

HOW TO USE THE SYSTEM (1)

IN POWDER CONFIGURATION

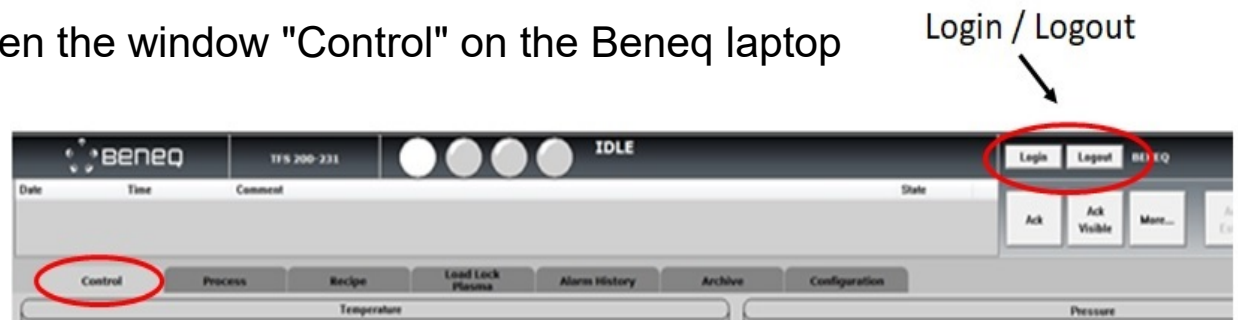
I. Login / logout

1. Login on the PC zone 4
2. Login on Beneq laptop (if it's not already done)
3. Press the button "Control" to open the window "Control" on the Beneq laptop
4. Click on Login:

Enter : **oper** and press return

Click on Password :

Enter : **oper** and press return



Once all your depositions are finished, the equipment come back in idle mode:

1. Switch off the heating if you are the last user
2. Fill the notebook
3. Log out on the PC zone 4

HOW TO USE THE SYSTEM (2)

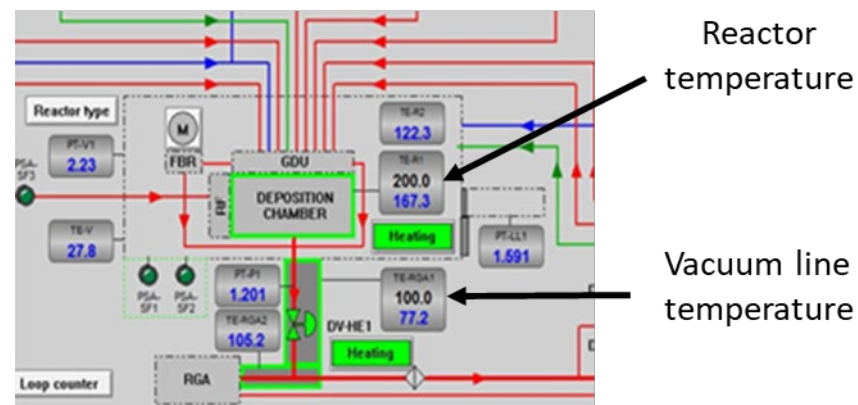
IN POWDER CONFIGURATION

II. Setting of the reactor and precursors temperatures

On the control window, you click on the black number corresponding to the reactor temperature and to the precursor temperature and you enter the temperature requested for the deposition (see below). It takes roughly 2 hours for the reactor to get 200°C from room temperature.

Al₂O₃ : Chamber: 200°C
Liquid precursor 2 (TMA): room temperature

TiO₂ : Chamber: 170°C
Liquid precursor 3 (TiCl₄): room temperature

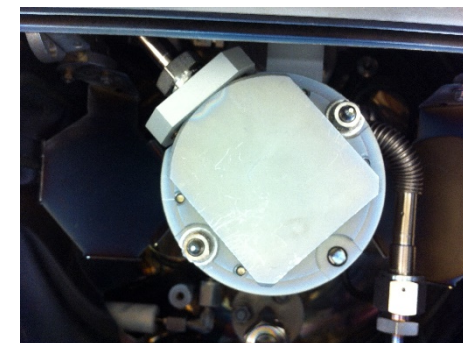
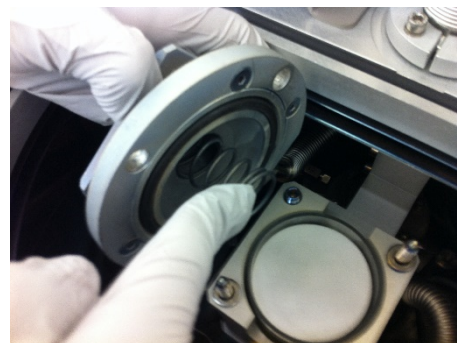
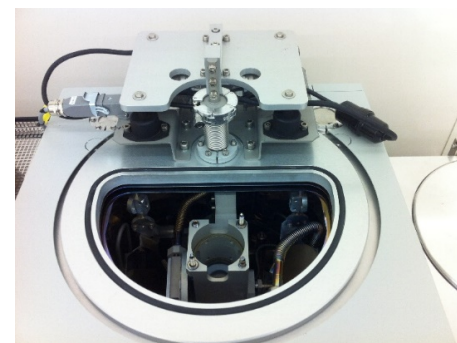


HOW TO USE THE SYSTEM (3)

IN POWDER CONFIGURATION

III. Powder loading

1. Fill with powder the glass or stainless-steel container
2. Go to the window “**control**” and press **Vent**
3. Open the cover of the chamber
4. Install the container in the powder reactor
5. Insert the spring in the cover of the reactor
6. Screw the cover on the powder reactor
7. Close the cover of the chamber
8. Go to the window “**control**” and press **Pump down**

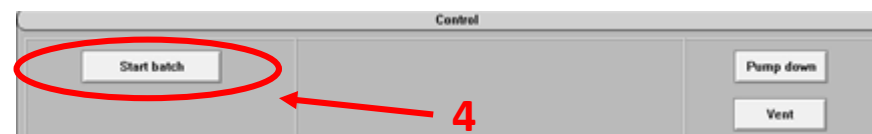
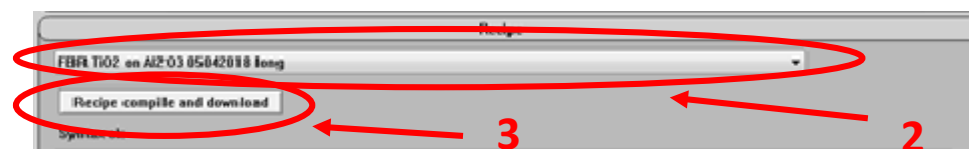


HOW TO USE THE SYSTEM (4)

IN POWDER CONFIGURATION

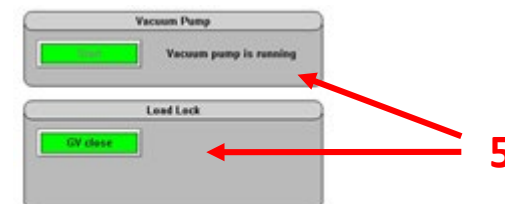
IV. Starting a recipe

1. Go to the window “Control”
2. Select your recipe in the recipe folder
3. Press **Compile and download the recipe**
4. Press **Start batch** and follow the instructions (open precursor valves etc)
5. In the menu “Start batch confirmation”, double check
 - if the pump is running



And then press **Start batch** one more time

At the end of the process close the hand valve if requested



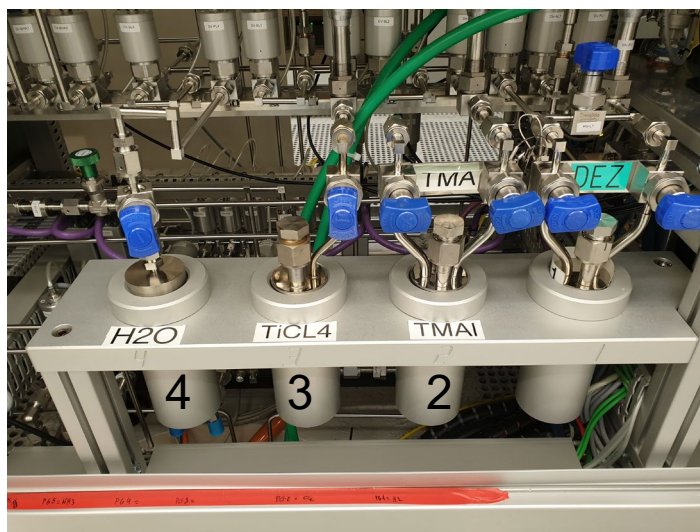
HOW TO USE THE SYSTEM (5)

IN POWDER CONFIGURATION

Valves setting before deposition

Al_2O_3 : Open the hand valves (right ones) of liquid precursor 4 (H_2O) & liquid precursor 2 (TMA)

TiO_2 : Open the hand valves (right ones) of liquid precursor 4 (H_2O) & liquid precursor 3 (TiCl_4)



HOW TO USE THE SYSTEM (6)

IN POWDER CONFIGURATION

V. Powder unloading

1. Click on “**control**” once the chamber temperature is below 50°C
2. Press **Vent** and wait for the atmospheric pressure
3. Open the cover of the chamber
4. Unscrew the cover on the powder reactor
5. Take out the spring in the cover of the reactor
6. Remove the container from the powder reactor
7. Close the cover of the chamber
8. Press **Pump down**