

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 Chemistry

We educate graduates for careers in environmental science, industry, the school system, research and public administration. Chemistry is also a basic discipline for medicine, biology and technology, and an important key in issues related to energy, climate, the environment, food, water and health. Research activities at the Department range from environmental chemistry to applied theoretical chemistry. [The Department of Chemistry](#) is one of eight departments in the [Faculty of Natural Sciences](#).

The Department of Chemistry has a vacancy for a

PhD Research Fellow in organic carbon characterization, DOC interaction with iron and other trace metals

About the position

We have a vacancy for a PhD Research Fellow at the Department of Chemistry, Marine Chemistry & Biogeochemistry Group, Faculty of Natural Sciences with the research project The Nansen Legacy. The appointment is for a period of 3 years.

The position reports to Head of Department Hallstein Hemmer.

Job description

Background: The thesis is part of our activities on the marine biogeochemistry of organic carbon, its characterization, and its interaction with iron and other trace elements.

Dissolved organic carbon (DOC) is a crucial part of the carbon cycle and the largest exchangeable reservoir of carbon in the marine environment. Improvement of the characterization of DOC pools is essential in order to have better knowledge of its role in the carbon cycle. Characterization of DOC will also improve our understanding of DOC's role in other important biogeochemical process, such as its effects on bioavailability, toxicity, and solubility of metals in marine environment. Micronutrient trace metals (i.e. iron, manganese, zinc) have a controlling role on the species composition and functionality of microbial organisms in marine systems. It is therefore crucial to understand how DOC and trace micronutrient interactions are affecting the marine microbial food web, biologically mediated carbon export into deep seas, and atmospheric CO₂ regulation.

Thesis topic: The PhD candidate will investigate and improve the development of DOC characterization techniques for both field and controlled experimental samples. The candidate will also participate in the ongoing research activities on DOC-trace metal interactions in cooperating with the other members of the research group. Interfacing the biogeochemistry of DOC and trace metals (especially iron) will enable new insights into how the microbial ecosystem in the Arctic and North Atlantic waters respond to growing climatic and anthropogenic stressors.

The position is affiliated with the research project The Nansen Legacy (<https://arvenetternansen.com>). The Nansen Legacy is the Norwegian Arctic research community's joint effort to establish a holistic understanding of a changing marine Arctic climate and ecosystem. The project will provide a scientific knowledge base needed for future sustainable resource management in the transitional Barents Sea and the adjacent Arctic Basin. It is a collaborative project between ten Norwegian research institutions, and will run from 2018-2023. Activities in the project will include international cooperation, and several cruises with the new, ice-going research vessel Kronprins Haakon.

The position is part of the Research Focus 2-1 (RF2-1) - Human Impacts, in Task 2-1, to improve our understanding of how human activities influence the northern Barents Sea ecosystem. Particularly, this task focuses on how increasing atmospheric CO₂, in combination with other drivers, influences the mobility and transformation of organic carbon (POC, DOC), essential trace elements (micronutrients) and toxic metals.

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 marine chemistry, biogeochemistry, marine biology 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.

The position requires a Master's degree in marine chemistry/biology/geochemistry or relevant fields. Experience with climate research concerning ocean chemistry, ocean biology is considered as an advantage. Experience with ocean acidification research is an advantage, but not a requirement. The PhD-position will be awarded on a competitive basis. Willingness to participate in cruises, both in open oceans and coastal seas, is a requirement.

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](#)

Other qualifications

The PhD candidate will ideally have experience in analytical methods for DOC and trace metal determination in the marine environment. The candidates will use ultra-high performance liquid chromatography coupled with quadrupole time-of-flight mass spectrometry (UHPLC-QTOF-MS, Synapt G2-S) and Fourier transform ion cyclotron resonance mass spectrometry (FT-ICR-MS) for DOC characterization and high-performance inductively coupled plasma mass spectrometry (HP ICP-MS) with SeaFast and flow injections analysis with chemiluminescence (FIA-CL) for trace metal measurements. Any experience or familiarity with these techniques will be an advantage but not a requirement. Previous experience in culturing techniques (in microbiological or microcosm scales) is also desirable.

Good written and oral English is essential.

Personal characteristics

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](#)
- [employee benefits](#)

Salary and conditions

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

The period of employment is 3 years. Appointment to a PhD position requires admission to the PhD programme in Chemistry <https://www.ntnu.edu/studies/phkj>

As a PhD candidate, you undertake to participate in an organized PhD programme during the employment period. A condition of appointment is that you are in fact qualified for admission to the PhD programme within three months.

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 Assoc.Professor Murat van Ardelan, e-mail murat.v.ardelan@ntnu.no

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 jobbno.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-113/18** when applying.

Application deadline: 09.12.2018

Jobbno ID: 160307, Deadline: 09.12.2018, Customer reference: 2018/41257