

Jobbnorge ID: 235252
Deadline: 1/8/2023
Website: <http://www.uis.no/>
Scope: Fulltime
Duration: Fixed Term

PhD Fellowship in Structural Engineering: Low carbon concrete

Job description

The University of Stavanger invites applicants for a PhD Fellowship in structural engineering at the Faculty of Science and Technology, Department of Mechanical and Structural Engineering and Materials Science. The position is vacant from January 2023.

This is a trainee position that will give promising researchers an opportunity for academic development through a PhD education leading to a doctoral degree.

The hired candidate will be admitted to the PhD program in Science and Technology. The education includes relevant courses amounting to about six months of study, a dissertation based on independent research, participation in national and international research environments, relevant academic communication, a trial lecture and public defence. Read more about the PhD education at UiS on [our website](#).

The appointment is for three years with research duties exclusively.

Research topic

The PhD Fellow will be affiliated with the following project: "Investigation of mechanical properties and damage evolution in low carbon concrete subjected to cyclic loading".

During the manufacture of one ton of Ordinary Portland Cement (OPC), CO₂ emission totals is about one ton. The emissions from the cement industry constitutes about 8% of global CO₂ emissions. The use of pozzolanic materials (e.g., Fly-ash and Granulated blast furnace slag (GBFS)) and the optimization of mix design will reduce the demand of cement clinker content in concrete and thereby reduce the CO₂ emission. This will enable to develop low carbon concrete. The use of low carbon concrete to also build future offshore gravity-based structures and wind turbine foundations will support to attain sustainability goals. However, the offshore gravity-based structures and in particular wind turbine foundations are subjected to cyclic loading during its service life. Therefore, it is essential to study the durability and mechanical properties of the low carbon concrete by considering a possible damage evolution of the concrete under cyclic loading.

Moreover, the cyclic compression in concrete can impact the mechanical properties as well as develop cracks in concrete. Cracks can lead to failure in concrete and the corrosion of reinforcement. However, there is limited experience and research on impact on durability and mechanical properties in low carbon concrete while subjected to cyclic loading both in dry and in wet environment.

This PhD project is focused on the identification of potential low carbon concrete for offshore applications and to study the mechanical properties and durability properties and any damage evolution. This study leads to a deeper insight and understanding of the concrete fatigue behavior and any potential damage with time in low carbon concrete.

Project proposal

As an applicant, you must prepare a preliminary project proposal for a doctoral project within the subject area, which explains the problem, relevance, theoretical and methodological approach.

Your preliminary project proposal will be included in the application assessment. During the first three months of the employment period, the project proposal and progress plan will be further developed in cooperation with your supervisors and completed for the final plan for the PhD-project. A project proposal template can be found [here](#).

Qualification requirements

We are looking for applicants with a strong academic background who have completed a five-year master degree (3+2) within structural or civil engineering, preferably acquired recently; or who possess corresponding qualifications that could provide a basis for successfully completing a doctorate.

Candidates with background in micro-computed tomography (micro-CT)/X-Ray CT Scanning and analysis of data; and laboratory testing experience (e.g. use of fatigue testing facility, testing of mechanical and rheological properties of concrete, microstructure analysis, etc.) will be preferred.

To be eligible for admission to the doctoral programmes at the University of Stavanger both the grade for your master's thesis and the weighted average grade of your master's degree must individually be equivalent to or better than a B grade. If you finish your education (masters degree) in the fall 2022 you are also welcome to apply.

Applicants with an education from an institution with a different grade scale than A-F, and/or with other types of credits than sp/ECTS, must attach a confirmed conversion scale that shows how the grades can be compared with the Norwegian A-F scale and a Diploma Supplement or similar that explains the scope of the subjects that are included in the education. [You can use these conversion scales to calculate your points for admission.](#)

Emphasis is also placed on your:

- motivation and potential for research within the field
- professional and personal skills for completing the doctoral degree within the timeframe
- ability to work independently and in a team, be innovative and creative
- ability to work structured and handle a heavy workload
- having a good command of both oral and written English

Requirements for competence in English

A good proficiency in English is required for anyone attending the PhD program. International applicants must document this by taking one of the following tests with the following results:

- TOEFL - Test of English as a Foreign Language, Internet-Based Test (IBT). Minimum result: 90
- IELTS - International English Language Testing Service. Minimum result: 6.5
- Certificate in Advanced English (CAE) or Certificate of Proficiency in English (CPE) from the University of Cambridge
- PTE Academic - Pearson Test of English Academic. Minimum result: 62

The following applicants are exempt from the above requirements:

- Applicants with one year of completed university studies in Australia, Canada, Ireland, New Zealand, United Kingdom, USA
- Applicants with an International Baccalaureate (IB) diploma
- Applicants with a completed bachelor's and / or master's degrees taught in English in a EU/EEA country

We offer

- a PhD education in a large, exciting and societally 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.
- salary in accordance with the State Salary Scale, l.pl 17.515, code 1017, NOK 501 200 gross per year with salary development according to seniority in the position. 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 [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
- [language courses](#): On this page you can see which language courses you may be entitled to (look up "language courses" under employment conditions)

Diversity

University of Stavanger values independence, involvement and innovation. Diversity is respected and considered a resource in our work and learning environment. Universal design characterises physical and digital learning environments, and we strive to provide reasonable adjustments for employees with disabilities.

You are encouraged to apply regardless of gender, disability or cultural background.

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.

Contact information

More information on the position and project description can be obtained from Associate Professor Samindi Samarakoon, tel: +47 51 83 23 87, e-mail: samindi.samarakoon@uis.no.

Information about the appointment procedure can be obtained from HR advisor Rosa Andrade, tel: +47 51 83 11 91, e-mail: rekruttering@uis.no.

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.

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

- cover letter explaining your interest in the project and the relevance of your background and experience to the position.
- project proposal, a project proposal template [can be found here](#).
- CV with a full summary of your education and experience

- references, certificates/diplomas and other documentation that you consider relevant
- Diploma Supplement or similar and a confirmed conversion scale if this is required
- documentation on competence in English if this is required
- publications or other relevant research work

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

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 PhD 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](#)".

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.](#)

The appointee will be based at the University of Stavanger, with the exception of a stay abroad at a relevant centre of research.

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 and the Department of Safety, Economics and Planning.

The Department of Mechanical and Structural Engineering and Materials Science carries out research and offers study programs in Offshore Technology, Marine and Subsea Technology, Offshore Wind, Industrial Asset Management, Structural Engineering and Mechanical Engineering. The department has a high international profile with students and staff from around the world. There are currently 60 employees including research fellows and postdocs, and 660 students at the department.

Additional information

Place of service:

Ullandhaug 4021 Stavanger (Stavanger Municipality)