

STEPS Students Report

Vladislav Gurenko (B3)
Institute of Chemistry, SPbU

I was a participant of STEPS program in UTokyo during 1 month in the research group of professor Tetsuya Hasegawa, which works with thin films of metal oxides and their properties. This internship was my first international scientific and educational experience and I suppose it was profitable and fruitful. In addition, it was a chance to plunge into the Japanese culture, which interested me a long time.

Actually, the initial plan of the research was changed; I was offered an educational program during my stay in Japan instead of doing scientific research, as 1 month is too little to perform a considerable investigation. The main subject of the program was studying the method of pulsed layer deposition of thin films (PLD). Such issues as theoretical basis of physics, chemistry of the fabrication process, fabrication technique and overall analysis of the samples were included into the course. The length of theoretical preparation was four days and I appreciated it greatly because it was very helpful for me as an introduction to the following steps. As for the practical part of the course, I have learnt how to prepare reagents for synthesis (both target and source substance), to work with PLD plant, to analyze the samples with such methods as XRD, AFM, Dektak surface profiler, MPMS, PPMS etc. The last part of the program was preparation of the final presentation-report in cooperation with other students of scientific group. During the special event called Group Meeting (usually held on Monday, here the members of scientific group present and discuss the current results of their work), we made a speech on the results of our work and passed it successfully despite the amount of hard and tricky questions. Moreover, I was allowed to take the samples of Fe_3O_4 thin films, synthesized during the teach-in course, to my university where I am going to continue the study. I assume that the experience, which I acquired during the program and the samples for the future researches, is my own best result of participating in program. Besides the educational course, I explored Tokyo and it really amazed me while I was visiting Ueno park, the Museum of Parasites, the heights of World Trade Center and so on.

To sum everything up, I should thank everyone who is charge of organizing this program, I think it can be very productive for both sides and it is necessary for developing the international collaboration. One little notice from my own: it is about the minimal duration of the program (maybe it is better to increase it to 1.5 or 2 months).