Electronic Supplementary Material (ESI) for RSC Advances

SUPPLEMENTARY DATA

THE CRITICAL ROLE OF SURFACTANTS TOWARDS CdS NANOPARTICLES: SYNTHESIS, STABILITY, OPTICAL AND PL EMISSION PROPERTIES

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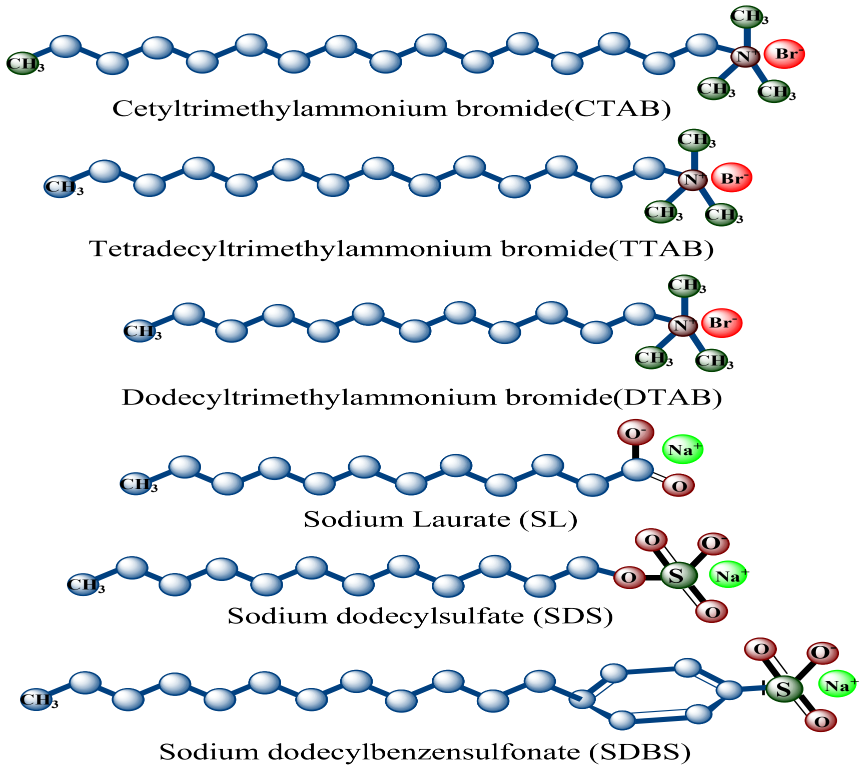

Fig. S1. Molecular structures of the cationic and anionic surfactants used in the study

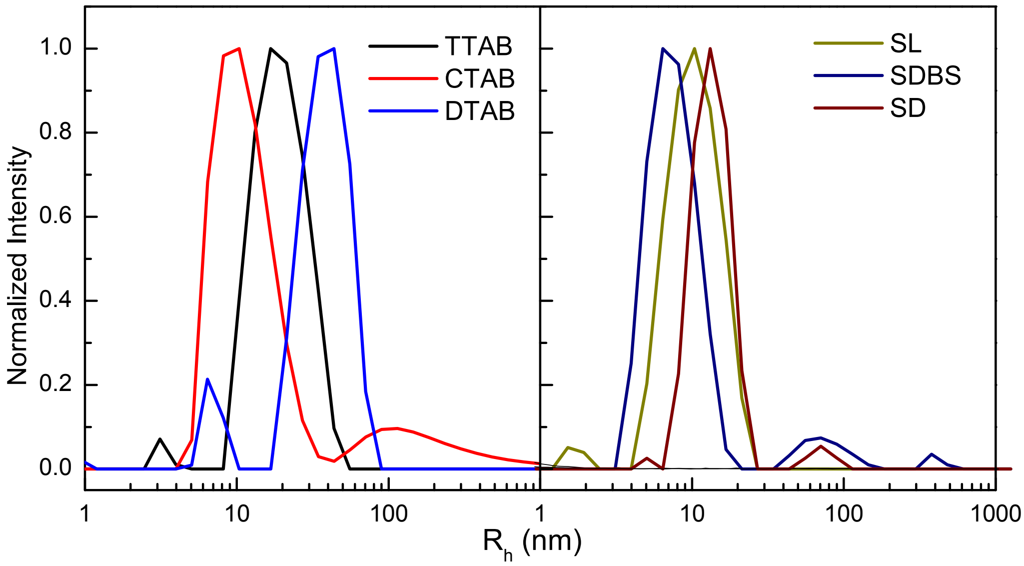

Figure S2. Size distribution of CdS NPs stabilized with different surfactants obtained after the CONTIN analysis.

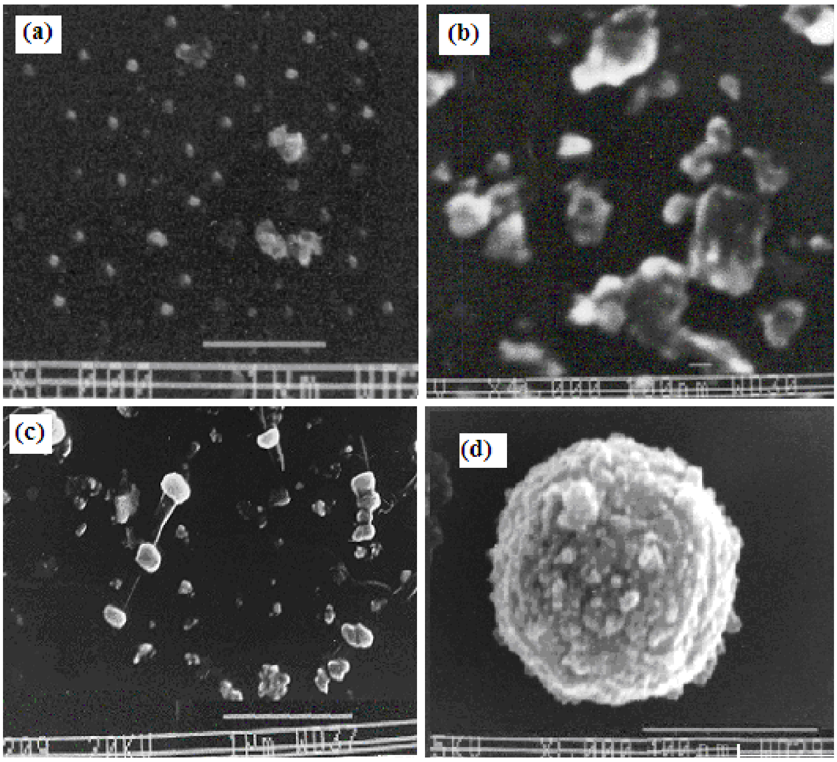

Figure S3. SEM images of powdered CdS NPs separated from (a) CTAB; scale bar 1μm, (b) DTAB; scale bar 100 nm, (c) SDBS; scale bar 1μm (d) Magnified view of single NP with scale bar of 100 nm.

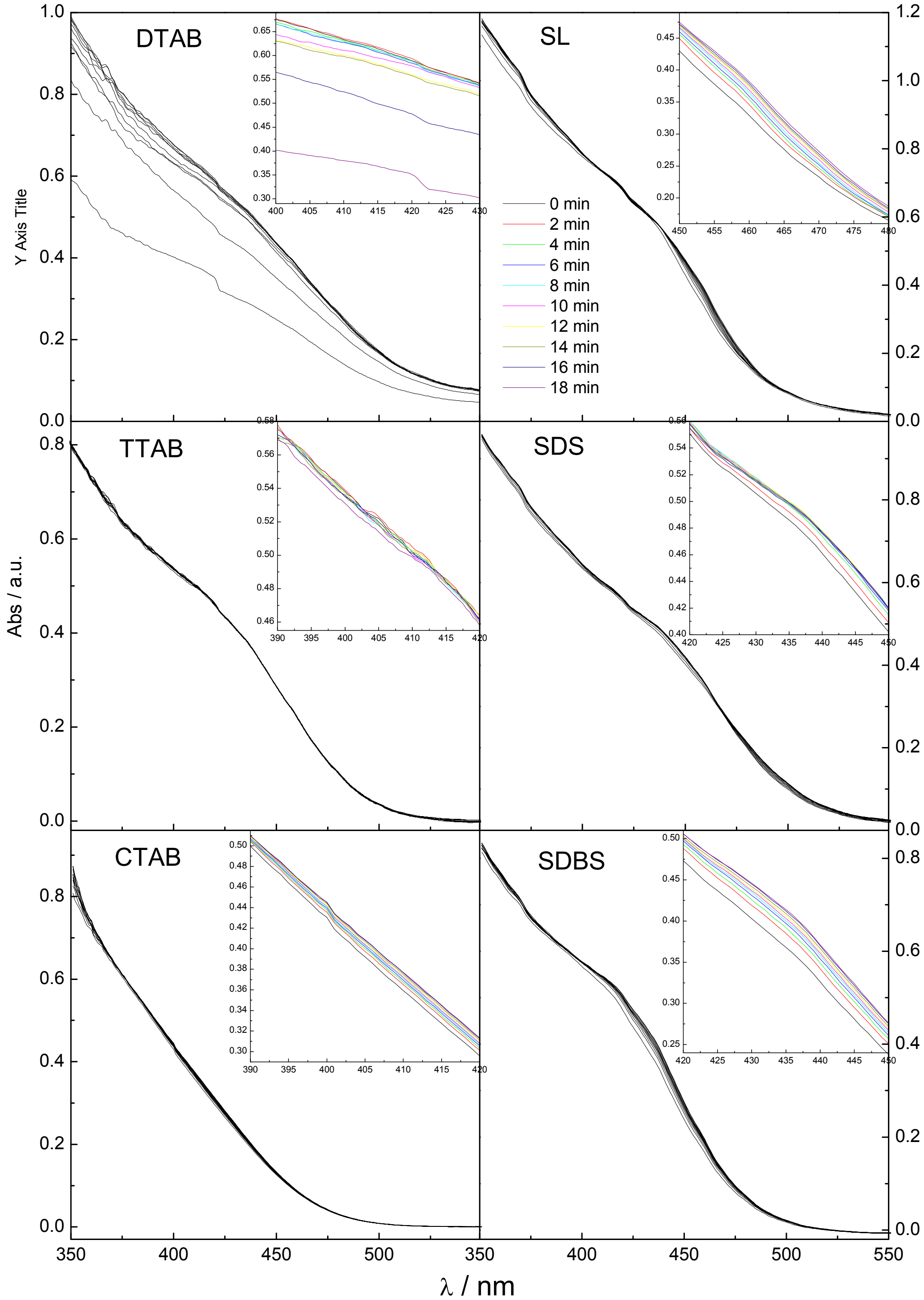

Figure S4. Time evolution of UV-vis spectra of CdS NPs stabilized in aqueous solution of various surfactants

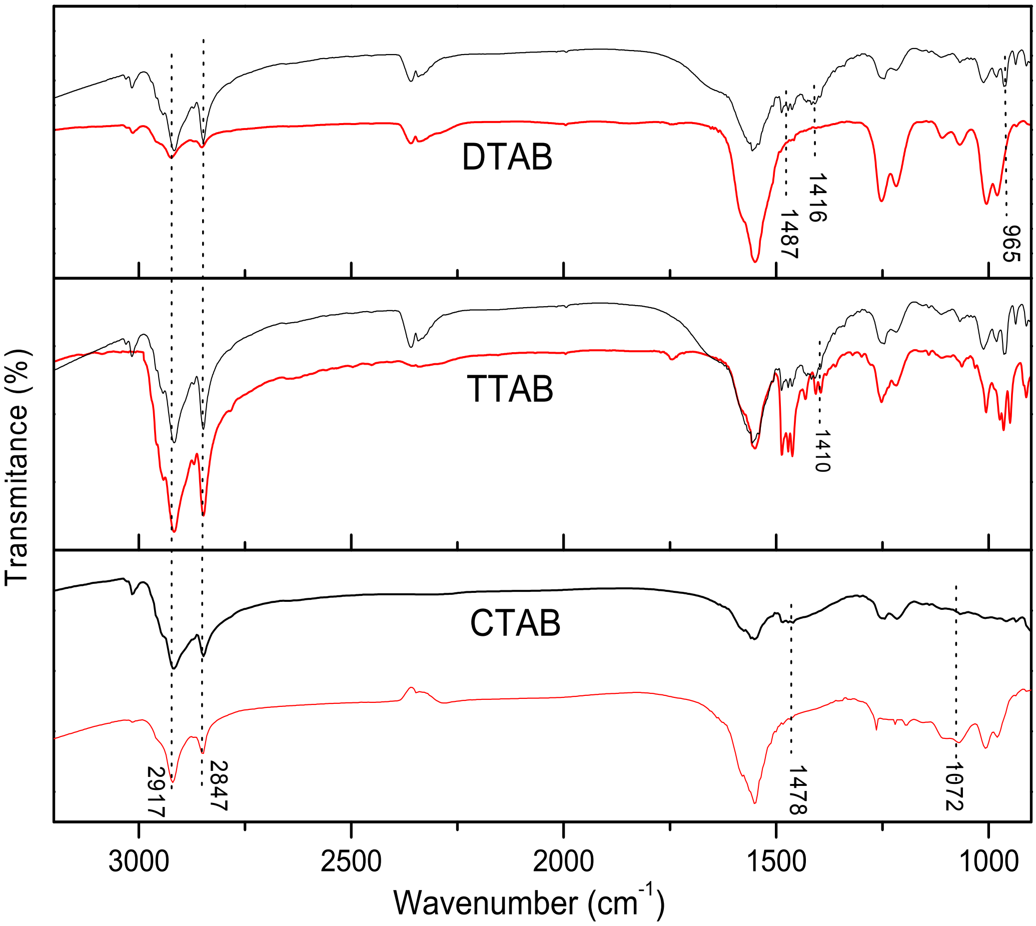

Fig. S5. Comparative FTIR spectra of free (black line) and CdS bound (red line) cationic surfactants.

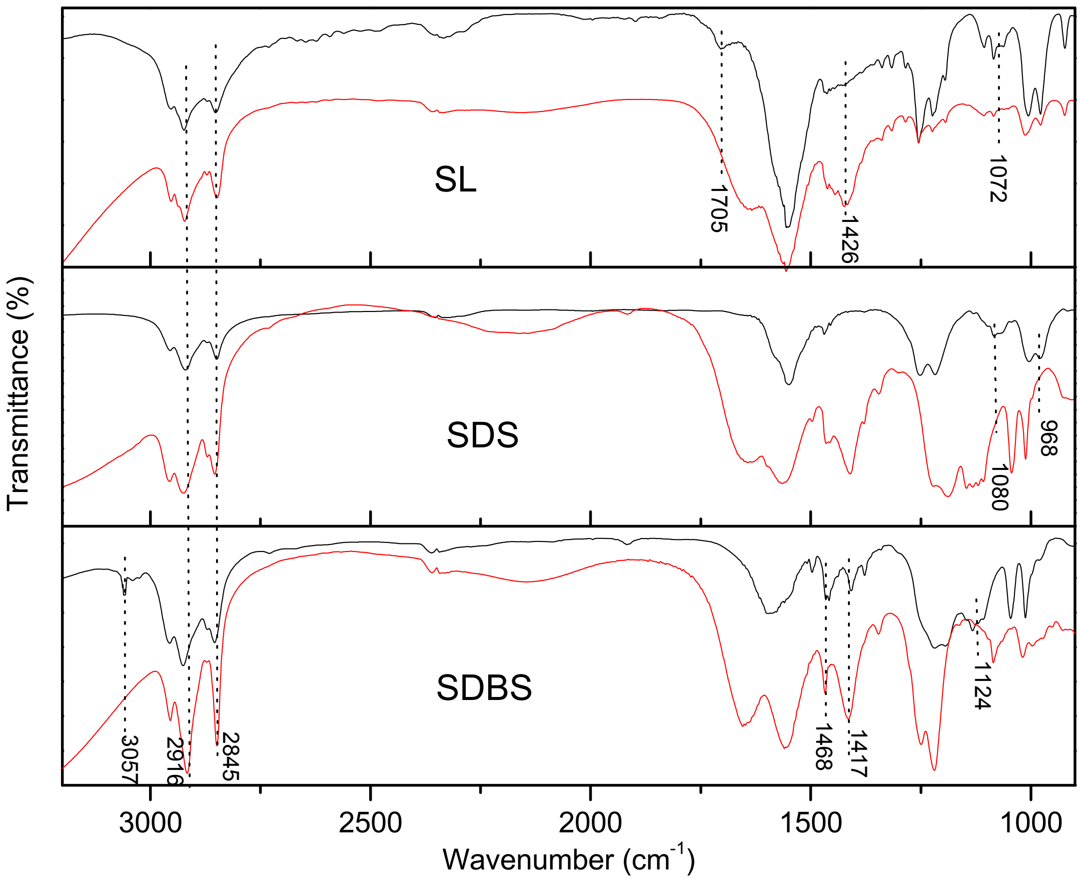

Fig. S6. Comparative FTIR spectra of free (black line) and CdS bound (red line) anionic surfactants.

Table S1. cmc values of the surfactants

Surfactant	CTAB	TTAB	DTAB	SL	SDS	SDBS
cmc / mM	0.92±0.03	3.40±0.20	15.8±0.2	25.1±0.2	8.30±0.20	1.90±0.20