

EPFL - CMi**LAB 600 H****WARNING**

Only the **CMi Staff** is qualified

- to do a **service**
- to do a **maintenance**
- to **fill** or to **exchange** any source in a **crucible**.

Each user has to **check** by himself / herself

- that the **crucible configuration and indexing** is correct
- that the **level of the evaporation source** in the pocket of the crucible is enough

If the crucible configuration isn't correct, please contact the staff.

User manual**1. Login**

1.1. Logon on the ACCESS CONTROL SYSTEM.

1.2. Logon on the LAB 600 H: User → Change User → Select your login and type your password.

2. Loading

2.1. VENT (~5 min)

2.2. ION SOURCE SHIELD

- Recipe without Ion Source (HRN, nSt, HHN, ...) => CHECK that the ion source is shielded with an aluminum foil.
- Recipe with Ion source (LRI, ...) => CHECK that the ion source isn't shielded (aluminum foil has been removed).

2.3. CHECK THE CRUCIBLE CONFIGURATION

- See in the recipe list which crucibles are used.
- **IMPORTANT**: CHECK the crucible configuration through the transparent door of the box where evaporation sources are stored.

Example as shown in the picture:

- Crucible 1 = Al
- Crucible 2 = Cr
- Crucible 3 = Au
- Crucible 4 = "Coffre"
- Crucible 5 = Ti
- Crucible 6 = Pt



2.4. INITIALIZE THE CRUCIBLE AND CHECK THE EVAPORATION SOURCES (crucible rotation in manual mode)

- "PROCESS" – "PatternNo" : Select "**Manual**", then click "**OK**".
- EGC38 Module – "**SHUTTER**" : press the button "**OPEN**".
- EGC38 Module – "**CRUCIBLE**" : press the arrow key up or down until number **1** and wait until the number stops flashing.
- EGC38 Module – "**CRUCIBLE**" : press the arrow key up or down until number **6** and wait until the number stops flashing.
- EGC38 Module – "**CRUCIBLE**" : press the arrow key up or down until number **2** and wait until the number stops flashing. The crucible indexing is now initialized. **CHECK that the Chromium pocket is shown (small grey pellets).**



- EGC38 Module – "**CRUCIBLE**" : press the arrow key up or down until the desired pocket(s).
- **IMPORTANT** : CHECK the evaporation sources.
 - Material : color, appearance (SiO₂: white grains, Au: yellow slug, Al₂O₃: white slug)
 - Level : check that the pocket isn't empty.
- EGC38 Module – "**SHUTTER**" : press the button "**CLOSED**".
- **IMPORTANT** : "PROCESS" – "PatternNo" : **Unselect** "**Manual**", then click "**OK**".
- EGC38 Module – Check that the **green Led "REMOTE"** is ON.

2.5. WAFER LOADING

- Put a dummy wafer in each ring you don't use.

2.6. CLOSE the DOOR.

- Check the cleanness of the door O-ring.
- Clean the O-ring with your glove. Never use a solvent (isopropanol, acetone, ...)
- Close the door and lock it with the two bolts.

2.7. HIGH VACUUM.

- Check the cleanness of the door O-ring.
- Clean the O-ring with your glove. Never use a solvent (isopropanol, acetone, ...).
- Close the door and lock it with the two bolts.

3. Recipe Configuration and Start**3.1. Modify recipe (thickness parameters)**

- **Recipe** → Select Category and Recipe.
- Double click on "**Write Data for Deposition**" : Enter the thickness in **kÅ**.

3.2. Start recipe: Button « ON » + Select category and recipe + OK

- As soon as the pumping starts, the two bolts fall down.
- Leave the bolts as they are.
- Never put the bolts up when the chamber isn't at atmospheric pressure.

3.3. Fill in the LAB 600 H notebook.**3.4. To stop a recipe: Button « Break ».** Then **call the staff** because you have no rights to restart a recipe.

4. Unloading

4.1. VENT (~5 mn)

- The chamber can't be vented if the temperature is higher than 100°C.
- **Wait 25 minutes after opening the door** and before unloading your wafers.
 - Temperature near the heaters = 120°C at chamber opening.
 - Temperature near the heaters = 80°C 25 minutes later.
 - Temperature of the substrate holder = 100°C at chamber opening.
 - Temperature of the substrate holder = 46°C 25 minutes later.

4.2. WAFER UNLOADING

- Put a dummy wafer in each ring after unloading your wafers.

4.3. CLOSE the DOOR & HIGH VACUUM.

- Check the cleanness of the door O-ring.
- Clean the O-ring with your glove. Never use a solvent (isopropanol, acetone, ...).
- Close the door and lock it with the two bolts.
- Press the button "High Vacuum".

5. Logout

5.1. Logout from the LAB 600 H: User → **LOGOFF**.

5.2. Logout from the ACCESS CONTROL SYSTEM.