Electronic Supplementary Material (ESI) for Analyst

"Turn-on-off-on" Fluorescence switching of Quantum dots-cationic Porphyrin nanohybid: A sensor for DNA

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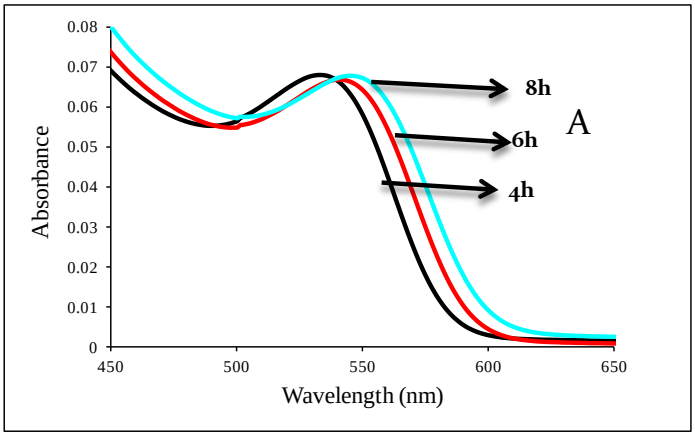
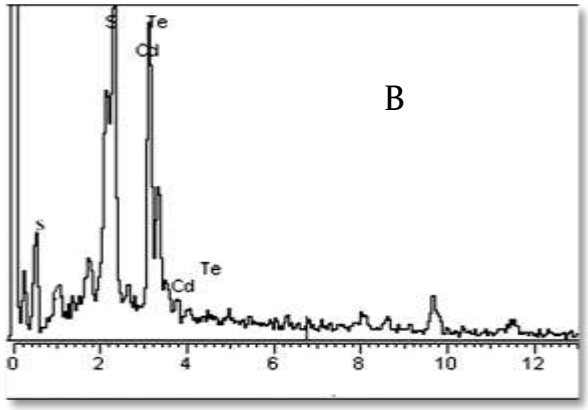
Fig. S1. A) The UV-Vis absorption spectra of CdTe-TGA collected at different refluxing time. B) EDAX spectrum and C) The XRD profile for the synthesized CdTe-TGA quantum dots.





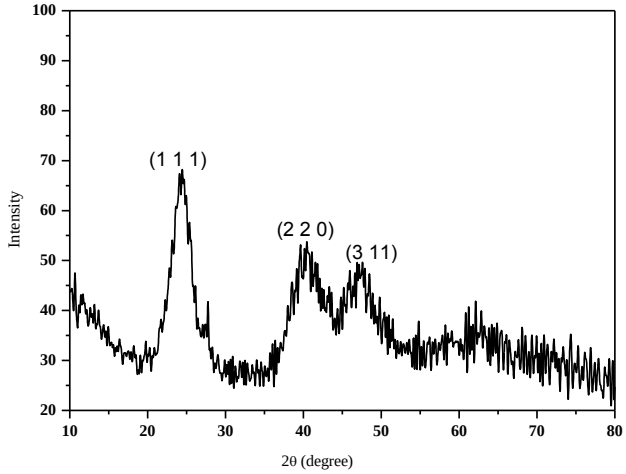


Fig. S2. FTIR spectra of positively charged CdTe-DEA quantum dots (red solid line) and DEA (broken line)

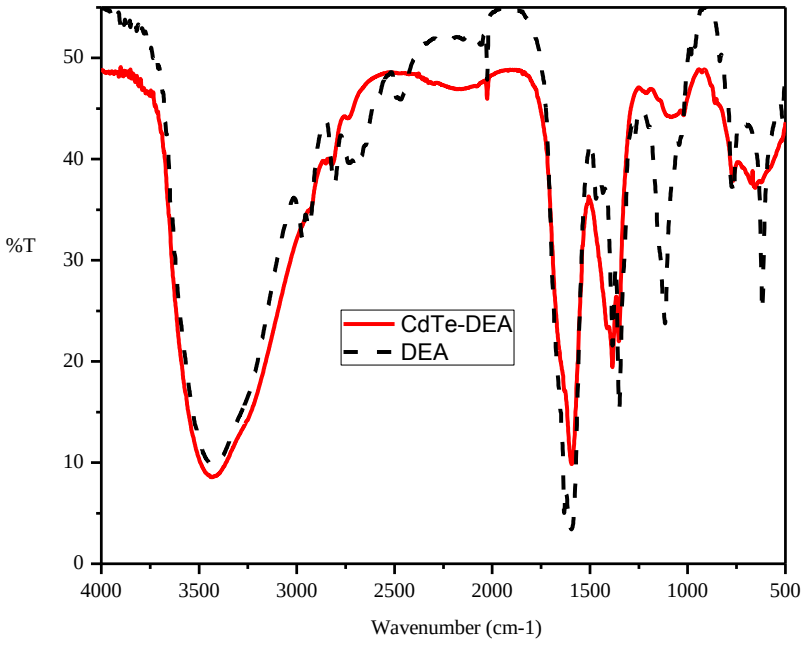


Fig. S3. Fluorescence intensity of CdTe-TGA at various pH ranging from 3-12

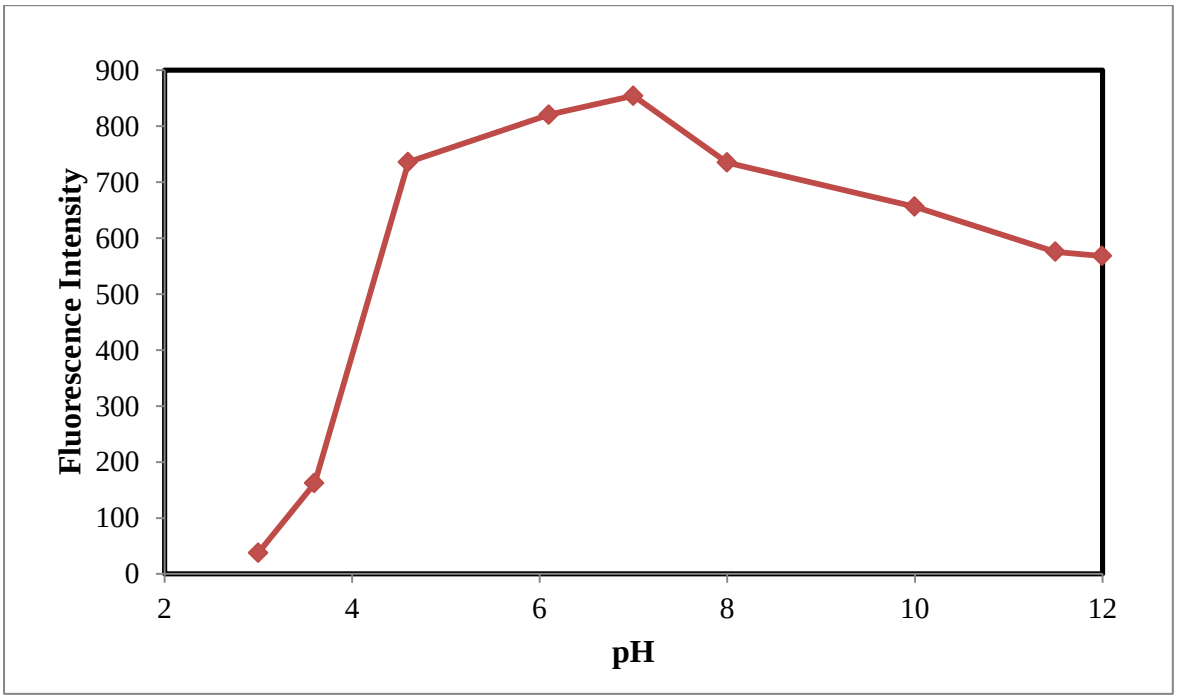


Fig. S4. Fluorescence decay of CdTe-TGA in the presence and absence of ZnTMPyP (1 x 10^{-5} M): λ_{exi} = 500 nm (blue colored prompt decay which is for instrument calibration)

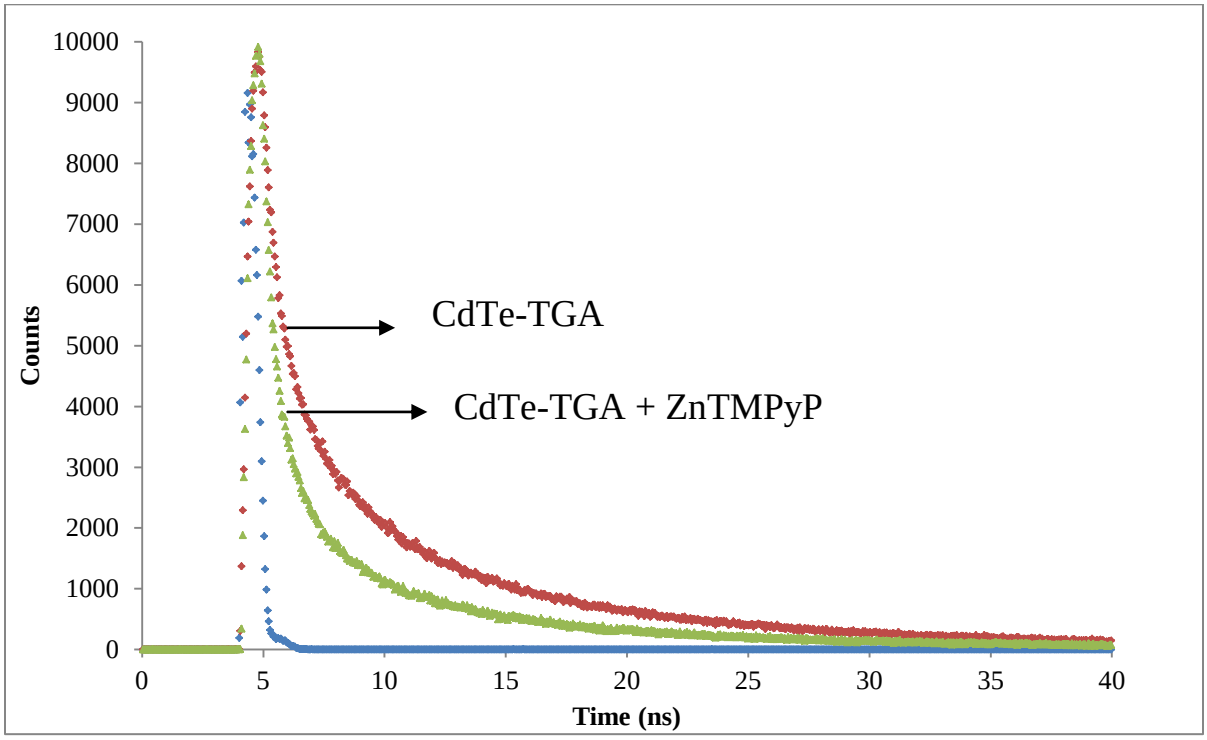


Fig. S5. Plot between $1/F_0$-F vs 1/[Q] (Comparison of binding constant)

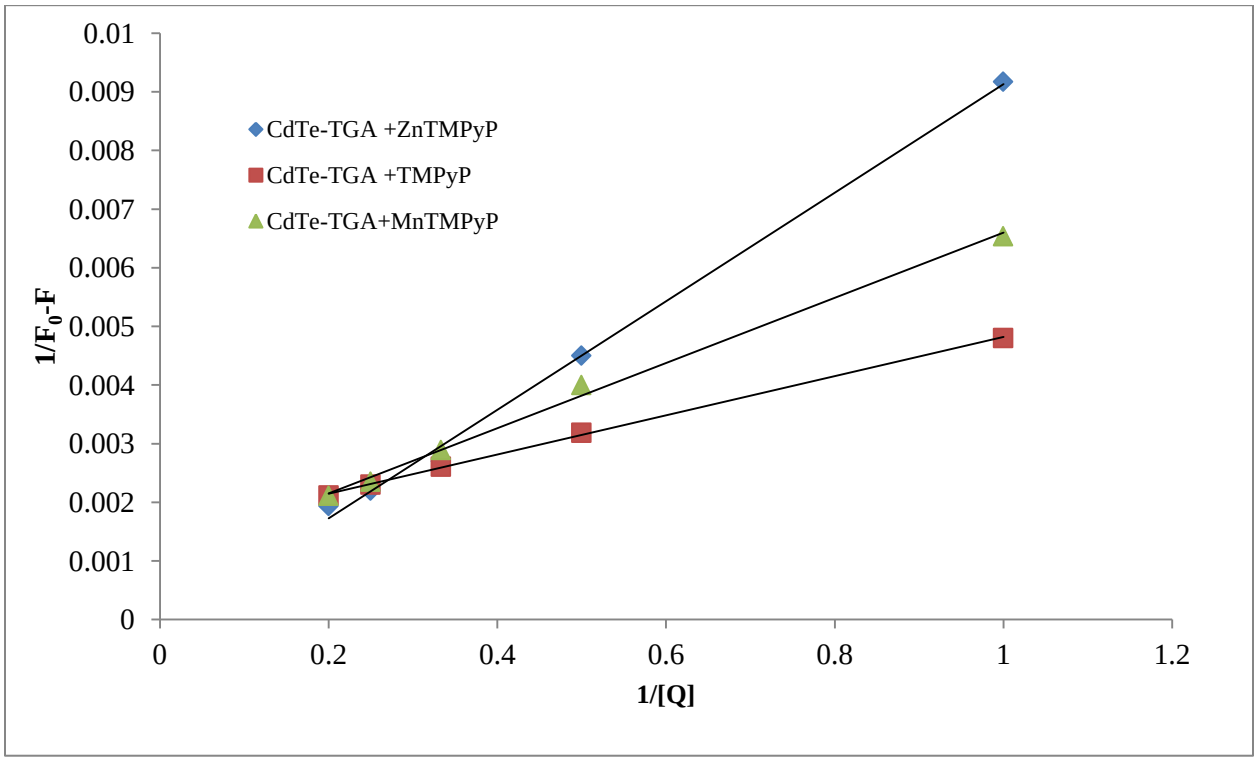


Fig. S6. Three dimensional spectra of a) CdTe-TGA (Red lines) b) CdTe-TGA+MnTMPyP (Green lines) c) CdTe-TGA+MnTMPyP+CtDNA (Blue lines), Concentration of CdTe-TGA= 1 × 10^{-7}M,MnTMPyP = 1× 10^{-6}M, CtDNA = 31.6× 10^{-8}M, pH= 7.5 and T= 298K.

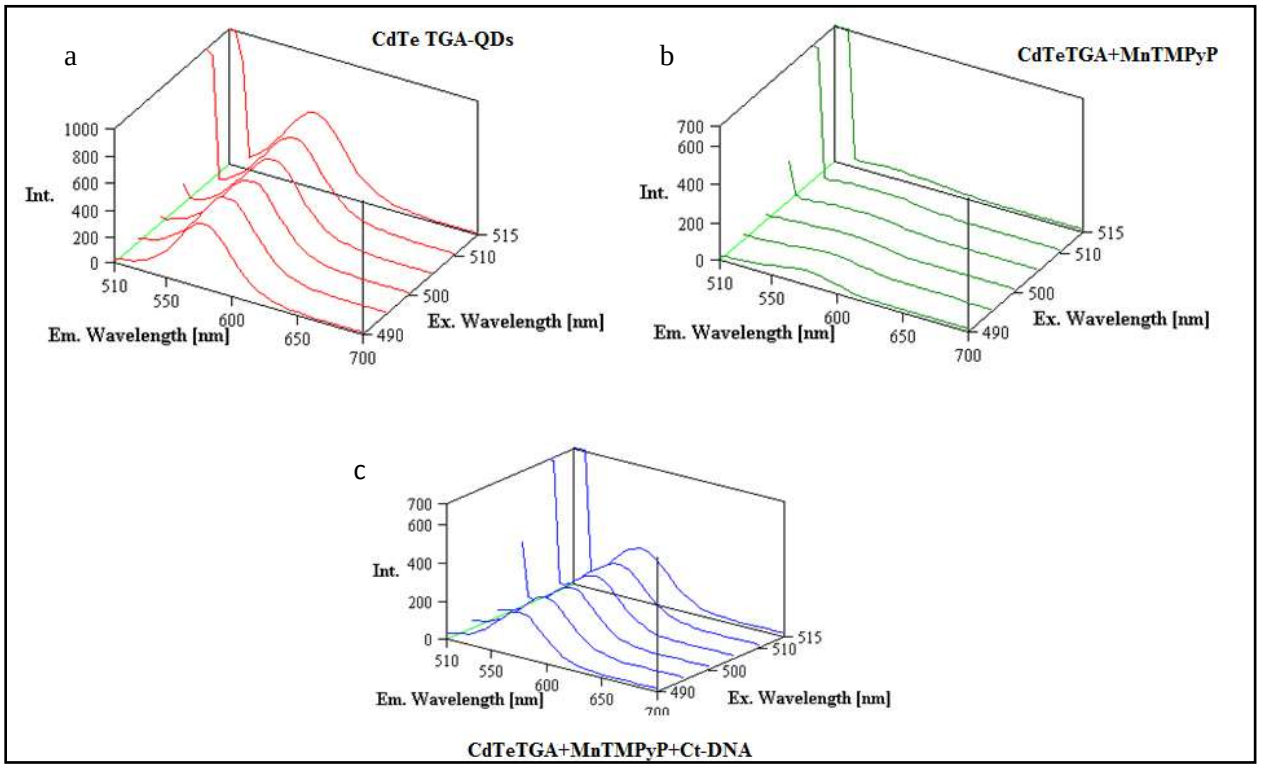


Fig. S7. The overlaps of absorbance spectra of TMPyP (a) and emission spectra of CdTe-TGA (b). The concentration of quantum dots and the cationic porphyrins were 1×10^{-6} M.

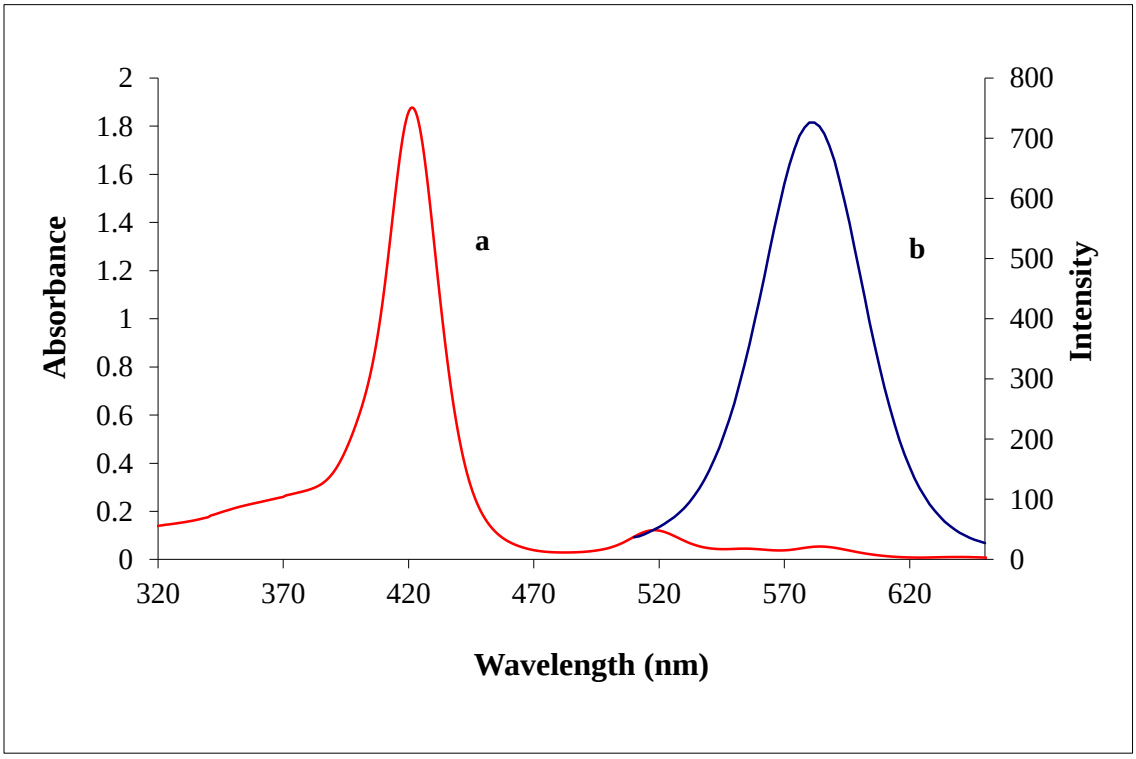


Fig.S8. Transient absorption spectrum of CdTe-TGA (Black), ZnTMPyP (Green) and mixture of CdTe-TGA+ ZnTMPyP (brown) recorded at 20 μs after the laser flash (500 nm).