**Operating the sputter gun**

Close the gate valve for the ion pump in the Main Chamber (MC). Turn off ion gauges in the MC.

Close the shunt valve between the Section 2 chamber (S2) and MC.

Check the sputter gun connections to make sure that none of them are touching each other or are grounded on the sputter gun holder. (This is a thing!)

Prep the Argon gas line to the sputter gun

Open all the gas line connections aside from the one that goes to the MC and the one at the Argon gas to the gas line.

Turn on the mechanical pump to pump out most of the left over air/water vapor.

Close the NuPro valve from the mechanical pump. (Righty tighty)

Then fill the line with Argon/sputter gas.

Next close the Argon gas from the gas line.

Then open the Nupro valve with the mechicalical pump to pump out the Argon gas.

This step helps dump out any left over air/water vapor that may have gotten stuck.

Then close the Nupro valve and turn off the mechanical pump.

Now that the Argon gas line is prepared we need to orient the sample to the Sputter gun. Make sure you pull out any other device (LEED, AES) away from the manipulator.

Prep the power supply

Connect digital multimeters to read voltage and current coming out of your Sputter Power

Supply.

I suggest ammeter for filament current, ammeter for anode current, and a high voltage probe for the anode and beam voltage (output voltage).

Turn on any external power supplies connected to the sputter power supple.

If using glass man voltage power supply click the green button for high voltage.

Turn on the Sputter Ion Gun Power Supply (SIGPS)

\*All knobs should be on zero on the SIGPS at this point\*

Let the Sputter Gas in (should only have neutrals coming in).

The pressure gauge in MC will help indicate the amount of gas we want coming towards the sample. (If operating around low 10-9 torr you’ll want to be around mid 10-6  torr for decent current later.)

(0 0) is the initial location of knob/full turn marks. Turn the knob around 4 to 4 ½ rotations.

Set Lens 1 and Lens 2 voltage to 350 V.

Set the beam voltage to 500 V.

Set anode voltage to max (250 V

if there is no anode knob it is already at max which is around 250 V)

Then slowly turn up the filament current until you get about 3.5 A (3.8 A is max)