

User Guide for the Parylene Coater Part 1

1. Prepare Liquid N₂, samples and weigh the dimer.
2. Switch to **VENT** and wait until the display reads above “1000”
IMPORTANT: Do not pull on the chamber lid, cold trap or any other opening until the VACUUM stabilised at ambient pressure (otherwise black material build-up from the inside the furnace will dislodge and contaminate the chamber).
3. Remove the cold trap and place it into its holder, ensuring that the external surface is not scratched.
4. Coat the cold trap interior lightly with 2% microsoap solution and allow it to dry.
5. Open the chamber and the vaporizer.
6. Inspect the chamber O-ring carefully; wipe or remove any visible PaC flakes. Clean the vaporizer with the vacuum cleaner.
7. Load the samples in the chamber, along with a dummy sample (for thickness measurements). Ensure parts do not shadow each other.
8. Replace the chamber lid and confirm O-ring engagement.
9. Load the dimer in the vaporizer in a boat made from Al foil or glass. Spread the PaC powder evenly within the boat to ensure uniform sublimation. Insert the boat into the vaporizer chamber only about 2 cm past the door - **do NOT push it deep.**
10. Close and seal the vaporizer door, reinstall fully dried cold trap.
11. Turn the **VACUUM** switch to **ON**.
12. Pump down to **50 units**
 - a) If unable to achieve 50 units, note it in the logbook and inform technicians: eng-eed-technicians@lists.cam.ac.uk.
13. Fill the cold trap with liquid N₂. Allow stabilization, then top off to near full.
14. Switch on the **FURNACE**, the **VAPORIZER**, and press **PROCESS START**.
 - a) In cases of long depositions (more than 4g) refill with liquid N₂ **every 2 hours**
15. Wait a total of **3 hours**: in 2 hours the green light will be flashing (the deposition sequence is finished). Then, an additional 30 minutes - 1 hour is needed until the vaporizer temperature is below **40°C**.

User Guide for the Parylene Coater Part 2

16. Turn off the **FURNACE**, the **VAPORIZER**, and de-press **PROCESS START**.
17. Write down the “Pmin” value and switch to **VENT** and **wait** until the equipment is **fully vented**.
18. Unload the samples and the boat. Remove the cold trap and secure it in the holder.
19. When the furnace and vaporizer reach ambient temperature **clean the coater**.
20. Close the chamber, the vaporizer and reinstall clean cold trap
21. Pump down to **50 units**
22. Add the remaining liquid N2 to the cold trap.
23. Measure the thickness of the parylene film using the profilometer.
24. Fill in the logbook.

25. If you change the pressure set point to a different value, set it back to the default value (26) before leaving,
26. The factory settings of the controllers are **NOT** to be changed for **ANY REASON**
27. **NEVER** remove the PID controllers from their slots. This will reset their settings.