



PhD Program between the Freie Universität Berlin (FUB) and the China Scholarship Council (CSC)

**Open PhD Position at Freie Universität Berlin,
offered only to Chinese CSC scholarship candidates 2025**

Department/Institute: Earth Sciences, Institute of Geological Sciences

Subject area: Geochemistry

Name of Supervisor: Prof. Dr. Harry Becker

Number of open PhD positions: 1

Type of the PhD Study: Full-time only, 4 years

Project title: Tracing crust-mantle recycling using sulfur isotopes

PhD Project description:

Sulfur is a key element in understanding both modern and ancient biochemical cycles, for instance, in bacterial sulfate reduction or photolytic splitting of sulfur compounds in ancient planetary atmospheres. Due to its siderophile, chalcophile and moderately volatile behaviour, it also can be redistributed by metal segregation during core formation, magmatic sulfide segregation in silicate magmas and volatilization in reducing or oxidizing environments. This project aims to understand the role of magmatic processes, crust-mantle recycling and early Earth processes for mass fraction, isotopic composition and origin of sulfur in the Earth's mantle and oceanic crust. The candidate will apply chemical separation methods in clean room environments and multi collector ICP spectrometry for isotopic measurements of mantle rocks, basalts, gabbros and other crustal rocks. The project involves method development regarding mass-dependent and, if possible, mass-independent sulfur isotope ratio ($\Delta^{33}\text{S}$) measurements, but no field work.

Language requirements:

- IELTS: 6,5 oder TOEFL: 90 ibt

Academic requirements:

This research requires a M.Sc. degree in geology and a very good background in geochemistry (chemistry or clean lab and/or MC-ICPMS experience would be beneficial). In exceptional cases (experience in ion exchange chromatography applications in inorganic chemistry and/or mass spectrometry, willingness to learn basics in geology and cosmochemistry) we also accept interested candidates with a M.Sc. in chemistry.

Information of the professor or research group leader (website, awards etc.):

https://www.geo.fu-berlin.de/en/geol/fachrichtungen/geochemhydromin/geochemie/Overview_people/people_new/Professors/Becker/index.html

Please note:

In a first step, the complete application should be uploaded to the online portal (<https://fuberlin.moveon4.de/form/60acfece5d328710e40bdbd5/eng>) for evaluation by January 15th, 2025.