

Supporting Information

Thin-Shell CdSe/ZnCdS Core/Shell Quantum Dots and Their Electroluminescence Device Application

Song Wei,^{1,2} Yue Liu,^{1,2} Mingyue Ma,¹ Yao Wu,¹ Lijian Huang¹ and Daocheng Pan^{1,2*}

¹State Key Laboratory of Rare Earth Resource Utilization, Changchun Institute of Applied Chemistry, Chinese Academy of Sciences, 5625 Renmin Street, Changchun, Jilin, 130022, P. R. China; ²University of Science and Technology of China, Hefei, Anhui 230026, P. R. China

Tel & Fax: +86-431-85262941; email: pan@ciac.ac.cn

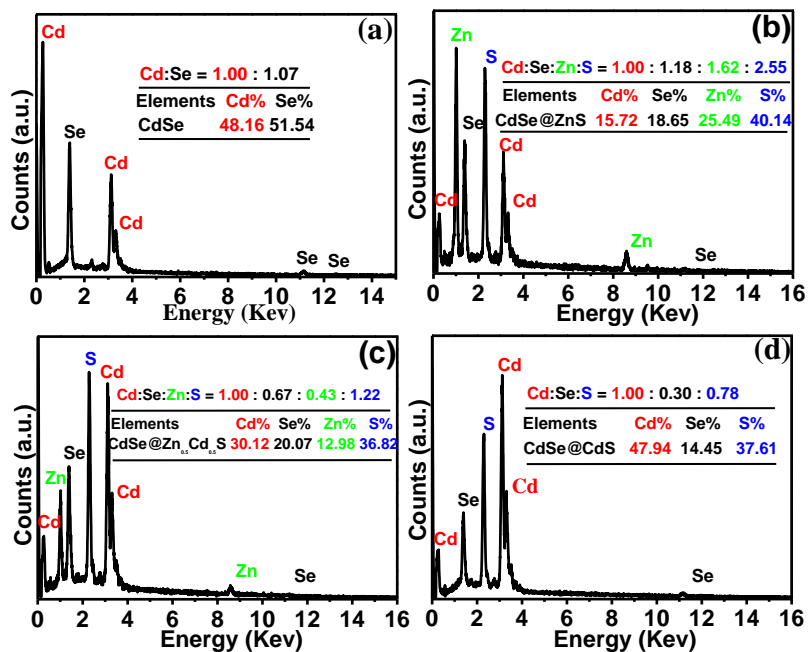


Figure S1. EDS spectra and chemical compositions of CdSe cores (a), CdSe/ZnS (b), CdSe/Zn_{0.5}Cd_{0.5}S (c), and CdSe/CdS core/shell QDs (d).

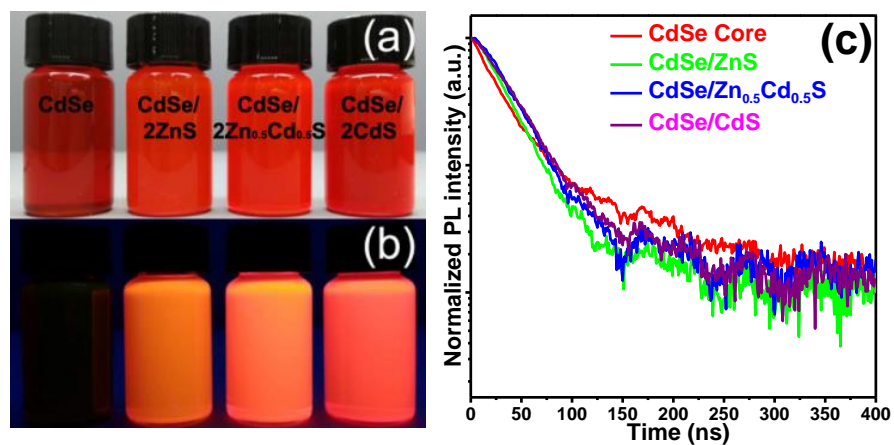


Figure S2. Digital photographs of thiol-capped CdSe cores, CdSe/2ZnS, CdSe/2Zn_{0.5}Cd_{0.5}S, and CdSe/2CdS core/shell QD solutions under normal indoor light (a) and UV light (b) illumination. (c) PL decay curves of CdSe cores, CdSe/2ZnS, CdSe/2Zn_{0.5}Cd_{0.5}S, and CdSe/2CdS core/shell QDs.

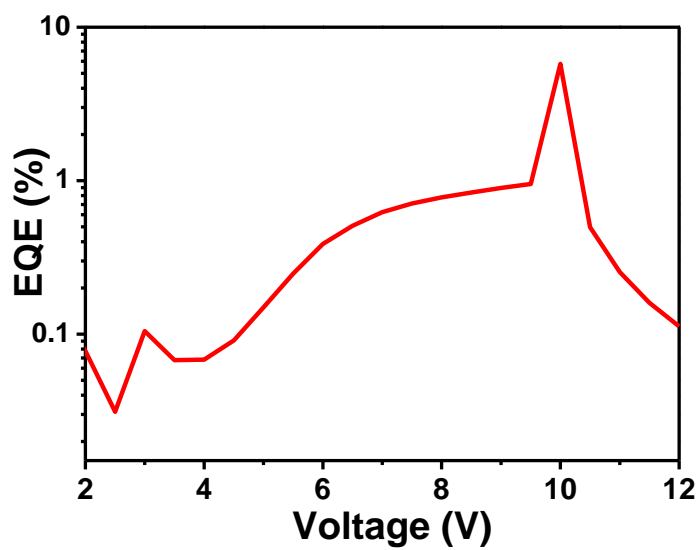


Figure S3. External quantum efficiency (EQE) vs driving voltage curve of the CdSe/2Zn_{0.5}Cd_{0.5}S QDs-based QD-LED.

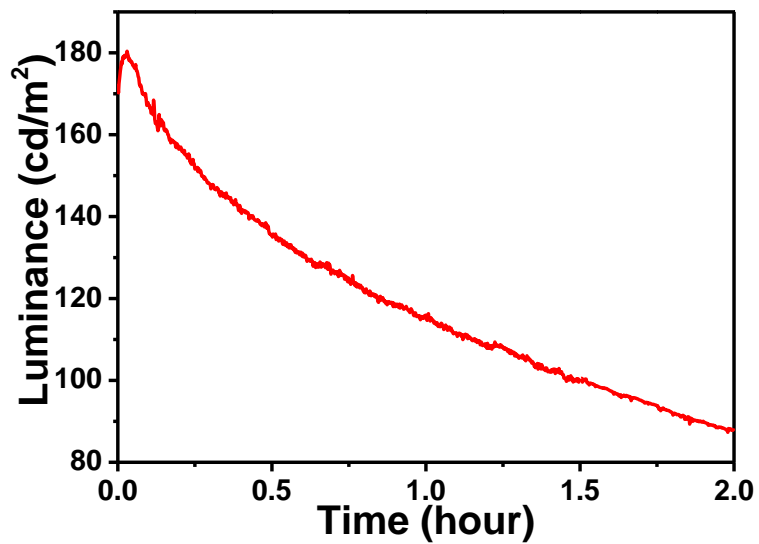


Figure S4. The lifetime data of CdSe/2Zn_{0.5}Cd_{0.5}S QDs-based QD-LED without encapsulation under 65% relative humidity.

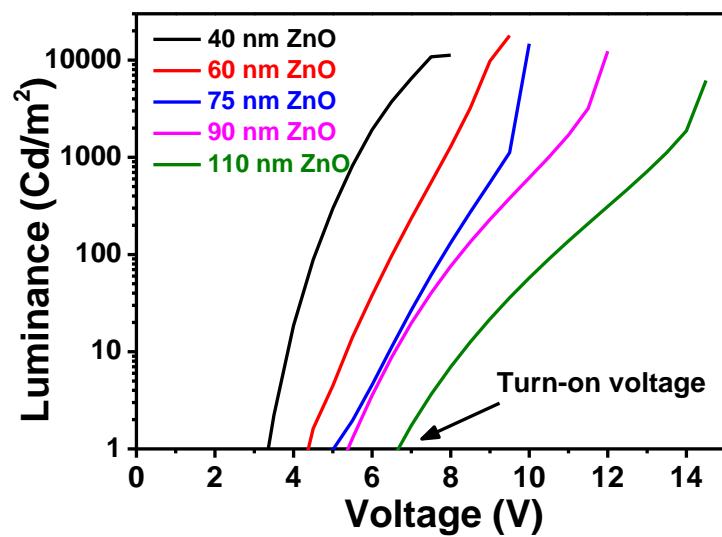


Figure S5. Luminance–voltage curves of the CdSe/2Zn_{0.5}Cd_{0.5}S QDs-based QD-LEDs with different ZnO thicknesses.

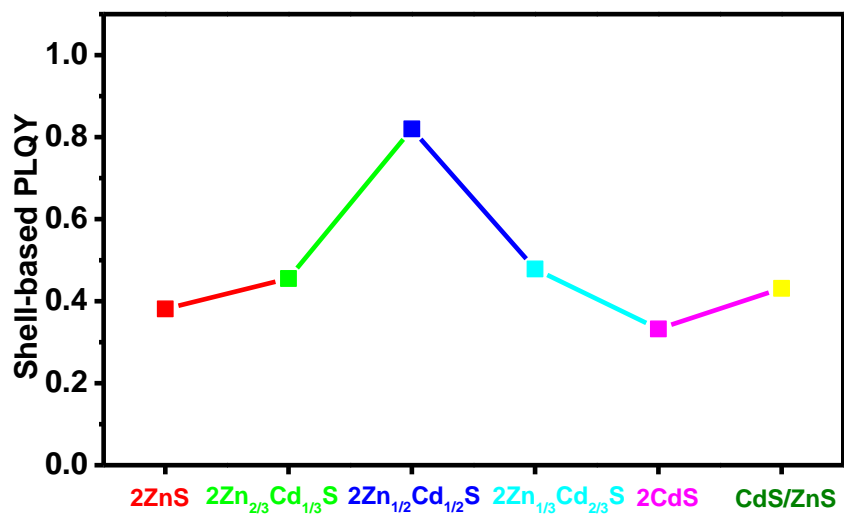


Figure S6. PLQYs of CdSe/2ZnS, CdSe/2Zn_{2/3}Cd_{1/3}S, CdSe/2Zn_{1/2}Cd_{1/2}S, CdSe/2Zn_{1/3}Cd_{2/3}S, CdSe/2CdS, and CdSe/1CdS/1ZnS core/shell QDs.