

The Institute of Mineralogy and Petrography at the University of Innsbruck (Austria) is searching for a

Postdoc in Experimental Petrology/ Geochemistry

Employment for the period of 36 months in the framework of the FWF-funded project PAT3880125 “**Bromine concentrations in a heterogeneous Earth’s mantle**”.

Starting Date: April 2026 or when position is filled. Candidates who are available later than April 2026 will be considered.

Fixed Term: 3 years

Salary: The gross salary for this position (100%) amounts to € 4 932,90 per month (14 times per year)

Location: Innsbruck (AT); For more information about the Institute of Mineralogy and the University of Innsbruck, please visit the official website at <https://www.uibk.ac.at/mineralogie/index.html.en>

Short project description:

The incompatible behavior of the heavy halogens makes them excellent tracers for past and present volatile transport processes within the Earth’s mantle. A better understanding of the halogen behavior in the Earth’s mantle is therefore essential to improve our understanding of the mechanisms that control the origin, abundance, distribution and transport of volatiles in the upper and lower mantle and the complex processes during subduction and recycling of oceanic lithosphere. Knowledge of the budget and distribution of Br in the Earth’s mantle is, however, very limited due to its extremely low abundance in the major phases of the Earth’s upper mantle and a lack of well-defined partition coefficients that describe its behavior during partial melting in mid-ocean ridge basalt (MORB) and ocean island basalt (OIB) source regions.

In this project, we aim to establish a new, cutting-edge analytical development by linking in-situ UV laserprobe analysis providing high spatial resolution with the sensitive Neutron Irradiation-Noble Gas Mass Spectrometry (NI-NGMS) technique. This will enable us to determine Br abundances in nominally anhydrous minerals. The analysis of natural lherzolites and new experimental samples will allow us to identify key carrier minerals for heavy halogens in the Earth’s upper mantle and to investigate the Br partitioning behavior in MORB and OIB source regions. This will allow us to estimate the Br abundance and distribution in the Earth’s mantle with direct implications for the distribution of heavy halogens in these reservoirs and their recycling in subduction zone settings. Results of this project will thus provide critical constraints in furthering our understanding of the solid Earth volatile cycle.

You will have access to state of the art experimental (Piston Cylinder, Multianvil) and analytical (EPMA, SEM, FTIR, Raman) facilities at the University of Innsbruck. The project further involves extensive research stays in the noble gas lab at ETH Zürich (Henner Busemann) and short-term research stays at the University of Vienna (FEG-SEM, EBSD, Gerlinde Habler), the University of Graz (LA-ICP-MS, Christoph Hauzenberger), The University of Oxford (TEM, Katharina

Marquardt) as well as close collaborations with research partners at the University of Manchester (Michael Broadley, Ray Burgess) and the University of Ottawa (Patricia Clay).

Required qualifications:

- PhD in Earth Sciences or a related field
- Experience in experimental and/or analytical lab work.
- Strong background in experimental Mineralogy/Petrology and/or analytical Geochemistry.
- Proven publication record in peer-reviewed international scientific journals
- Excellent communication and project management abilities, as close collaboration between all project partners will be essential for the success of the project
- Excellent skills in written and spoken English

Responsibilities:

- Plan and conduct high-P-T (Piston cylinder) experiments
- Prepare and analyze experimental and natural samples (after appropriate training and in close collaboration with the PI and national and international collaboration partners) using EPMA, FTIR, FIB-SEM, EBSD, LA-ICP-MS and TEM
- Select samples for irradiation and determine Br concentrations using UV-laser ablation combined with NI-NGMS.
- Present results at national and international conferences
- Publish results in peer-reviewed international scientific journals

Application:

Please send your documents (letter of motivation, CV, list of publications, copies of relevant certificates, list of two referees) to bastian.joachim@uibk.ac.at

Applications will be considered until **11.01.2026** or until the position is filled.

The University of Innsbruck emphasizes equal opportunities and diversity in its personnel policy. The University of Innsbruck strives to increase the percentage of women and thus expressly encourages women to apply. This is particularly true for leading positions and scientific job offers. In case of underrepresentation women with the same qualifications will be given priority. Following Austrian disability legislation, qualified persons are strongly encouraged to apply.