

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.

At the **Faculty of Physics, Institute of Applied Physics**, the **Chair of Ultrafast Microscopy and Photonics** offers a full-time position as

Research Associate / Postdoc (m/f/x)

Ultrafast detection of THz-controlled light emitters in quantum matter

(subject to personal qualification employees are remunerated according to salary group E 13 TV-L)

starting **February 1, 2026**. The position is initially limited to two years until January 31, 2028. 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. The position is funded by the Federal Ministry of Education and Research (Bundesministerium für Bildung und Forschung - BMBF).

Our research is focused on spectroscopy and microscopy of interacting electronic many-particle states in low-dimensional semiconductors using a variety of techniques from linear and non-linear spectroscopy to time-resolved microscopy as well as under the influence of external fields.

The scientific and technical aims of the project are focused on studying and controlling correlated electronic states in quantum matter using combination strong THz radiation and ultrafast optical detection. This strongly motivates the main aim of this project to match the high quality of the THz and optical sources with the demands of novel material classes for transient light detection, including both integration and proof-of-concept studies.

Tasks:

- setup and operation of combined THz-optical experiments using advanced streak camera detectors and free-electron-laser radiation.
- scientific research on time-resolved optoelectronic phenomena in low-dimensional van der Waals materials
- fabrication and preparation of complex heterostructures involving van der Waals semiconductors in combination with a variety of nanomaterial systems
- analysis and communication of the research findings

Requirements:

- university and PhD degree in physics or similar discipline; interest in experimental condensed matter research
- hands-on expertise in THz spectroscopy, operation of optical setups at free-electron-laser facilities
- expertise in time-resolved spectroscopy of van der Waals semiconductors under the influence of external electrical and magnetic fields

We offer: We will be happy to welcome you to an international team of highly motivated researchers to be part of a highly active scientific field. We further offer

- access to state-of-the-art facilities of the group and the institute
- collaborations and networking with leading research groups in the field
- promotion of gender equality and family-friendly work environment

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. 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 (in English or German) including a motivation letter, CV, and copies of degree certificates by **November 10, 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 alexey.chernikov@tu-dresden.de or to:

TU Dresden, Chair of Ultrafast Microscopy and Photonics, Herrn Prof. Alexey Chernikov, 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.

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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>.