

Sputter Cleaning Procedure for XPS1 (Kratos Manual Section 5.6)

It is suggested that you acquire a spectra before and after performing a sputter clean so that a comparison can be made and the effect of the clean determined. For example, you may want to look at the oxygen and carbon peaks before and after sputtering to verify that they have decreased sufficiently.

- 1. Click on the “Manual” zone in the top task bar to open the manual control window.**
- 2. Turn off the X-Rays (if on) by clicking on “Standby” in the XRay Gun section**
- 3. Turn off the Charge Neutralizer (if on) by clicking on “OFF” in the Neutralizer section**
- 4. Scroll to the Vacuum Section and select Automatic Sequences if not already selected**
- 5. Click “Ion Gas On” and wait for the sequence to complete.** This opens the valves to allow the Argon gas in for sputtering.
- 6. Turn the manual leak valve on** until the Ion Pump current reading is about 1×10^{-4} amps. The valve takes one complete turn and then approximately around to the 5 position. The SAC pressure should read around $4-6 \times 10^{-8}$ torr.
- 7. Scroll to the Ion Gun Section and select the Table button and Status button.** The table contains pre-set setting for various ion-sputtering conditions.
- 8. Select the 5kV Large Spot row in the Table** (for depth profiling, choose the 5kV medium spot and a raster of 2mm should normally suffice)
- 9. Click “Restore Row”** to enter these settings.
- 10. Choose desired Raster Size in Operation Settings** (A value of “0” is OK for sputter cleaning, as a raster is not needed)
- 11. Click on “Standby” in Ion Gun Section to ramp up voltage and currents.**
- 12. After ramp-up is complete (green light is on), click on “On” in the Ion Gun Section to start the sputter process**
- 13. Look for the emission current to reach 10mA** (This reading is located in the status section). The sputter start time begins when the emission current reaches 10mA.
- 14. Allow to run for desired time.** (Typical time is 10 minutes for a sputter clean)
- 15. Click on “Off” in the Ion Gun Section after acceptable sputter cleaning has been achieved**
- 16. Turn the manual leak valve completely off**
- 17. In the Vacuum section, click on “Ion Gun Gas Off” and wait for the automatic sequence to complete**