

Revised April 2020

MATERIALS NOT ALLOWED IN THE PECVD:

Photoresist, Kapton, Gold, Platinum, Copper, Iron, Silver, Nickel, Zinc & Tin

Interface Overview

You will primarily be interfacing with 3 main screens:

- 1. Pump Control page
- 2. Recipe page
- 3. Chamber Process Control page

There are several informational items that are common across all interface screens (Fig.1): **Main Menu, Screen Title, Stop All Auto Processes and System Status Indicators.**

Stop All Auto Processes acts as a soft emergency stop for the system. Using this method resets the internal system controller, stopping all running processes. **NOTE:** This cannot be used if the loadlock arm is inside the chamber, doing so could damage the gate valve between the loadlock and main chamber.

System Status Indicators. If any indicators are **red** the system will not operate. Do not proceed with your processes and contact the MNTC staff.

Pump Control page

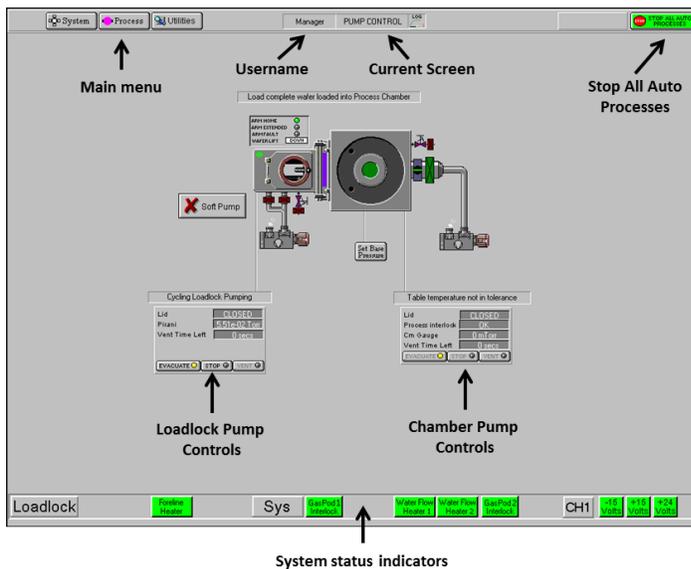


Fig. 1: Pump Control page. Use this screen to control both the load lock and main system pumps. The left half of the screen is dedicated to the load lock, the right half to the process chamber.

Recipe page

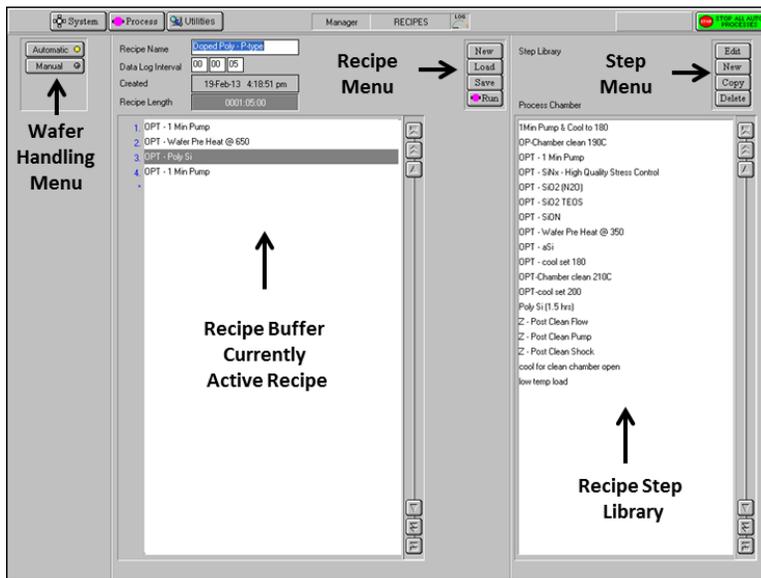


Fig. 2: Recipe Editor. This screen is used for building/editing recipes and selecting the wafer handling mode, automatic or manual.

Chamber Process Control page

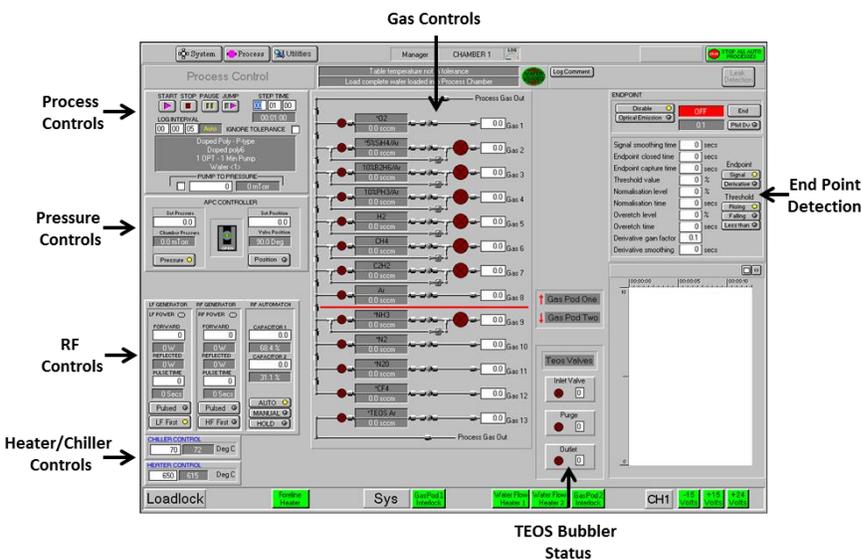


Fig. 3: Chamber 1. This screen shows the current status of all major subsystems.

Start Up

1. Go to your FOM account and login to the tool.
2. Before start using the tool make sure the Step Up Transformer is in **1400** position.



Recipe Editing

Recipe editing is mostly straightforward. A minimal recipe will always contain at least **2 steps**:

Initialization Step: It's important to have a simple initial step which allows the temperature to stabilize. Stabilizing the temperature permits the deposition process to begin at a desired temperature and base pressure for a more repeatable process.

Deposition Step: In this step the following deposition parameters are defined.

- Deposition gases selection with flow rate (sccm)
- Chamber pressure (mT)
- Deposition Process Time (hours: minutes: seconds)
- ICP Power (W). Typical power is 500 to 2000 W
- Substrate RF Power (W). Typical substrate power is 10 to 100 W
- Etc.

Sample Loading

1. Vent the load lock. **SYSTEM MENU>>PUMPING** button, then click **STOP**, then **VENT** on the load lock.

NOTE: Be Careful to Not vent the chamber. The load lock is on the left; the chamber is on the right and must stay under vacuum unless safety precautions are taken. The airlock vent takes about 4 min.

2. Lift the airlock lid and place your wafer in the load lock fork. Make sure your wafer is seated properly between the posts on the arm.
3. Gently close the load lock door.
4. Pump the airlock to vacuum. **SYSTEM MENU>>PUMPING** button, then on the left, load lock side, click **STOP**, and then **EVACUATE**.
5. Enter your wafer ID in the dialog box. You will be able to identify your wafer run in the system log by this ID.
6. Wait until both the load lock and process chamber have reached a vacuum level suitable for transfer, as indicated by green bidirectional arrow indicators shown in both respective regions on the screen.

Automatic Run

1. Go to the recipes screen: **PROCESS MENU>>RECIPES BUTTON**.
2. Make sure the mode indicator in the upper left corner is selected as **AUTOMATIC**.
3. Click Load button. You may be prompted to "**OVERWRITE CURRENT RECIPE <X>?**" Click **YES**, as this refers to overwriting the recipe in memory, not the recipe on disk.
4. Choose your recipe file from the list. Click **OK**.

5. Verify the recipe parameters in each step of your recipe. This is a good practice as there is no recipe protection on this system.
6. Verify that the Gas Valves for shared gas channels and Gas Factors for all gasses you are using are set properly.
7. Click the **RUN** button. The wafer will transfer into the chamber and the deposition process will start.
8. Wait for the deposition process to complete and the chamber to pump to base pressure. A **YELLOW ALERT** will display telling you the process is complete. Click **OK**.
9. The wafer will be unloaded back to the load lock, and a dialog box will indicate **PROCESS COMPLETED OK**.
10. Vent the load lock. **SYSTEM MENU>>PUMPING** button, then click **STOP**, acknowledge the confirmation message that usually appears and then click **VENT** on the load lock.

NOTE: Be Careful to not vent the chamber. The load lock is on the left; the chamber is on the right.)
The airlock vent takes 4 min.

11. Lift the air lock lid and remove your wafer. If you have further wafers to processes, load your next wafer and repeat the above steps.
12. If you have completed your last wafer, evacuate the load lock to vacuum. **SYSTEM MENU>>PUMPING** button, and then click **EVACUATE**. If there is no wafer in the load lock, click the **CANCEL** button when prompted for the Wafer ID.
13. Go to your FOM account and logoff from the tool.