Supporting Information

N-doped carbon-dots for luminescent solar concentrators

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RESULTS:

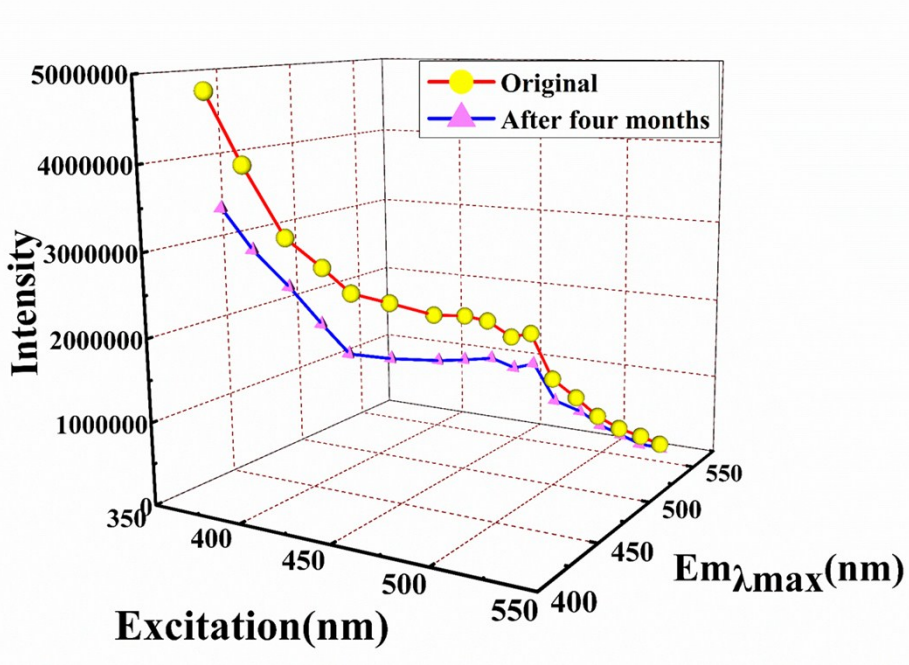

Figure S1 Maximum intensity of fluorescence emission spectra of N-CDs/PMMA thin film LSCs excited by light with different wavelengths. The film thickness is 6.67 μm (containing 0.3 wt% N-CDs).

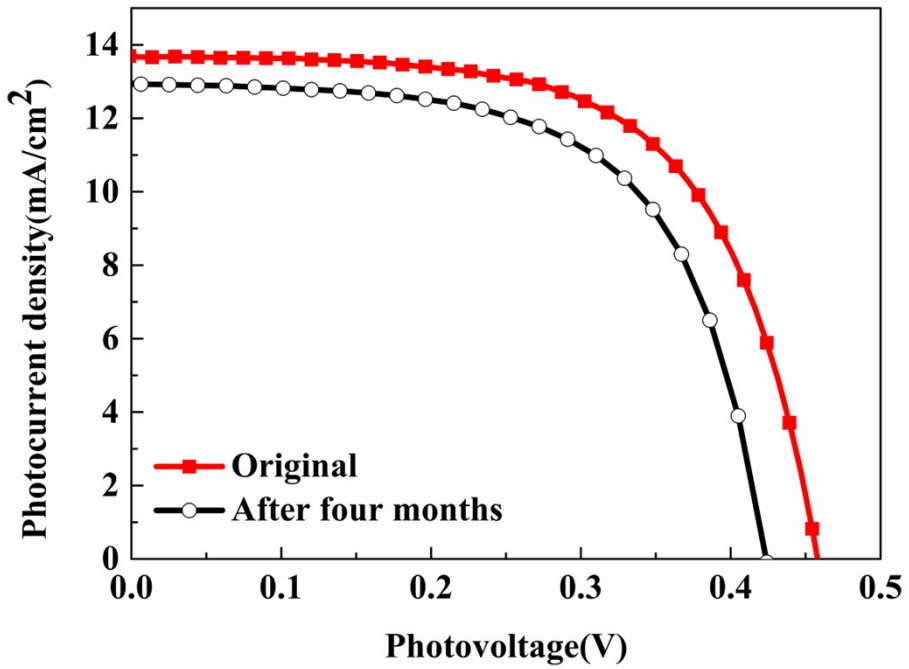

Figure S2 Relation of photocurrent density and photovoltage (*J*–*V*) of the N-CDs/PMMA thin films. The film thickness is 6.67 μm (containing 0.3 wt% N-CDs).

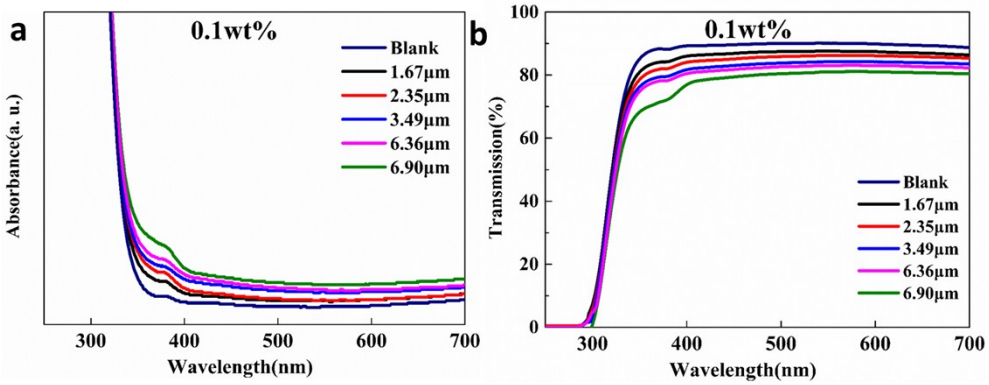

Figure S3 (a) Absorption spectra and (b) Transmittance spectra of N-CDs/PMMA thin film LSCs with different thicknesses (containing 0.1 wt% N-CDs).

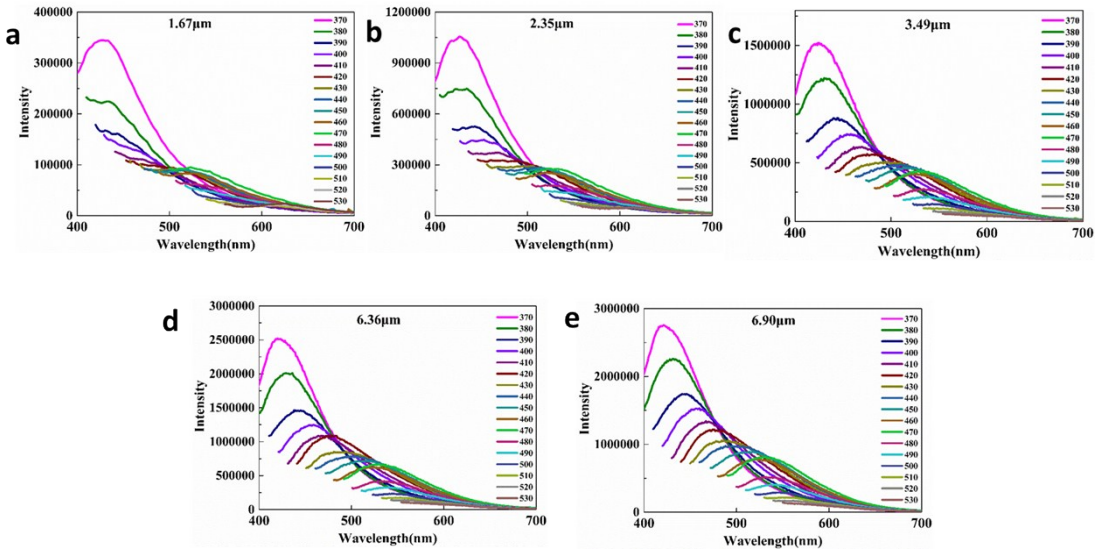

Figure S4 Photoluminescence spectra of N-CDs/PMMA thin film LSCs with different thicknesses (containing 0.1 wt% N-CDs).

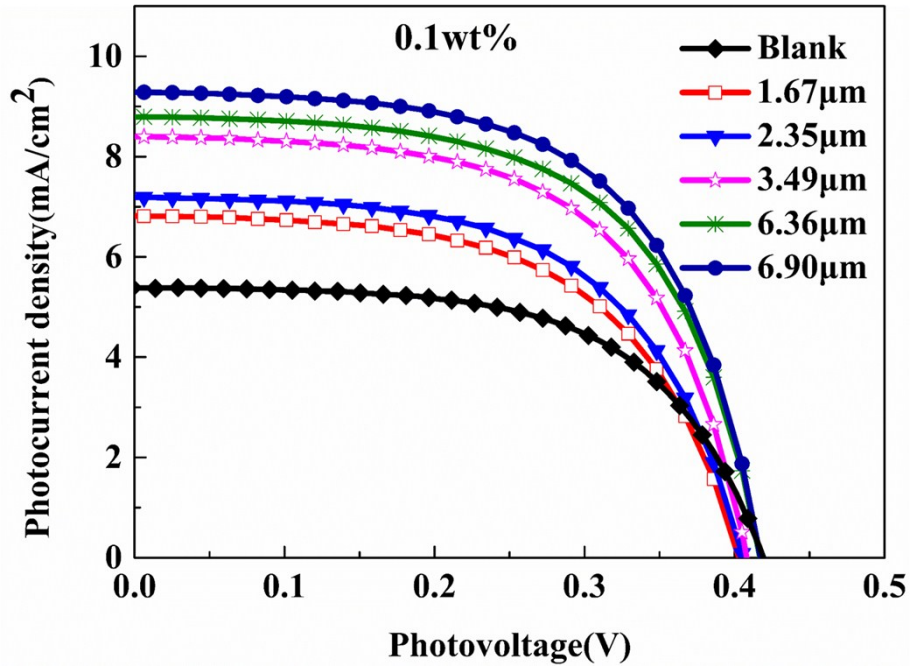

Figure S5 Relation of photocurrent density and photovoltage (*J*–*V*) of the N-CDs/PMMA thin films with different film thickness (containing 0.1 wt% N-CDs).

Table S1 Photovoltaic parameters of N-CDs/PMMA thin film LSCs with different film thicknesses (0.1 wt% N-CDs).

Thickness（μm）	J_{sc} (mA/cm^2)	V_{oc} (V)	*Fill Factor* (%)	*G*	η_{opt} (%)	*C*	η (%)
Blank	5.38	0.42	59.51	4.88	1.87	0.09	1.34±0.01
1.67	6.89	0.40	56.93	4.88	2.39	0.12	1.57±0.02
2.35	7.24	0.40	57.61	4.88	2.51	0.12	1.68±0.01
3.49	8.38	0.41	59.46	4.88	2.91	0.14	2.03±0.03
6.36	8.78	0.42	60.02	4.88	3.05	0.15	2.19±0.02
6.90	9.27	0.42	60.25	4.88	3.22	0.16	2.32±0.02

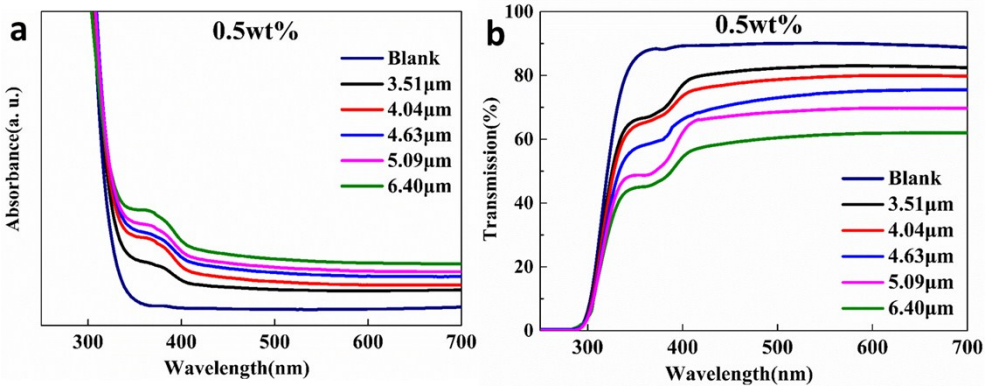

Figure S6 (a) Absorption spectra and (b) Transmittance spectra of N-CDs/PMMA thin film LSCs with different thicknesses (containing 0.5 wt% N-CDs).

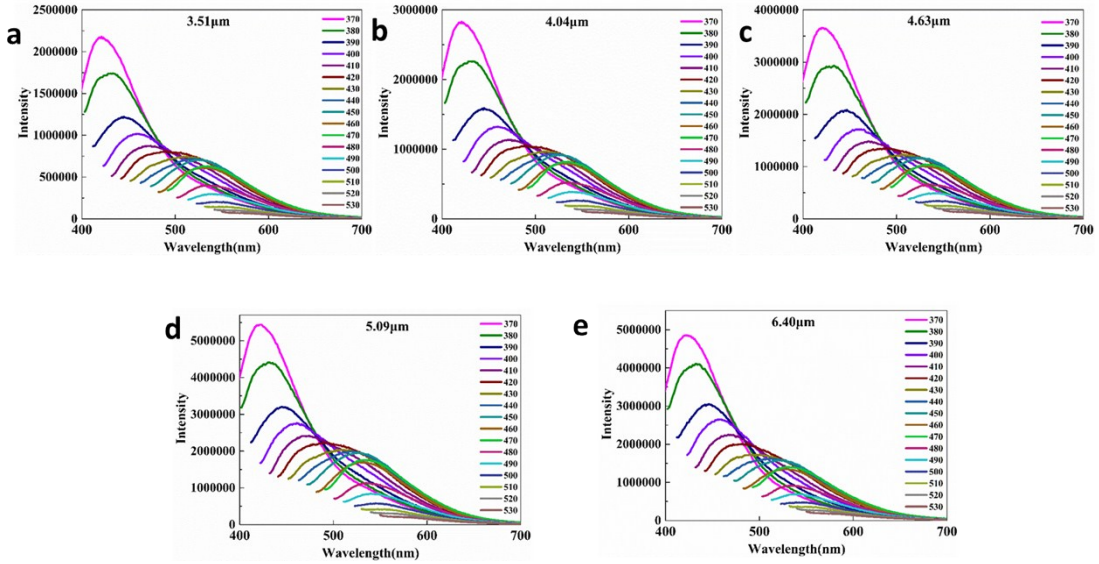

Figure S7 Photoluminescence spectra of N-CDs/PMMA thin film LSCs with different thicknesses (containing 0.5 wt% N-CDs).

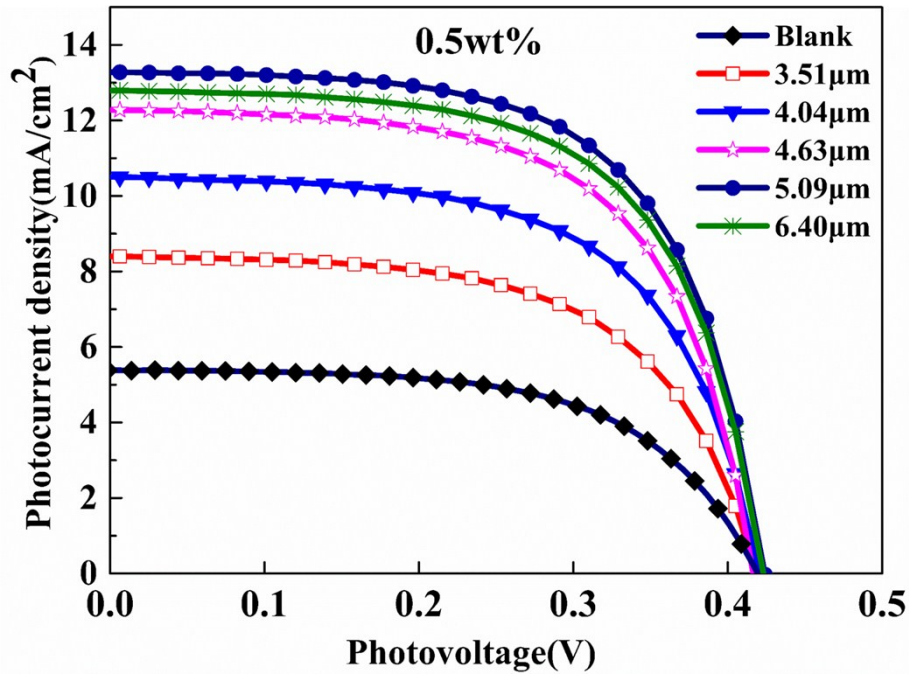

Figure S8 Relation of photocurrent density and photovoltage (*J–V*) of the N-CDs/PMMA thin films with different film thicknesses (containing 0.5 wt% N-CDs).

Table S2 Photovoltaic parameters of N-CDs/PMMA thin film LSCs with different film thicknesses (0.5 wt% N-CDs).

Thickness（μm）	J_{sc} (mA/cm²)	V_{oc} (V)	*Fill Factor* (%)	*G*	η_{opt} (%)	*C*	η (%)
Blank	5.38	0.42	59.51	4.88	1.87	0.09	1.34±0.01
3.51	8.38	0.42	59.92	4.88	2.91	0.14	2.09±0.03
4.04	10.48	0.42	61.14	4.88	3.64	0.18	2.68±0.04
4.63	12.26	0.41	61.99	4.88	4.25	0.21	3.15±0.01
5.09	13.27	0.42	62.81	4.88	4.60	0.22	3.51±0.02
6.40	12.78	0.42	62.54	4.88	4.43	0.22	3.36±0.02