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 Resource Ecology performs research to protect humans and the environment from hazards caused by pollutants resulting from technical processes that produce energy and raw materials. The Department of Synchrotron Science is looking for a Scientist (f/m/d) - Development of an innovative approach for the selective recovery of rare-earth elements, to work on the MaLaR project – Novel 2D–3D Materials for Lanthanide Recovery from Nuclear Waste, funded by the European Union's EURATOM Research and Innovation Programme. MaLaR aims to develop a innovative approach for the selective recovery of rare-earth elements from nuclear and industrial waste. The project focuses on development of the 2D-3D carbon-based materials to improve the efficiency and selectivity of lanthanide recovery from complex waste matrices. https://malar-project.eu/

Scientist (f/m/d) - Development of an innovative approach for the selective recovery of rare-earth elements

City: Dresden; Starting date (earliest): 01/12/26; Duration: 31.12.2027;
Remuneration: TVöD-Bund; Reference number: 2026/46; Closing date: 06/05/26

Tasks

- Develop innovative concepts for the recovery and separation of lanthanides and actinides from nuclear waste
- Design and synthesize novel 2D and 3D carbon-based materials optimized for selective lanthanide/actinide separation
- Perform sorption and separation experiments to evaluate material performance and selectivity
- Characterize synthesized materials using laboratory-based techniques as well as synchrotron-based methods at the Rossendorf Beamline (ROBL)
- Design and develop in situ cells and experimental instrumentation to improve and expand advanced characterization capabilities
- Analyze experimental data and contribute to the development of improved separation strategies
- Collaborate closely with the ROBL team and other project partners in an interdisciplinary research environment
- Prepare scientific reports, present results at conferences, and publish findings in peer-reviewed journals

Requirements

- Completed PhD in the field of Chemistry, Materials Science or a closely related discipline
- 5+ years of research experience after completing a PhD
- Strong interest in lanthanide and actinide chemistry and separation processes

Experience in the synthesis and characterization of carbon-based materials (e.g., graphene, carbon frameworks, porous carbons)
- Ability and willingness to work with radionuclides in a controlled laboratory environment
- Experience and willingness to use 3D printing technologies for the design and fabrication of in situ experimental setups
- Hands-on experience with advanced characterization techniques; experience with synchrotron methods is an advantage
- Excellent scientific writing and reporting abilities
- A strong publication record in peer-reviewed journals
- Strong communication and teamwork skills
- Ability to work independently as well as collaboratively in an international and multidisciplinary research environment
- Fluency in English (written and spoken)

What we offer

- A vibrant research community in an open, diverse and international work environment
- Scientific excellence and extensive professional networking opportunities
- 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

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=77419

More information at https://stellenticket.de/203210/FUB/
Offer visible until 06/05/26