

University of Pittsburgh Nanoscale Fabrication & Characterization Facility

Trion Orion PECVD Users Guide



The Trion PECVD system has four process gases for deposition of films such as silicon dioxide, silicon nitride and poly-silicon. The system is controlled by a user-friendly touch screen computer system.

Operation Procedure:

- 1) Log into both "Cr-Cleanroom" and "CR-PECVD" using FOM.
- 2) Touch the screen to wake" up the computer. The machine will indicate "Standby mode". Press "Cancel" to exit standby.
- 3) Vent the system by pressing the "Vent Reactor" button. The venting process will take approximately 1 minute. The top lid will open automatically.
- 4) Load your sample onto the platen. Be Careful because the platen is **HOT! DO NOT LOAD WET SAMPLES!**
- 5) Wipe down the o-ring and sealing surface. Press the "Close Lid" button.
- 6) Press the "Load/Edit Recipe" Button and select "Recipe From Disk".
- 7) Select the desired recipe from the list.
- 8) Press "Exit" to use standard process.
- 9) Make recipe modifications through manual and save your unique recipe for current or future processing.
- 10) There are five process gasses available, NH₃, N₂, N₂ with 5% SiH₄, N₂O, and CF₄.
- 11) Press "Automatic Single Process" to run your process.

- 12) Enter a lot name if desired. An on screen keyboard can be selected by pressing "Screen text Entry". Otherwise just press "Enter to continue.
- 13) After pressing the "Enter" button, the screen will show the set points and the actual readings for each parameter.
- 14) Record the parameters and actual readings for your records and future reference.
- 15) The plasma may be viewed through the side viewport and the process will be counting down on the screen.
- 16) Once the process is completed, the screen will display the time and the name of the process that was completed.
- 17) Press "OK" to return to the main screen.
- 18) Press "Vent Reactor" to vent the system.
- 19) The lid will automatically open. Carefully remove your samples from the chamber. Remember the electrode is very hot! Wipe down the o-ring and sealing surface. Press "Close Lid".
- 20) Load and run the "NFCF Clean" recipe. The clean recipe should be at least as long as the previous process. Modify the time accordingly.
- 21) Once the process has completed, press the "Standby" button.
- 22) Log out of the PECVD through FOM.