

Supporting Information

Highly Efficient, Color-Pure, Color-Stable Blue Quantum Dot-Light-Emitting Devices

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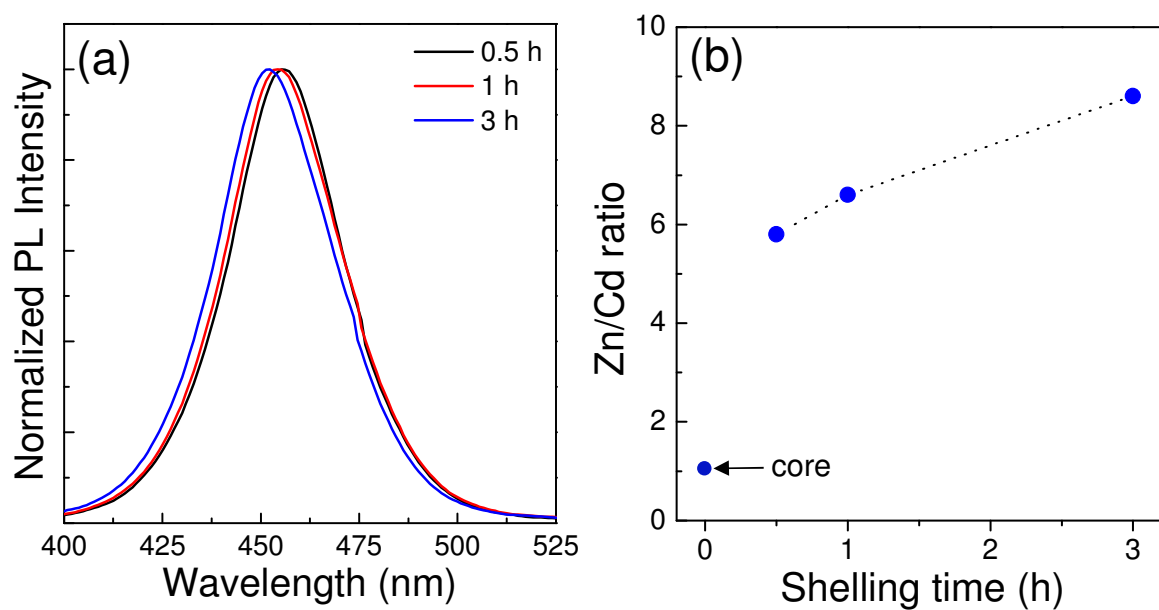


Figure S1. (a) PL emission spectra and (b) chemical compositions of Zn/Cd ratio of CdZnS/ZnS QDs with different shelling times. The actual Zn/Cd ratio of CdZnS core QD is also marked in (b).

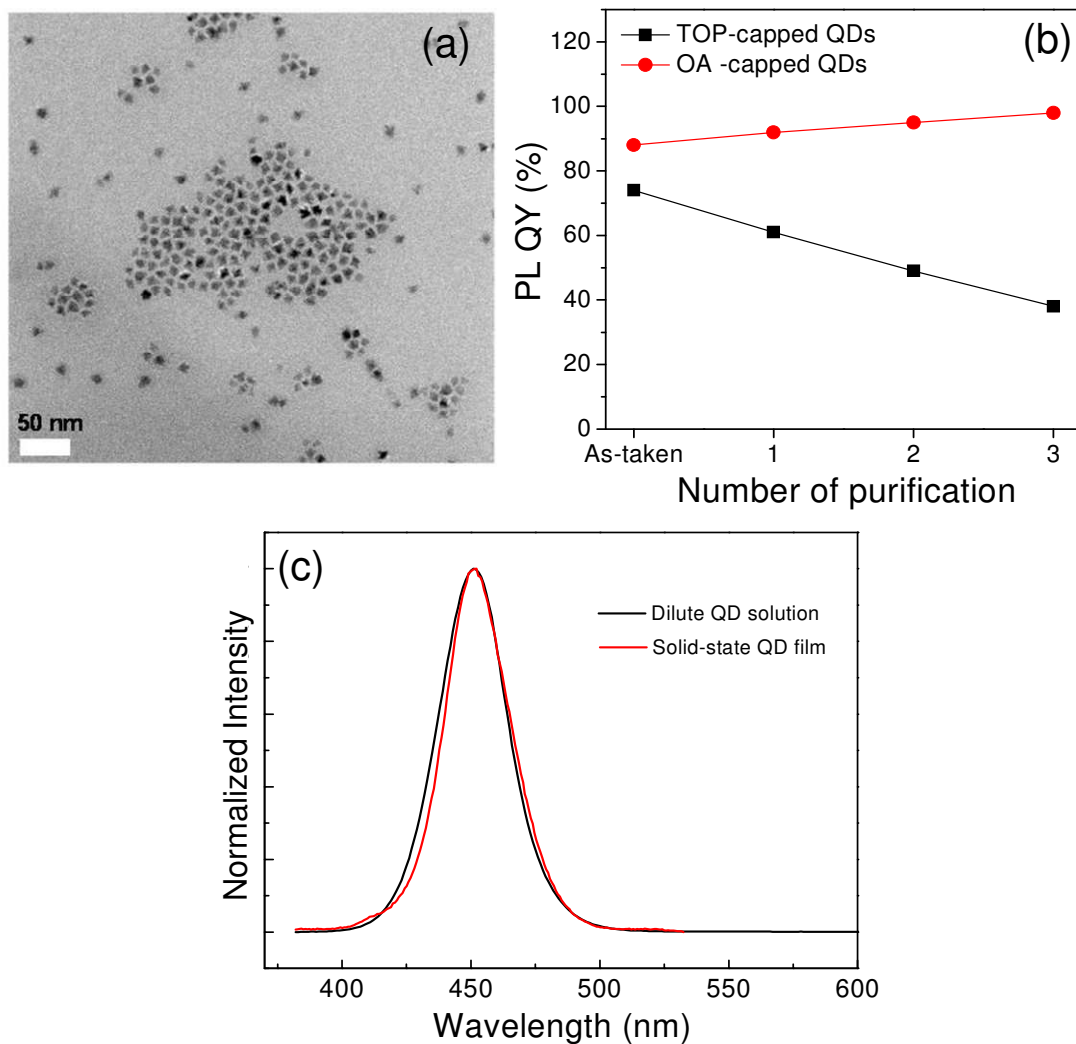


Figure S2. (a) TEM image of TOP-capped CdZnS/ZnS QDs and (b) comparison of changes in PL QY of TOP-capped versus OA-capped CdZnS/ZnS QDs as a function of repetition number of purification. (c) Comparison of normalized PL spectra of 3 h-shelled CdZnS/ZnS QDs in the forms of dilute QD solution *versus* solid-state QD film.

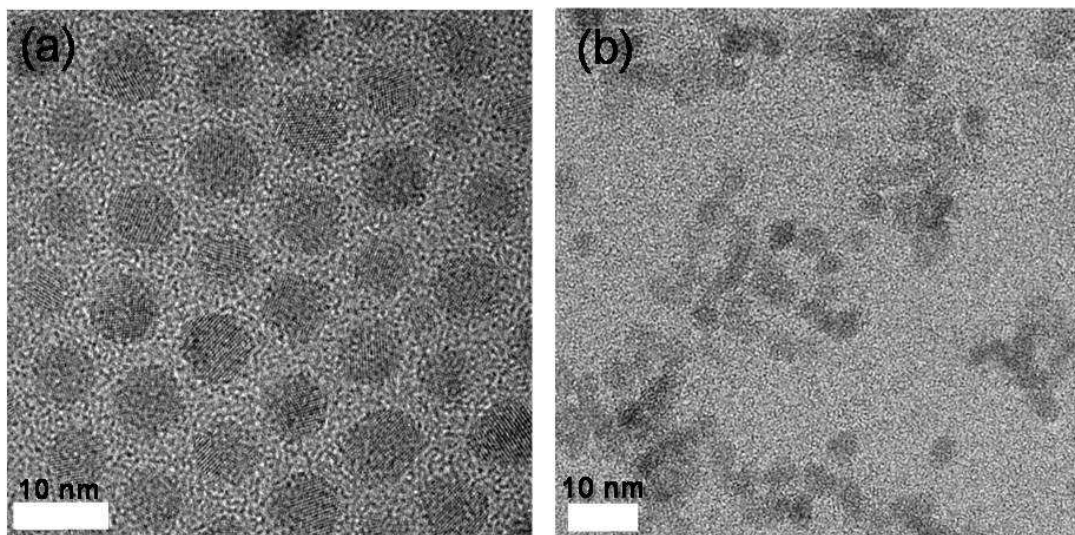


Figure S3. TEM images of (a) CdZnS core QDs and (b) ZnO nanoparticles.

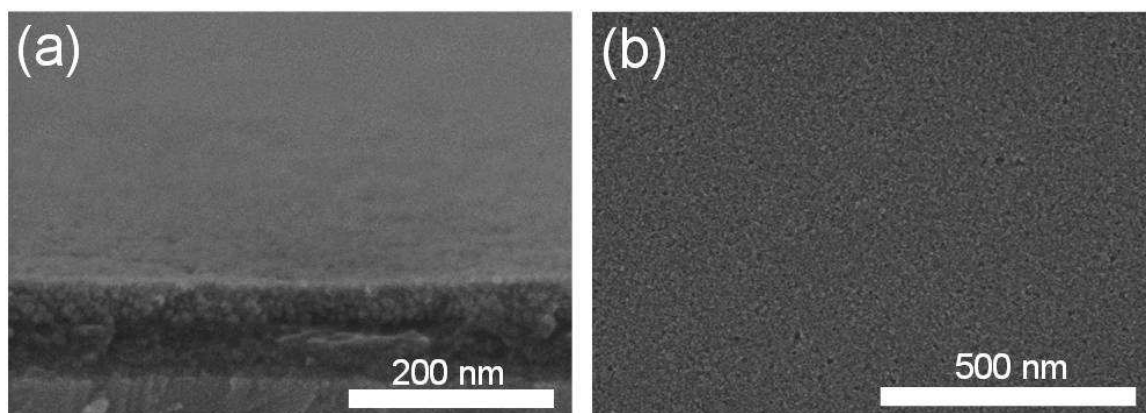


Figure S4. (a) Tilted and (b) surface SEM images of ITO / PEDOT:PSS / PVK / QDs / ZnO NPs.

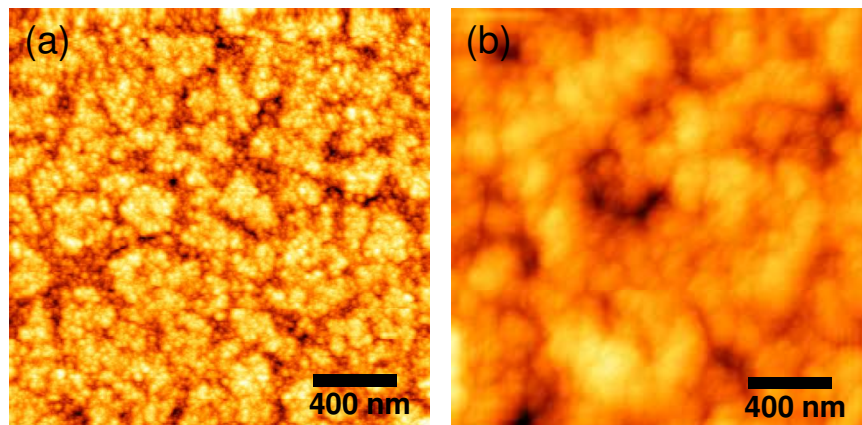


Figure S5. AFM images of (a) QD and (b) ZnO NP layer surfaces ($2\ \mu\text{m} \times 2\ \mu\text{m}$).

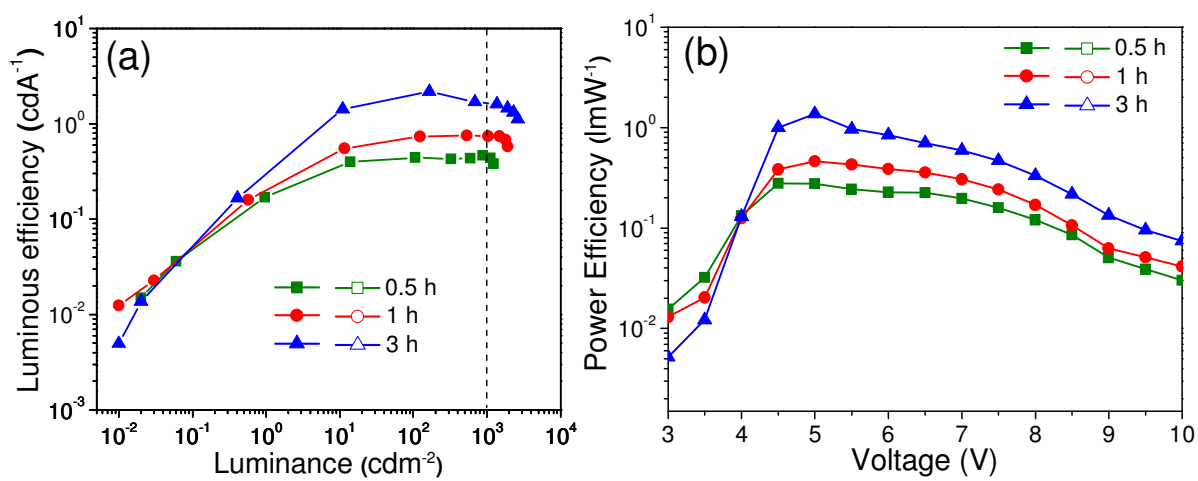


Figure S6. (a) Luminous efficiency–luminance and (b) power efficiency–voltage characteristics of blue emissive devices having the QDs with 0.5, 1, and 3 h shelling times.

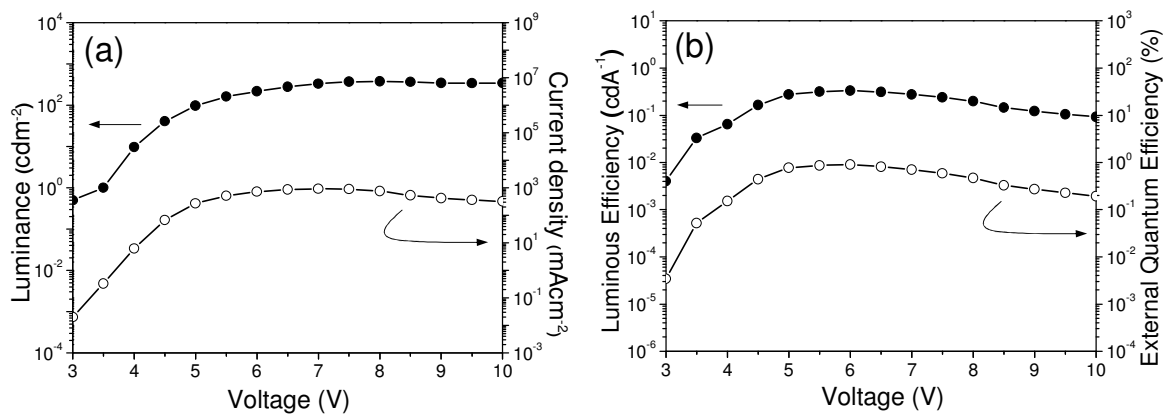


Figure S7. Characteristics of (a) luminance and current density and (b) luminous efficiency and external quantum efficiency as a function of driving voltage for TOP-capped CdZnS/ZnS QD-based LED.

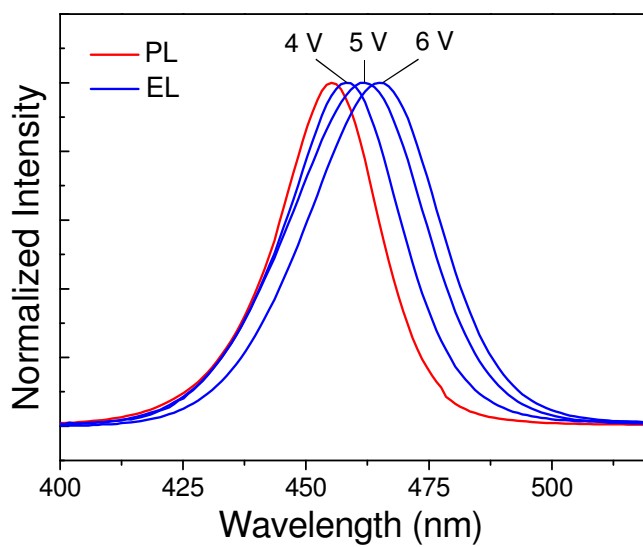


Figure S8. Voltage-dependent EL spectral red-shift and broadening of TOP-capped CdZnS/ZnS QD-based LED. PL spectrum of diluted QD dispersion is also compared.