EVG 810 Plasma Activation System Operation

Restrictions & Precautions

- **THIS SYSTEM IS NOT A DESCUM, DO NOT PUT RESIST COATED SAMPLES INSIDE!**
- **NO METAL-TIPPED TWEEZERS AS IT CAN DAMAGE THE SYSTEM!**
  The chamber and electrodes are coated in silicon and are very sensitive to scratching. Only remove the carrier wafer with the vacuum wand. If you dropped a sample off of the carrier wafer use only carbon tipped tweezers to retrieve it.
- **ALWAYS CONSULT WITHN STAFF BEFORE CREATING CUSTOM RECIPES!**
- **ALWAYS LOWER THE LOADING PINS BEFORE CLOSING THE CHAMBER LID!**
- Recipes are characterized for substrate thicknesses between 250um and 750um. Thicknesses outside of this range need to have parameters optimized to minimize reflective power.

Operational Notes

- At times you will encounter a 'MACH Missing Machine facilities (Pressure, Vacuum or N2): Input PRESSURE missing!' error in red across the top of the screen. Click on this error to clear it and proceed.
- If you encounter any errors during your run, attempt to clear them first. If that does not work, select 'Abort' and then 'Clean up'. Follow the on screen directions and after that try to run the recipe again.

Operation

1. Select 'Login Here' (lower left corner of the screen) and use the pop-up window to login to the system.
2. Verify you are in the correct recipe directory by looking at the banner at the top of the program window, it with read EVGVISU – *directory name*.ecp. The general use directory is called 'Official Recipe Directory.ecp'. If you need to open a different directory, perform the following:
   a. Select 'Recipe'.
   b. Select File → Open. A pop-up window will appear that should be in the 'Recipes' folder, double click on a directory to load it.
      NOTE: If you are not in the recipes folder you will need to locate it, use the drop down menu in the pop-up window to begin looking for it. The file path is:
      C:\Program Files\EVG\EVGVisu\Recipes
3. Select 'Jobs'.
4. Select 'Start' and a select recipe window will pop-up. The wafer size is always 6" and should not need to be changed, use the drop down menu to select a recipe and then select 'OK'.
   The standard recipes are:
   a. **ExSitu_0.2mbar** – 0.2mbar, N_2, 100/75W
   b. **ExSitu_0.2mbar_Line2** – 0.2mbar, O_2 100/75W
   c. **Dis 0.2mbar_Line2** – 0.2mbar, O_2, 125/75W (recipe has a 16 min pump down wait time)

   NOTE: If the system has been idle, it is recommended to make an empty chamber run before running your sample(s). If you are running the **Dis 0.2mbar_Line2** recipe you can just use the **ExSitu_0.2mbar_Line2** recipe for the empty run so you don't have to wait the extra 16 minutes.

5. The chamber will vent. Once the message at the top of the screen reads 'Please press both safety buttons now!', press and hold both of the green buttons until the chamber lid is open and the lid actuation noise stops.

6. Inspect the inside of the chamber. Do you see any marks or any particles? If so, gently brush them aside with a foam swab and isopropanol. Note this in the logbook.

7. A pop-up window stating 'Please put wafer on bonder. Press OK when finished!' will have appeared once the chamber is opened. Before loading your samples, Select 'OK' to lower the carrier wafer. After it has lowered, make sure the carrier wafer is centered before proceeding. **NOTE:** A 6" carrier wafer is kept in the system at all times. If you need to run a 6" wafer of your own, then you will need to remove this carrier wafer. Do this before lowering the wafer. Use the vacuum wand at the system to unload the carrier wafer and place it in the cassette at the system. Now load your wafer using the vacuum wand. The vacuum wand is always on, pressing the lever on the wand shuts off the vacuum.

8. Place your samples onto the 6" carrier wafer in the chamber.

9. Press and hold both green buttons until the chamber lid is closed and the lid actuation noise stops.

10. The system will run the selected recipe and vent the chamber when it is finished. Once the message at the top of the screen reads 'Please press both safety buttons now!', press and hold both of the green buttons until the chamber lid is open.

11. Unload your samples from the carrier wafer.
    NOTE: If you ran your own 6" wafer, unload it using the vacuum wand and then reload the carrier wafer that was in the system.

12. Inspect the chamber as per Step 6. Note any cleaning in the logbook.

13. A 'Substrate finished' pop-up window with the options of 'Load next' or 'End' will have appeared once the chamber is open. If you are finished with the system proceed to Step 13. If you need to make more runs, select 'Load Next'. A pop-up window will appear asking 'Repeat same sequence?':
    a. If you are running the same recipe, select 'Yes' and go back to Step 7.
    b. If you are running a different recipe, select 'No' and go back to Step 4 (the select recipe pop window will have appeared).

14. Select 'End', you will be asked to close the chamber cover. Select 'No', a pop-up window stating 'Process is Finished!' will appear, select 'OK' to continue.
    NOTE: IT IS EXTREMELY IMPORTANT THAT YOU DO NOT LOWER THE CHAMBER COVER!

15. Click on the center of the chamber graphic, a pop-up menu will appear. Select 'LoadingPins Down' and the wafer will lower.
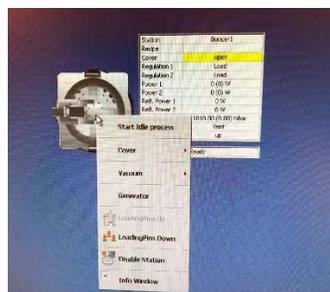
16. Click on the center of the chamber graphic again and select 'Start Idle process' from the menu.

17. Press and hold both green buttons until the chamber lid is closed and the lid actuation noise stops.

18. Log out by selecting your user ID in the lower left corner of the screen.

19. Enter your run(s) in the logbook.