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_ESR11. Applications are accepted until the positions are filled, but we intend to conduct a first evaluation by May 31st 2015.
ESR11—PhD position
Dolomitization of modern and fossil brachiopods – experimental approach
CONTACT: Martin Dietzel, Graz University of Technology, Austria, e-mail: martin.dietzel@tugraz.at

SHORT DESCRIPTION: This project is based on laboratory-controlled dolomitization experiments performed by hydrothermal treatment of brachiopod shells. The evolution of dolomite formation will be monitored by the chemical composition of the aqueous solution as well as the chemical and (micro/nano)structural evolution of the solid throughout the dolomitization and by applying traditional (δ¹³C, δ¹⁸O) and non-traditional (e.g. δ⁴⁴/⁴⁰Ca, δ²⁶/²⁴Mg, δ⁸⁸/⁸⁶Sr, Δ⁴⁷) stable isotope systems. The study aims to (i) deciphering individual diagenetic reaction pathways, (ii) evaluating the degree of diagenesis and chemical alteration, and (iii) elucidating the implications to isotope records of the Phanerozoic seawater and/or of diagenesis.

FULL JOB DESCRIPTION
In the offered PhD project hydrothermal experiments will be conducted to simulate the exposure of modern and fossil brachiopod shells to aqueous diagenetic solutions. For this purpose different experimental designs have to be developed to investigate ongoing carbonate transformation (dissolution/precipitation) at the boundary conditions of a closed and open system with respect to the aqueous solution. The experimental results will be compared to the composition of naturally dolomitized brachiopods and related sedimentary rocks. The overall goals of the study are (i) to decipher individual diagenetic reaction pathways for the dolomitization of brachiopod shells, (ii) to obtain quantitative criteria to evaluate the degree of diagenesis and chemical alteration for the conservation of primary proxy signals in brachiopod shells and (iii) to evaluate the use of these proxy signals to reconstruct environmental conditions during formation and transformation of brachiopods shells.

For the experimental transformation studies the chemical and isotopic signals of the solutions will be adjusted to maximize distinction between primary carbonate and secondary (proto) dolomite for deciphering individual reactions steps. Such kind of data on elemental and isotope changes are highly promising for discovering individual reaction pathways. Laboratory experiments to induce dolomitization will use (i) batch reactors and (ii) flow through mixed reactors. The sampled solutions will be analysed for chemical and isotopic composition as a function of reaction time. Additionally, the chemical, mineralogical and isotopic composition of the reaction products will be investigated.

The PhD project is located at the Institute of Applied Geosciences of the Graz University of Technology and embedded into the Doctoral School Geosciences within the NAWI 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 of solid and liquid analyses. Secondment activities of the selected PhD at other BASE-LiNE Earth institutions will allow comprehensive topical expansion 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 mineralogy, Earth science, 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 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 salary: ~37,280 €* plus Mobility Allowance 7,200 € (tax free) plus in case of family obligations** additionally 6,000,- €.
* 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/.