## **Electronic supplementary information**

## Aqueous Synthesis of Glutathione-capped Cu<sup>+</sup> and Ag<sup>+</sup>-doped Zn<sub>x</sub>Cd<sub>1-x</sub>S Quantum Dots with Full Color Emission<sup>†</sup>

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**Figure S1.** UV-vis absorption (A) and PL emission (B) spectra of Ag-doped  $Zn_xCd_{I-x}S$  core QDs synthesized under different Ag/(Cd+Zn) ratios (0.3-5%) with fixation of growth time of 30 min; Evolution of UV-vis absorption (C) and PL emission (D) spectra of the Ag-doped  $Zn_xCd_{I-x}S/ZnS$  core/shell QDs with deposition of different amount of ZnS shell around the core NCs.



Figure S2. The excitation spectra of the Cu-doped  $Zn_xCd_{1-x}S$  QDs with different

Zn/Cd ratios.



**Figure S3.** PL decay curves of Cu-doped  $Zn_xCd_{1-x}S$  d-dots with representative emission wavelengths.



**Figure S4.** PL decay curves of Ag-doped  $Zn_xCd_{1-x}S$  core QDs with representative emission wavelengths.



**Figure S5.** The PL intensity curves of Cu-doped and Ag-doped  $Zn_xCd_{I-x}S/ZnS$  core/shell QDs synthesized under different pH values.



**Figure S6.** The band gap of alloyed  $Zn_xCd_{1-x}S$  QDs as a function of Cd mole fraction.