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Amorphous Si, Deposited at 250 C, using Unaxis ICP Tool

Amorphous-Si, Deposited at 250 C, using Unaxis PM3									
Run #	Pressure (mT)	Power (W)		Gas Flow Rate (SCCM)			Deposition Rate (nm/min)	Stress (MPa) (~200nm Film Thickness)	Note
		Bias	ICP	SiH_4	Ar	He			
1	5	50	400	10	20	250	23.8	-213	See Fig 2(a)
2	5	50	400	2	20	250	0	N/A	No Film (Sputtered!)
3	5	50	400	3	6	75	0	N/A	No Film (Sputtered!)
4	5	25	400	3	6	75	6.8	-185	See Fig 2(b)
5	5	50	400	5	10	125	6.3	-281	See Fig 2(c)
6	5	15	400	3	6	75	9.5	-404	See Fig 2(d)
7	5	35	400	3	6	75	4.1	-283	See Fig 2(e)

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Fig. 1 Deposition rate and stress of amorphous Si films vs. bias power.

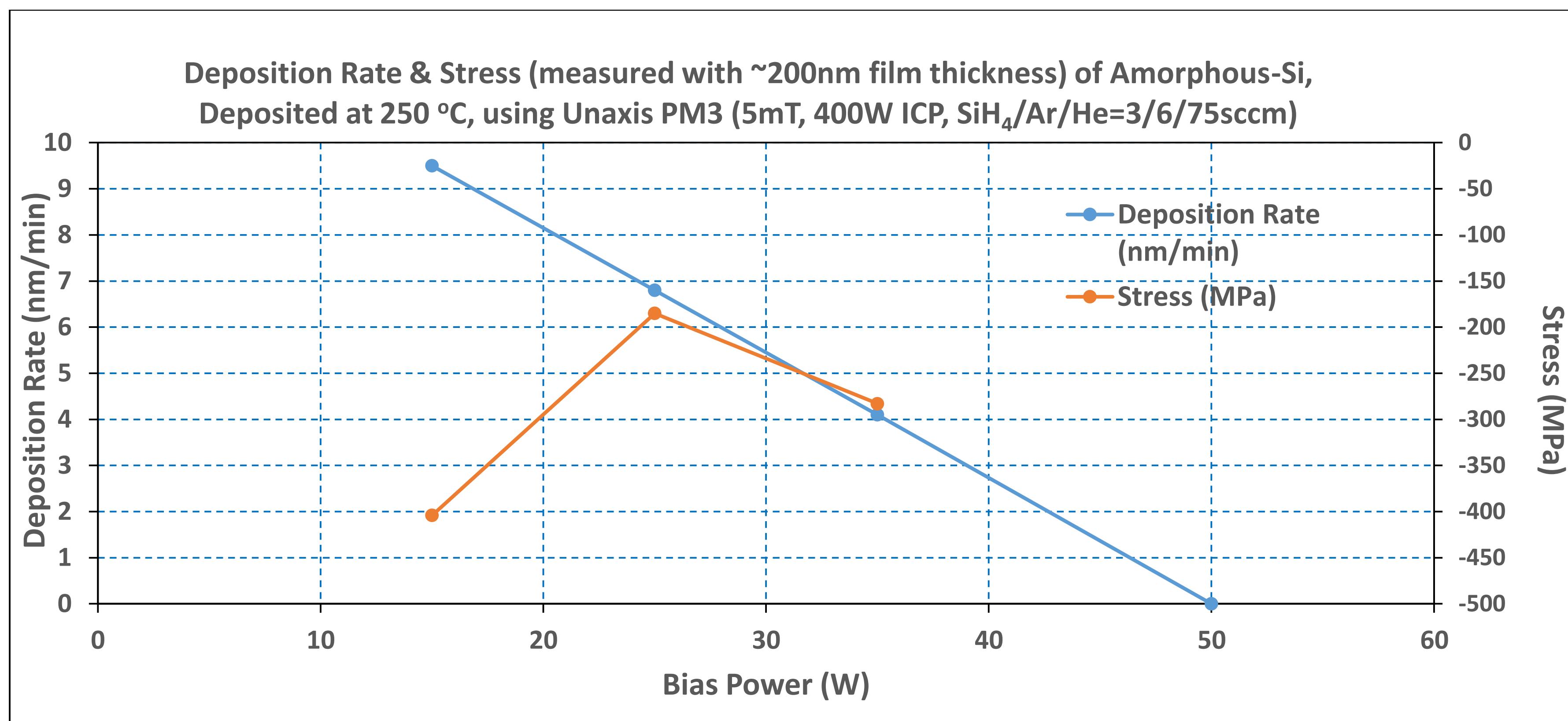

Fig 2. Amorphous Si, deposited at 250 C, using Unaxis PM3 (underneath: ~300nm SiO_2). (a): 5mT, 50/400W, SiH_4/Ar/He=10/20/250 SCCM, and 10m; (b): 5mT, 25/400W, SiH_4/Ar/He=3/6/75 SCCM, and 20m; (c): 5mT, 50/400W, SiH_4/Ar/He=5/10/125 SCCM, and 20m. (d) 5mT, 15/400W, SiH_4/Ar/He=3/6/75 SCCM, and 20m; (e): 5mT, 35/400W, SiH_4/Ar/He=3/6/75 SCCM, and 20m.