Faculty of Mechanical Science and Engineering

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

**Research Associate / PhD Position (m/f/x)**

(subject to personal qualification employees are remunerated according to salary group E 13 TV-L)

starting **March 3, 2022.** The position is limited until February 28, 2025 and entails 75% of the fulltime weekly hours. 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).

**Tasks:** Development of electrical sensor and measurement technology for the acquisition of flow parameters in thermohydraulic test facilities as part of the BMBF-funded joint project "Development and use of robust electrical measurement and imaging methods for the high-resolution acquisition of thermohydraulic parameters in large-scale test facilities for nuclear safety research (ROBIN)". In detail, the following work is to be carried out:

- development of wire-mesh sensor technology for the measurement of two-dimensional gas holdup and flow velocity fields in thermohydraulic test facilities based on a thermoanemometry principle
- comparative assessment of different sensor variants
- design of a sensor with miniaturized transducers
- development, implementation, testing and evaluation of circuit solutions, including solutions with high-temperature electronics up to 200°C
- functional verification in the laboratory as well as application in thermohydraulic test facilities.

**Requirements:** very good university degree (diploma, master's degree) in electrical engineering, physics or a related subject. A confident handling of or quick familiarization with numerical simulation tools for electrostatic fields as well as analog circuit technology is expected. 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. You should be able to quickly familiarize yourself with new topics, demonstrate a team-oriented and independent approach to work, and be fluent in the English language for scientific communication. A very good basic knowledge of mathematics and physics is desirable. A specialization in precision engineering as well as analog and digital circuit technology, high-temperature electronics is beneficial.

Applications from women are particularly welcome. The same applies to people with disabilities.

Please submit your comprehensive application including the usual documents by **January 3, 2022** (stamped arrival date of the university central mail service applies) preferably via the TU Dresden SecureMail Portal [https://securemail.tu-dresden.de](https://securemail.tu-dresden.de) by sending it as a single pdf document to [uwe.hampel@tu-dresden.de](mailto: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.

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**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](https://tu-dresden.de/karriere/datenschutzhinweis)