

Supporting Information

A turn-on fluorescent sensing strategy for rapid detection of Flumequine in water environment using covalent-coordination functionalized MOFs

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Fig. S1 Energy dispersive X-ray spectroscopy (EDS) of ZIF-90

Fig. S2 Energy dispersive X-ray spectroscopy (EDS) of ZIF-90-PA

Fig. S3 Energy dispersive X-ray spectroscopy (EDS) of Eu@ZIF-90-PA

Fig. S4 PXRD patterns of Eu@ZIF-90-PA before and after immersing in different solvents for 24 h

Fig.S5 PXRD patterns of Eu@ZIF-90-PA before and after immersing in different pH values aqueous solutions.

Fig.S6 Fluorescence excitation and emission spectra of solid-state (a) ICA ligand (b) ZIF-90 at room temperature.

Fig.S7 Fluorescence excitation and emission spectra of solid-state (a) PA (b) ZIF-90-PA (C) Eu@ZIF-90-PA at room temperature(d) CIE coordinates of Eu@ ZIF-90-PA.

Fig. S8 Variation of luminescence intensity of Eu@ ZIF-90-PA at 613 nm with immersion time in Flumequine aqueous solutions (10^{-2} M) ($\lambda_{\text{ex}} = 349$ nm).

Fig. S9 Luminescence intensity of Eu@ ZIF-90-PA at 613 nm after three repetitions with 10^{-2} M Flumequine in aqueous solutions ($\lambda_{\text{ex}} = 349$ nm).

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Fig. S10 PXRD patterns of Eu@ZIF-90-PA before (a) and after (b) immersing in Flumequine aqueous solutions (10^{-3} M) for 24h

Fig. S11 Emission intensities of Eu@ ZIF-90-PA at 613 nm upon the addition of Flumequine in the solutions after soaking in solutions of different pH values for 24h

Scheme S1 The chemical structural formula of Flumequine.

Fig. S12 Emission decay profiles of 5D_0 in Eu@ ZIF-90-PA solid powder and in aqueous solution (a), Eu@ ZIF-90-PA with 10^{-2} M Flumequine added (b).

Table S1 The weight percentages of all elements in ZIF-90, ZIF-90-PA and Eu@ZIF-90-PA determined by Energy dispersive analysis by X-rays (EDX).

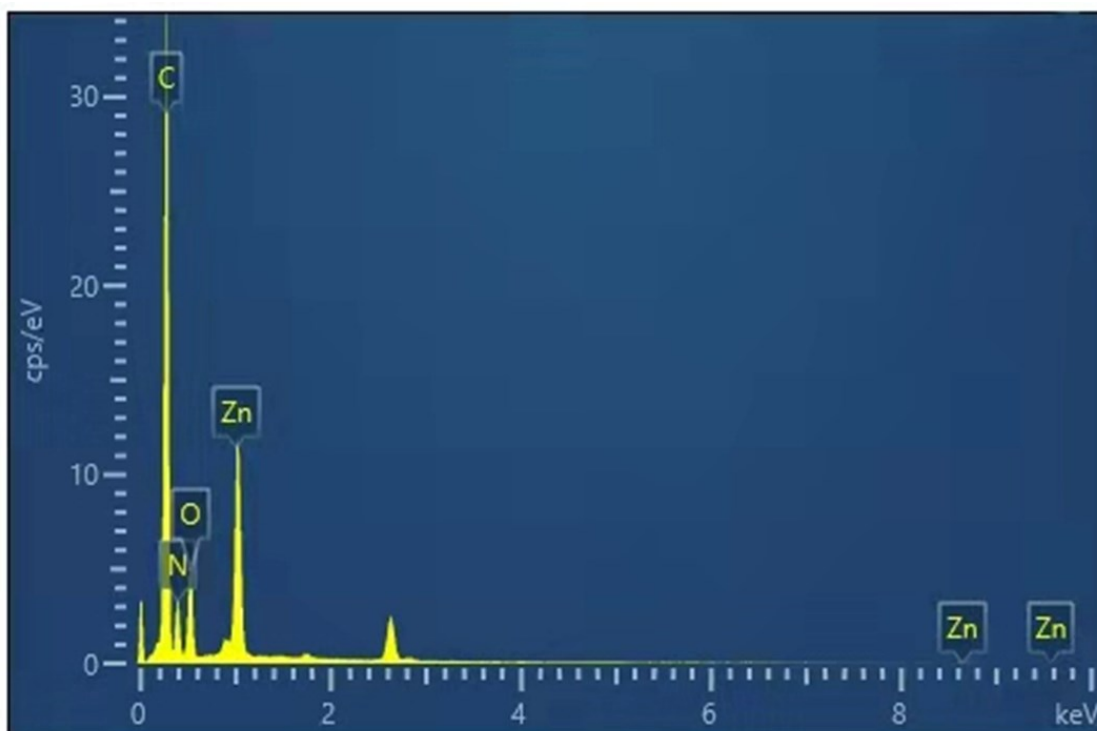


Fig. S1 Energy dispersive X-ray spectroscopy (EDS) of ZIF-90

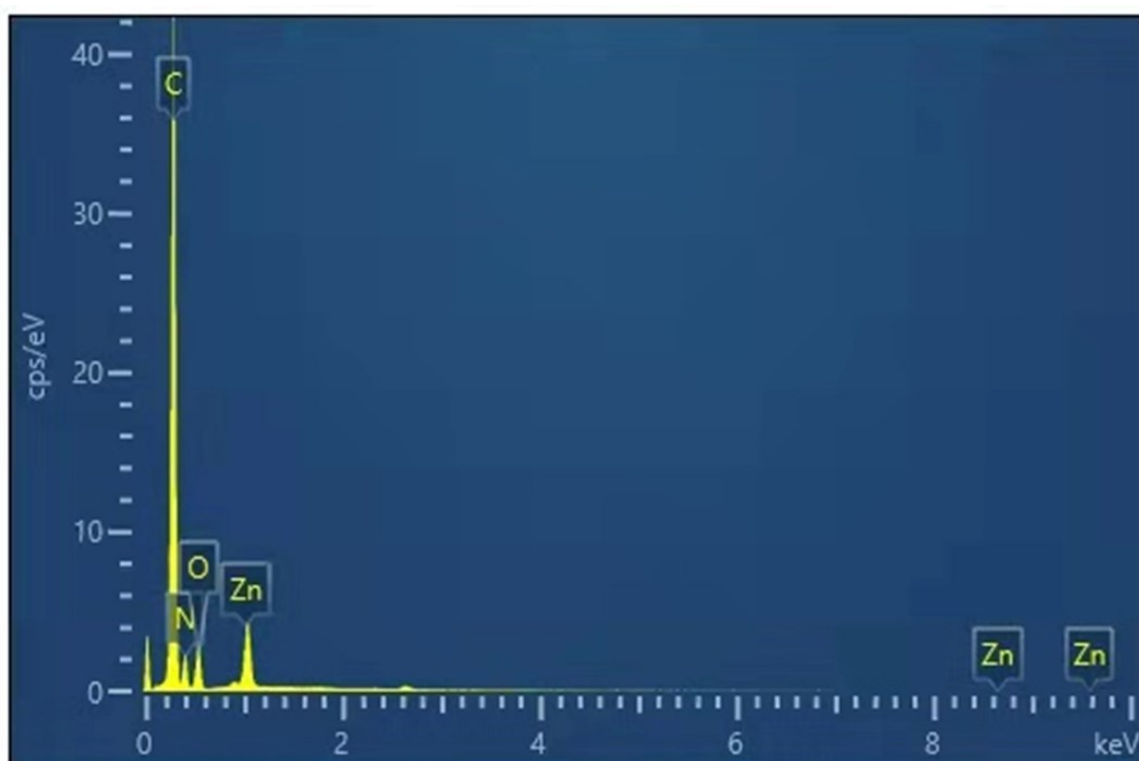


Fig. S2 Energy dispersive X-ray spectroscopy (EDS) of ZIF-90-PA

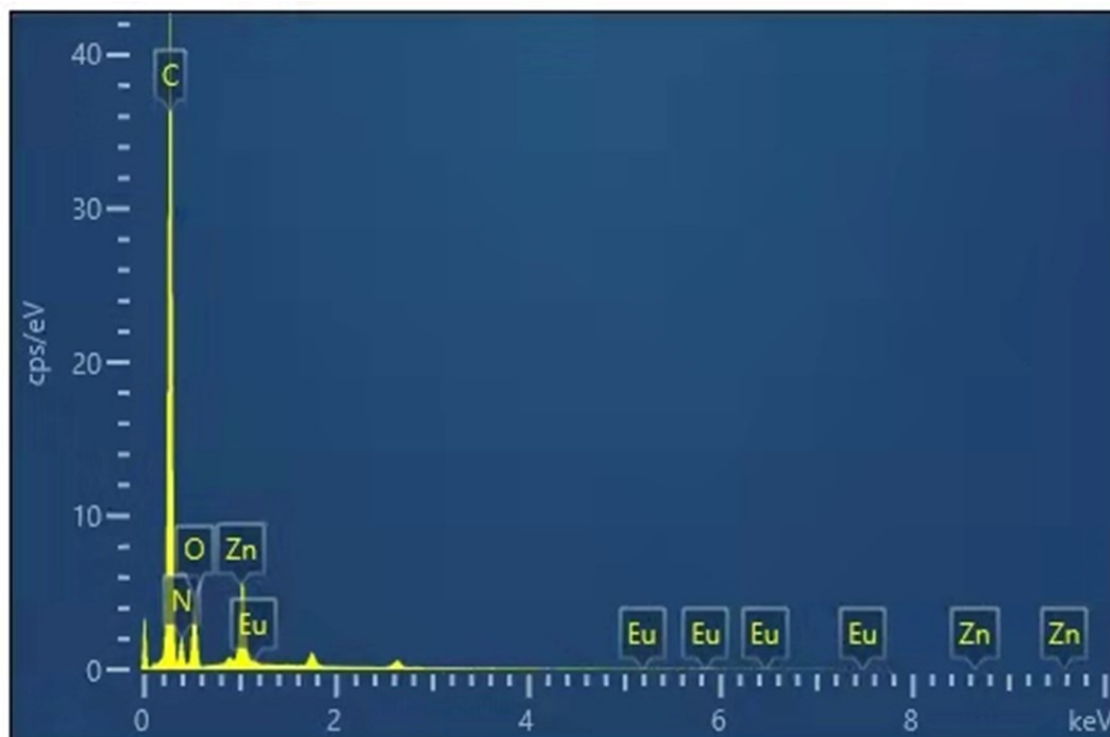


Fig. S3 Energy dispersive X-ray spectroscopy (EDS) of Eu@ZIF-90-PA

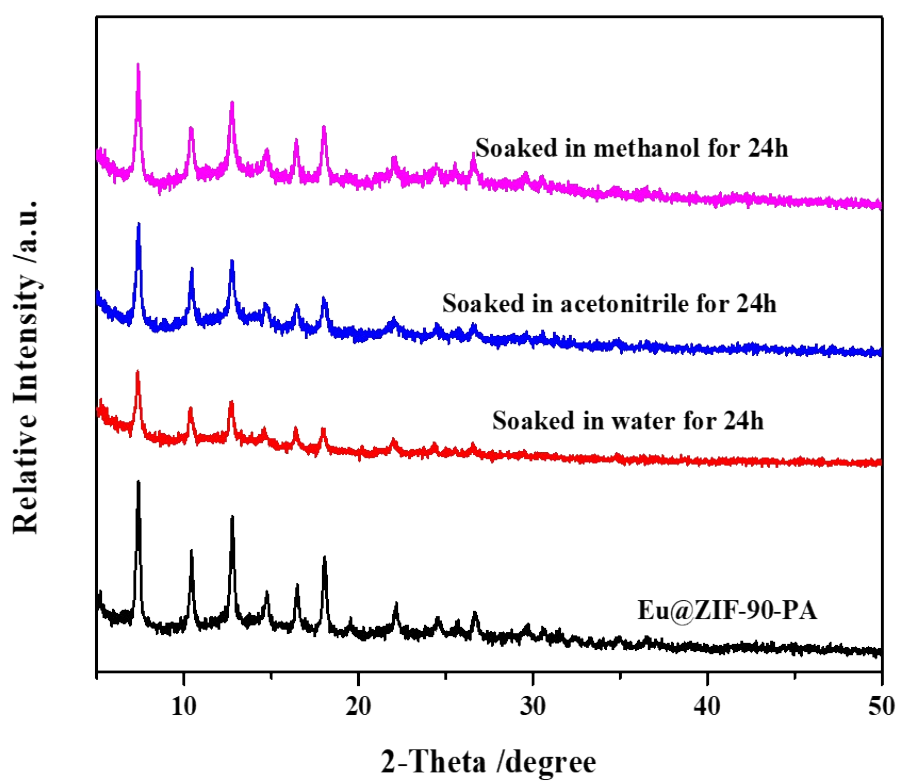


Fig. S4 PXRD patterns of Eu@ZIF-90-PA before and after immersing in different solvents for 24 h

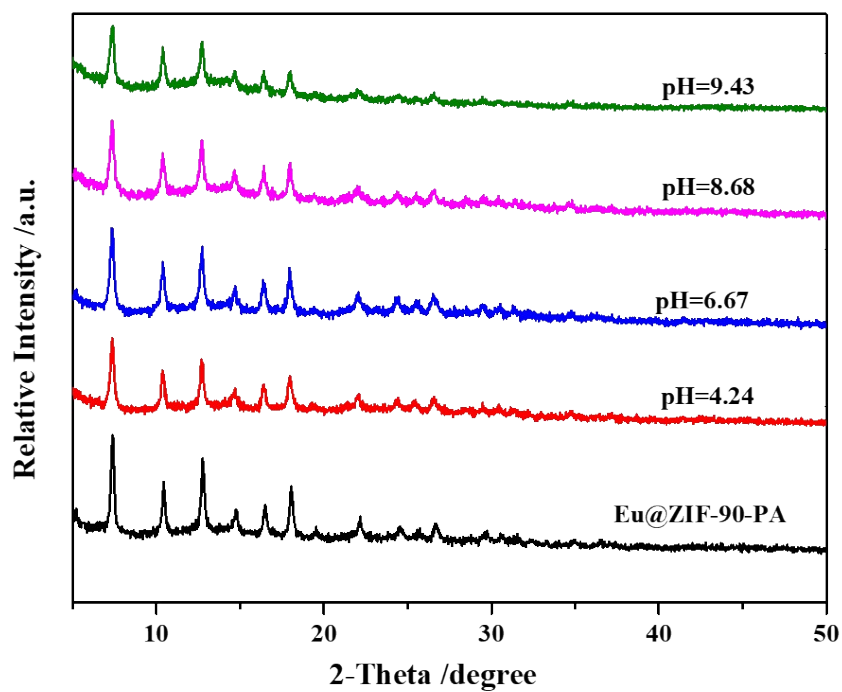


Fig.S5 XRD patterns of Eu@ZIF-90-PA before and after immersing in different pH values aqueous solutions.

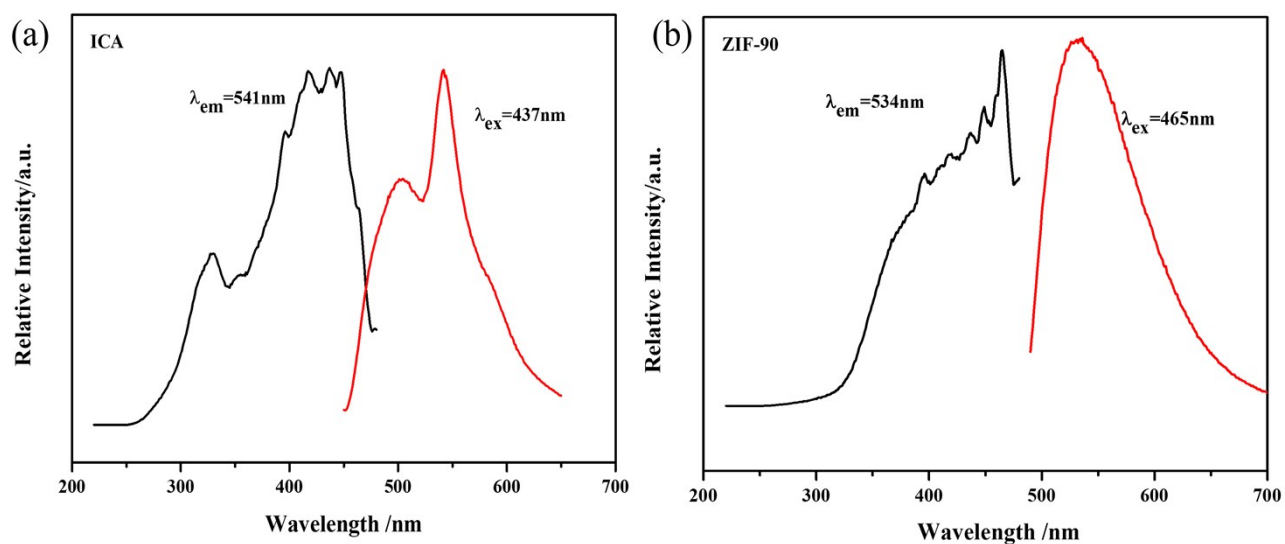


Fig.S6 Fluorescence excitation and emission spectra of solid-state (a) ICA ligand (b) ZIF-90 at room temperature.

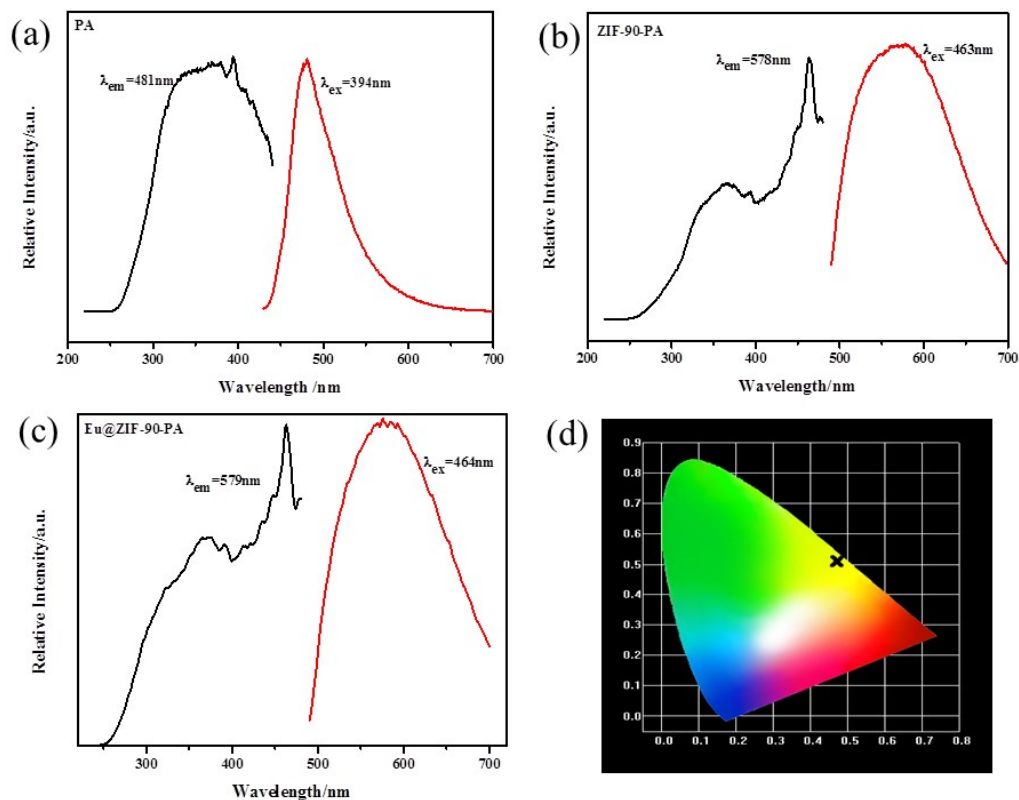


Fig.S7 Fluorescence excitation and emission spectra of solid-state (a) PA (b) ZIF-90-PA (C) Eu@ZIF-90-PA at room temperature(d) CIE coordinates of Eu@ ZIF-90-PA.

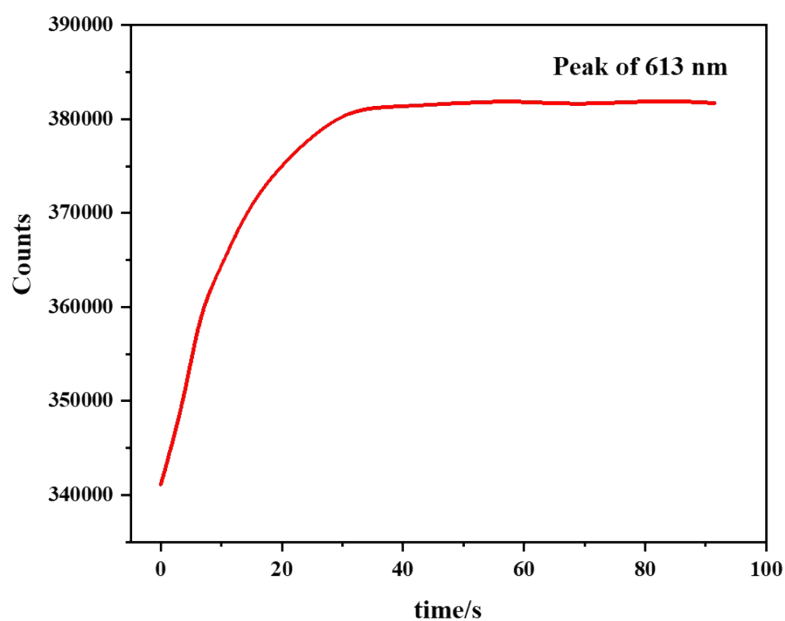


Fig. S8 Variation of luminescence intensity of Eu@ ZIF-90-PA at 613 nm with immersion time in Flumequine aqueous solutions (10^{-2} M) ($\lambda_{ex} = 349$ nm).

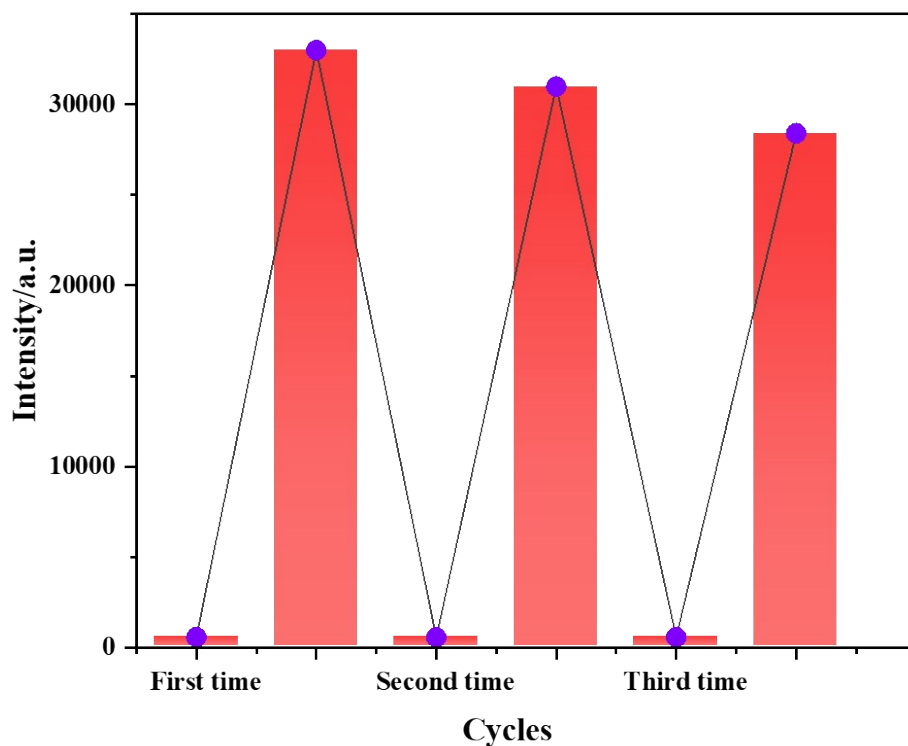


Fig. S9 Luminescence intensity of Eu@ZIF-90-PA at 613 nm after three repetitions with 10^{-2} M Flumequine in aqueous solutions ($\lambda_{\text{ex}} = 349$ nm).

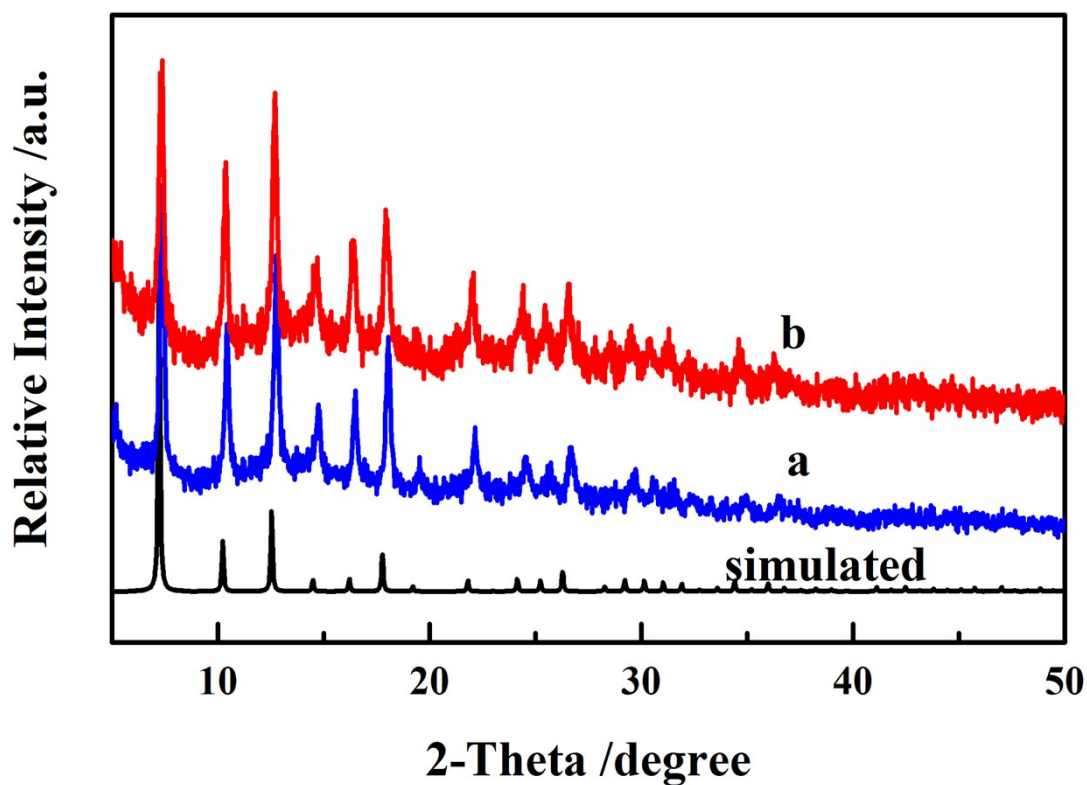


Fig. S10 PXRD patterns of Eu@ZIF-90-PA before (a) and after (b) immersing in Flumequine aqueous solutions (10^{-3} M) for 24h

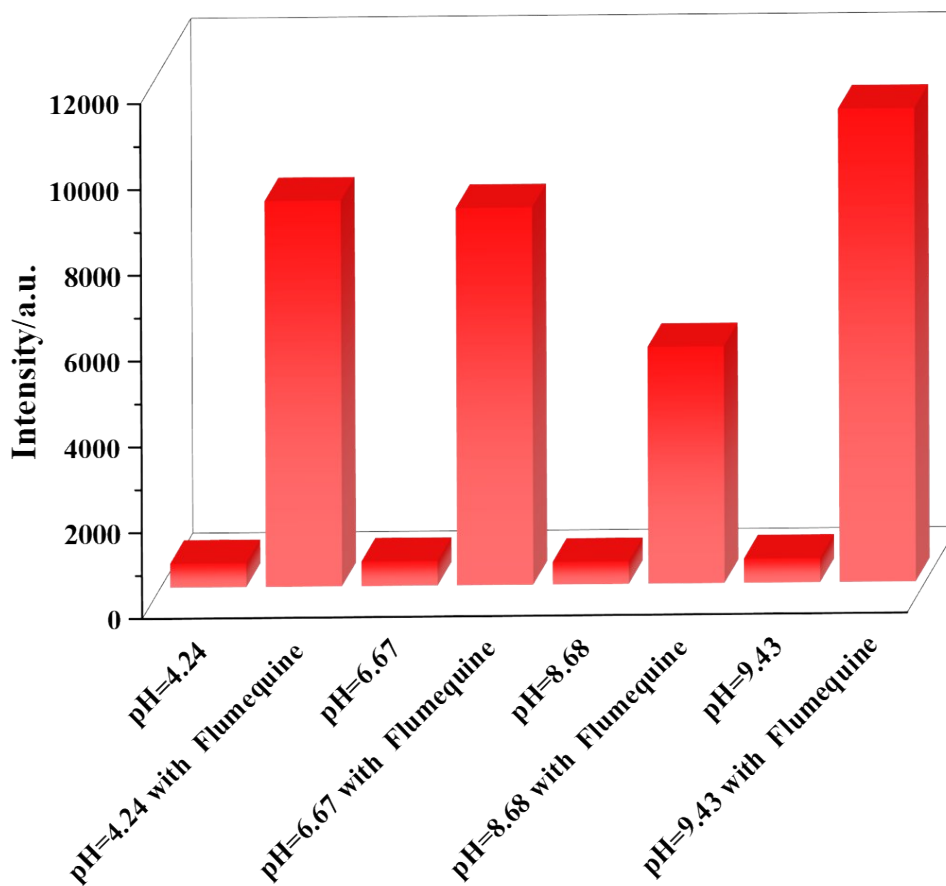
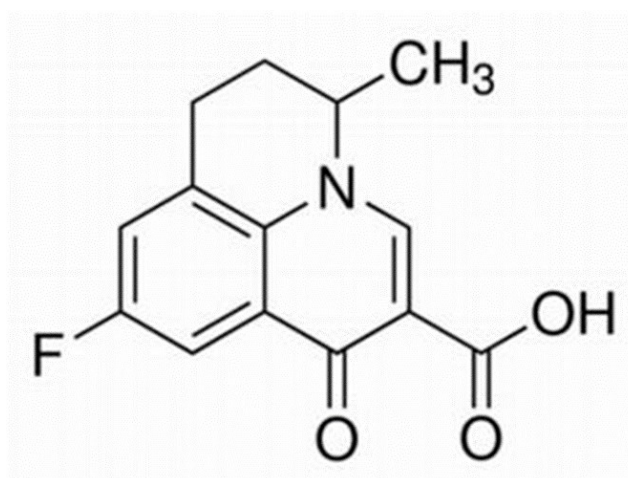


Fig. S11 Emission intensities of Eu@ ZIF-90-PA at 613 nm upon the addition of Flumequine in the solutions after soaking in solutions of different pH values for 24h



Scheme S1 The chemical structural formula of Flumequine.

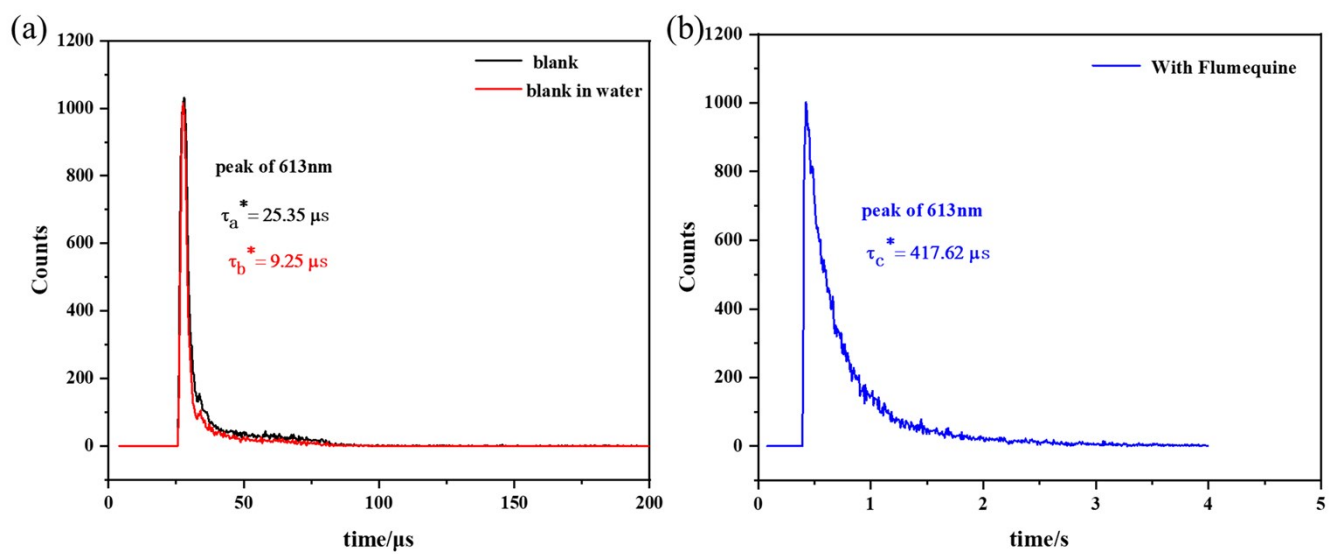


Fig. S12 Emission decay profiles of 5D_0 in Eu@ ZIF-90-PA solid powder and in aqueous solution

(a), Eu@ ZIF-90-PA with 10^{-2} M Flumequine added (b).

Table S1 The weight percentages of all elements in ZIF-90, ZIF-90-PA and Eu@ZIF-90-PA determined by Energy dispersive analysis by X-rays (EDX).

Element	Weight percentages/%		
	ZIF-90	ZIF-90-PA	Eu@ZIF-90-PA
C	52.91	64.57	62.32
N	16.91	17.66	13.38
O	10.59	8.74	11.65
Zn	19.59	9.03	10.64
Eu	-	-	2.00
Total	100		