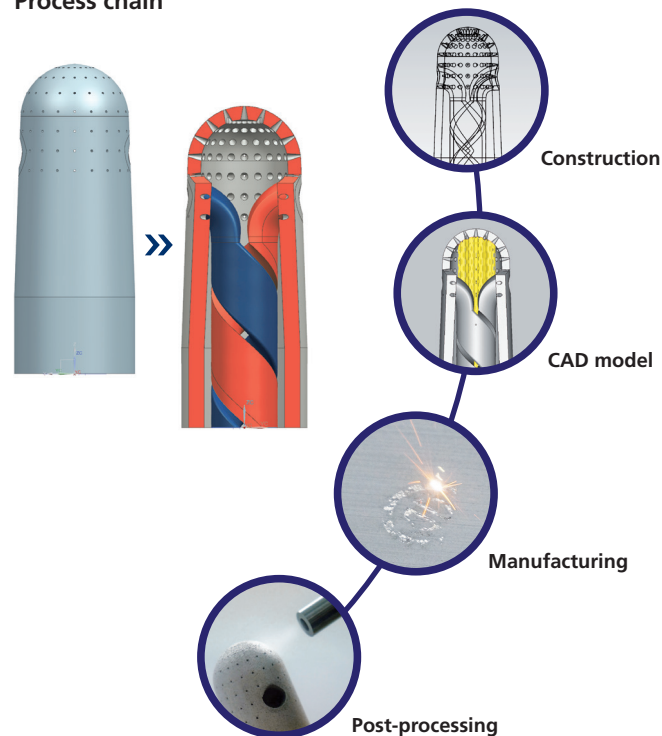


CONTACT

**FUNCTION INTEGRATION BY MEANS
OF LASER POWDER BED FUSION (LBPf)**

Process chain



**AACHEN CENTER
FOR 3D PRINTING**

Fraunhofer Institute for Laser Technology ILT

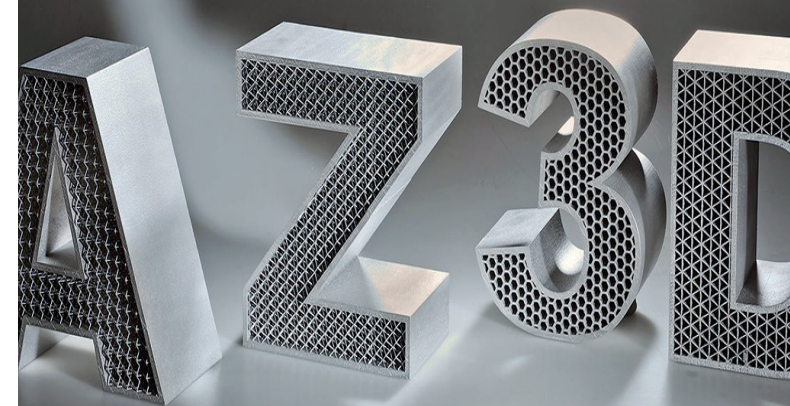
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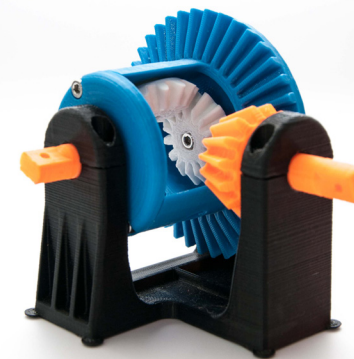
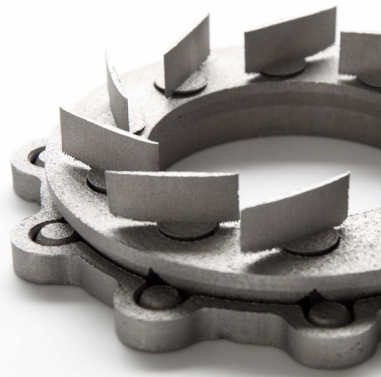
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OBJECTIVES OF THE COOPERATION

As small- and medium-sized enterprises examine their applications in detail, they increasingly see the economic and technological opportunities as well as the potential of additive manufacturing (AM) in their production environments. Large companies invest directly in innovative technology to open up new sales markets or optimize existing products and processes, but smaller companies often shy away from the investment risks associated with new system technology. Above all, however, they rarely have qualified AM specialists or skilled workers. Both in the generation of metallic components and in the field of polymer 3D printing, they face, therefore, the danger of losing touch with this innovative technology.

This is where the closely cooperating team of experts at Aachen University of Applied Sciences and the Fraunhofer Institute for Laser Technology ILT comes in. Their practice-oriented approach to AM solutions and knowledge of in-depth process and systems technology provide small- and medium-sized companies in particular with access to the entire additive manufacturing process chain. This way, they can take advantage of the economic and technological opportunities offered by metal and polymer AM processes.

OUR RANGE OF SERVICES – YOUR BENEFIT

Conception

- Function, cost and time analysis
- AM-compliant design
- Data preparation
- Reverse engineering
- Development of process chains

Additive manufacturing

- Feasibility studies
- Sample and component production including transfer to commercial systems
- Process or parameter optimization
- Material development
- Mechanical testing

Post-machining and finishing

- Post-processing
- Surface treatment
- Heat treatment
- Quality analysis according to VDI guidelines

Practical education and training

- Integration of additive manufacturing in university and non-university education
- Workshops and internships for industry employees
- Transfer of specialist knowledge on the operation of different AM systems and on powder handling
- Partnership-based cooperation with coordinated work packages
- Contract security and know-how protection
- DQS-certified according to DIN EN ISO 9001

Processes and equipment

- Metal L-PBF: Various systems from $\varnothing 70 \times 80 \text{ mm}^3$ to $800 \times 400 \times 500 \text{ mm}^3$ e. g. XLine 2000R, M1 Cusing, SLM50
- Polymer Laser Sintering: EOS P800
- Polymer Extrusion: various commercial FDM printers
- Polymer Stereolithography: Stratasys Objet 24, Objet 30 pro, Form 1+ Formlabs
- Powder binder process: Z-Printer 3D-Systems