

CNSI Microfluidics Lab - Harrick PDC-32G Plasma Cleaner Operations

This procedure is adapted from the University of Arizona's SOP.

This machine is to be used by authorized personnel only.

Load Sample:

- 1) Ensure that your sample fits inside the plasma chamber.
- 2) If present, remove the glass sample holder plate from chamber carefully.
- 3) Place your sample onto the mid-section of the glass holder plate (if available).
- 4) Insert the glass holder plate and your sample back into plasma chamber carefully.
- 5) Ensure vent valve on the chamber lid is closed.
- 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. Note: some users find more consistent results with a Nitrogen plasma instead of flowing air in the chamber. If you would like to do this:
 - Open the Nitrogen valve on the right side of the fume hood
 - Close the valve at the bottom of the left-hand flow meter on the plasma cleaner controller.
 - Open the chamber vent valve about 1/8 of a turn
 - Open the flow meter valve slightly until the chamber pressure is 450mT
- 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 Nitrogen gas valve on the hood**
- 19) Turn off the POWER switch.
- 20) Hold the lid until chamber is fully vented and the lid comes off.
- 21) Open the chamber lid vent valve slowly until you hear hissing sounds from the valve to vent chamber completely.
- 22) Turn off the PUMP ON/OFF switch to turn off the vacuum pump. Start chamber vent before turning pump off.**
- 23) Remove the glass sample holder from chamber and remove sample.
- 24) Clean the glass sample holder if necessary and re-insert back into chamber.