

# STEPS Students Report

Aleksandr Ushakov (D2)  
Faculty of Physics, MSU

The main subject of my research in University of Tokyo was a study of laser induced plasma source of terahertz radiation. In our home university we was conducted a lot of experiments with terahertz radiation generated from different sources including the two-color laser induced plasma. This source has broadband spectrum that makes this source perspective for pulse ultrafast spectroscopy. For the more effective generation of terahertz radiation in laser induced plasma the ultrashort femtosecond laser radiation should be used. Our scientific group from A.M. Prokhorov General Physics Institute RAS and M.V. Lomonosov Moscow State University had already cooperated with Gonokami-Yumoto-Ideguchi Group previously. This group has a lot of laboratories containing different types of lasers, including 35fs Ti:Sapphire laser. This group had planned to produce terahertz radiation from two-color laser induced plasma. That is why we arranged to create a two-color laser induced plasma source of terahertz radiation and to optimize it by measuring angular distribution of output terahertz radiation under the different focusing in the University of Tokyo.

When I came to the University I had got a student card, library card and the working place in the laboratory. Moreover during the first week we discussed a lot of experimental problems for the construction of experimental setup. At the beginning of the second week I made a presentation at the Gonokami-Yumoto-Ideguchi Group seminar, where we decided a way of future experiments. During the next five weeks we had optimizing the laser plasma source and measuring the different characteristics of output terahertz radiation. Thereafter we have done measurements by using a terahertz camera. These results are very amazing!



During my stay in Tokyo all professors and students of Gonokami-Yumoto-Ideguchi Group were very helpful. I am very grateful to all members of Gonokami-Yumoto-Ideguchi Group and organization committee of STEPS program for the possibility of visiting and studying in the University of Tokyo. The obtained data will be helpful for the preparation my PhD paper. I hope that our collaboration will be more and more

perspective. Thank you so much for such wonderful possibility!