

Jobbnorge ID: 253740
Deadline: 1/28/2024
Website: <http://www.ntnu.no>
Scope: Fulltime
Duration: Fixed Term

The Department of Chemistry has a vacancy for a

Postdoctoral Fellow in experiments and CFD on evaporation

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 job

The postdoctoral fellowship position is a temporary position where the main goal is to qualify for work in senior academic positions. The period of employment of this position is 4 years. The position will be in the [Thermodynamics group at the Department of Chemistry at NTNU](#).

The PostDoc will be part of the ERC project Interlab, "Unravelling the fundamentals of transport across the vapor-liquid interface". Transport of energy and particles across vapor-liquid interfaces is central for growth of rain drops in the atmosphere, evaporation from lakes, distillation columns, development of micro/nano-fluidic devices and much more. The objective of InterLab is to develop theory and methods to reproduce evaporation rates from steady-state experiments with water and octane within an accuracy of 10%. To reach its objectives, InterLab must fill major knowledge gaps in the fundamental understanding of transport across vapor-liquid interfaces.

The PostDocoral fellow will be involved in designing two experimental facilities for this purpose, perform steady-state evaporation experiments, where some also include Particle Image Velocimetry (PIV) and compare the experimental results to calculations from computational fluid dynamics (CFD) that include the details of the interfacial transport.

If InterLab is successful, we believe that the project can lead to a paradigm shift in the prediction of evaporation and condensation rates, of relevance to a multitude of practical examples.

Your immediate leader is Prof. Øivind Wilhelmsen, who is also the Principal Investigator (PI) of the ERC grant.

Duties of the position

- Design two experimental facilities together with the PI for water and octane, similar to the rigs presented by [Kazemi et al.](#), equipped to measure properties with very high accuracy.
- Perform experiments to investigate evaporation, also including PIV.
- Develop a CFD model of the system that includes the detailed interfacial phenomena, where a theory for the interfacial details will be developed by other colleagues in the ERC project.
- Compare the experimental results to a CFD model that also included details about the evaporation process from the interfacial scale.
- Write academic papers and submit them to international scientific journals.
- Participate in international scientific conferences.

Required selection criteria

- You must have completed a Norwegian doctoral degree or corresponding foreign doctoral degree recognized as equivalent to a Norwegian PhD. If you can document that the PhD thesis has been submitted, your application can be assessed even if you have not yet defended your dissertation.
- Excellent oral and written English.

The appointment is to be made in accordance with [Regulations on terms of employment for positions such as postdoctoral fellow, Ph.D Candidate, research assistant and specialist candidate](#).

Preferred selection criteria

- Have experience from designing experimental rigs.
- Have experience from carrying out experiments.
- Have experience with PIV measurements.
- Have knowledge on and experience with performing CFD simulations.

Personal characteristics

We are looking for a positive and creative personality who can work independently and consistently on the research project. The candidate 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 and interpersonal qualities.

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

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 period of employment is 4 years, the position is within research.

The engagement is to be made in accordance with the regulations in force concerning [State Employees and Civil Servants](#), and the acts relating to Control of the Export of Strategic Goods, Services and Technology. Candidates who by assessment of the application and attachment are seen to conflict with the criteria in the latter law will be prohibited from recruitment to NTNU.

After the appointment you must assume that there may be changes in the area of work.

The position is subject to external funding from the ERC Project, InterLab.

It is a prerequisite you can be present at and accessible to the institution on a daily basis.

About the application

The application and supporting documentation to be used as the basis for the assessment must be in English.

Publications and other scientific work must be attached to the application. Please note that applications are only evaluated based on the information available on the application deadline. You should ensure that your application shows clearly how your skills and experience meet the criteria which are set out above.

If, for any reason, you have taken a career break or have had an atypical career and wish to disclose this in your application, the selection committee will take this into account, recognizing that the quantity of your research may be reduced as a result.

The application must include:

- CV and certificates
- transcripts and diplomas for bachelor's-, master's- and PhD degrees. If you have not yet completed your Ph.D, you must provide confirmation on your estimated date for the doctoral dissertation, or that your PhD thesis has been submitted
- A copy of the doctoral thesis. If you are close to submitting, or have recently submitted your thesis, you can attach a draft of the thesis. Documentation of a completed doctoral degree must be presented before taking up the position.
- Academic works - published or unpublished - that you would like to be considered in the assessment (up to 5 items)
- 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 NOKUT, 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.

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

NTNU is committed to following evaluation criteria for research quality according to [The San Francisco Declaration on Research Assessment - DORA](#).

General information

[Working at NTNU](#)

NTNU believes that inclusion and diversity is a strength. We want our faculty and staff to reflect Norway's culturally diverse population and we continuously seek to hire the best minds. This enables NTNU to increase productivity and innovation, improve decision making processes, raise employee satisfaction, compete academically with global top-ranking institutions and carry out our social responsibilities within education and research. NTNU emphasizes accessibility and encourages qualified candidates to apply regardless of gender identity, ability status, periods of unemployment or ethnic and cultural background.

The city of Trondheim is a modern European city with a rich cultural scene. Trondheim is the innovation 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.

As an employee at NTNU, you must at all times adhere to the changes that the development in the subject entails and the organizational changes that are adopted.

A public list of applicants with name, age, job title and municipality of residence is prepared after the application deadline. If you want to reserve yourself from entry on the public applicant list, this must be justified. Assessment will be made in accordance with [current legislation](#). You will be notified if the reservation is not accepted.

If you have any questions about the position, please contact Prof. Øivind Wilhelmsen, email Oivind.wilhelmsen@ntnu.no. If you have any questions about the recruitment process, please contact HR consultant Marie Kristiansen, e-mail: marie.kristiansen@ntnu.no

If you think this looks interesting and in line with your qualifications, please submit your application electronically via jobb norge.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: 28.01.2024

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 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](#).

Additional information

Place of service:

Trondheim, Gløshaugen 7491 Trondheim (Trondheim Municipality)