

## Two trips to ESRF, 28.1-31.1.2010 and 25.2-1.3.2010

A synchrotron is a type of powerful particle accelerator where magnetic and electrical fields are used to turn, accelerate and synchronize the travelling particle beam. The three main parts of an accelerator are the pre-injector, the booster and the storage ring. The European Synchrotron Radiation Facility in Grenoble, France is a third generation type of synchrotron. This accelerator with 40 beamlines was built in 1992 and the storage ring, with a circumference of 844.4 meters, can store a 6 GeV electron beam. It can be used e.g. in research areas as protein and large molecule crystallography, drug discovery and for analyzing chemicals to determine their composition.

As I had succeeded in crystallizing my protein I wanted to go to ESRF to collect X-ray diffraction data on my protein crystals. The crystals had been tested with the in house X-ray source in Biocity, Turku so I knew that the crystals diffract. The in house X-ray source that was used to test the crystals is not as powerful as the synchrotron radiation source at ESRF and, therefore, I wanted to go to ESRF for data collection.

As I knew that the crystals diffract I had high hopes for both my trips to ESRF. During my stay at ESRF I learned how to operate at the synchrotron radiation source. The crystals diffracted nicely and I collected one data set during the first trip and three more data sets on the second trip. The data sets turned out to be fine up to 2 Å resolution and the structure of the protein could be solved using the collected data sets. Thus, my trips to ESRF Grenoble were successful and very rewarding. The structure will be published in a scientific journal.

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<http://www.esrf.eu/AboutUs/esrf-aerial-view.jpg>