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SiO_2 Etch Recipe using RIE#3

Recipe: 2.3mT, CHF_3=5sccm, bias voltage=250 V (a very low surface damage)

Etch Rate=6.55 nm/min (for the flood etch: no etch pattern!); 6.89 nm/min (for the PR patterned ridge, see Figure 1 below).

Etch Selectivity (SiO_2/PR) = 0.207/ (1.58-1.42) =1.29.

(Prior to the SiO_2 etch, do O_2 plasma chamber clean: 50mT, O_2=20sccm, bias voltage=450 V, and time=30 minutes, then, CHF_3 plasma chamber coat: 10mT, CHF_3=20sccm, bias voltage=250 V, and time=10 minutes)

Figure 1 a) SiO_2 etch profile using RIE#3 with 2.3 mT, CHF_3 flow-rate=5sccm, bias voltage=250 V, and etch time=30 minutes. Note: the PR etch mask is still remained on the top of oxide ridge; b) Un-etched sample.