Leibniz Universität Hannover

The Institute of Earth System Sciences (IESW) welcomes applications for the following position starting at the earliest date possible:

Research Staff (PhD Position) in Experimental Petrology (salary scale 13 TV-L, 75 %)

The fixed-term position is limited to 36 months. The preferred starting date is in autumn 2026 but can be negotiated.

Your role

The main objective of the DFG-funded project is to clarify the formation processes of the economically crucial monomineralic magnetite layers in the Upper Zone of the Bushveld Complex in South Africa. We are looking for a PhD candidate to run high-pressure and high-temperature experiments to constrain the liquid line of the descent of the Upper Zone parental magmas and test possible formation hypotheses of magnetite layers. Experimental run products will be analysed using state-of-the-art analytical techniques such as SEM, EPMA, Raman, and LA-ICP-MS.

The experimental approach will be complemented with a detailed petrographic and geochemical study of drill core samples using a combination of 2D scanning methods (e.g. µEDXRF and LIBS) available at the Federal Institute for Geosciences and Natural Resources (BGR) and high-resolution geochemical analyses (e.g. EPMA and LA-ICP-MS) at IESW, focussing on the transition zone between magnetite layers and adjacent silicate-rich lithologies. Data processing will be complemented by the usage of artificial intelligence (AI) to enable the automated recognition of specific features.

Who are we looking for?

The successful candidate must hold a university science degree (MSc in Earth Sciences or equivalent). Further required qualifications are:

- high level of motivation for research and laboratory work
- strong background in (igneous) petrology and geochemistry
- experiences with microanalytical methods (e.g. SEM, EPMA, LA-ICP-MS, and/or µEDXRF)
- ability to work independently and as part of a team with international collaborations
- very good English skills (written and oral)

Ideal candidates may also have knowledge and experience in:

- high-pressure-temperature experimental research (e.g. 1-atm gas mixing furnace, cold seal pressure vessel, internally heated pressure vessel, piston cylinder apparatus)
- thermodynamic modelling of petrological processes
- data science and coding (e.g. Python)

Equal opportunities and diversity are core values at Leibniz University Hannover. Our goal is to tap into individual potential and open up possibilities. We therefore welcome applications from anyone interested in the position, irrespective of gender, nationality, ethnic origin, religion or ideology, disability, age, sexual orientation, and identity.

We strive towards a balanced and diverse workforce and a reduction in under-representation in accordance with the Lower Saxony Equal Rights Act (*Niedersächsisches Gleichberechtigungsgesetz – NGG*). We therefore also welcome applications from women for the above-mentioned position. Preference will be given to equally-qualified candidates with disabilities.

Why join us?

Research at the Mineralogy Section of the IESW focusses on high-temperature igneous processes and the general characterisation of magmatic systems with the ultimate goal to better understand the formation and differentiation of igneous rocks. Our well-equipped experimental lab, including several internally heated pressure vessels (IHPV), allows us to conduct ground-breaking research covering a variety of different topics in igneous petrology. This joint project at IESW and BGR (in collaboration with additional international partners) also offers a unique opportunity for an excellent training with a range of state-of-the-art analytical facilities (SEM, EPMA, Raman, fs-LA-ICP-MS, µEDXRF, and LIBS).

Additional information

Please include the following documents in your application (in a single PDF file):

- motivation letter (max. 2 pages)
- CV
- copies of BSc and MSc certificates and diploma
- contact details of two referees (or recommendation letters, if available)
- overview of previously used scientific techniques and methods

The project will be supervised by Dr. Felix Marxer (IESW), Dr. Wilhelm Nikonow (BGR), and Prof. Dr. François Holtz (IESW).

For questions and further information, please contact Dr. Felix Marxer (f.marxer@mineralogie.uni-hannover.de).

Please submit your application and supporting documents by 15th of July 2026 to f.marxer@mineralogie.uni-hannover.de.

Review of later applications will continue until the position is filled.

Information on the collection of personal data according to article 13 GDPR can be found at: https://www.uni-hannover.de/en/datenschutzhinweis-bewerbungen/