

Advanced PECVD-Nitride2 (HF n=2.00, 9.3nm/min)			Advanced PECVD Typical Film Properties
SiN deposition~2400A, 300C			Calibrated every 2-4 weeks
Step1: NITRIDE2 coat			Check for the latest update on UCSB Nanofab WIKI
Name	Value	Changeable	
Process pressure	800 mtorr	N	
RF setpoint	30 W	N	
stabilization time	15 seconds	N	
step time(m)	10	Y	
step time(s)	0	Y	
2%SiH4 %He	1040	N	
N2	980	N	
NH3	17	N	
Step2: NITRIDE2 deposition			Nitride2~2400A Typical Film Properties
Name	Value	Changeable	Deposition rate~8nm/min
Process pressure	800 mtorr	N	Refractive index@632.8nm=1.961
RF setpoint	30 W	N	Stress=500MPa
stabilization time	15 seconds	N	HF etch rate=48nm/min
step time(m)	30	Y	All size particles accumulated in deposition ( min=87, max=303)
step time(s)	0	Y	Mostly small size particles (0.160-0.213)um
2%SiH4 %He	1040	N	Uniformity within the wafer (97.52-99.95)%
N2	980	N	
NH3	17	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 Match	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 7min(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	

Nitride2 (HF n-2.00 9.3nm/min)

Recipe parameters

Number	Name	Name	Process value	Unit	Changeable
1	process	Process pressure	800	mtorr	N
		RF setpoint	30	W	N
		Stabilisation time	15	seconds	N
		Step time (m)	10	minutes	Y
		Step time (s)	0	seconds	Y
		2%SiH4%He (1)	1040	sccm	Y
		N2 (3)	980	sccm	Y
		NH3 (2)	17	sccm	Y