

Electronic Supplementary Information for

**Highly Efficient CdTe/CdS Quantum Dots Sensitized Solar Cells Fabricated by A One-Step Linker Assisted Chemical Bath Deposition**

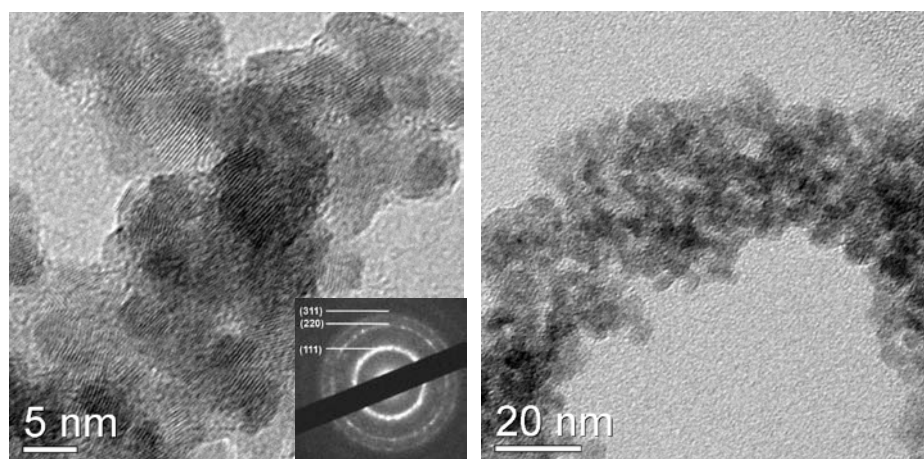
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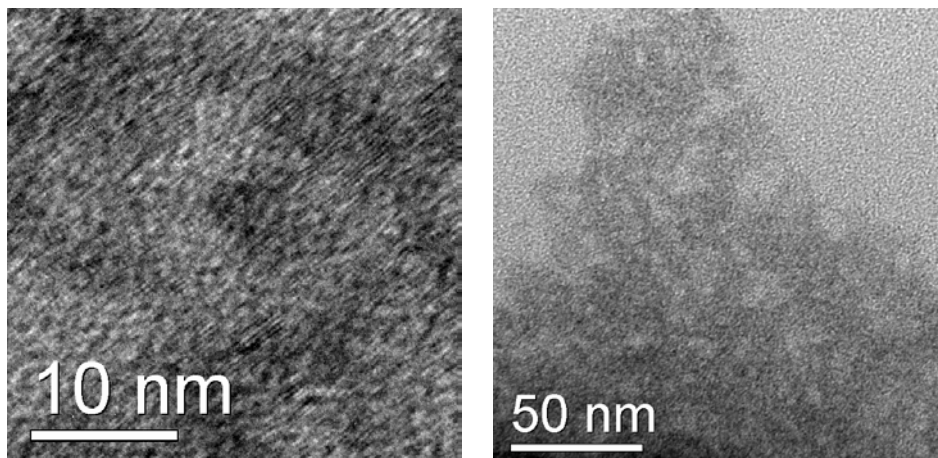
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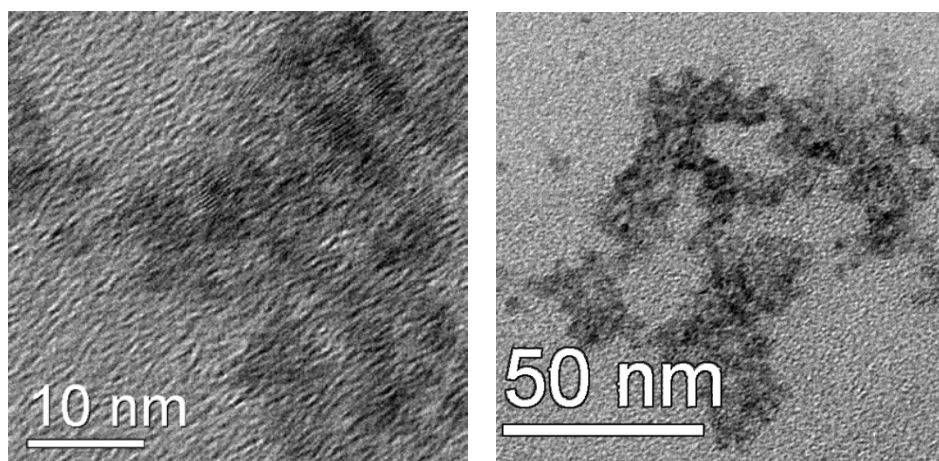
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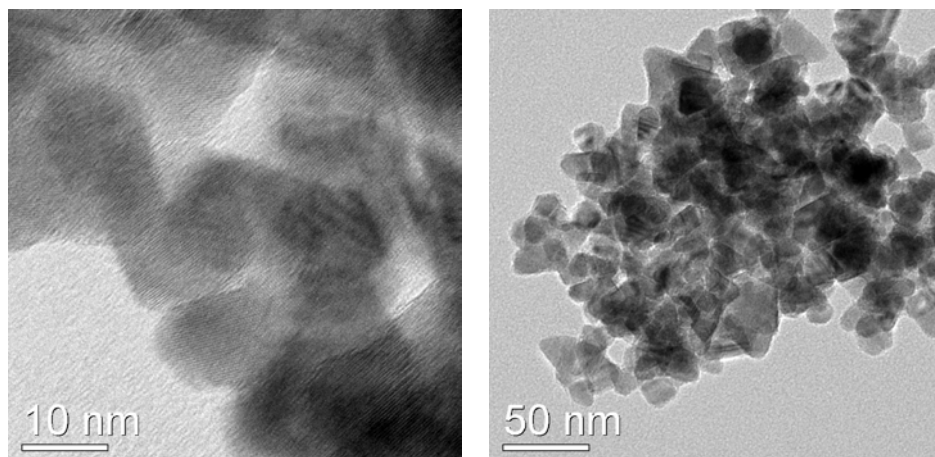
**Fig. S1** TEM, HRTEM images and SAED pattern of QDs prepared at 160 °C, which has an average size of 6.1 nm.



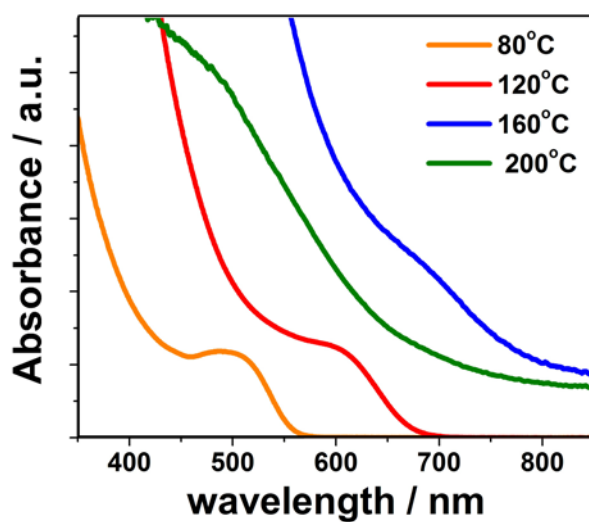
**Fig. S2** TEM and HRTEM images of QDs prepared at 80 °C. Shows the average size of the QDs is 3.7 nm.



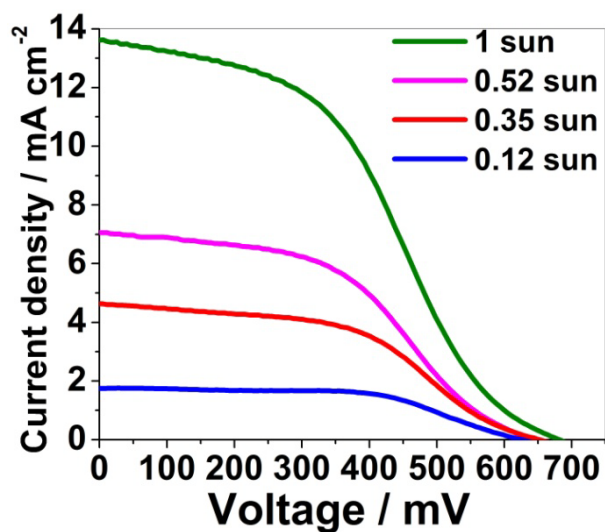
**Fig. S3** TEM and HRTEM images of QDs prepared at 120 °C, which has an average size of 4.8 nm.



**Fig. S4** TEM and HRTEM images of nanoparticles prepared at 200 °C. The size of the nanoparticles ranges from 5 to 50 nm.



**Fig. S5** The UV-vis absorption spectra of single QDs (without TiO<sub>2</sub> film) prepared under different reaction temperature.



**Fig. S6** I-V curves of CdTe/CdS core/shell (prepared at 160°C) QDs based QDSSCs illuminated under different light intensities.

**Table S1** Detailed I-V parameters of QDSSCs under different light intensities illuminations with Au counter electrode.

light density	$J_{SC} / \text{mA cm}^{-2}$	$V_{OC} / \text{mV}$	$\eta / \%$	FF
1 sun	13.60	682	3.80	0.41
0.52 sun	7.05	642	3.91	0.45
0.35 sun	4.65	652	4.32	0.49
0.12 sun	1.75	627	5.25	0.57