



Technische Universität Berlin



Research Assistant - salary grade E13 TV-L Berliner Hochschulen - for qualification

Part-time employment may be possible

Faculty III - Process Sciences, Institute of Chemical and Process Engineering / Mechanical Process Engineering

Reference number: III-480/25 (starting at 01/01/26 / limited for 24 months / closing date for applications 05/12/25)

Your responsibility:

Dynamic image analysis has become established in particle measurement technology as a common method for characterizing dispersed substances. Its advantage lies in the fact that, in addition to particle size, shape information can also be extracted. For this to be possible, particles must be fed in a suitable manner. Furthermore, suitable multi-camera systems must be used to extract 3D information. Both requires improvement, and therefore, simulations will be used to thoroughly investigate both liquid-fed and free-flowing particle feeding in the context of multi-camera systems. This will then allow the application of machine learning methods based on the findings (see, for example, <https://doi.org/10.1016/j.powtec.2025.121193>). This will provide reliable 3D information in particle measurement technology for the first time. This opens up new possibilities for quality control and process control in industrial applications. Teaching duties will be required during the course of employment.

Your profile:

- Successfully completed university degree (Master's, Diploma, or equivalent) in energy and/or process engineering, numerical engineering, mechanical engineering, natural sciences, or a related field (required); above-average results are desirable
- Basic programming skills in languages such as C, Fortran, MATLAB, and Python
- Ability to teach in German and/or English is required; willingness to acquire the necessary language skills is expected.
- Prior knowledge of/interest in particle-based modeling (e.g., Discrete Element Method) and/or CFD (desirable)
- Prior knowledge of/interest in machine learning (desirable)
- Prior knowledge of and/or interest in mechanical process engineering and particulate processes (desirable)
- Interest in numerical engineering research (desirable)
- Teamwork skills, curiosity, and creativity (desirable)

How to apply:

Please send your application, **quoting the reference number**, with the usual documents (in a single PDF file, max. 5 MB) by email to Prof. Dr. Kruggel-Emden at sekretariat@mvta.tu-berlin.de.

By submitting your application via email you consent to having your data electronically processed and saved. Please note that we do not provide a guaranty for the protection of your personal data when submitted as unprotected file. Please find our data protection notice acc. DSGVO (General Data Protection Regulation) at the TU staff department homepage: https://www.abt2-t.tu-berlin.de/menue/themen_a_z/datenschutzerklaerung/.

To ensure equal opportunities between women and men, applications by women with the required qualifications are explicitly desired. Qualified individuals with disabilities will be favored. The TU Berlin values the diversity of its members and is committed to the goals of equal opportunities. Applications from people of all nationalities and with a migration background are very welcome.

The vacancy is also available on the internet at:
<https://www.jobs.tu-berlin.de>

