Cd1-xMgxS CQDs Thin Films for High Performance and Highly Selective NIR Photodetection

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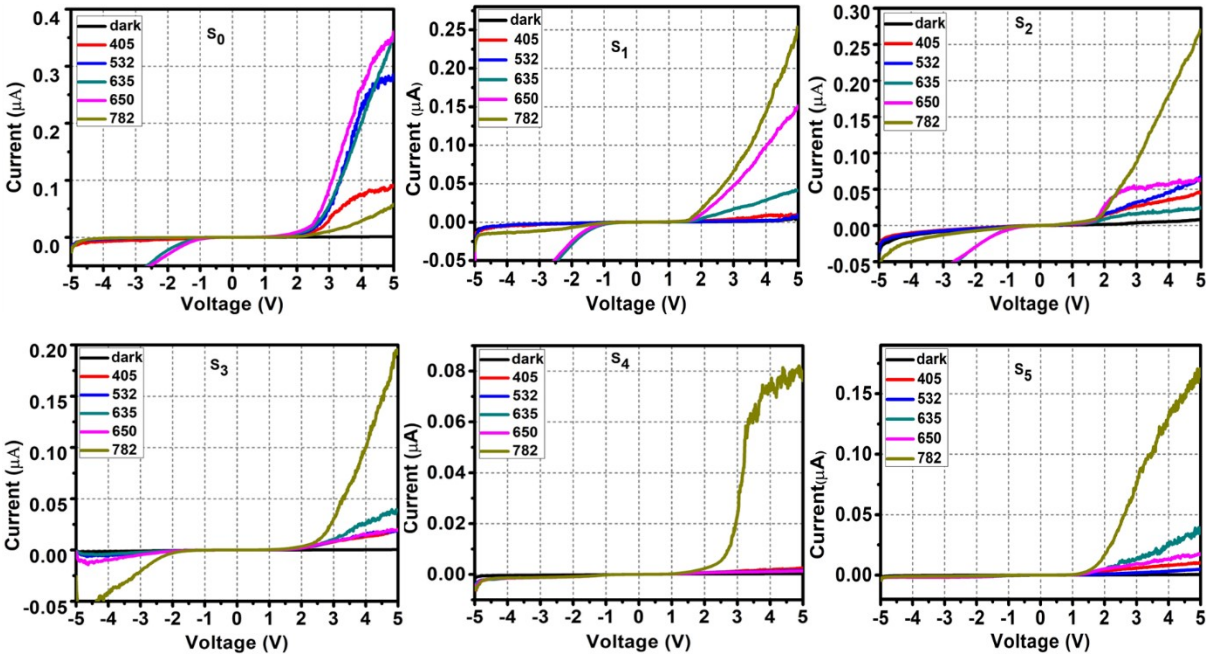

Fig. S1 : Linear plot of *I-V* charactristics of PDs S_0,….., S_5 under the illumination of light of different wavelength.

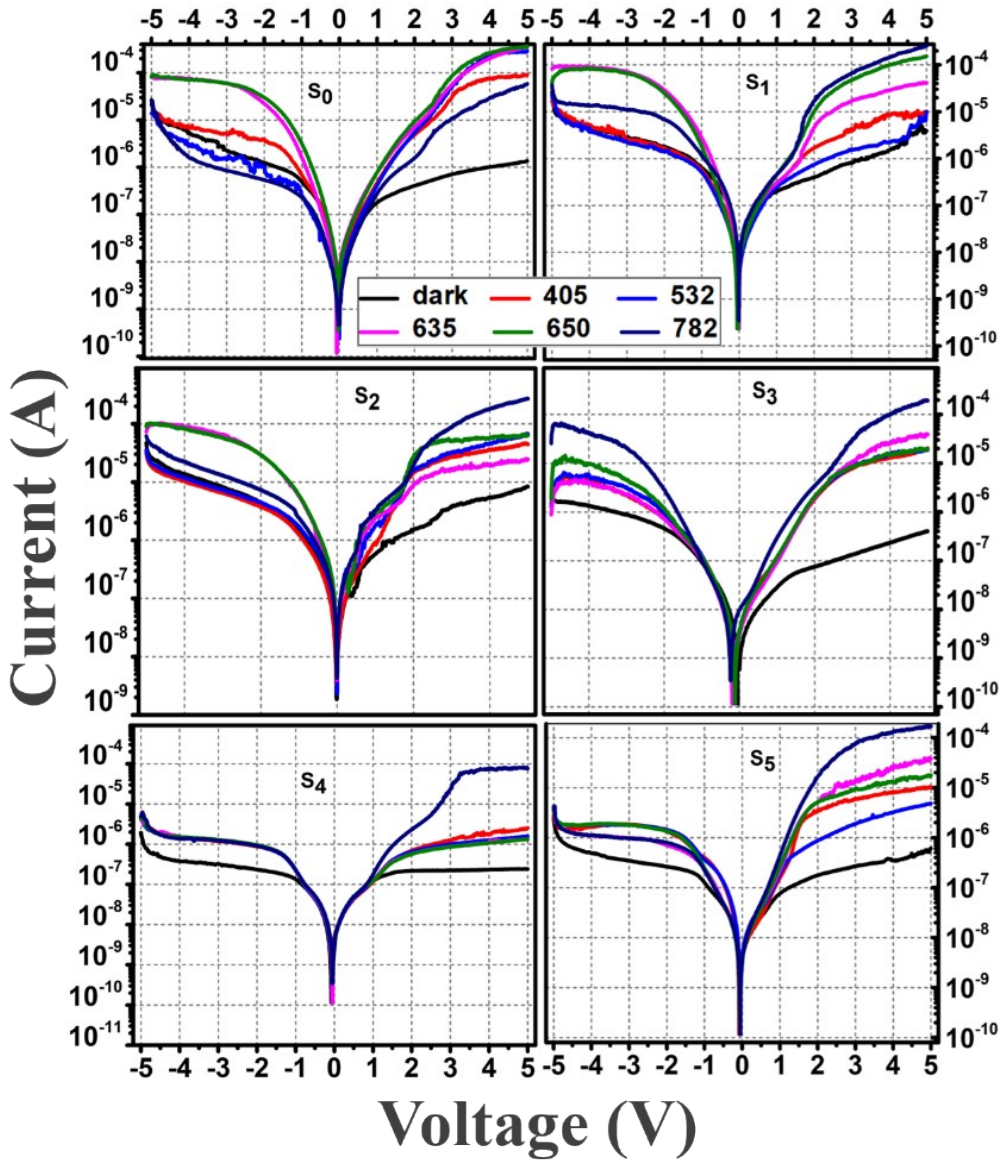

Fig. S2 : Semi-log plot of I-V charactristics of PDs S_0,….., S_5 under the illumination of light of different wavelength.

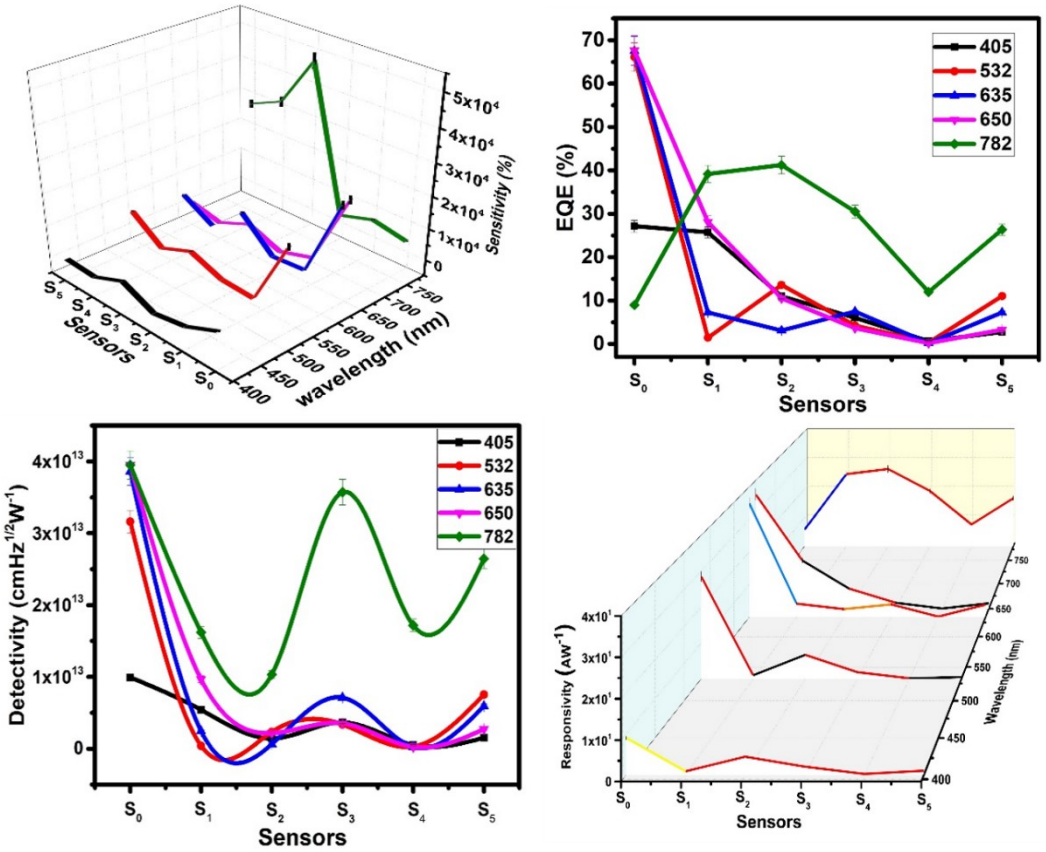

Fig. S3: (a) Sensitivity (*S*), (b) EQE, (c) Detectivity (*D*) and (d) Responsivity (*R*) of PDs S_0,……..,S_5 under the illumination of light at 405 nm, 532 nm, 635 nm, 650 nm and 782 nm.

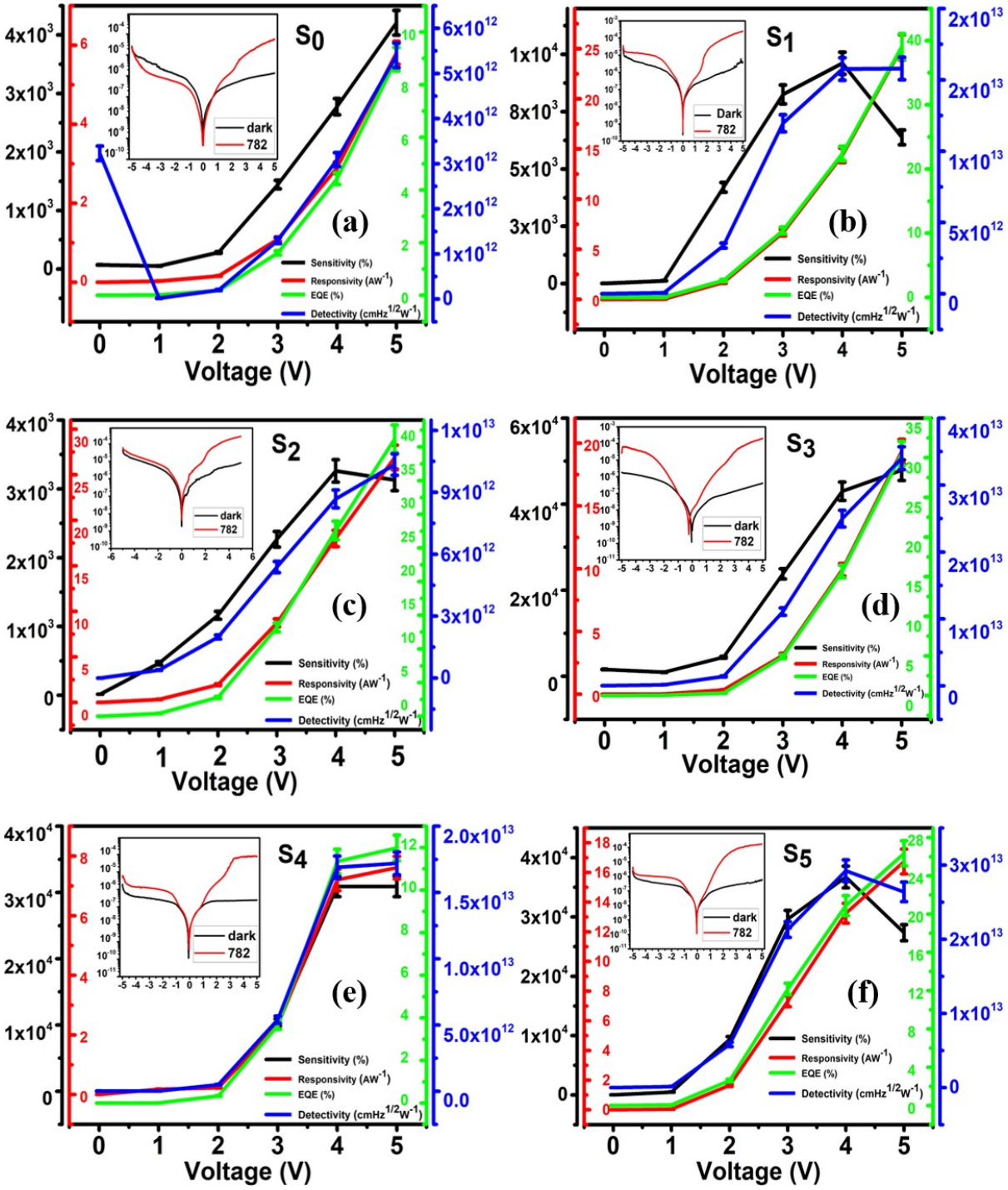

Fig. S4: Sensitivity (*S*), EQE, Detectivity (*D*) and Responsivity (*R*) of PDs (a) S_0, (b) S_1, (c) S_2, (d) S_3, (e) S_4 and (f) S_5 as a function of +ve biasing voltage under the illumination of light of wavelength of 782nm.

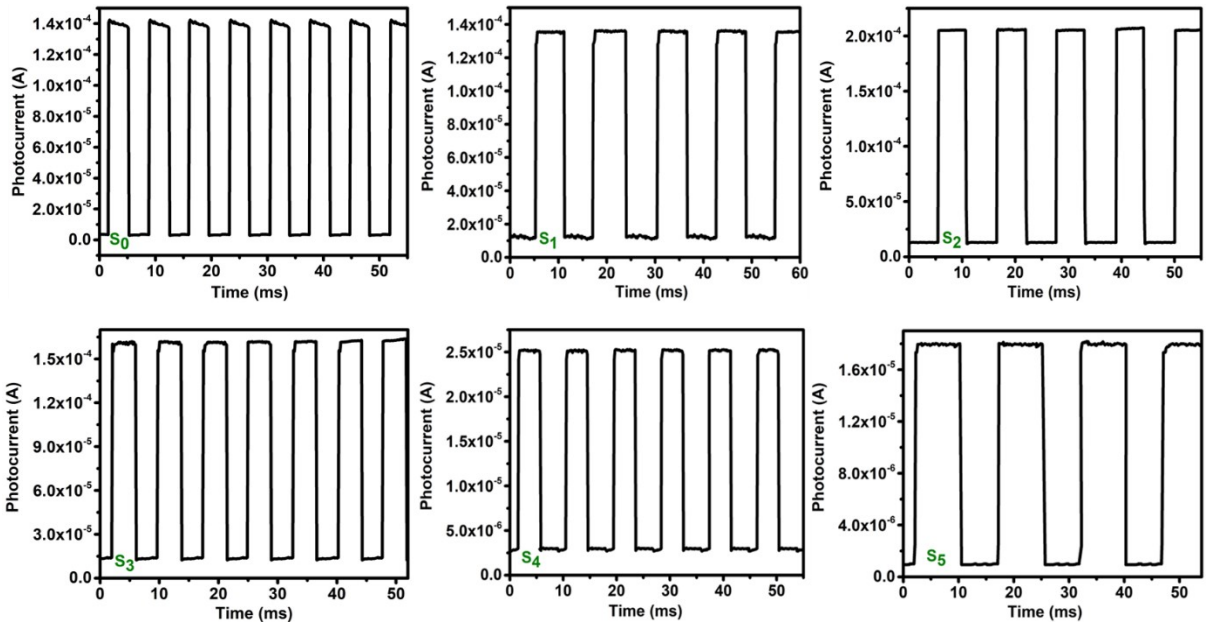

Fig. S5: *I-t* characteristics of PDs S_0,……..,S_5 at an external bias of 3V under the illumination of light of 782nm.

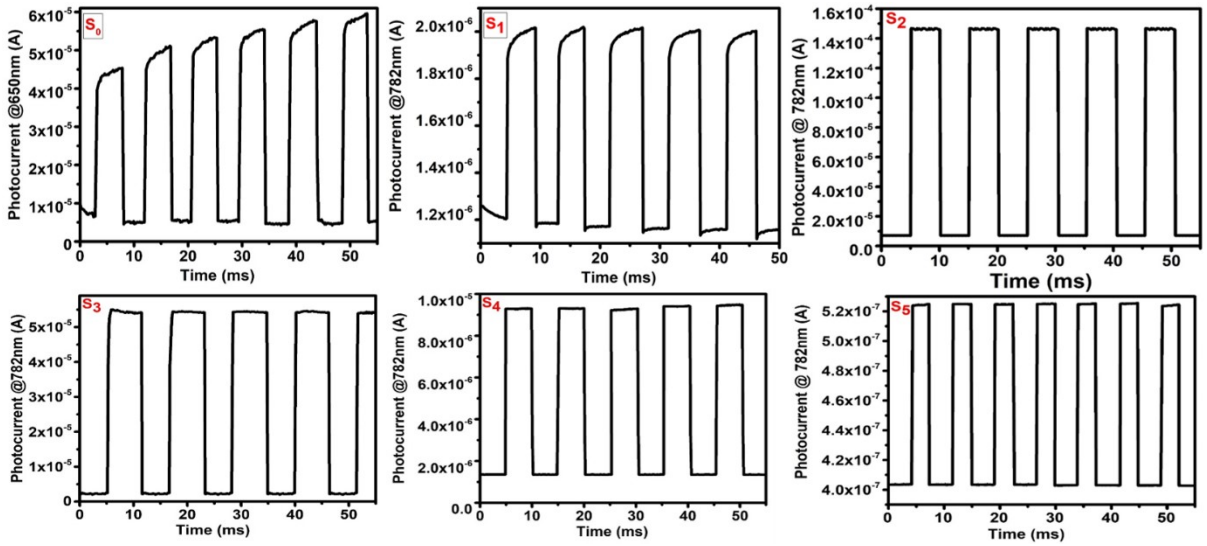

Fig. S6: *I-t* characteristics of PDs S_0,……..,S_5 at an external bias of 5V under the illumination of light of 782nm.

Table T1: Estimated response times from *I-t* curves for PDs S_0,…….,S_5 at different external bias voltages from 1V to 5V under the illumination of light of 782nm.

Sensor	Response Time (ms)									
	1V		2V		3V		4V		5V	
	t_r	t_f	t_r	t_f	t_r	t_f	t_r	t_f	t_r	t_f
S_0	130	130	1033	226	331	208	303	313	215	220
S_1	371	124	924	220	313	207	385	131	124	129
S_2	229	228	322	217	296	177	224	184	138	173
S_3	221	135	140	124	110	116	157	131	123	120
S_4	186	165	272	218	305	210	177	142	123	139
S_5	196	207	279	250	145	130	184	172	153	238