Technische Universität Dresden - Faculty of Mechanical Engineering, Institute of Manufacturing, Chair of Ultra-Precision Surface Machining Using Ions and Plasmas

Technische Universität Dresden

TUD Dresden University of Technology, as a University of Excellence, is one of the leading and most dynamic research institutions in the country. Founded in 1828, today it is a globally oriented, regionally anchored top university as it focuses on the grand challenges of the 21st century. It develops innovative solutions for the world's most pressing issues. In research and academic programs, the university unites the natural and engineering sciences with the humanities, social sciences and medicine. This wide range of disciplines is a special feature, facilitating interdisciplinarity and transfer of science to society. As a modern employer, it offers attractive working conditions to all employees in teaching, research, technology and administration. The goal is to promote and develop their individual abilities while empowering everyone to reach their full potential. TUD embodies a university culture that is characterized by cosmopolitanism, mutual appreciation, thriving innovation and active participation. For TUD diversity is an essential feature and a quality criterion of an excellent university. Accordingly, we welcome all applicants who would like to commit themselves, their achievements and productivity to the success of the whole institution.

Research Associate (m/f/x)

(subject to personal qualification, employees are remunerated according to salary group E 13 TV-L) At the Faculty of Mechanical Engineering, Institute of Manufacturing, the Chair of Ultra-Precision Surface Machining Using Ions and Plasmas offers a position as Research Associate (m/f/x) starting as soon as possible as part of the DFG research project “Advanced design and atmospheric pressure fabrication technologies for future optical instrumentation – AdvFab4Optics”. The position is limited to 3 years and entails 75 % of the full-time weekly hours. The period of employment is governed by the Fixed Term Research Contracts Act (Wissenschaftszeitvertragsgesetz - WissZeitVG). The position offers the chance to obtain further academic qualification (usually PhD). The position is based at the Leibniz Institute of Surface Engineering (IOM), Leipzig (www.iom-leipzig.de).

City: Leipzig; Starting date (earliest): At the earliest possible; Duration: 3 Jahre; Remuneration: bei Vorliegen der persönlichen Voraussetzungen E 13 TV-L; Reference number: w26-131; Closing date: 16/06/26

Tasks

The position involves working on a collaborative research project together with the Leibniz Institute for Surface Engineering (IOM) in Leipzig and the Institute of Scientific Instruments of the CAS (Czech Republic) to conduct fundamental research on plasma processing methods for the ultraprecise shaping and microstructuring of optical surfaces. The research project aims to develop and demonstrate a fully atmospheric-pressure-based process chain for the fabrication of hybrid optical elements with refractive and diffractive functionality. The work includes investigations into reactive plasma jet etching processes on glasses and laser-structured resist materials to elucidate the dominant interaction mechanisms. Suitable process parameters for optimal pattern transfer of 2.5-dimensional structures are to be derived from the topographical and chemical

characterization of the surfaces. In addition to technical project work, the position also includes reporting, correspondence with industry and research partners, and the publication of scientific results.

Requirements

- a scientific university degree (Diploma or Master's) with above-average grades in the fields of laser and optical technologies, photonic technologies, micro/nanotechnology, materials science, or comparable fields
- in-depth knowledge in the field of plasma or laser technology as well as surface analysis
- strong interest in experimental work and in solving engineering and physical-chemical problems
- experience with programming (e.g., MATLAB, Python)
- motivation, initiative, and the ability to collaborate in a team-oriented, interdisciplinary manner in the field of innovative materials processing and photonic technologies
- very strong command of written and spoken German and English

What we offer

- Opportunities for personalized professional development through central training programs offered by the research consortium or TUD
- Academic preparation for a future doctoral project
- Intensive academic exchange within the project consortium
- Partial flexibility to work remotely

Application

TUD strives to employ more women in academia and research. We therefore expressly encourage women to apply. The university is a family-friendly university. We welcome applications from candidates with disabilities. If multiple candidates prove to be equally qualified, those with disabilities or with equivalent status pursuant to the German Social Code IX (SGB IX) will receive priority for employment.
Application: Please submit your detailed application with the usual documents by June 16, 2026 (stamped arrival date of the university central mail service or the time stamp on the email server of TUD applies), preferably via the TUD SecureMail Portal https://securemail.tu-dresden.de by sending it as a single pdf file to ulrich_thomas.arnold@tu-dresden.de or to:
TU Dresden, Chair of Ultra-Precision Surface Machining Using Ions and Plasmas, Prof. Dr. rer. nat. Thomas Arnold, Helmholtzstr. 10, 01069 Dresden, Germany.
Please submit copies only, as your application will not be returned to you. Expenses incurred in attending interviews cannot be reimbursed.

TUD is a founding partner in the DRESDEN-concept alliance.
Reference to data protection: Your data protection rights, the purpose for which your data will be processed, as well as further information about data protection is available to you on the website:
https://tu-dresden.de/karriere/datenschutzhinweis.

More information at https://stellenticket.de/204316/HAWK/
Offer visible until 16/06/26