Jobbnorge ID: 233226
Deadline: 2/1/2023
Website: http://www.ntnu.no
Scope: Fulltime
Duration: Fixed Term

The Department of Electronic Systems has a vacancy for a tenure-track position as part of the Onsager Fellowship Programme

Associate Professor in experimental quantum communications

This is NTNU

NTNU is a broad-based university with a technical-scientific profile and a focus on 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.

Video: https://www.youtube.com/watch?v=WWHqR5i1FHE&feature=youtu.be

The Onsager fellowship programme

The Onsager Fellowship programme at NTNU is designed to attract talented early-career scholars with a track-record of high quality published research, ready to work independently and with the potential to become a research leader.

The tenure-track associate professor's duties will primarily include research, but also include supervision, teaching, and other duties necessary to qualify for a permanent professor position within 6-7 years.

In the NTNU tenure-track programme, associate professors are subject to two types of review during the tenure-track period:

- a mid-career assessment after 3-4 years
- a final tenure assessment at the end of the tenure track period.

If the 'final tenure assessment" is positive, s/he will be employed as a full-time professor.

The overall purpose of the review system is to ensure and maintain the high academic standards of the university's senior faculty staff. To help meet these standards, the associate professor is offered an international mentor and favourable terms.

NTNU is now announcing 16 tenure-track positions.

About the position

The focus of the tenure track position is to establish a research program addressing secure quantum communication. We are looking for someone motivated in establishing how advances miniaturized device technology can be used to realize practical communication strategies. The long-term technical goal is to develop technologies and devices to enable implementation of short and long-distance quantum communication, thereby supporting large scale deployments. The successful candidate will address photonic integrated circuits to manipulate and transport quantum states, including their use in the quantum communication stack through the development of relevant communication methods and strategies.

You will join a dynamic environment currently developing novel nanoscale materials with tuneable properties, photonic sensors, and optical characterization techniques for information technology applications, as well as classical and machine learning based signal processing algorithms for use within communications. Today's activities include III-V nanowire- and silicon based photonic systems, realization of frequency combs, as well as secure communications in wireless environment and information theoretic limits. We have state of the art labs within Photonics engineering and access to NTNU Nanolab for device fabrication.

Your immediate leader is Head of Department.

Duties of the position

The Onsager Fellow will:

- Establish a translational quantum engineering research program with focus on quantum communication and sensing.
- Build on and expand current activities and facilities in photonic and communication research at Department of Electronic Systems and at NTNU.
- Build an active international network around the activity in quantum communication systems.

- Actively acquire funding from national and international funding agencies.
- Contribute to master and PhD education activities within Department of Electronic Systems within his/her field.

Required qualifications

The Onsager Fellows programme is designed to attract talented early-career scholars, with documented excellent supervised work, with ambitious research plans to work independently and with the potential for scientific breakthrough.

The general qualifications required to be appointed as an associate professor are outlined in the regulations concerning appointment and promotion to teaching and research posts. Additionally, the requirements for this position are as follows:

- Ph.D. within physics/photonics, optical communication, quantum communication theory, or a relevant related field.
- Experimental experience in photonics.

The PhD should have been awarded no more than 5 years to the application deadline, excluding law entitled leave. You must document relevant basic competence in teaching and supervision at a university/higher education-level, as referenced in the Norwegian national Regulations. If this cannot be documented, you will be required to complete an approved course in university pedagogy within two years of commencement. NTNU offers qualifying courses.

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

Preferred qualifications

- Experience in quantum communication theory, methods, and related implementations
- Solid theoretical background in physics/photonics
- Experience in:

- design and fabrication of photonic integrated circuits,
- quantum photonics,
- quantum devices,
- quantum communication systems,

- Experience with initiating and leading research projects and writing grant proposals.
- Active international network
- Teaching and supervision experience from higher education

Personal qualities

- Proactive and with great ability to implement new solutions
- Goal- and result oriented
- Strategic in planning and executing research
- Team builder and stimulates collaboration with a positive attitude
- Ability to communicate in a clear, precise, and structured manner

In the qualification assessment we emphasize education, experience, personal suitability as well as your motivation for the position.

We offer

- exciting and challenging 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 Associate Professor (code 1011) you are normally paid from gross NOK 615 000 - NOK 775 000 per annum before tax, depending on qualifications and seniority. As required by law, 2% of this salary will be deducted and paid into 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 you can be present at and accessible to the institution on a daily basis.

Application Process

You can find more information about working at NTNU and the application process here.

Video: https://youtu.be/bwfNPj8HxHw

About the application

Your application and supporting documentation must be in English.

Publications and other scientific work must follow the application. 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. Leave to which the candidate is entitled by law or collective agreement shall be excluded when calculating the time since finishing the PhD.

Your application must include:

- CV, diplomas, and certificates
- A teaching portfolio, in which your teaching competence is compiled and presented systematically, (See guidelines for applicants: Documentation of teaching qualifications in applications and appointments to academic positions at NTNU)
- Academic works - published or unpublished - that you wish to be considered during assessment of your application (up to 10 items)
- A description of the scientific/artistic works you consider most relevant, which you particularly wish to be factored into the assessment
- A list of your previous works, with details on where they have been published
- A research plan (maximum 10 pages) describing the research you suggest establishing at NTNU
- Details of projects for which you have served as project manager, including information on financing, duration, and scope
- 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 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. Our assessment of the pedagogical skills will be based on documented pedagogical material, forms of presentation in your academic works, teaching experience, PhD, and Masters supervision, and any other relevant pedagogical background. Both quality and scope will be taken into consideration.

NTNU is obliged by the evaluation criteria for research quality in accordance with The San Fransisco Declaration on Research Assessment - DORA. This means that we will pay particular attention to the quality and academic range demonstrated by your scientific work to date. We will also pay attention to research leadership and participation in research projects. Your scientific work from the last five years will be given the most weight.

Your application will be considered by an expert committee. Candidates of interest will be invited to an interview, and to deliver a trial teaching session.

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.

NTNU is working actively to increase the number of women employed in scientific positions and has a number of resources to promote equality.

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 continually maintain and improve your professional development and be flexible regarding any organizational changes.

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.

For the sake of transparency, candidates will be given the expert evaluation of their own and other candidates. As an applicant you are considered part of the process and is stipulated to rules of confidentiality.

If you have any questions regarding the position, please contact Head of department Professor Thomas Tybell, tel. +47 918 97 414, e-mail thomas.tybell@ntnu.no.

If you have questions regarding the recruitment process, please contact Head of office Lars Arne Hassel, e-mail lars.arne.hassel@ntnu.no.

If you think this looks interesting and in line with your qualifications, please submit your application electronically via jobbnorge.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: 01.02.2023.

NTNU - knowledge for a better world

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

Department of Electronic Systems

The digitalization of Norway is impossible without electronic systems. We are Norway’s leading academic environment in this field, and contribute with our expertise in areas ranging from nanoelectronics, phototonics, signal processing, radio technology and acoustics to satellite technology and autonomous systems. Knowledge of electronic systems is also vital for addressing important challenges in transport, energy, the environment, and health. The Department of Electronic Systems is one of seven departments in the Faculty of Information Technology and Electrical Engineering .

Additional information

Place of service:

Gløshaugen 7491 Trondheim (Trondheim Municipality)