

Quantum Delta NL

in collaboration with

AMOLF and Delft University of Technology

Director of Mechanical Sensor Testbed (f*/m)

Quantum Delta NL has recently established a mechanical sensor testbed funded by the Dutch Ministry of Economic Affairs and Climate Policy, which will build a facility for testing mechanical quantum sensors and bring together stakeholders from academia, industry and government. The testbed will provide access to technology stakeholders developing technology from many diverse domains such as: navigation, security, process control, and (personalized) medicine. The idea is to establish a service oriented facility, enabling benchmarking of new sensors, as well as proof-of-concept sensor development within the testbed. Some of the services the testbed will provide include

- Identifying new applications for quantum-limited and quantum-enabled mechanical sensors
- Benchmarking of various mechanical sensing technologies against state of art
- Realizing various sensing modalities and conditions (EM fields, vibrations, etc.)
- Sensing capabilities will include: pressure, temperature, charge, mass, acceleration, force (microscopy), electric and magnetic fields.

Quantum physics has been blooming in recent years as a hotbed of scientific and technological innovation with a broad research landscape explored by a worldwide community. Nano- and micromechanical resonators have emerged as powerful building blocks for quantum technologies, in particular in the area of sensing, with strong advances in the development of ultra-coherent resonators, quantum-limited readout, and control over resonator quantum states. The mechanical sensor testbed aims to leverage these advances and connect them to real-world applications, advancing the unlocking of the tremendous potential for innovation that lies in the quantum world.

We are looking for a leading scientist or engineer with expertise in mechanical sensing technology, quantum measurement, and related areas to become the director of the testbed. We are particularly interested in candidates with a strong entrepreneurial spirit, who want to shape and establish a new facility and perform research at the cutting edge of science. The candidate should further create synergies with existing academic research groups.

The ideal candidate should have a successful scientific or industrial track record and be able to formulate a business plan, while also addressing current scientific and technological challenges.

Requirements:

Applicants should have the following qualifications:

- PhD degree (or equivalent) and expertise in a field relevant for the position
- Ability to lead projects, as well as supervise, train, and support junior researchers
- Ability to define and pursue an own research direction, evidenced by the track record and recommendations
- Ability to communicate with stakeholders
- Ability to collaborate in research projects

We offer:

- Fully funded testbed for up to 7 years, incl. personnel, equipment and rent
- Close collaboration with the optomechanics groups of Prof. Verhagen (AMOLF) and Prof. Groeblacher (TU Delft)
- Independence and support for own research line
- Competitive salary: Depending on education and experience up to maximum 83k€ / year (equivalent to VSNU salary scale 12)
- Professional and personal development programs

Additional information:

The intention is that the director will be employed by an independent testbed foundation. The organization and embedding of the testbed is currently being set up by Quantum Delta NL, AMOLF and Delft University of Technology. Quantum Delta NL, AMOLF and Delft University of Technology are dedicated to promoting equality, creating a safe environment for everyone, and we believe deeply in diversity of race, gender, sexual orientation, religion, ethnicity, national origin, age, socioeconomic background and strongly encourage applications from minorities.

In order to apply, please submit, in addition to your CV and a list of your research outputs, a research / professional statement (max. 3 pages) in which you explain what you consider your most important achievements as well as your vision of the future research.

Please email your application documents to: verhagen@amolf.nl and s.groeblacher@tudelft.nl. There will be an opportunity for first stage interviews to be held online, if needed or preferred. For further information about this vacancy please also contact either Prof. Ewold Verhagen or Prof. Simon Groeblacher.

Applications submitted by November 15 2022 will receive full consideration.