

Electronic Supplementary Information

Controllable Synthesis of Ultrasmall CuInSe₂ Quantum Dots for Photovoltaic Application

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Table S1 Fitted Biexponential Values for CdS/SiO₂, CdS/TiO₂ and CdS/CuInSe₂/TiO₂ Films of Time-Resolved Transient Absorption Bleaching Recovery.

Sample	y ₀	a ₁	τ ₁ (ps)	a ₂	τ ₂ (ps)	<τ> (ps)	K _{et} (s ⁻¹)
CdS/SiO ₂	-0.017	-0.19±0.009	17.9±0.2	-0.26±0.0170	194.8±13.5	183	
CdS/TiO ₂	-0.092	-0.20±0.0035	9.1±0.4	-0.14±0.0035	117.8±6.9	107	2.97×10 ⁹
CdS/CuInSe ₂ /TiO ₂	-0.0062	-0.92±0.028	7.0±0.4	-0.49±0.0285	80.8±10.0	70	7.92×10 ⁹

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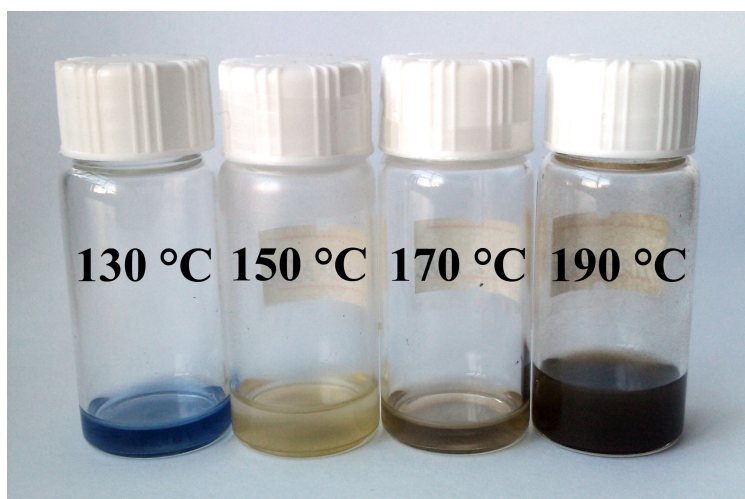


Fig. S1 Colors of CuInSe₂ quantum dots synthesized at different temperatures

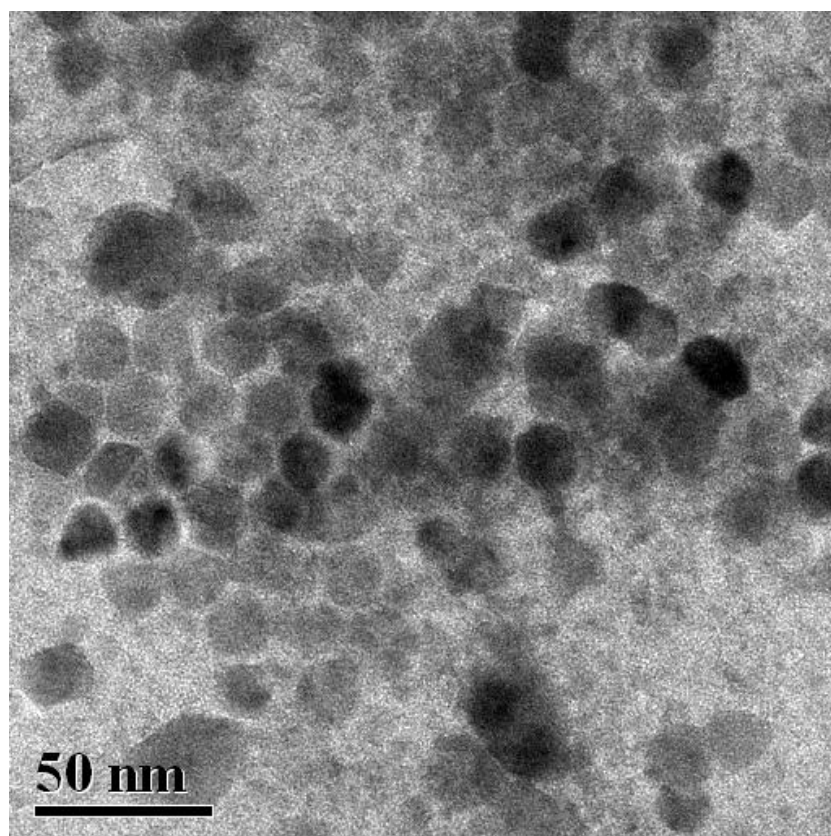


Fig. S2 TEM image of CuInSe₂ quantum dots synthesized at 190 °C

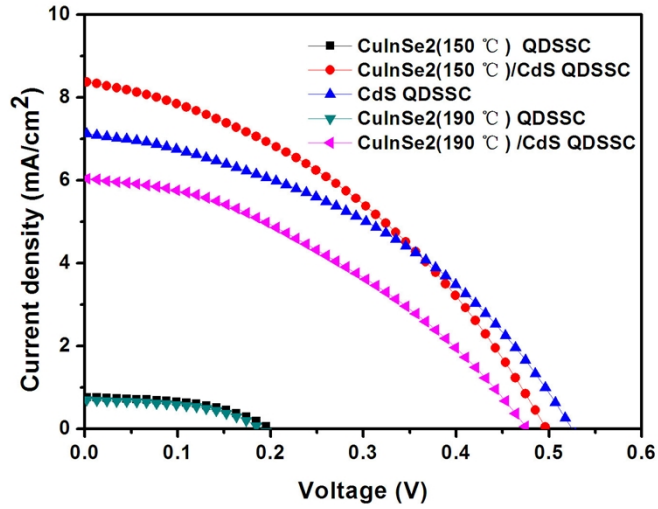


Fig. S3 I-V characteristics of QDSSCs for CuInSe₂, CdS, and CdS/CuInSe₂ QD-sensitized TiO₂ electrodes measured under the illumination of one sun (AM 1.5G, 100 mW cm⁻²).

Table S2 Results obtained from the photocurrent-voltage (*I-V*) measurements of the QDSSCs using various electrodes.

Sample	V_{oc} (V)	J_{sc} (mA cm ⁻²)	FF(%)	η □ □ % □
CuInSe ₂ (150°C) QDSSC	0.200	0.76	49.0	0.07
CuInSe ₂ (190°C) QDSSC	0.190	0.69	49.3	0.06
CdS QDSSC	0.524	7.43	39.3	1.53
CdS/CuInSe ₂ (150°C) QDSSC	0.496	8.69	37.8	1.63
CdS/CuInSe ₂ (190°C) QDSSC	0.475	6.13	37.8	1.10