

**EPFL - STI - 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** 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 mn)

**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 = Al<sub>2</sub>O<sub>3</sub>
- Crucible 5 = Ti
- Crucible 6 = Pt



## 2.4. 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
- **IMPORTANT** : CHECK the evaporation sources
  - Material : color, appearance (SiO<sub>2</sub>: white grains, Au: yellow slug, Al<sub>2</sub>O<sub>3</sub>: 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.

## 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.