Jobbnorge ID: 274119
Deadline: 3/20/2025
Website: http://www.uis.no/
Scope: Fulltime
Duration: Fixed Term

Postdoctoral Fellow in Experimental Fluid Mechanics: Non-Newtonian Fluid Flows in Annuli

Job description

The University of Stavanger invites applicants for a position as Postdoctoral Fellow in Experimental Fluid Mechanics at the Faculty of Science and Technology, Department of Energy and Petroleum Engineering.

The position is vacant from 1 August 2025. Postdoctoral Fellow is employed for a period of 3 years.

The aim of the position is for the successful candidate to develop a research profile and gain the qualifications required to be eligible for a position as an Associate Professor. Additionally, the position may provide valuable experience and other competencies relevant to the postdoctoral researcher's career development.

The position is funded by the Research Council of Norway, ConocoPhillips Skandinavia AS and Equinor Energy AS.

The qualifying project will be carried out at the University of Stavanger. It is assumed that the appointee will work full time on the project and that she/he will participate in the academic community.

Information about the project

The Postdoctoral Fellow will be affiliated with the following project "Cement Placement in Irregular Wellbores" (Research Council of Norway project number 352936).

This project will study displacement flows in irregular-shape annular geometries, and is motivated by primary cementing of casing strings, which is a critical well construction operation. Primary cementing involves the displacement of non-Newtonian fluids (i.e. drilling fluid) from the annular space between the casing and formation. Previous research has shown that such displacement flows are strongly influenced by the irregularities of the annulus geometry, such as casing eccentricity, stress-induced hole deformation or washout sections of the wellbore.

New technological advances now allow high-resolution imaging of the wellbore shape as being drilled. Such information can potentially be utilized to tailor and optimize the displacement and cementing operation, provided one understands and can model how geometric irregularities affect the displacement. The current project will conduct experiments and perform modelling of such displacement flows using relevant downhole irregular geometries, with an aim of contributing to more effective future cementing jobs.

The postdoctoral position is focused on experimental activities, involving displacement experiments that will utilize an annular flow loop consisting of well-defined irregular geometric features. Important outcomes of the experimental work will be the measurement of displacement efficiency within relevant irregular annuli, addressing both bulk displacement and wall cleaning, and assessment of how operational parameters such as fluid viscosity, casing eccentricity, inclination, or imposed flow rate (/flow regime) affect the displacement.

Responsibilities of the postdoctoral fellow will include:

- Development and optimization of instrumentation methods to be used for investigating annular displacement in regular and irregular geometries,
- Design and characterization of relevant (scaled) test fluids,
- Design, execution, analysis and interpretation of experiments,
- Publication of results,
- Supervision and co-supervision of bachelor and master student theses.

The final project description and progress plan are drawn up in consultation with the supervisor (s) during the first three months of the employment period. It is a prerequisite that you complete the project during the employment period.

Qualification requirements

You must have a Ph.D. with a specialisation relevant for the project. The Ph.D. thesis must have been submitted for evaluation within the application deadline for the position and approved before accession.

You must document recent and active research activities. Applicants that have submitted the Ph.D. thesis within the last 3 years will therefore be prioritized. Candidates that can document significant experience in performing research in collaboration with industry and/or the institute sector will be prioritized.

You must have good command of both oral and written English.

We are looking for applicants with strong academic backgrounds within applied and experimental physics, materials science, mechanical engineering, chemical engineering or similar. The candidate should have:

- Strong experimental background within fluids and/or materials,
- Experience performing experiments using industrially relevant non-Newtonian fluids, such as polymeric liquids and cement slurries,
- Publication track record within relevant domains.

We are seeking a resourceful candidate with a proactive attitude and ability/interest in conducting physically demanding experiments. Experience within computational methods and/or advanced instrumentation relevant for fluid mechanics experiments is a benefit.

In the assessment the following criteria will be emphasised:

- submitted scientific work and your personal skills for completing the project within the time frame
- international experience and network
- qualifications within the areas of creativity, innovation and commercialisation of research
- good teamwork, communication skills and ability to participate in research communities across organisational units
- ability to work independently in a structured manner
- motivation, sense of responsibility and accountability, work capacity and enthusiasm for research

We offer

- varied duties in a large, exciting and socially important organisation
- an ambitious work community which is developing rapidly. We strive to include employees at all levels in strategic decisions and promote an informal atmosphere with a flat organisational structure
- access to Lifekeys, a digital service for the preservation of personal mental health and well-being
- salary in accordance with the State Salary Scale, l.pl 17.510, code 1352, NOK 580.000 - 680.000 gross per year. A higher salary may be considered in special cases. From the salary, 2% is deducted as a contribution to the Norwegian Public Service Pension Fund.
- automatic membership in the Norwegian Public Service Pension Fund, which provides favourable insurance and retirement benefits
- favourable membership terms at a gym and at the university sports club, SiS sports club at campus
- employment with an Inclusive Workplace organisation which is committed to reducing sick leave, increasing the proportion of employees with reduced working capacity, and increasing the number of professionally active seniors
- Hjem-jobb-hjem, discounted public transport to and from work
- as an employee in Norway, you will have access to an optimal health service, as well as good pensions, generous maternity/paternity leave, and a competitive salary. Nursery places are guaranteed and reasonably priced.
- relocation programme

Diversity

Diversity is a resource in the working and learning environment at UiS. When we have different backgrounds and experiences, we can approach challenges from multiple perspectives and find better solutions.

At UiS, we are committed to showing respect for each other's differences and accommodating employees with disabilities. We take into consideration your needs and your situation in various life phases.

If you find this position interesting, we encourage you to apply, regardless of gender, disability, cultural background, or whether you have been out of the workforce for a period.

If there are qualified applicants with disabilities, gaps in their CV, or immigrant backgrounds, we will invite at least one applicant from each of these groups for an interview. If you fall into any of these categories, feel free to indicate it when applying for the position.

Learn more about the criteria for being considered an applicant in these specific groups here.

The university aims to recruit more women within the subject area. If several applicants are considered to have equal qualifications, female applicants will be given priority.

Application

To apply for this position please follow the link "Apply for this job". Your application letter, relevant education and work experience as well as language skills must be registered here. In the application letter, you must state your research interests and motivation for the position.

The following documents must be uploaded as attachments to your application:

- CV with a full summary of your education and experience
- documentation of approved PhD If you have not completed the PhD, you may enclose a confirmation from the institution on the expected date of obtaining the doctoral degree.
- complete list of academic publications with information on where they are published. You may also upload up to 5 publications, including your PhD thesis or published monograph based upon the thesis.
- transcripts and certificates, and other documentation that you consider relevant

Applications are evaluated based on the information available in Jobbnorge on the application deadline. You should ensure that your application shows clearly how your skills and experience meet the criteria which are set out above.

The documentation must be available in either a Scandinavian language or in English. If the total size of the attachments exceeds 30 MB, they must be compressed before upload.

Please note that information on applicants may be published even if the applicant has requested not to be included in the official list of applicants - see Section 25 of the Freedom of Information Act. If your request is not granted, you will be notified.

UiS only considers applications and attachments registered in Jobbnorge.

General information

The engagement is to be made in accordance with the regulations in force concerning State Employees and Civil Servants, and the acts relating to Control of the Export of Strategic Goods, Services and Technology. If your application is considered to be in conflict with the criteria in the latter legislation, it will be rejected without further assessment.

Employment as Postdoctoral Fellow is regulated in "Regulations concerning terms and conditions of employment for the posts of post-doctoral research fellow and research fellow, research assistant and resident".

We put emphasis on the quality, relevance and significance of the research work and not on where the work is published, in accordance with the principles of The San Francisco Declaration on Research Assessment (DORA).

Your qualifications for the position, based on documentation registered in Jobbnorge, will be assessed by an internal expert committee.

Based on the committee's statement, relevant applicants will be invited to an interview before any recommendations are made. References will also be obtained for relevant candidates. More about the hiring process on our website.

UiS has an Acquisition of Rights Agreement for the purpose of securing rights to intellectual property created by its employees, including research results.

It is a prerequisite that you have a residence which enables you to be present at/available to the academic community during ordinary working hours.

The position has been announced in both Norwegian and English. In the case of differences of meaning between the texts, the Norwegian text takes precedence.

UiS - challenge the well-known and explore the unknown

The University of Stavanger (UiS) has about 12,000 students and 2,200 employees. The university has high ambitions. We strive to have an innovative and international profile, and be a driving force in knowledge development and in the process of societal change. Our common direction is driven by consideration for green and sustainable change and equitable social development, through new ways of managing natural resources and facilitating better cities and local communities. Energy, health and welfare, learning for life are our focus areas.

In constant collaboration and dialogue with our surroundings, regionally, nationally and internationally, we enjoy an open and creative climate for education, research, innovation, dissemination and museum activities. Academic life at the University of Stavanger is organised into six faculties comprising various departments/schools and National Research Centres, as well as the Museum of Archaeology. We are a member of the European Consortium of Innovative Universities. The university is located in the most attractive region in the country with more than 300,000 inhabitants. The Stavanger region has a dynamic labour market and exciting cultural and leisure activities.

Together with our staff and students we will challenge the well-known and explore the unknown.

The Faculty of Science and Technology offers study programs at bachelor, master and doctoral level. The faculty has established close cooperation on research with NORCE (Norwegian Research Centre AS) and the regional industry. A number of master's and doctoral theses are made in collaboration with the industry. The faculty has established research collaborations with universities in the US and Europe, and has developed several academic environments that are at the forefront internationally.The faculty has about 2,800 students and approximately 500 employees at the Department of Electrical Engineering and Computer Science, Department of Structural Engineering and Materials Science, Department of Mathematics and Physics, Department of Energy and Petroleum Engineering, Department of Energy Resources, Department of Chemistry, Bioscience and Environmental Engineering and the Department of Safety, Economics and Planning.

Department of Energy and Petroleum Engineering carries out research and offers study programs at all levels in Drilling Technology, Natural Gas Technology, Petroleum Engineering and Energy Technology. The department has established close research collaboration with relevant industry - especially in the petroleum and battery sector. The department focuses on internationalization, with the development of English study programs and high mobility among academic staff and students. There are currently 60 employees including research fellows and postdocs.

Additional information

Contact persons:

- Hans Joakim Skadsem, førsteamanuensis / Associate Professor
  Phone: | E-mail: hans.j.skadsem@uis.no
- Margot A. Treen, senior HR-rådgiver/ Sr HR advisor
  Phone: | E-mail: rekruttering@uis.no

Place of service:

- Adresse mangler 4036 Stavanger (Stavanger Municipality)
- Ullandhaug 4036 Stavanger (Stavanger Municipality)