

Helmholtz-Zentrum Dresden-Rossendorf e.V.



With cutting-edge research in the fields of ENERGY, HEALTH and MATTER, around 1,500 employees from more than 70 nations at Helmholtz-Zentrum Dresden-Rossendorf (HZDR) are committed to mastering the great challenges facing society today. The Institute of Fluid Dynamics is conducting basic and applied research in the fields of thermo-fluid dynamics and magnetohydrodynamics in order to improve the sustainability, the energy efficiency and the safety of industrial processes. The Department of Fluid Dynamics Resource Technology Processes is looking for a

PhD Student (f/m/d) Experimental Investigation of Hydrodynamics in Turbulent Flotation Cells

City: Dresden; Starting date (earliest): 01/08/26; Duration: 3 years; Remuneration: TVöD Bund; Reference number: 2026/73; Closing date: 21/06/26

Tasks

- Apply and further develop optical and sensor-based measurement techniques to capture key hydrodynamic parameters in flotation cells
- Analyze multiphase flow behavior, including turbulence, gas dispersion, bubble size distributions, and time-resolved flow structures
- Integrate, document, and communicate experimental findings through data interpretation, reports, scientific publications, and project meetings

Requirements

- Completed university studies (Master/Diploma) in the field of Process Engineering, Mechanical Engineering, Chemical Engineering, or a comparable discipline
- Experimental background in fluid dynamics, particularly in bubbly and multiphase flows
- Hands-on experience with optical or sensor-based measurement techniques for hydrodynamic characterization, such as PIV, PTV, LIF, vibro-acoustic sensors, or fiber-optic sensors
- Basic to good programming skills for data analysis and image processing (e.g., MATLAB, Python)
- Strong problem-solving skills in experimental setup, instrumentation, and measurement campaigns
- Good teamwork and communication skills in an interdisciplinary project environment
- Good written and spoken English

What we offer

- A vibrant research community in an open, diverse and international work

environment

- Scientific excellence and extensive professional networking opportunities
- A structured PhD program with a comprehensive range of continuing education and networking opportunities - more information about the PhD program at the HZDR can be found here
- Salary and social benefits in accordance with the collective agreement for the public sector (TVöD-Bund) including 30 days of paid holiday leave, company pension scheme (VBL)
- We support a good work-life balance with the possibility of part-time employment, mobile working and flexible working hours
- Numerous company health management offerings
- Employee discounts with well-known providers via the platform Corporate Benefits
- An employer subsidy for the "Deutschland-Ticket Jobticket"

Application

We look forward to receiving your application documents (including cover letter, CV, diplomas/transcripts, etc.), which you can submit via our online-application-system: <https://www.hzdr.de/db/!BewerbungS1?pNid=490&pJid=2246&pLang=en>

More information at <https://stellenticket.de/204507/HTWB/>
Offer visible until 21/06/26

