Pavel Makin

- Master student of Saint-Petersburg state marine technical university; department of electrical energetics and automation technology.
- Bachelor student at UNIS.

Principal supervisor: Aleksey Senkov.

UNIS supervisor: Aleksey Marchenko.
I heard about UNIS in my university, there was a conference about polar research there. Actually, it was the last Workshop of SMIDA project. I came there and met Aleksey and Nataly Marchenko, saw the presentations of students from Moscow and St. Petersburg, who studied at UNIS and made Master projects there. When I saw activities, which UNIS provided, I realize that I want to study there. I have applied for two courses AT-205 “Frozen Ground Engineering for Arctic Infrastructures”, AT-211 “Ice Mechanics, Loads on Structures and Instrumentation” and I was happy to receive support from SITRA project.

Before UNIS I did a lot of research of electrical drives and control systems, and I wanted to use my skills in a polar field.

My adventure in Longyearbyen started 8th January 2016. First thing that I saw was housing in Nybyen. I’d like to describe Nybyen as a student village. It is 3 km away from UNIS and every day trip to university is a challenge for people who didn’t walk much. I was thrilled about idea of international housing. People from all over the world can socialize, communicate and just have fun.

First week started with safety courses, we participate in trainings which could help us to prevent accidents on field works like: drowning under the sea ice, polar bear defense, first aid, navigation, avalanches etc. I enjoyed this courses, I believe that this experience will help me one day.

On AT-205 we did research for foundations and properties of frozen ground, this knowledge could help me with a project of geothermal power plant placed in permafrost. We had a lab week for testing soil, most of the tests were performed manually in a teaching lab, compression test has been performed in a cold lab on a Knekkis machine.

Most exiting events were on course AT-211, which is helping us with understanding properties of ice and instrumentation. One of the greatest memories was Svea trip. Huge group of students went to Svea by snow scooters. I was shocked about the quality of the road. There was a truck which cleaned road for snow scooters. I enjoyed the view as well. Next day when we arrived we went to the ice to perform tests. Organization of our activities was highly qualified. After the tests we had a discussion of our results. It was really helpful for understanding the reasons of the tests and to understand our mistakes.
With two SITRA professors from Lomonosov Moscow State University (Petr Chistyakov – on the left and Alexander Sakharov on the right) and SITRA Ms Student form MIPT (Andrii Murdza). Important instruments – paddle and manual saws are in the hands.

Making hole with large drilling device
Preparation to the beam test

Beam Test. Pavel is starting pumping system and experiment begins
Preparation for indentation test with indenter

Students observe the indentation test.
The result of compression. Professor Sakharov explains. Students follow up.

Small scale compression test. Marina Konstantinova (former SMIDA student and PhD student now) explains
Our working place on the lake Valunden. Long line of scooters, two tents and experimental sites

Field lecture in the port Kapp Amsterdam by professor Aleksey Marchenko
We have a laboratory week as well. This week helped me realize better the properties of ice. Personally I enjoyed compression test which was performed on Knekki rig. Because of my specialty I have a

![Compression test of ice sample in a cold lab.](image)

I have huge interest of automatical laboratory instrumentation. And lab week fully satisfied my interest.

I can’t forget to mention the UNIS student community. I haven’t seen organization like this for my whole life. All fun activities are developed by students and for students. I started campaign for reorganizing student cabin in Bjorndallen. It is very picturesque place on a shore of the Arctic Ocean. I was thrilled about amount of student who came to help me. Fred Hansen (*Director of HSE & infrastructure*) gave us full support for our activity. There are a lot of activities which are performed by students and this is very exciting. Starting from parties ending of dog sledge races and controlling help for kitchen and student equipment all this events is made by student with support of UNIS staff. This making after school spending time very fun and productive.
Bjorndallen.

I had the most exiting adventure in my life and I hope to come back and have financial support from SITRA project) on a next year.