silicon etching with ZEP520A mask

- silicon substrate
- Resist Coat
  - ZEP520A, 4000RPM, 60sec
- EBL exposure
  - 100kV, 2nA
- Resist Develop
  - 2min immersion n-Amyl Acetate, 30sec immersion IPA rinse
- Si etch
  - STS SOE ICP
  - 5mTorr, 20sccm Cl_2, 5sccm Ar, coil = 600W, plate = 50W
  - etch time = 30sec

Pa 3 = 208.1 nm
Pb 3 = 0.8 °

Pa 2 = 170.6 nm
Pb 2 = 91.9 °

Pa 4 = 144.5 nm
Pb 4 = 0.0 °

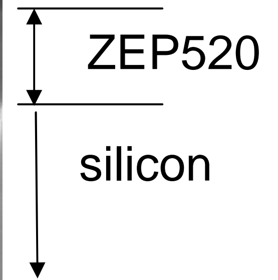
Pa 1 = 132.9 nm
Pb 1 = 90.0 °

Pa 5 = 300.6 nm
Pb 5 = 1.1 °

200 nm | D_BROWN | 15 Jun 2009 | 1024 * 768 | Width = 2.959 µm | Scan Rot = Off | Stage at T = 1.3 ° | Scan Speed = 10 | InLens | Pixel Avg. | N = 6 | WD = 7.3 mm | 5.00 kV | Aperture Size = 30.00 µm | 89.86 K X | Out Dev.

EBL:
$220 uC/cm^2$
2nA
6nm shot pitch

etch:
Cl2/Ar STS SOE
30sec



silicon etch rate = 133nm / 30 sec = 4.4nm/sec

ZEP etch rate = (360 – 170 nm) / 30 sec = 6.3nm/sec

selectivity (Si:ZEP) = 4.4/6.3 = 0.7