UNIVERSITETET I OSLO

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Nettside: http://www.uio.no/
Omfang: Heiltid
Varigheit: Åremål

PhD Research Fellow in Systemic Environmental Risk Analysis of Hydrogen

About the position

Position as PhD Research Fellow in Systemic Environmental Risk Analysis of Hydrogen available at the Department of Technology Systems.

The fellowship period is three years.

A fourth year may be considered and it will involve 25 % of other career-promoting work. Other career-promoting work may consist of teaching, supervision, and/or research assistance. This is dependent upon the qualification of the applicant and the current needs of the department.

Starting date no later than October 1, 2026.

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

Place of work is the Department of Technology Systems at Kjeller, Lillestrøm.

Job description

We are looking for a PhD candidate to work on a research project focusing on systemic environmental risks associated with hydrogen infrastructure, based at the department of Technology Systems (ITS) University of Oslo (UiO).

This PhD project aims to advance understanding of how the large-scale deployment of hydrogen infrastructure interacts with environmental systems at the European and global level, and how such interactions can generate systemic environmental risks. These risks arise not from individual technologies in isolation, but also from cumulative effects, cross-sectoral interactions, and long-term dynamics linking energy systems, emissions pathways, and environmental constraints.

Hydrogen is a central element of future low-carbon energy systems, with infrastructure developments spanning multiple sectors and regions. This PhD project addresses this academic topic by applying data analysis, energy system and/or environmental modelling frameworks to analyze hydrogen systems as part of an interconnected energy-environment system.

As a PhD candidate, you will develop database and energy/environmental modelling approaches to explore hydrogen deployment pathways at the European or global scale and assess their implications for emissions and environmental performance. The research will involve working with large-scale datasets and may include the use of advanced data analysis or AI-based methods to support modelling, uncertainty analysis, and systemic risk assessment. You will contribute to scientific publications in high-quality peer-reviewed journals and present your work at international conferences.

The PhD project is conducted within a strong interdisciplinary research environment at UiO, with close links to Nordic and international partners. While your main research activities will be based in Norway, you are expected to engage with the wider Nordic research network, participate in collaborative activities, and contribute to knowledge exchange across partner institutions.

The position offers a unique opportunity to contribute to the development of new modelling-based approaches for understanding systemic environmental risks in hydrogen-based energy transitions, with relevance for policy, planning, and sustainable energy system design in Europe and beyond.

What skills are important in this role?

The Faculty of Mathematics and Natural Sciences has a strategic ambition to be among Europe's leading communities for research, education and innovation. 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.

Required qualifications:

- A master's degree or equivalent in engineering, environmental sciences, environmental engineering, data science, systems modelling, applied mathematics, or a closely related field
- Foreign completed degree (M.Sc.-level) corresponding to a minimum of four years in the Norwegian educational system
- Strong competence in quantitative methods, modelling, or data-driven analysis
- Solid programming experience (e.g. Python, R, MATLAB, GAMS or similar)
- Interest in environmental risk, emissions analysis, and sustainability transitions. Ability to work both independently and collaboratively within an interdisciplinary research environment.

- Experience or interest in energy system/environmental modeling or large-scale data analysis is an advantage
- Fluent oral and written communication skills in English. Knowledge of Norwegian is beneficial but not required.

Desired qualifications:

- Experience working with European or global energy and environmental datasets
- Familiarity with advanced data analytics, uncertainty analysis, energy/ environmental analysis
- Previous involvement in interdisciplinary research linking energy/ environmental assessment or data analysis
- Prior scientific publications are beneficial but not required

Candidates without a master's degree have until **June 30, 2026** to complete the final exam.

Language requirement:

- Good oral and written communication skills in English
- English requirements for applicants from outside of EU/ EEA countries and exemptions from the requirements: https://www.mn.uio.no/english/research/phd/regulations/regulations.html#toc8

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

The purpose of the fellowship is research training leading to the successful completion of a PhD degree. For more information see: http://www.mn.uio.no/english/research/phd/

All candidates and projects will have to undergo a check versus national export, sanctions and security regulations. Candidates may be excluded based on these checks. Primary checkpoints are the Export Control regulation, the Sanctions regulation, and the national security regulation.

What are we looking for in you?

Personal skills:

- Ability to work both independently and as part of a team
- Ability to work precise in a structured manner and swiftly adapts to new tasks
- Good communication and collaboration skills
- Positive attitude and the ability to handle hectic periods

Employment in the position is based on a comprehensive assessment of all qualification requirements applicable to the position, including personal qualifications.

We can offer you

- A pleasant and stimulating work environment
- Good welfare schemes
- Opportunity of up to 1.5 hours a week of exercise during working hours
- A workplace with good development and career opportunities
- Career development programmes
- Membership in the Statens Pensjonskasse, which is one of Norway's best pension schemes with beneficial mortgages and good insurance schemes
- Oslo's family-friendly surroundings with their rich opportunities for culture and outdoor activities
- Salary in position as PhD Research Fellow, position code 1017 in salary range NOK from 550 800 - 595 000, depending on competence and experience. From the salary, 2 percent is deducted in statutory contributions to the State Pension Fund

We need different perspectives in our work

UiO is an open and internationally oriented comprehensive university that strives to be an inclusive and diverse workplace and academic environment. You can read more about UiO's work on equality, inclusion, and diversity at uio.no.

We fulfill our mission most effectively when we draw upon our variety of experiences, backgrounds, and perspectives. We are looking for great colleagues, could you be the next one?

We will do our best to accommodate your needs. Relevant adjustments may include modifications to working hours, task adaptations, digital, technical, or physical adjustments, or other practical measures.

If you have an immigrant background, a disability, or CV gaps (Norwegian), we encourage you to indicate this in the job application portal. We always invite at least one qualified candidate from each group for an interview. In this context, disability is defined as an applicant who identifies as having a disability that requires workplace or employment-related accommodations. For more details about the requirements, please refer to the Employer portal (Norwegian).

The selections made in the job application portal are used for anonymized statistics that all state employers include in their annual reports. More information about gender equality initiatives at UiO can be found here.

We hope you will apply for the position with us.

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 and transcripts of records
- Letters of recommendation
- Documentation of English proficiency if applicable
- 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)

Application with attachments must be submitted via our recruitment system Jobbnorge, click "Apply for this job". Foreign applicants should attach an official explanation of their University's grading system.

When applying for the position, we ask you to retrieve your education results from Vitnemålsportalen.no. If your education results are not available through Vitnemålsportalen, we ask you to upload copies of your transcripts or grades. Please note that all documentation must be in English or a Scandinavian language.

General information

The best qualified candidates will invited for interviews.

Applicant lists can be published in accordance with Norwegian Freedom of Information Act § 25. When you apply for a position with us, your name will appear on the public applicant list. It is possible to request to be excluded from this list. You must justify why you want an exemption from publication and we will then decide whether we can grant your request. If we can't, you will hear from us.

Please refer to Regulations for the Act on universities and colleges chapter 3 (Norwegian), Guidelines concerning appointment to post doctoral and research posts at UiO (Norwegian) and Regulations for the degree of Philosophiae Doctor (PhD) at the University of Oslo.

The University of Oslo has a transfer agreement with all employees that is intended to secure the rights to all research results etc.

About the University of Oslo

The University of Oslo is Norway's oldest and highest rated institution of research and education with 26 500 students and 7 200 employees. Its broad range of academic disciplines and internationally esteemed research communities make UiO an important contributor to society.

The University of Oslo (UiO) is expanding the activity at Campus Kjeller to strengthen our education, research, and innovation in technology for a sustainable future. UiO is a well-ranked research university where the **Department of Technology Systems at Kjeller (ITS)** is focused on applied research in sustainable energy, autonomous systems, space, and security. At Kjeller, ITS is co-located with the Norwegian Defense Research Establishment (FFI) and the Institute for Energy Technology (IFE), which both offer rich opportunities for collaboration. ITS also has a range of interdisciplinary research collaborations that include the UiO Blindern Campus and Oslo Science City, as well as many other national and international institutions and industries.

ITS offers several master level programmes, alone and jointly with other departments: Renewable energy systems, Cybernetics and autonomous systems, Robotics and intelligent systems, and Information security. ITS also hosts the Centre for Space Sensors and Systems (CENSSS), which incorporates operation of an instrument on the NASA Perseverance rover on Mars. A new master program in Space systems is in the planning stage. The department currently has 9 permanent scientific staff, approximately 35 adjunct staff from the research institutes at Kjeller and from industry, as well as about 20 PhD candidates. This position is part of an ongoing expansion of the UiO activity at Campus Kjeller. Campus Kjeller is located 20 km northeast of Oslo, between the city center and Oslo Airport. It is a 20 minutes commute with public transportation from Oslo city center to the campus.

Tilleggsinformasjon

Kontaktpersonar:

- Xi Yang, Associate Professor
  Telefon: | E-post: xi.yang@its.uio.no
- For questions regarding Jobbnorge, please contact Elin Thoresen, HR Adviser
  Telefon: | E-post: elin.thoresen@mn.uio.no

Arbeidsstad:

Gunnar Randers vei 19 2007 Kjeller (Lillestrøm Kommune)