Supporting information for

Synthesis and Characterization of High-Quality ZnS, ZnS:Mn^{2+} and ZnS:Mn^{2+}/ZnS (Core/Shell) Luminescent Nanocrystals

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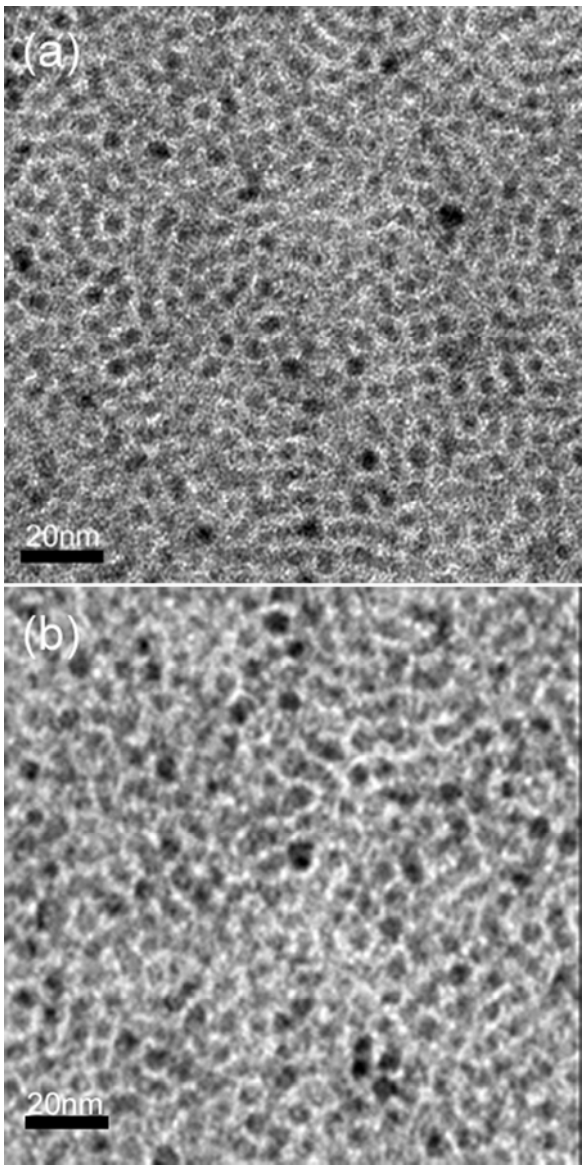

Figure S1 TEM images of ZnS:Mn^{2+} (a) and ZnS:Mn^{2+}/ZnS core/shell (b) NCs prepared in oleylamine and PEG system.

Figure S2 Large area TEM image of ZnS 2D NCAs (monolayer) prepared with PEG and oleylamine.

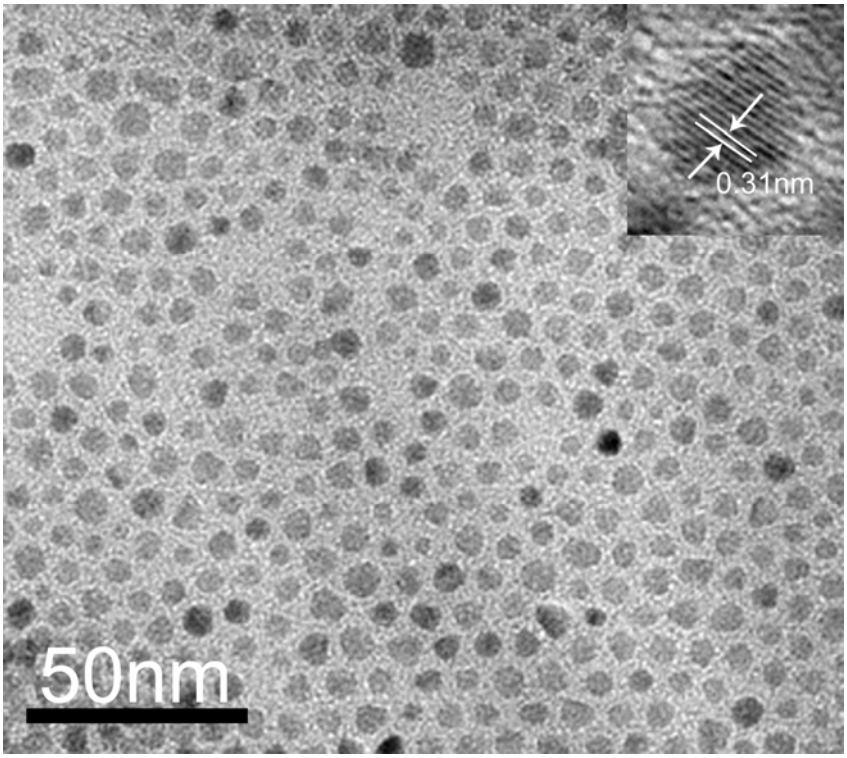

Figure S3 TEM image of ZnS NCs prepared only with oleylamine. Note that no PEG was used in this reaction. The inset is the HR-TEM of a single ZnS NC.

Synthesis of CdS NCs. Sample A was synthesized from a reaction mixture of with a cadmium to sulfur molar ratio of 2:1. Sulfur (1 mmol) in 10 mL of oleylamine was injected into a oleylamine solution containing 2 mmol of cadmium-oleylamine complex at 160 °C. The resulting mixture was aged for 6 h at that temperature for the the formation CdS NCs. The TEM image for the CdS NCs is shown in Figure S3(a). Sample B was prepared in a similar way with the addition of PEG into the mixture, and the corresponding TEM image for the obtained CdS NCs is shown in Figure S4(b). Obviously, more homogenous CdS NCs were obtained in the presence of PEG.

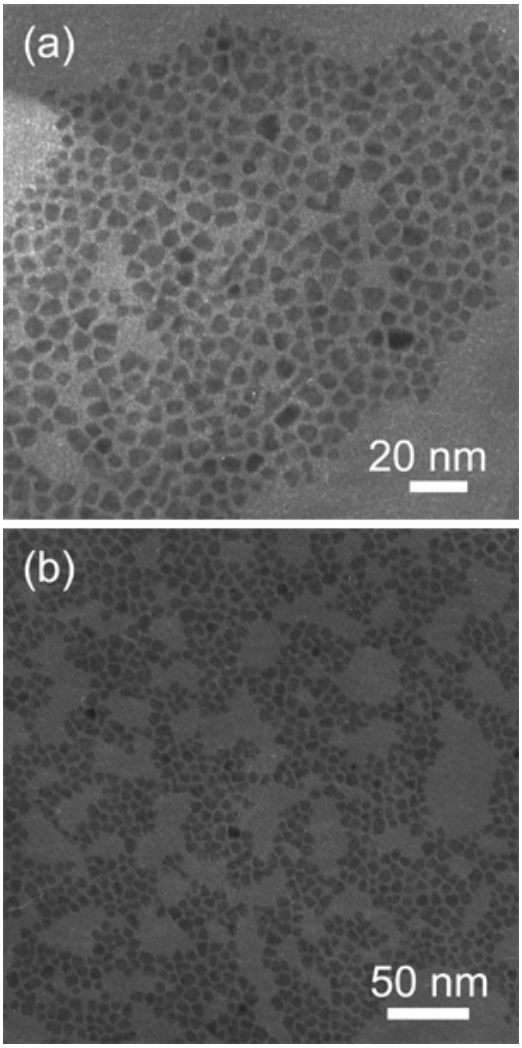

Figure S4 TEM images of CdS NCs prepared in the absence (a) and presence (b) of PEG.