

# PECVD - SPTS DELTA LPX APM

A more detailed user manual by KLA-SPTS is available. Please always leave the computers turned on.

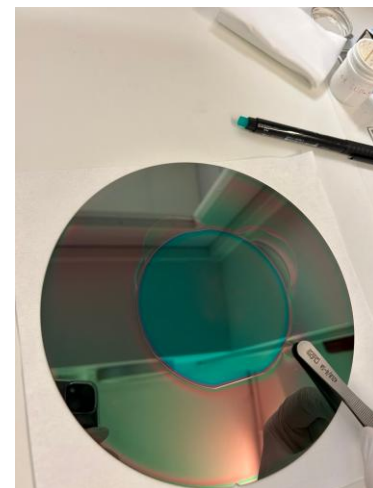
## Procedure

Mount your sample on a 200 mm wafer dedicated to Oxide and Nitride films separately using thermal paste on the table sharing with CI-Apex.



**Important:** Ensure the sample is securely attached to the wafer carrier and is free from any contamination or dust particles. There should not be any visible gap between sample and wafer carrier. Otherwise, there will be thermal gradients all over the sample, which can lead to uneven material properties.

Use IPA and tissue to clean the wafer holder before use and N<sub>2</sub> gun to remove particles, see photo:

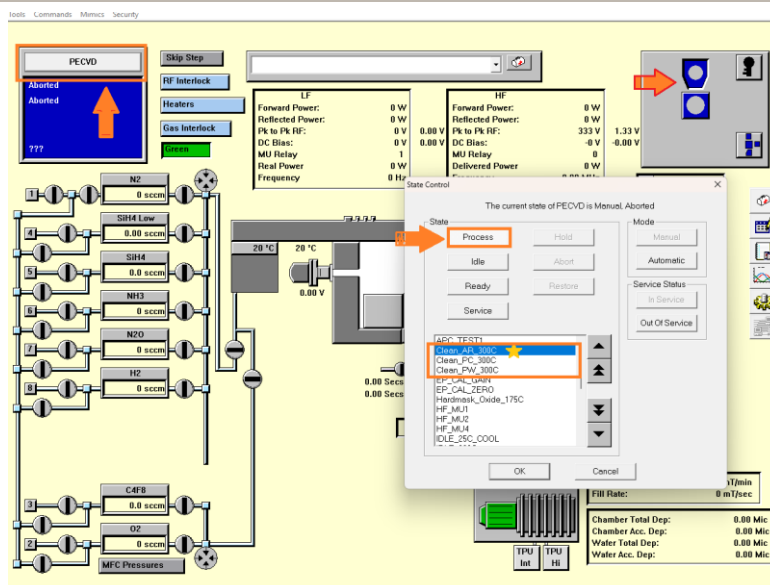


Open The SiH<sub>4</sub> and N<sub>2</sub>O gas lines follow the instruction.

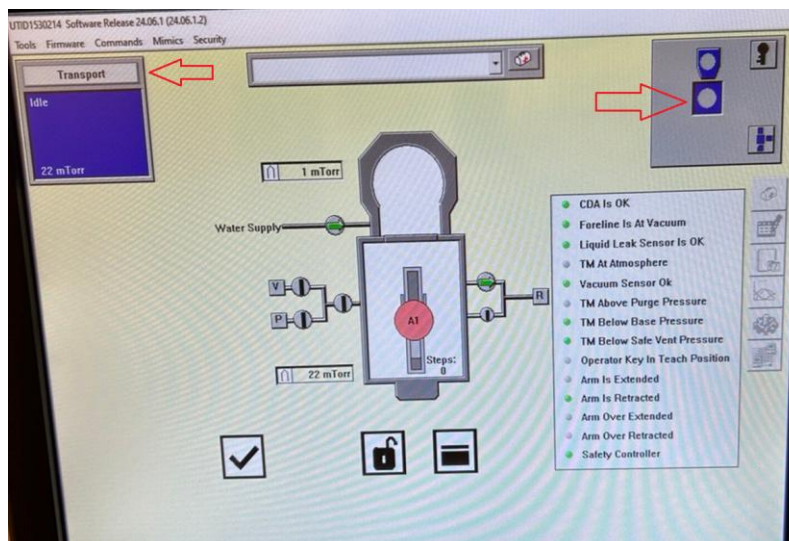
Start the software, log in with username (user) and password (user).

Select Chamber (PECVD) on the right-top of screen. In State Control window, Select Process, and select **Clean\_AR\_300C**.

After every process (when there is no sample loaded in the process chamber). Run **Clean\_PW\_300C**. Finally, at the end of your work, close SiH<sub>4</sub> and N<sub>2</sub>O gaslines and run **Clean\_PC\_300C**.

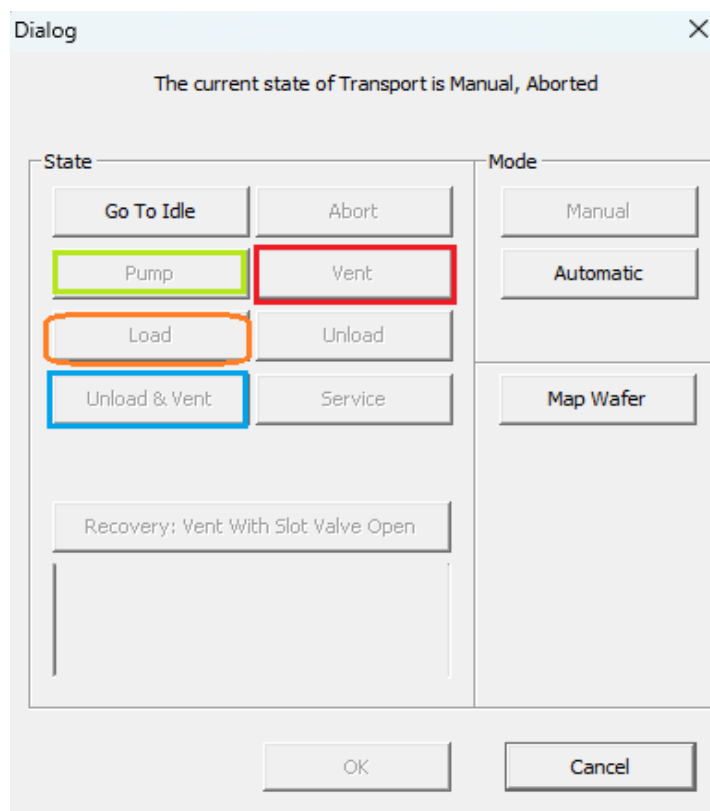


Select *Chamber Scope* (Transport) on the right-top corner of the screen as mentioned in the picture:



For manually pump, vent, load or unload the sample: Click the button “Transport” and wait for the dialogue window to appear.

When any function is in progress the related tab color turns green. Thus, if you see a tab that is either green or red, it's necessary to wait until that process has finished before taking any further action.



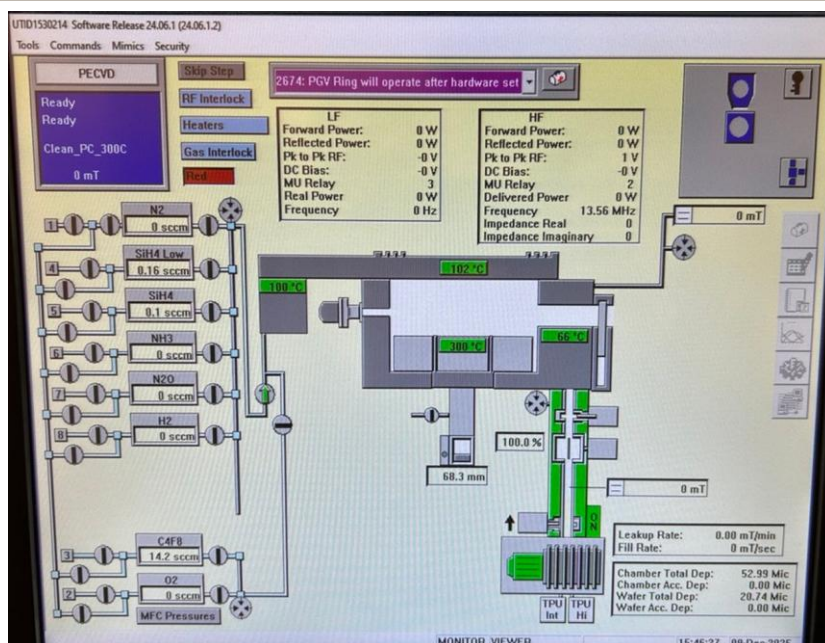
When the loadlock chamber is vented (the indicator light turns blue and the pressure in the loadlock is >760 Torr), open the chamber lid by unlocking the pin. Ensure you wear appropriate gloves and handling tools before loading the wafer carrier. Avoid touching sensitive surfaces to prevent contamination. Carefully load the wafer carrier 200 mm on the End Effector as shown in the picture. Close the chamber's lid and pump the chamber by pressing the tab in the Transport module.



**Important:** Try to place the wafer carrier properly on the end effector (see picture), to avoid any fault in transferring to the process chamber.



Once your sample is positioned within the process chamber and the chamber indicators return to blue, select *Chamber* (PECVD) from the upper left of the screen. In the State Control window, choose Process. Locate your designated recipe and confirm by pressing Ok. If NH<sub>3</sub> gas is required for your procedure, ensure it is opened according to the instructions.



After process finished, select loadlock chamber on the right top of the screen. Select Transport. Select Unload. If you are going to Vent, select Vent (Unload and Vent). Wait for the tab to turn blue again and chamber pressure 760 Torr. Open the chamber's lid by unlocking the black pin. Unload the wafer carrier, close the lid and pump the loadlock in Transport tab.

Close all the gas lines you opened. SiH<sub>4</sub>, N<sub>2</sub>O and NH<sub>3</sub>.

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Run **Clean\_PC\_300C** at the end of your work.

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