

**Final report for the grant of € 500 for the studies  
in European School on Nanoscience and Nanotechnology (ESONN 2020)**

**General information**

Participant: Anastasiia Sorokina, Doctoral Candidate, Aalto University, Finland

Study event: ESONN 2020, August 24<sup>th</sup> – September 4<sup>th</sup>, 2020, Grenoble, France

**Description**

ESONN'2020 has been organized as a two-week summer school, with 51 hours of lectures, 14 hours of practical work. The total number of working hours is estimated as 100 hours that also include tutorials, visits, group and individual work. The lectures and seminars have covered the following topics:

- Technologies of Nanofabrication
- Electronic Transport in Low Dimensional Materials
- Nano-optics
- Spintronics
- Near-field Microscopies
- Microtechnology and Nanoscience
- Quantum Coherent Transport and Mesoscopic Superconductivity
- Plasma Etching for Nanotechnologies
- MOSFET Physics and Technology
- Self-assembly for Nanotechnologies

Additionally, I have attended the following practices:

- Surface analysis: an introduction to XPS
- Chemical synthesis of perovskite nanocrystals, their microscopic and spectroscopic characterization
- Synthesis of silicon nanowire powder in mass for lithium-ion batteries
- Fabrication technologies and electrical characterization of semiconductor devices

Following my personal research direction in semiconductor III-V nanowires, I would like to highlight the lectures in Nano-optics by Prof. Zwiller. His broad experience in optics and, especially, his research work towards the applications of nanowires for single-photon sources are a significant source of knowledge for me.

Due to the bad epidemiological situation, the lectures and practices were transferred to Zoom and Slack, where the participants and lecturers had conferences and official ceremonies. It is worth to mention, that the organizers kept the communication level of the participant quite high and it was a big pleasure to take part in the discussions. Additionally, I have participated in the self-presentation event, when we were talking about our own research experience, either positive or challenging, and build on the networking. At the end of the summer school, the official certificate was sent to participants and therefore, will be attached to this report as well.