Technical University Dresden

The Technical University of Dresden (TUD) counts as an excellence university among the most productive research institutions in Germany. Founded in 1828, it is today a globally oriented, regionally anchored leading university that aims to make innovative contributions to solving global challenges. In research and teaching it unites engineering and natural sciences with the humanities and social sciences and medicine. This nationwide outstanding diversity of subjects enables the university to promote interdisciplinarity and to bring science into society. TUD sees itself as a modern employer and aims to offer attractive working conditions to all employees in teaching, research, technology and administration and thus also to promote, develop and involve their potentials. TUD stands for a university culture characterized by openness to the world, appreciation, enthusiasm for innovation and participation. It regards diversity as a cultural self-evidence and a quality criterion of an excellence university. Accordingly, we welcome all applicants who wish to commit themselves with their performance and personality for our success and with us for the benefit of all.

At the Faculty of Electrical Engineering and Information Technology, Institute for Fundamentals of Electrical Engineering and Electronics, at the professorship for Measurement and Sensor Systems Technology at the earliest possible date a position as

scientific staff / doctoral student / postdoc (m/f/d)
Development of fiber-bundle-based endoscopy for high-resolution medical imaging
(subject to meeting the personal requirements E 13 TV-L)

for 3 years, with up to 100% of the regular weekly working hours to be filled. There is the opportunity for your own scientific further qualification (usually PhD / habilitation). The compatibility of family and work is of high importance. The position is generally also suitable for part-time employees. Please indicate this wish in your application.

In the framework of a DFG-funded research project we are working on the further development of coherent fiber bundles for high-resolution lens-free endomicroscopy. The aim is to optimize the image quality and functionality of these fiber bundles to create new possibilities in biomedical imaging (e.g., in vivo brain tumor diagnostics, cochlear implant monitoring, imaging of periodontitis therapy) and also to enable therapies. Modern technologies such as two-photon 3D printing and laser ablation are used to create precise optical structures and improve the performance of the fiber bundles. Also the modification of the underlying fiber bundle (e.g., tapering) improves photon efficiency and is being studied here. The aim is to find the best balance between the individual possibilities and to demonstrate it finally.

Requirements

- Above-average scientific university degree in physics, photonics, optics or related disciplines.
- Knowledge in optics, specifically: fiber optics, diffractive optics and experimental optics.
- Initial experience in laser processing and optical characterization is advantageous.
- Ability to work independently and goal-oriented
- High commitment
- Proficient command of English

We offer:

- a varied, highly current and demanding research activity
- an interdisciplinary research group whose shown paradigm shifts have been awarded with high-level prizes (over 100 awards in total)
- modernly equipped laboratories
- opportunity to publish in high-quality journals and to attend international conferences for scientific exchange

As of: 27.02.2026

- excellent contacts with partners from research and industry
- flexible working hours
- an annual vacation entitlement of 30 days within a 5-day week
- participation in the additional pension scheme for civil servants via the VBL

For technical questions please contact Mr. Jakob Dremel (email jakob.dremel@tu-dresden.de, Tel. 0351 / 463-33205).

The TUD aims to increase the proportion of women and therefore explicitly invites them to apply. The university is a family-friendly university. Applications from severely disabled people are particularly welcome. When equally qualified, they or those protected under SGB IX by law due to equality will be given preference.

Application: Please send your compelling application with the usual documents by 30.04.2026 (the postmark of the Central Mail Office or the timestamp on the TUD email server applies), preferably via the TUD SecureMail portal https://securemail.tu-dresden.de as a PDF document to grp-application-mst@msx.tu-dresden.de or to:

TU Dresden, Faculty of Electrical Engineering and Information Technology, Institute for Fundamentals of Electrical Engineering and Electronics (IEE), Chair of Measurement and Sensor Systems Technology, Prof. J. Czarske, Helmholtz Str. 10, 01069 Dresden.

Your application documents will not be returned, please only submit copies. Interview costs will not be reimbursed.

The TUD is a founding partner of the Dresden-concept e.V. research alliance.

DRESDEN concept

Data protection notice: Which rights you have and for what purpose your data are processed as well as further information on data protection are provided on the following website: https://tu-dresden.de/karriere/datenschutzhinweis.