

## OSMIUM COATER

3-6-12

**Be sure to wear gloves and NEVER remove the osmium tetroxide from the chamber!**

1. Ensure green osmium crystals are present in the window in the black box on the left side of the coater. If empty, please find Ben or ERiC to replace the crystals.
2. Turn Osmium coater on.
3. Turn rough pump on.
4. Select **CHAMBER EVACUATE** on the osmium coater.
  - a. The button's yellow light will flash and eventually stay on.
5. Pump coater down to **0.4 pa**.
6. Press the **OsO<sub>4</sub> EVACUATE** button and wait for the pressure to stabilize.
7. Press **OsO<sub>4</sub> EVACUATE** again.
  - a. The light will flash for a few seconds indicating the osmium reservoir is now isolated.
8. Continue pumping chamber down to **0.4 pa**.
9. Press **LEAK** to vent the sample chamber.
  - a. The button will flash while venting.
10. Once the green **LEAK** light goes solid, you may open the specimen chamber.
11. The specimen and its mount **MUST BE ISOLATED** from touching anything in the chamber.
  - a. The specimen mount should be sitting atop a Teflon pad inside the well.
  - b. Ensure the sample and sample holder is not in contact with the edges of the well.
  - c. The sample should be about three mm above the edge of the cathode.
12. Make sure the O ring at the base of the chamber is seated and close the chamber.
13. Set coating thickness in nanometers with the numeric display.
  - a. If you are coating 10 nm or more, do multiple coatings (ex. two coatings of 5 nm).
14. Ensure **LEAK** light is off.
  - a. If it isn't, select it again so it turns off.
15. Hold chamber lid down and select **START** for the coater to automatically coat your samples.
  - a. Discharge current should read ~1.5mA while coating.
16. Coating is complete once **START** and **OsO<sub>4</sub> Evacuate** buttons have gone off.
17. To coat the same samples again, select **START**. Change thickness if necessary.

### WHEN FINISHED COATING:

18. Wait until coater pumps down to **0.4 pa**, and press the **LEAK** button.
19. Once the **LEAK** button is solid you can open the chamber and remove samples.
20. To coat more samples, repeat steps 12 thru 20.

### SHUT DOWN

21. Make sure the O ring at the base of the chamber is clean and close the chamber.
22. Evacuate the system by pressing **EVACUATE**.
23. Pump down to **0.4 pa**.
24. Unselect **EVACUATE** and turn off the Osmium coater.
25. Turn off the rough pump.