PhD Research Fellow in Fluid Mechanics

Job description

Position as PhD Research Fellow in Fluid Mechanics available at The Njord Centre, Department of Geosciences, University of Oslo. No one can be appointed for more than one PhD Research Fellowship period at the University of Oslo. The fellowship period is 3 years devoted to research education. Starting date no later than October 1 2020.

Job description

We invite applications for a PhD position in Fluid Mechanics. The main goal is experimental and numerical modelling of fluid flows at various scales with applications in the domains of porous media and geological processes. The objectives of this project are to investigate experimentally, to visualize, and to model the pore scale complexity of single and multiphase flows in porous rocks, in the presence of evolving solid-solid and solid-fluid interfaces.

The research involves three tasks. 1) Perform experiments and process data of fluid flow in porous rock imaged with time-lapse neutron tomography technique. 2) Use digital rocks to perform single phase flow simulations and characterize mixing properties in rocks with evolving microstructure. Results will be compared to the experimental data. 3) Simulate flow in porous rock with two immiscible or partially miscible fluids and characterize mixing and dispersion.

The successful candidate will be part of a lively research environment at the Njord Centre, and will study numerically flows in the presence of interfaces and solids. He/she will be at a strategic interface between laboratory activities that provide unique data and numerical modelling activities. He/she will be part of an international joint collaboration with Prof. Joachim Mathiesen (Univ. Copenhagen) and Prof. Tanguy Le Borgne (Univ. Rennes), and will visit these two universities regularly. The position is funded by Equinor through the Akademia Initiative at the University of Oslo.

Qualification requirements

The Faculty of Mathematics and Natural Sciences has a strategic ambition of being a leading research faculty. Candidates for this position will be selected in accordance with this, and expected to be in the upper segment of their class with respect to academic credentials.

Applicants must hold an MSc degree in Physics, Mechanics, Applied Mathematics, or Geoscience with competences in fluid mechanics. Candidates without a master’s degree examination may be admitted but appointment cannot be made until the requirement has been obtained and documented.

Foreign completed degree (M.Sc.-level) corresponding to a minimum of four years in the Norwegian educational system

Fluent oral and written communication skills in English

The position requires a strong background and skills in one or several of these topics:

- Computational fluid dynamics
- Statistical mechanics
- Data processing
- Physics of interfaces
- Porous media

Desired skills:

- Experience with Python
- Image analysis

Grade requirements:

The norm is as follows:

- the average grade point for courses included in the Bachelor’s degree must be C or better in the Norwegian educational system
- the average grade point for courses included in the Master’s degree must be B or better in the Norwegian educational system
- the Master’s thesis must have the grade B or better in the Norwegian educational system
- Fluent oral and written communication skills in English

English requirements for applicants from outside of EU/ EEA countries and exemptions from the requirements:

http://www.mn.uio.no/english/research/phd/application/application.html

The purpose of the fellowship is research training leading to the successful completion of a PhD degree.
The fellowship requires admission to the PhD programme at the Faculty of Mathematics and Natural Sciences. The application to the PhD programme must be submitted to the department no later than two months after taking up the position. For more information see:

http://www.uio.no/english/research/phd/
http://www.mn.uio.no/english/research/phd/

We offer

- Salary NOK 479 600 - 523 200 per annum depending on qualifications and seniority as PhD Research Fellow (position code 1017)
- Attractive welfare benefits and a generous pension agreement
- Vibrant international academic environment
- Career development programmes
- Oslo’s family-friendly surroundings with their rich opportunities for culture and outdoor activities

How to apply

The application must include

- Cover letter - statement of motivation and research interests
- CV (summarizing education, positions and academic work - scientific publications)
- Copies of the original Bachelor and Master’s degree diploma, transcripts of records and letters of recommendation
- Documentation of English proficiency
- List of publications and academic work that the applicant wishes to be considered by the evaluation committee
- Names and contact details of 2-3 references (name, relation to candidate, e-mail and telephone number)

The application with attachments must be delivered in our electronic recruiting system, please follow the link “apply for this job”. Foreign applicants are advised to attach an explanation of their University's grading system. Please note that all documents should be in English (or a Scandinavian language).

Applicants may be called in for an interview.

Formal regulations

Please see the guidelines and regulations for appointments to Research Fellowships at the University of Oslo.

No one can be appointed for more than one PhD Research Fellowship period at the University of Oslo.

According to the Norwegian Freedom of Information Act (Offentleglova) information about the applicant may be included in the public applicant list, also in cases where the applicant has requested non-disclosure.

The University of Oslo has an agreement for all employees, aiming to secure rights to research results etc.

Contact information

Prof. François Renard, francois.renard@geo.uio.no

Prof. Tanguy Le Borgne, tanguy.le-borgne@univ-rennes1.fr

Prof. Joachim Mathiesen, mathies@nbi.ku.dk

For technical questions regarding the recruitment system, HR Adviser Torunn Standal Guttormsen, +47 22854272, t.s.guttormsen@mn.uio.no

About the University of Oslo

The University of Oslo is Norway’s oldest and highest rated institution of research and education with 28 000 students and 7000 employees. Its broad range of academic disciplines and internationally esteemed research communities make UiO an important contributor to society.

Njord is a cross-disciplinary Geology-Physics center hosted by the Faculty of Mathematics and Natural Sciences at the University of Oslo.

We focus on the fundamental physics of geological processes related to: transport and reactions in deformable porous media, fracturing and fragmentation processes, interface dynamics during geophysical flows, and intermittency and pattern formation in geological systems far from equilibrium.

We conduct research on earth systems that range in scale from atoms to continents and apply methods where fieldwork, numerical modelling, experiments and theory act in concert.

The center includes the Oslo-branch of PoreLab, which is a Center of Excellence (CoE), and the former CoE, Physics of Geological Processes (PGP). There are 13 professors and associate professors at the center, in addition to doctoral research fellows, postdoctoral fellows, researchers and technical and administrative staff - in total about 65 persons.

Jobbnorge-ID: 184189, Søknadsfrist: 7. april 2020