

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 Helmholtz Institute Freiberg for Resource Technology is looking for a PhD Student (f/m/d) Metallurgical Extraction of Critical Raw Materials from Future Electronic Devices Towards Responsible Electronics.

PhD Student (f/m/d) Metallurgical Extraction of Critical Raw Materials from Future Electronic Devices Towards Responsible Electronics

City: Freiberg; Starting date (earliest): 01/09/26; Duration: 36 months;

Remuneration: TVöD-Bund, EG 13; Reference number: 2026/93; Closing date: 14/08/26

Tasks

- Identification and isolation of advanced, critical, and technology metals/ materials from 'future electronic devices'
- Develop and optimize sustainable metallurgical extraction processes, based on hydrometallurgical or combined pyro-hydrometallurgical processes for recovering critical raw materials from future electronic devices
- Characterization of the leaching phenomena, impurity behavior, and the effect of leaching processes on the matrices, including in-operando analysis
- Understanding and structuring activity relationships for materials used in future electronic devices vis-à-vis their circular economy potential
- Following-up with collaboration partners within the DFG excellence cluster "Rec2"
- Provide proactive feedback to electronic device designers
- Thorough and robust scientific reporting and intensive publication activity

Requirements

- Completed university studies (Master/Diploma) in the field of Chemical Engineering, Process Metallurgy, Chemistry, Process Engineering, Applied sciences or related field
- Experience in experimental solution chemistry on lab or pilot scale (experience in hydrometallurgy/biohydrometallurgy is highly desirable)
- Understanding of aqueous chemistry speciation and use of thermodynamics software (e.g., HSC, FactSage)
- General understanding of solid and liquid-based characterization tools (e.g., XRD, XRF, SEM-EDS, Raman, FTIR, ICP-MS/OES, or AAS)
- Proven team player with strong communication skills for interdisciplinary

collaboration

- Independent, creative, flexible and self-driven researcher with a strong problem-solving mindset
- Strong analytical skills, scientific curiosity, and critical thinking to ensure scientific rigor
- Excellent writing and spoken English
- 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=78195>

More information at <https://stellenticket.de/205858/TUB/>
Offer visible until 14/08/26

