

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. At the Helmholtz Institute Freiberg for Resource Technology (HIF), innovative technologies for the circular economy are developed to provide and use mineral and metal-bearing raw materials more efficiently and to recycle them in an environmentally friendly way. The Department of Process Metallurgy is looking for a PhD Student (f/m/d) Characterization of primary REE resources for innovative hydrometallurgical technologies.

PhD Student (f/m/d) Characterization of primary REE resources for innovative hydrometallurgical technologies

City: Freiberg; Starting date (earliest): 01/10/26; Duration: 30.09.2029;

Remuneration: TVöD-Bund, EG 13; Reference number: 2026/105; Closing date: 04/09/26

Tasks

- Investigation of rare earth element (REE) containing primary resources and safe handling of high-grade, complex, polymetallic primary ore samples
- Systematic characterization of primary REE resources, including the creation of mineralogical and geological data basis for the investigated deposits utilizing tools like SEM-EDS, XRF, X-ray tomography, SEM-based automated mineralogy, Raman spectroscopy, microwave digestion, ICP-OES/MS, etc.
- Identification and development of strategies for extraction of valuables, mainly rare earths, and processing (physical and chemical) of primary resources for further utilization within the same project
- Presentation of results at national and international conferences, and project meetings
- Follow up with collaboration partners
- Ensure thorough and robust scientific reporting
- Monitor progress and prepare publications for contributions to the REEHydroMin project under the FONA EGARoh cluster and beyond
- Follow-up with a systematic PhD and credit collection plan and project milestone plan

Requirements

- Completed university studies (Master/Diploma) in the field of Economic Geology, Mineralogy, Chemistry, Metallurgy, Chemical Engineering or related field
- Experience with instrument-based chemical analysis and mineralogical characterization for trace and major components (such as XRF, XRD, ICPOES, ICP-MS, SEM, SEM-based automated mineralogy)
- Knowledge or experience working with samples containing naturally occurring heavy elements

- Experience in evaluating mineralogical variations within REE containing ores and deposits
- Knowledge of hydrometallurgical processing of this specific ore samples
- Experimental experience in hydrometallurgy is advantageous
- Capability to evaluate the effect of properties from different ore deposits on processing strategies
- Trained in safe experimental laboratory practices and sample preparation
- Ability to combine multidisciplinary data into scientific conclusions
- Great teamwork skills with the ability to collaborate with international partners
- Flexible, hardworking and multitasking with a good academic track record
- Excellent ability in scientific writing and presentation in English
- Good German language skills would be an advantage

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)
- Depending on the personal qualifications, the candidate may be classified in salary group 13 according to TVöD-Bund
- 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-applicationsystem: <https://www.hzdr.de/db/Cms?pNid=490&pLang=en&pOid=78336>

More information at <https://stellenticket.de/206404/TUD/>
Offer visible until 04/09/26

