

Energy change procedure

1. Back off detector. Take the sample out of the cryostat.
2. Move energy to 200 eV below E_0 for the current element.
3. Click on Setup button and in the pop-up window click **Focusing ON**. Write down the focus position displayed here: Click Save and Exit.
4. Click Edges. In the pop-up window find the element you want and click on it, then click on Save and Exit.
5. Click on Adjust Beamline Optics., find Mirror Angle and click on it. Read the **mirror angle** and write it here:
6. See if you need to change the mirror angle for your next element. (Rule of thumb: run Mn, Fe and Co with Ni mirror angle set to 4.5 mrad, Ni, Cu, Zn with 3.5 mrad.) If so, do **procedure A**.
7. Move energy to 200 eV below E_0 for the next element
8. Click on Setup button and in the pop-up window. Read the focus position displayed and compare it to the one in step 3. If they are the same, click **Focusing OFF**, then click OK.
9. Check that Piezo Control in the Setup is ON. Make sure manual switch of Piezo control is at Computer.
10. Run **piezo calibration**.
11. Place the sample holder in cryostat chamber and center it. Do burn if necessary.
12. Place the **metal foil** of the element investigated between I1 and I2 ionization chambers.
13. Remove metal holder. Do mid edge scan and **calibrate monochromator** to the edge of the metal foil.
14. Put the **model compound** containing the element investigating in the cryostat chamber.
15. Move the detector in. (If you changed the Mirror angle, you will need to change the height of the table on which the detector sits.)
16. Optimize **Ge detector** to record the fluorescence energy of the element you will investigate. Follow the procedure described in Ge-detector.
17. Back off detector, place the sample in the cryostat chamber, check its alignment.
18. Move the detector back in and run. Good luck!

Procedure A

1. Set HA_Vertical_slit_size to 3 mm. Read I0, write it here:
2. Move Mirror angle to desired value. I0, I1 and I2 meters may drop to zero.
3. Record HA_box_height setting. Write it here:
4. Move HA_box_height 3.5 mm down for every mrad increase in mirror angle. (Or, move it up if you decreased mirror angle.) I0 should go back up. I1 and I2 may still read zero.
5. Manually change piezo voltage to maximize I0.
6. Move Mirror Height (in steps of 0.05 mm) to further maximize I0. Do not move it more than +/- 0.5 mm.
7. Set vertical slit size to 1 mm.

8. Fine-tune HA_box_height (in 0.1 mm steps) to maximize I0. Record its position here:
9. If you know how to change the angle of the table under the cryostat chamber, you should do it here and skip steps 10-11.
10. Move the table that holds the cryostat chamber up or down by the same amount you moved HA_box_height (subtract readings in 3 and 8). I1 should go up.
11. Check I2 reading. Put a piece of burn paper over the metal foil to find the beam. Adjust the height of I1 and I2 chambers by moving the jack that holds them, if necessary.
12. Place a burn paper at the nose of the cryostat and make sure the beam hits the center of the window.
13. Set piezo control to computer.
14. Continue with energy change procedure from step 7.