Master: Multilayer – Chemotaxic Swimming chamber dev

**Layer 1** is the smallest feature. We do thin chambers in 3 different heights: ( 0.8, 1, 1.2 ) μm.

**Layer 2** is the texture for the Main channel, which at about10 μm in height

Clean :

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

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Spin 1 :

* ***Hlayer*** **1** = 1.2 μm
* Photoresistor: negative **Su-8 2002**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| *height* | ***Su-8*** | *Speed* | *ramp* | *Time* |
| all |  | 500 rpm | 1 | ***10 s*** |
| 1.2 | **2002** | 6000 rpm | 3 | ***30 s*** |
| 2.0 | **2002** | 3500 rpm | 3 | ***30 s*** |

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

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

Mask 1 Exposure 1 : E1.2 = **70** [mJ/cm^2]  1.2 ≈  ***1.5*** *s*

Post Bake 1 :

|  |  |  |
| --- | --- | --- |
| ***65****°C* | *ramp* | ***95****°C* |
| ***1*** *min* | ***~ 90*** s |

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* ***Hlayer*** **2** = about ***8 μm***
* Photoresistor: negative **Su-3010**

|  |  |  |  |
| --- | --- | --- | --- |
|  | *Speed* | *ramp* | *Time* |
| 0° | 500 rpm | 1 | ***10*** *s* |
| 1° | 3500 rpm | 8 | ***30*** *s* |

Soft Bake 2 : **1** min @ 65°C **+**  ***3*** *min* @ **95°**C **+**  **1** min @ 65°C

Edge Bead removal: thin stream of developer of the edge, while spinning at 750 rpm

Soft Bake 2 : ***~ 2*** min @ 65°C   
[allow reflow and drying, so that photoresistor is not steaky and it is easy to do mask alignment]

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

Mask 2 Exposure 2 : E = **180** [mJ/cm^2]  3.2 ≈  ***3.6*** *s*

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Post Bake 2 :

|  |  |  |
| --- | --- | --- |
| ***65****°C* | *ramp* | ***95****°C* |
| ***1*** *min* | ***~2-3*** *min* |

Develop 2 : t = ***5*** *min*

Hard Baking : about ***20*** *min*  @ ***180°***C [ramp up, about 10 degrees per min, and down]