



Norwegian University of  
Science and Technology

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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.*

**Faculty of Engineering Science and Technology  
Department of Geology and Mineral Resources Engineering**

## **PhD position in Mining Engineering - Marine minerals (IVT - 75/16)**

### **PhD position in Mining Engineering - Marine minerals**

At Department of Geology and Mineral Resources Engineering there is a vacant PhD position in mining engineering with focus on extraction of marine minerals from the deep sea. The position is for a three years period, financed by the Norwegian Research Council and the industry involved in the MarMine project.

The PhD project will focus on technological aspects related to the marine mineral extraction on the deep ocean floor. Given deposit descriptions in terms of size geometry, mechanical properties and mineralogy, the successful candidate is expected to review and assess possible extraction methods and to document the technical and the economic feasibility of a smaller selection of these methods. This will involve a holistic approach to the mining system, a focus on selection of mining equipment and technology involved. Based on these results, the candidate should define and describe a future pilot-plant setup including a monitoring scheme deemed necessary to reduce the associated uncertainties. Technology areas will be within mechanical engineering, mechatronics and automation, focused on topside and subsea technologies, riser systems and loading/handling solutions with heave compensation. Subsea monitoring and communication could also be focus areas.

The candidate will spend time both at NTNU and at University of Agder (UiA) and is expected to cooperate tightly with the consortium partners in the MarMine project.

The Department of Geology and Mineral Resources Engineering has a long history of research mining engineering and it has been heavily involved in NTNU's activities related to marine minerals. University of Agder (UiA) has a strong department within mechatronics. This department has focused on three main research areas: Drive systems, Dynamics and Robotics and Automation, and has close cooperation with offshore-related companies and clusters. They are today managing SFI Offshore Mechatronics.

In order to be considered for the PhD position, the applicant must have a Master's degree within mining engineering or mechatronics. The candidate must also qualify for admittance as a PhD student at NTNU. Innovative candidates with background from marine operations will be preferred. Good written and oral English is a prerequisite.

Conditions of salary etc.

PhD candidates are remunerated in code 1017, and are normally remunerated at wage level 50, currently gross NOK 430 200 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 to the Norwegian Public Service Pension Fund from the gross wage.

Engagement 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. See also the information about doctoral studies at NTNU at <http://www.ntnu.edu/ivt/phd>. The engagement is to be made in accordance with the regulations in force concerning State Employees and Civil Servants. The position adheres to the Norwegian Government's policy of balanced ethnicity, age and gender. Persons with immigrant background and women are encouraged to apply. 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.

For further information about the position, please contact Associate Professor Steinar Ellefmo, phone +47 73 59 48 56, email: [steinare@ntnu.no](mailto:steinare@ntnu.no)

Contact person at UIA: Head of Department, Rein-Terje Thorstensen, phone:+47 37 23 32 16, email: [rein.t.thorstensen@uia.no](mailto:rein.t.thorstensen@uia.no)

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