Jobbnorge ID: 290101
Deadline: 1/31/2026
Website: http://www.ntnu.no
Scope: Fulltime
Duration: Temporary

The Department of Physics has a vacancy for a PhD position in computational physics

PhD Position in Computational Condensed Matter Physics

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

A three-year PhD position in computational condensed matter physics is available in the research group of Research Prof. Alireza Qaiumzadeh at the Department of Physics, NTNU, Trondheim, Norway.

Your immediate leader will be the Head of Department.

About the project

The PhD project will explore quantum many-body phenomena in emerging two-dimensional magnets, unconventional magnetic systems, and topological materials. The candidate will develop and apply advanced computational techniques, including (TD)DFT and post-DFT analyses, alongside spin dynamics simulations. The primary goal is to investigate how collective excitations and topological effects influence quantum transport and dynamical properties in quantum materials.

This project provides the opportunity to tackle fundamental questions at the forefront of condensed matter physics, while connecting computational insights to potential experimental realizations with significant impact on emerging technologies and the design of energy-efficient spintronic devices.

Duties of the position

- Complete the PhD program within three years, including the successful completion of four mandatory courses.
- Carry out research of excellent quality within the framework described above
- Academic publications and popular science dissemination
- Participate in international activities such as conferences and research stays at foreign institutions

Required selection criteria

- You must hold a relevant Master’s degree in computational physics, materials science, or quantum chemistry, with a strong foundation in quantum physics and solid experience in ab initio DFT methods and/or spin dynamics simulations, complemented by strong programming skills.
- Your course of study must correspond to a five-year Norwegian course, where 120 credits have been obtained at master's level. Master students can apply, but the master's degree must be obtained and documented before starting the position. We will not consider candidates with a PhD degree for the PhD positions.
- 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 meet the requirements for admission to the faculty's Doctoral Programme.

- The position requires spoken and written fluency in the English language. Such evidence might be represented by the results of standard tests such as TOEFL and IELTS. The candidate`s language skills might also be assessed in a personal interview.

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

- Experience with post-DFT analysis and processing tools for electronic structure calculations
- Knowledge about machine learning application in condensed matter
- Knowledge about magnetism, superconductivity, and topological order

Personal characteristics

We are looking for a candidate who is persistent, creative, curious, and a strong problem-solver, with the ability to work independently as well as collaboratively in a research team. Particular emphasis will be placed on personal initiative, motivation, and the ability to tackle challenging scientific problems.

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)

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.

Salary and conditions

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

The employment period is 3 years.

For employment as a PhD Candidate, it is a prerequisite that you gain admission to the PhD programme in physics within three months of your employment contract start date, and that you participate in an organized doctoral programme through out 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 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 bein conflict with the criteria in the latter act, will not be able to be employed.

About the application

The attachments (including a description of your scientific work) must accompany the application as these documents form the basis of the application assessment. The documents must be in English.

Please note: the application will only be assessed on the basis of the information we have received by the application deadline. Therefore, make sure that your application clearly shows how your skills and experience meet the criteria described above. The application and all attachments must be sent electronically via Jobbnorge.no. If you are invited to an interview, you must bring certified copies of certificates and diplomas upon request.

The application must include:

- One page cover letter demonstrating how the candidate fulfills the required and preferred selection criteria, and explaining their motivation, research interests, and suitability for the project.
- One page summary of the master’s thesis project, including the results and methodology
- Transcripts and diplomas for Bachelor's and Master's degrees
- CV
- Names and contact information of two relevant referees

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.

Joint work will be considered. If it is difficult to identify your contribution to joint work, you must attach a brief description of your participation.

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 Research Prof. Alireza Qaiumzadeh, alireza.qaiumzadeh@ntnu.no. If you have any questions about the recruitment process, please contact Merete Thyholdt , e-mail: merete.thyholdt@ntnu.no.

Application deadline: 31.01.2026

For practical information about working at NTNU, please visit this webpage.

The city of Trondheim is a modern European city with a rich cultural scene. Trondheim is the tech capital of Norway with a population of 200,000. The Norwegian welfare state, including healthcare, schools, kindergartens and overall equality, is probably the best of its kind in the world. Professional subsidized day-care for children is easily available. Furthermore, Trondheim offers great opportunities for education (including international schools) and possibilities to enjoy nature, culture and family life and has low crime rates and clean air quality.

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 Physics

Our research and teaching are both experimental and theoretical, covering a wide range of disciplines. Our activities contribute to development of new medical technology and to finding solutions for the next generation’s communication technology, energy utilization and development of materials. The Department of Physics is one of eight departments in the Faculty of Natural Sciences.

Additional information

Place of service:

Høgskoleringen 1 7491 Trondheim (Trondheim Municipality)