Electronic Supplementary Material (ESI) for Chemical Communications
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Electronic Supplementary Information

1. Experimental

1.1 Materials

Aminoalkylated glass beads (aminopropyl-CPG-1400 Å, 200-400 mesh) and L-cysteine (≥99%) were purchased from Fluka (St. Louis MO, USA). Millipore water was used to prepare all solutions. Glutaraldehyde (grade II, solution 25%), cadmium chloride anhydrous (≥99%), Sodium telluride (100mesh, 99%), tellurium powder (200mesh, 99.8%), sodium borohydride (NaBH4, 99%) and L-glutathione reduced (≥98%), were purchased from Sigma-Aldrich (St. Louis MO, USA). Ethanol was purchased by Fisher Scientific (Leicester**,** UK**).**

1.2 Instrumentation

1.2.2 Atomic Force Microscopy (AFM). Samples for atomic force microscopy (AFM) were prepared by drying onto freshly cleaved mica substrates from diluted aqueous solutions. AFM measurements were made using an AFM Workshop TTAFM instrument in vibrating (intermittent contact) mode. A small (15 μm) scanner and low gains were used to ensure high resolution. Probes from AppNano (ACT) with resonant frequency of around 300 kHz were used. Images were analysed using Gwyddion software.

1.2.3 Reflectance Fourier Transform Infrared (FTIR). Samples in KBr pellets were freshly prepared and analysed with a Perkin-Elmer Spectrum BX FTIR.

1.2.4 Ultraviolet-Visible Spectroscopy (UV-Vis).
The UV-Vis spectra of QDs solutions were recorded on a Jasco V-660 spectrophotometer UV-Vis spectrometer between 400 and 700nm. For the size determination the QDs solutions absorbance was ≤ 0.1.

1.2.5 X-ray Diffraction (XRD).
X-ray powder diffraction (XRD) studies of the nanocrystals were carried out by using a Philips X'Pert X-ray MPD diffractometer (Cu Kα radiation). XRD data were collected at a scan rate o 40.0 s for step at step intervals of 0.04º.

1.2.6 Fluorescence spectroscopy.
Fluorescence measurements were carried out with a PerkinElmer LS-50B luminescence spectrometer. For QDs immobilized glass beads dispersion in water the PL spectra was recorded under stirring. Excitation wavelength was fixed at 400nm.

1.2.7 Fluorescence microscopy
Fluorescence microscopy was performed with a system composed by an inverted epifluorescence microscope (Eclipse TE300, Nikon, Tokyo, Japan) equipped with 10X air objectives, a monochromator (Polychrome II; TILL Photonics, Martinsried, Germany), a CCD camera (C6790; Hamamatsu Photonics, Hamamatsu, Japan), and a computer with analysis software (Aquacosmos 2.5; Hamamatsu Photonics)

1.2.8. Quantum Yield
The absolute emission quantum yields were measured at room temperature using a quantum yield measurement system C9920-02 from Hamamatsu with a 150 W Xenon lamp coupled to a monochromator for wavelength discrimination, an integrating sphere as sample chamber and a multi channel analyzer for signal detection. Three measurements were made for each sample so that the average value is reported. The method is accurate to within 10 %.

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2. Results

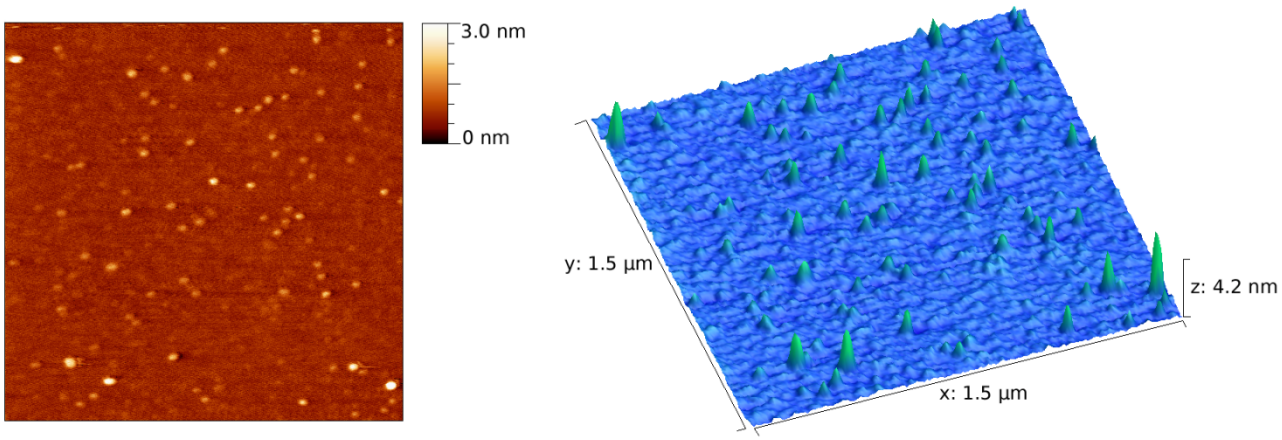

Figure S1. AFM images of 2.7nm GSH-CdTe QDs in water deposited on an atomized flat surface.

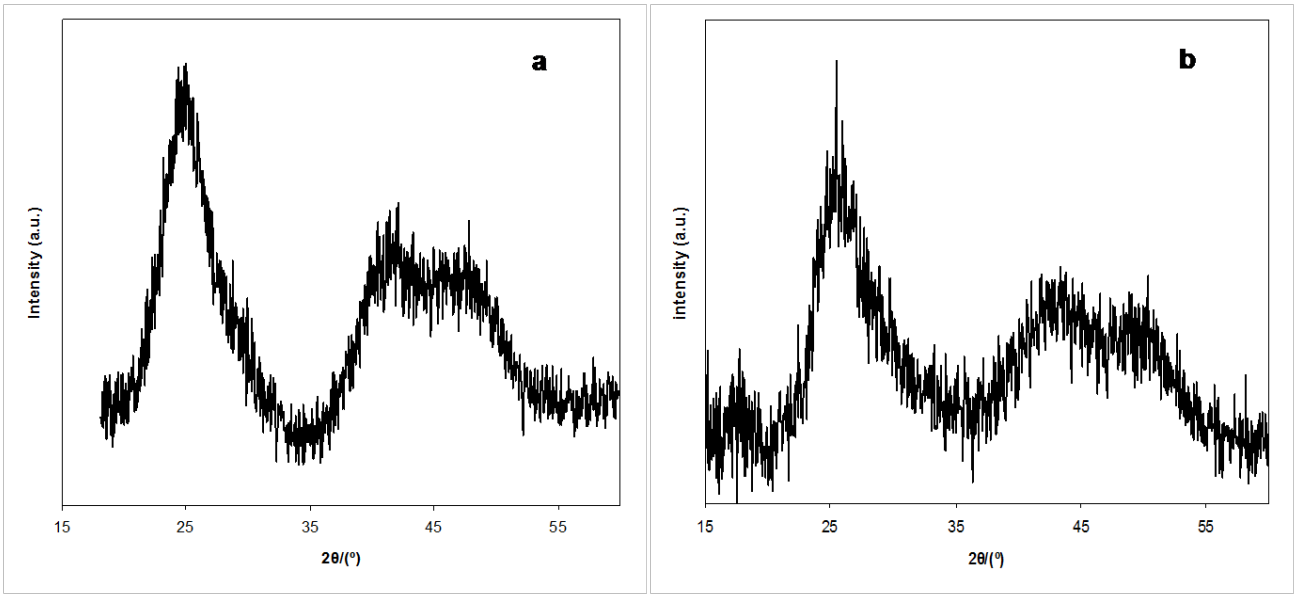

Figure S2. p-XRD of CYS (a) and GSH (b) capped QDs.

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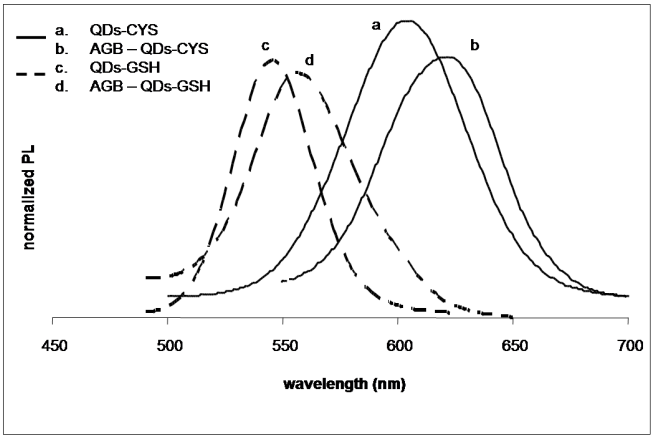

Figure S3. Comparison of QDs-conjugated AGB (AGB-QDs-GSH and AGB-QDs-CYS) emission spectra with that of QDs solution (QDs-GSH and QDs-CYS).

2.1. Quantum Yield

Quantum dots quantum yield (QY%) was not affected by immobilization and remained unaltered: 11% and 16% for CdTe-GSH and CdTe-CYS quantum dots, respectively.