

At the Faculty of Mechanical, Process and Energy Engineering, Institute of Mechanical Process Engineering and Mineral Processing, a position is available from 01.07.2024 as a

Research assistant (m/f/d) - job advertisement reference number 86/2024

to be filled on a temporary basis as part of a third-party funded project.



Remuneration: Pay group 13 TV-L
Scope of position: 1.0 FTE (40 hours/week; part-time possible)
Time limit: 36 months (extension of up to 12 months is sought)

Functional particle systems, i.e. particles with special properties, are a technology carrier 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 structure-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)), in which fundamental work on mechano-fusion and structure formation on model systems is carried out, which offers a variety of cooperation opportunities.

These are your tasks:

- Working on a research topic in the field of particle technology and particle characterization
- Further development and experimental research work on an automated test facility for high-energy mixing and coating
- On- and off-line characterization 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:

- Working at a family-friendly university with flexible working hours
- Remuneration in accordance with the provisions of the collective agreement for the public service of the federal states in line with personal requirements
- Attractive fringe benefits, e.g. capital-forming benefits (VL), company pension scheme (VBL), health management; discounted ticket for local public transport "Job-Ticket"
- Further training opportunities
- A varied and responsible job in the laboratories and at the pilot plants of the MVTAT Institute; excellent research infrastructure in laboratory facilities and in the associated particle analysis technology
- Integration of your research work into an excellent professional network with further scientific training
- Industrial relevance of the research work

What we expect from you:

- Above-average university diploma or master's degree in the field of process or materials engineering, chemical engineering, physics, applied natural sciences or comparable fields.
- Knowledge of the basic processes of mechanical process engineering and programming
- Good written and spoken German and English skills
- Willingness to gain further qualifications

**For further information, please contact Prof. Peuker (Tel.: 03731 39-2916;
e-mail: urs.peuker@mvtat.tu-freiberg.de).**

Applicants (m/f/d) must fulfill the recruitment requirements for the conclusion of employment contracts for a fixed term in accordance with the WissZeitVG. Severely disabled or equivalent applicants (m/f/d) with equal aptitude, performance and qualifications will be given preferential consideration. For appropriate consideration, please enclose proof of severe disability/equal status with your 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 and stating the advertisement **reference number (86/2024)** by **22.05.2024** (the postmark of the ZPS of the TU Bergakademie Freiberg applies) to:

**TU Bergakademie Freiberg - Department of Human Resources - 09596 Freiberg or
by e-mail: bewerbungen@tu-freiberg.de**

Your application documents will not be returned, please submit only copies. Interview costs will not be covered. The TU Bergakademie Freiberg is also looking for staff from various disciplines. Further information can be found at: <https://tu-freiberg.de/stellenangebote>