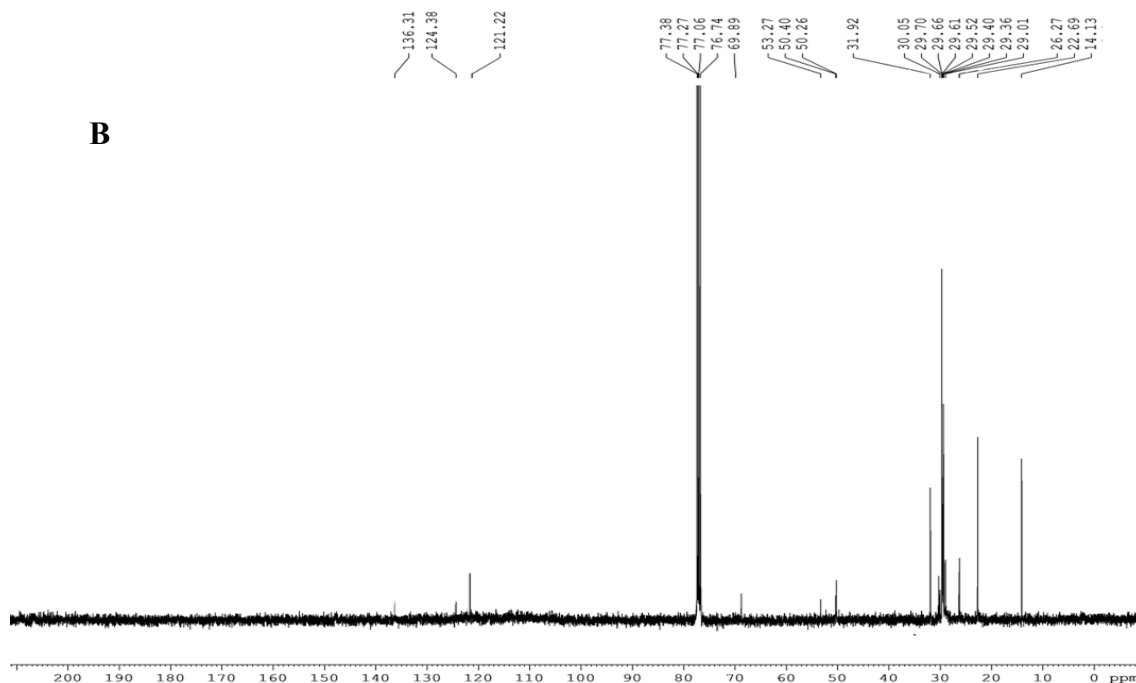
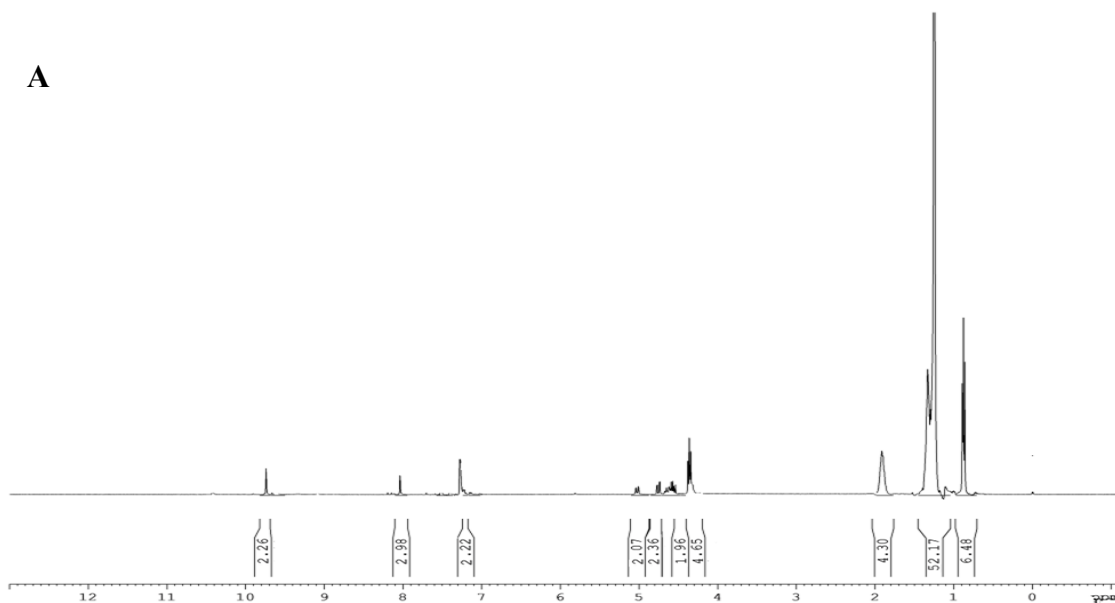


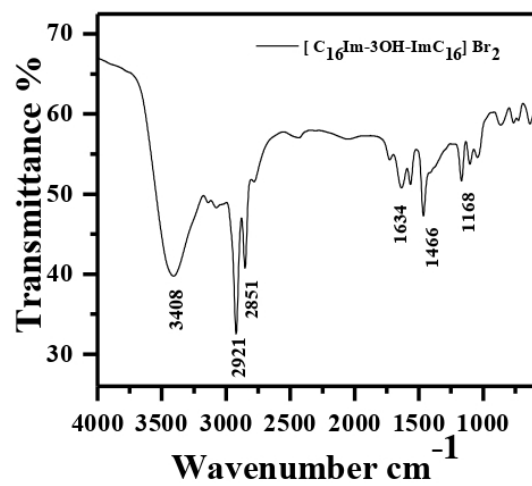
**Study of self-assembly of gemini surfactant induced by anionic QDs in aqueous solution**

Arifa Shaheen,\* Arun Dhanagar, Rabia Arif

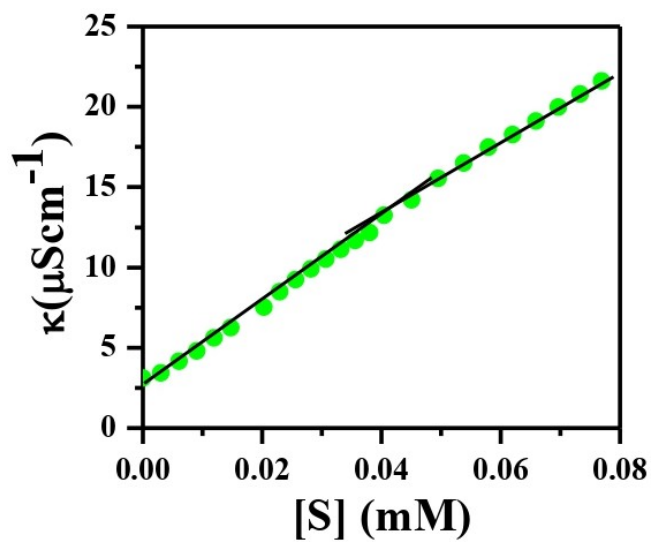
Department of Chemistry, Aligarh Muslim University, Aligarh, India



**Fig.S1:** (A)  $^1\text{H}$  NMR spectra of imidazolium-based gemini surfactant,  $[\text{C}_{16}\text{Im-3OH-ImC}_{16}]\text{Br}_2$   
(B)  $^{13}\text{C}$  NMR spectra of imidazolium-based gemini surfactant,  $[\text{C}_{16}\text{Im-3OH-ImC}_{16}]\text{Br}_2$ .



**Fig. S2:** FTIR spectra of imidazolium-based gemini surfactant,  $[\text{C}_{16}\text{Im-3OH-ImC}_{16}]\text{Br}_2$ .



**Fig. S3:** Conductivity plot of gemini surfactant.

(A)

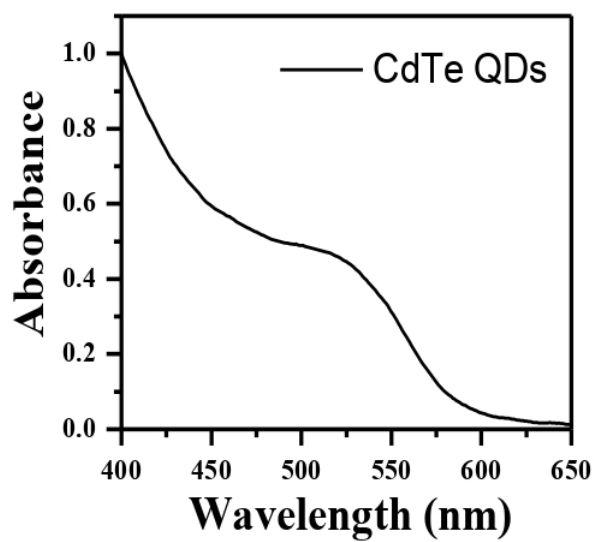


Fig. S4A: Absorption spectra of CdTe QDs.

(B)

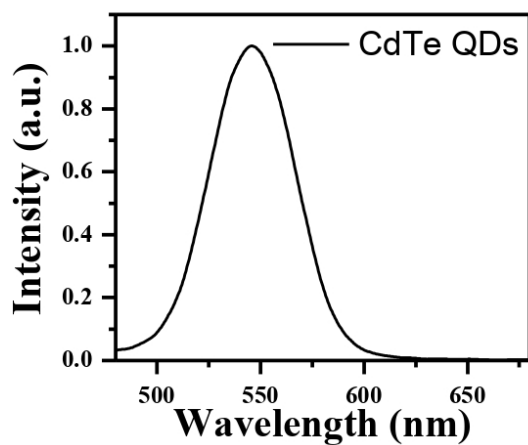


Fig. S4B: Emission spectra of CdTe QDs.

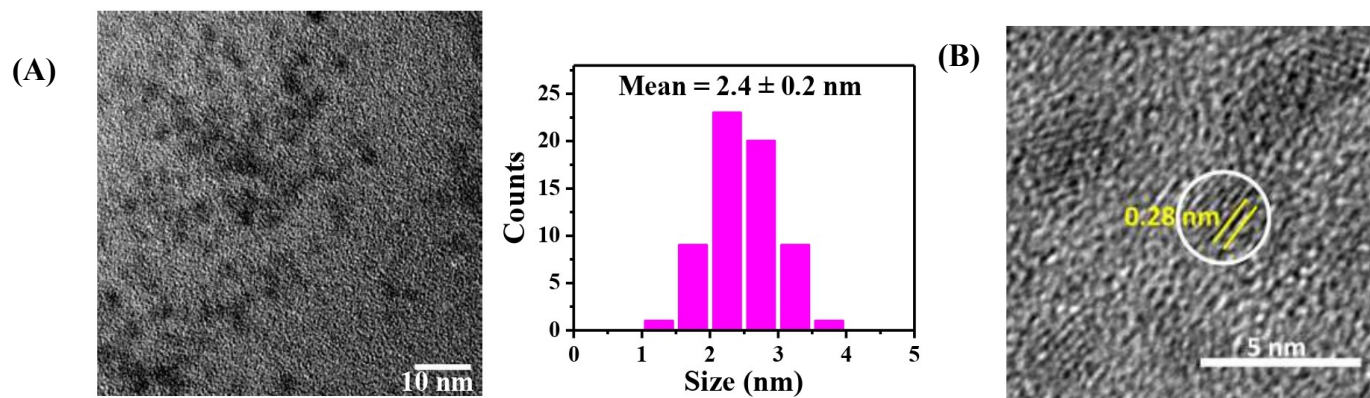


Fig.S5: TEM image with size histogram (A) and HRTEM image of CdTe QDs (B)

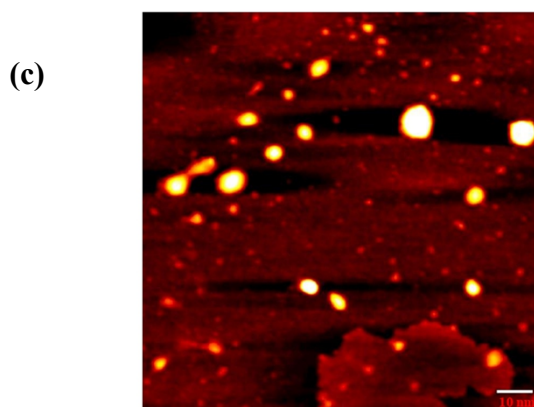


Fig.S5 AFM image of CdTe QDs (C).

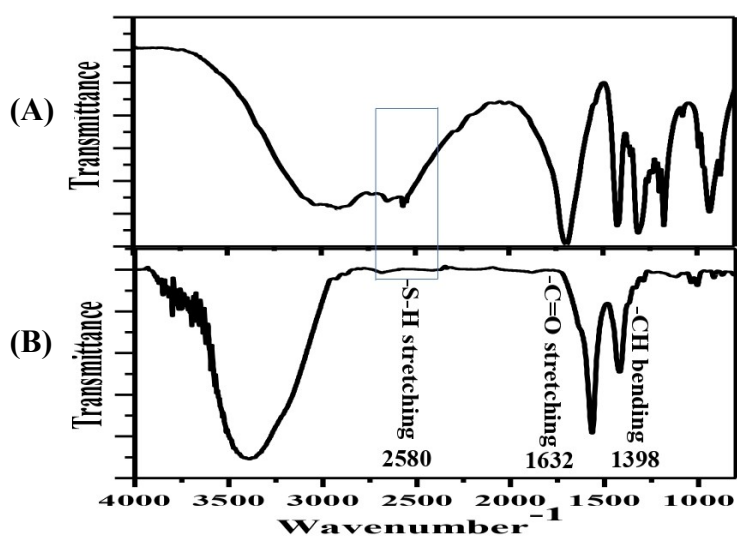
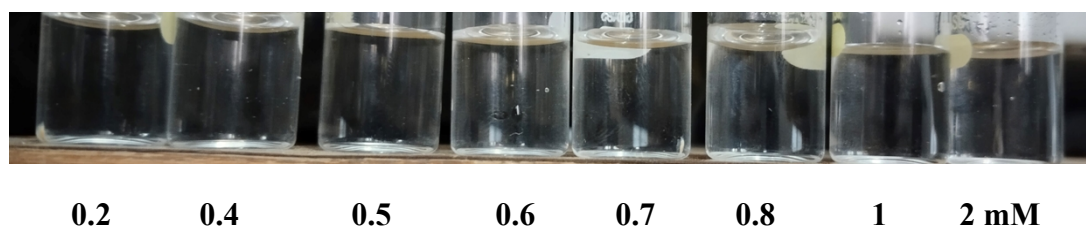
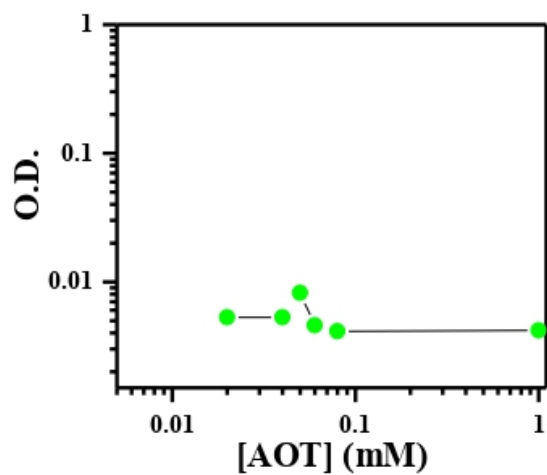


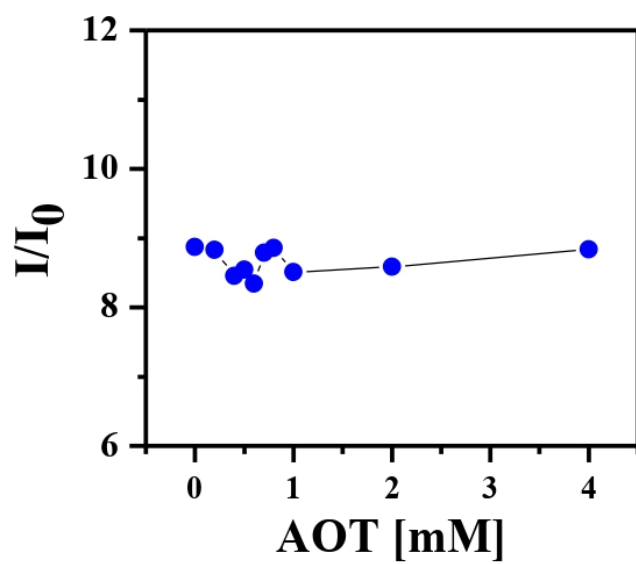
Fig.S6: FTIR spectra of unbound MSA ligand (A) and CdTe QDs (B).



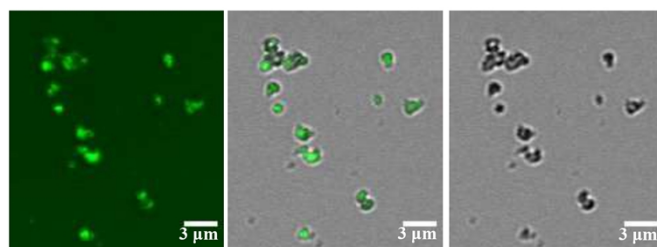
**Fig.S7:** Images of QDs-AOT surfactant mixture at different concentrations.



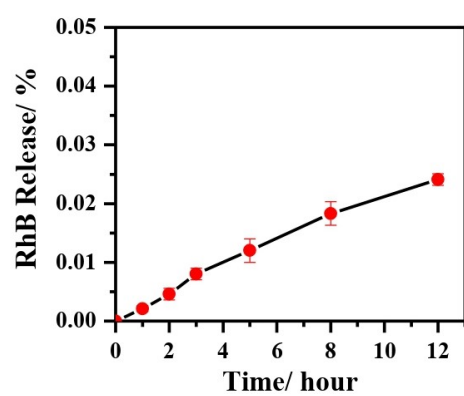
**Fig. S8:** Changes in the absorbance ( $\lambda = 700$  nm) of QDs in the presence of AOT surfactant.



**Fig. S9:** Changes in the fluorescence intensity ratio of QDs in the presence of AOT surfactant.



**Fig. S10:** Fusion image of self-assembled vesicles.



**Fig. S11:** Release profiles of the RhB-loaded self-assembly in water (Y-scale 0.01 =10%).