



## 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.*

<b><u>Department/Institute:</u></b>	Institute of Geological Science
<b><u>Subject Area:</u></b>	Mineralogy-Petrology
<b><u>Name of Supervisor:</u></b>	Prof. Dr. Timm John (Project 1)
<b><u>Number of Open PhD Positions:</u></b>	1
<b><u>Type of the PhD Study:</u></b>	Full-time
<b><u>Project Title:</u></b>	The effect of Fluor on element mobility

#### **PhD Project description:**

It is planned to investigate the role of fluoride in increasing the solubility of fluid-mobile elements in aqueous solutions. The objective is to evaluate how in aqueous fluid systems fluoride a) effectively mobilizes elements out of mineral structures, b) contributes to a stabilization of dissolved complexes in fluids. It will be tested if these effects can be linked to H...F bridge networks, for which polyhydroxy fluorides play a central role. With synchrotron based in situ XAS(XRF)-measurements using a Hydrothermal-Diamond-Anvil-Cell (HDAC), the solubility of elements will be determined as a function of temperature and HF concentration in aqueous solutions. Solution-NMR and solution Raman spectroscopy will be used to investigate the complexing behavior of hydrogen bifluoride in respect to sparingly soluble elements in aqueous silicic solutions. The project will be fully linked to a larger collaborative research program based in Berlin.

#### **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 basic knowledge in Matlab coding will be helpful.

#### **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 4<sup>th</sup>, 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.