Electronic Supplementary Information for Dalton Transactions

SUPPORTING INFORMATION

Ordered Fabrication of Luminescent Multilayered Thin Films of CdSe Quantum Dots

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Fig. S1. FTIR spectra of pure 11-HUDA and CdSe QDs surface grafted 11-HUDA.

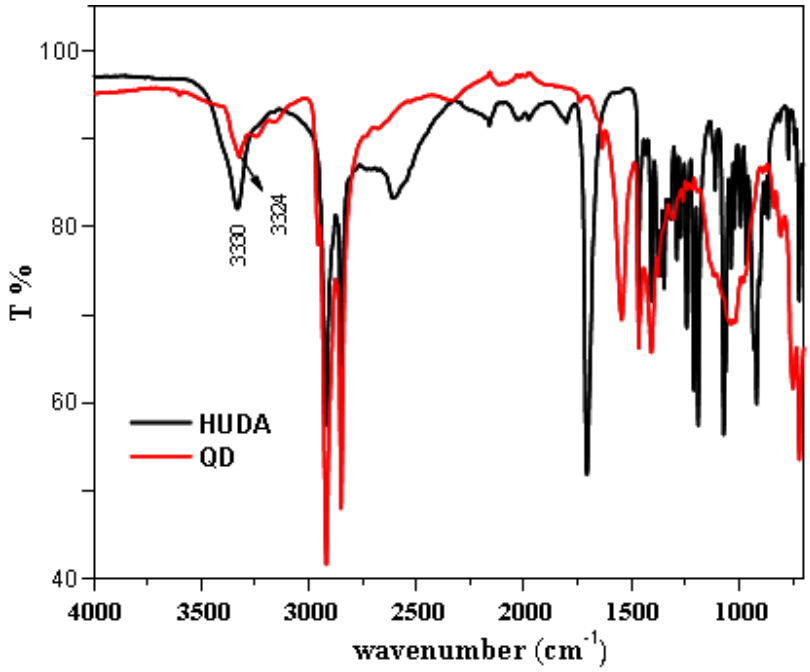
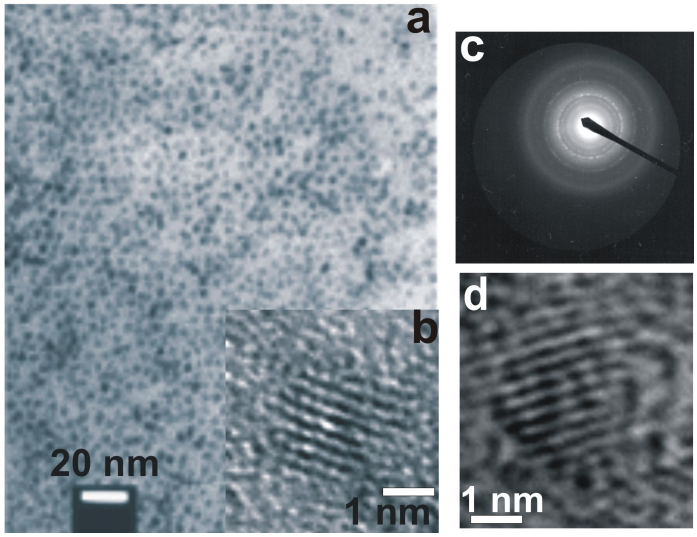


Fig. S2. TEM micrograph of unfunctionalized CdSe QDs (a), HRTEM of a single unfunctionalized CdSe QD (b) and its electron diffraction (c), HRTEM of a single 11-HUDA-functionalized QD (d).



Quantum Yield (QY) measurements for the samples:

The sample placed in the integrated sphere was excited with a monochromatic source of the wavelength λ. The film absorbance, A, is

$$A = \frac{L_b - L_c}{L_b} \qquad (1)$$

where L_b is the integrated excitation profile when the sample is diffusely illuminated by the integrated sphere's surface; L_c is the integrated excitation profile when the sample is directly excited by the incident beam.

The quantum yield, Φ_f, was calculated according to:

$$\Phi_f = \frac{E_c - (1 - A).E_b}{L_a.A} \qquad (2)$$

where E_c is the integrated luminescence of the sample caused by direct excitation, and E_b is the integrated luminescence of the sample caused by indirect illumination from the sphere. The term L_a is the integrated excitation profile from an empty integrated sphere (without the sample). For integration of function L over the wavelength, λ, the integration limits were 15 nm above and 10 nm below the excitation wavelength. The background of recorded spectra was corrected for wavelength dependence of the spectrofluorometer and integrated sphere, using a blank sample holder.