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 Mechanical Science and Engineering, Institute of Power Engineering**, the **Chair of Thermodynamics** offers a full-time project position as a

Research Associate (m/f/x)

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

starting **as soon as possible**, limited until December 31, 2027 in a project funded by the European Regional Development Fund (ERDF). The period of employment is governed by § 2 (2) Fixed Term Research Contracts Act (Wissenschaftszeitvertragsgesetz - WissZeitVG).

Tasks:

- Development of an automated evaluation routine for area detection of microscope images of salt solutions during solidification
- Linking the time curves of the automated area evaluation and simultaneously recorded heat flow signals of a dynamic differential calorimeter (DSC) using a neural network to be developed for predicting a pseudo-DSC signal from microscope images
- Transfer of the evaluation routine to a multi-sample test rig (automated detection of crucible positions in the test rig required)
- Verification of the applicability of the developed neural network agent to the light and infrared images recorded simultaneously in the multi-sample measuring rig
- Literature study and validating literature comparison
- Validation, final documentation, publication of the results, and presentation at relevant conferences

Requirements:

- University degree in mechanical engineering, process engineering, chemistry, physics, or computer science
- Ability to quickly familiarize yourself with the various issues involved in energy storage and programming
- A high degree of independence and mobility
- Confident scientific working methods
- Ability to work in a team
- Programming experience

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 **February 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: **cornelia.breitkopf@tu-dresden.de** or to:

TU Dresden, Chair of Thermodynamics, Prof. Cornelia Breitkopf, 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.

DRESDEN concept

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.