Job Vacancy Available

Marie Skłodowska-Curie actions
Innovative Training Network (ITN-ETN)
"BASE-LiNE Earth"

We invite applications to undertake competitive high-level research on the complex Phanerozoic seawater history through the determination of original proxy information preserved in reliable ancient geological archives like fossil brachiopods using cutting edge technologies and experimental approaches within the Marie Skłodowska-Curie Innovative Training Networks (ITN-ETN) »Brachiopods As SEnsitive tracers of gLobal mariNe Environment: Insights from alkaline, alkaline Earth metal, and metalloid trace element ratios and isotope systems«. BASE-LiNE Earth is funded through the HORIZON2020 program of the European Union and consists of 14 full partners and seven associated partners out of 11 countries (Austria, Australia, Canada, Czech Republic, Denmark, France, Germany, Israel, Italy, Poland, Slovak Republic) among them internationally leading researchers in the field of geology, chemistry and isotope geochemistry, marine biology and ecology as well as numerical modelling and engineering.

The project is coordinated at the GEOMAR Helmholtz Centre for Ocean Research Kiel, Germany. BASE-LiNE Earth will run until December 2018.

All positions offered are full-time and fixed term for 3 years. Successful applicants will benefit from training and networking program delivered jointly by academic and non-academic partners. As a result, BASE-LiNE Earth fellows will gain both, research experience and complementary skills such as career planning, communicating science, and management techniques. Researchers will mainly work in their host institution, but they will also have the possibility to visit another BASE-LiNE Earth partner for secondment activities, which could be either in academia or in industry. On completion of their fellowship, successful applicants are expected to be among the future leaders in their respective fields. The Researchers recruited for these positions are expected to be an active part within the BASE-LiNE Earth consortium by participating in network wide activities such as workshops and conferences. The candidate will be part of an international, interdisciplinary team at universities and research institutions, and is expected to attend the actions as announced in the proposal.

In order to strengthen the role of women in science the application of females for an ESR position is strongly encouraged. Handicapped persons with comparable qualifications receive preferential status.

Please submit your complete application (including a CV [max. 3 pages], a letter of motivation for the position and a statement of your research interests [max. 1 page], relevant certificates, plus contact details of at least two referees) to the contact below quoting BASE-LiNE Earth_ESR14. Applications are accepted until the positions are filled, but we intend to conduct a first evaluation by May 31st 2015.
ESR14—PhD position

*Calibration of elemental and isotope proxies by inorganic precipitation experiment*

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**SHORT DESCRIPTION:**
This PhD project focuses on the element discrimination and isotope fractionation processes in inorganic calcium carbonates precipitated under laboratory controlled conditions. A main task is the impact of organic acids on carbonate precipitation and proxy signals. The evolution of carbonate formation will be monitored by using elemental ratios and applying traditional ($\delta^{13}$C, $\delta^{18}$O) and non-traditional (e.g. $\delta^7$Li, $\delta^{11}$B, $\delta^{44/40}$Ca, $\delta^{26/24}$Mg, $\delta^{88/86}$Sr, $\Delta^{47}$) stable isotope systems. Emphasis will be given on the partitioning of redox-sensitive elements (e.g. Cr, U) and related isotope systems ($\delta^{53/52}$Cr, $\delta^{238/235}$U) in artificially precipitated calcium carbonate phases.

**FULL JOB DESCRIPTION**
In the offered PhD position innovative precipitation experiments will be performed under controlled laboratory conditions to decipher the impact of growth conditions on selected trace elements ratios and isotope signatures of calcium carbonate. The experimental conditions will be adjusted and compared to natural marine environments. The overall goal of this task within the BASE-LiNE Earth project is to reconstruct the paleo-environmental conditions during the formation of biogenically induced carbonates (brachiopod shells), by using an advanced multi-proxy approach. Proxies will involve elemental ratios (Mg/Ca, Sr/Ca, Li/Ca and B/Ca) and their related non-traditional stable isotope systems (e.g. $\delta^7$Li, $\delta^{11}$B, $\delta^{44/40}$Ca, $\delta^{26/24}$Mg, $\delta^{88/86}$Sr). Emphasis will be given on redox-sensitive elements (Cr, U) in calcium carbonates and the related effects on their corresponding isotope composition ($\delta^{53/52}$Cr, $\delta^{238/235}$U). Moreover, traditional stable isotopes of carbonate ions ($\delta^{13}$C, $\delta^{18}$O) and clumped isotopes ($\Delta^{47}$) will be analyzed. The main goal of this study is to provide quantitative data for the influence of environmental factors on the distinct elemental and isotope proxies with focus on the impact of organic acid.

The PhD project is located at the RESOURCES - Institute of Water, Energy and Sustainability of the JOANNEUM RESEARCH and embedded into the Doctoral School Geosciences within the NAVI Graz cooperation. Analytical techniques including microprobe, XRD, XRF, TEM, laser ablation ICP-MS, Micro-Raman/FTIR spectroscopy and IC, ICP-OES/MS, IRMS are available in Graz for solid and liquid analyses. In addition to chemical and mineralogical analyses, the present PhD study focuses on traditional, non-traditional stable isotope systems incl. redox-sensitive stable isotope systems in close collaboration with the other BASE-LiNE Earth projects. PhD secondments at other institutions linked to the BASE-LiNE Earth project will allow for comprehensive topical expansions of the PhD study. A tight collaboration amongst the BASE-LiNE Earth nodes will set an ideal basis for this and all the other PhD projects of this call.

Qualifications:
As a successful candidate you should have
- A MSc degree in a relevant field such as of Earth science, applied mineralogy, chemistry or equivalent
- The ability to work in an internationally-oriented environment
- A broad interest in geosciences, and the willingness and capacity to work independently
- The willingness to travel
- You should be fluent in oral and written English, since the host group is highly international in composition and publication aims
Knowledge and interest on use of stable isotopes in geoscience, water-rock interaction and experimental (hydro)geochemistry, is highly valued.

Experience with geochemical and mineralogical analytical techniques.

Employment conditions:
The position is offered for three years full-time position, starting summer/ autumn 2015. In accordance with the Marie Skłodowska-Curie rules, the salary will be calculated as follows:

- Annual funding: ~46.000 €* plus in case of family obligations** additionally 6000,-€
- Annual salary for the employee: approximately EUR 30.000.-p.a. before tax and social insurance
- Mobility Allowance + Family Allowance (if eligible)

* This amount is based on the relevant budget concerning the employment of the EU-Researcher. After deduction of the employer's social insurance share, it amounts to the gross salary for the activity. Employees gross salary includes taxes, social security, insurance, pension summing up the following:
  1. The Living Allowance is a gross EU contribution to the salary costs of the researcher, calculated individually for each European country. “The net salary results from deducting all compulsory (employer/employee) social security contributions as well as direct taxes (e.g. income tax) from the gross amounts. The final amount will not change during the secondment activities. The primary host will ensure that the researcher is covered under the social security scheme. During the secondment the social security provision will also cover the researchers during this period.” (Ref: Guide for Applicants, Marie Skłodowska-Curie Actions).
  2. The Mobility Allowance: All eligible researchers recruited within an ETN/ITN are entitled to receive this allowance. It contributes to the expenses of the researcher caused by the mobility. The amount of the mobility allowance is specified in Table 3 of the MSCA Work Programme and for the calls 2014-2015 it amounts to €600 per month.” (Ref: Guide for Applicants, Marie Skłodowska-Curie Actions). According to the country-specific requirements this amount may be subject to taxation.
  3. Family Allowance of €500 per month will be paid should the researcher be eligible for this allowance. See ** below.

** In this context, family is defined as persons linked to the researcher (i) by marriage, or (ii) a relationship with equivalent status to a marriage recognised by the legislation of the country where this relationship was formalised; or (iii) as dependent children who are actually being maintained by the researcher. The family status of a researcher will be determined at the time of their (first) recruitment in the project and will not evolve during the project lifetime.” (Ref: Guide for Applicants, Marie Skłodowska-Curie Actions).

In order to be eligible, each applicant must simultaneously fulfil the following criteria at the time of recruitment:

- **Mobility**: At the time of recruitment, the applicant must not have resided or carried out his/her main activity (work, studies, etc...) in the country of the host organization for more than 12 months in the 3 years immediately prior to his/her recruitment. Compulsory national service and/or short stays such as holidays are not taken into account.

- **Qualifications and research experience**: The applicant must fulfil the requirements defined for Early Stage Researchers (ESRs): ESRs are 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.

Additional information on BASE-LiNE Earth and further job descriptions can be found on our website, https://www.baseline-earth.eu/.