

Preparing for a RIXS experiment

1. **Samples must have a good surface** (typically cleaved or as grown). Polishing is not recommended for RIXS measurements, which typically measure only the first few microns of the surface.
2. **Pre-aligned samples are required.** Knowing the alignment of the sample (ie: two non-parallel reflections, or two axes of the unit cell, etc, not just one surface normal) at the level of a few (say ± 5) degrees is crucial. While we will refine the alignment on the spectrometer, searching for Bragg reflections from scratch at sector 27 is extremely difficult and time consuming. We also recommend mounting your sample at your home institution before coming to sector 27. Your local contact can mail you some sample holders or you can make your own from the online diagram <https://www.aps.anl.gov/Sector-27/User-Information/Sample-Environment>
3. **Have a team with enough experience and people.** Beamtime is very intense and even the most experienced users do not attempt an experiment solo. We recommend 2-3 people with at least one having significant x-ray experience.