

Harrick PDC-32G Plasma Cleaner Operations

This machine is to be used by authorized personnel only. For training contact: Staff Engineer, Omid Mahdavi, (520) 621-9849, omidm@email.arizona.edu

Enter all necessary information in the Log Book for each use.

Load Sample:

- 1) Ensure that your sample fits inside the plasma chamber.
- 2) Remove the glass sample holder plate from chamber carefully.
- 3) Place your sample onto the mid-section of the glass holder plate.
- 4) Insert the glass holder plate and your sample back into plasma chamber carefully.
- 5) Ensure vent valve on the chamber lid is closed. Turn clock-wise all the way.
- 6) Ensure rubber O-ring on the lid is clean and free of any debris.
- 7) Place lid over the chamber opening and hold lid in place with one hand.
- 8) Turn on the PUMP ON/OFF switch to turn on the vacuum pump.
- 9) Chamber vacuum should now hold lid in place.

Run Plasma:

- 10) Ensure RF LEVEL power switch on the front panel is on OFF.
- 11) Turn on the POWER switch on the front panel.
- 12) Wait for one minute before proceeding.
- 13) Open the chamber lid vent valve about 1/8 of a turn (counter-clockwise) to establish an air flow into the chamber.
- 14) Switch the RF LEVEL power switch to the desired setting.
- 15) Look for a purple glow which would indicate the presence of a plasma.
- 16) Run plasma for the desired time using an external timer.

Unload Sample:

- 17) Switch the RF LEVEL power to OFF.
- 18) Turn off the POWER switch.
- 19) Turn off the PUMP ON/OFF switch to turn off the vacuum pump.
- 20) Open the chamber lid vent valve to vent chamber completely.
- 21) Hold the lid until chamber is fully vented and the lid comes off.
- 22) Remove the glass sample holder from chamber and remove sample.
- 23) Clean the glass sample holder if necessary and re-insert back into chamber.
- 24) **DO NOT LEAVE GLASS HOLDER ON OR AROUND THE TOOL.**

Qual Data:

2" Silicon wafers coated with S1811 and patterned using a checkered mask (blocks of 2mm x 2mm). A profilometer was used to measure block step height before and after clean.

Film	Plasma	Process Time (min)	Avg. Amount Removed (Ang)
Photoresist Shipley 1811 (Positive)	Air (Hi Setting)	2	350

Revision	Description of change	Change initiator(s)	Date
0	Create Spec.	Omid Mahdavi Steve Orozco	1-10-2007
1	Added Plasma Preen control unit due to larger current requirement for the larger capacity vacuum pump.	Omid Mahdavi	3-15-07
2	New Pump available does not require higher current than rated. Back to old op instructions.	Omid Mahdavi	4-11-07