



With more than 16,000 students and 3,800 employees, the **Technische Universität Braunschweig** is one of Germany's leading institutes of technology. It stands for strategic and performance-oriented thinking and acting, relevant research, committed teaching, and the successful transfer of knowledge and technologies to the economy and society. We consistently advocate for family friendliness and equal opportunities.

Our research focuses are mobility, engineering for health, metrology, and city of the future. Strong engineering and natural sciences are our core disciplines. These are closely interconnected with economics, social and educational sciences and humanities.

Our campus is located in the midst of one of the most research-intensive regions in Europe. We work successfully together with over 20 research institutions in our neighborhood as we do with our international partner universities.

Starting from the earliest possible date the Institute for Chemical and Thermal Process Engineering is looking for a

Research Associate / Postdoc / Doctoral Candidate (m/f/d) in the field of polymerization fouling (EG 13 TV-L, full-time)

The position is to be filled on a fixed-term basis for an initial period of two years with the possibility of extension. The successful applicant will be given the opportunity to pursue a doctorate or for further scientific qualification.

The Institute for Chemical and Thermal Process Engineering deals with problems in the research areas of Fouling and Cleaning, Sustainable Production Technologies, Innovative Equipment and Plant Concepts, and Pharmaceutical and Biotechnological Processes. In doing so, both aspects of fundamental engineering research and application-oriented aspects are addressed. The work is carried out in collaboration with other national and international research institutions as well as with industry. With the aim of basic and application-oriented research, our institute deals with the fundamentals, the conception of production processes up to the design of optimal apparatus concepts and their simulation, based on experimental investigations.

The "Fouling and Cleaning" team is now looking for a research associate to work on a research project, which aims at a deeper understanding of the mechanisms that lead to the formation of deposits on the reactor walls as well as heat transfer surfaces during emulsion polymerization. A comprehensive time-resolved characterization of all processes in the bulk and at the surface combined with the correlation of these processes with each other shall provide a comprehensive view on all mechanisms contributing to the deposit formation. Therefore, the initial phase of the deposit formation shall be tracked in-situ by two complementary measures: firstly, a quartz crystal microbalance (QCM) integrated within a flow channel which is in parallel with the reactor, and secondly, a heated finger that can be withdrawn vertically from the reactor in a stepwise manner. With regard to the materials, a focus shall be on polyacrylates and polyvinyl acetate. The project aims to break new ground in terms of both a description of fouling mechanisms and quantitative modelling.

Your tasks

- You will carry out research for the description of the fouling process during polymerization and will be in mutual exchange with an academic partner.
- You will design and operate test facilities and use analysis techniques to generate a database for modelling the overall system.
- You will implement the developed models into a holistic deposition model
- You will publish research results, participate in national and international conferences and apply for further research projects.
- You will be involved in teaching at the University (preparation and implementation of courses as well as supervision of students' work).

Your Qualifications

- You have a university degree (Master's degree or equivalent) in the fields of process engineering, bio/chemical engineering or chemistry.
- You have practical experience in the design, construction and operation of laboratory facilities as well as in the planning, execution and evaluation of experiments
- You have the highest level of social skills, teamwork and communication skills
- You have very good knowledge of the English (and German) language.
- You enjoy scientific work and are aiming for a doctorate or for further scientific qualification.

We offer

- Responsible work on exciting future-oriented research topics in an inspiring work environment as part of the university community
- A wide range of tasks with room for personal development
- An excellent research infrastructure with its own test facilities and extensive analytical tools
- Pay in accordance with the collective agreement TV-L including 30 days' vacation per year
- Flexible working and part-time options and a family-friendly university culture

Further notes

We welcome applicants of all nationalities. At the same time, we encourage people with severe disabilities to apply. Applications from severely disabled persons will be given preference if they are equally qualified. Please attach a proof of disability to your application. We are also working on the fulfilment of the Central Equality Plan based on the Lower Saxony Equal Rights Act (*Niedersächsisches Gleichberechtigungsgesetz—NGG*) and strive to reduce under-representation in all areas and positions as defined by the NGG. Therefore, applications from women are particularly welcome in this case.

The personal data will be stored for the purpose of processing the application. By submitting your application, you agree that your data may be stored and processed electronically for application purposes in compliance with the provisions of data protection law. Further information on data protection can be found in our data protection regulations at <https://www.tu-braunschweig.de/datenschutzerklaerung-bewerbungen>. Application costs cannot be reimbursed.

Questions and Answers

For more information, please contact Dr.-Ing. Wolfgang Augustin by email: w.augustin@tu-braunschweig.de or call on +49 (0) 531 391-2789.

Deadline for applications is 20. May 2024

Are you interested? Please send your application preferably via email to w.augustin@tu-braunschweig.de.

or via mail to

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