3-4-2016

SUSS MicroTec MA6 Gen3 - S1818 Contrast Curve Data

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Materials:

- MicroChem S1818 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 S1818 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

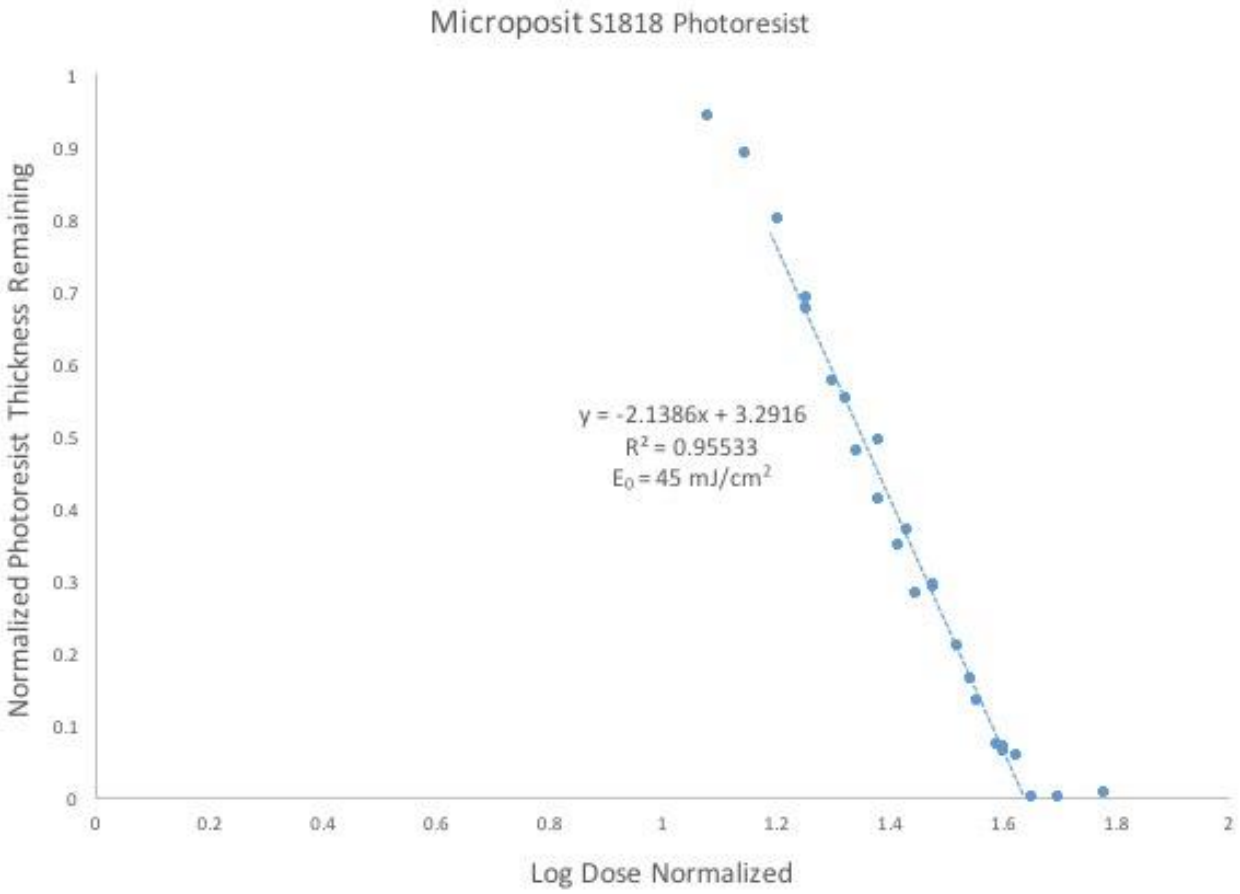
Expose and Develop

1. Exposed at 100, 60, and 40 mJ/cm^2 using 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 (mJ/cm^2)	Thickness Measured (microns)
12	1.693
14	1.6
16	1.433
18	1.21
20	1.033
21	0.991
22	0.585
24	0.739
24	0.887
26	0.627
27	0.663
28	0.507
30	0.528
30	0.523
33	0.373
35	0.292
36	0.238
39	0.127
40	0.114
40	0.124
42	0.104
45	0
50	0


Microposit S1818 Photoresist
Normalized Photoresist Thickness Remaining
Log Dose Normalized
y = -2.1386x + 3.2916
R² = 0.95533
E0 = 45 mJ/cm²
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8
2