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| Objective |
| Batch name: Process template |
| This process flows is a guideline on how to spin coat, expose, and develop AZ nLOF 2020 on 4” substrates such as Si, SiO2 and Borofloat, using automatic spin coater, maskless aligner and automatic developer. |

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| Step Heading | Equipment | |  | Comments |
| 1. Pretreatment | | | |  |
| * 1. Pretreatment | BHF dip  *or*  Oven: HMDS – 2 | BHF dip for Si substrates (30 s, H2O 5 min)  HMDS treatment for Si, SiO2, and Borofloat  **Recipe:** 01 | | For Si, choose BHF or HMDS.  HMDS priming can also be performed on Gamma spin coater. |
| 1. Spin coat of AZ nLOF 2020 | | | |  |
| * 1. Coat wafers | Spin Coater: Gamma UV | **Resist:** AZ nLOF 2020 (line 2)  **Spin:** 30 s @ 3300 rpm (for 2µm)  **Softbake:** 60 s @ 110 °C  **Sequence:**  (2420) DCH 100mm AZ5214E 1.5um | | Use (2421) for in-line HMDS priming.  Resist thickness can be measured on FilmTek |
| 1. UV Exposure | | | |  |
| * 1. Exposure | Aligner: Maskless 01  or  Aligner: Maskless 02 | **Design:** your design file  **Exposure dose:**  220 mJ/cm2 for MLA1  500 mJ/cm2 for MLA2 (375nm)  **Defocus:**  0 for MLA1  0 for MLA2 (optical) | | Information on exposure dose for other thickness or aligner: http://labadviser.danchip.dtu.dk/index.php/Specific\_Process\_Knowledge/Lithography/UVExposure\_Dose |
| 1. Post Exposure Bake | | | |  |
| * 1. Post Exposure Bake | Developer: TMAH UV-lithography | **Post Exposure Bake:** 60 s @ 110 °C  **Sequences:**  (2001) DCH PEB 110C 60s or  (3005) DCH 100mm PEB60s@110C+SP30s  (3001) DCH 100mm PEB60s@110C+SP60s | | 120 s PEB is better for Borofloat. May require lower exposure dose.  PEB and development is typically done simultaneously |
| 1. Development, Rinse, and Dry | | | |  |
| * 1. Develop | Developer: TMAH UV-lithography | **Development in TMAH (AZ 726 MIF):**  single puddle, 30 s or 60 s  **Sequences:**  (1001) DCH 100mm SP 30s  (1002) DCH 100mm SP 60s or  (3005) DCH 100mm PEB60s@110C+SP30s  (3001) DCH 100mm PEB60s@110C+SP60s | | Choose 60 s development for extra undercut (lift-off).  PEB and development is typically done simultaneously |
| 1. Inspection | | | |  |
| * 1. Inspection | Optical microscope | Inspect pattern / alignment mark / process monitor | |  |