Electronic Supplementary Information

Dual-emissive Ratiometric Fluorescent Probe Based on Lanthanide Functionalized Carbon Quantum Dots for White-light Emitting and Chemical Sensing

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Figure. S1 XPS spectra of CQDs: the wide spectra (A) and high-resolution spectra of C 1s (B), N 1s(C), O 1s (D).

Figure. S2 ¹H NMR spectra of CQDs and PCQDs

Figure. S3 UV-Vis spectrum of the aqueous solution of the CQDs

Figure. S4 PL emission spectrum of FCQDs-Tb(TFA)₃ after one week

Figure. S5 PL Intensity changes with pH

Figure. S6 UV- vis spectra of Tb(TFA)₃ and FCQDs-(Eu:Tb) (TFA)₃/PMMA

Table. S1 The amount of each component in the film preparation process

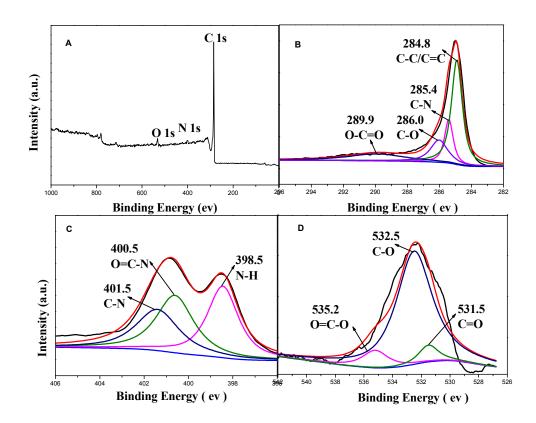


Figure. S1 XPS spectra of CQDs: the wide spectra (A) and high-resolution spectra of C 1s (B), N 1s(C), O 1s (D).

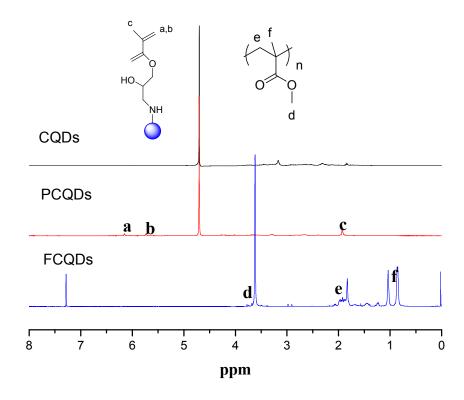


Figure. S2 ¹H NMR spectra of CQDs and PCQDs

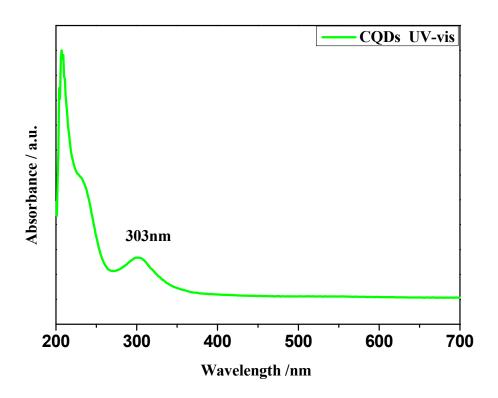


Figure. S3 UV-Vis spectrum of the aqueous solution of the CQDs

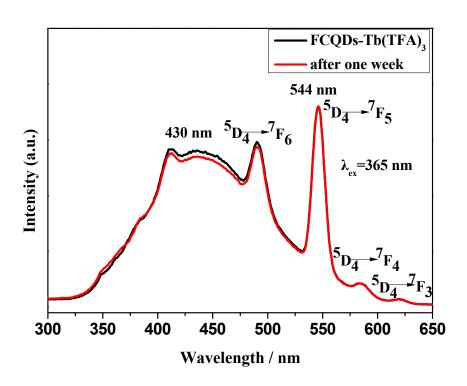
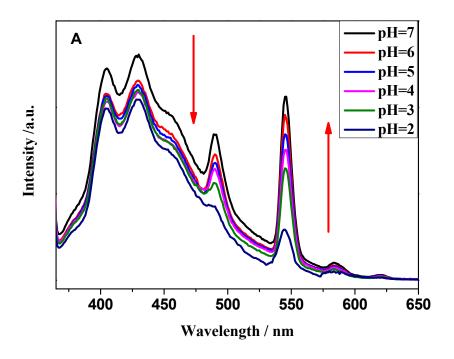


Figure. S4 PL emission spectrum of FCQDs-Tb(TFA)₃ after one week



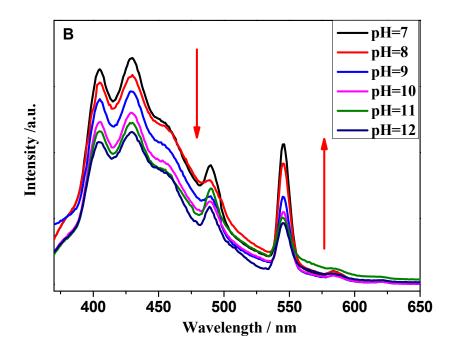


Figure. S5 (A) PL Intensity changes in the range of pH=2-7 (B) PL Intensity changes in the range of pH=7-12

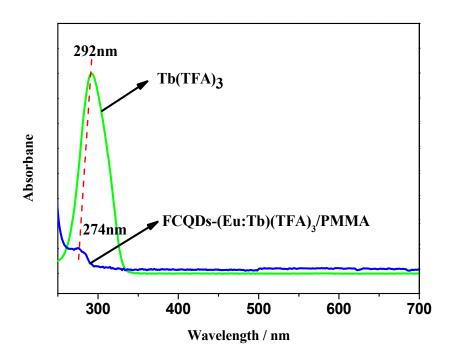


Figure. S6 UV- vis spectra of Tb(TFA)₃ and FCQDs-(Eu:Tb) (TFA)₃/PMMA Intensity changes with pH

Table S1. The amount of each component in the film preparation process

Film	PMMA	FCQDs	$Eu(TFA)_3 : Tb(TFA)_3$
1	300 mg	3 mg	5:5
2	300 mg	3 mg	4:6
3	300 mg	3 mg	3:7
4	300 mg	3 mg	2:8