Supplementary Material (ESI) for Journal of Materials Chemistry

Supporting information

Synthesis of cadmium selenide quantum dots modified with thiourea type ligands as fluorescent probes for iodide ions

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Synthesis of 1-modified CdSe QDs

Compound **1** exchanged TOPO to give **1**-modified CdSe QDs. Briefly, 2 mL of TOPO-CdSe QDs chloroform solution (0.5 mg/mL) was added to 2 mL of 1 chloroform and ethanol (v:v = 4:1) mixture solution (10^{-4} M), and the mixture was refluxed at 80 °C for 4 h to give **1**-modified CdSe QDs. The resulting QDs were purified by precipitation and centrifugation in anhydrous methanol. The**1**-modified CdSe QDs were stored in chloroform and ethanol (v:v = 4:1) mixture solution at room temperature for further investigations.

Characterizations of 1-modified CdSe QDs

The 1-modified CdSe QDs were were characterized by ultraviolet–visible (UV–vis) spectrophotometry, and transmission electron micrograph (TEM). As can be seen from Figure S1, no distinct difference is observed in the position and peak widths of the absorbance spectra between 1-modified CdSe QDs and the original QDs, which suggests that the **1**-modified QDs in chloroform and ethanol (v:v = 4:1) solution maintain optical properties of original QDs. The TEM images (Figure S2) demonstrate that the sizes of the 1-modified CdSe QDs and TOPO-QDs are virtually identical, and the modified particles are of monodisperse and uniform in chloroform and ethanol (v:v = 4:1) solution.

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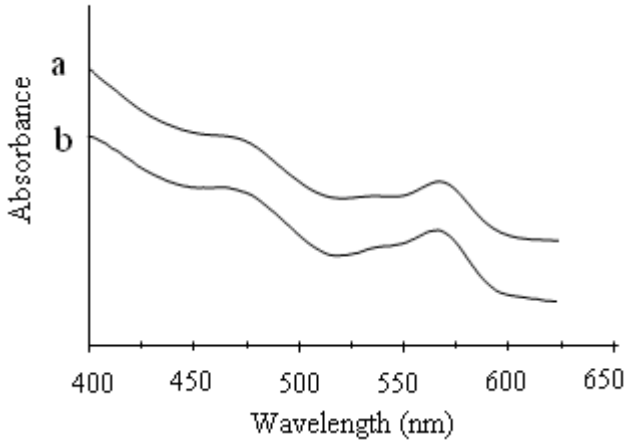

Figure S1. Absorption spectra of (a) **1**-modified QDs in chloroform and ethanol (v:v = 4:1) solution, and (b) TOPO-coated CdSe QDs in chloroform

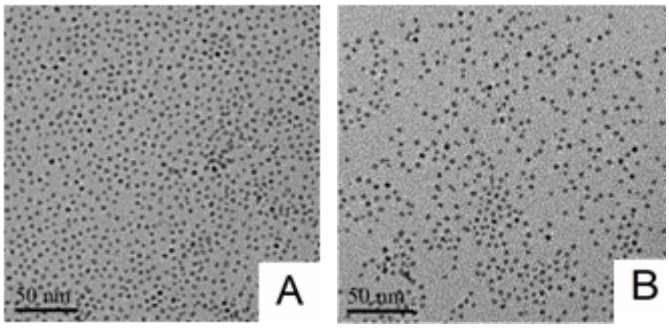

Figure S2. TEM image of (A) original CdSe QDs in chloroform, and (B) **1**-modified CdSe QDs in chloroform and ethanol mixture solution (v:v = 4:1). Scale bars are all 50 nm.