

Supporting Information

High-Efficiency Deep-Red Quantum-Dot Light-Emitting Diodes with Type-II CdTe/CdSe Core/Shell Quantum Dots as Emissive Layers

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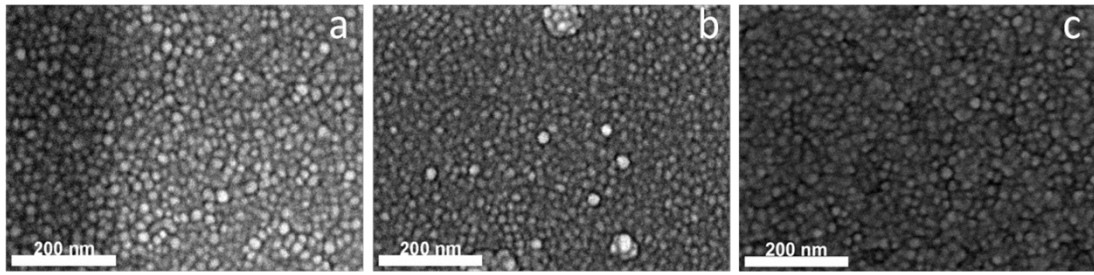


Figure S1. SEM images of QD layers with emission wavelength of 642 nm (a), 664 nm (b) and 689 nm (c).

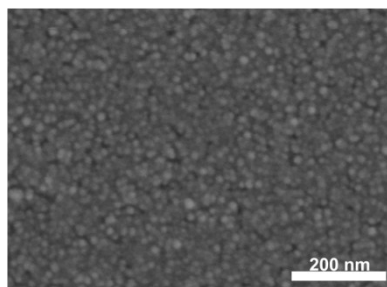


Figure S2. SEM image of ZnO layers.

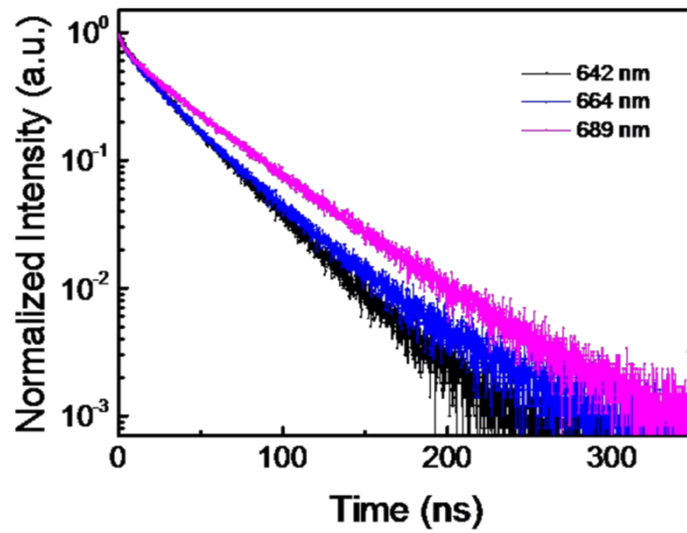


Figure S3. Transit-PL lifetime of QDs with different thickness of shells. τ (642 nm, black) = 31.48 ns, τ (664nm, blue) = 35.39 ns, τ (689 nm, magenta) = 43.78 ns.

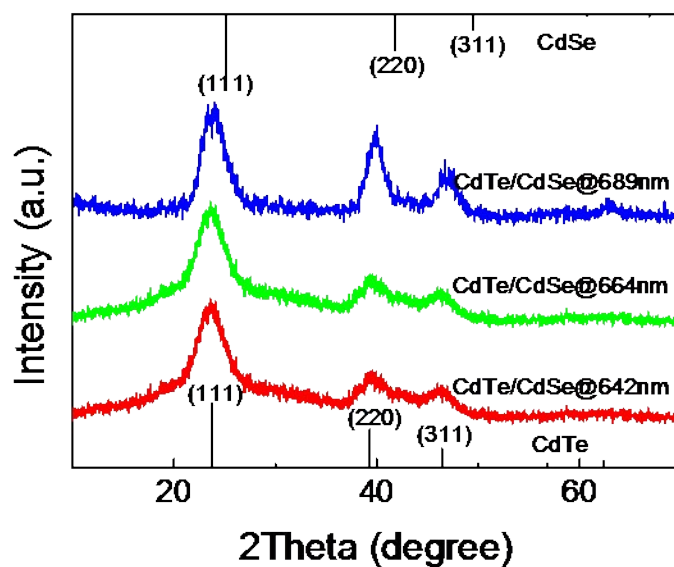


Figure S4. XRD patterns of as-prepared CdTe/CdSe QDs with different PL peaks.

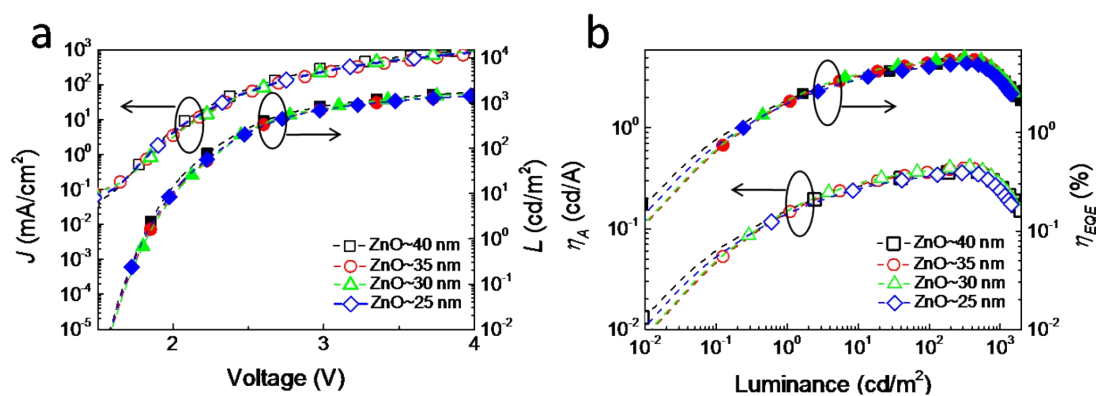


Figure S5. Characteristics of QD-LEDs with different thickness of ZnO electron transport layer. (a) Current density-voltage-luminance (J - V - L), (b) Current efficiency-luminance-EQE

(η_A - L - η_{EQE})

Table S1. Summary of parameters of QD-LEDs with different thicknesses of QD and ZnO layers.

		V_T (V)	$L@4\text{ V}$ (cd/m ²)	η_{EQE} (%)	η_A (cd/A)
Thickness of QDs	~35	1.9	1360	4.6	0.33
	~30	1.8	1489	5.0	0.38
	~25	1.8	1610	5.4	0.38
	~20	1.8	1464	3.1	0.32
Thickness of ZnO	~40	1.8	1716	5.26	0.37
	~35	1.8	1441	5.6	0.40
	~30	1.8	1619	5.8	0.41
	~25	1.8	1443	5.0	0.36

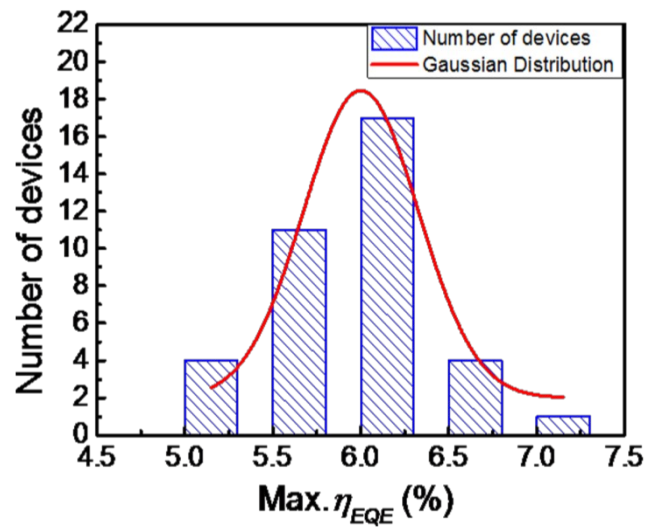


Figure S6. Histogram distribution of the maximum EQE values for devices with the same device structure as device #3.

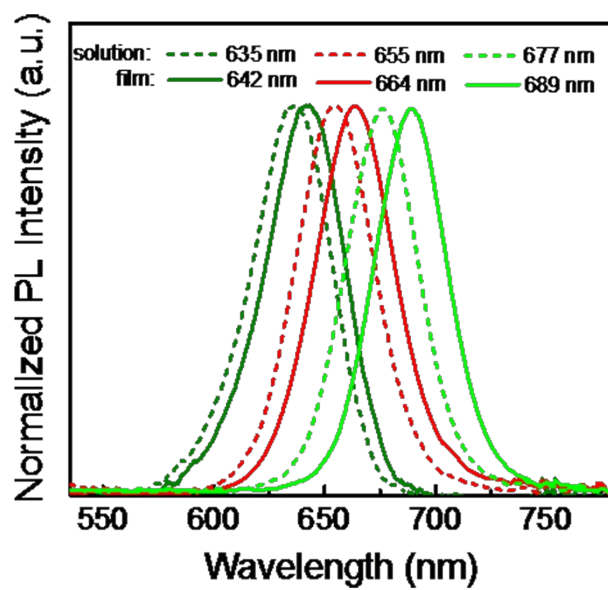


Figure S7. Comparison of PL spectra of QDs in the form of solution (dash line, at OD=0.02-0.05) versus solid films (solid line).