

A position is available at the Faculty of Mechanical, Process and Energy Engineering, Institute for Mechanical Process Engineering and Mineral Processing for a

**research assistant (m/f/d) – tender number 254-E/2023**

to be filled at the earliest possible time, limited till 28.02.2026. (an extension to 12 months is being sought)

**Pay grade:** 13 TV-L  
**Job size:** 100 % (40 hours a week; Part-time possible, if applicable)

Functional particle systems, i.e. particles with special properties, are a technology driver in the development of electrochemical systems such as batteries, fuel cells or electrolyzers. Such functional particles are characterized by the structuring of their surface or by their composition and structure as an agglomerate of primary particles. Various high-energy mixing processes enable the production of such functional structures of particles. The subject of the research work is the systematic investigation of the synthesis of core-shell particles using the mechano-fusion process. The starting materials come from the field of Li-ion batteries. The aim is to produce particle materials that lead to an increase in performance (fast charging capability, energy density) in a battery. These systematic process engineering investigations are aimed at determining structural property functions for this particle system, whereby the structural information is determined using imaging methods such as 3D micro-computed tomography. The work is associated with the SPP 2289 of the DFG ([SPP 2289 Hetero-Aggregates - University of Bremen \(uni-bremen.de\)](https://www.uni-bremen.de/spp2289)), in which fundamental work on mechano-fusion and structure formation on model systems is carried out, which offers a variety of cooperation opportunities.

**Your tasks are:**

- Working on a research topic in the field of particle technology and particle characterisation
- Further development and experimental research work on an automated test facility for high-energy mixing and coating
- On- and off-line characterisation of agglomerates from mechano-fusion; (further) development of evaluation routines for image data from computer tomography; Process modelling - data evaluation - digitization

**What you can expect from us:**

- a varied and responsible job in the laboratories and at the excellent measurement technology of the institute MVT/AT; excellent research infrastructure in laboratory locations as well as in the associated particle analytics
- Integration of your research work into a professional network with further scientific training
- Industrial relevance of the research work; working at a family-friendly university with flexible working hours
- Remuneration according to the provisions of the collective agreement for the public service of the German states (Länder) in accordance with personal requirements; attractive fringe benefits, e.g. capital-forming benefits (VL), company pension scheme (VBL), health management; further training opportunities; discounted ticket for local public transport "Job-Ticket"

**What we expect from you:**

- Above-average Master degree (or equivalent) in process, mechanical or materials engineering, chemical engineering, physics, applied natural sciences or comparable
- Knowledge of the basic processes of mechanical process engineering as well as basic programming
- good English and German language skills (verbal and written) and readiness for further qualification

**For further questions on the content of the individual topics, please contact Prof. Dr.-Ing. Urs Peuker ([urs.peuker@mvtat.tu-freiberg.de](mailto:urs.peuker@mvtat.tu-freiberg.de), 03731 39-2916).**

Severely disabled or equivalent applicants (m/f/d) will be given preferential consideration in the event of equal suitability, performance and qualifications. For appropriate consideration, we ask that proof of the severe disability/ equality is attached to the application documents. The TU Bergakademie Freiberg aims to increase the proportion of women in teaching and research and is therefore particularly interested in applications from qualified women.

Please send your application with the usual documents, quoting the **tender code (254-E/2023)**, by **14.12.2023** (the postmark of the ZPS of the TU Bergakademie Freiberg applies) to:

**TU Bergakademie Freiberg - Dezernat für Personalangelegenheiten - 09596 Freiberg**  
**mail: [bewerbungen@tu-freiberg.de](mailto:bewerbungen@tu-freiberg.de)**

Your application materials will not be returned; please submit copies only. Interview costs will not be covered. The TU Bergakademie Freiberg is also looking for scientific personnel from different disciplines. Information under: <http://tu-freiberg.de/wirtschaft/karriere/stelle-nausschreibungen>