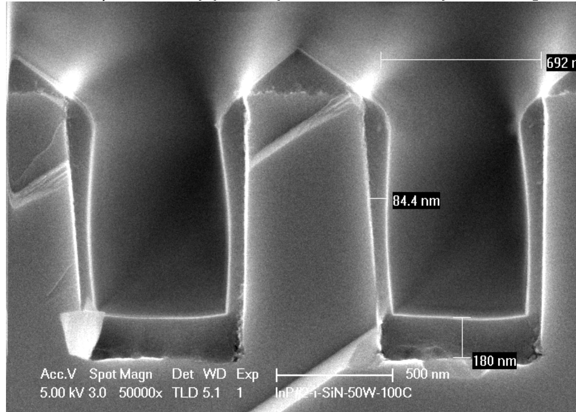
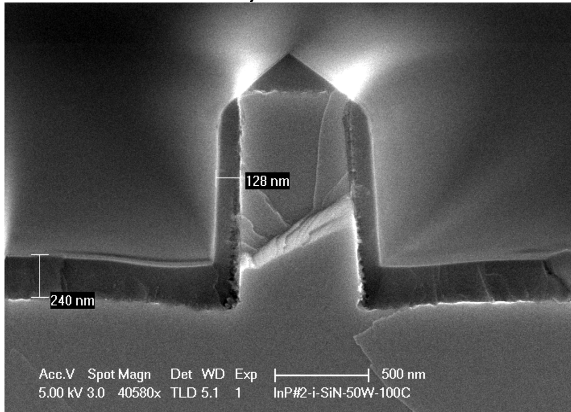
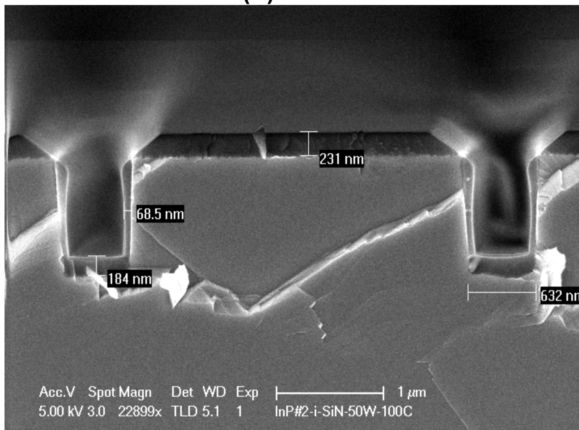
Figure 1 (a) (in a closed trench area), **(b)** (in an open area), and **(c)**. Sidewall coverage of SiNx film, deposited using Unaxis ICP tool (PM3) at 100 ^{o}C, with the chamber pressure=15 mT, bias/ICP powers=50/400 W, 2%SiH_4 (diluted in He)/N_2/Ar=360/4/20 sccm, and deposition time=500 s [Sample's solvent clean and BHF dip (two minutes, to remove the remaining SiO2 etch mask) were applied prior to the deposition].



a)



(b)



(c)

Note: As you can see from the figures, the sputtering rate at the corner of a gap is much higher than that on horizontal and vertical surfaces and this recipe (with a bias power of 50 W) may be suitable for filling a sub-micro gap between lines.

For some applications, users care more about a surface damage, caused by such a high bias power, than a high stress. For those users, a SiNx deposition recipe with a bias power of 5 W is provided as follows,