

# Planning Your Beamtime: Useful Tips

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## Deciding how much beamtime to request

It can be very difficult to decide how much time to request for a proposal. Of course the first step is to decide what information you want to get. You should decide the spectral range you desire, the resolution you need, if you want spectra under different conditions you should determine how many different conditions you will need, if you need a calibration. You should also consider how many scans you want for each spectrum (remember that the S/N goes as the square root of the number of scans you collect). If you are not sure about any of these parameters you should talk to the beamline scientist. Once you have an outline of the experiment outlined you should use the form found at <http://exshare.lightsource.ca/farir/FARIR%20EXP/Forms/AllItems.aspx> . This form is a valuable tool in estimating the amount of beamtime you will need. It will help you determine the different configurations that you will need to cover the spectral range you are interested in. And it will estimate how long a set of scans will take to complete. **Remember that all set-up and configuration changes required for your experiment comes out of your beamtime.** The following is a list of common set-up issues and configuration changes and the minimum amount of time you should set aside for them.

- a. Preparing the Ge:Cu detector or the Si Bolometer: 24 hours (3 shifts)
- b. Changing between to the Ge:Cu detector from any other detector: 24 hours (3 Shifts)
- c. Changing between to the Si Bolometer detector from any other detector: 24 hours (3 Shifts)
- d. Changing beamsplitters (3 hours)
- e. Changing windows (3 Hours)
- f. Changing Pathlength (1 Hour in most cases but can be longer)
- g. Changing pressure (sample dependant, plan for at least 1 hour more if your sample has a low vapour pressure)
- h. Changing Cell (4 hours)
- i. Changing temperatures (24 hours)
- j. Changing sample (sample dependant, at least 1 hour more if your sample has a low vapour pressure)

The other thing to remember when you are planning your beamtime is that there are many things that can cause unexpected delays. Therefore it is generally a good idea to request 25% more time than you think you need.

## Planning out your beamtime

Once you have beam granted beamtime it is very important that you develop a good plan for how you are going to use it. A good plan will be efficient and flexible. Choose which experiment are the most important to you and make sure that they are done first, this way if there are delays the least important experiments are the ones cut. Also note that with the exceptions of changing pressure and sample all of

the configuration changes listed require the assistance of beamline staff. Therefore your plan should have these things scheduled between 9 am and 5 pm if at all possible (the changes that require 24 hours should be started during the same window). If your beamtime spans a time when beam isn't available it is advisable to plan any changes for that time (when possible, often this will not be achievable), alternatively it is useful to have tests that can be run using the internal sources. It is a good idea to go over your plan with the beamline scientist before your beamtime.