Norwegian University of Life Sciences

Jobbnorge ID: 295218
Deadline: 3/15/2026
Website: http://www.nmbu.no
Scope: Fulltime
Duration: Fixed Term

Turn quantum physical effects into next-generation thermoelectric cooling materials

PhD position within theoretical material physics

About the position

A PhD position in theoretical material physics is available at the Department of Mechanical Engineering and Technology Management at the Faculty of Science and Technology.

The PhD position is for a period of 3 years.

Desired start date: 1 Aug. 2026

The PhD project is part of project “Novel materials for low-temperature thermoelectric cooling” (NOMATEC). The project is funded by Research Council of Norway.

The project will exploit and leverage **quantum physical effects and mechanisms** to develop new materials for environmentally friendly cooling technology.

The NOMATEC project will involve a close collaboration between the theory group at NMBU and experimental and computational partners at the SINTEF research institute.

The candidate will benefit from a strong international network within the thermoelectric community and theoretical material science.

The starting date for the position will ideally be Aug 1, 2026, but some flexibility is possible.

The position involves training through formal courses, active participation in research activities, collection and processing data, publication in international peer-reviewed journals, and finally writing a PhD dissertation to be defended at a doctoral disputation for the PhD degree.

For your professional and social interactions, it is important that you are physically present and available to the institution on a daily basis.

Main tasks

Research tasks can include

- Develop and implement theory-based models for **electronic scattering and transport** in materials
- Compute electronic and thermal transport properties based on **first-principles electronic structure calculations**
- Perform materials screening including machine learning to identify promising thermoelectric materials for cooling technology

The successful candidate is expected to enter a plan for the progress of the work towards a PhD degree during the first months of the appointment, with a view to completing a doctorate within the PhD contract period.

Competence

Required qualifications

- A Master's degree or equivalent in **physics or closely related disciplines.**
- Foreign degrees must correspond with the admission criteria for the PhD program. Candidates submitting their MSc thesis within 30. June 2026 may be considered.
- Experience using Python or Julia for scientific computing and model implementation.
- Proficiency in both written and oral English in correspondence with the admission criteria for the PhD program.
- Personal suitability and motivation for the position.

Grade requirements

- 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 following experiences and skills will be emphasized:

- Knowledge of materials science and condensed matter physics.
- Experience in using plane-wave density functional theory (DFT) (e.g., VASP, Quantum Espresso).

- Familiarity with microscopic electronic transport theory or related calculations is an advantage.

Applicants who have recently graduated with excellent results may be given preference.

Personal qualities:

- Strong analytical skills.
- Strong inner drive and ability to work independently and systematically.
- Good verbal and written communication skills.

The successful applicant must meet the conditions defined for admission to a PhD programme at NMBU. For more detailed information on the admission criteria please see the PhD Regulations and the relevant PhD programme description.

Remuneration and further information

We offer:

- Salary 550 800 NOK per annum. For exceptionally well-qualified candidates, a higher salary may be considered.
- Government pay scale position code 1017 PhD Research Fellow.

Formal regulations

The appointment is to be made in accordance with Regulations to the Universities and University Colleges Act and Regulations for the PhD degree at the Norwegian University of Life Science (NMBU)

The engagement is to be made in accordance with the regulations in force concerning State Employees and Civil Servants, and the acts relating to Norwegian Security and Control of the Export of Strategic Goods, Services and Technology. Candidates who by assessment of the application and attachment are seen to conflict with the criteria in the latter laws will be prohibited from recruitment.

Contact information

For further information, please contact Kristian Berland, Associate Professor, NMBU

E-mail: kristian.berland@nmbu.no; phone +47 4567 9296 (do not use e-mail for application, it is only for questions)

Dr. Ole Martin Løvvik, Chief. Scientist, SINTEF

E-mail: olemartin.lovvik@sintef.no

Information for PhD applicants and general Information to applicants

Application

To apply online for this vacancy, please click on the 'Apply for this job' button above. This will route you to the University's Web Recruitment System, where you will need to register an account (if you have not already) and log in before completing the online application form.

Application deadline: 15.03.2026

Please note that all documents should be in English or a Scandinavian language.

By applying the candidate confirms that information and documentation submitted via the job application can also be used by NMBU in a possible admission process to the PhD program.

Interviews with the best qualified candidates will be arranged. Applicants invited for an interview are expected to present original diplomas and certificates.

The application must include:

- Motivation letter (maximum 1 page)
- Curriculum Vitae (with a list of education, positions, teaching experience, administrative experience and other qualifying activities, including a complete list of publications)
- Certified copies of academic diplomas and certificates. (i.e. Diploma, transcript. Diploma supplement for both bachelor and master). Diplomas, transcripts and diploma supplements that are not in Norwegian or English must be uploaded in the original language. An English translation of these documents must also be attached.
- Applicants from universities outside Norway are kindly requested to send a diploma supplement, or a similar document, which describes in detail the study program and grading system.
- Documentation of proficiency in written and oral English in accordance withNMBU PhD regulation section 5-2 (3).
- Names and contact details for two references
- Additional relevant documentation of professional knowledge (for example, list of scientific works). If it is difficult to judge the applicant's contribution for publications with multiple authors, a short description of the applicant's contribution must be included.

About The Faculty of Science and Technology

The Faculty of Science and Technology (REALTEK) develops research-based knowledge and educates civil engineers and lecturers needed to reach the UN's sustainability goals. We have approximately 150 employees, 70 PhD students and soon 1500 students. The education and research at REALTEK cover a broad spectrum of disciplines.

This includes data science, mechanics and process engineering, robotics, construction and architecture, industrial economics, environmental physics and renewable energy, geomatics, water and environmental engineering, applied mathematics as well as secondary school teacher education in natural sciences and use of natural resources such as in agriculture, forestry and aquaculture. The workplace is in Ås, 30 km from Oslo.

What is it really like to work at the Faculty of Science and Technology (REALTEK) at NMBU?

- Guided tour of the Faculty of Science and Technology on Vimeo

The Norwegian University of Life Sciences (NMBU)

NMBU will contribute to securing the future of life through outstanding research, education, communication and innovation. We have the country's most satisfied university students, who receive research-based education in a unique student environment. Our graduates gain a high level of competence in interdisciplinary collaboration and are popular in the labor market.

NMBU has internationally leading research environments in several subjects. Together with our partners in society and business, we contribute to solving some of the biggest societal challenges of our time. We focus on innovation, communication and entrepreneurship because we believe these challenges are best solved with joint efforts. We believe that a good working environment is characterized by diversity.If necessary, workplace adaptations will be made for persons with disabilities. More information about NMBU is available at www.nmbu.no/en

Additional information

Contact persons:

- Kristian Berland, Associate Professor, NMBU
  Phone: +47 4567 9296 | E-mail: kristian.berland@nmbu.no
- Dr. Ole Martin Løvvik, Chief. Scientist, SINTEF
  Phone: | E-mail: olemartin.lovvik@sintef.no

Place of service:

Universitetstunet 3 1430 Ås (Ås Municipality)