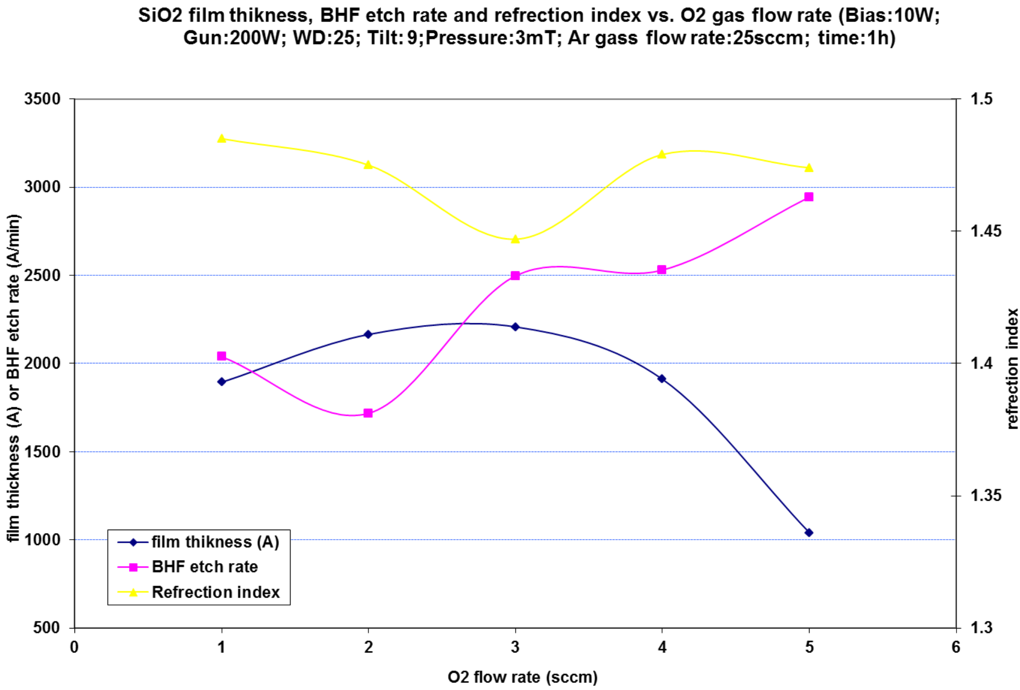
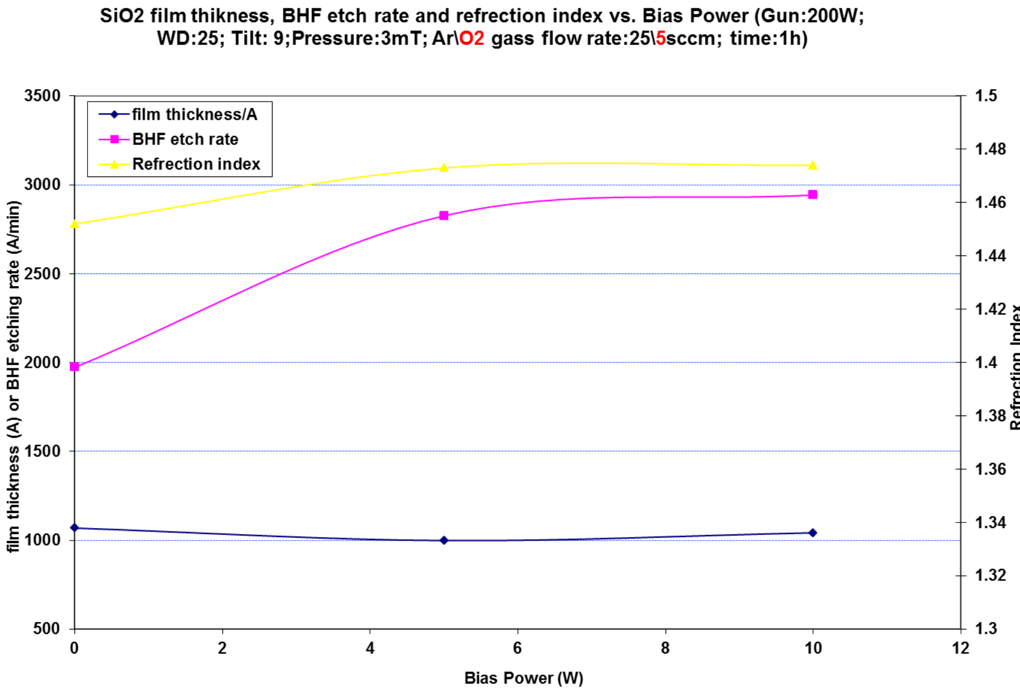
SiO2 Reactive Sputtering – O2 Flow and Bias Data AJA1

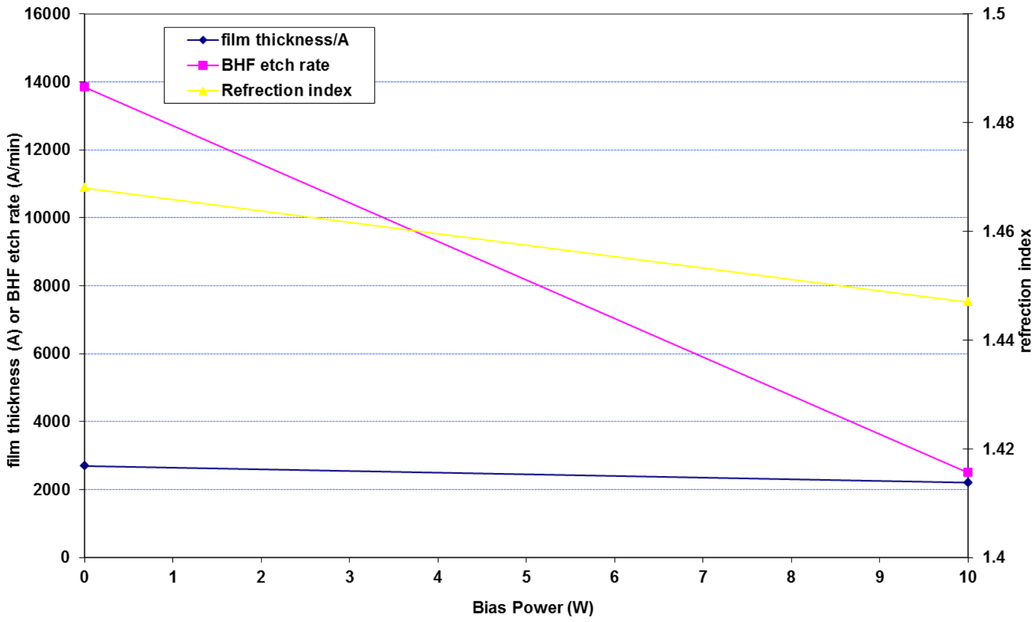
Thickness - Index - Etch Rate – vs O2 flow: 1 hour: Ar 25sccm; 200W RF; Bias 10W; 3mT; Ht/Tilt 25/9



Thickness - Index - Etch Rate – vs Bias: 1 hour: O2/Ar 3(5)/25sccm; 200W RF; 3mT; Ht/Tilt 25/9



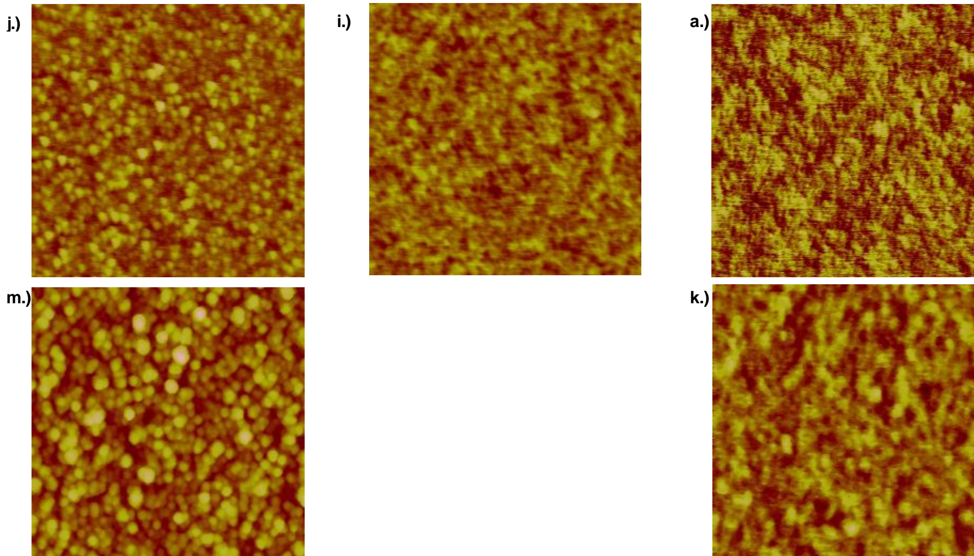
SiO2 film thikness, BHF etch rate and refrection index vs. Bias Power (Gun:200W; WD:25; Tilt: 9;Pressure:3mT; Ar\O2 gass flow rate:25\3sccm; time:1h)



AFM – vs O2 flow and Bias: 1 hour: Ar 25sccm; 200W RF; 3mT; Ht/Tilt 25/9; Room T

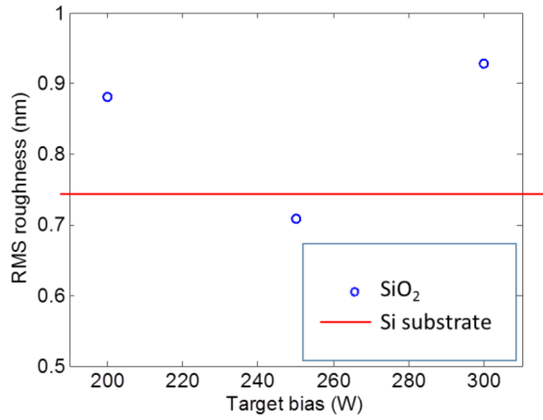
AFM Measurements SiO2 AJA1
Ar-25sccm, 3mT, 200W, 1 hour, Ht/Tilt 25/9

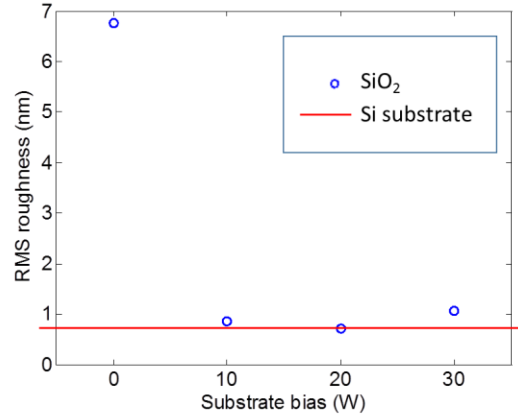
Gas flow	Bias	name	roughness in nm			
			R_q	R_a	R_{max}	
5 0_2	0 W	j	0.809	0.634	6.7600	
5 0_2	5 W	i	0.0782	0.0624	0.6620	
5 0_2	10 W	a	0.0866	0.0689	0.6820	
3 0_2	0 W	m	1.61	1.27	12.0	
3 0_2	10 W	k	0.0727	0.0576	1.4500	



Roughness Optimization on Silicon – Mike Davenport Data

O2/Ar 2.5/25sccm; 3mT; Ht/Tilt 44/4; Room T; 10W bias 250W RF unless noted otherwise





On Ultra-Smooth Substrate: **Result: 0.13nm RMS roughness for 500nm thick film**