

Advanced PECVD-LS Nitride2( n=1.93,-40MPa, 8.3nm/min)			Advanced PECVD Typical Film Properties
LS Nitride 2 deposition~2400A, 300C			Calibrated every 2-4 weeks
Step1: NITRIDE2 coat			Check for the latest update on UCSB Nanofab WIKI
Name	Value	Changeable	* Always 90W, but adjusted 10/17/17 to lower stress!
LF on time(ms)	1000ms	Y	
LF setpoint	80W*	Y	
Process pressure	800 mtorr	N	
RF on time(ms)	6000ms	N	
RF setpoint	30 W	N	
stabilization time	15 seconds	N	
step time(m)	10 min	Y	
step time(s)	0 sec	Y	
2%SiH4 %He	1040sccm	N	
N2	980sccm	N	
NH3	18sccm	N	
Step2: NITRIDE2 deposition			LS Nitride2~2400A Typical Film Properties
Name	Value	Changeable	Deposition rate~8 nm/min
LF on time(ms)	1000ms	Y	Refractive index@632.8nm=1.959
LF setpoint	80W*	Y	Stress~7MPa
Process pressure	800 mtorr	N	HF etch rate~36 nm/min
RF on time(ms)	6000ms	N	Gain 4 0.16-1.6um particles from film ONLY~1500-2000
RF setpoint	30 W	N	Gain2 (2.8-28)um particles from film ONLY~15-26
stabilization time	15 seconds	N	Average uniformity (within the wafer) is ~ 99.4%
step time(m)	30 min	Y	
step time(s)	0 sec	Y	
2%SiH4 %He	1040sccm	N	
N2	980sccm	N	
NH3	18sccm	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	
DriveMatch	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	

Recipe

LSNitride2 (n-1.97 -40MPa 9.0nm/min)

Recipe parameters

Number	Name	Name	Process value	Unit	Changeabl
1	01	Process pressure	800	mtorr	N
		RF on time (ms)	6000	ms	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	N
		N2 (3)	980	sccm	N
		NH3 (2)	18	sccm	N