

TUD Dresden University of Technology, as a University of Excellence, is one of the leading and most dynamic research institutions in the country. Founded in 1828, today it is a globally oriented, regionally anchored top university as it focuses on the grand challenges of the 21st century. It develops innovative solutions for the world's most pressing issues. In research and academic programs, the university unites the natural and engineering sciences with the humanities, social sciences and medicine. This wide range of disciplines is a special feature, facilitating interdisciplinarity and transfer of science to society. As a modern employer, it offers attractive working conditions to all employees in teaching, research, technology and administration. The goal is to promote and develop their individual abilities while empowering everyone to reach their full potential. TUD embodies a university culture that is characterized by cosmopolitanism, mutual appreciation, thriving innovation and active participation. For TUD diversity is an essential feature and a quality criterion of an excellent university. Accordingly, we welcome all applicants who would like to commit themselves, their achievements and productivity to the success of the whole institution.

At the **Faculty of Mechanical Science and Engineering, Institute of Process Engineering and Environmental Technology**, the **Chair of Chemical 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 **August 01, 2024**. The position is limited to 3 years and comprises 75% of the full-time 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 (usually PhD thesis).

**Tasks:** In the joint EFRE InfraProNet project "SmartPaste," we aim to advance a technology that produces hydrogen through the hydrolysis of magnesium hydride for decentralized applications. To develop effective reactor concepts, it is crucial to thoroughly determine and describe the reaction kinetics. In particular, operating conditions must be identified where maximum hydrogen formation rates can be achieved with a minimal spectrum of by-products, and efficient heat removal is ensured. The project involves creating dynamic reactor models that account for side reactions, diffusion, passivation effects, and the precipitation of metal salts. Additionally, tasks include developing and optimizing chromatographic and other analytical methods to evaluate the reaction system. Effective collaboration within the team and with project partners is essential. The PhD project also requires the presentation of research findings in journals and at conferences.

**Requirements:** a very good university degree, preferably in a natural science, ideally in chemistry, technical chemistry, or chemical engineering; advanced knowledge in instrumental analytical chemistry, especially chromatography and common coupling methods; interest in engineering-related issues; creativity and self-motivation; interest in new forms of teamwork and knowledge transfer to students; a personality skilled in communication and presentation, who works independently, systematically, and confidently. Profound reaction engineering knowledge and skills in process modeling and data analysis/programming (e.g., MATLAB, Python) are an advantage.

For more information call: +49 351 46334106.

TUD strives to employ more women in academia and research. We therefore expressly encourage women to apply. The University is a certified family-friendly university and offers a Dual Career Service. We welcome applications from candidates with disabilities. If multiple candidates prove to be equally qualified, those with disabilities or with equivalent status pursuant to the German Social Code IX (SGB IX) will receive priority for employment.

Please submit your detailed application with the usual documents, along with a detailed letter of motivation referencing the job advertisement text, by **May 22, 2024** (stamped arrival date of the university central mail service or the time stamp on the email server of TUD applies) to: **TU Dresden, Fakultät Maschinenwesen, Institut für Verfahrenstechnik und Umwelttechnik, Professur für Chemische Verfahrenstechnik, Herrn Prof. Dr.-Ing. Markus Schubert, Helmholtzstr. 10, 01069 Dresden, Germany** or via the TUD SecureMail Portal <https://securemail.tu-dresden.de> by sending it as a single PDF file to [cvt@tu-dresden.de](mailto:cvt@tu-dresden.de). 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>.