Sawatec & Präzitherm Coater Line for MISC polymers: User Manual

Version of 2024-11-25

1. Introduction

This user manual explains how to operate the Sawatec LSM-250 & Präzitherm coater line for the coating and drying/curing of misc. polymer thin films. In this line, a combination of two hotplates and spin coater offers maximum flexibility for various type of deposition process.

NOTE: MATERIALS TO BE COATED IN THIS LINE SHOULD BE REVIEWED BY THE CMi COMMITTEE. COATING OF STANDARD PHOTORESIT ARE NOT ALLOWED IN THIS COATER!

List of compatible material and associated Standard Operating Procedure (SOP) are available here:

https://cmiaccess.epfl.ch/restricted/indexWP.php

Standard photoresists are not included in this list and must be deposited in dedicated coaters for photoresists.

2. Login

- Login on the "Z13 Sawatec Coater for MISC polymers" with CAE on zone 13 accounting computer.

3. Präzitherm Hotplate Settings

- Two hotplates are available for baking/curing ofthe films. One is equipped with a cover so that wafers can be baked under N2 flow/atmosphere.
- Make sure the Präzitherm hotplate controllers are turned on. If not, turn them on.

- The Präzitherm hotplates can operate in two modes:
  - Fixed temperature mode = "Regler"
  - Ramped temperature mode = "Rampenreg.Programmer"
- WARNING: Maximum hotplate temperature is 350°C.
- Select the preferred operating mode using the appropriate switch.

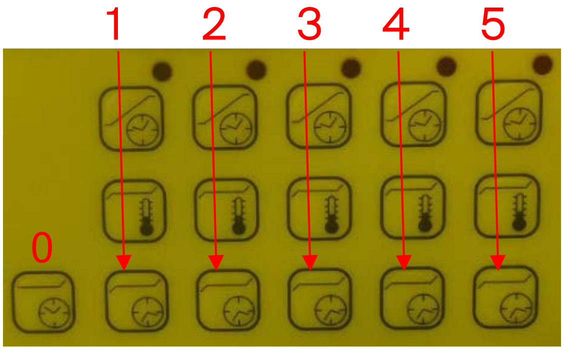
1) "Regler" mode:

To adjust the temperature in this mode, maintain the "blue" button pressed and adjustthe temperature set-point with the "up" and "down" arrows. Wait until the temperature is stable.

2) "Programmer" mode:

- In "Programmer" mode, users can edit three programs. Press "P1", "P2" or "P3" to select these programs.

- Each program can hold a maximum of 5 steps (ramp time + wait time each).
- Edit each steps of program by maintaining the corresponding buttons and adjusting with the arrows. Temperature ramps will be linear up to the temperature set-point.



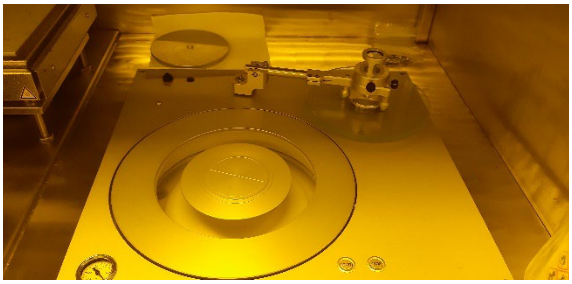
Ramp time [hr.min]

Temperature set-point [°C]

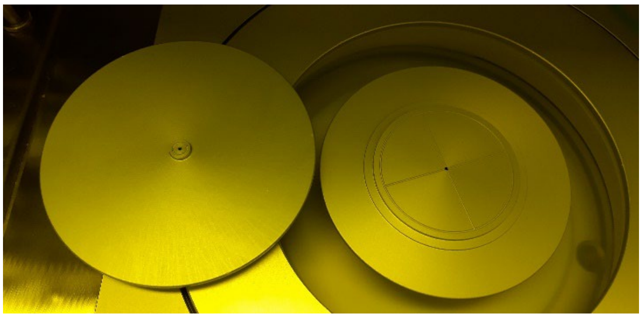
Wait time [hr.min]

- To start the selected temperature program,press “START”.

4. Sawatec Coater Preparation



- Verify that the proper chuck is installed. Two chucks are available on the system: 1) Chuck for small chips, 2) 4inch wafer chuck.
- CHUCK EXCHANGE:
  - Make sure to wear a second pair of nitrile gloves during exchange of chucks.
  - Remove the chuck by lifting it up.
  - Make sure the three pins are present. If one is missing, it might have fallen into the vacuum hole. Contact the Staff if it is the case!
  - Look at the pin position to insert the new chuck and press firmly for correct chuck leveling.



5. Recipe selection and operation

- Recipe selection is done by pressing the following buttons:

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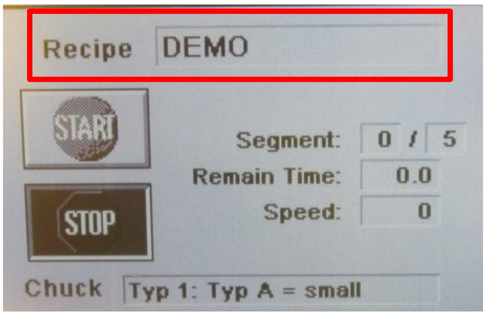

Recipe DEMO

Segment: 0 / 5
Remain Time: 0.0
Speed: 0

Chuck Typ 1: Typ A = small

- Select the process in the list. The recommended processes are :
  - STD_XXXX (wafers and low viscosity PR)
  - HV_XXXX (wafers and high viscosity PR)
  - CHIP_XXXX (small chips)

Warning: Recipes are edited by the CMi Staff. Do not edit them!!

- Dispense the material to be spinned at the center of the wafer using the disposable pipettes or manually. 2-3 ml are sufficient for a 4inch wafer.

- Make sure that the cover glass is not obstructed by any objects and start the process.
- Press the “START” key to execute the coating process.

- Wait for process completion. The cover glass will move back to standby position.
- The wafer is then ready to be transferred to the hotplate.

- Make sure to check the temperature with the surface probes and adjust the setpoint if necessary.
- Measure the softbake duration with a timer
- Repeat for each wafer.