

Scientific Report

The purpose of the visit was to get direct knowledge on time resolved mid-infrared spectroscopic techniques, to learn special techniques and tricks that are not needed with visible pulses. And if time allows to measure vibrational cooling of chlorophyll-*A* molecule.

During the visit was aligned mid-IR optical parametrical amplifier and mid-IR pump-probe spectrometer, was made experiment with test sample. 2D mid-IR spectroscopy set-up also was prepared for experiment. It was not enough time to make experiment on chlorophyll-*A*, but it let to learn special methods, which are used in mid-IR spectroscopy. Very important knowledge about mid-infrared femtosecond light pulses generation and spectroscopic applications was got. Such knowledge is possible to get only by working in laboratory with people who are experts in that field. That knowledge will help very much to finish building of mid-IR (3-6 μm) pump-probe system in University of Jyväskylä. In near future we are planning also to build also 2D mid-IR system.

In the future we will collaborate with prof. Peter Hamm group in sense of exchanging knowledge about mid-IR instrumentation and mid-IR spectroscopic applications.

Our mid-IR system is still in building process. After finishing we are planning to make first experiments on chlorophyll-*A* molecule, dendritic host-guest complexes, which will result certain publications.

That visit let to get very important knowledge, which will remarkably speed up building process of mid-IR spectroscopic system in Jyväskylä.

