Dresden University of Technology

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 Chemistry and Food Chemistry**, the **Chair of Theoretical Chemistry** offers, subject to the availability of resources, a position as

Research Associate / PhD Student (m/f/x)

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

starting **as soon as possible**. The position comprises 75% of the full-time weekly hours and is limited to 3 years. 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).

Tasks: The evaluation of potential final repositories for radioactive waste requires precise knowledge of the sorption and diffusion of radionuclides through rock layers. The successful candidate will work in an interdisciplinary team investigating the diffusion of radionuclides (U, Pu, Am) and decay products (Zr) through rock minerals triggered by colloids, as well as methods for immobilizing these ions. Modern methods of theoretical chemistry (first principles, kinetic Monte Carlo, machine learning) will be applied to investigate diffusion phenomena and link speciation with spectroscopic signatures. Close cooperation with the project partners is expected. This project is funded by the German Federal Ministry of Education and Research.

Requirements:

- university degree (master or diploma) in chemistry or physics and profound knowledge in computational and theoretical physics/chemistry
- A sound knowledge of simulation methods and actinide chemistry is required, as well as a willingness to learn and apply new methods.
- Capability of team work is essential, initiative and excellent communication skills
- Willingness to collaborate in an interdisciplinary and international team and to regularly present research findings
- Skills in materials chemistry, actinide chemistry, theoretical chemistry, high-performance computing, and programming are beneficial.

We offer: We offer a position with a competitive salary in one of Germany's most attractive research environments. TUD is one of eleven German Universities of Excellence and provides outstanding working, research, and networking possibilities. The position will be in the group of Prof. Thomas Heine at the Chair of Theoretical Chemistry where 40 researchers from 9 nations works interdisciplinary in the fields of computational materials science, theoretical and computational chemistry/physics and physics of low-dimensional materials. It maintains strong ties with the local experimental groups of TUD and the institutes of the DRESDEN-concept environment. The chair hosts its own computer cluster and has full access to the high-performance computing infrastructure at ZIH Dresden, one of Germany's leading HPC centers. Dresden, the capital of the State of Saxony, is a city with a beautiful historical city center and offers a high standard of living with high ratings in housing, safety, and healthcare.

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 with the usual documents by **January 9, 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 **antje.voelkel@tu-dresden.de** or to:

TU Dresden, Chair of Theoretical Chemistry, Prof. Thomas Heine, 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.