

The GeoSphere Austria, Federal Institute for Geology, Geophysics, Climatology and Meteorology as an institution under public law with its own legal personality is offering a position as

**Postdoctoral researcher (f/m/x) – Chemistry of hydrothermal magnetites**

in the Department of Mineral Resources and Geoenergy, with an employment scope of 40 hours per week, in Vienna and Innsbruck.

GeoSphere Austria is the national geological, meteorological, climatological and geophysical service in Austria. We combine over 150 years of experience and competence in cutting-edge research always putting the needs of people first in all our endeavors. With more than 500 experts, we are the knowledge partner on the topics of geology and raw materials, geophysics, weather and climate, natural hazards and more.

**We offer:**

- A meaningful area of responsibility with personal creative freedom
- Individual training opportunities and technical courses
- Short lines of communication
- An effective and innovative team
- Flexible working hours through flextime and home office
- A family-friendly environment
- Various prospects to actively take part within international and national cooperations

**Your tasks:**

You will work on the project "Chemistry of hydrothermal magnetite" funded by the Austrian Science Fund (FWF). This project focusses on a deeper understanding of trace element fractionation in magnetite precipitating from high-temperature saline ore-forming fluids. Data sets of partition coefficients will be obtained from experimentally grown magnetite, natural ore samples, and thermodynamic modeling and compared with each other. The observations and data obtained in the project serve as a sought-after basis for interpreting the genesis of magnetite-rich ores based on mineral chemistry.

Your task is to design and carry out a series of experiments in the hydrothermal laboratory at Universität Innsbruck to grow magnetite from solutions doped with trace elements under controlled P/T/X conditions. You will also sample natural ore samples from research collections. It is planned to carry out petrography on the synthetic and natural samples and, based on this, to analyze the mineral chemistry down to the nanoscale (REM, EPMA, TEM, laser ablation ICP-MS). The mineralizing fluids are characterized in inclusions in co-genetic phases using microthermometry, Raman spectroscopy and laser ablation ICP-MS. In addition, you will perform in situ oxygen isotope thermometry using the ion beam probe and measure the oxidation states of Fe and minor elements in magnetite using TEM-ELNES and (time permitting)  $\mu$ XANES. Experts in various labs will guide you with sampling, experiments and analyses.

You will interact with colleagues at GeoSphere Austria and University Innsbruck, are prepared to supervise project related bachelor's or master's students, and present results at international conferences and in peer-reviewed publications.

**Requirements/Essential qualifications:**

- Unrestricted access to the Austrian labor market
- Completed master's degree (or comparable) and doctorate (PhD) in one of the disciplines: geochemistry, petrology, mineralogy, mineral deposit research
- Very good knowledge of English

**Desired Skills**

- In-depth knowledge of experimental petrology, mineral chemistry, fluid inclusions or geochemical modeling of fluid-rock interaction
- Knowledge of hydrothermal/magmatic ore deposit genesis
- Knowledge of the methods of thermodynamic modelling
- Evidence of publication of research results in peer-reviewed journals
- High flexibility and willingness to travel
- Ability to work independently
- Good communication skills
- Experience in supervising BSc or MSc students
- Basic knowledge of the German language or willingness to learn it

**Salary:**

At least EURO 50,260 gross, may be higher depending on your background and qualifications.

**Place of work:**

First year: University Innsbruck, Institute of Mineralogy, Innrain 52, 6020 Innsbruck  
Afterwards: Geosphere Austria, Neulinggasse 38, 1030 Wien

**Start of employment:**

Spring 2025

**Working time:**

40 hours per week (full time)

**Duration of employment:**

The contract is limited to a period of 2 ½ years. New employees go through a probationary period of one month.



**More information:**

Thomas Angerer, Head of competence unit Mineral Resources ([thomas.angerer@geosphere.at](mailto:thomas.angerer@geosphere.at))

**Your Application:**

Interested candidates are invited to send their application documents **until including 31.1.2025** via e-mail to [thomas.angerer@geosphere.at](mailto:thomas.angerer@geosphere.at) and [bewerbung@geosphere.at](mailto:bewerbung@geosphere.at) **containing the reference 521/24 114 in the subject**. Please enclose the following documents with your application:

- Motivation letter
- CV
- relevant diploma and certificates
- full list of publications
- letters of references and/or names and contacts of two reference persons

The invitation for an interview (on-site or online possible) will be sent to the candidates via E-mail. Please note that GeoSphere Austria will not refund any travel and accommodation expenses for travels to/from Vienna for the interview.

Note that with your application, you expressly agree on processing of your personal data.