



The research group "Additive Manufacturing" at the Chair of Photonic Technologies (LPT) at Friedrich-Alexander University Erlangen-Nuremberg (FAU) is seeking a

Research Associate (m/f/d)

for active support in our research activities in the field of laser-based additive manufacturing.

In the **Additive Manufacturing** research group, we focus on investigating the processes of laser powder bed fusion and directed energy deposition, both for metals and plastics. As part of an exciting research project, you will play a significant role in examining the interactions between laser radiation and polymer powder materials at a wavelength of 1.94 μm . The goal is to develop a theoretical understanding of laser-material interaction to gain fundamental insights into energy and temperature distribution in the Directed Energy Deposition process with Laser Beam (DED-LB/P). You will work at the interface of experimental research and theoretical modeling to analyze the influence of process parameters on temperature fields and specimen properties. Furthermore, the generated results will be published in scientific journals and presented at international conferences, making them accessible to the public.

Responsibilities:

- Investigating the relationships between process control and material properties in laser-based additive manufacturing
- Improving scientific understanding and industrial applicability of additive manufacturing, particularly DED-LB/P
- Establishing and deepening international and interdisciplinary collaborations with companies, universities, research institutions, and associations
- Publishing scientific results
- Initiating new research projects
- Actively participating in the education of students, e.g., by providing support in teaching or supervising theses

Requirements:

- University degree (M.Sc.) in Mechanical Engineering, Materials Science, Medical Engineering, Physics, or a comparable field
- Strong communication skills and enjoyment of interdisciplinary work, including collaboration with external teams
- Experience in the field of additive manufacturing is an advantage
- Willingness to pursue personal and professional development towards a doctoral degree (Dr.-Ing.), integrated into the SAOT as a Doctoral Researcher
- Independent and self-reliant working style
- Good command of English, both spoken and written
- Willingness to travel, e.g., for project meetings or conferences (< 10%)
- Interest in expanding the research group

Employment:

Limited term according to TV-L E13 (100%)

Applications to:

Prof. Dr.-Ing. Michael Schmidt, sekretariat@lpt.uni-erlangen.de

*Keywords:

PhD, Additive Manufacturing, Directed Energy Deposition, Plastics, Material Analytics, Simulation