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

starting **October 1, 2021**. The position is limited until September 30, 2024. The period of employment is governed by the Fixed Term Research Contracts Act (Wissenschaftszeitvertragsgesetz-WissZeitVG). Balancing family and career is an important issue. The post is generally suitable for candidates seeking part-time employment. Please indicate your request in your application. The position offers the chance to obtain further academic qualification (e.g. PhD).

**Tasks:** Development of electrical measurement technology to determine porosity and moisture in concrete as part of the BMBF-funded joint project "Development of measurement technology for sampling contaminated concrete structures of nuclear facilities during dismantling (KOBEKA)". In detail, the following work is to be carried out:

- Comparative assessment of the suitability of the electrical impedance measurement as well as the measurement of the scattering of guided radar waves for the detection of concrete porosity and moisture in the wall in narrow boreholes
- Development of a sensor technology solution
- Construction of a probe with integration of further measurement technology (radiation sensors, endoscope)
- Functional verification, uncertainty evaluation and sensor optimisation in the laboratory and in the field.

**Requirements:** very good university degree (diploma, master's degree) in electrical engineering, physics or a related subject. Interdisciplinary thinking, independent scientific work, practical experimental skills and abilities as well as active communication with scientific partners are indispensable for the successful implementation of the project. Very good basic knowledge of mathematics and physics is desirable. A specialisation in high-frequency technology as well as a confident handling or quick familiarisation with numerical simulation tools for electromagnetic fields and HF circuit technology and good knowledge in the fields of measurement and sensor technology, circuitry and precision engineering are beneficial. You will be able to quickly familiarize yourself with new topics, demonstrate a team-oriented and independent approach to work, and have a good command of 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 **August 31, 2021** (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. Dr. h. c. 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](https://tu-dresden.de/karriere/datenschutzhinweis)