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SUSS MicroTec MA6 Gen3 - S1805 Contrast Curve Data

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Keywords
S1805, positive resist, MA6

Disciplines
Nanoscience and Nanotechnology

Materials:

- MicroChem S1805 Photoresist
- DisChem SURPASS 4000 Primer (http://www.dischemінc.com/)
- MicroChem MF-319 Developer
- Acetone
- Isopropyl Alcohol (IPA)
- 4 inch Silicon Wafers
- Benchmark Technologies multi-transmission photomask

Equipment:

- Torrey Pines Scientific hotplate
- Reynoldstech 1000 RPM/second spinner
- SUSS MicroTec MA6 Gen3 Mask Aligner
- Filmetrics F40 film thickness measurement tool

Protocol:

Prime and Coat

1. Mounted wafer and ensured that it was centered
2. Deposited ~7 milliliters of SurPass 4000 in the center of the wafer
3. Spun on primer at 3000 RPM for 30 seconds
4. Rinsed with IPA
5. Deposited ~14 milliliters of S1805 photoresist in the center of the wafer
6. Spun on photoresist at 4500 RPM for 60 Seconds

Soft Bake

1. Baked wafer at 100° C for 60 seconds

Expose and Develop

1. Exposed at 35 mJ/cm^2 using Karl Suss MA6 mask aligner with 30 micron proximity gap and multi-transmission photomask
2. Developed in Microposit MF-319 for 60s while agitating

Thickness Measurement

1. Measured remaining resist at different exposure doses using Filmetrics F40

Dose	Thickness Measured
5.4	0.386
6.3	0.348
6.6	0.317
7.2	0.231
7.7	0.242
8.1	0.132
8.8	0.194
9	0.101
9.9	0.11
10.8	0.096
11	0
11.7	0
12.1	0
12.6	0
13.2	0