NanoQAM

Centre de Recherche sur les Nanomateriaux et l'Énergie

QUICK START

Parylene Deposition System

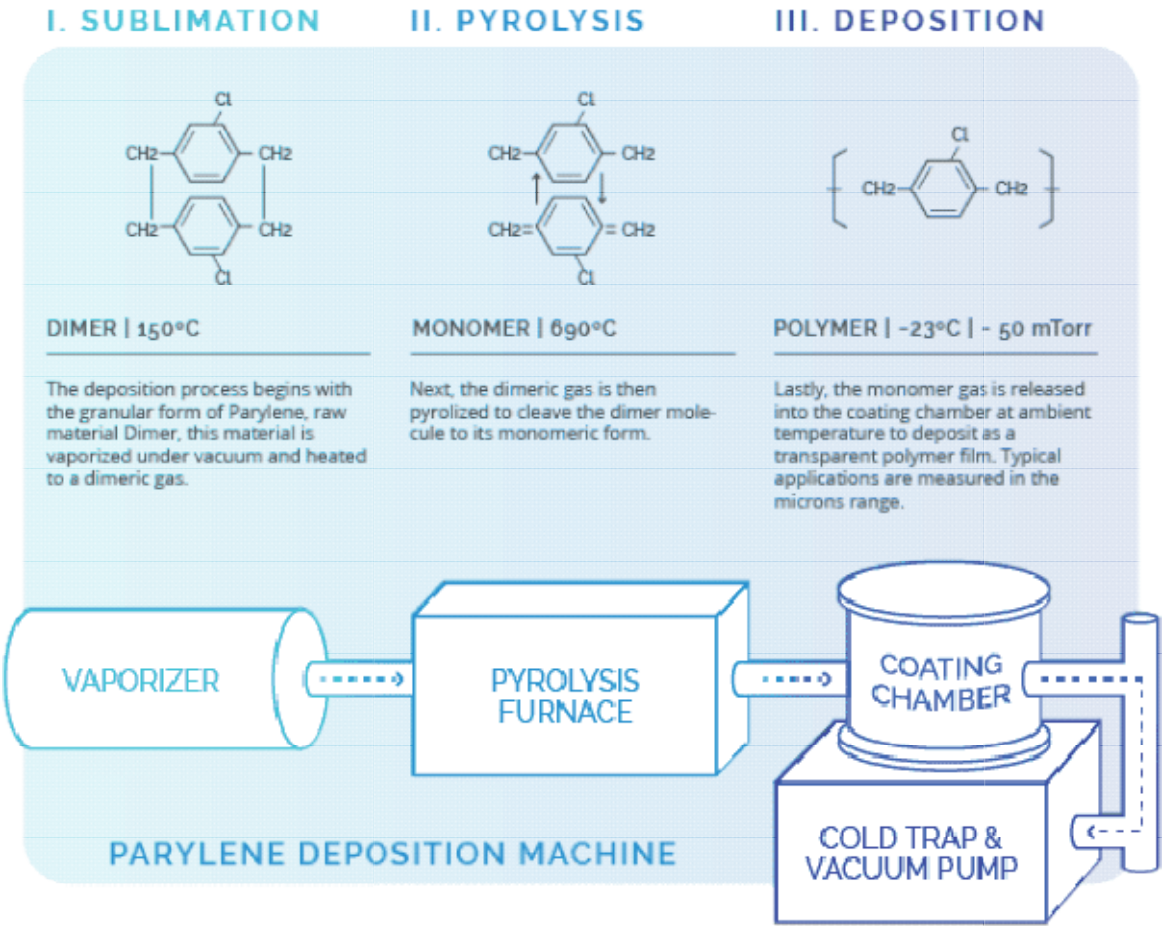
PDS 2010 LABCOTER™ 2

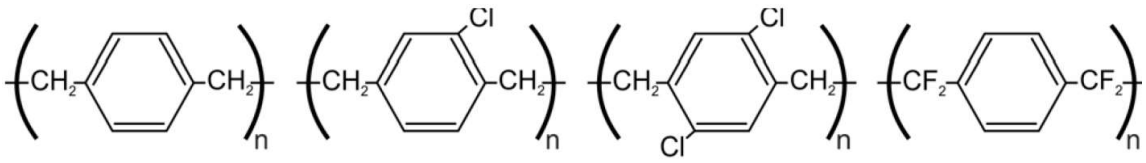
by Specialty Coating Systems

Purpose

The Parylene deposition system model 2010 is a vacuum system used for the vapor deposition of a Parylene polymer onto a variety of substrates. The coating is truly conformal and pinhole free.

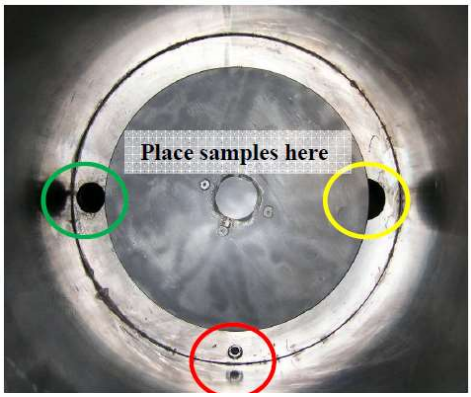
Process Description





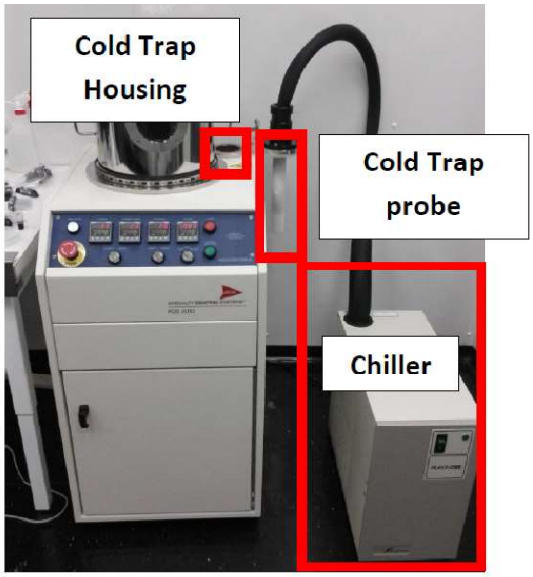
1. Prepare the desired amount of the source material. The Parylene C will deposit approximately **100 nm** for each **160 mg** of material (if the turn table is loaded, otherwise the deposition rate will be higher due to the decreased surface area).

2. Remove the chamber and verify if there is no Parylene blocking the chamber gauge port. The Parylene monomer inters though the opening circled in green, while the chamber is exhausted through the opening circled in yellow. The vacuum gauge port shown in red must be clear

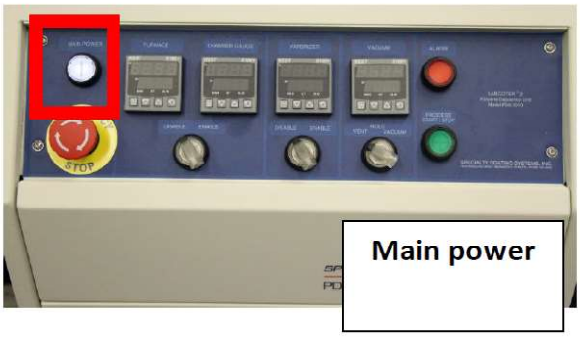


3. Load the sample by placing it on chamber carousel base plate. If needed install the turn table and distribution post. Place the chamber on.

4. Insert the cold trap probe into the cold trap housing.



5. Power on the PDS2010 instrument



6. Set the temperature controllers at the desired (Parylene C: furnace – 690 C°, chamber gauge – 135 C°, vaporizer – 175 C°, vacuum – 35 mTorr).

7. Press the **process start/stop** button, it will turn green.

8. Switch the **furnace**, **chamber gauge** and **vaporizer** to **enable**. (The vaporizer heater will not come on until the process all conditions (pressure and furnace temps) have been met).

9. Turn on the **mechanical chiller** and wait at least for 30 min before pumping down.

10. Make a boat of the aluminium foil using the boat forming tube and insert it in the load chamber. Load the measured amount of parylene in the boat. Close the load door.



11. Switch the **vacuum selector** to vacuum to begin pumping of the system (remember: the chiller has to be started 30 min before that).

12. Wait until the **process start/stop** button blinks continuously. It will take 2-5 hours.

13. Press the **process start/stop** button, it will stop blinking.

14. **Disable** the **furnace**, **chamber gauge** and **vaporizer.**

15. Wait until the vaporizer is less than 100 C° before venting the chamber. **Vent** the chamber by turning the **vacuum selector**.

16. Switch off the mechanical chiller.

17. Remove the cold trap from the exhaust port and place it in the holder.

18. Wait 5-10 min to clean the cold trap with the chem-wipes and microsoap.

19. Remove chamber and unload samples.

20. Clean the chamber and the plates with the chem-wipes and small quantity of the microsoap.

21. Disable device by pressing and depressing of the emergency button.

If you have any question, please contact Galyna Shul (shul.galyna@uqam.ca, 514 250 5306).