|  |
| --- |
| Objective |
| Batch name: Process template |
| This process flows is a guideline on how to spin, develop and rinse ZEP520A on non-conducting substrates such as SiO2 and quartz.  |

|  |  |  |  |
| --- | --- | --- | --- |
| Step Heading | Equipment | **ZEP spinning on Si, SiO2, SOI** | Comments |
| 1. Pretreatment
 |  |
| * 1. Surface treatment
 | BHF dip *or*HMDS | BHF dip for Si substrates (30 sec, H2O 5 min) HMDS treatment for SiO2 and III-V substrates | Generally, pre-treatment is not recommended by ZEON.  |
| 1. Spin coat of ZEP
 |  |
| * 1. Coat wafers
 | Manual Spinner 1, SSE Spinner, or III-V spinner | **Resist:** ZEP520A**Spin:** 60 sec @ 4000 rpm (~100 nm)**Softbake:** Si, SiO2, III-V: 2 min @ 180 °C (hotplate)Borofloat: 5 min @ 180 °C (hotplate) | Use filter on syringe when dispensing the resist. |
| 1. Coat with Thermal Aluminum (only for non-conductive substrates)
 |  |
| * 1. Coat with Al
 | Wordentec | Thickness: 20 nmRate: 15 Å/S |  |
| 1. E-beam exposure
 |  |
| * 1. E-beam exposure
 | E-beam writer | Dose: 200 - 350 µC/cm2; a dose-test is required. See e-beam logbook for inspiration. | Dose depends strongly on substrate material, thickness of resist, critical dimension and load of pattern. |
| 1. Removal of Thermal Aluminum
 |  |
| * 1. Removal of Al
 | Petribowl, e-beam fumehood CR4 | Dip in MF-322, 50 sec.Rinse in H2O, 3 -5 secBlow dry with N2. |  |
| 1. Development & Rinse
 |  |
| * 1. Develop-ment
 | Developer (E-beam) | Develop with N50, 60 sec, use agitation.Rinse in IPA.Blow dry with N2. | Dose depends on how you develop; make sure you develop in same manner as after dose-test. |
| 1. De-scum
 |  |
| * 1. De-scum
 | BHF dip | BHF dip for Si substrates (30 sec, H2O 5 min). | De-scum generally not recommended. If residues appear, optimize dose, development and rinse process. |
| 1. Postbake (in case of wet etching)
 |  |
| * 1. Postbake
 | Hotplate | Postbake: 2 - 3 min @ 100 - 140 °C |  |
| 1. Lift-off and Strip
 |  |
| * 1. Lift-off
 | Petribowl,Fumehood CR4 | Remover 1165 in petribowl. |  |