Postdoctoral researcher (m/f/d)

As member of the Helmholtz Association of German Research Centers, the HZDR employs about 1,400 people. The Center's focus is on interdisciplinary research in the areas energy, health and matter.

The Rossendorf Beam line at the European Synchrotron Radiation Facility, operated by the Department of Resource Ecology at HZDR/Dresden, opens a three-year postdoctoral position for an experimentalist who is interested to perform experiments on synchrotron diffractometers.

Postdoctoral researcher (m/f/d)

The position will be available from 01.02.2021. The employment contract is limited to 3 years.

The position, recently subject to approval, is imbedded into a joint BMBF project of five German institutions dealing with fundamental investigations on immobilization of actinides by incorporation into solid ceramic phases. A substantial part of this project is diffraction with synchrotron radiation on the Rossendorf Beam line. The Rossendorf Beam line has recently installed two new diffractometers for high-resolution powder diffraction, single-crystal diffraction, surface diffraction and in situ powder diffraction.

The main subject of the postdoc's work will be powder diffraction studies on incorporation of Ce(IV), Th(IV) and U(IV) into $ZrSiO_4$, and into monoclinic, tetragonal and cubic ZrO_2, phases, furthermore maintaining the diffraction measurements of the project partners. The required samples will be prepared by the project partners. The place of work is the Rossendorf Beam line at European Synchrotron Radiation Facility in Grenoble/France.

Tasks:

- Performing diffraction experiments in the frame of the project on ROBL's 6-circle Huber diffractometer with high-resolution powder diffraction and on the multi-purpose Kappa diffractometer, equipped with a Pilatus3 X 2M detector, using in situ powder diffraction and single crystal diffraction.
- Taking care of all diffraction measurements requested by the project partners (approximately a total of 4 weeks per year). Supervision of the data analysis. (Most of the project partners have experience in diffraction.)
- Installation and testing of new equipment (new detector, high temperature chamber)
- Own research based on powder diffraction studies on structural effects of Ce(IV), Th(IV) and U(IV) incorporated into zirconium ceramics
- Preparation of research papers for scientific journals
- Coordination of the diffraction part of the project at the Rossendorf beam line

- Periodical report writing in the frame of the project
- Dissemination of project results on meetings in the frame of the joint BMBF project and on conferences
- Willingness of handling radioactive samples
  For further information please visit our web site
  https://www.hzdr.de/db/Cms?pOid=12071&pNid=247 and contact Dr. Christoph Hennig (email hennig@esrf.fr).

Requirements:

- Required Education Level: PhD degree in a scientific discipline with emphasis on powder diffraction.
- Experience in data analysis of powder diffraction data
- Experience in single crystal diffraction as well as experience on synchrotrons is welcome but not required
- Good publication record, preferably as a first author
- Good interpersonal and communication skills, being able to work in a multi-cultural environment both independently and as a part of a team

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 conformity with the provisions of the Collective Agreement TvöD-Bund
- 30 Vacation Days per year
- Company pension scheme (VBL)
- A good work/life balance for which we offer assistance in the form of:
  - possibility to work part-time
  - flexible working hours
  - in-house health management

Kindly submit your completed application (including cover letter, CV, diplomas/transcripts, etc.) only via our Online-application-system https://www.hzdr.de/db/Cms?pNid=0&pOid=62014

Online application English / German

Deadline: 20 November 2020