STEPS Students Report

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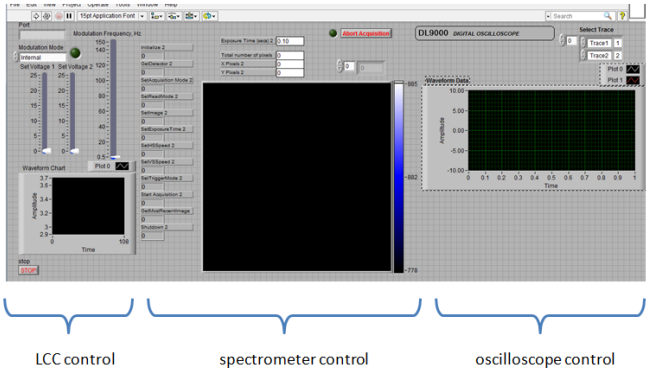
I got a unique opportunity to spend two month in Tokyo University under professor Goda supervision. The best thing about his laboratory is working at the crossroads of physics, chemistry, biology and computer science. Everybody has a chance to enlarge their field of knowledge and learn something new about related fields of science. Both fundamental and applied sciences are developed in this strong team of professionals. Besides that, many students, interns and scientists all over the world could be met there. It was a pleasure for me to meet some new friends and spend time with them in laboratory and outdoors.

Professor Goda's laboratory has weekly meetings. Every member of the laboratory makes a report on new articles and their actual work periodically. I find it a good practice for developing skills of oral presentation and communication among the colleagues. Moreover, team has a habit to celebrate various graduations and welcomes together. I enjoyed the time spent in the barbeque restaurant with catchy view in informal way.

My subject was connected with improving of signal to noise ratio in Raman optical activity (ROA) technique. ROA is defined as the intensity difference of Raman scattered light with respect to right and left circularly polarized incident or scattered radiation, or both. So it could be applicable to chiral molecules investigation. But signal intensities are dramatically weak and flicker noise is better to be reduced. In order to do that the whole spectroscopic system should have a fast modulation and detection of scattered light.

Fast modulation could be achieved with using liquid crystal controller for precise and efficient polarization control. This modulation should be controlled with a spectrometer while LCC should be controlled with external oscilloscope. The whole equipment was connected to the computer and operated via LabVIEW – a graphic programming language.



All the equipment was attached to the front panel of the program. There are some regulators, parameters settings, waveform charts, indicators and other windows.

Being inside Japanese culture was an impressive experience for me. Two month is enough time for see Japan from various sights. I got a chance to see the history of Edo and Japan in highly organized and rich museums. I saw urban Tokyo and sleeping areas, overcrowded shopping streets and peaceful shades of parks. I had a little time to travel around Tokyo. I enjoyed Kamakura for its unique and authentic atmosphere of religious places and spectacular views of Japanese traditional gardens.

I would definitely recommend to any visitor to spend a day in traditional hot thermal bathes – Onsen. It is the easiest way to fall in love with Japan for the rest of life.