Faculty of Mechanical Science and Engineering

The Institute of Power Engineering, Chair of Imaging Techniques in Energy and Process Engineering offers, subject to the availability of resources, a position as

Research Associate / PhD Student (m/f/x)
(subject to personal qualification employees are remunerated according to salary group E 13 TV-L)

starting March 1, 2022. The position is limited until February 28, 2025. The period of employment is governed by the Fixed Term Research Contracts Act (Wissenschaftszeitvertragsgesetz-WissZeitVG). The position offers the chance to obtain further academic qualification (e.g. PhD). Balancing family and career is an important issue. The position is generally suitable for candidates seeking part-time employment. Please indicate the request in your application.

Tasks: Analysis of phase distribution, residence time and dynamics of the two-phase flow in separation columns as part of the DFG-funded joint project "Experimental and theoretical investigation of fluid dynamics und separation efficiency of sandwich packings". In detail, the following work is to be carried out:

▪ modification of an experimental setup for the analysis of flow phenomena in structured packings,
▪ assessment of the influence of viscosity and surface tension on flow morphology and load points using x-ray imaging techniques,
▪ development of a model for the prediction of flow regime transitions based on a hydrodynamic stability analysis using the Navier Stokes equation,
▪ development of an experimental approach to determine mixing parameters.

Requirements: very good university degree (e.g. diploma, master's degree) in process or chemical engineering, applied science or any related subject. Interdisciplinary thinking, independent scientific work, practical experimental skills and abilities as well as an active communication with scientific partners are indispensable for the successful implementation of the project. A very good basic knowledge of mathematics and physics is desirable. A good knowledge in the fields of thermal separation, fluid mechanics as well as measurement and sensor technology is beneficial as well as a confident handling or quick familiarisation with simulation tools and tools for analysis of large datasets. You should be able to quickly familiarise yourself with new topics, demonstrate a team-oriented and independent approach to work, and be fluent in the English language for scientific communication.

Applications from women are particularly welcome. The same applies to people with disabilities. Please submit your comprehensive application including the usual documents by December 15, 2021 (stamped arrival date of the university central mail service applies) preferably via the TU Dresden SecureMail Portal https://securemail.tu-dresden.de by sending it as a single pdf document to uwe.hampel@tu-dresden.de or by mail to: TU Dresden, Fakultät Maschinenwesen, Institut für Energietechnik, Professur für Bildgebende Messverfahren für die Energie- und Verfahrenstechnik, Herrn Prof. Dr.-Ing. habil. Uwe Hampel, Helmholtzstr. 10, 01069 Dresden. Please submit copies only, as your application will not be returned to you. Expenses incurred in attending interviews cannot be reimbursed.

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