



## ECOLE DOCTORALE DES SCIENCES DE LA TERRE

### PhD position in geobiology/biopetrology

#### Marie-Curie Initial Training Network ABYSS

*Training network on reactive geological systems from the mantle to the abyssal sub-seafloor*

#### **ESR11: The ocean crust as microbial incubator**

**Host institution** : Institut de Physique du Globe de Paris (France) – Equipe Géobiosphère actuelle et primitive

**Secondment institutions:** Department of Geosciences, Bremen University, Germany & Department of Chemical and Geological Sciences, Modena and Reggio Emilia University, Italy

The Institut de Physique du Globe de Paris seeks to appoint a PhD student for a research project in geobiology to assess the potential of the ocean crust to act as a microbial incubator through the chemical energy and organic compounds its hydration provides. The successful applicant will work on the characterization of oceanic rocks from an organic carbon and microbiological point of view in close collaboration with Bénédicte Ménez (IPGP, France), Wolfgang Bach (Bremen University, Germany) and Daniele Brunelli (Modena and Reggio Emilia University, Italy).

**Methods:** on selected samples from past IODP drill cores or dredges rocks along the ridge system, the successful candidate will implement a series of state of the art microimaging techniques to in situ characterize the organic content and tackle with its biological or abiotic origin (those include SEM, TEM,  $\mu$ FTIR,  $\mu$ Raman, CLSM, Synchrotron Deep UV, Tof-SIMS imaging along with FISH for cell identification). Detailed petrographical and mineralogical characterizations and in situ geochemical analysis of constituent minerals will be carried out in parallel using diffraction, EPMA and LA-(MC)-ICP-MS to characterize the nature and the structure of the habitats and past interactions.

**Goals:** acquire/develop expertise in high resolution techniques for the search of biosignatures, in situ in oceanic crust samples; explore the metabolic diversity, energy sources, and biogeochemical transformations of deep ecosystems in the oceanic lithosphere; develop upscaling models constrained by bioenergetic considerations that aim at predicting biomass production at depth along with its impact on fluid circulations and elemental budgets.

**Requirements:** Candidates must hold an MSc in Biological or Earth Sciences. Knowledge in organic chemistry and petrology will be appreciated as a plus. Most importantly, she/he should be motivated by working on an interdisciplinary topic. She/he should enjoy working in a team and have skills for communicating her/his results in English.

**This fellowship is for a period of 36 months starting on the 1<sup>st</sup> of October 2014.**



It is funded by **ABYSS**, an **EU Framework 7 Marie Curie Integrated Training Network<sup>i</sup>** starting **on March 1, 2014**. **ABYSS** brings together 10 European research groups and 4 Associated Partners from the private sector and **proposes 12 PhDs (ESR: *Early Stage Researcher*) positions and 3 postdoctoral fellowships (ER: *Experienced Researcher*)**.

Recruitment will be an international process based on the principles of the **European Charter and Code for Researchers** and the **eligibility criteria for ITN projects**.

*A PhD candidate (ESR) is a researcher who, at the time of recruitment, has not yet been awarded the doctorate degree and is in the first 4 years (full-time equivalent) of his/her research career. At the time of recruitment, researchers shall not have resided or carried out their main activity in the country of their future host organization for more than 12 months in the 3 years prior to that date.*

Interested candidates must submit their curriculum vitae, Bachelor and Master grades sheet, a motivation letter explaining why she/he thinks being the best suited for this Fellowship and her/his expectations, and the contact information of two scientists who can provide an assessment of the candidate.

**Deadline for application: June 1, 2014.**

**For further information, contact: B. Ménez ([menez@ipgp.fr](mailto:menez@ipgp.fr))**

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