Jobbnorge ID: 225477
Deadline: 5/27/2022
Website: http://www.ntnu.no
Scope: Fulltime
Duration: Fixed Term

The Department of Energy and Process Engineering has a vacancy for a

Postdoctoral Fellow - Integrated Assessment of Circular Economy and Resource Efficiency Measures

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 postdoctoral fellowship position is a temporary position where the main goal is to qualify for work in senior academic positions.

The Industrial Ecology Program (IndEcol), Department of Energy and Process Engineering (EPT) at the Norwegian University of Science and Technology (NTNU) is seeking a Postdoctoral Fellow to advance the integrated modeling of circular economy and resource efficiency strategies in climate change mitigation models. The modeling is to combine bottom-up life cycle assessment, dynamic stock models, and integrated assessment models. It is part of the **CIRCOMOD** project, a Horizon Europe project lead by Utrecht University.

The circular economy has been recognized at the EU and global levels as an important mechanism to achieve sustainable development goals (SDGs). Land, water, energy, biomass, and minerals comprise resources which are to be used more efficiently. The International Resource Panel has found that there are important potential synergies between reducing material footprints (the indicator for SDG 12.1) and greenhouse gas (GHG) emissions. So-called integrated assessment models, which are central in informing climate change and biodiversity policy, capture material use and industrial production insufficiently. The industrial ecology community has traditionally focused on empirical research of resource use, material cycles, the life cycle impacts of products and technologies, and global supply chains and production networks. There is now a move towards forward-looking, mechanistic models which can provide scenarios of resource use and emissions as a function of technology choice and the implementation of specific mitigation strategies.

The RECC modeling framework focuses on the functional performance and dynamics of product stocks over time and combines life-cycle assessment, engineering models, and material flow analysis. NTNU is collaborating with climate research institutes in order to help climate change mitigation models correctly represent material demand and options for demand management in circular material flows. This is the focus of the CIRCOMOD project.

The Postdoctor would take a leading role in the further development and application of the current suite of models and assessment approaches to the decarbonization of identified with the aim to develop an approach that can be implemented in a range of economic and climate models. The work will be done under the guidance of Professor Edgar Hertwich and in collaboration with the entire consortium.

The Head of Department is Professor Terese Løvås. The position's supervisor is Professor Edgar Hertwich.

Trondheim, Gløshaugen, is the place of duty.

Duties of the position

- Data collection and development.
- Modelling assumptions, rationale, and documentation.
- Develop demand scenarios for the product group in question.
- Identify and model improvement strategies.
- Operate and help to improve the ODYM-RECC product and material stock-flow model.
- Write scientific papers.
- Contribute to the coordination and execution of studies for the International Resource Panel.

- Advising of PhD and Master's students.

Required selection criteria

- Relevant programming and software skills (Python, R, BIM, GIS, or similar)
- Research competence and productivity, demonstrated through research output
- Relevant subject competence (life cycle assessment, material flow analysis, integrated assessment or engineering-economic modeling)
- Fluent English language skills

A postdoctoral research fellowship is a qualification position in which the main objective is qualification for work in academic positions. You must have completed a Norwegian doctoral degree in industrial ecology, energy or climate economics or a related field, or a corresponding foreign doctoral degree recognized as equivalent to a Norwegian doctoral degree is required.

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 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, post doctor and research assistant

Preferred selection criteria

- It is considered a strength of the candidate also speaks a Scandinavian language, Ukrainian, or Russian
- Competence in industrial ecology methods (life cycle assessment, material flow analysis, input-output modeling), or subject knowledge regarding buildings, construction, or transport systems

Personal characteristics

- Strong analytical skills
- Self-motivated, enthusiastic and dedicated
- Ability to solve complex technical tasks independently
- Team player
- Excellent communication skills

In the evaluation of which candidate is best qualified, emphasis will be placed on education, experience and personal suitability.

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 574 700 per annum before tax, depending on qualifications and seniority. From the salary, 2% is deducted as a contribution to the Norwegian Public Service Pension Fund.

The period of employment is 3 years.

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.

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 follow 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, certificates and diplomas
- Transcripts and diplomas for bachelor's-, master's- and PhD degrees.
- Academic works - published or unpublished - that you would like to be considered in the assessment.
- Research plan
- Name and address 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

A good work environment is characterized by diversity. We encourage qualified candidates to apply, regardless of their gender, functional capacity or 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.

Under the freedom of Information Act (Offentleglova), your name, age, position and municipality may be made public even if you have requested not to have your name entered on the list of applicants.

If you have any questions about the position, please contact Professor Edgar Hertwich, email edgar.hertwich@ntnu.no. If you have any questions about the recruitment process, please contact HR consultant, Renate Fjellheim, e-mail: renate.fjellheim@ntnu.no.

Please submit your application electronically via jobbnorge.no with your CV, diplomas and certificates. Applications submitted elsewhere will not be considered. Diploma Supplement is required to attach for European Master Diplomas outside Norway. Chinese applicants are required to provide confirmation of Master Diploma from China Credentials Verification (CHSI).

If you are invited for interview you must include certified copies of transcripts and reference letters. Please refer to the application number IV-111/22 when applying.

Application deadline: 27.05.2022

Further information

This position is part of the **CIRCOMOD** project, a Horizon Europe project, lead by Utrecht University.

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 Energy and Process Engineering

We conduct research and teaching covering the entire energy chain, from resources to the end-user. We look at how energy is produced and used by humans and machines in a sustainable way with regard to health, climate change and the resource base. The Department of Energy and Process Engineering is one of eight departments in the Faculty of Engineering.

Additional information

Place of service:

Gløshaugen 7034 Trondheim (Trondheim Municipality)