NTNU
Norwegian University of Science and Technology

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

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The Department of Physics has a vacancy for a position as

PhD position in experimental soft matter physics: Complex microfluidics

This is NTNU

At NTNU, creating knowledge for a better world is the vision that unites our 7 000 employees and 40 000 students.

We are looking for dedicated employees to join us.

Video about NTNU
https://www.youtube.com/watch?v=clgKd1SwGLI

About the position

We have a vacancy for a PhD Resarch Fellow postion at the Department of Physics. The appointment has a duration of 3 years with the possibility of until 1 year extension with teaching duties in agreement with the Department.

The PhD candidate will be based at, and perform the bulk of the experiments at the International Research Institute of Stavanger (IRIS), Norway, in close collaboration with NTNU and Institute for Energy Technology (IFE) at Kjeller, Norway.

The position reports to Head of Department Erik Wahlstrøm.

Job description

The position is financed by the Research Council of Norway, from the Petromaks2 programme, which is a large-scale programme for petroleum research.

The available position is for a PhD student to work at the Department of Energy at IRIS in close collaboration with The Laboratory for Soft and Complex Matter Studies at the Department of Physics at NTNU. The PhD candidate's activities will be joint with another PhD student which is based in the NTNU laboratory, and that is working within the same project, on a related topic. The work will be in soft matter science/microfluidics at the interface between experimental physics, chemical engineering, materials science and nano-micro-technology.

The project is a collaboration between the NTNU group, and research groups at The Institute for Energy Technology (IFE) at Kjeller, Norway, the International Research Institute of Stavanger (IRIS) Norway, the Pierre Gilles de Gennes Institute (IPGG) in Paris France, the University of Rennes1 France, the Catholic University in Rio de Janeiro (PUC-Rio) Brazil and the University of Sao Paulo (USP) Brazil.

IRIS is part of the NORCE research group. NORCE is one of Norway's largest independent research institutes with 700 employees, 1500 projects, annual revenues of approximately NOK 890 million and around 500 academic publications per year.

IRIS Energy focuses on research and development of new technologies related to safe and environmentally sound exploration and exploitation of oil and gas, sustainable energy, and storage of carbon dioxide. Additional research areas include smart energy systems, natural gas-based power generation, energy systems based on new fuels and geothermal energy.

For further information about IRIS and NORCE

The PhD project will develop and investigate experimental model systems made from oil, water drops/emulsions, with nanoparticles. The activities will focus on developing, characterizing, and understanding how nanofluids from nanoparticles influence oil drops, emulsion stability, and flow in micro and/or nanofluidic environments. The purpose of the project is to develop new understanding of fundamental processes specifically relevant for Improved Oil Recovery, Tracer Technology and for emulsion technologies generally (i.e. food, cosmetics, coatings, materials processing technologies etc.).

The work will involve designing and using targeted experimental model systems and sample environments. The experimental methods include the use of standard soft matter tools such as microfluidics, rheometry, small-angle X-ray-scattering (SAXS either at the NTNU group's home X-ray laboratory, or at international synchrotron facilities), or small-angle-neutron-scattering (SANS at IFE in Norway, or at international neutron facilities). The PhD candidate will be based at, and work mainly at, IRIS, including research missions to Trondheim (NTNU), Kjeller (IFE), Paris (IPGG), or Rio de Janeiro (PUC-Rio).

Qualification requirements

The PhD-position's main objective is to qualify for work in research positions. The qualification requirement is completion of a master's degree or second degree (equivalent to 120 credits) with a strong academic background in physics, nanotechnology, materials science, or another relevant field with sufficient physics contents or equivalent education with a grade of B or better in terms of NTNU's grading scale. Applicants with no letter grades from previous studies must have an equally good academic foundation. Applicants who are unable to meet these criteria may be considered only if they can document that they are particularly suitable candidates for education leading to a PhD degree.

Applicants must agree to participate in organized doctoral study programs within the period of the appointment and have to be qualified for the PhD-study.

The appointment is to be made in accordance with the regulations in force concerning State Employees and Civil Servants and national guidelines for appointment as PhD, postdoctor and research assistant

The position requires a strong interest in developing experimental skills. Experience with, or courses in, soft or condensed matter experimental physics, e.g. microfluidics, may be considered an advantage. It may also be considered an advantage if the applicant has data-analysis skills in e.g. Matlab.

Good written and oral English language skills is required.

Personal characteristics

The successful candidate should

- be creative, with a strong ability to work goal-oriented
- possess good skills to deliver oral and written presentations of research results
- He/she should also enjoy interdisciplinary research and take keen interest in learning and working in teams, which is of particular importance in this collaborative project.

In the evaluation of which candidate is best qualified, emphasis will be placed on education, experience and personal suitability, as well as motivation, in terms of the qualification requirements specified in the advertisement.

We offer

- exciting and stimulating tasks in a strong international academic environment
- an open and inclusive work environment with dedicated colleagues
- favourable terms in the Norwegian Public Service Pension Fund

Salary and conditions

PhD candidates are remunerated in code 1017, and are normally remunerated at gross from NOK 449 400 per annum before tax. From the salary, 2% is deducted as a contribution to the Norwegian Public Service Pension Fund.

Appointment takes place on the terms that apply to State employees at any time, and after the appointment you must assume that there may be changes in the area of work.

General information

Working at NTNU

A good work environment is characterized by diversity. We encourage qualified candidates to apply, regardless of their gender, functional capacity or cultural background. Under the Freedom of Information Act (Offentleglova), information about the applicant may be made public even if the applicant has requested not to have their name entered on the list of applicants.

Questions about the position can be directed to Chief Scientist Ingebret Fjelde (email: infj@norceresearch.no), who will be the main PhD supervisor at IRIS, or Professor Jon Otto Fossum (email: jon.fossum@ntnu.no) , who will be the main PhD supervisor at NTNU.

About the application:
Publications and other academic works that the applicant would like to be considered in the evaluation must accompany the application. Joint works will be considered. If it is difficult to identify the individual applicant's contribution to joint works, the applicant must include a brief description of his or her contribution.

Please submit your application electronically via jobbnorge.no with your CV, diplomas and certificates. Applicants invited for interview must include certified copies of transcripts and reference letters. Please refer to the application number NV-98/18 when applying.

Application deadline: October 15, 2018

Jobbnorge ID: 158502, Deadline: 15.10.2018, Customer reference: 2018/34732