

*The Norwegian University of Science and Technology (NTNU) in Trondheim represents academic eminence in technology and the natural sciences as well as in other academic disciplines ranging from the social sciences, the arts, medicine, teacher education, architecture to fine art. Cross-disciplinary cooperation results in innovative breakthroughs and creative solutions with far-reaching social and economic impact.*

**Faculty of Engineering Science and Technology**  
**Department of Structural Engineering**

### 3 PhD Positions in Nanomechanics

The positions are administrated by the Department of Structural Engineering under the Faculty of Engineering Science and Technology at the Norwegian University Science and Technology (NTNU). At present, the Department has 20 technical/administrative employees, 20 Professors, 8 Associate Professors, 10 Professor II, 5 researchers and 36 PhD/postdocs.

Three PhD positions within the field of nanomechanics are available at NTNU Nanomechanical Lab, Faculty of Engineering Science and Technology. NTNU Nanomechanical Lab, established at 2006, is the unique group working on nanomechanics in Norway. Over the past years, NTNU Nanomechanical Lab has developed high level interdisciplinary competence on experimental and computational nanomechanics of energy and functional materials.

All positions require a Master's degree or similar within nanotechnology, material science, physics, or mechanical/structural engineering. The applicants must be qualified for the doctoral program within any of these disciplines. The successful applicants are motivated and ambitious students with excellent grades. Proficiency to carry out goal-oriented work, good skills to deliver oral and written presentation of research results, and good cooperation abilities will be emphasized.

#### PhD Position 1 – Nanotechnology for anti-icing applications

The project is financed by Statoil ASA and cooperated with Center for Nano and Micro Mechanics at Tsinghua University, China. The principal objective of the project is to design, test and develop nano-micro hierarchically structured icephobic surfaces and coatings for anti-icing application by both experimental and multiscale modeling methodologies.

#### PhD Position 2 – Nanomechanical characterization and simulation of metal-coated polymer particles

This project is financed by The Research Council of Norway via an innovation project at Mosaic Solutions As ([www.mosaicsolutions.no](http://www.mosaicsolutions.no)), and aims to improve fundamental understanding and knowledge of nanostructured polymer particles for novel applications. The PhD candidate will focus on the multiphysics experiment of selected metal-coated polymer particles and numerical simulation of particle behaviour.

#### PhD Position 3 – Nanotechnology-enabled petroleum engineering

Nanotechnology has received great attention recently in the petroleum industry and there is a general perception that nanotechnology can bring revolutionary breakthrough to the oilfield. This project is financed by NTNU. The primary objective is to study nanoparticle transport in reservoir environment for enhanced oil recovery. The PhD candidate will work on the multiscale modeling of oil/water flow behaviour in the presence of nanoparticles to explore the nanoparticle transport in confined channel and understand the nanoparticle effect on the oil/water flow.

Further information can be obtained from Prof. Zhiliang Zhang, [zhiliang.zhang@ntnu.no](mailto:zhiliang.zhang@ntnu.no), 73592530, <http://folk.ntnu.no/zhiliang/>; and Assoc. Prof. Jianying He, [jianying.he@ntnu.no](mailto:jianying.he@ntnu.no), 73594686.

PhD Candidates are remunerated in code 1017, and are normally remunerated at wage level 50, gross NOK 416 300 before tax. The salary is adjusted according to the recent wage negotiations, and given subject to the final approval of the Storting (the Norwegian Parliament). There will be a 2 % deduction for superannuation.

The period of appointment is up to three years. Engagement as a PhD Candidate is done in accordance with "Regulation concerning terms and conditions of employment for the posts of post-doctoral research fellow, research fellow, research assistant and resident", given by the Ministry of Education and Research of 19.07.2010. The goal of each of the announced positions is to obtain a PhD degree. Applicants will engage in an organized PhD training program, and appointment requires approval of the applicants plan for a PhD study within three months from the date of commencement. See <http://www.ntnu.edu/ivt/phd> for more information.

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. A contract will be drawn up regarding the period of appointment and work related duties.

The engagement is to be made in accordance with the regulations in force concerning State Employees and Civil Servants. The positions adhere to the Norwegian Government's policy of balanced ethnicity, age and gender. According to the new Freedom of Information Act, information concerning the applicant may be made public even if the applicant has requested not to be included in the list of applicants.

Applications with CV, possible publications and other scientific works, certified copies of transcripts and reference letters should be

submitted electronically via this website.

Mark your application with **ref.no. IVT-27/13** and specify which position you are interested.

**Application deadline: 12.03.2013.**

JobbnorgeID: 91307, Deadline: 12.03.2013, Internal ID: IVT-27/13