TU BERGAKADEMIE FREIBERG

TUBAF
Die Ressourcenuniversität.
Seit 1765.

Research Assistant (m/f/d)

Job offer reference number 10-E/2026

Faculty of Mechanical, Process and Energy Engineering
Institute of Mechanics and Fluid Dynamics

Scope of position: 1,0 FTE (40 hours/week)
Time limit: 24 months with optional prolongation

Remuneration: pay group E13 TV-L
Start: 01.04.2026

TU Bergakademie Freiberg is researching sustainable solutions to the global challenges facing the 21st century. We are looking for a research assistant (m/f/d) to work on a DFG research project: “Causes, Reproducibility, and Modeling of Size Effects in the Mechanical Behavior of Foam Materials”. Cellular materials combine low density with high stiffness, strength, and energy absorption capacity, making them attractive for lightweight and impact-absorbing structures. Experimental studies, however, have shown that their mechanical properties in thin components—comprising only a few layers of cells—depend strongly on specimen size. The available data in the literature are inconsistent: some studies report a positive size effect (“smaller is stiffer”), while others find a negative one (“smaller is softer”). The aim of this project is to systematically resolve this ambiguous evidence regarding the nature and magnitude of size effects in cellular materials. To this end, extensive mechanical testing and numerical simulations shall be combined to identify the underlying structural causes and to develop physically motivated models for the deformation and fatigue behavior of these materials.

Your tasks

- conduct independent research on the microstructural mechanisms of the behavior of cellular materials
- apply the finite element method (FEM) and other advanced numerical simulation techniques
- perform small-scale mechanical experiments in collaboration with experienced laboratory engineers
- analyze, interpret, and critically evaluate simulation and experimental results
- present research findings at national and international conferences
- prepare and submit scientific reports and peer-reviewed journal publications

What we expect from you

- university diploma or M.Sc. degree in engineering or natural sciences, applied mathematics or related fields
- a strong background and practical experience in continuum mechanics, FE analysis and material modeling
- experience on combined numerical-experimental research is highly welcome
- strong motivation to pursue a PhD within the framework of the research project
- good team-working and communication skills
- fluency in spoken and written German and/or English

What you can expect from us

- working at a family-friendly university with flexible working hours
- renumeration according to the provisions of the collective agreement for the public service of the German federal states (TVL) in accordance with the personal requirements
- attractive fringe benefits, e.g., asset-based benefits (VL), company pension schemes (VBL), health management, “Job-Ticket”
- a wide range of networking, mentoring and development opportunities
- a focused research program and a structured supervision strategy offering the opportunity to pursue a PhD

Applicants (m/f/d) must meet the employment requirements for the conclusion of fixed-term employment contracts in accordance with the WissZeitVG (German Academic Fixed-Term Contract Act).

Your application

Please send your application with the usual documents, quoting the reference number (10-E/2026)

by 16 February 2026, preferably by email to:

bewerbungen@tu-freiberg.de

or to:
TU Bergakademie Freiberg
Dezernat Personalangelegenheiten
09596 Freiberg

For further information please contact:

Prof. Björn Kiefer, Ph.D.
E-Mail: Bjoern.Kiefer@imfd.tu-freiberg.de
or Dr. Geralf Hütter
Geralf.Huetter@imfd.tu-freiberg.de

Severely disabled persons or persons of equivalent status (m/f/d) will be given preferential consideration if they have the same qualifications, performance and abilities. Please enclose proof of this. The TU Bergakademie Freiberg specifically promotes the proportion of women and expressly invites qualified women to apply.

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Zertifikat seit 2023 audit familiengerechte hochschule
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