

Supplementary material

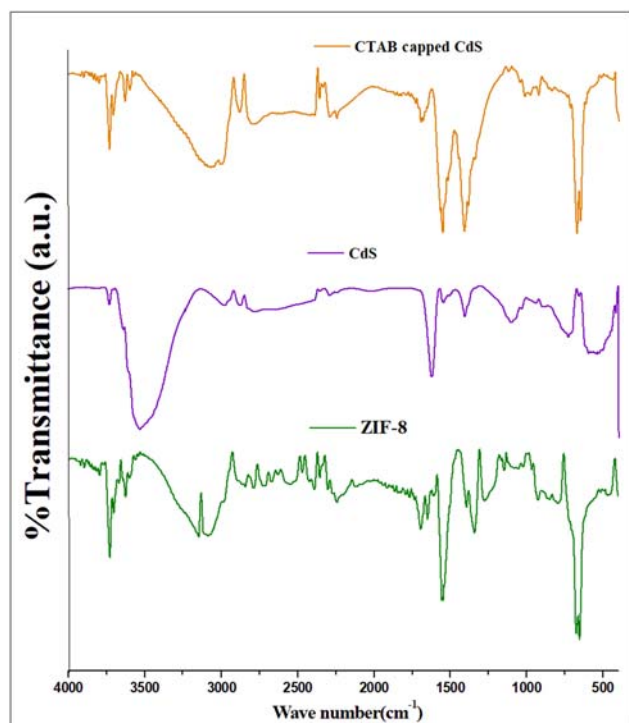


Figure S1: FT-IR Spectra of ZIF-8, CdS and CTAB capped CdS.

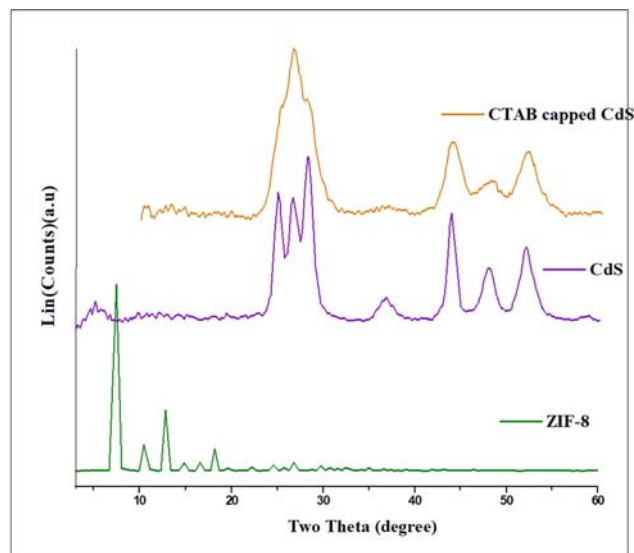


Figure S2: XRD of ZIF-8, CdS and CTAB capped CdS.

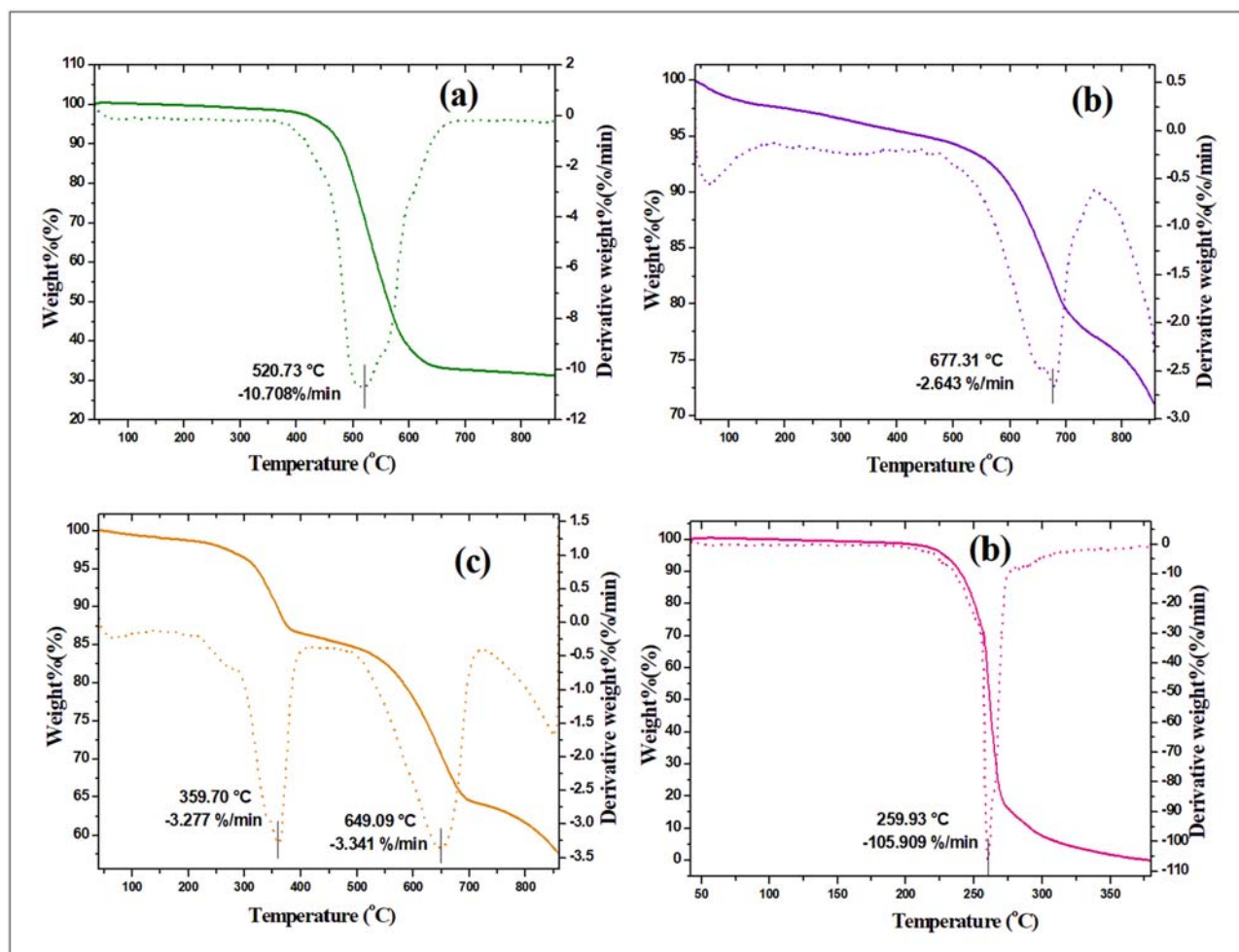


Figure S3: TGA/DTG of (a) ZIF-8, (b) CdS, (c) CTAB Capped CdS, (d) CTAB.

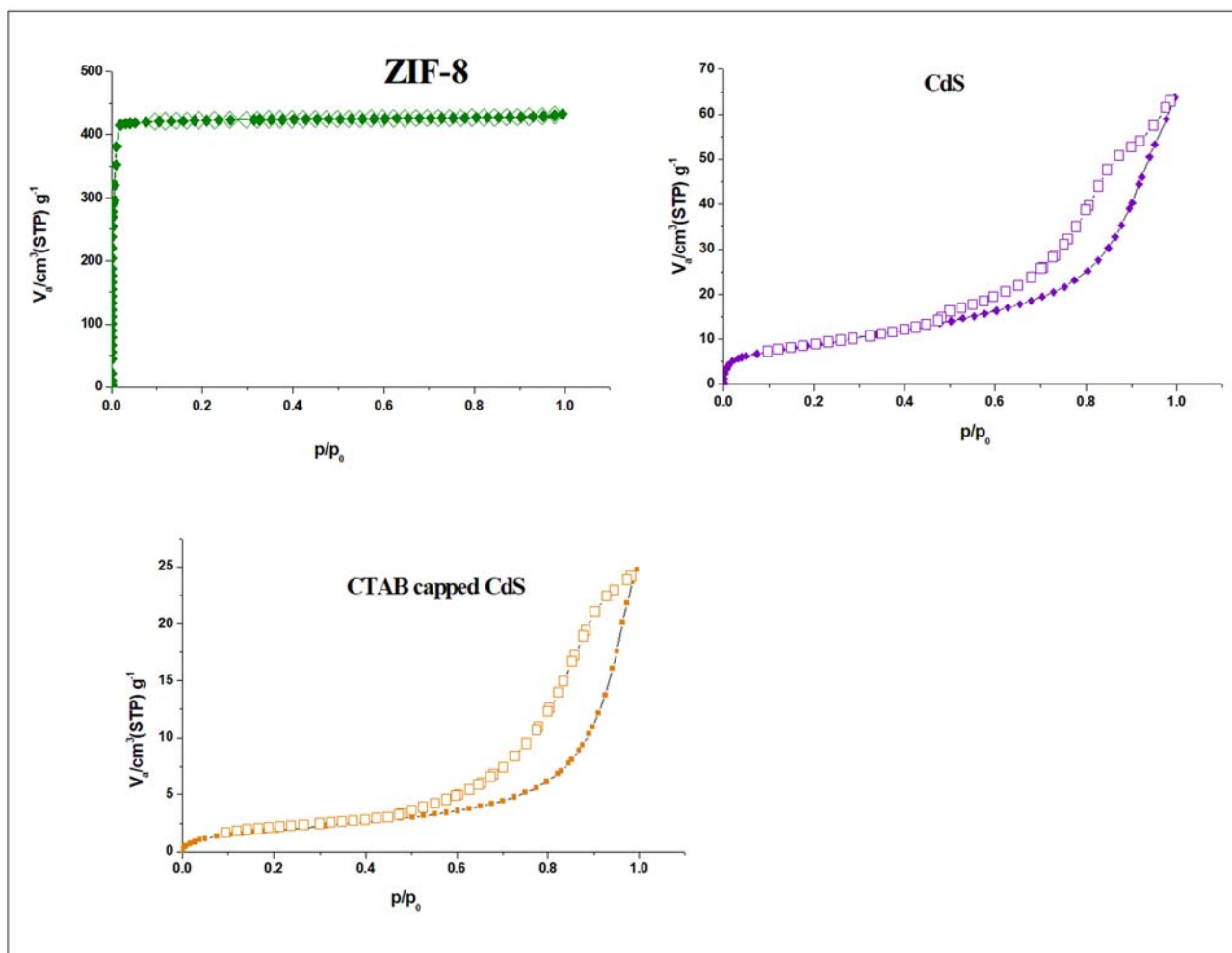


Figure S4: Nitrogen adsorption/desorption isotherms of (a) ZIF-8, (b) CdS, (c) CTAB Capped CdS.

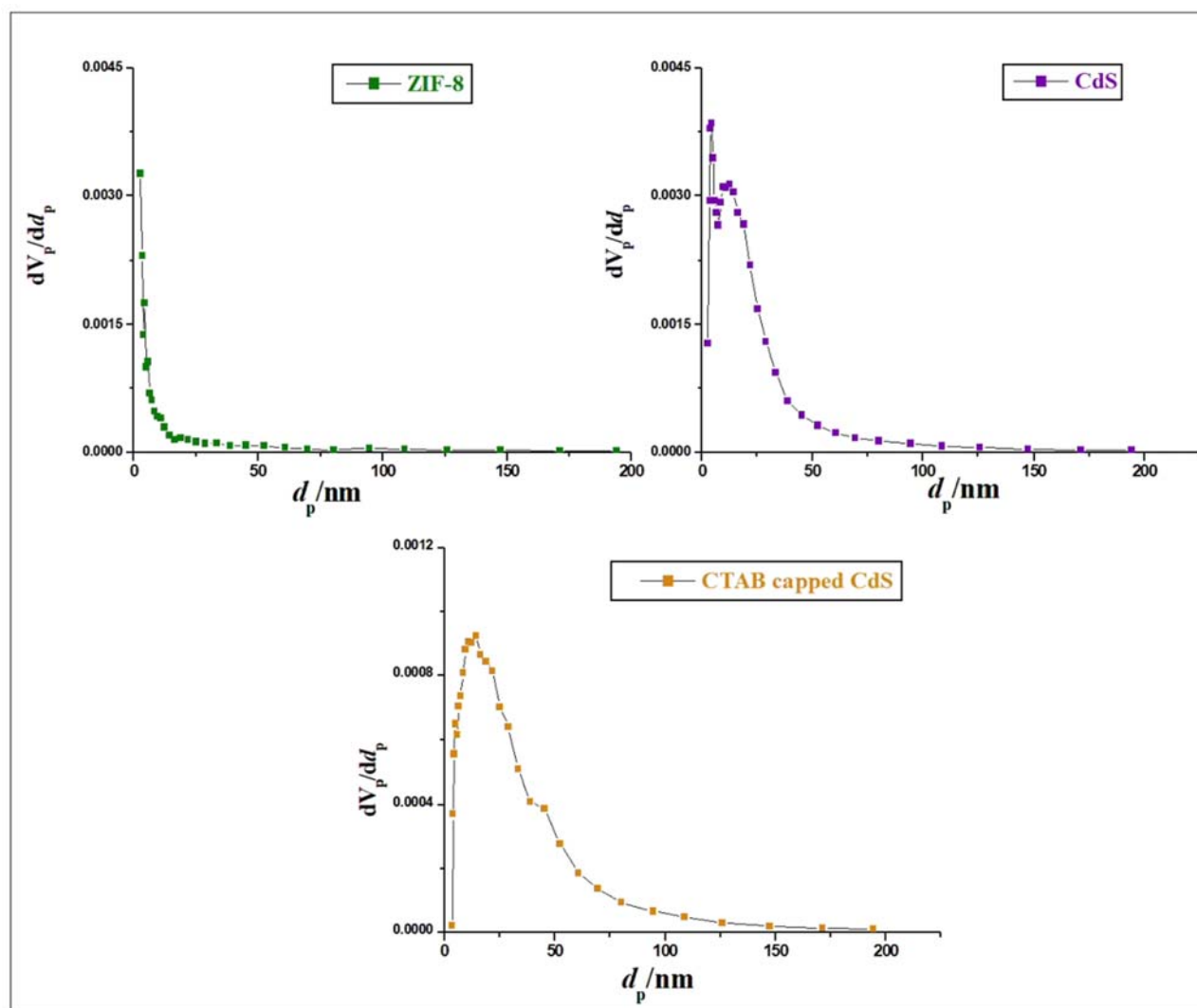


Figure S5: BJH plot of ZIF-8, CdS and CTAB capped CdS.

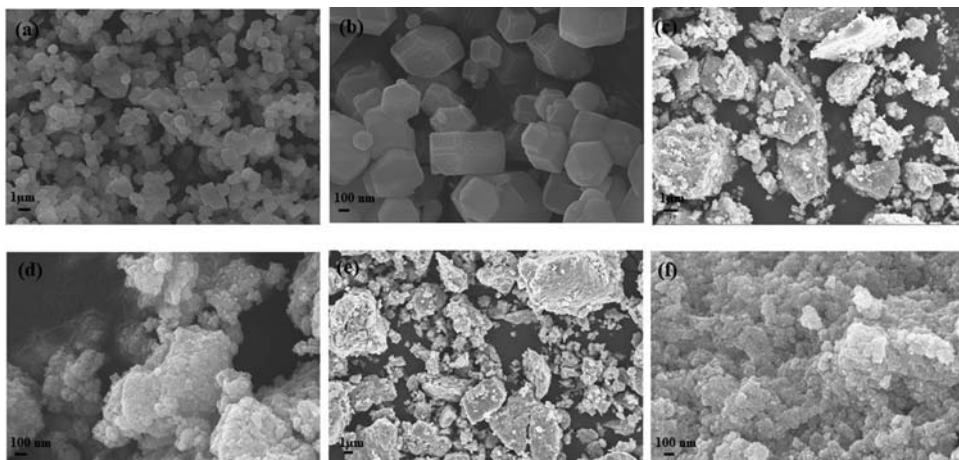


Figure S6: FE-SEM images of (a and b) ZIF-8, (c and d) CdS and (e and f) CTAB capped CdS.

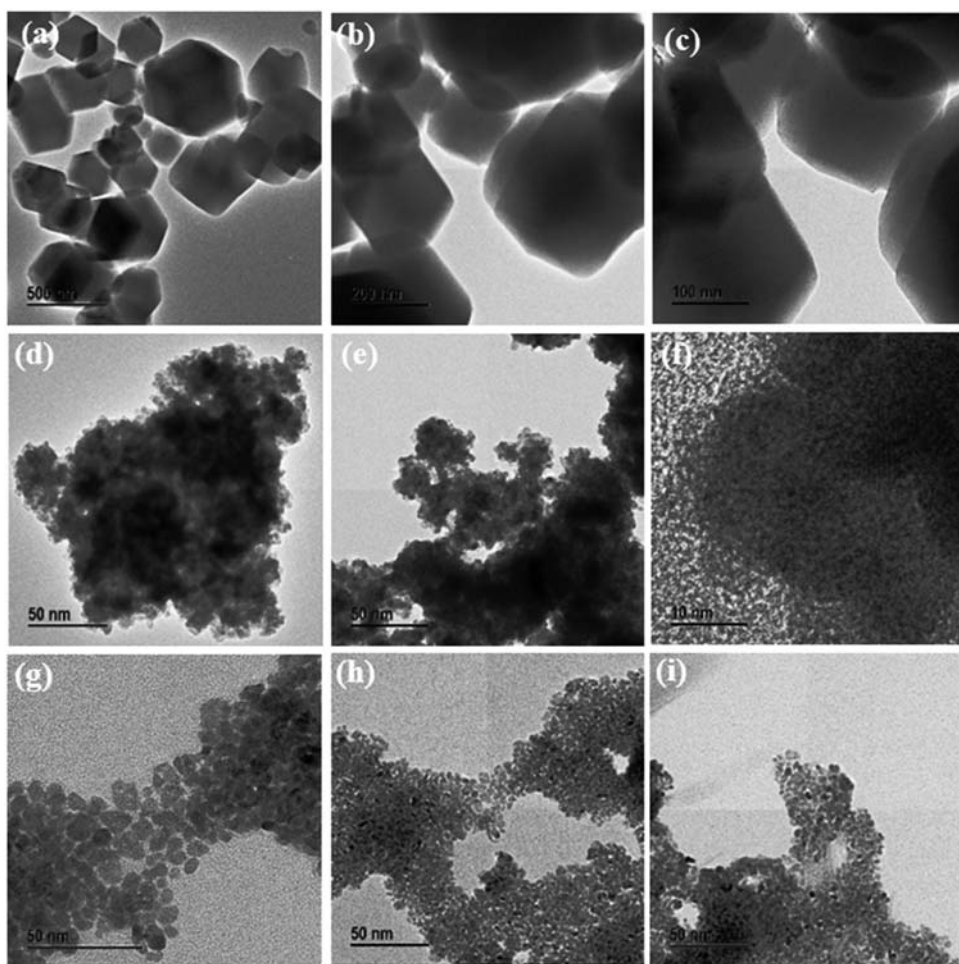


Figure S7: TEM images of (a–c) ZIF-8, (d–f) CdS and (g–i) CTAB capped CdS.

Table S1: Antibacterial activities of ZIF-8, CdS and CTAB capped CdS

Sl. No	Sample	Organism	Diameter of zone		
			+(80 µg) (control)	T1 (400 µg)	T2 (800 µg)
1	ZIF-8	<i>E. coli</i>	24.0 ± 0.08	—	11.8 ± 0.26
2		<i>S. aureus</i>	24.0 ± 0.08	—	—
3		<i>Bacillus substilis</i>	29.0 ± 0.05	—	10.9 ± 0.17
4	CdS	<i>E. coli</i>	30.1 ± 0.08	9.9 ± 0.08	11.3 ± 0.12
5		<i>S. aureus</i>	23.9 ± 0.12	—	—
6		<i>Bacillus substilis</i>	30.0 ± 0.08	—	10.1 ± 0.05
7	CTAB capped CdS	<i>E. coli</i>	30.0 ± 0.08	12.9 ± 0.12	15 ± 0.17
8		<i>S. aureus</i>	22.0 ± 0.08	12.9 ± 0.17	15 ± 0.08
9		<i>Bacillus substilis</i>	27.8 ± 0.17	11.9 ± 0.33	14.0 ± 0.08

Table S2: DNA binding studies on ZIF-8, CdS, CTAB capped CdS are shown below

	Absorbance	Inference	Wavelength (nm)	Inference
Untreated <i>E. coli</i> genomic DNA	0.188	—	265	—
ZIF-8 (50 µg) + <i>E. coli</i> genomic DNA	0.332	Hyperchromic	260	Blue shift
CdS (50 µg) + <i>E. coli</i> genomic DNA	0.223	Hyperchromic	270	Red shift
CTAB capped CdS (50 µg) + <i>E. coli</i> genomic DNA	0.329	Hyperchromic	270	Red shift