# Discussion 4

Thursday, February 20, 2020 6:16 PM

The cross-section below is to be etched via reactive ion etching (RIE). For this problem, assume that the RIE etch is 100% anisotropic and that it etches polysilicon at the rate of 1 μm/min and has a silicon-to-oxide selectivity of 5:1. Draw cross-sections of the structure after etching for (a) 2min.; (b) 5min.; and (c) 6min.

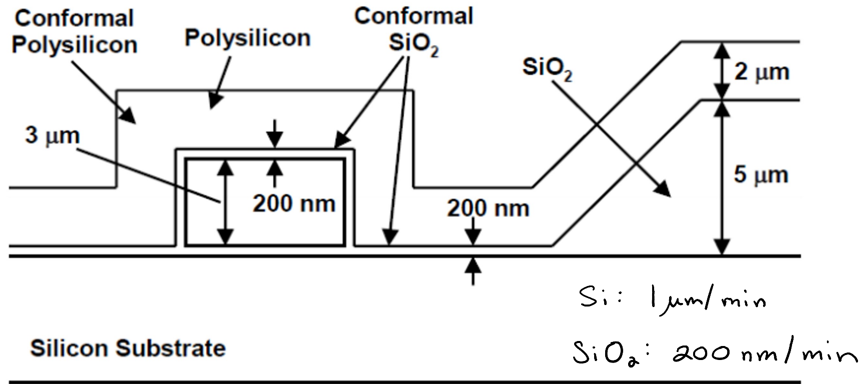



Fig. PS2.1

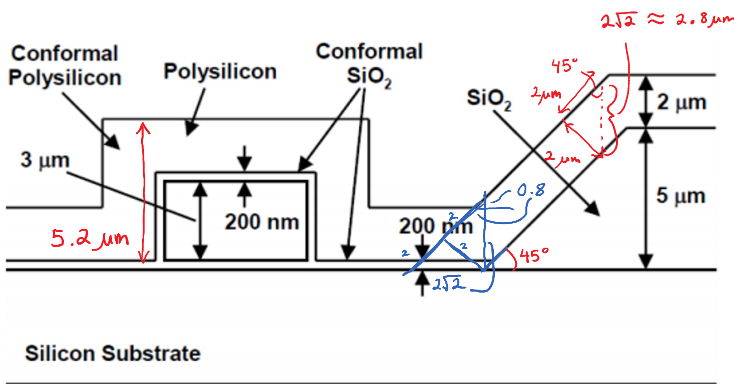
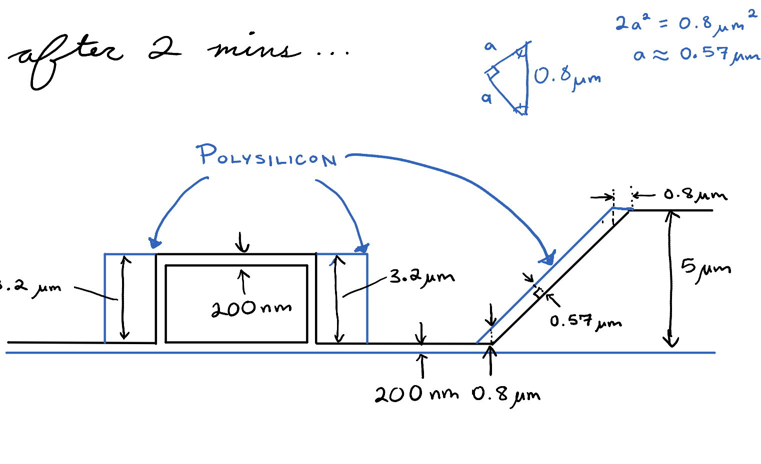


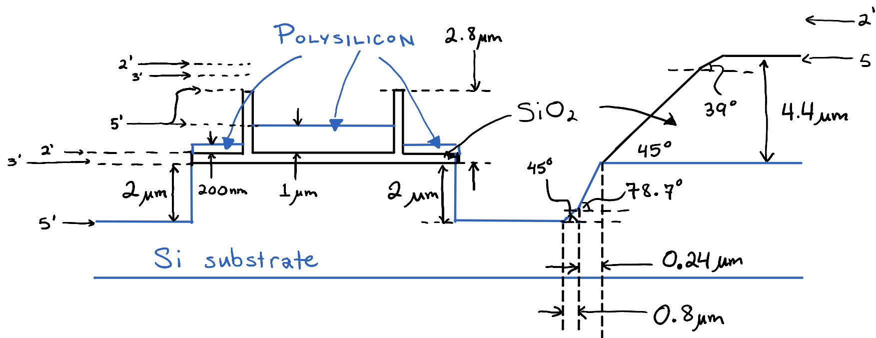

Fig. PS2.1

(a)

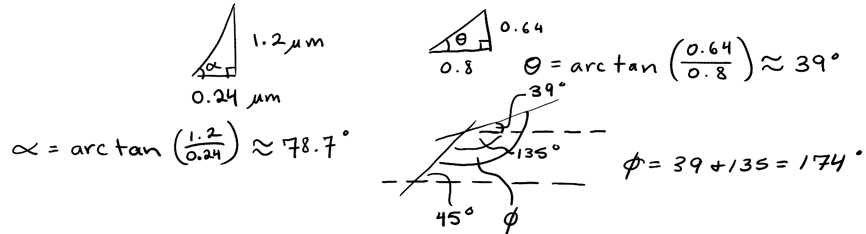


(b)

*after 5 mins ...*

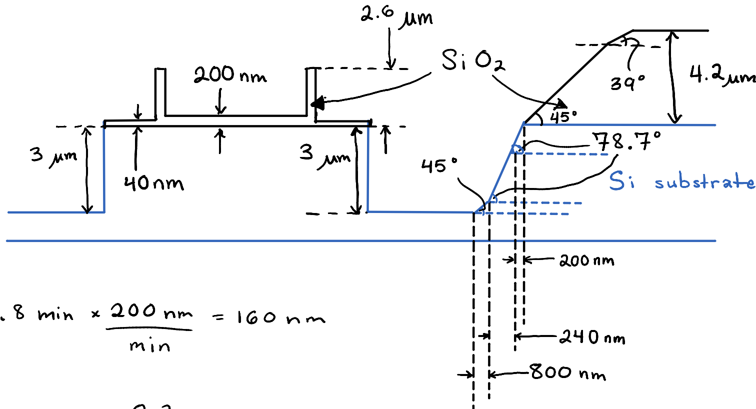



- 2 min. – 1st exposure of $SiO_2$
- 3 min – 1st exposed layer of $SiO_2$ removed
- 5 min – 2 μm of 2nd exposed Si layer etched, 400nm more $SiO_2$ etched




(c)

*after 6 mins ...*




$$0.8 \text{ min} \times \frac{200 \text{ nm}}{\text{min}} = 160 \text{ nm}$$