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 2019

Please Note: this PhD position is only offered to Chinese PhD candidates for the application in the framework of the FUB-CSC PhD Program.

Department/Institute:	Institute of Geological Science
Subject Area:	Mineralogy-Petrology
Name of Supervisor:	Prof. Dr. Timm John (Project 2)
Number of Open PhD Positions:	1
Type of the PhD Study:	Full-time
Project Title:	Li-chronometric constraints on the duration of hydrothermal ore deposit formation

PhD Project description:

Reactions between fluids and rocks have a fundamental impact on the geodynamics and geochemistry of Earth at all scales. Key towards a better understanding of fluid-rock interaction and its chemical and mechanical feedback in a geodynamic and chemical context is obtaining in-depth understanding of how fluids flow within crystalline low permeability rocks. Developing reliable quantitative models of fluid-mediated mass transfer requires quantifying the general relationships between mineral reactions, fluid flow and element mobilization during fluid–rock interaction. The timescales of distinct fluid flow events and the physico-chemical processes triggered by fluid flow are crucial parameters of such models. As fluid flow may last only less than a few months to thousands of years, they are well below the resolution of conventional geochronological methods. Chronometry based on diffusion modelling of fast diffusing elements allows the determination of rates for such fast geological processes. To quantify the duration of relatively short-lived processes Li-chronometry is shown to be very effective. It is planned to apply this approach to explore the duration time of formation of fluid-rock interaction related ore deposits. The research will be based on field work and further includes hands on work with high-spatial analytical equipment such as SEM and EPMA as well as LA-ICP-MS. Additionally it includes clean lab work and MC-ICP-MS based determination of the Li isotope composition of sample material. Finally, Matlab-based modelling is used to extract the duration of the ore forming process.

Language requirements:

IELTS: 6,5 oder TOEFL: 95 ibt

Academic requirements:

Requirements: Master Degree in Geosciences or Mineralogy
Desired qualifications: Good knowledge of Mineralogy and Petrology. Experiences in chemical laboratory techniques and analytical methods. Interest in economic geology and field work is of advantage. Basic knowledge in Matlab coding will be helpful.

Information of the professor or research group leader:

Information of the professor or research group leader: http://www.geo.fu-berlin.de/geol/fachrichtungen/geochemhydromin/mineralogie/Personen/John/index.html
Please Note: In a first step, the complete application should be submitted to the Beijing Office for evaluation by January 4th, 2019. Please do not contact the professor before. He/she will get in contact with you after having received the complete application via the Beijing Office in January.