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| Objective |
| Batch name: Process template |
| This process flows is a guideline on how to spin, develop and rinse SU8 on substrates as Si, SiO2, glass and SOI, using the KS Spinner and KS Aligner. SU8 is a negative resist. |

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| Step Heading | Equipment |  | Comments |
| 1. Pretreatment | | |  |
| * 1. Surface treatment | 250C oven  *or*  HMDS | At least 30 min , better overnight bake for dehydration  Recipe 9, 150C vacuum bake with no HMDS step | This treatment take long time ask Lithograph Team for advice. |
| 1. Spin coat of SU8-2075 formation, resist thickness 70um | | |  |
| * 1. Syringe prepare | Fume hood | Pour resist in 30 ml syringe one day before use  Keep syringe in a storage cabinet for resist | Mark syringe with resist type, your name, group name and date |
| * 1. Coat wafers | KS Spinner | **Resist:** SU8-2075  **Cartridge dispense system:** 8 sec, 42 psi  **Spin:** 2 steps spin process  1.spin step: 1000 rpm, 200 rpm/s, 30s  2. spin step: 2000 rpm, 500rpm/s, 60s | Adjust dispense time and dispense pressure.  Measure the thickness with Dektak doing scratch with scalpel. |
| * 1. Softbake | SU8 hot plate | **The manufacturer recommends following procedure:**   |  | | --- | | Step 1: ramp 5 min to 60 C, wait 10 min | | Step 2: ramp 5 min to 90 C, wait 20 min | | Step 3: ramp 1 hour to 25 C then wait  The softbake step depends strongly on the mask structures. | | Place wafers on SU8 HP straight after spin.  High baking temperature is known to produce cracks especially in corners. If this is a problem, we recommend reducing the baking temperature and increase the time (a very rough rule of thumb is that if you divide the temperature by 2, the time should be multiplied with 10). If structures are critical, a test should be done. |
| 1. Exposure | | |  |
| * 1. Exposure | KS Aligner | **Exposure mode:** Global Contact or Soft Contact  **Exposure time:** 2 x 250 mJ/cm2 with 30 sec wait time between exposure  **Mask**: your mask | Activate a multiple exposure  Exposure time is dose divided by intensity. Check the intensity of the aligner (normally 7 mW/cm2 on KS aligner ex 250 mJ/cm2/ 7 mW/cm2 = 36 sec) |
| * 1. Post   exposure bake | SU8 hot plate | **The manufacturer recommends following procedure:**   |  | | --- | | Step 1: ramp 5 min to 60 C, wait 10 min | | Step 2: ramp 5 min to 90 C, wait 20 min | | Step 3: ramp 1 hour to 25 C then wait  The post-exposure bake step depends strongly on the mask structures. | | Place wafers on SU8 HP straight after spin.  High baking temperature is known to produce cracks especially in corners. If this is a problem, we recommend reducing the baking temperature and increase the time (a very rough rule of thumb is that if you divide the temperature by 2, the time should be multiplied with 10). If structures are critical, a test should be done. |
| 1. Development & Rinse | | |  |
| * 1. Develop | SU8 Developer bench | Develop in PGMEA  2min in First Bath  2min in Final Bath |  |
| * 1. Rinse | SU8 Developer bench | Rinse in IPA |  |
| 1. Inspection | | |  |
| * 1. Inspection | Optical microscope | Check pattern and alignment marks | Optical microscope |