PAUL SCHERRER INSTITUT

Technical feasibility questions for FEMTO proposals

To help evaluate whether it is possible to do you experiment at the FEMTO facility, we ask you to provide whatever answers you are able to give to the following questions. Please send your response to Paul Beaud (paul.beaud@psi.ch) at least a few days before the proposal submission deadline, if possible. Please try to be as specific as possible to the beamtime proposed. Do not be intimidated by the questions ... most proposed experiments cannot provide definite answers to all questions, although you should have at least a rough idea. We will also need a scientific description of the experiment in addition to the answers to these questions. Any additional information you can offer is of course welcome.

After reviewing the answers you provide, I will discuss the proposed experiment with the local staff and then contact you with specific questions and other feedback.

1. What is the temporal resolution required for your experiment?

2. What is the maximum laser/x-ray delay range to you need to measure?

3. What wavelength(s) of laser excitation is needed to excite your sample? Will you bring along any optics needed to produce these wavelength(s) from the fundamental (800 nm, 115 fs, 1 kHz)?

4. What is the excitation fluence needed for your experiment?

5. What x-ray photon energies do you need to measure at? Is there any flexibility here?

6. Have you performed any simulations of the proposed experiment? Alternatively, can you estimate roughly the magnitude, time-scale and nature of the pumpprobe signal you expect from this measurement?

7. Have you *experimentally* measured the x-ray probe response of the system statically under the approximate conditions of the proposed experiment? For example (if your experiment is designed to use grazing incidence x-ray diffraction as a probe) have you measured the efficiency and rocking curve widths of the reflections you wish to measure? For x-ray spectroscopy measurements, have you measured the XAFS of your sample? Please attach data if possible.

8. What equipment do you expect the beamline to provide for your experiment? Please be as specific as possible. This should include optics, sample mounts & manipulation, sample environment....

9. Who is available to participate in the beamtime? What is their experience and/or expertise?

10. What do you plan to provide for this experiment, in terms of samples and equipment?

11. What type of detectors do you want or need for this experiment? Is 1-D or 2-D spatial resolution required? Will you bring any detectors with you?

12. Have you performed any measurements of the pump-probe dynamics in this system with other techniques? Alternatively, are there any meaurements done that are published in the literature on this subject? Please attach this data if available.

13. Do you need access to any local sample characterization facilities before, during or after your experiment?