

Advanced PECVD-OXIDE (HF n-1.46 25nm/min)				Advanced PECVD Typical Film Properties	
SiO2 deposition~2900A, T=300C				Calibrated every 2-4 weeks	
Step1: OXIDE COAT				Check for the latest update on UCSB Nanofab WIKI	
Name	Value	Changeable			
Process pressure	800 mtorr	N			
RF point	30 W	N			
stabilization time	15 seconds	N			
step time(m)	10	Y			
step time(s)	0	Y			
2%SiH4 %He	600 sccm	N			
N2O	1420 sccm	N			
Step2: OXIDE DEPOSITION				SIO2~2900A Typical Film Properties	
Name	Value	Changeable		Deposition rate~29nm/min	
Process pressure	800mtorr	N		Refractive index@632.8nm=1.475	
RF point	30W	N		Stress=-260MPa	
stabilization time	15 seconds	N		HF etch rate=637nm/min	
step time(m)	10	Y		All size particles accumulated in deposition (min=19, max=200)	
step time(s)	0	Y		Mostly small size particles (0.160-0.213)um	
2%SiH4 %He	600 sccm	N		Uniformity within the wafer (99.45-99.99)%	
N2O	1420 sccm	N			
Step3: STANDARD PLASMA CLEAN					
1. pump down					
Name	Value	Changeable			
stabilization time	15 seconds	N			
step time(m)	0	N			
step time(s)	30	N			
2. Pre-purge					
Name	Value	Changeable			
purge	1 (Yes/No)	N			
stabilization time	15 seconds	N			
step time(m)	1	N			
step time(sec)	0	N			
3.1 High Pressure					
Name	Value	Changeable			
Cloud position	50%	N			
Ctune position	50%	N			
Drive Run longer clean if chamber M	1 (Yes/No)	N			
Process pressure	600 mtorr	N			
RF setpoint=300	300 W	N			
Stabilization time	35 seconds	N			
step time(m)	ENTER TIME	Y		For 2min(coat+deposition) run 1min Standard Plasma clean	
step time(s)	0	Y		Run longer clean, (10-20%) more, only if chamber does not look clean	
CF4/O2(5)	500 sccm	N			

Oxide (HF n-1.46 25nm/min)

Recipe parameters

Number	Name	Name	Process value	Unit	Changeable
1	01	Process pressure	800	mtorr	N
		RF setpoint	30	W	N
		Stabilisation time	15	seconds	N
		Steptime (m)	10	minutes	Y
		Steptime (s)	0	seconds	Y
		2%SiH4%He (1)	600	sccm	N
		N2O (4)	1420	sccm	N