



UNIVERSITETET
I OSLO

Jobbnorge-ID: 141876

Søknadsfrist: Closed

Nettside:

Omfang:

Varighet:

PhD Research Fellowship in Mineral and Rock Physics

A position as PhD Research fellow is available at The Department of Geosciences.

The fellowship is for a period of up to 4 years, with 25 % compulsory work. Preferred starting date no later than January 1st, 2018. No one can be appointed for more than one fixed-term period at the same institution.

Project description:

We invite applications for a challenging doctoral position (PhD) in mineral and rock physics. The objectives of this project are to unravel the nanoscale dynamics of fluid-rock interactions and friction at mineral interfaces. This position is funded by the Department of Geosciences and will be coordinated with several on-going research projects funded by the Norwegian Research Council.

The specific goal of this position is to combine numerical simulations and laboratory experiments using atomic force microscopy or other imaging techniques to unravel: 1) How nanoparticle formation and dynamics control fault behavior, and in particular what is the activation energy to produce them (weakening during slip) what is their reactivity in presence of water (interface healing), and how do they deform during sliding? 2 What is the dynamics of crystallization of such nanoparticles in systems where both dissolution and precipitation processes are coupled? and what is their potential to trap ions or carbon dioxide initially present in the water?

The PhD candidate will use several laboratory techniques to characterize nanoscale processes at mineral interfaces as well as atomistic scale numerical simulations.

The candidate will be part of a lively research environment in deformation of rocks in the presence of fluids, involving seven other young scientists, with expertise spanning from field work, X-ray tomography, laboratory modeling, numerical and theoretical modeling. The position involves laboratory experiments, numerical modeling and interpretation of data. The PhD candidate will be supervised by Prof. François Renard (rock physics), Dr. Anja Røyne (experimental physics), and Prof. Anders Målthe-Sørenssen (computational physics).

The position is affiliated with the sections "Geology and Geophysics" (G&G) and "Physics of Geological Processes" (PGP) and the successful applicant will evolve in this multidisciplinary environment between geosciences and physics.

In the position, 25% of the time will be dedicated to teaching practical courses in Earth Sciences at Bachelor and Master levels.

Requirements and qualifications:

The Faculty of Mathematics and Natural Sciences has a strategic ambition of being a leading research faculty. Candidates for these fellowships 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 a Master degree or equivalent in Geophysics with experience on topics, such as:

- Rock physics
- Mineral physics
- Atomic scale processes
- Ab initio simulations

The position requires a strong background and interest on:

- Numerical modelling (ab initio, molecular dynamics)
- Laboratory experiments
- Data analysis using Matlab or Python programming
- Demonstrate an ability to work independently and in a structured manner. In addition, the applicant must have the capability of cross-disciplinary collaboration.
- Teaching geomechanics, rock physics, mineral physics, earthquakes physics

Priority will be given to candidates with multidisciplinary experience, including teaching experience, data analysis and modeling.

In assessing the applications, special emphasis will be given to:

- The applicant's academic and personal qualifications in order to execute the project
- The applicant's ability to complete research training
- The applicant's mobility
- Good communication and collaboration skills and an ability to join interdisciplinary academic communities

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:

[Doctoral degree and PhD](#)

[A good command of English is required](#)

[Doctoral degree: PhD in Mathematics and Natural Sciences](#)

Salary:

Position code 1017, NOK 436 900 - 490 900 per year, depending on qualifications and seniority.

The application must include:

- Application letter
- CV (summarizing education, positions and academic work - scientific publications)
- Copies of educational certificates, transcript 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)

Foreign applicants are advised to attach an explanation of their University's grading system. Please remember that all documents should be in English or a Scandinavian language.

In accordance with the University of Oslo's equal opportunities policy, we invite applications from all interested individuals regardless of gender or ethnicity.

UiO has an agreement for all employees, aiming to secure rights to research results a.o.

Contact information:

For further information please contact: Professor Francois Renard, francois.renard@geo.uio.no

For questions about the recruitment system, please contact HR Officer Helene Jansen, +47 22857196, h.b.jansen@mn.uio.no

Tilleggsinformasjon

Arbeidssted: