

# Operation Procedure for ASH2 Glow Research Auto Glow 200 Plasma System

## Sample Loading

1. Open the chamber door
2. Place samples to be processed on the **LOWER SHELF** of the 2 shelves in the system. This shelf can slide out if needed if pulled **CAREFULLY**. See optional features at the bottom of this page for an alternative method.
3. Push shelf back into the system **CAREFULLY** until it lines up with the top shelf.
4. Close the chamber door

## Operation

1. Power the system on via the “**AC ON**” button
2. Set up the process timer via the controller at the lower left corner of the system using the 4 blue arrow buttons which represent MM:SS
3. Rotate “**Selector**” knob to “**RF Set Point**” and use the “**RF Set Point**” separate knob to set desired power level (up to 300W, though generally it is recommended to stay below 250W)
4. Rotate “**Selector**” knob to “**Pressure**” and the system should display approximately 1.98 Torr
5. Press the “**Vacuum**” button and the chamber will start to pump down. Allow it to pump down to at least 0.5 Torr
6. Press “**Process Start**” to start the process. The gas will flow as seen in the process flowmeters. GAS1 is Oxygen, GAS2 is Argon. Typically set the flow to approximately 50 on the scale (though that can vary depending on desired chamber pressure)
7. The RF will turn on and the optimal process pressure should be between 0.5 to 1.2 Torr on the pressure display. Actual Forward and Reflected Power can be viewed by rotating the “**Selector**” knob to those values.
8. The process will stop at the end of the timer and the chamber will pump down with the vacuum pump
9. Press the “**Vacuum**” button to stop the chamber pumping and then open the purge flowmeter by turning the knob on the flowmeter counterclockwise (the higher the flow rate the faster the vent)
10. Open the chamber door when vented and remove samples. **Caution:** *the chamber and substrates may be HOT after the process, purge longer to aid cooling if needed*
11. Close the purge flowmeter until the ball reaches the bottom of the meter (**DO NOT OVER TIGHTEN**)
12. Close the chamber door
13. Power the system off via the “**AC ON**” button

## Optional Features

- The square aluminum sample holder can be an easier way to load and unload samples from the shelves without having to move the shelves.
- The system can do more aggressive etching by switching to RIE mode from the standard Plasma mode. Contact SMIF Staff for instructions if this is desired.