

Professor

Ecole/Institution/Société:

Norwegian University of Science & Technology, Norway / Trondheim

Discipline:

Industrial Engineering, Mechanical Engineering

Type d'emploi::

Full-time

Date de publication:

2021-03-06

Personne à contacter:

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Professor / Associate Professor, Department of Mechanical and Industrial Engineering

About the position

The candidate for this position is expected to develop his / her research line within the Materials research group at the Dept. of Mechanical and Industrial Engineering at NTNU. Outstanding candidates in the following areas are encouraged to apply since these applications will be prioritized:

- Hydrogen
- Artificial intelligence and machine learning with focus on materials or materials engineering
- Mesoscale modeling of materials
- Sustainable materials and their applications

About the department

- The department of Mechanical and Industrial Engineering (MTP) has broad interdisciplinary expertise in the fields of logistics, machine design, product development, robotics and automation, materials science and engineering, production management and risk and reliability of complex systems.
- The research focuses on development, optimization and improvement of industrial processes, materials and production systems. The vision of NTNU is to create knowledge for a better world, and the main research areas are Health, Oceans, Energy and Sustainability to which MTP is also actively contributing.
- The research activities at high international level of knowledge and value creation contribute to solve important societal and industrial challenges. Experimental and modeling research, education and practice are vital parts of the department's strategy.

MTP has virtual laboratories for product development and advanced physical laboratories for manufacturing and research from nano-to-macro scales. MTP also owns and has access to IT infrastructure both at local, national and EU levels. The department offers studies such as 3-years Bachelor program, and 2- and 5-years Master programs, experience-based Master programs and PhD programs.

About the Materials group and the environment

This position is part of the Materials research group. The Materials group works on the most applied

aspects of materials science, ie engineering materials and surfaces with desirable properties for

specific applications. But our research also touches upon basic research topics. The group is a multidisciplinary mixture of engineers, physicists, and chemists, bringing a unique footprint to our research work. Our group is also an internationally oriented research group with researchers active in many national and international research projects, groups and programs, externally financed by the EU, the Research Council of Norway and the industry.

The most important research activities and expertise in the group are currently within the following areas:

- Electrochemistry, corrosion and hydrogen embrittlement. The main focus of this area is metals and alloys mostly used in the O&G industry and also for hydrogen transport
- Polymers and composites. The main focus in this area is pressure vessels, hydrogen transport, composite propellers for ships, long-term properties of polymers and composites and composite-metal joints, design, production and inspection methods
- Deformation and fracture of materials. The main focus is on the deformation behavior and fatigue, tailoring the microstructure and its characterization on different scales, modeling the plastic response in monotonic and cyclic loading, ultra-fine grained structural materials, in-situ mechanical testing using SEM, DIC, Infrared imaging and acoustic emission for structural integrity monitoring and fracture prediction
- Experimental tribology, nanotribology and tribocorrosion. The main focus is on metallic systems and green lubricant formulation. This area also includes research to understand degradation phenomena that starts on metal surfaces exposed to chemical environment under mechanical action
- Surface engineering. The focus is on organic coatings, thermal spray and thin vacuum coatings. This area also includes the development of powder feedstock material for thermal spray and additive manufacturing, mostly ceramic and ceramic-metallic types
- Modeling and simulations (both for materials, transport and tribology). Numerical modeling of transport and degradation on the nanoscale using molecular dynamics, both coarse grained and atomistic, as well as analytical descriptions and simulations of simple models. Finite-element based simulations and analytical models for degradation on macroscopic scales

Duties of the position

- International level research in the scientific area of the candidate's field, resulting in publications in internationally top ranked journals in his / her field
- initiate new research projects through active marketing and sales to the industry and the funding bodies (eg EU and The Norwegian Research Council)
- initiate, participate in, and manage externally and internally funded research projects
- contributing to, fronting and leading the development of the research area within the candidate's field of research
- teaching at bachelor, master and PhD levels in all the study programs taught in the department, with a specific focus on the study program in PUMA (Product Development and Materials)
- supervision of bachelor, master and PhD students and provide mentorship to Postdocs and researchers
- exam preparation and evaluation
- administrative tasks as required

Required selection criteria

The position of Professor requires that you meet the criteria in the Regulations concerning appointment and promotion to teaching and research posts section 1-2.

The position of Associate Professor requires that you meet the criteria in the Regulations concerning appointment and promotion to teaching and research posts section 1-4.

To qualify for this Professor / Associate Professor position, we require the following:

- your academic research production must be within one of the subject areas listed above (ie hydrogen, artificial intelligence and machine learning with focus on materials or materials engineering, mesoscale modeling of materials, or sustainable materials)
- you must have publications in highly ranked journals in your field. Scientific articles published in the last five years (excluding career breaks) with relevance for the research areas mentioned above will weigh strongest in the evaluation and ranking. The scientific publication record will be evaluated in light of the length of the applicant's academic career taking into account the research field
- you must have at least 5 years of documented research experience after your PhD
- you must have documented experience in preparing and succeeding in research funding applications (national or international)
- you must have documented teaching experience at bachelor and / or master level
- you should have documented experience in supervising master and PhD students
- you need excellent oral and written English language skills

You must document relevant basic competence for teaching and supervision at university / higher education-level, ref. Regulations. If this cannot be documented, you are required to complete an approved course in university teaching within two years of commencement. NTNU offers qualifying courses.

It is a prerequisite that within three years of appointment, new employees who do not speak a Scandinavian language can demonstrate skills in Norwegian or another Scandinavian language equivalent to level three in the course for Norwegian for speakers of other languages at the Department of Language and Literature at NTNU.

Please see the Regulations concerning appointment and promotion to teaching and research posts for general criteria for the position.

Preferred selection criteria

- the preferred candidate should have performed at least 2 international stays outside the country of his / her PhD studies for a minimum period of 6 months each.
- other type of working experience outside the PhD.
- you should have collaboration experience with industry and / or public sector.
- you should have international collaboration experience and an internationally oriented mindset.
- you should have experience in participation in the development of educational quality in a working environment.
- project management experience.

Personal characteristics

The Materials research group is an open, diversified and inclusive group. We want you to contribute to the well-being, commitment and community within the group and the department. We are looking for a new teammate who will spend a long time with us therefore, it is very important that you are:

- reliable and respectful
- positive, curious and willing to learn
- problem solver
- willing to collaborate both within the group, with other groups in the department and across

NTNU

- able to work both independently and in a team
- willing to share results with colleagues locally and globally

We offer

- a work environment for professional development as researcher and educator
- a world class infrastructure for research
- exciting and stimulating tasks in a strong international academic environment
- an open and inclusive work environment with dedicated colleagues
- favored terms in the Norwegian Public Service Pension Fund
- employee benefits

Salary and conditions

In a position as Professor (code 1013) you will normally be remunerated from gross NOK 700 000 to NOK 1 000 000 per year, depending on qualifications and seniority. In a position as Associate Professor (code 1011) you will normally be remunerated from gross NOK 600 000 to NOK 900 000 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. After the appointment, you must assume that there may be changes in the area of work.

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

Application Process

You can find more information about working at NTNU and the application process [here](#).

About the application

- The application and supporting documentation must be in English.
- 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
- academic works - published or unpublished - that you would like to be considered in the assessment (up to 10 works)
- a description of the academic / artistic works that you regard as most relevant and that you particularly want to be considered in the assessment
- name and contact details of three referees
- details of teaching qualifications based on "Documentation of applicant's teaching qualifications in connection with appointment to an academic position at NTNU"
- details of the projects you have managed, with information about funding, duration and size
- a description (maximum 1 page) on how the candidate envisions his / her research in a

Norwegian context and what would be the main sources of funding

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 assessment of the best-qualified applicant, we will emphasize education, experience and personal suitability as well as your motivation for the position. You will be expected to deliver high-quality teaching at undergraduate and postgraduate levels and undertake supervision of Master and Doctoral candidates. Evaluation of these skills will be based on documented experience and relevant teaching qualifications. Applicants with teaching experience at university level are preferred. Quality and breadth of the teaching qualifications will be evaluated.

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.

Your application will be considered by an expert committee and the most suitable applicants will be invited to interview and to deliver a lecture.

General information

A good working environment is characterized by diversity. We encourage qualified candidates to apply, regardless of their gender, capacity or cultural background. NTNU wishes to increase the proportion of women in its academic positions, and women are therefore encouraged to apply.

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 Prof. Nuria Espallargas (Materials group leader), email nuria.espallargas@ntnu.no. If you have any questions about the recruitment process, please contact Linn-Cecilie Felle, e-mail: linn.c.felle@ntnu.no

Please submit your application and supporting documentation via jobb norge.no. If you are invited for interview, you must bring certified copies of certificates and diplomas. Mark the application with reference number: IV-70/21.

The Norwegian University of Science and Technology (NTNU) creates knowledge for a better world and solutions that can change everyday life.

Department of Mechanical and Industrial Engineering

We educate graduates who can create new products, operate and maintain products, and manage

projects. The Department has a variety of bachelor's and master's degree programs. We conduct wide-ranging research in fields such as technology, energy, product quality and development, and productivity. The Department of Mechanical and Industrial Engineering is one of eight departments in the Faculty of Engineering.

Employer NTNU - Norwegian University of Science and Technology

Municipality Trondheim

Scope Fulltime

Duration Permanent

Personne à contacter:

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