

Supplementary Materials

HiPIMS and DC Magnetron Sputter-Coated Silver Films for High-Temperature Durable Reflectors

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Table S1. Data tabulated from the GIXRD spectra for the 400 A HiPIMS, 200 A HiPIMS and 12 A DC magnetron sputtered silver show in Figure 4a as discrete films on coated-glass substrates, as-deposited and after an 8 h 400 °C anneal.

Sample	Crystal Plane	Peak Position (°)	FWHM ¹ (2θ)	Grain Size ² (nm)	Relative Intensity
DC MS as-deposited	(111)	38.14	0.60	14	1.00
	(200)	44.19	1.07	8	0.24
	(220)	64.51	0.69	14	0.62
	(311)	77.43	0.98	10	0.19
	(222)	81.56	0.87	12	0.03
DC MS annealed	(111)	38.15	0.47	18	0.33
	(200)	44.33	0.50	17	0.32
	(220)	64.49	0.42	22	1.00
	(311)	77.48	0.51	20	0.18
	(222)	81.58	0.50	21	0.06
200 A HiPIMS as-deposited	(111)	38.16	0.60	14	1.00
	(200)	44.22	1.04	8	0.26
	(220)	64.53	0.66	14	0.73
	(311)	77.46	0.86	12	0.23
	(222)	81.58	1.07	10	0.03
200 A HiPIMS annealed	(111)	38.11	0.39	21	0.09
	(200)	44.32	0.45	19	0.17
	(220)	64.47	0.37	25	1.00
	(311)	77.44	0.42	24	0.11
	(222)	81.56	0.43	24	0.03
400 A HiPIMS as-deposited	(111)	38.19	1.02	8	1.00
	(200)	44.22	1.15	7	0.19
	(220)	64.57	0.87	11	0.34
	(311)	77.48	1.11	9	0.15
	(222)	81.56	1.18	9	0.02
400 A HiPIMS annealed	(111)	38.16	0.54	16	0.63
	(200)	44.30	0.59	15	0.23
	(220)	64.46	0.40	23	1.00
	(311)	77.44	0.55	18	0.20
	(222)	81.57	0.55	19	0.04

¹ Full Width Half Maximum; ² As estimated by the Scherrer formula.

Table S2. Data tabulated from the GIXRD spectra for the 400 HiPIMS, 200 HiPIMS and 12 A DC magnetron sputtered silver show in Figure 4b as protected silver film systems grown on coated glass substrates, as deposited and after 24 h 400 °C anneal.

Sample	Crystal Plane	Peak Position (°)	FWHM ¹ (2θ)	Grain Size ² (nm)	Relative Intensity
DC MS as-deposited	(111)	38.19	0.58	15	1.00
	(200)	44.27	1.02	8	0.24
	(220)	64.58	0.66	14	0.75
	(311)	77.51	0.89	11	0.21
	(222)	81.60	0.90	12	0.03
DC 6 A annealed	(111)	38.19	0.46	18	0.30
	(200)	44.54	0.62	14	0.16
	(220)	64.68	0.46	20	1.00
	(311)	77.60	0.62	16	0.12
	(222)	81.66	0.58	18	0.03
200 A HiPIMS as-deposited	(111)	38.18	0.60	14	1.00
	(200)	44.26	1.07	8	0.26
	(220)	64.57	0.68	14	0.75
	(311)	77.50	0.93	11	0.21
	(222)	81.58	1.11	9	0.03
200 A HiPIMS annealed	(111)	38.29	0.47	18	0.58
	(200)	44.58	0.68	13	0.33
	(220)	64.70	0.50	19	1.00
	(311)	77.62	0.64	16	0.23
	(222)	81.68	0.62	17	0.04
400 A HiPIMS as-deposited	(111)	38.18	0.62	14	1.00
	(200)	44.22	1.18	7	0.22
	(220)	64.57	0.86	11	0.42
	(311)	77.47	1.07	10	0.18
	(222)	81.55	0.94	11	0.02
400 A HiPIMS annealed	(111)	38.27	0.56	15	1.00
	(200)	44.52	0.94	9	0.24
	(220)	64.71	0.72	13	0.87
	(311)	77.62	0.87	12	0.21
	(222)	81.64	0.76	14	0.03

¹ Full Width Half Maximum; ² As estimated by the Scherrer formula.