Advanced PECVD-LS Nitride2(n=1.93,-40MPa, 8.3nm/min)

LS Nitride 2 depostion~2400A, 300C

	Name	Value	Changeable
Step1:	**NITRIDE2 coat**		
	Name	**Value**	**Changeable**
	LF on time(ms)	1250ms*	Y
	LF setpoint	90W	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**		
	Name	**Value**	**Changeable**
	LF on time(ms)	1000ms	Y
	LF setpoint	90W	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)	**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**
	Cload 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
	step time(s)	0	Y
	CF4/O2(5)	500 sccm	N

Advanced PECVD Typical Film Properties

Calibrated every 2-4 weeks

Check for the latest update on UCSB Nanofab WIKI

***Adjusted 12-21-16**

LS Nitride2~2400A Typical Film Properties

Deposition rate=7.87nm/min

Refractive index@632.8nm=1.938

Stress=-4MPa

HF etch rate=46nm/min

All size particles accumulated in deposition (min=43, max=453)

Mostly small size particles (0.160-0.213)um

Uniformity within the wafer (97.59-99.80)%

For 7min(coat+deposition) run 1min Standard Plasma Clean

Run longer clean, (10-20%) more, only if chamber does not look clean

Recipe

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

Recipe parameters

Number	Name
1	01

Name	Process value	Unit	Changeabl
Process pressure	800	mtorr	N
RF on time (ms)	6000	ms	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)	1040	sccm	N
N2 (3)	980	sccm	N
NH3 (2)	18	sccm	N