



**Jobbnorge ID:** 297126  
**Deadline:** 4/13/2026  
**Website:** <https://www.usn.no/>  
**Scope:** Fulltime  
**Duration:** Temporary

Do you want to contribute to the development of knowledge, insight and solutions that are relevant to society and working life today and in the future?

## PhD Candidate in Data-Driven Methods and Sustainable Materials for Offshore Wind

### Welcome to USN

The University of Southeastern Norway (USN) ranks as the country's fourth largest higher education institution. We are a vibrant community of approximately 18,000 students and 1,900 employees.

Video: <https://vimeo.com/898549899/60305e2540>

### About the position

We are pleased to announce a new PhD Research Fellowship in the Department of Process, Energy and Environmental Technology at The Faculty of Technology, Natural Sciences and Maritime Sciences.

The position is a vacancy for a 100% position, and the place of employment is campus Porsgrunn. The employment period will be three years of full time with no teaching obligations. Commencement on August 3rd 2026 or by agreement.

Are you passionate about solving the real engineering challenges driving the green energy innovation? We urgently need breakthrough research in:

- recyclable & durable materials
- fast, data-driven surrogate models
- lifecycle-conscious design

to reduce costs, increase reliability, and accelerate the North Sea's ambitious 300 GW target by 2050.

You will become an integral part of a dynamic research team, joining the **REACT-Lab** (Renewable Energy and Advanced Construction Technologies Laboratory) and the **URGENT** (USN Research Group in Energy and Environmental Technology) research group. The **REACT-Lab** will provide a stimulating environment focused on renewable energy infrastructure and environmental technology.

The project also offers strong potential for collaboration with leading research institutes and industry partners and international labs, providing access to advanced facilities and real-world validation during your PhD.

We are looking for a highly motivated and self-driven PhD student with strong intellectual curiosity and interest in computational mechanics, data-driven design, and sustainable engineering.

If this excites you and you want to make a real impact, join our PhD team at USN and help shape the future of offshore wind.

### About the PhD-project

Offshore wind energy is fundamental to the global green transition, nevertheless the harsh marine environment presents severe engineering challenges that degrade offshore wind turbine components and limit their lifespan. Critical components face distinct and demanding failure modes: turbine blades suffer complex aerodynamic loading and leading-edge erosion from high-speed particulate impact, while transition pieces and support structures endure complex multi-axial fatigue from stochastic wave and wind loading, plus corrosion and biofouling. To overcome these barriers, the industry requires a shift toward Lifecycle-Conscious Design, an approach embedding longevity, material efficiency, and realistic performance limits from the start.

This project develops a pioneering methodology for data-driven optimization of next-generation material systems. You will bridge advanced computational mechanics with physical reality, moving beyond trial-and-error by leveraging surrogate modeling (e.g., Kriging or Gaussian Processes) to efficiently explore complex design spaces and identify resilient, resource-efficient material solutions that are practically viable.

The successful PhD candidate is expected to carry out research on one or more of the following focus areas:

- Developing and training robust machine learning surrogates to replace computationally expensive high-fidelity simulations, enabling exploration of vast design spaces.

- Formulating optimization frameworks that rigorously incorporate manufacturing capabilities, geometric boundaries, and operational limits for physically realistic and producible designs.
- Incorporating material efficiency and lifecycle metrics directly into the design loop to drive durable, resource-efficient components, validated against analytical benchmarks or experimental data.

## Qualifications

- Applicants to the PhD position must have a master's degree (120 ECTS) or equivalent higher education qualifications in Civil Engineering, Mechanical Engineering, Applied Mathematics, or Computational Science. The degree must be completed before commencement of the position.
- The successful candidate will have a solid theoretical foundation in one or more of the topics: Computational Mechanics, Finite Element Analysis (FEA), Numerical Optimization, or Materials Science. More specifically, we are looking for candidates with competence in more than one of the following areas and a willingness to learn the others: Structural Analysis and Mechanics of Materials, analytical and numerical, Data-Driven Engineering Design and Optimization Algorithms, Surrogate Modeling (e.g., Kriging, Gaussian Processes, Neural Networks, etc.), Scientific Programming (e.g., Python, MATLAB, etc.)
- The successful candidate must be enrolled in USN's PhD program in Technology within three months of accession. For admission to the Programme, the weighted average grade of B or higher is usually required.
- **The position requires an export license, and the applicant must meet the requirements for this. You can read more about export licenses on DEKSA's website.**

## Personal characteristics

To complete a doctoral degree (PhD), it is important that you can:

- Work independently
- Work in a structured way, set goals and make plans to achieve them
- Present and discuss your research with other professionals
- Get involved and contribute constructively with feedback
- Work constructively under pressure or in the face of adversity
- Show curiosity and strong motivation for the subject
- Analyze data, assess different perspectives and draw well-founded conclusions
- Be flexible and open to adjusting the plan for the project as needed

Emphasis will be placed on personal qualities.

## Language requirements

The applicant must be able to demonstrate/document that they are fluent in English - orally and in writing, and may be asked to provide a valid certificate from one of the following tests:

- 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 Cambridge University
- 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, the United Kingdom, the United States
- Applicants with a completed master's degree with English as the language of instruction in an EU/EEA country
- Applicants who are exempt based on the Norwegian Directorate of Higher Education and Skills Higher Education Entrance Qualification (GSU) list
- Applicants from Norway can confirm their English proficiency by submitting their high school (videregående skole) diploma

## We offer

- An exciting job with an important mission for society
- A stimulating and growing research environment, with good opportunities to develop your career and your academic skills
- An open and inclusive working environment with committed colleagues
- Attractive welfare benefits in the [State Pension Plan](#)
- Opportunity for physical activities within working hours

## Salary

PhD Research Fellow (code 1017): NOK 550 800 a year. Further promotion will be based on time served in the position. In special cases, employment in code 1378 (NOK 546 569 - 685 728 a year) may be considered.

A statutory contribution to the state pension plan will be deducted from the employee's salary.

## Other information

The Academic Appointments Board for PhD Research Fellowships is responsible for the appointment. An expert assessment of applicants will be carried out<sup>[1]</sup>. The candidates deemed best qualified will be invited to an interview.

The person appointed must comply with the laws, regulations and agreements that apply at any given time to the post. Please note that approved work permit is a prerequisite for employment.

According to its human resources policy, the University of South-Eastern Norway targets a balanced gender composition and aims to recruit persons with a background as an immigrant.

The University contributes to the Inkluderingsdugnaden (a voluntary scheme to promote inclusion), and it is our aim that our employees, to the fullest extent possible, shall reflect the diversity of the general population. We therefore encourage qualified applicants with disabilities to apply for the post. The University will facilitate the workplace for employees with disabilities.

Pursuant to section 25, 2nd paragraph of the Freedom of Information Act, information on the applicant may be disclosed even if the applicant has requested not be included on the list of applicants. Applicants will be notified if such requests are not allowed.

## Requirements regarding a licence and/or security clearance

- **The position requires an export license, and the applicant must meet the requirements for this. You can read more about export licenses on DEKSA's website.**

## How to apply

The University of South-Eastern Norway makes use of online application management. Applicants to the post must register their application and CV with enclosures online via the Jobbnorge recruitment portal by clicking on the link on the right-hand side - "Søk stillingen" (Apply for the post).

The following documents shall be attached to the online application:

- Transcripts and diplomas of bachelor's and master's Degrees (120 ECTS)
- Other relevant certificates (if applicable, must be specified).
- A 1-page motivation letter.
- Documentation of English proficiency.
- Any scientific publications and a list of these.
- Three references (contact information).
- A copy of your master's thesis (if available at the time of the application).
- Receipt on your application or recognition from HK-dir\*

**\*If your higher education is from a university outside of Norway, we require it to be recognized by the Norwegian Directorate of Higher Education and Skills. [You must apply for the recognition before the application deadline for this position expires.](#) Add a receipt on your application or recognition when applying. The recognition must be sent to us and is a requirement for being hired.**

The application will be assessed based on the attached documentation as requested above. Each applicant is responsible for ensuring that the required documentation has been uploaded with the application deadline.

## Contact information

**For more information about the position, please contact:**

Assoc. Prof. Hadi Amlashi, e-mail: [hadi.amlashi@usn.no](mailto:hadi.amlashi@usn.no)  
Department Head, Assoc. Prof. Ali Ghaderi, [ali.ghaderi@usn.no](mailto:ali.ghaderi@usn.no)

**For questions regarding the recruitment process, please contact:**

HR-Advisor Live Lindgård, email: [liverl@usn.no](mailto:liverl@usn.no)

## About USN

At USN you'll contribute to a mission that matters. The University of Southeastern Norway was established in 2018, following the merger of several smaller university colleges, some with historical roots dating back to the 17th and 18th centuries. We are committed to collaborative problem-solving, aiming to provide solutions that benefit our communities - locally as well as globally.

Our diverse campuses are located from the beautiful fjords to the snow-covered mountains. USN spans three Norwegian counties, with campuses in Bø, Drammen, Horten, Kongsberg, Notodden, Porsgrunn, Ringerike, and Rauland.

Wherever you're located, you will engage in meaningful work amidst a thriving student culture and innovative research environments. Our university offers a wide range of high-quality and internationally recognized academic programs. With a strong emphasis on profession-oriented and socially relevant education, we prepare our students for the workforce and equip them with the necessary skills to make a positive impact on society.

At USN, we deeply value and cultivate our relationships with local communities. Our staff and students are actively engaged in a variety of projects that address societal challenges, driving change and innovation. We place a strong emphasis on diversity, inclusion, and equal opportunity, and we strive to shape future leaders, innovators, and change-makers.

Read more about working for us: [Work for us - Universitetet i Sørøst-Norge](#)

## Additional information

### Contact person:

Ali Ghaderi, Instituttleder  
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### Place of service:

