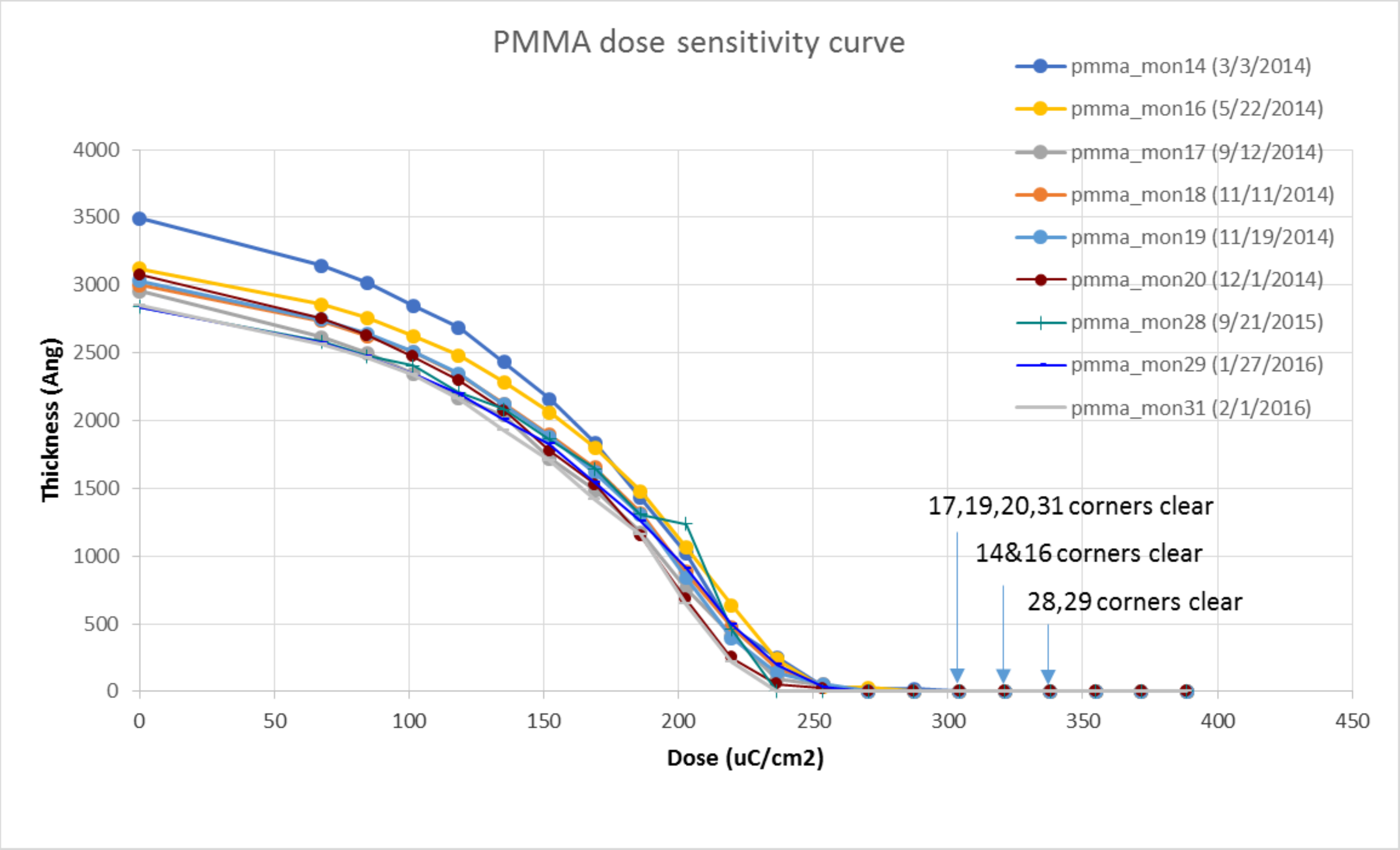
pmma_mon31

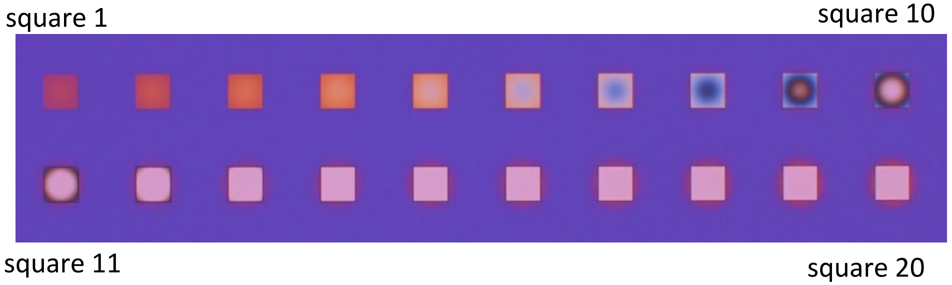
2/1/2016

Process flow

- substrate
  - 4" 100 silicon wafer
- spin coat
  - PMMA A6, 5000 RPM, 2000 RPM/sec, 60sec
  - 180 C hot plate, 90 sec
- expose
  - base dose = 338 uC/cm2
- develop
  - 1:1 MIBK:IPA, 2 min
  - IPA rinse 30 sec, N2 blow dry

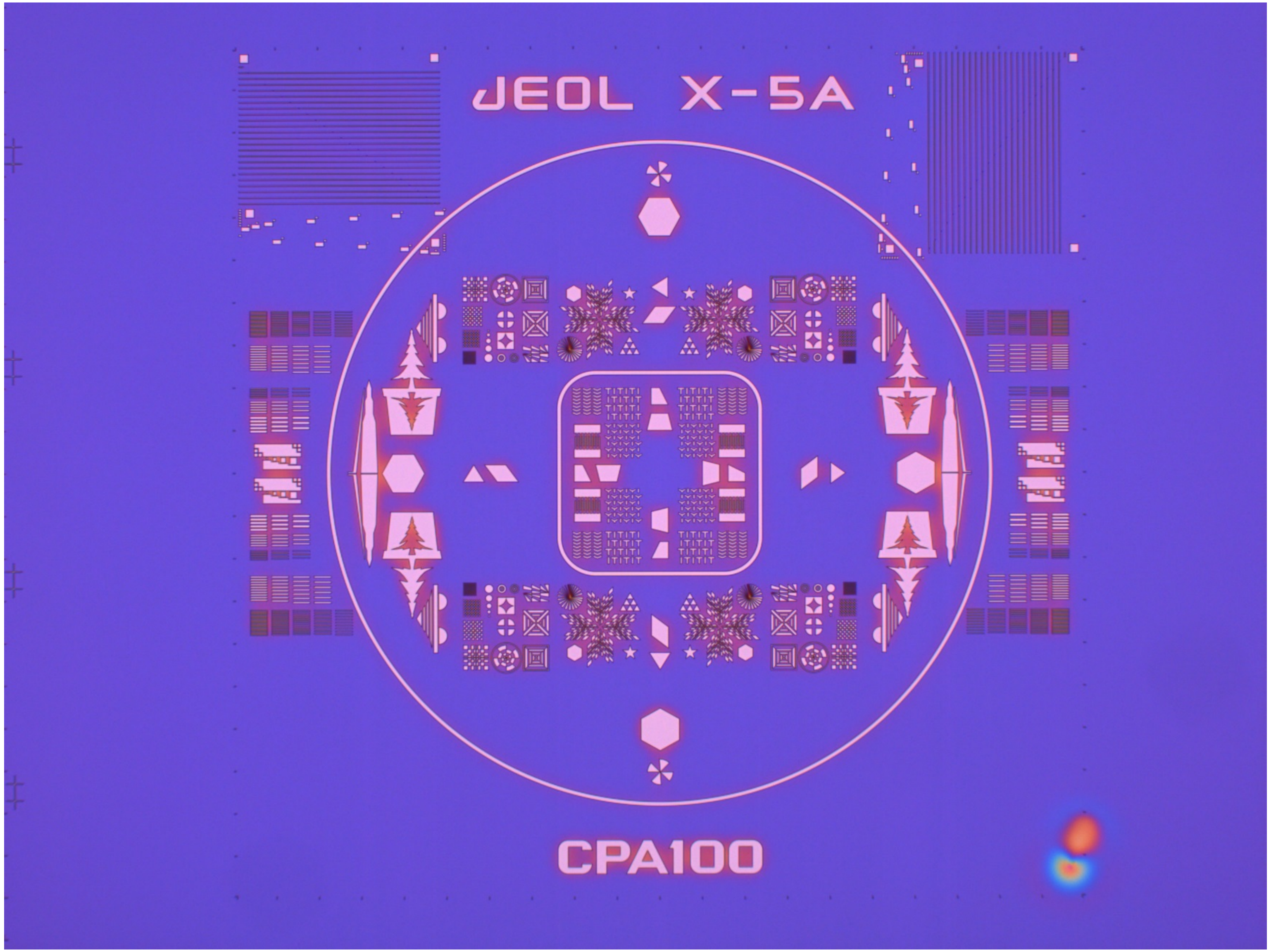
dose sensitivity



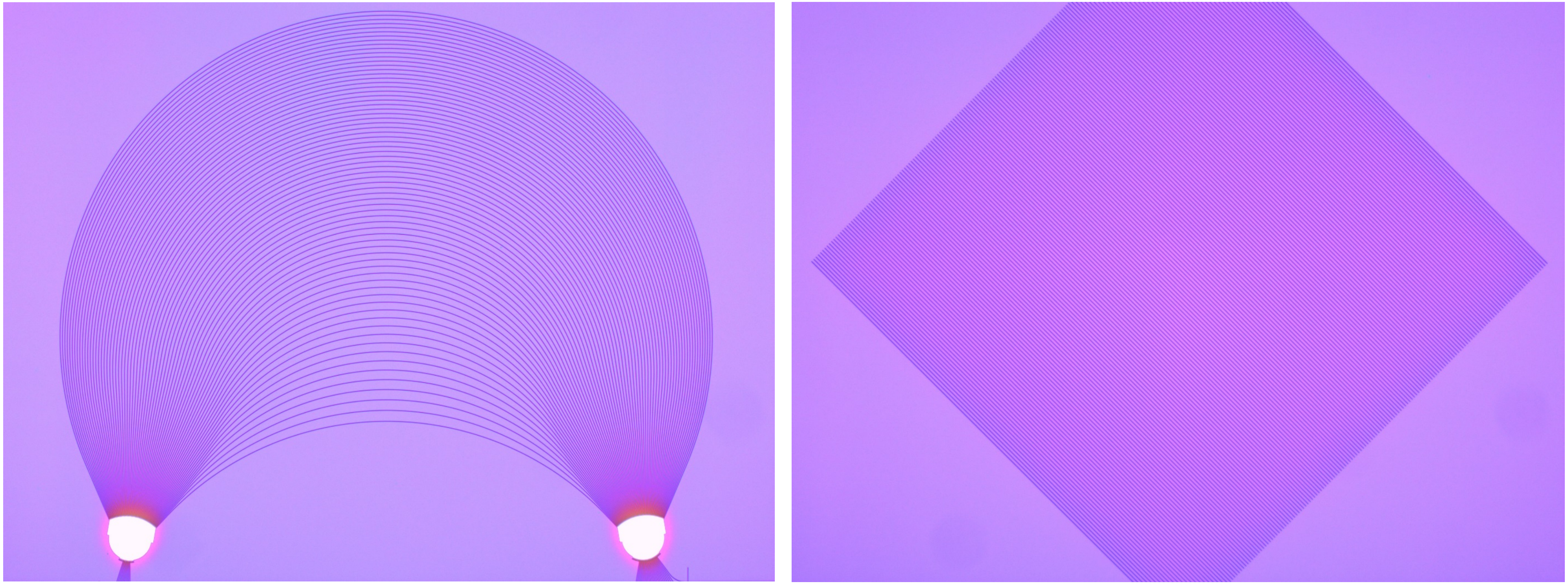


square	shot mod	actual dose
0		0
1	-80	67.6
2	-75	84.5
3	-70	101.4
4	-65	118.3
5	-60	135.2
6	-55	152.1
7	-50	169
8	-45	185.9
9	-40	202.8
10	-35	219.7
11	-30	236.6
12	-25	253.5
13	-20	270.4
14	-15	287.3
15	-10	304.2
16	-5	321.1
17	0	338
18	5	354.9
19	10	371.8
20	15	388.7

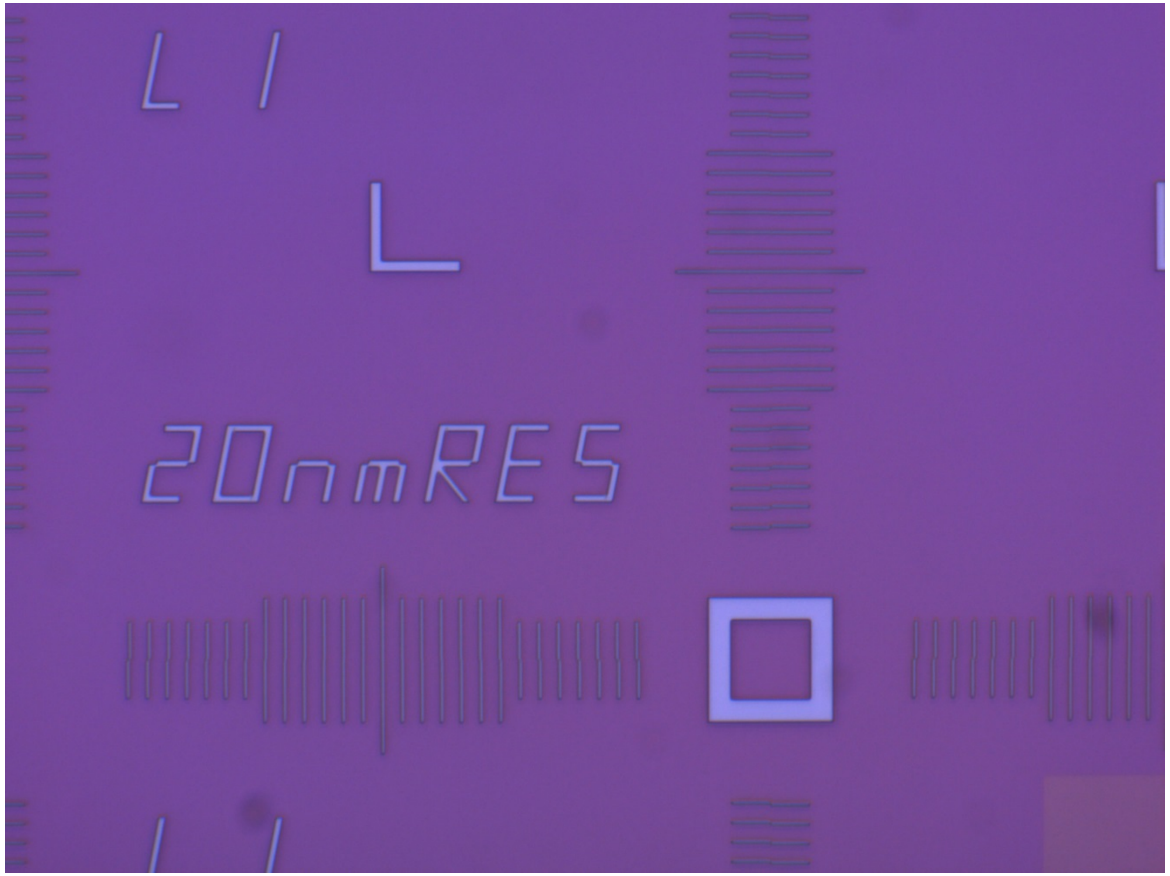
CPA



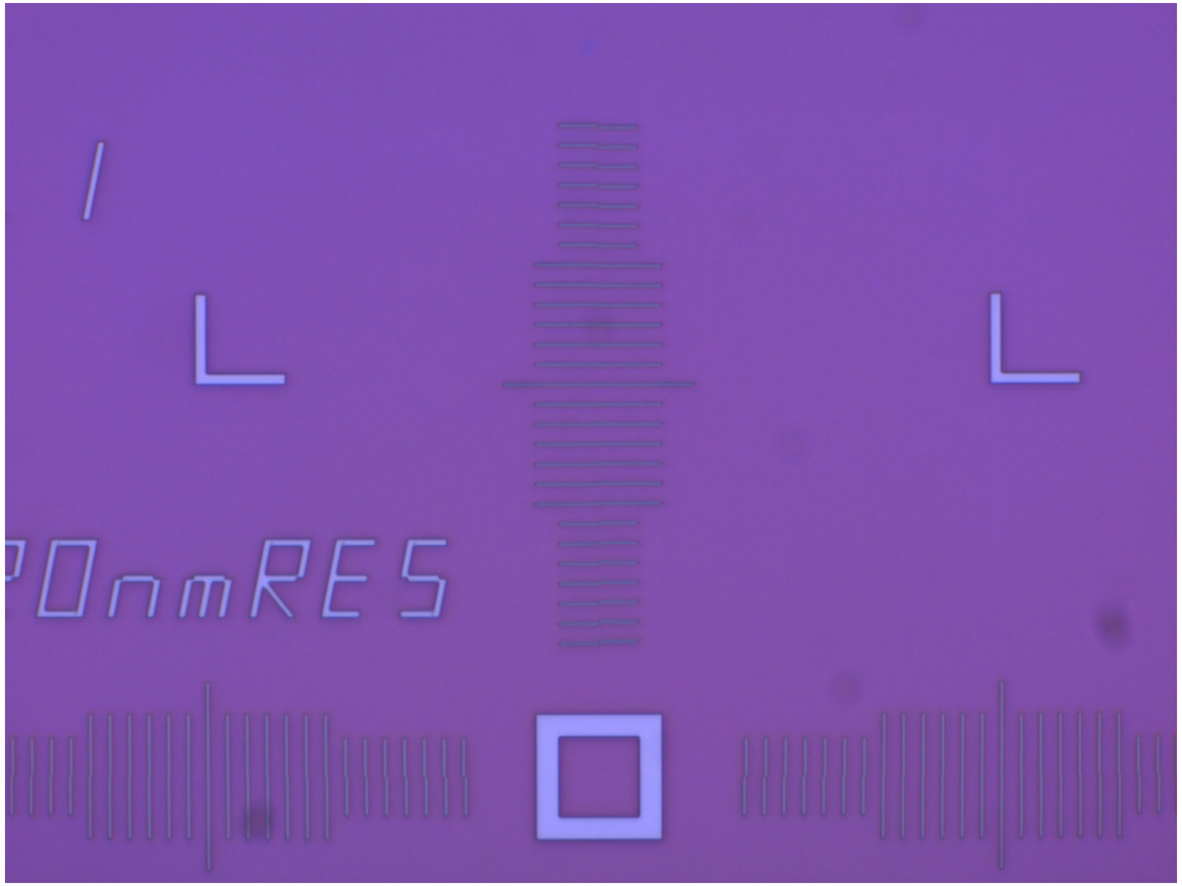
field stitch check patterns



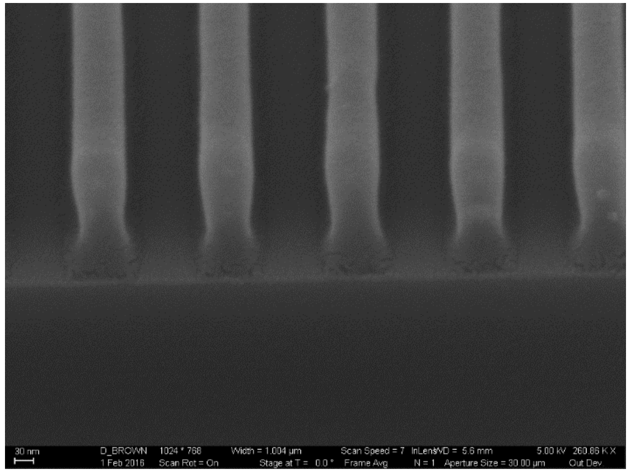
field stitch



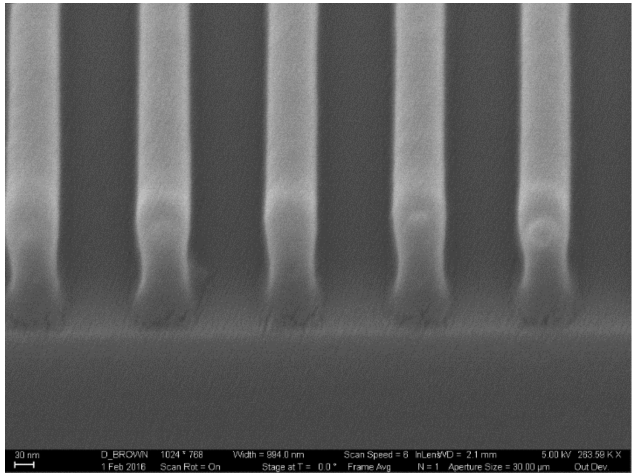
bottom dose



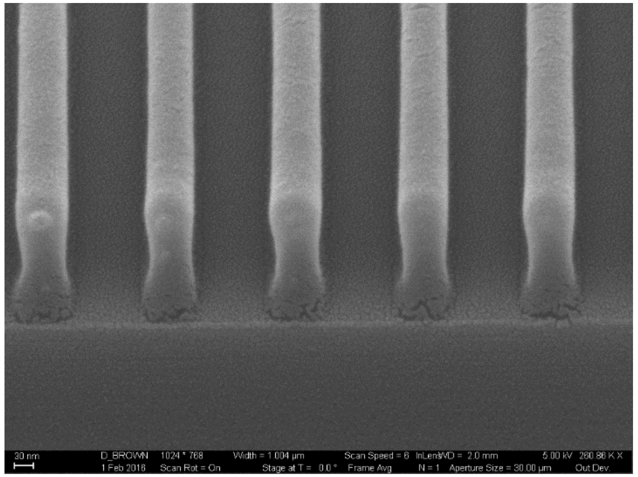
100 nm line/space



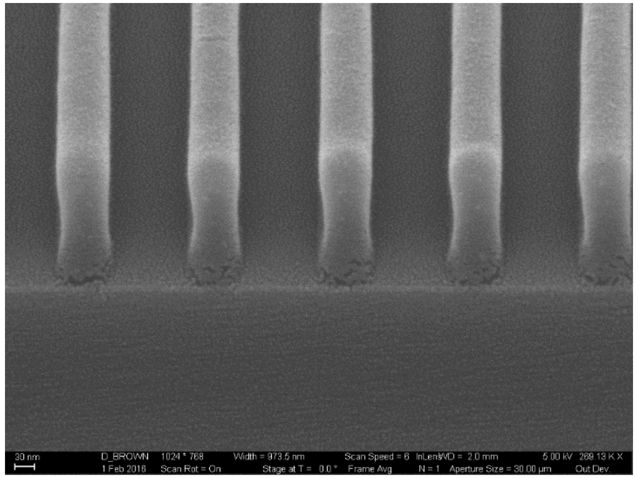
d1, -6%, 319 uC/cm2



d2, -2%, 332 uC/cm2



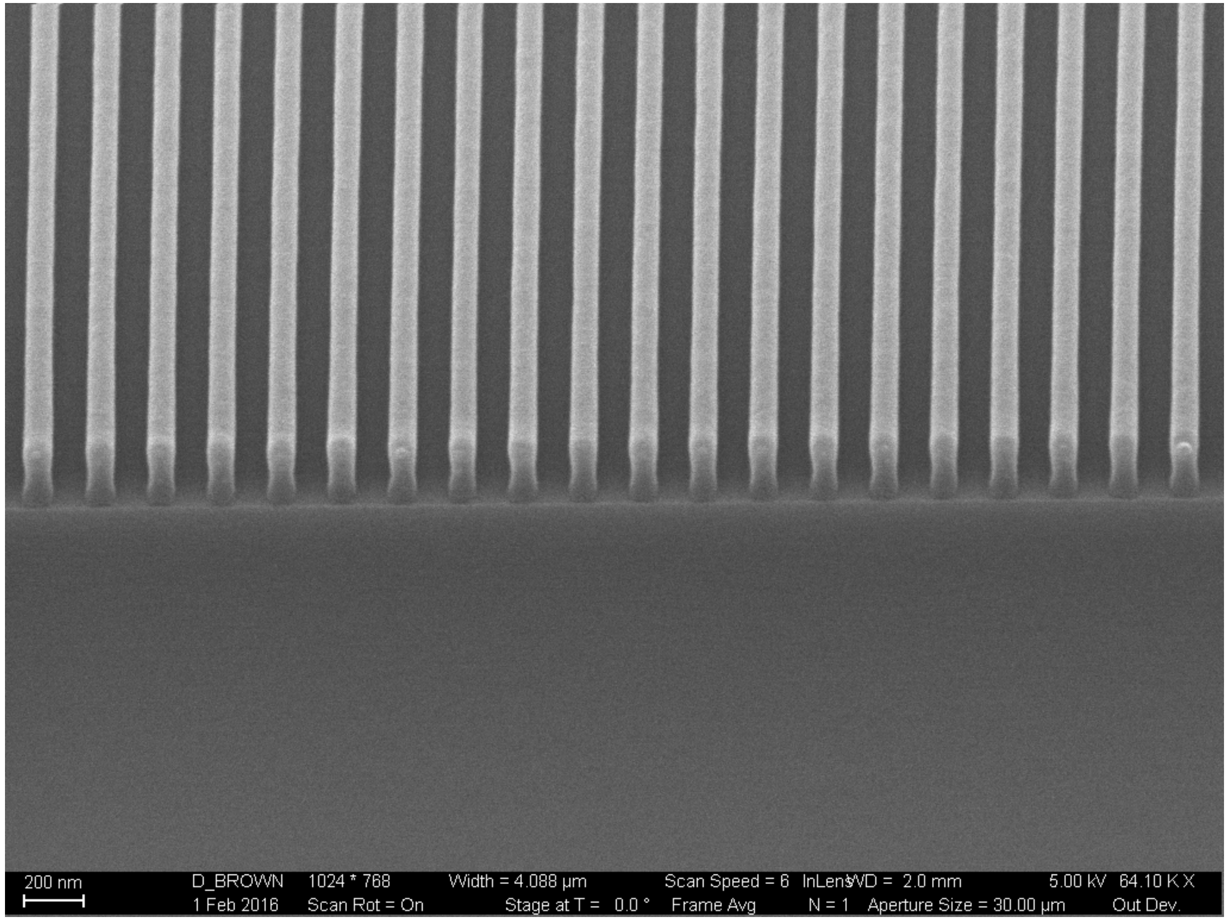
d3, +2%, 346 uC/cm2



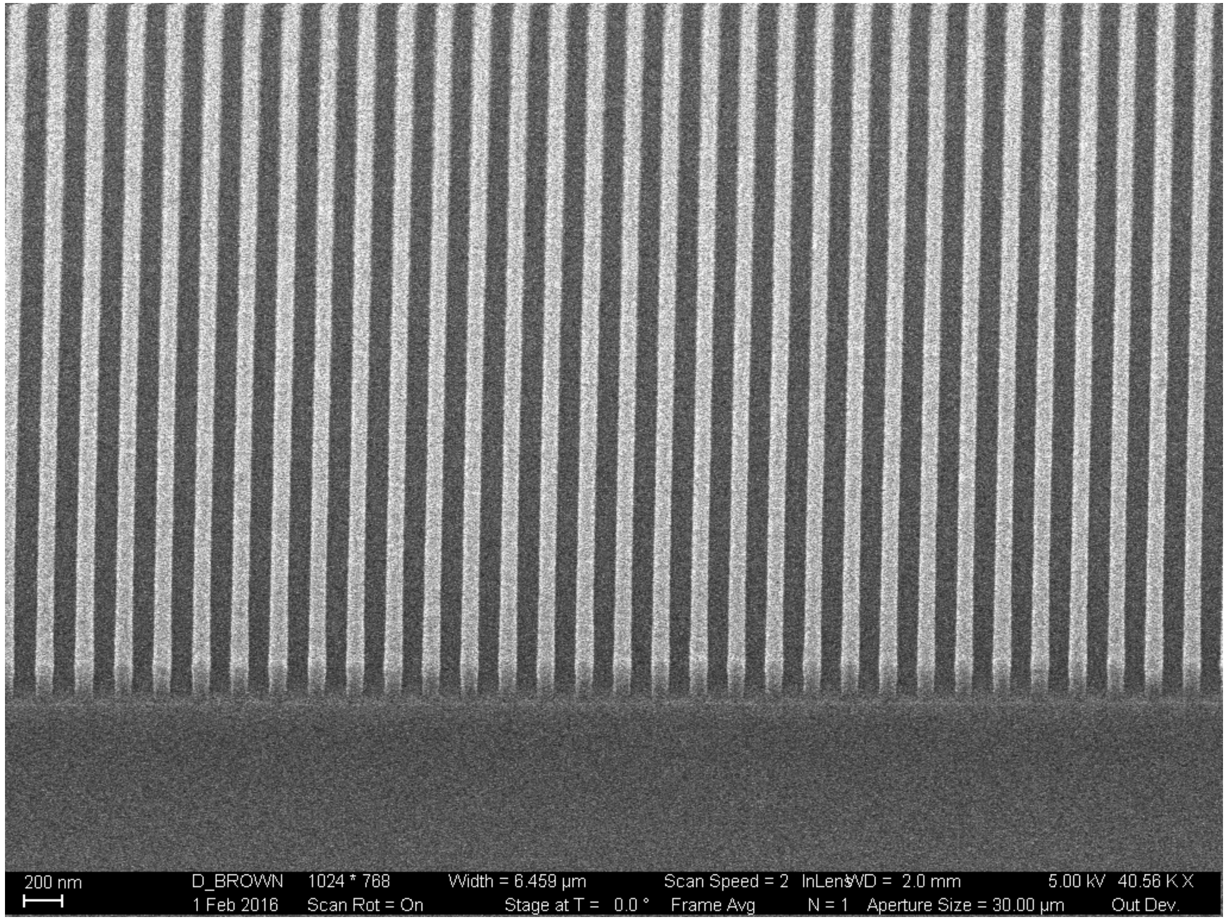
d4, +10%, 371 uC/cm2

45 degree tilt

100 nm line/space



d3, +2%, 346 uC/cm2



d4, +10%, 371 uC/cm2

45 degree tilt