

## **Technische Universität Dresden - Faculty of Physics, Institute of Applied Physics, Chair of Experimental Physics / Photophysics**



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 / PhD Student (m/f/x) in the area of “Interface Engineering through Wafer-Bonding with Ferroelectrics and Ferroics”**

At the Faculty of Physics, Institute of Applied Physics, the Chair of Experimental Physics / Photophysics (Prof. Dr. phil. habil. Lukas M. Eng) offers within the DFG Research Group FOR5044 “Periodic low-dimensional defect structures in polar oxides (<https://www.for5044.de>) a position as Research Associate / PhD Student (m/f/x) in the area of “Interface Engineering through Wafer-Bonding with Ferroelectrics and Ferroics” (subject to personal qualification employees are remunerated according to the salary group E 13 TV-L) starting at the earliest possible date. The position is limited to 3 years with the option of extension up to 1 year and entails 75% of the full-time weekly hours. The period of employment is governed by Fixed Term Research Contracts Act (Wissenschaftszeitvertragsgesetz - WissZeitVG). The position aims at obtaining further academic qualification (usually PhD).

City: Dresden; Starting Date: At the earliest possible; Duration: limited to 3 years with the option of extension up to 1 year; Remuneration: subject to personal qualification employees are remunerated according to the salary group E 13 TV-L; Closing date: 06/03/25

#### **Working field**

The successful candidate will be responsible to establish and apply the technique of wafer bonding to charged surfaces and interfaces, i. e. bonding to ferroelectrics together in order to establish a solid-state bonding of a nominally charged interface, as well as to other promising interface structures. Structural characterization and electronic transport measurements through I-V-curve and Hall-transport recording at various temperatures will allow to quantify the necessary interface characteristics for nano-electronic

applications. Equally, the nanoscale analysis through dedicated scanning probe methods [including piezo-response force microscopy (PFM), conductive atomic force microscopy (c-AFM), and Kelvin probe force microscopy (KPFM)] will allow to shed light on the microscopic mechanisms. The subject allows the candidate to become scientifically competitive internationally through peer-reviewed publications and conference contributions. The candidate will be part of the above-mentioned larger research group FOR5044 and hence participate in several group meetings and discussions, both on site and online. This allows also to bridge between the experimental findings and theoretical interpretation. Moreover, the position also includes project-related supervising Masters and Bachelor students during their early-stage academic careers.

### **Requirements**

very good university degree (Master, diploma, or equivalent) in physics, material sciences, or equivalent; experience and understanding in the fields of ferroelectricity and scanning force microscopy; excellent interpersonal and communication skills; an independent, target- and solution-driven work attitude; fluent English both oral and written. Applications by women are particularly welcome. The same applies to people with special needs.

### **Application**

TUD strives to employ more women in academia and research. We therefore expressly encourage women to apply. The University is a certified family-friendly university and offers a Dual Career Service. 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.

Please submit your detailed application including a cover letter, CV, scientific achievements, publication list, a summary of the master thesis, certificates, names of two referees, etc. by March 6, 2025 (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 **lukas.eng@tu-dresden.de** or to: TU Dresden, Fakultät Physik, Institut für Angewandte Physik, Herrn Prof. Dr. Lukas M. Eng, 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.

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/191652/>

Offer visible until 06/03/25

