

Operation instruction. Thermal evaporator NANO 36.

*Person Responsible – Dr Li Li*

The evaporator has two screens:

Power Distribution Unit – left screen,

Film Thickness Controller – right screen.

(Name of the tabs and buttons are in CAPITAL LETTERS)

1. If the system is in the pump down mode and the pumping is finished, press DONE. Otherwise, go to step 2.
2. On the left screen, select the tab RECIPE. In the RECIPE screen, press VENT to vent the chamber.
3. The system will slow down the turbo pump to 50% and finally to 0% before refilling with N<sub>2</sub>.
4. When the refilling finishes, press DONE.
5. Manually open the chamber.
6. Select the tab DEP and press the shutter activation button (with '1') to open the shutter.
7. Install the required boat (Tungsten, Molybdenum or Alumina coated Tungsten – refer to the chart) into the required pocket (tooling factor might be different). Secure the holding bolts DO NOT TIGHTEN.
8. Install the pocket-separating shield and fill the boat with the required material. Close the shutter.
9. Select the tab SUBST. Press the shutter activation button (with 'SBST') to open the shutter. Lift and withdraw the sampleholder. Secure the sample on the sampleholder and install it into the chamber. Close the shutter.
10. Check the crystal monitor, by selecting on the right screen SENSOR INFO. Make sure LIFE for sensor #1 is higher than 50%. (You might need to press NEXT MENU a few times to see the SENSOR INFO tab).
11. Close the chamber and on the RECIPE tab, press PUMP DOWN.
12. After the chamber pressure falls below  $1 \cdot 10^{-5}$  Torr, press DONE.
13. On the SUBST tab, press MOTOR ROTATE, then select the input window under SPEED, set the rotation speed and press ENTER. (100 %/s is the maximum speed).
14. On the DEP tab, select the source (SRC) corresponding to the required pocket. Press PWS1 button to toggle it and activate FTC.

1. On the Film Thickness Controller (right screen) press NEXT MENU until FILM MENU appears.
2. FILM MENU → select required film and go to step 4 or an empty field
3. CREATE → EDIT NAME → create film name
4. EDIT → set TOOLING FACTOR, POCKET, MATERIAL (this will set the DENSITY and ZFACTOR)
5. FILM CONDITIONS → set RAMP POWER1, RAMP TIME1, SOAK TIME1, RAMP POWER2, RAMP TIME2, SOAK TIME2, IDLE POWER (0%), IDEL TIME (60s).
6. TO MAIN → PROCESS MENU → SELECT existing process and go to step 9.
7. CREATE → EDIT NAME
8. EDIT → INSERT NEW → select film → INSERT NORMAL
9. EDIT → LAYER → set INIT RATE, FINAL THICKNESS, START MODE (auto), SENSOR1 (on), MAX POWER
10. TO MAIN → NEXT MENU → toggle AUTO/MANUAL ⇔ MANUAL/AUTO (auto or manual power control)
11. START (or START LAYER)
12. Do the deposition.

### After the deposition finished

1. On the left screen select DEP tab. Toggle FTC and PWS1.
2. If another material has to be deposited (already in the chamber) go to step 14 on page 1.
3. On the SUBST tab. Toggle MOTOR ROTATE.
4. On the RECIPE tab. Press VENT.
5. Open the chamber and unload the sample.
6. Close the chamber and press PUMP DOWN in RECIPE tab.