Professorship of Laser-based Additive Manufacturing
TUM School of Engineering and Design
Technical University of Munich

Research Associate or Doctoral Candidate (m/f/d) with a Focus on Process Monitoring and Quality Control in Laser-Based Powder Bed Fusion of Polymers (PBF-LB/P)

The Professorship of Laser-based Additive Manufacturing at the Technical University of Munich (TUM) welcomes applicants for the research associate position with a focus on Process Monitoring and Quality Control in Laser-Based Powder Bed Fusion of Polymers (PBF-LB/P).

About us

Located in the capital of Bavaria and home to over 52,000 students, the TUM can be found among the world's top universities and home to one of the most vibrant environments in Additive Manufacturing (AM), committed to excellence in research and teaching, interdisciplinary education, and the active promotion of promising young scientists. Munich benefits from the healthy mix of AM companies and startups of all sizes headquartered in the region. The Professorship of Laser-based Additive Manufacturing is part of the TUM School of Engineering and Design and combines basic research with application in order to shape the still-young AM environment. We seek a highly motivated research associate who can work independently and participate creatively in collaborative teams.

Key Responsibilities

- Work within a committed team of engineers and scientists to implement process monitoring techniques and AI methods in industrial PBF-LB/P,
- Conduct PBF-LB/P experiments and testing of the resulting components,
- Support the development and application of an advanced X-ray inspection method that can quantify porosity below the imaging system's resolution limit.
- Collect, analyze, and interpret process data to establish correlations between process signatures and final part quality with AI methods.
- Driving publication of project results in leading journals and conferences in the additive manufacturing community.

Requirements

- Master in material science, or mechanical engineering with a focus on AI or related discipline,
- Proven background in laser-based manufacturing,
- Proficient verbal and written communication skills as reflected in effective presentations at seminars and meetings,
- Team player who can work in a collaborative, multidisciplinary team environment,
- Fluency in spoken and written English and German.

We offer

- A stimulating environment for cutting-edge research in the field of laser-based additive manufacturing,
- An exceptional opportunity to experience research in a highly inspiring international environment and to learn from some of the world's leading researchers,

- Possibility of earning a doctoral degree and working on cutting-edge AM technology,
- Remuneration aligns with the current German public service salary scale (i.e., TV-L E13 based on the applicant's experience level).

How to apply?

The following documents are needed for applications:

- A motivation letter (1-2 pages) describing (i) yourself, (ii) your research interests, (iii) your qualifications, (iv) your future career goals and research focus, and (v) why you would be a suitable candidate,
- A detailed CV,
- Academic transcripts from your Bachelor's and Master's degrees

Interested applicants should send the necessary documents via email to personal.lbam@ed.tum.de and state "application research associate laser technology in AM". The position will be filled as soon as possible. TUM has been pursuing the strategic goal of substantially increasing the diversity of its staff. As an equal opportunity and affirmative action employer, TUM explicitly encourages nominations of and applications from women as well as from all others who would bring additional diversity dimensions to the university's research and teaching strategies. Preference will be given to disabled candidates with equal qualifications. International candidates are highly encouraged to apply.

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