

## Phi XPS Operating Instructions:

1. Check that the x-ray gun is off, 147 and the card rack is off. If not see steps ? below.
2. Check that the load lock door is unlocked.
3. Check that the gate valve between the load lock and the XPS chamber is closed.
4. Close the gate between the turbo and the load lock.
5. Turn off the turbo.
6. Open the valve to vent the load lock.
7. When the load lock door opens put the sample holder onto the transfer arm.
8. Wait for the turbo to stop.
9. Open the gate between the turbo and the load lock
10. Turn on the turbo
11. Wait 20 minutes and make sure that the pressure is less then  $1 \times 10^{-6}$  torr in the load lock.
12. Open the gate to the XPS chamber.
13. Move the transfer arm forward until the sample holder is over the XPS stage.
14. raise the sample stage until it contacts the sample holder.
15. With draw the transfer arm and close the gate to the XPS chamber.
16. Wait until the pressure is down below  $3 \times 10^{-9}$  torr in the XPS chamber.
17. Make sure the x-ray gun power supply is off and the high voltage knob is set to 0.
18. Turn on the power to the card rack.
19. Turn on the power to the 147 control box.
20. Turn on the power to the X-ray gun power supply. (Turn on the monochromator Power supply if you are going to use the monochromatic source.). Make sure the switch on the PS is in "int", the Out/Act push button is out, the meter reads **ZERO** watts and the HV push button is out (off).
21. Turn on HV. Push HV button in.
22. Slowly turn HV up to 1500V
23. Slowly bring the PS Wattage to 5 W. The pressure in the chamber should rise a little and then go down.
24. Slowly turn up the Wattage to 300 W while adjusting the high voltage so it stays at 1500 V and making sure the current does not exceed 20 mA.

## Running XPS spectra :

1. If you are using the standard source: Move the standard source until it is about a  $\frac{1}{2}$ " above the sample. There is a line of the bar next to the adjustment handle.
2. If you are using the Monochromatic source make sure the standard source is fully withdrawn.
3. Start Auger Scan and do an alignment scan on a peak. Adjust the height of the stage to maximize the peak height.
4. Run your spectra.

## Removing the sample

1. Turn off HV. Push the HV button on the X-ray power supply to turn off the gun power.
2. Set the HV knob to zero
3. Press the Out/Act button twice to zero the watts.
4. Turn off the HV and X-ray gun PS (and the monochromator PS if you used it).
5. Turn off the 147 and the power to the card rack.
6. Make sure the standard source is fully withdrawn.
7. Make sure the vacuum in the load lock is  $< 1 \times 10^{-6}$  M.
8. Open the gate valve for the XPS chamber.
9. Move the transfer arm forward and lower the XPS stage so that the arm can grasp the sample holder.
10. Lower the XPS stage so the sample holder can clear the stage.
11. Withdraw the transfer arm making sure the sample clears the stage.
12. Close the gate to the XPS chamber.
13. Close the gate to the Turbo pump.
14. Turn off the Turbo pump.
15. Open the vent valve to the load lock and turn off the ion gage on the load lock.
16. Wait for the load lock door to open. Remove the sample.
17. Wait for the Turbo to stop.
18. Open the gate to the Turbo.
19. Turn on the Turbo and hold the load lock door closed.