

#### **4 years - PhD position**

#### **PhD project: “Geochemical evolution of the Nyiragongo volcano, DR Congo: A natural and experimental study”**

The Petrology Unit from the Department of Earth and Environmental Sciences at the KU Leuven (Belgium) invites applications for a 4-year PhD position in igneous petrology starting in October 2018. In the frame of a FWO-funded Odysseus project to Olivier Namur, we seek a highly motivated doctoral student who is interested in pursuing fundamental research in Earth Sciences. The candidate should have basic knowledge in the areas of igneous petrology and thermodynamics. Required qualifications are an interest in experimental work and a degree in Earth Sciences or an associated discipline.

**The project aims to:** understand the magmatic processes and mechanisms of differentiation recorded in the Nyiragongo volcano (DR Congo) and the relationships between crystal, melt and bulk rock compositions. We will specifically investigate the distribution of crystal populations across a range of lava compositions to better understand how magmas formed, evolved and were transported to the surface. In a second part of the project, the geochemical evolution of the magmas will be investigated experimentally in a new laboratory being currently built at the KU Leuven. Results of the projects will contribute to better understand the mechanisms of crust formation and magmatic processes in the East African Rift.

#### **Tasks will include:**

- Bulk rock analysis of lavas by X-ray fluorescence
- Measurement of concentration profiles of major and trace elements in different minerals using electron microprobe and laser-ablation ICP-MS techniques
- Diffusion modelling of the measured concentration profiles to obtain cooling rates
- Textural analysis of lavas
- Experimental petrology at low- to high-pressure
- Data interpretation and presentation of results in scientific publications

#### **Qualifications:**

- A MSc degree or equivalent in Earth Sciences (or associated discipline)
- A strong interest in igneous petrology and analytical techniques
- Experience in electron microprobe analyses and/or laser-ablation ICP-MS techniques is an asset
- Good written and spoken English skills, and the motivation to work in an international team
- An interest in technical optimization of equipment and participation in development of analytical and experimental procedures

The position is funded for 4 years and will start on **01.10.2018**. Salary and benefits will be according to Belgian Public Service Sector salary group. The PhD student will work on the project with Olivier Namur and Philippe Muchez in collaboration with researchers from the University of Liège (Belgium), the University of Hannover (Germany) and the Royal Museum for Central Africa (Tervuren, Belgium). As an equal opportunity employer, the KU Leuven strongly encourages women to apply. Equally qualified disabled applicants will be given preference.

**Application:** Please send your application as a single pdf document (including motivation, CV, certificates, names of 1-2 referees) on the vacancy website of the KU Leuven before 15.06.2018. The review process will proceed until the position is filled. Questions can be addressed to Olivier Namur: [olivier.namur@kuleuven.be](mailto:olivier.namur@kuleuven.be).