

Preparing a beamtime application for beamline 01B1-01 MidIR Spectromicroscopy

In addition to the scientific value of an application for beamtime, the following points will be critical in the evaluation of applications on beamline 01B1-01. Please, make sure that your proposal addresses these points clearly.

- 1) *Need for IR synchrotron radiation.* When using mid infrared radiation, the only advantage provided by a synchrotron source is given by its high brightness. Brightness is critical when performing mapping and spectromicroscopy experiments requiring diffraction limited spatial resolution and high signal/noise ratio. Your proposal must explain clearly why your scientific problem requires such performance. Two examples of experimental situations that satisfy this requirement follow.
 - a. Measurement of time resolved spectra from a sample 3-10 microns in size.
 - b. Mapping of a sample 20 microns x 20 microns in size with diffraction limited resolution.

Note that stating that a high resolution measurement will be performed is not by itself a sufficient condition. The Peer Review Committee must be convinced that such experiment is indispensable for the resolution of the scientific problem and that no simple alternative exists to the use of synchrotron radiation for solving the scientific problem. E.g. stating that a sample will be mapped with diffraction limited resolution is not by itself sufficient justification, if it appears that the scientific problem can also be addressed by mapping the sample at low resolution or that a setup with a globar source is perfectly capable of providing the information.

Satisfying this requirement is critical. Failure to do so can easily result in the proposal receiving a very low grade or being rejected altogether.

- 2) *Capability to make efficient use of beamtime.* The peer review committee must be convinced that the group has the capability to use the requested beamtime effectively. Some factors that will be taken into account are the following ones.
 - a. Previous experience in infrared or vibrational spectroscopy and spectromicroscopy. Indicate which team members or collaborators will contribute to experiment planning and data analysis.
 - b. Previous experience in synchrotron work.

- c. Size of the team of experimentalists compared to the proposed experiment. Indicate clearly how many team members will be performing experiments on site at the CLS.
- d. Experimental plan. Provide enough details to convince the committee that you have planned carefully your experiment and will make optimal use of beamtime.

Note that items in point 2 are not individually critical but they do affect the evaluation of the proposal. For example, a proposer with no experience in synchrotron infrared experiments can still have a successful application by presenting an interesting scientific problem, with a reasonable request of shifts, and a good experimental plan. In contrast a proposal by an applicant working alone and requesting 30 contiguous shifts without a detailed experimental plan is unlikely to succeed.