Master: Multilayer – Thin Chamb. and Mother Machine

**Layer 1** is the smallest feature. For the thin chambers we do ( 0.4, 0.5, 0.6 ) μm, while for Mother machine we will do ( 0.4 0.5 ) μm.

**Layer 2** is the texture for the Main channel, which at 30 μm in height, they will be ~ 60 times bigger than layer 1.

Clean :

* ddH2O
* Acetone
* (Sonication, 10 min)
* Dehydration ( ***15*** *min* @ **120**°C )

----------------------------------------------------------------------------------------------------------------------------------------------------------

Spin 1 :

* ***Hlayer*** **1** = 0.6 μm , 0.5 μm , 0.4 μm
* Photoresistor: negative **Su-2000.5**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| *height* |  | *Speed* | *ramp* | *Time* |
| all | 0° | 500 rpm | 1 | ***10 s*** |
| 0.6 | 1° | 2200 rpm | 3 | ***30 s*** |
| 0.5 | 2° | 3000 rpm | 3 | ***30 s*** |
| 0.4 | 3° | 3700 rpm | 3 | ***30 s*** |

Removal of Edge Bead = this will grant better contact between mask and wafer

Soft Bake 1 : ***1*** *min* @ **95°**C

Mask 1 Exposure 1 : E = **60** [mJ/cm^2]  ≈ *s*

Post Bake 1 :

|  |  |  |
| --- | --- | --- |
| ***65****°C* | *ramp* | ***95****°C* |
| ***/*** | ***~ 90*** s |

----------------------------------------------------------------------------------------------------------------------------------------------------------

----------------------------------------------------------------------------------------------------------------------------------------------------------Spin 2 :

* ***Hlayer*** **2** = about ***30 μm***
* Photoresistor: negative **Su-3025**

|  |  |  |  |
| --- | --- | --- | --- |
|  | *Speed* | *ramp* | *Time* |
| 0° | 500 rpm | 1 | ***10*** *s* |
| 1° | 2500 rpm | 3 | ***30*** *s* |

Soft Bake 2 : 1 min @ 65°C **+** ***12*** *min* @ **95°**C

-------------- Allignment -----------------

Mask 2 Exposure 2 : E = 180 [mJ/cm^2]  ≈ *s*

----------------------------------------------------------------------------------------------------------------------------------------------------------

Post Bake 2 :

|  |  |  |
| --- | --- | --- |
| ***65****°C* | *ramp* | ***95****°C* |
| ***1*** *min* | ***~3.5*** *min* |

Develop 2 : t = ***6*** *min*

Hard Baking : about ***20*** *min*  @ ***180°***C