PhD position in sedimentary geology: Response of source-to-sink systems to major step-changes in environmental factors

PhD position

There is a vacancy for a PhD position in sedimentary geology: Response of source-to-sink systems to major step-changes in environmental factors at the Department of Earth Science. The position is for a fixed-term period of 3 years. The position is part of the Marie Curie Innovative Training Network “S2S-FUTURE”. The project involves field work on Svalbard and collaborations with multiple European institutions and industrial partners, including required research stays at VBPR - Volcanic Basin Petroleum Research and Université Bourgogne Franche-Comté, France.

About the project/work tasks:

About this PhD project:

The Permian-Triassic transition represents the greatest change in climate, life and sedimentary systems ever recorded on Earth. The goal of this PhD project is to understand how source-to-sink systems (eroding uplands and their sedimentary systems in sedimentary basins) are affected by such major step-changes in forcing factors. The Norwegian Barents Sea contains continuous sedimentary sections covering this critical time interval, which will be studied on the Finmark Platform in the Southern Barents Sea, and on Svalbard. Before the Permian-Triassic transition, spiculitic shales and carbonate platforms with sparse sandstone beds dominated the area. After the Permian-Triassic transition, large deltaic sedimentary systems prograded into the basin. The objective of this project is to study these systems in seismic data, core, well-logs, outcrops, petrology and provenance data in order to understand the landscapes, and environmental factors during the deposition in the Late Permian and Early Triassic.

Specifically, the candidate will complete the following tasks. 1) use grain- and clay mineralogy, detrital zircon provenance analysis and sediment volumes to investigate catchment area, lithology and weathering types before and after the Permian-Triassic boundary event, 2) use sedimentological and paleontological data to understand the environmental conditions in the basin, 3) compare conditions before and after the Permian-Triassic boundary event in different parts of the basin. The goal is to understand why these systems changed during the Permian-Triassic boundary event and to disentangle climatic and tectonic factors.

This project within the framework of the S2S-FUTURE research project:

This PhD position is within the framework of a European ITN project named S2S-FUTURE: SIGNAL PROPAGATION IN SOURCE TO SINK for the FUTUre of earth Resources and Energies, involving 15 PhD positions.

Under the supervision of Christian Haug Eide (Associate Professor, University of Bergen, Geodynamics and Basin Studies), the PhD student will investigate many types of data from the deposits spanning the Permian-Triassic boundary in the Barents Sea basin. The data will be used to investigate conditions in the catchments before and after this step-change in earth evolution. These results will increase the understanding of how sedimentary systems respond to strong but gradual perturbations (ITN Work Package “SLOW”). The project involves field work on Svalbard and collaborations with multiple European institutions and industrial partners, including required research stays (secondment) at VBPR - Volcanic Basin Petroleum Research (Oslo, Dr. Sverre Planke, 1 month) and Université Bourgogne Franche-Comté, France (Dijon, Dr. Pierre Pellenard & Dr. Emmanuelle Pucaet, 3 months).

The PhD student will be also involved in scientific/soft-skills meetings and in research activities conducted in other laboratories/companies from Europe and associated countries. An important component of the training will be the participation to 3 main major “Summer Institutes”:

Summer 2020: “Dragonstone” - South-Pyrenees Spain and France: an innovative combination of field excursion and computer modeling of surface processes from source to sink.

Summer 2021: “The Factory” - Norway, Great Britain and Switzerland: field visit of modern S2S systems and course intensive program program of technical and soft skills to accelerate the students’ research, write and present their results, consolidate their profiles and develop concrete plans for their future.

Summer 2022: “Inside Africa” - South-Africa: an immersion of ESRs in the modern source-to-sink system of a continental-scale large river, the Orange in Southern Africa, with high economic implications for mining industries.

In addition to these major milestones of the program, the PhD students will 1) continuously develop their core research skills via their own research project locally and within the network while at secondments and conferences, 2) receive a mandatory amount of hard and soft-skills training specific to their own doctoral school, along with mentoring by joint supervising bodies, 3) use EGU conferences both as dissemination events for ESRs results and network events for progress reports and evaluations, and 4) collaborate into practical activities aimed at network-structuring legacy deliverables.
Qualifications and personal qualities:

- Applicants must hold a master’s degree or equivalent education in Earth Science or another relevant field, or must have submitted his/her master's thesis for assessment prior to the application deadline. It is a condition of employment that the master's degree has been awarded.
- Excellent technical skills including experience with subsurface data is a requirement
- Experience from sedimentological field work is a requirement.
- Experience from clastic deposits is a requirement
- Experience with sedimentary petrology is a strong advantage
- Experience with seismic interpretation, well log interpretation, core description, and/or clay mineral analysis is an advantage
- Applicants must be able to work independently and in a structured manner and demonstrate good collaborative skills.
- Applicants must be proficient in both written and oral English
- Availability to travel for training events and research secondments is required.

Personal and relational qualities will be emphasized. Ambitions and potential will also count when evaluating the candidates.

Special requirements for the position:
The applicant should not have lived and had his/her main activity in the same country as the beneficiary institute (Norway) for more than 12 months during the last 3 years on the date of appointment. This is a requirement for all Marie Curie sponsored exchange scholarships.

In addition, the successful candidate should satisfy at the time of the recruitment the following mandatory characteristics:

- having not more than 4 years of equivalent research experience (i.e. working as researcher after obtaining your master’s degree)
- having not been awarded a title of PhD

About the PhD position:

The fellowship will be for a period of 3 years.

About the research training

As a PhD candidate, you must participate in an approved educational programme for a PhD degree within a period of 3 years. A final plan for the implementation of the research training must be approved by the faculty within two months after you have commenced in the position. It is a condition that you satisfy the enrolment requirements for the PhD programme at the University of Bergen.

We can offer:

- a good and professionally stimulating working environment
- salary at pay grade 54 (Code 1017/Pay range 20, alternative 10) in the state salary scale. This constitutes a gross annual salary of NOK 479 600,-. Further promotions are made according to length of service in the position.
- enrolment in the Norwegian Public Service Pension Fund
- good welfare benefits

Your application must include:

- a brief account of the applicant's research interests and motivation for applying for the position
- the names and contact information for two referees. One of these should be the main advisor for the master's thesis or equivalent thesis
- CV
- transcripts and diplomas showing completion of the bachelor's and master's degrees. If you have not yet completed your master's degree, please submit a statement from your institution confirming that the master's thesis has been submitted relevant certificates/references
- approved documentation of proficiency in English (if required, cf. English language requirements for PhD admission)
- a list of any works of a scientific nature (publication list)
- any publications in your name

The application and appendices with certified translations into English or a Scandinavian language must be uploaded at Jobbnorge.

General information:

Detailed information about the position can be obtained by contacting: Christian Haug Eide (Associate professor, University of Bergen, +47 55 58 33 93)

The state labour force shall reflect the diversity of Norwegian society to the greatest extent possible. People with immigrant backgrounds and people with disabilities are encouraged to apply for the position.

The University of Bergen applies the principle of public access to information when recruiting staff for academic positions.

Information about applicants may be made public even if the applicant has asked not to be named on the list of persons who have applied. The applicant must be notified if the request to be omitted is not met.

The successful applicant must comply with the guidelines that apply to the position at all times.

For further information about the recruitment process, click here.

About The University of Bergen
The University of Bergen is a renowned educational and research institution, organised into seven faculties and approximately 54 institutes and academic centres. Campus is located in the centre of Bergen with university areas at Nygårdsheyden, Haukeland, Marineholmen, Møllendalsveien and Årstad.

There are seven departments and several centres at Faculty of Mathematics and Natural Sciences. Read more about the faculty and departments.

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