



## RSXS Sample Alignment

Use following steps for initial alignment after loading a new sample.

1. Mount sample. Move th to 90°. Use one of the absorption edges to adjust the sample position y and z.
  - a. Set energy to the absorption edge. (**moveE XXX**)
  - b. Set to plot TEY. (**plotselct tey\_r**)
  - c. Align y and z. Move to center of the sample area.
2. Move detz to 40 mm (photodiode). Set to plot photodiode. Select appropriate slit for your measurements. (using slitselct command)
3. **IMPORTANT:** Verify the MCP and the Channeltron will not be in the direct beam. Direct beam will permanently damage the MCP and the Channeltron detector. Replacing either of them is very expensive. Only photodiode can be used to align tth with direct beam.
4. Move tth and th motor to 0° (using **uan 0 0**). Photodiode is seeing the direct beam.
5. Move x back by 2-3 mm. Photodiode current shall be  $\sim 20\mu\text{A}$ .
6. Align tth. The profile shall be a peak. Move tth to CEN. Set tth to 0°.
7. Align x. The profile is similar to a step. Move x to CEN.
8. Align th. Move th to pl\_xMAX. Set th 0°.
9. Align x again. Move x to CEN.
10. Repeat step 8 and 9 if necessary.
11. The photodiode current shall be about half of the full beam value.

The sample rough alignment is done. Further alignment of th, chi and phi will be done with diffraction or reflectivity peaks.