Georgia Tech MiRC Aluminum Patterning Results

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Electron Beam Lithography
JEOL JBX-9300FS 100kV EBL System

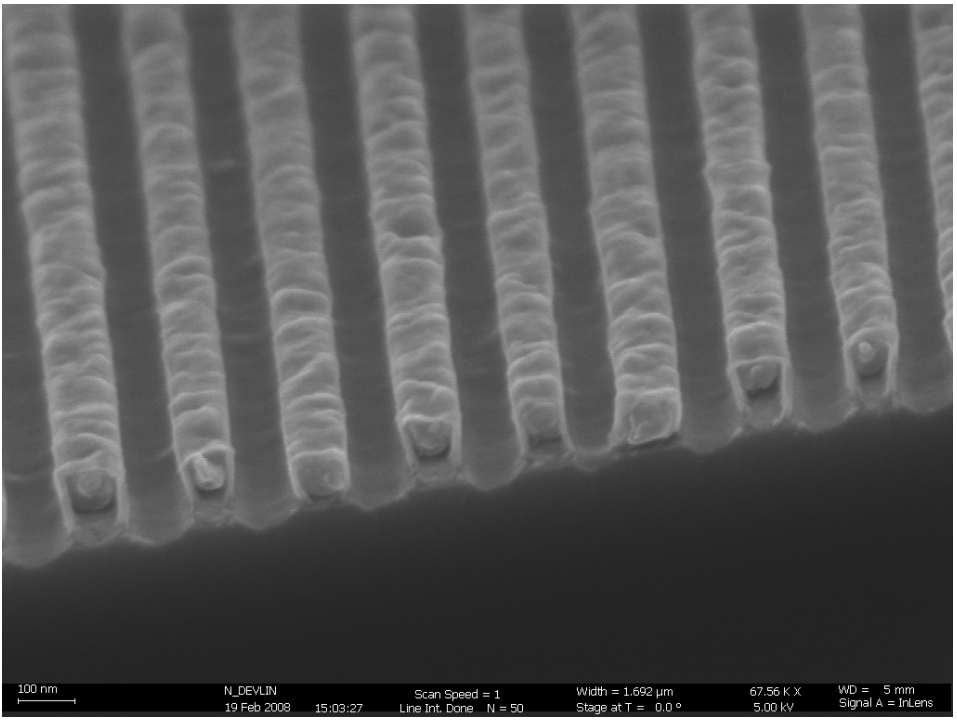
- Silicon substrate with ~1100Ang filament evaporated aluminum
- 200nm thick ZEP520 resist
  - 2:1 ZEP520:Anisole dilution
  - 3000RPM, 2500RPM/sec, 60sec
  - 180C hot plate bake, 2min
- 100nm line / 100nm space test pattern
- 2nA beam current, 8nm shot pitch
- 180uC/cm^2 exposure dose
- 2min immersion develop n-Amyl Acetate

Reactive Ion Etch
Plasma-Therm SLR RIE

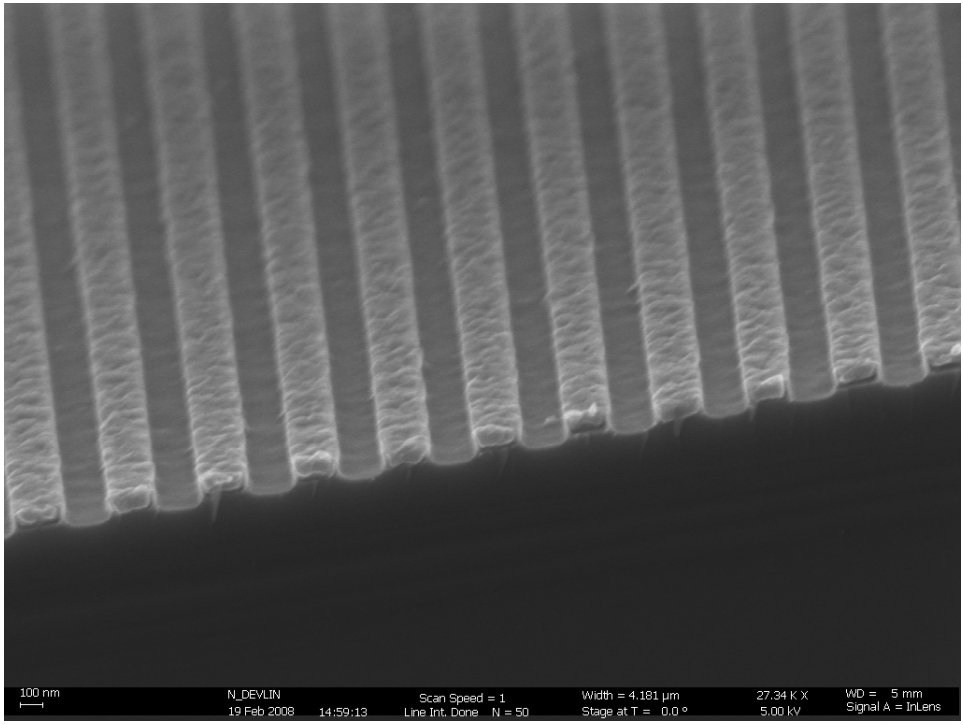
- pressure = 20mTorr
- BCl_3 20sccm
- Cl 8sccm
- H_2 2sccm
- RF Power 225W
- 28C temperature
- aluminum etch rate ~1500Ang/min

Aluminum on Silicon

100nm line / 100nm space



200nm line / 200nm space



Aluminum on Quartz