

# SUSS Twin Gamma Coater & Developer

**Coater and developer for 4 and 6 inch wafer. Consists of separate modules for coating and developing process with integrated wafer transfer station**

## **I/O station**

- 4 I/O stations, coater side, send/receive carrier for coating or developing
- 2 I/O stations developer side, deactivated and cannot be used
- I/O stations can optionally be equipped with 4 and 6 inch carriers  
parallel operation is possible
- Coating and developing lots can be started in parallel
- selective selection of wafer is possible

## **Coater Unit**

- 1 mechanical wafer alignment station (flat)
- 1 HMDS unit (bubbling system)
- 2 coater cups, spin speed 10 – 6000 rpm, acceleration 10 – 50000 rpm/s, open bowl
- 4 resist nozzles per coater cup
- prewet /EBR nozzle
- (solvent) nozzle for cleaning of resist nozzles
- backside rinse
- 6 hotplates, contact, with vacuum, 60 – 250°C
- 2 coolplates, contact and with programable proximity 0.2 – 15 mm, step 0.1 mm, vacuum, 20 – 25°C
- 5 IDI pumps, low viscosity
  - 3 resists, coater 1 + 2
  - 1 resist, coater 1
  - 1 resist, coater 2
- the machine is open to the top and no coater chamber → no temperature and humidity control possible
- robot, Genmark GB4S with needle gripper

## **Resist cabinet**

- 5 resist bottles
- 5 resist reservoirs (~500 ml)

## **Developer Unit**

- 1 mechanical wafer alignment station (flat)
- 3 developer cups, spin speed 10 – 6000 rpm, acceleration 10 – 50000 rpm/s
- 1 (puddle) developer nozzle per developer cup
- 1 DI water nozzle per developer cup
- backside rinse
- 6 hotplates, contact, with vacuum, 60 – 250°C
- 2 coolplates, contact and with programable proximity 0.2 – 15 mm, step 0.1 mm, vacuum, 20 – 25°C
- robot, Genmark GB4S with needle gripper

## **Temperature control devices cabinet**

- 6 thermostats, Fa. Julabo Compact Refrigerated circulator F30-C
  - 1 per coater cup and all resists
  - 1 per developer cup for developer
  - 1 for all developer cups for DI Water
- 2 thermostats, Fa. Julabo Recirculation Coolers FC600 S
  - 1 for all coolplates
  - 1 for flange cooling (coater + developer)

## **Chemical cabinet**

- 2 solvent tanks, stainless steel, 10 l, change tank system
- 2 developer tanks for developer cup 1+2, polyethylene (PE), 5 l, changing tank system
- 2 developer tanks for developer cup 3, polyethylene (PE), 5 l, changing tank system

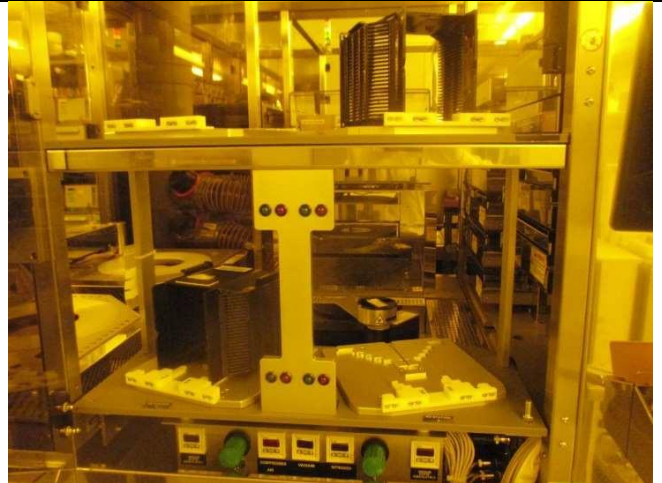
## **Used chemicals**

- HMDS
- positive i-line resists
- solvent
- TMAH based developer with surfactant, metal free

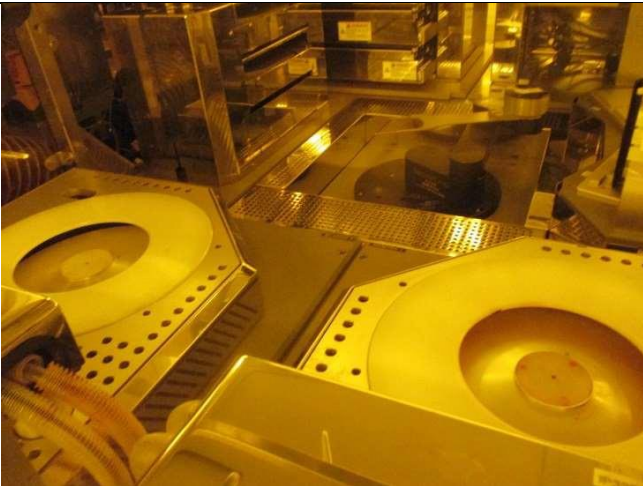
## Pictures



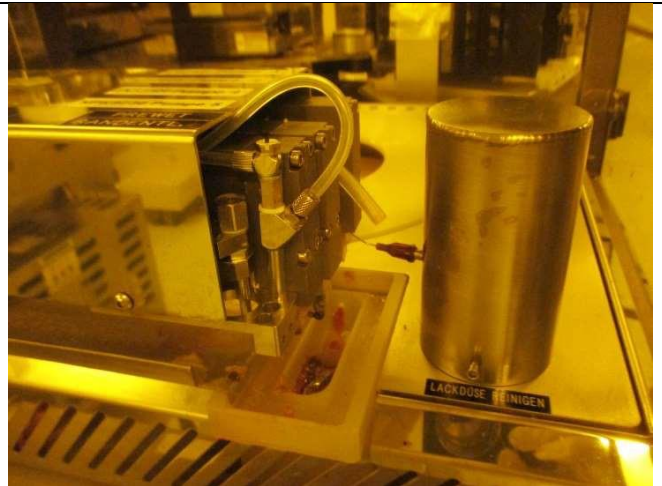
Overall system: left side coating module, right side developing module



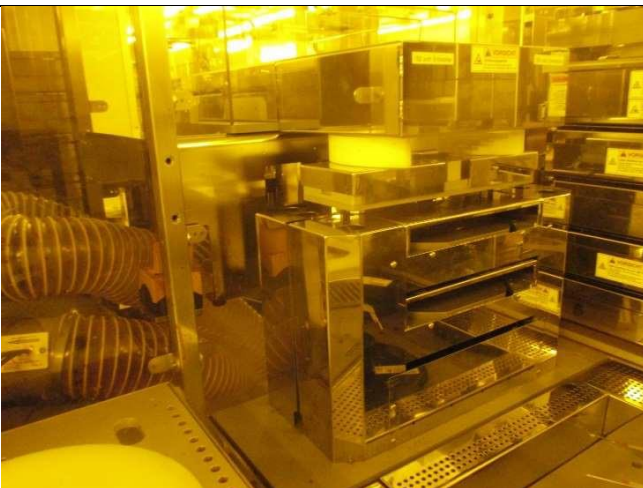
4 I/O station



2 Coater cups



Resist + Prewet/EBR + cleaning nozzles  
(1 nozzle removed)

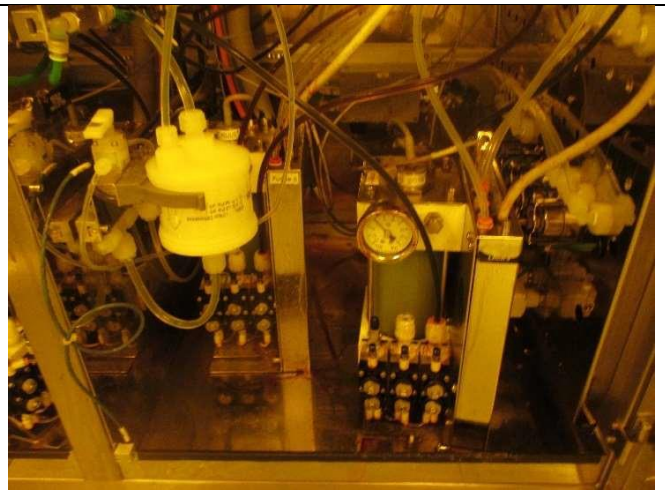


Mechanical wafer alignment station (up)  
2 Coolplates (down)



HMDS module (up) + 4 Hotplates  
(down)

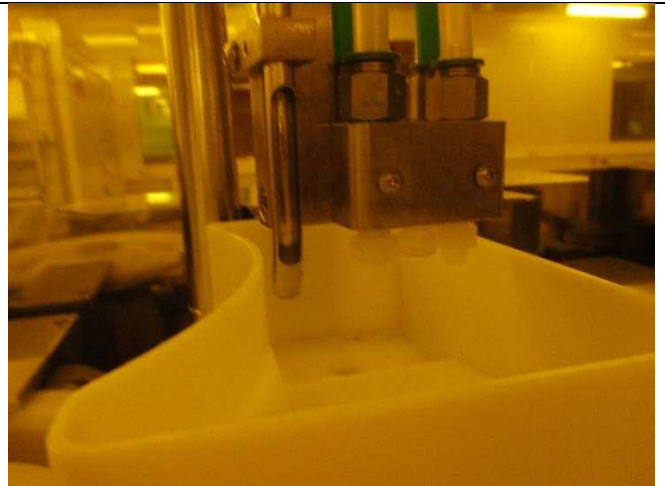
2 Additional Hotplates (coating module)



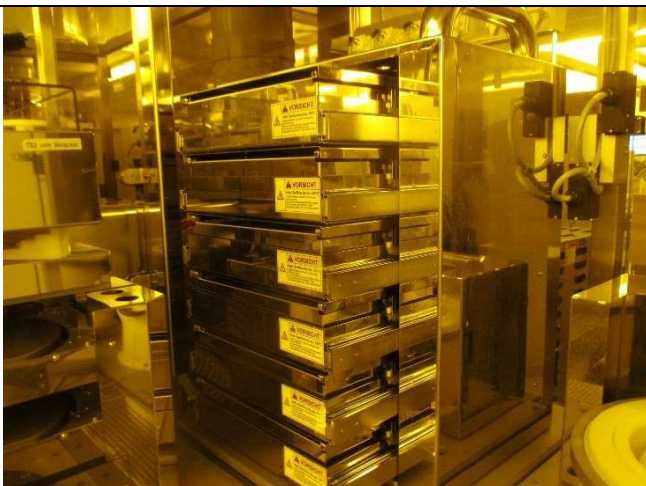
Resist pump



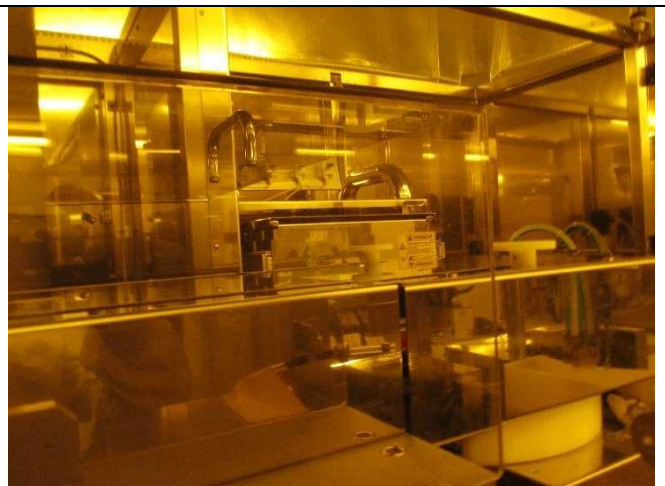
Developer cups 1 + 2



Developer + DI water nozzles



6 Hotplates (developing module)  
Developer cup 3 (right lower corner)



Wafer transportation system between  
the two modules

Robot Genmark



Needle Gripper



Resist reservoirs



Chemical cabinet solvent + developer



Thermostats  
Julabo



Power supply