Jobbnorge ID: 280820
Deadline: 6/20/2025
Website: http://www.ntnu.no
Scope: Fulltime
Duration: Temporary

The Department of Physics has a vacancy for a

Postdoc position in multiphase flow in porous media

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 can find more information about working at NTNU and the application process here.

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

About the position

We have a vacancy for an experimental postdoc position in multiphase flow in porous media at PoreLab, Department of Physics, NTNU. The position is financed by PoreLab under Research Theme 1: Thermodynamics of flow in porous media. The position is for a period of three years, with the possibility of a one-year extension to include teaching duties at the Department of Physics and, if needed, participation in courses to develop educational competence.

The position is organized at the Department of Physics in close collaboration with the Center of Excellence PoreLab.

The position reports to Professors Erika Eiser and Alex Hansen, PoreLab, Department of Physics, NTNU.

The postdoctoral fellowship position is a temporary position where the main goal is to qualify for work in senior academic positions.

Your immediate leader will be the Head of Department.

Information about the Department of Physics

The department incorporates a broad activity within physics with activities in solid state physics/material physics, soft/complex and biopolymer physics, medical physics, statistical physics, optics, atmospheric physics, university didactics and astro-particle physics. The department is also since 2017 the hosting institution of two national centers of excellence - PoreLab and QuSpin. The department is responsible for the best recruiting physics study programmes in Norway, both within applied and fundamental physics. It also provides a large set of courses within physics for other study programmes at NTNU.

For more information about the department and its activities, see: https://www.ntnu.edu/physics

Information about PoreLab

PoreLab is a Norwegian Center of Excellence under the auspices of the Research Council of Norway. It was created in 2017 and it is situated at the Norwegian University of Science and Technology (NTNU) in Trondheim, and the University of Oslo.

PoreLab is an interdisciplinary center with joint efforts in theory, computer simulations and experiments, both in fundamental and in more applied directions. The center works to advance the understanding of porous media by developing theories, principles, tools and methods to replace ad hoc approaches to porous media with a fundamental understanding of porous media with relevance in biology, chemistry, geology and geophysics based on fluid mechanics, non-equilibrium thermodynamics and statistical mechanics.

Further information about PoreLab can be found here: https://porelab.no/

Main duties and responsibilities

The position is closely related to the European Research Council project AGIPORE, see https://cordis.europa.eu/project/id/101141323 which aims to derive effective equations describing the simultaneous flow of immiscible fluids in porous media at length scales where the porous medium appears continuous. This is accomplished by constructing a version of statistical mechanics that takes the physical processes at the pore scale as a starting point. This leads to emergent variables at the continuum scale. The emergent variables are related through thermodynamics-like equations. It is the aim of the position to investigate the experimental consequences of this theory in close collaboration with the theorists involved. The postdoc will construct and use 3D printed model porous media. The analysis will entail extensive use of image analysis techniques such as Particle Image Velocimetry.

Required selection criteria

- You must have completed a Norwegian doctoral degree or corresponding foreign doctoral degree recognized as equivalent to a Norwegian PhD in physics or equivalent education.
- The position requires spoken and written fluency in the English language. Applicants from non-English-speaking countries outside Europe must document English skills by an approved test (Approved tests are TOEFL, IELTS and Cambridge Certificate in Advanced English (CAE) or Cambridge Certificate of Proficiency in English (CPE)).
- Excellent experimental skills are required.
- Knowledge in thermodynamics is required.

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

If you do not already have educational competence that meets the requirements for a position as associate professor in Norway, NTNU will arrange for you to acquire such competence during the employment period. In such cases, you will also be assigned relevant teaching as part of the career-promoting work.

The appointment is to be made in accordance with Regulations for the Universities and Colleges Act (university and colleges regulations) and Regulations for the degrees philosophiaedoctor (ph.d.) and philosophiaedoctor (ph.d.) in artistic development work at the Norwegian University of Science and Technology (NTNU) for general criteria for the position.

Preferred selection criteria

- A knowledge of fluid dynamics is recommended.

Personal characteristics

Working as a Postdoctoral fellow requires that you

- The successful applicant is a highly competent, motivated and ambitious candidate
- We are looking for a positive and balanced personality open to new proposals.
- We are looking for candidates who can think creatively and critically, and who can work independently and consistently on the research project.
- The applicant should be able to take initiative, work goal-oriented, tackle challenges, enjoy interdisciplinary research and take keen interest in learning and working in teams.

Emphasis will be placed on personal qualities.

We offer

- An exciting job with an important social mission
- Developing tasks in a strong and international professional environment
- Career guidance throughout the postdoctoral program and together with you we will prepare a career plan, which contains the skills and knowledge you will acquire
- Open and inclusive working environment with committed colleagues
- Favourable terms in the Norwegian Public Service Pension Fund
- 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.

Salary and conditions

As a Postdoctoral Fellow (code 1352) you are normally paid from gross NOK 594 500 per annum before tax. From the salary, 2% is deducted as a contribution to the Norwegian Public Service Pension Fund.

The position is for a period of three years, with the possibility of a one-year extension to include teaching duties at the Department of Physics and, if needed, participation in courses to develop educational competence.

As an employee at NTNU, it is important to keep yourself up to date with academic and organizational changes and to 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 attachments must accompany the application as these documents form the basis of the application assessment. The documents must be in English.

A letter of motivation is expected.

Please note: the application will only be assessed on the basis of the information we have by the application deadline. Therefore, make sure that your application clearly shows how your skills and experience meet the criteria described above.

The application must include:

- Transcripts and diplomas for Bachelor's-, Master's- and PhD degrees. If you have not yet completed your PhD, you must provide confirmation on your estimated date for the doctoral dissertation, or confirmation that your PhD thesis has been submitted. Documentation of a completed doctoral degree must be presented before taking up the position.
- CV
- A copy of the doctoral thesis. If you are close to submitting, you can attach a draft of the thesis.
- Academic works - published or unpublished - that you would like to be considered in the assessment (up to 5 items)
- Possible recommendation letters
- Letter of motivation.
- Name and contact information of three 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. Description of the documentation required can 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 works will be considered. If it is difficult to identify your contribution to joint works, you must attach a brief description of your participation.

If you have had leave or another break in your career, it is important that this is stated in your application so that the selection committee can take this into account and that the amount of your research may be reduced as a result.

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

NTNU recognizes a wide range of academic contributions and is committed to follow evaluation criteria for research quality according to The San Francisco Declaration on Research Assessment DORA and the obligations in 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 list of applicants, this must be justified. Assessment will be made in accordance with current legislation. You will be notified if the exemption is not granted.

Questions about the position can be directed to Professor Erika Eiser, PoreLab, Department of Physics, NTNU, Phone: +47 920 45 497 (erika.eiser@ntnu.no) or Professor Alex Hansen, PoreLab, Department of Physics, NTNU, Phone: +47 924 11 965 (alex.hansen@ntnu.no).

If you have any questions about the recruitment process, please contact HR Magnus Gautvik, email: magnus.gautvik@ntnu.no.

If you find this position interesting, and in accordance with your qualifications, please submit your application electronically via jobbnorge.no with your CV, diplomas and certificates attached. Applications submitted elsewhere will not be considered. Upon request, you must be able to obtain certified copies of your documentation.

Application deadline: 20.06.2025

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

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)