

Aqueous synthesis of Ag⁺ doped CdS quantum dots and its application in H₂O₂ sensing

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Fig. S1. The response behavior of H₂O₂ sensing system, CdS-Ag₂S QDs prepared at different pH (a) 5.6, (b) 7.2, (c) 10.2, (d) 11.2, plot of the luminescence ratio $(I_{F0}-I_F)/I_{F0}$ versus lgC of different CdS-Ag₂S QDs.

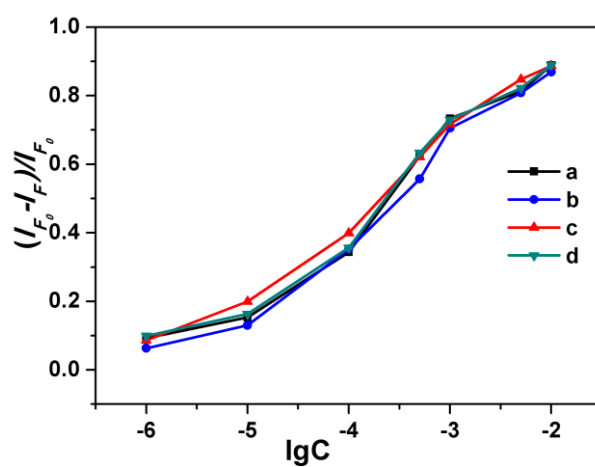


Fig. S2. (A) Fluorescence spectra of CdS-Ag₂S QDs prepared at different ratio of [Cd²⁺] / [S²⁻], (a) 0.5:1, (b) 1:1, (c) 1.5:1, (d) 2:1, (e) 2.5:1, (f) 3:1. (B) Fluorescence spectra of CdS-Ag₂S QDs prepared at different concentration of reactants, (a) 3×10⁻³, (b) 3×10⁻⁴, (c) 3×10⁻⁵, (d) 3×10⁻⁶. (C) Fluorescence spectra of CdS-Ag₂S QDs containing various molar ratios of Ag to CdS (a) 1%, (b) 3%, (c) 5%, (d) 10%, (e) 15%, (f) 25%. (D) Fluorescence spectra of CdS-Ag₂S QDs prepared at different reaction time, (a) 20 min, (b) 40 min, (c) 60 min, (d) 90 min, (e) 120 min, (f) 180 min.

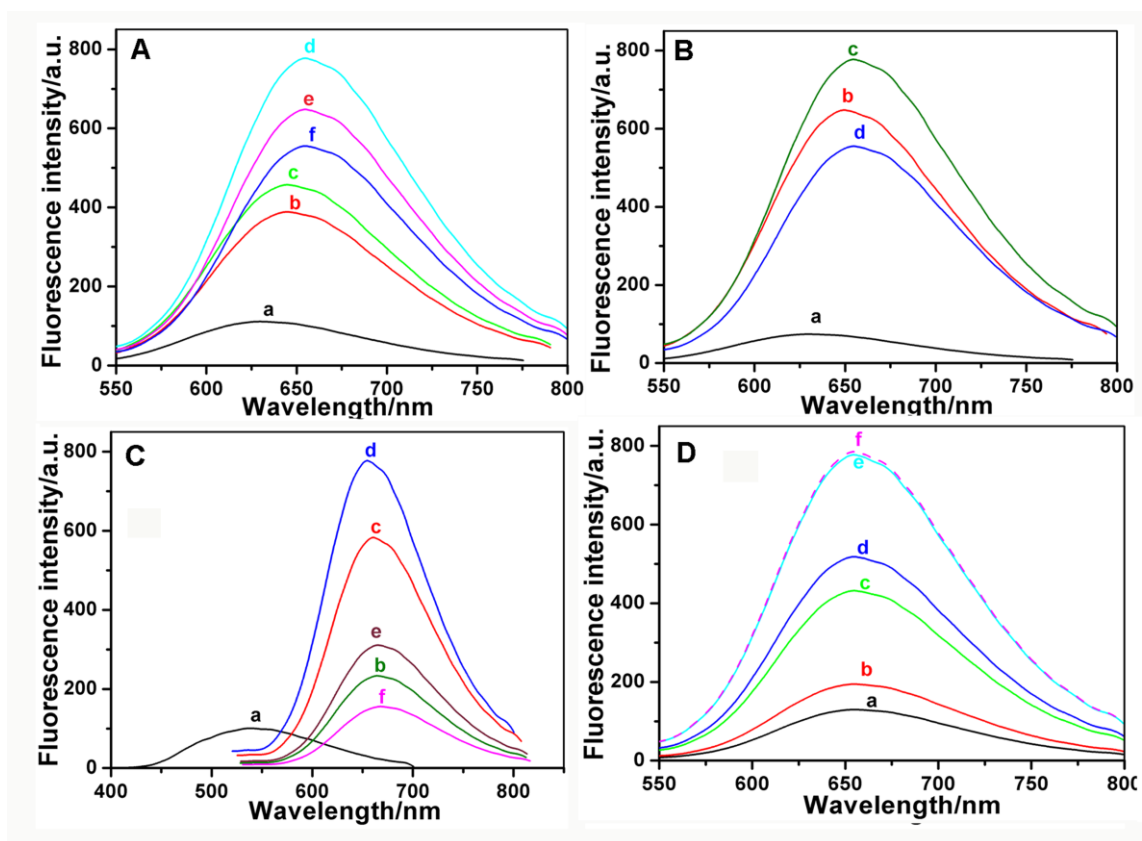


Fig. S3. Fluorescence decay curve of CdS-Ag₂S QDs after interaction with H₂O₂.

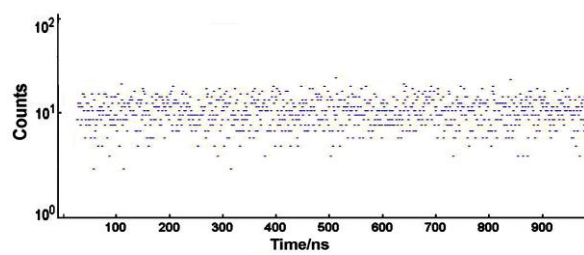


Fig. S4. The TEM images (a, b) and the HRTEM (c) image of CdS-Ag₂S QDs after interaction with H₂O₂.

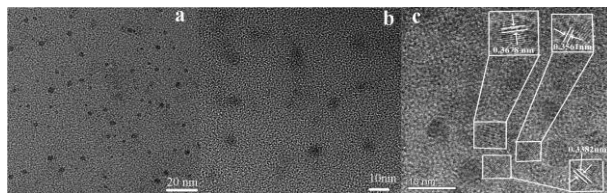


Fig. S5. The pH value of PBS on the relative fluorescence quenching intensity, plot of the luminescence ratio $(I_{F0}-I_F)/I_{F0}$ versus $\lg C$ at different pH values.

