

User Manual

PECVD – Corial D250L

Corial Plasma-Therm

Restrictions and Precautions

- **The following materials are forbidden in the PECVD reactor:**
 - **Copper**
 - **Gold**
 - **Photoresists**
- **The shuttle is always stored in the reactor and therefore is extremely hot (>300°C) when transferred to the load-lock.**
- **Plastic tweezers are forbidden as they might melt if in contact with the shuttle. Only use metallic tweezers.**

1. Connect to the operator account

- a) Logon on the access control system on the zone computer to bring the tool's reactor online.
- b) The Corial D250L computer, click on the top right on *User Login*.
- c) Select the *Operator* account and enter the password.
- d) You are now connected for 20 minutes. After this time, you will be automatically logged out, you will need to reconnect again.

2. Preliminary Checks

- a) Check that the previous user has cleaned the chamber. It should be written in the logbook and in the *Job History* sub-tab in the *Process* tab.
- b) Check that the chamber temperature setpoint matches the one of the recipe that you will use. If not, select the recipe in *Process Tab* -> *Start Job* and click on the *Set Recipe Temp.* button on the left of the screen.

3. Chamber Conditioning

- a) Check that the shuttle is inside the chamber. If not, transfer it back to the reactor from the *Handler* tab.
- b) The conditioning should be made of approx. 200 nm of the same material than for your deposition.
- c) In *Process* tab and *Start job* sub-tab, select the corresponding recipe *C_ "recipename" _conditioning*.
If the conditioning recipe for the layer needed is not present, you can also run the "A_" regular deposition recipe and set it for 200nm.
- d) Enter "conditioning" as *Job Id* and tick the *No Transfer* box.
- e) Click on *Start Job* button.

4. Deposition

- a) In the *Handler* tab, transfer the shuttle to the load-lock and vent it.



The shuttle is coming back at 300 °C. Use metallic tweezers!

- b) Load your sample on the shuttle and close the load-lock's lid.
- c) Wait for the shuttle to be detected and click on *Transfer*. The load-lock will be pumped down automatically.
- d) In *Process* tab and *Start Job* tab, select a deposition recipe "*A_recipename*" and enter a *Job Id*.
- e) Click on *Start Job* button and enter your deposition time in the pop-up window. At the end of the deposition, the shuttle remains in the reactor.
- f) In the *Handler* tab, transfer the shuttle back to the load-lock and vent it.
- g) **By using metallic tweezers**, unload your sample and cool it down using the nitrogen gun.
- h) Once the depositions finished, transfer the shuttle back to the reactor to keep at temperature.

5. Plasma Cleaning

The plasma cleaning of the reactor has to be done regularly and is **mandatory**:

- Once the total thickness has been reached in the reactor, conditioning included.
 - At the end of the user's depositions before leaving the tool. The plasma cleaning is part of the process.
 - Before switching to another material.
- a) Check that the shuttle is back to the reactor. If not, transfer it.
 - b) In *Process* tab -> *Start Job* tab. Select the cleaning recipe used for the material you deposited, either "B_Clean" or "B_Clean_aC".
 - c) Type "Clean" as Job Id.
 - d) Click on *Start Job* button.
 - e) The plasma cleaning ends automatically by OES Endpoint.

6. Leaving the tool

- a) **Fill the logbook**
- b) Set the temperature setpoint back to 320 if you have use lower temperature
- c) Check that the shuttle is the reactor.
- d) On the top right, click on *User Login* and on *Log out*
- e) Log out of the CAE.