

Preparation of High Stress Silicon Nitride film using PECVD

Prepared by Chia-Hsing Pi (10/7/2013)

	1	2	3	4	5	6	7	8	9
Parameters	default recipe	default recipe							
Temperature (°C)	350	350	350	350	350	350	350	350	350
SiH4 (sccm)	170	170	170	170	170	120	155	145	130
NH3 (sccm)	20	20	20	20	50	50	50	50	50
N2 (sccm)	820	820	820	820	820	820	820	820	820
Pressure (mTorr)	1000	1000	1000	1000	1000	1000	1000	1000	1000
RF (W)	20	20	60	100	60	60	60	60	60
LF (W)	20	20	-	-	-	-	-	-	-
Thickness (nm)	1000	250	565	570	580	620	570	580	590
Stress (MPa)	105	180	563	519	680	crack	780	720	850
Type	Compressive	Compressive	Tensile	Tensile	Tensile	X	Tensile	Tensile	Tensile