

Technische Universität Dresden - Faculty of Environmental Sciences, Department of Hydro Sciences, Institute of Urban and Industrial Water Management, Chair of Process Engineering in Hydro Systems



TUD Dresden University of Technology, as a University of Excellence, is one of the leading and most dynamic research institutions in the country. 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.

Research Associate / PostDoc (m/f/x)

CFD modelling in (hydro-)process engineering/water management

(subject to personal qualification, employees are remunerated according to salary group E 13 TV-L) At the Faculty of Environmental Sciences, Department of Hydro Sciences, Institute of Urban and Industrial Water Management, the Chair of Process Engineering in Hydro Systems offers a project position as Research Associate / PostDoc (m/f/x) CFD modelling in (hydro-)process engineering/water management starting November 1, 2026. The position is limited until October 31, 2028. The period of employment is governed by § 2 (2) Fixed Term Research Contracts Act (Wissenschaftszeitvertragsgesetz - WissZeitVG).

City: Dresden; Starting date (earliest): 01/11/26; Duration: bis zum 31.10.2028;
Remuneration: bei Vorliegen der persönlichen Voraussetzungen E 13 TV-L; Reference number: w26-244; Closing date: 01/10/26

Tasks

You will be working on the sub-project 'CFD simulation of flow and mass transport' within the project 'Pure Water and Rare Materials: Resource-Efficient Removal and Recovery of Critical Raw Materials from (Waste)water Flows using Membrane Capacitive Deionisation (ReWaRare)' run by the STEP Early-Career Research Group, comprising early-career researchers from four chairs within the Department of Hydrosiences. Studies at TU Dresden confirms the effectiveness of MCDI technology for the selective and energy-efficient recovery of critical raw materials, as well as for the removal of charged pollutants from various water streams. The technology is being scaled up from current laboratory and pilot plant scale to practical application, tested and evaluated using various wastewater streams as examples to facilitate its transfer to industrial use.

You will optimize materials and processes developed in the project for scale-up using CFD simulations of flow and mass transfer. Based on your simulations, the reactor design will be optimized in terms of performance and efficiency. In a subsequent step, material and process parameters will be integrated into the model simulations; the simulation results will then be validated at pilot plant scale and optimized where necessary. You will also be responsible for the design, construction and operation of the necessary process set-ups

required to carry out this experimental work. In addition, your remit will include project management, documentation, report writing and, in particular, the publication and presentation of the research results.

Requirements

- an above-average university degree in the field of fluid mechanics, (hydro-)process engineering, mechanical engineering, computational engineering, water management, chemistry or chemical engineering, or similar; an above-average PhD and/or experience in project work would be an advantage
- the most recent academic qualification must not have been obtained more than 6 years ago. This period is extended by 2 years for each child, provided that parental leave was taken for that child during this time
- very good knowledge of (commercial) CFD software
- fluency in English for the production of high-quality publications and participation in international conferences. Proficiency in German is desirable
- a high level of commitment, strong team and communication skills, and the ability to work independently
- willingness to undertake training in the areas of gender equality, teaching, social skills and project management
- knowledge of electrochemical membrane processes and, more generally, the process engineering of hydraulic systems is an advantage

What we offer

- the opportunity for challenging, interesting, and independent work within a flat hierarchy, in an open-minded, interdisciplinary team, with excellent connections to research and industry partners, as well as the independent organization of research activities with a high degree of personal responsibility
- flexible arrangements for work hours to support a good work-life balance
- 30 days of vacation per year (based on a 5-day workweek)
- extensive opportunities for professional development and continuing education
- health care and sports programs offered by TUD
- a discounted job ticket (also available as a Deutschlandticket)
- participation in the supplementary pension scheme for employees in the public sector via VBL (Federal and State Government Employees Retirement Fund)

Application

TUD strives to employ more women in academia and research. We therefore expressly encourage women to apply. The university is a family-friendly university. 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.

Application: Please submit your detailed application with the usual documents by October 1, 2026 (time stamp on the email server of TUD applies), exclusively by email, preferably via the TUD SecureMail Portal <https://securemail.tu-dresden.de> by sending it as a single pdf file to andre.lerch@tu-dresden.de. Expenses incurred in attending interviews cannot be reimbursed.

TUD is a founding partner in the DRESDEN-concept alliance.

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>.

More information at <https://stellenticket.de/207203/UP/>

Offer visible until 01/10/26

