

**Jobbnorge ID:** 219391

**Deadline:** 7/31/2022

**Website:** <https://www.usn.no/>

**Scope:** Fulltime

**Duration:** Temporary

The Faculty of Technology, Natural Sciences and Maritime Sciences have a vacancy for a post as

## **Postdoctoral researcher - quantum states of mechanical motion for sensing**

### **About the position**

As part of the QuantERA consortium "Quantum sensing with nonclassical mechanical oscillators" (ETH, Aalto, ICFO, USN, U. of Malta), the Faculty of Technology, Natural Sciences and Maritime Sciences will announce a vacancy for a position as Postdoctoral Researcher within the field of mechanical systems in the quantum regime/quantum sensing starting in summer/fall of 2022.

The position is at the Department of Science and Industry Systems (IRI). The place of employment is Campus Kongsberg.

We are seeking a highly motivated postdoctoral researcher to work on the theory of quantum properties of mechanical systems and quantum sensing. Any previous background in quantum optomechanics, circuit QED, quantum optics or quantum sensing is considered as an advantage, but strong candidates from other fields of physics are encouraged to apply as well.

### **Responsibilities and duties**

The current position focuses on the study of quantum states of mechanical systems and their potential usefulness in quantum sensing protocols. The underlying idea is that, by preparing mechanical systems in states exhibiting suitable quantum properties (such as non-Gaussianity and entanglement), it is possible to enhance their performance as detectors in the quantum regime. The successful candidate will establish new theoretical protocols for the preparation of quantum states of mechanical motion. A fundamental aspect of this research will be the study of open quantum systems, quantum control and measurement. The investigation will be performed through a combination of different analytical techniques (I/O formalism, master equation, Green's functions...).

Given the nature of the MQSens consortium, comprising two theoretical and three experimental groups, demonstrated ability to collaborate with experimentalists is considered as an advantage.

The appointment is for a period of two years.

For further information concerning the position please contact:

F. Massel ([francesco.massel@usn.no](mailto:francesco.massel@usn.no)),

K. Børkje ([kjetil.borkje@usn.no](mailto:kjetil.borkje@usn.no)).

### **Qualifications**

Applicants to the postdoctoral position must have (or be nearing completion of) a PhD degree or equivalent higher education qualifications in applied physics or closely related subjects. The applicant must have earned the degree within the commencement date.

Co-operation between staff members is an integrated part of the working atmosphere at the University of South-Eastern Norway. The candidate must be motivated and demonstrate a proven ability to work effectively within a team and in a collegiate manner to formulate and realise common objectives.

Personal suitability for the position will be emphasized.

### **We offer**

- A professionally stimulating working environment.
- Good opportunities to develop your career and your academic skills
- A good social environment
- Attractive welfare benefits in the State Pension Plan
- Opportunity for physical activities within working hours

### **Salary**

Postdoctoral Research Fellow (code 1352): NOK 563 900 - 702 100 a year. A statutory contribution will be made from the employee's salary to the state pension plan.

## Additional information

The Academic Appointments Board is responsible for appointments to academic positions at University of South-Eastern Norway. An expert assessment of applicants will be carried out. Short-listed candidates will be called in for interviews and must be prepared to present and discuss their projects.

The successful applicant must comply with the laws, regulations and agreements that apply to the position. As an equal opportunities employer we welcome applicants from all sections of the community regardless of gender, ethnicity, disability, sexual orientation and transgender status. All appointments are made on merit.

There are few women/men employed in research positions at the Department, and consequently women/men are especially encouraged to apply.

According to the Norwegian Freedom of Information act § 25 2 paragraph, information about the applicant may be included in the public applicant list, even though the applicant has requested non-disclosure. The applicant will be informed if his/her request has been declined.

## Contact information

**For more information about the position, please contact:**

Professor Francesco Pietro Massel , Francesco.Massel@usn.no / 35 02 64 98

**For questions regarding the recruitment process, please contact:**

Senior Consultant Amna Zafar, Amna.Zafar@usn.no

## How to apply

University of South-Eastern Norway uses online applications. We therefore ask applicants to register their application and CV online by clicking on the "Send application" link to the right. The application must include the following documents:

1. Curriculum vitae, including a list of publications
2. PhD thesis
3. Contact information for three references

Please note that all documents must be translated into English or a Scandinavian language by an authorized translator.

**Each applicant is responsible for ensuring that the requested documentation has been uploaded with the application within the application deadline!**

The University has been awarded a Charter & Code certificate by the European Commission, and is entitled to use the HR Excellence in Research (HRS4R) logo. The University is also a member of the EURAXESS network, which contributes to good working conditions for mobile researchers.

## About USN

The University of South-Eastern Norway, USN, is one of Norway's largest higher education institutions, with around 18,000 students and 1,900 employees across eight different campuses.

We offer studies, research and knowledge dissemination, all targeting various professions and working life and with a high level of quality internationally. Our goal as a University is to create value both for the individual student and for business and commerce, the public sector and society in general. We achieve this by utilising the best tools we have: education and research.

USN is a University with a strong social commitment where studies and working life are integrated. At USN, we focus on practice-relevant, profession-oriented and applied research and education.

The students shall benefit from innovative educational methods and challenging studies closely associated with society's requirements and needs. They will learn how to adapt to a society and working life that is constantly changing. The University shall meet major social challenges with knowledge and expertise, helping to promote practical solutions, structural changes and new ways of thinking. USN's academic activities shall be embodied by a clear dedication to the UN's sustainable development goals. The University aims to realise this main profile in close cooperation with society and working life.

For more information on USN, please go to [www.usn.no](http://www.usn.no)

## Additional information

**Place of service:**

The place of employment is Campus Kongsberg. 3603 Kongsberg (Kongsberg Municipality)