

**Jobbnorge ID:** 292240  
**Deadline:** 2/15/2026  
**Website:** <http://www.ntnu.no>  
**Scope:** Fulltime  
**Duration:** Temporary

The Department of Manufacturing and Civil Engineering, Norwegian University of Science and Technology (NTNU), Gjøvik, has a vacancy for a

## PhD Candidate in Sustainable and Cement-Free Marine Materials

### This is NTNU

NTNU is a broad-based university with a technical-scientific profile and a focus in professional education. The university is located in three cities with headquarters in Trondheim.

At NTNU, 9,000 employees and 43,000 students work to create knowledge for a better world.

You will find more information about working at NTNU and the application process [here](#).

Video: <https://youtu.be/Xt-yHCN5QS0>

### About the position

For a position as a PhD Candidate, the goal is a completed doctoral education up to an obtained doctoral degree.

This is a unique opportunity to join an international and interdisciplinary team in the forefront of sustainable blue economy innovation. You will be pioneering the development of next-generation, cement-free materials for marine infrastructure and cold-water coral reef restoration, directly addressing climate change impacts and circular economy goals in Norway and globally.

The position is for a period of 3 years.

Your immediate leader is the Research Group Leader.

Are you motivated to take a step towards a doctorate and open up exciting career opportunities? As a PhD Candidate with us, you will work to achieve your doctorate, and at the same time gain valuable experience that qualifies you for a further career in higher education and research, in and outside academia.

### About the project

The HAPMarine project aims to address coastal ecosystem collapse and reduce reliance on carbon-intensive, concrete-based marine infrastructure. It pioneers circular-economy solutions by upcycling Norway's abundant calcium-rich waste streams—aquaculture shells and demolition concrete—into bioreceptive, low-carbon, and high-strength materials. The project involves key partnerships, including experts from the University of Tokyo and NIVA (Norwegian Institute for Water Research), working together to achieve the project's objectives.

### Duties of the position

The successful candidate will be expected to complete their doctoral education and perform fundamental research, primarily within:

- Develop and optimize eco-friendly shell-based materials.
- Optimize the forming conditions to achieve the expected high mechanical performance and high bio-receptive characteristics.
- Conduct comprehensive assessment of the material properties.
- Perform numerical simulation to get insight of process.
- Develop hybrid shell-concrete (geopolymer) composites.
- Investigate carbonation routes to enhance CO<sub>2</sub> capture.
- Cooperate with other researchers to perform field testing, leaching analysis, and ecological assessment of the developed materials in lab and field environments.
- Collaborate with project and industry partners, and contribute to the interdisciplinary project goals.
- In understanding with the supervisors provide a detailed plan for PhD study that includes the mandatory courses, research activities, dissemination and milestones
- Report progress on a regular basis and in agreement with the supervisors
- Completion of coursework during the initial part of the employment period.

Be prepared for changes to your work duties after employment.

## Required selection criteria

- You must have a relevant Master's degree in [subject area] or equivalent. Your course of study must correspond to a five-year Norwegian course, where 120 credits have been obtained at master's level.
- You must have a strong academic background from your previous studies and have an average grade from your Master's degree study, or equivalent education, which is equal to B or better compared to [NTNU's grading scale](#). If you do not have letter grades from previous studies, you must have an equally good academic foundation. If you have a weaker grade background, you maybe considered if you can document that you are particularly suitable for a PhD education.
- You must have a professionally relevant background in **Materials Science, Chemical Engineering, Civil/Structural Engineering, Ocean Engineering, or similar**.
- You must meet the requirements for admission to the faculty's Doctoral Programme <https://www.ntnu.edu/iv/doctoral-programme>
- Excellent written and oral English language skills.

PLEASE NOTE: For detailed information about what the application must contain, see paragraph "About the application".

The appointment is to be made in accordance with [NTNUs guidelines for recruitment positions](#) and [Regulations for the degrees philosophiae doctor \(ph.d.\) and philosophiae doctor \(ph.d.\) in artistic development work at the Norwegian University of Science and Technology \(NTNU\)](#) for general criteria for the position.

## Preferred selection criteria

- Strong theory and experimental background in materials (such as cement or geopolymer) development and optimization
- Experience with publishing in high-impact factor SCI journals
- Extensive material characterization experience (XRD, SEM, FTIR, Mercury Intrusion Porosimetry (MIP))
- Experience with numerical modelling (e.g., COMSOL/ANSYS) for material or structural performance

Background in green/bio-concrete or waste valorization

## Personal characteristics

- Strong analytical and mathematical skills
- Enthusiastic, able to adapt and learn
- Highly motivated and scientifically curious
- Positive attitude and interested in teamwork and interdisciplinary collaboration
- Ability to take initiative and to work independently

Emphasis will be placed on personal qualities.

## We offer

- An exciting job with an important [mission](#) in society
- Developing tasks in a strong and international professional environment
- Career guidance and [follow-up during the PhD period](#)
- Open and inclusive working environment with committed colleagues
- Favorable terms as a member of the [Norwegian Public Service Pension Fund \(SPK\)](#)
- Free Norwegian language training at a basic level ([A2](#)) (one course)

As a PhD Candidate at NTNU, you will have access to [employee benefits](#).

## Diversity

Diversity is a strength, and at NTNU we aim to be an employer that reflects the diversity in society and that makes use of the potential of the population's collective skills. Our vision is [Knowledge for a better world](#) and [our values are creative, critical, constructive and respectful](#). We believe that an organization that is equal, diverse and gender-balanced is essential for us to achieve our goals.

We strive to attract employees with different skills, life experiences and perspectives to contribute to even better problem solving of our societal mission in research and education.

If you think this position is relevant and interesting, we encourage you to apply, regardless of gender, functional ability and cultural background, or whether you have been out of work for a period of time.

At NTNU we want to increase the proportion of women in scientific positions. We have a number of [measures](#) to promote equality.

## Salary and conditions

In the position of PhD Candidate, code 1017, your gross salary will normally be NOK 550 800,-per annum depending on qualifications and seniority. A 2% statutory contribution to the State Pension Fund is deducted from the salary.

The employment period is 3 years. If learning Norwegian (level A2 corresponding to at least 15 credits) is to be completed before the end of the employment period, the employment period can be extended by 10 weeks after completed and documented the Norwegian course.

For employment as a PhD Candidate, it is a prerequisite that you gain admission to the PhD programme in Engineering <https://www.ntnu.edu/iv/doctoral-programme> within three months of your employment contract start date, and that you participate in an organized doctoral programme through out the period of employment.

The position is conditional on external funding.

As an employee at NTNU, it is important that you keep yourself up to date with academic and organizational changes and adapt to them.

For the necessary professional and social interaction, it is a prerequisite that you are physically present and available to the institution on a daily basis.

The appointment is carried out in accordance with the principles of the [State Employees Act](#), and [Export control](#) (legislation that regulates the export of knowledge, technology and services). Candidates who, after assessment of the application and attachments, are considered to be in conflict with the criteria in the latter act, will not be able to be employed.

## About the application

The application and supporting documentation to be used as the basis for the assessment must be in **English**.

Publications and other scientific work must follow the application. Please note that your application will be considered based solely on information submitted by the application deadline. You must therefore ensure that your application clearly demonstrates how your skills and experience fulfil the criteria specified above.

Application must be in English and include:

- CV and certificates.
- Transcripts and diplomas for bachelor's and master's degrees. If you have not completed the master's degree, you must submit a confirmation that the master's thesis has been submitted.
- A copy of the master's thesis. If you recently have submitted your master's thesis, you can attach a draft of the thesis. Documentation of a completed master's degree must be presented before taking up the position.
- A 2-page project proposal on a topic related to green sustainable materials for ocean or building materials. The proposal should reflect your innovative thinking and professional competence in material development and optimization.
- Names and contact details of three referees.
- Publications or other relevant research work

If all, or parts, of your education has been taken abroad, we also ask you to attach documentation of the scope and quality of your entire education, both bachelor's and master's education, in addition to other higher education. Description of the documentation required can be found [here](#). If you already have a statement from NOKUT, please attach this as well.

We will take joint work into account. If it is difficult to identify your efforts in the joint work, you must enclose a short description of your participation.

In the evaluation of which candidate is best qualified, emphasis will be placed on education, experience and personal and interpersonal qualities. Motivation, ambitions, and potential will also count in the assessment of the candidates.

NTNU recognizes a wide range of academic contributions and has committed itself to [The San Francisco Declaration on Research Assessment](#) and [CoARA](#) (responsible assessment of research and recognition of a greater breadth of academic contributions in accordance with NTNU's social mission).

## General information

A public list of applicants with name, age, job title and municipality of residence is prepared after the application deadline. If you wish to be exempt from entry on the public applicant list, this must be justified. Assessment will be made in accordance with [current legislation](#). You will be notified if the exemption is not granted.

If you think this position looks interesting and in line with your qualifications, you are welcome to apply.

If you have any questions about the position,

please contact Associate Professor Guomin Ji, email [guomin.ji@ntnu.no](mailto:guomin.ji@ntnu.no).

If you have any questions about the recruitment process,

please contact Kristine Rognlid Hagaseth, e-mail: [kristine.r.hagaseth@ntnu.no](mailto:kristine.r.hagaseth@ntnu.no).

### Application deadline: 15.02.2026

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For practical information about [working at NTNU](#), please visit [this webpage](#).

**Gjøvik**, a charming town by the shores of Lake Mjøsa, is known for its beautiful nature and rich cultural offerings. The town boasts a vibrant community with excellent schools, modern healthcare services, and a variety of recreational activities. With its strategic location, just a short drive from Oslo, Gjøvik combines the best of urban life and natural experiences. Here, you'll find a dynamic business environment and exciting career opportunities in a setting that values work-life balance.

## NTNU - knowledge for a better world

NTNU - knowledge for a better world

The Norwegian University of Science and Technology (NTNU) creates knowledge for a better world and solutions that can change everyday life.

### **Department of Manufacturing and Civil Engineering**

Our profile of expertise can help to solve the world's most important societal challenge: the development of sustainable solutions in industry and society. This profile includes research on modern industrial processes, use of new and recycled materials, new technological solutions and the application of new forms of organization and business models. The [Department of Manufacturing and Civil Engineering](#) is one of eight departments in the [Faculty of Engineering](#).

### **Additional information**

#### **Place of service:**

Teknologivegen 22 2815 Gjøvik (Gjøvik Municipality)