Film Properties of Medium-Stress SiN_x deposited at the chuck temperatures of 50, 100 and 250^oC with pressure=15 mT, bias/ICP powers=50/400 W, SiH_4(100%)/He/N_2: (a) 8.2/352.5/4 sccm (at 50^oC); (b) 8.2/352.5/4 sccm (at 100^oC); (c) 8.2/352.5/4 sccm (at 250^oC).

Medium-Stress SiN_x Film (50W Bias Power, No Ar), Grown using Unaxis ICP PM3 Deposition Tool, Characterizations				
	50^oC(ICP)	100^oC(ICP)	250^oC(ICP)	250^oC(PECVD)
Refractive Index	~2	~2	~2	~2
Deposition Rate (nm/min.)	28.9	30	29.8	10
Buffered HF Etch Rate (nm/min.)	162.3	129	73.5	36
Film Stress (~200 nm in Thickness) (MPa)	-157	-178	-271	260

deposited at the chuck temperatures of 50, 100 and 250^oC using Unaxis ICP PM3 tool with pressure=15 mT, Bias/ICP powers=5/400 W, SiH_4(100%)/He/N_2: (a) 7.7/257.4/4 sccm (at 50^oC);
(b) 7.6/257.4/4 sccm (at 100^oC); (c) 7.5/257.4/4 sccm (at 250^oC).

High-Stress SiN_x Film (5W Bias Power, No Ar), Grown using Unaxis ICP PM3 Deposition Tool, Characterizations				
	50^oC(ICP)	100^oC(ICP)	250^oC(ICP)	250^oC(PECVD)
Refractive Index	~2	~2	~2	~2
Deposition Rate (nm/min.)	30.6	29.3	27.4	10
Buffered HF Etch Rate (nm/min.)	75.3	67.5	39.6	36
Film Stress (~200 nm in Thickness) (MPa)	-807	-959	-1158	260

Pin-hole Testing Result

High-Stress SiN_x Film deposited at 250 C with 15mT, 5/400W, SiH_4/N_2/He flow-rate=7.5/4/257.4sccm, and time=600s;

Film thickness and refractive index are 2342Å and 2.13, respectively.

Film stress is ~-1158 MPa.

Pin-Hole Result (In KOH@90C, 15 minutes): **good (almost none pin-holes).**