Postdoctoral position in Experimental Quantum Plasmonics and Nanophotonics

Aalto University is a community of bold thinkers where science and art meet technology and business. We are committed to identifying and solving grand societal challenges and building an innovative future. Aalto University has six schools with nearly 11,000 students and nearly 400 professors. Our campuses are located in Espoo and Helsinki, Finland.

The Quantum Dynamics (QD) Group at the Department of Applied Physics is looking for a postdoctoral researcher for a project on topological lasing and Bose-Einstein condensation in plasmonic lattices. The position is part of the current programs of the group funded by ERC, Academy of Finland, QuantERA and Aalto Centre for Quantum Engineering. The project involves e-beam lithography, optical measurements, and interpretation of the results in close collaboration with theorists in our groups. The QD laboratories are located on the university campus near Helsinki and offers a motivating and state-of-the-art research environment. For more information on QD research activities and facilities, see http://physics.aalto.fi/en/groups/qd/.

**Major responsibilities**

Your research will be directed towards identifying and observing new topological and condensation phenomena in nanophotonics and plasmonics. Background for the work is given by our recent observations of Bose-Einstein condensation (Nature Physics 2018, https://www.nature.com/articles/s41567-018-0109-9) and lasing (Nature Communications 2017, https://www.nature.com/articles/ncomms13687) in plasmonic lattices, and our theory work on superfluidity and topology (Nature Communications 2015, https://www.nature.com/articles/ncomms9944). Your main responsibility is to develop new concepts in close collaboration with the theorists in the group, and perform optical measurements including data analysis and development of the measurement setup. It is a plus if you can in addition do (part of) the sample fabrication and/or theoretical simulations. You are expected to contribute to the design of measurement techniques and to develop your own scientific concepts within the new fields of photonic condensates and topological photonics.

**Qualifications**

We are looking for outstanding candidates with a strong background in experimental nanophotonics, optics, plasmonics, and/or studies of luminous condensates/lasing. The candidate should hold a Ph.D. degree in physics or equivalent and have documented experience in optical measurements and data analysis. Experience in e-beam lithography, ultrafast optical measurements, magnetic measurements and/or ability to do theoretical/numerical work supporting the experiments are considered as special assets.

The ability to collaborate and interact with other researcher and research communities are important. You should have good communication skills, good analytical and experimental skills and good ability to work independently towards the goals of the project.

**Position summary**

The position will initially be filled for a two-year period with the possibility of an extension for 1-2 years, depending on the progress and the availability of resources. The salary will be based on the salary system of Finnish universities. The gross starting salary amounts to about 3500 €/month.
Applications

Candidates should send the following documents (all in English) as a single pdf-file.

- Application
- CV
- List of publications
- Highest degree certificate
- Contact information of three references

Apply through the link: https://www.aalto.fi/open-positions/postdoctoral-position-in-experimental-quantum-plasmonics-nanophotonics

The deadline for applications is 7 May 2019, but the position will remain open until filled. For questions, please contact Prof. Päivi Törmä (see contact information below). Aalto University reserves the right for justified reasons to leave the position open, to extend the application period, reopen the application process, and to consider candidates who have not submitted applications during the application period.

About Finland

As a living and work environment, Finland is consistently ranked highly in quality-of-life and competitiveness studies. It is the happiest place in the world according to a 2018 World Happiness Report. Finland is the most stable, freest and safest country in the world in 2018. Helsinki is the third best city in the world to live in according to a 2016 report by Metropolis magazine. The air in Finland is the cleanest in the world and the food cleanest in Europe. Finland has also been ranked the 10th in the Global Competitiveness Index 2017-2018 of the World Economic Forum. And Finns drink the most coffee per capita in the world; by the way, coffee is free at our institute! For sources see https://www.stat.fi/ajk/satavuotiassuomi/suomimaailmankarjessa_en.html

Aalto University offers support for moving of international staff to Finland. Some useful information is available at: http://www.aalto.fi/en/about/careers/international_staff/

Additional information

Prof. Päivi Törmä, paivi.torma@aalto.fi, +358-503826770