

Electronic Supplementary Information

Synthesis of Lanthanide Functionalized Carbon Quantum Dots for Chemical Sensing and Photocatalytic Application

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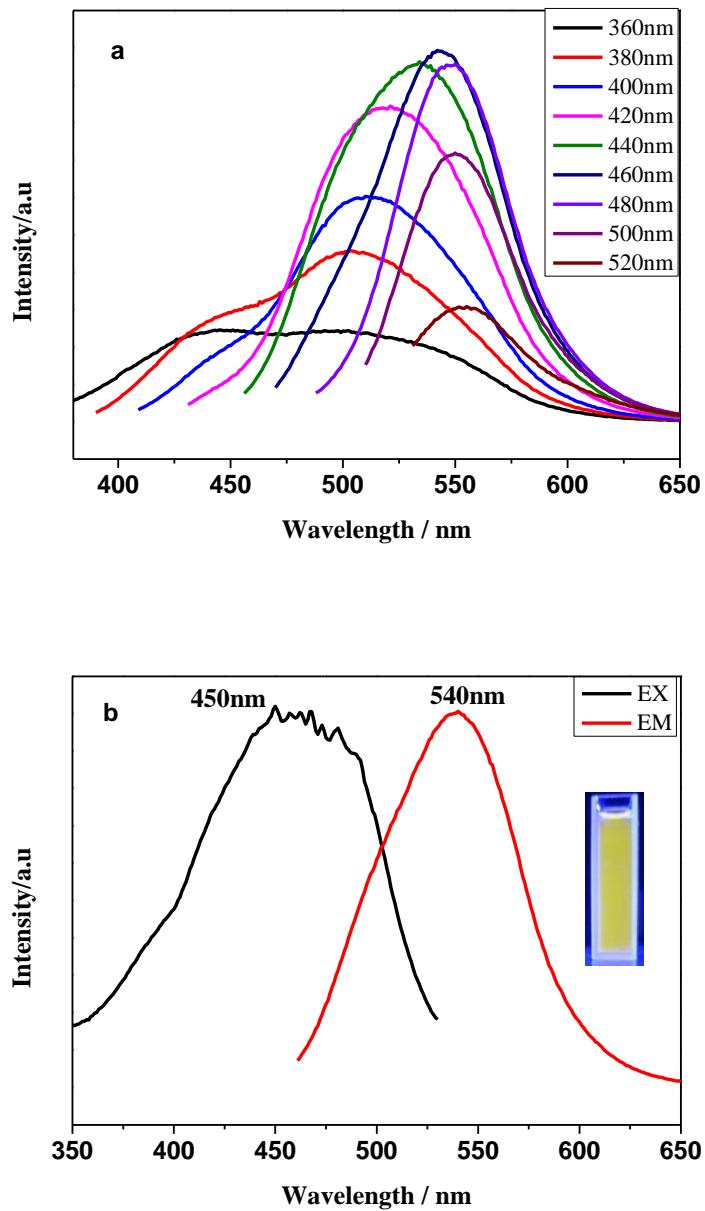


Figure.S1 PL spectra of the CQDs: (a) different excitation wavelengths in ethanol solution (b) optimal excitation and emission spectra. (the inset is the digital photos of CQDs under 460 nm in ethanol solution).

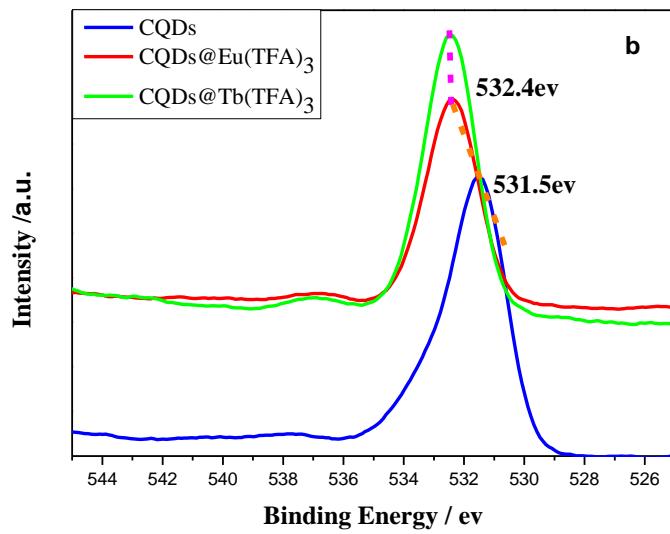
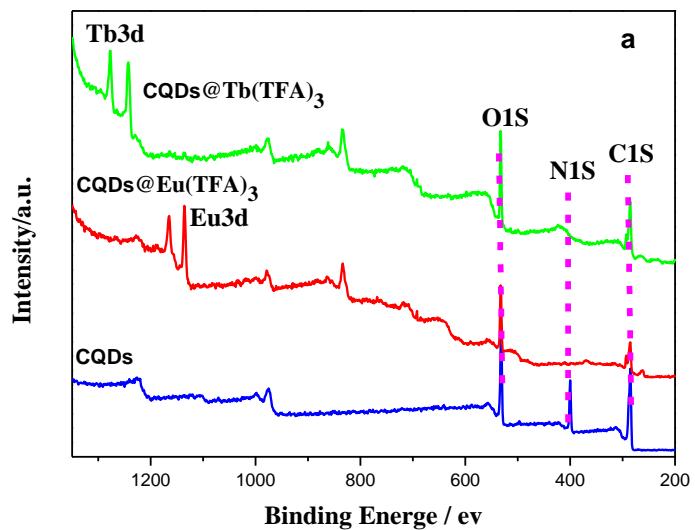


Figure.S2 (a) XPS spectra (b) O1s of CQDs and CQDs@Ln(TFA)₃

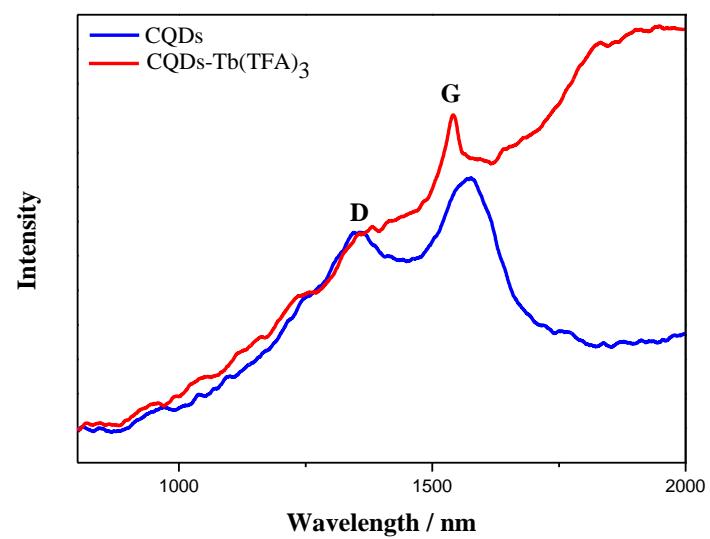


Figure.S3 Raman spectra of CQDs and CQDs@Tb(TFA)₃

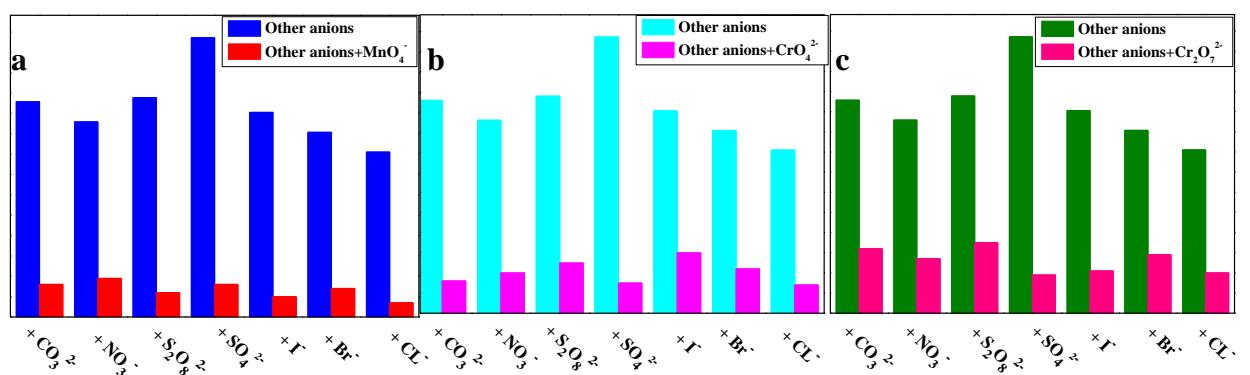


Figure S4. Interference experiment: MnO_4^- , CrO_4^{2-} and $\text{Cr}_2\text{O}_7^{2-}$ of CQDs@Tb(TFA)₃ ($\lambda_{\text{ex}}=365 \text{ nm}$)

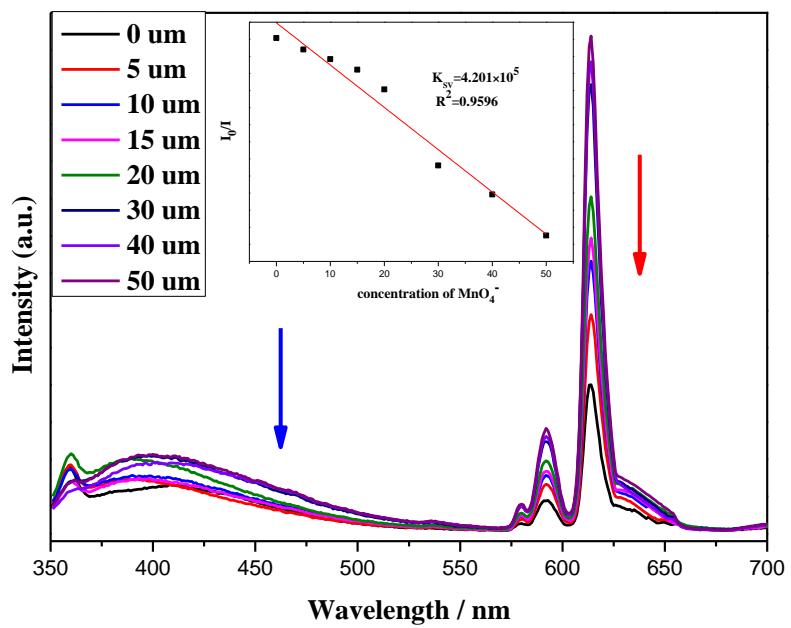


Figure.S5. The emission spectrum of CQDs@Eu(TFA)₃ at different concentrations of MnO₄⁻