

**Jobbnorge ID:** 231002  
**Deadline:** 9/22/2022  
**Website:** <http://www.ntnu.no>  
**Scope:** Fulltime  
**Duration:** Temporary

The Department of Chemical Engineering has a vacancy for a

## Researcher within Digital Twins for autonomous operations

### 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 42,000 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 position

The Department of Chemical Engineering has a vacancy for a researcher for one year in the Process Systems Engineering group. The project is part of the Center for Research-based Innovation (<https://www.ntnu.edu/subpro>), and the researcher will be part of the process Systems Engineering group.

Starting date for the position is as soon as possible. The goal of this project is to develop digital twins for process systems that update themselves using process measurement data. We will study the systematic combination of dynamic state-estimation and data-driven modelling methods and use them in algorithms for automatic control.

Your immediate leader is Professor Johannes Jäschke.

### Duties of the position

- Develop methods for automatically update digital twin process models based on measurement data, machine learning and state- and parameter estimation.
- Test the methods on simulation case studies
- Verify developed methods on real process data from a subsea pump
- Publish results in peer reviewed outlets (Journal/conference)

### Required selection criteria

- Masters or PhD degree (or equivalent qualifications) in Chemical Engineering, Control Engineering or a related field
- Documented experience with two or more of the following: state or parameter estimation, adaptive control, machine learning, numerical optimization, process modelling
- Background in Process Systems Engineering
- Good Scientific programming skills
- Good written and oral English language skills

### Preferred selection criteria

- Experience with Hydrocarbon production processes: pumps, compressors, separators
- Experience with Design of Experiments
- A PhD is of advantage

### Personal characteristics

- Taking initiative and independent

- Goal oriented working approach
- Curious mindset

## 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

The gross salary for the position of Researcher (code 1108) is normally remunerated at gross from NOK 501 000 before tax per year, depending on qualifications and seniority. From the salary, 2% is deducted as a contribution to the Norwegian Public Service Pension Fund.

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.

The position is subject to external funding.

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

## About the application

The application and supporting documentation must be in English.

Please note that your application will be considered based solely on information submitted by the application deadline. You must therefore ensure that your application clearly demonstrates how your skills and experience fulfil the criteria specified 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, certificates and diplomas
- A description of the academic works that you regard as most relevant and that you particularly want to be taken into account in the assessment
- Details of the projects you have managed, with information about funding, duration and size
- Names and contact information for three relevant referees

Joint work will also be considered. If it is difficult to identify your specific input to a joint project, you must include evidence of your contributions.

In the assessment of the best qualified applicant, we will emphasize education, experience and personal suitability as well as your motivation for the position.

NTNU is committed to following evaluation criteria for research quality according to [The San Francisco Declaration on Research Assessment - DORA](#). This means that we pay special attention to the quality and professional breadth of these works. We also consider experience from research management and participation in research projects. We place great emphasis on your scientific work from the last five years.

## General information

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 Professor Johannes Jäschke, email [johannes.jaschke@ntnu.no](mailto:johannes.jaschke@ntnu.no). If you have any questions about the recruitment process, please contact HR-consultant Andrea Sommervold, e-mail: [andrea.s.sommervold@ntnu.no](mailto:andrea.s.sommervold@ntnu.no)

If you think this looks interesting and in line with your qualifications, please submit your application electronically via [jobbno.no](http://jobbno.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: 22.09.2022.**

## **NTNU - knowledge for a better world**

### **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 Chemical Engineering**

We take chemistry from laboratory scale to industrial production. This demands a wide range of knowledge, from molecular processes and nanotechnology to building and operation of large processing plants. We educate graduates for some of Norway's most important industries. The Department of Chemical Engineering is one of eight departments in the Faculty of Natural Sciences.

### **Additional information**

#### **Place of service:**

Trondheim 7491 Trondheim (Trondheim Municipality)