



NTNU

Kunnskap for en bedre verden

Jobbnorge ID: 278180
Deadline: 4/30/2025
Website: <http://www.ntnu.no>
Scope: Fulltime
Duration: Temporary

We are looking for a

PhD Candidate in Computational Modelling of Thin-Film Magnetic 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

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.

Your immediate leader will be the Head of Department.

We have an open PhD position in computational modelling of thin-film magnetic materials at the Department of Manufacturing and Civil Engineering, NTNU.

Magnetic materials like antiferromagnet materials have fast THz spin dynamics, picosecond switching speeds, and net-zero magnetization, making them resistant to external magnetic interference and ideal for robust, fast, and energy-efficient operation in spintronics, quantum sensing, and neuromorphic computing applications. This PhD project will focus on thin-film antiferromagnet materials based computational modeling framework to explore new possibilities in spintronics and other applications.

Duties of the position

- Implement computational modelling of antiferromagnet based thin-film using software tools such as VASP, Quantum ESPRESSO, VAMPIRE, or MuMax3
- Perform simulations to design and optimize material properties for the desired magnetic characteristics
- Complete the doctoral education until obtaining a doctorate
- Carry out research of good quality within the framework described above
- Academic publications and popular science dissemination
- Participate in the research group
- Participate in international activities such as conferences and/or research stays at foreign educational institutions

Be prepared for changes to your work duties after employment.

Required selection criteria

The primary objective of the PhD position is to prepare candidates for research roles. To qualify, applicants must hold a master's degree or equivalent (120 credits) in materials science, physics, or a related field, with a strong academic background in computational materials science. A grade of B or higher on [NTNU's grading scale](#) is required. If letter grades are not available, an equivalent academic foundation must be demonstrated. Candidates may still be considered if they can document exceptional suitability for PhD studies. To be considered, applicants must have:

- A master's degree in materials science, physics or related field, specializing in computational materials science, with a grade of B or better in terms of [NTNU's grading scale](#).
- Strong experience in computational material design.

- Proficiency in simulation tools such as VASP, Quantum ESPRESSO, VAMPIRE, or MuMax3.
- Experience with magnetism modeling.

The appointment will be made in accordance with applicable regulations for State Employees and Civil Servants, as well as national guidelines for appointment as PhD, post doctor and research assistant.

As a result of the new Act relating to universities and university colleges with associated regulations of 01.08.2024, NTNU has, during a transitional period (for decisions on employment in recruitment positions before 1 August 2025), chosen to use the terms of employment in the old [regulations of 31 January 2006 no. 102 on terms of employment for positions such as postdoctoral fellow, research fellow, scientific assistant and specialist candidate](#)

Preferred selection criteria

- Strong publication record in computational materials science, particularly in magnetic materials.
- Experience in research project work.
- Proficiency in written and spoken English.
- Experience in simulation tools such as VASP, Quantum ESPRESSO, VAMPIRE, or MuMax3.

Personal characteristics

- Team-oriented.
- Inventive and creative.
- Proactive and self-motivated.

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
- [Working capital](#) that can be used to implement the project
- [Mentor programme](#) as a [new employee at NTNU](#)
- As a public employee, you have favourable benefits as a member of the [Norwegian Public Service Pension Fund \(SPK\)](#)

You will be employed as a PhD Candidate at NTNU and will have access to [employee benefits and discounts](#).

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 536 200,- per annum depending on qualifications and seniority. A 2% statutory contribution to the State Pension Fund is deducted from the salary.

The period of employment is 3 years.

For employment as a PhD Candidate, it is a prerequisite that you gain admission to the PhD programme in Engineering within three months of your employment contract start date, and that you participate in an organized doctoral programme throughout the period of employment.

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 academic 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 must be in English and will serve as the basis for assessment. Publications and other scientific work should accompany the application. Please note that only the information provided by the application deadline will be considered, so ensure that your application clearly demonstrates how your skills and experience meet the stated criteria.

The application must include:

- CV, certificates, diplomas, and transcripts for BSc and MSc studies (original official documents with English translations)
- Academic works (published or unpublished) you wish to be considered
- Names and contact details of three references
- Joint works will be considered. If your contribution to joint works is not clear, please include a brief description of your role.
- In evaluating candidates, emphasis will be placed on education, experience, and personal suitability.

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. If your institution uses "diploma supplement" (normal for most European institutions), you must attach this. A description of the documentation required can also be found [here](#). If you already have a statement from [Norwegian Directorate for Higher Education and Skills \(HK-dir\)](#), please attach this as well.

When assessing the best qualified, we emphasize necessary qualifications such as education, experience and personal suitability. Motivation for the position, ambitions and potential for research will also count when assessing 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 Professor Michael Cheffena, email: michael.cheffena@ntnu.no.

If you have any questions about the recruitment process, please contact Senior Adviser Per David Nielsen e-mail: per.nielsen@ntnu.no

Application deadline: 30.04.2025

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

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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

Contact person:

Michael Cheffena, Professor

Phone: | E-mail: michael.cheffena@ntnu.no

Place of service:

NTNU i Gjøvik 2815 Gjøvik (Gjøvik Municipality)