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| Objective |
| Batch name: Process template |
| This process flow is a guideline on how to spin coat, expose, and develop resist (e.g. AZ 5214E) on a chip mounted on a 4” Si carrier wafer, using automatic spin coater, maskless aligner, and automatic developer. |

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| Step Heading | Equipment | |  | Comments |
| 1. Pretreatment | | | |  |
| * 1. Surface treatment | Oven: HMDS – 2 | | HMDS treatment for Si, SiO2, and Borofloat  **Recipe:** 01 | OBS: HMDS priming can NOT be performed on Gamma spin coaters. |
| 1. Mounting on carrier | | | |  |
| * 1. Bond chip | Hotplate | | Use Crystalbond  Chip must be in the center of the carrier wafer |  |
| 1. Spin coat of AZ 5214E | | | |  |
| * 1. Coat wafers | Spin Coater: Gamma UV  or  Spin Coater: Gamma e-beam & UV | | **Resist:** AZ 5214E (line 3 or CO2 line 1)  **Spin:** 30 s @ 4500 rpm (for 1.5µm)  **Softbake:** 60 s @ 90 °C  **Sequence:**  (3410) DCH 100mm AZ5214E 1.5um or  (4110) DCH 100mm AZ5214E 1.5um | Resist thickness can be measured on FilmTek |
| 1. Exposure | | | |  |
| * 1. Expose | Aligner: Maskless 01  or  Aligner: Maskless 02 | | **Design:** your design file  **Exposure dose:**  70 mJ/cm2 for MLA1  65 mJ/cm2 for MLA2  **Defocus:**  0 for MLA1  2 for MLA2 | Information on exposure dose for other thickness, aligner, or developer: http://labadviser.danchip.dtu.dk/index.php/Specific\_Process\_Knowledge/Lithography/UVExposure\_Dose |
| 1. Development | | | |  |
| * 1. Develop | Developer: TMAH UV-lithography | | **Development in TMAH (AZ 726 MIF):**  single puddle, 60 s  **Sequence:**  (1002) DCH 100mm SP 60s | Consider long PEB if different resist is used (e.g. 2min @ 110°C for nLOF or MiR) |
| 1. Inspection | | | |  |
| * 1. Inspection | Optical microscope | | Inspect pattern / alignment mark / process monitor |  |
| 1. Unmounting | |  |  |  |
| * 1. De-bond chip | Hotplate | | Remove chip from carrier and clean before continuing processing |  |