Technische Universität Dresden

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 Inorganic Chemistry I** offers, subject to the availability of resources, a project position as

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**. The position is limited until May 31, 2029 with 75% of regular weekly working hours. The period of employment is governed by § 2 (2) Fixed Term Research Contracts Act (Wissenschaftszeitvertragsgesetz – WissZeitVG).

Tasks:

- battery electrode manufacturing and characterization: development of mixtures and coatings by dry processing methods and optimization of process parameters
- powder rheology characterization: evaluation of flowability, compressibility, cohesion, and shear behavior of electrode materials (active materials, conductive additives, binders) using advanced powder rheometry techniques (e.g. shear cell, rotative drum)
- Process–structure correlation: Establishment of relationships between powder properties, processability in dry coating technologies and electrode properties
- electrochemical performance evaluation: Characterization of electrodes using techniques such as galvanostatic cycling, cyclic voltammetry, and impedance spectroscopy
- material characterization: Microstructural and physicochemical analysis (e.g. SEM, XRD, porosity analysis, conductivity measurements)
- modeling and data analysis: Implementation of data-driven approaches or discrete element modeling (DEM) to describe powder behavior and predict process outcomes
- documentation and dissemination of results on scientific conferences and in scientific publications
- close interaction with academic and industrial partners
- project-based support in supervising students / assistants and/or Master students

Requirements:

- very good university degree (M.Sc. or equivalent) in chemistry, materials sciences, chemical engineering, physics, or a related field
- practical experience and strong interest in battery technology
- practical experience in working in laboratory environments as well as material characterization methods
- practical experience in powder technology / rheology or particle systems or granular mechanics
- practical experience in electrochemistry and battery characterization as well as in process engineering are of advantage
- programming and/or modeling skills (Python, MATLAB, DEM)
- excellent results on individual performance criteria (e.g., manuscript/publication resulting from Master thesis, awards) and timely completion of higher education

- strong motivation to independently conduct research and to work in interdisciplinary collaborations
- ability to work independently in a structured and analytical manner
- strong interest in interdisciplinary research on battery cells and battery component development
- excellent written and verbal communication skills in the English language, at least passive understanding of German

TUD strives to employ more women in academia and research. We therefore expressly encourage women to apply. The university is a 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.

Application: Please submit your detailed application with the usual documents, quoting the **reference number w26-141** by **June 24, 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 **linda.petersohn@tu-dresden.de** or to:

TU Dresden, Chair of Inorganic Chemistry I, Mrs. Petersohn, 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.