Electronic Supplementary Information

AIE material with time-dependent fluorescence conversion obtained by 2D coordination polymer modification via covalent post-synthetic modification

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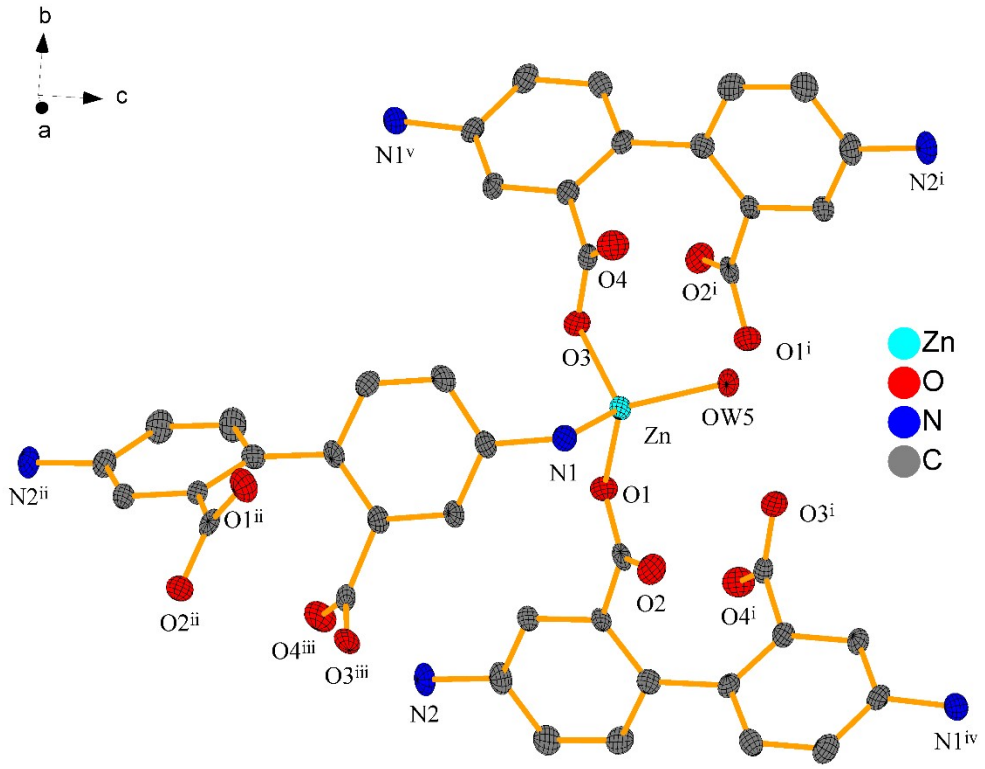

Figure S1 Coordination environment of Zn(II) centers with the hydrogen atoms and solvent molecules omitted for clarity in **HLC-NH_2** (symmetry codes: (i) 1-x, 1-y, 1-z; (ii) -0.5+x, 0.5-y, -0.5+z; (iii) 0.5-x, -0.5+y, 0.5-z; (iv) 0.5+x, 0.5-y, 0.5+z; (v) 0.5-x, 0.5+y, 0.5-z)

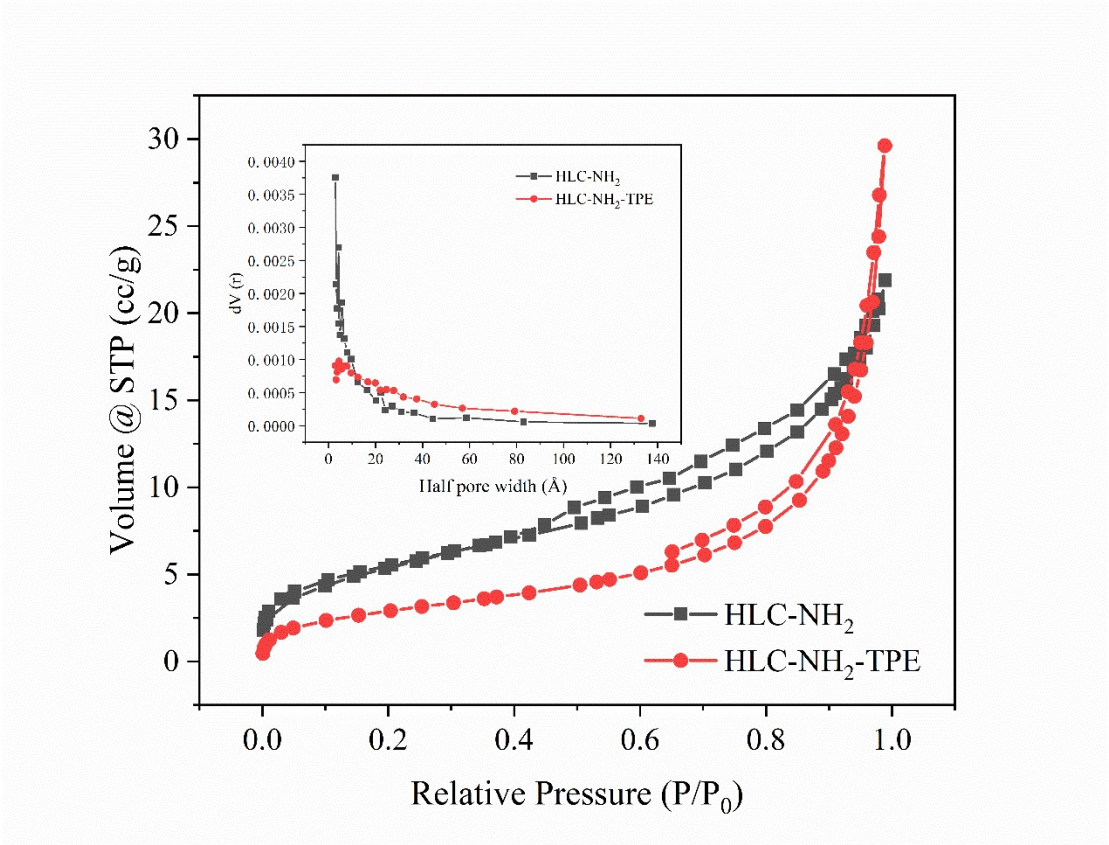

Figure S2 N_2 adsorption isotherms of the **HLC-NH$_2$** and **HLC-NH$_2$-TPE** carried out at 77K (insert shows pore size distribution plot)

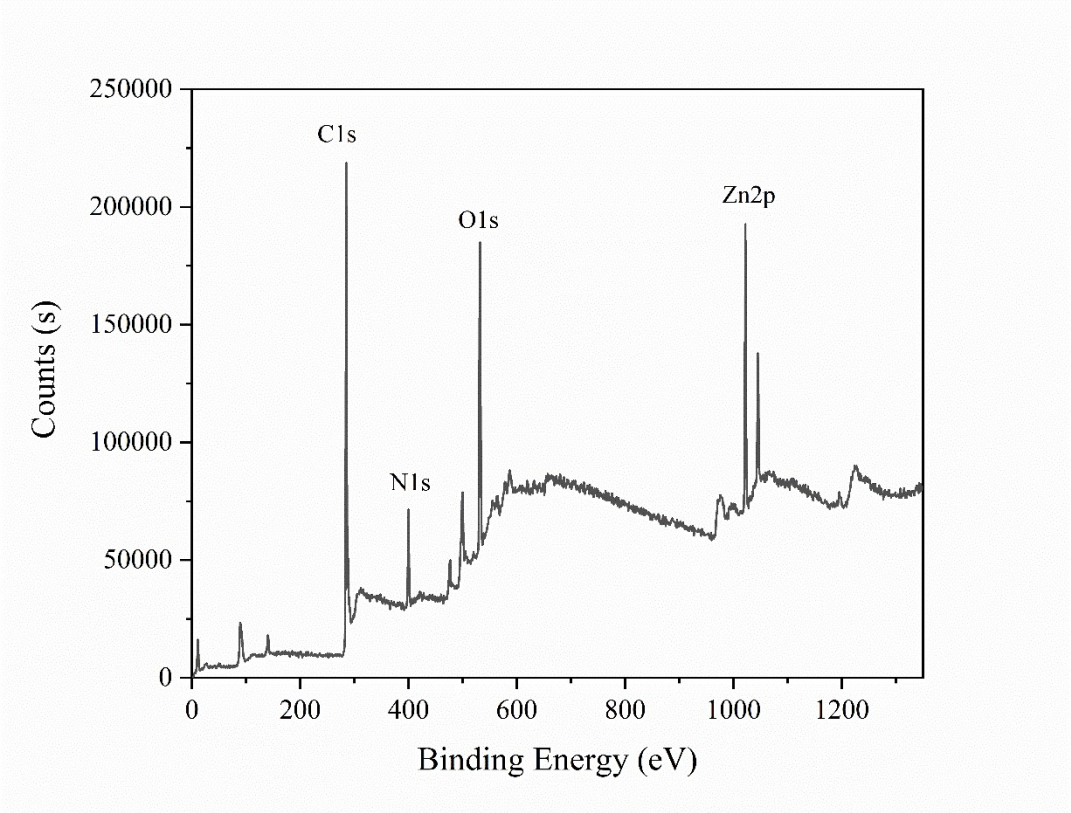

Figure S3 XPS spectra for **HLC-NH_2**

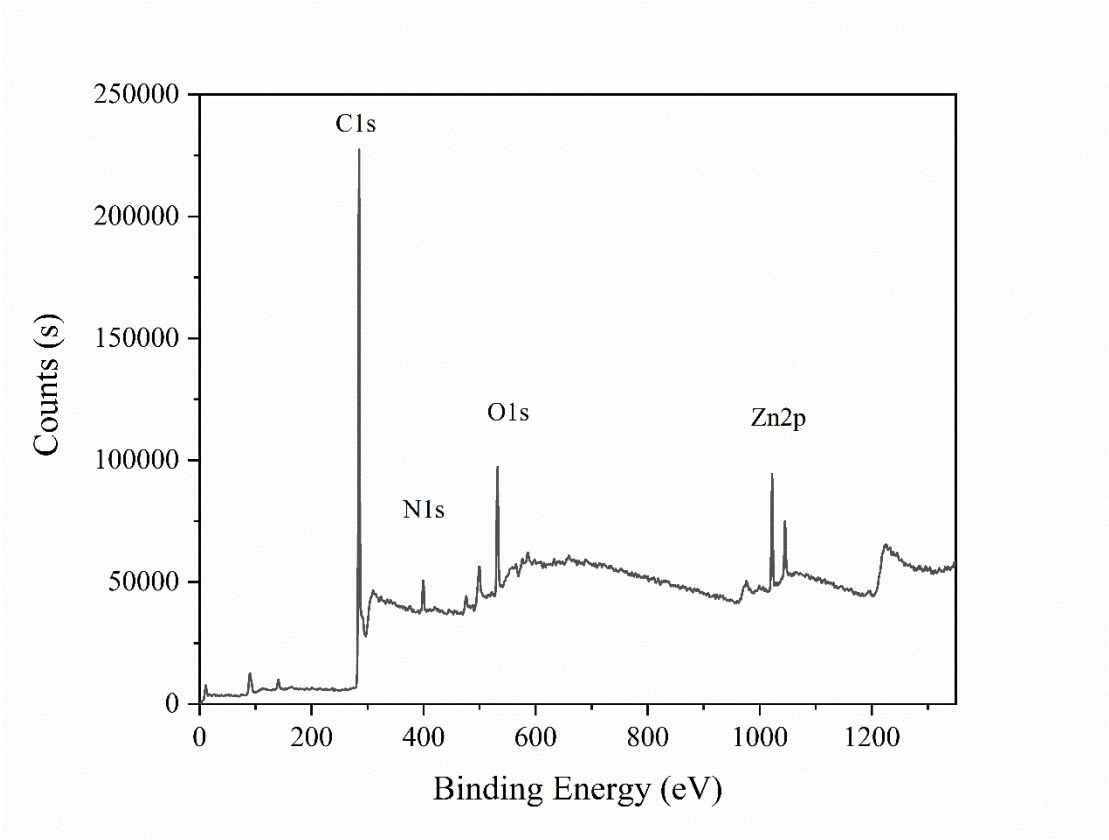

Figure S4 XPS spectra for **HLC-NH_2-TPE**

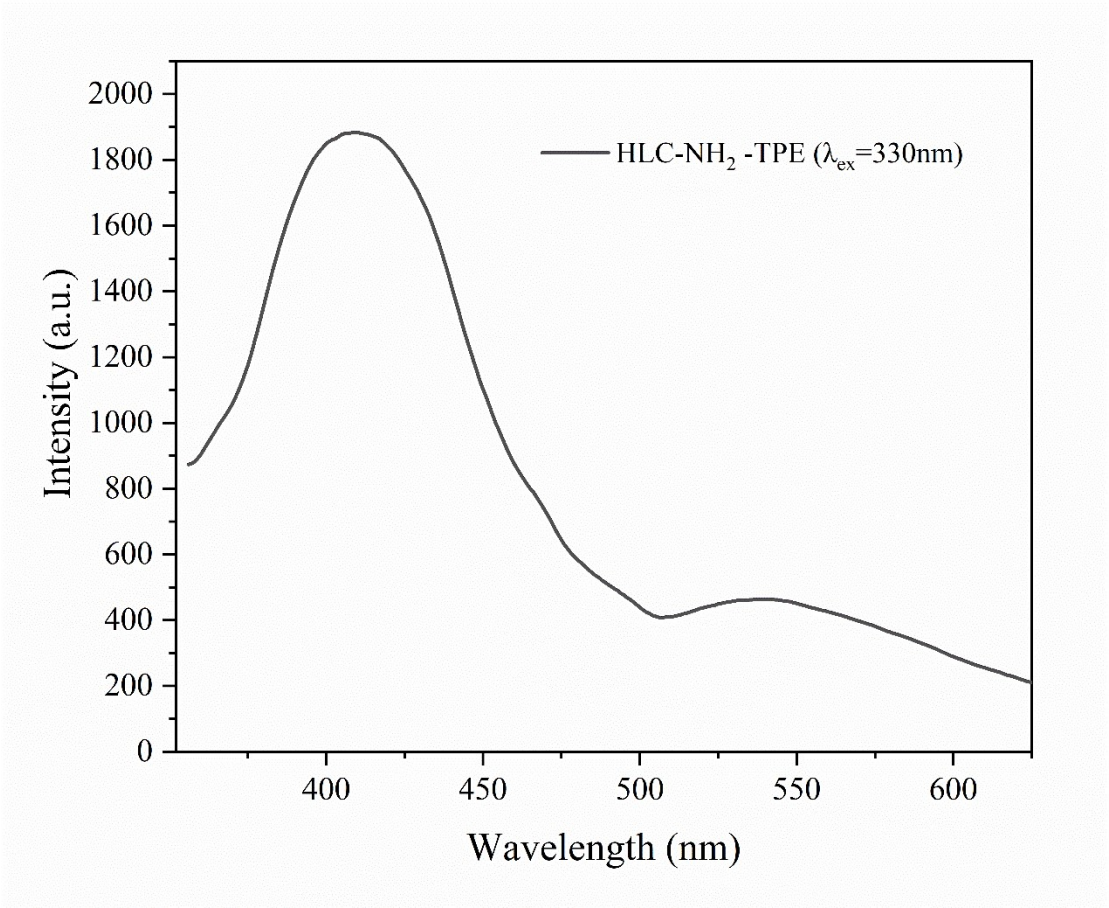

Figure S5 Solid-state fluorescence spectra of **HLC-NH$_2$-TPE** (λ_{ex}=330nm)

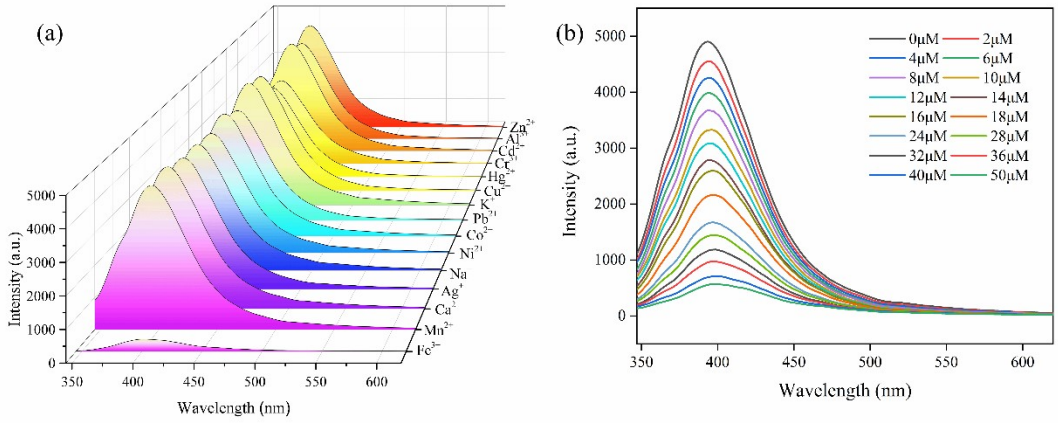

Figure S6 Fluorescence response of **HLC-NH$_2$** towards Fe^{3+} ions: (a) fluorescence intensities of **HLC-NH$_2$** in the solution of different metal ions; (b) emission spectra of **HLC-NH$_2$** in water with different concentrations of Fe^{3+}.

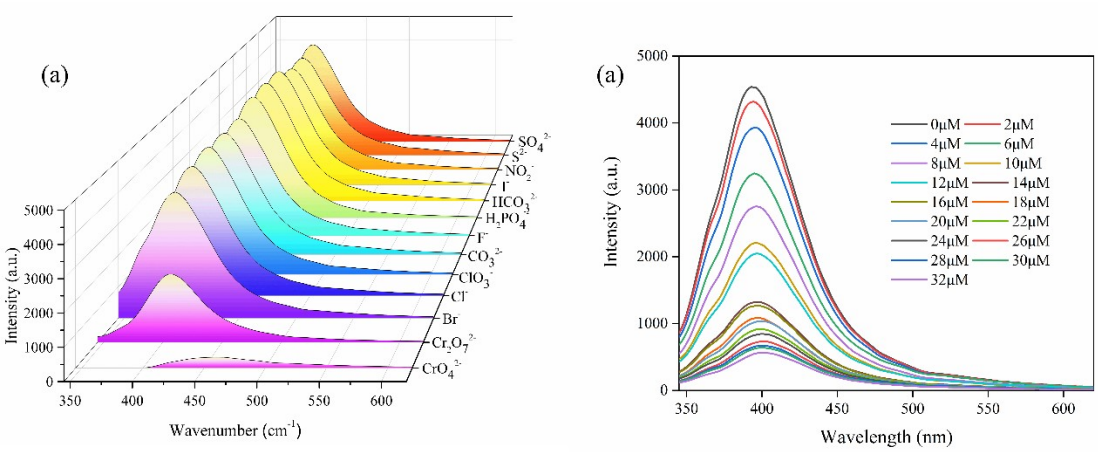

Figure S7 Fluorescence response of **HLC-NH$_2$** towards CrO_4^{2-} ions: (a) fluorescence intensities of **HLC-NH$_2$** in the solution of different anions; (b) emission spectra of **HLC-NH$_2$** in water with different concentrations of CrO_4^{2-}.

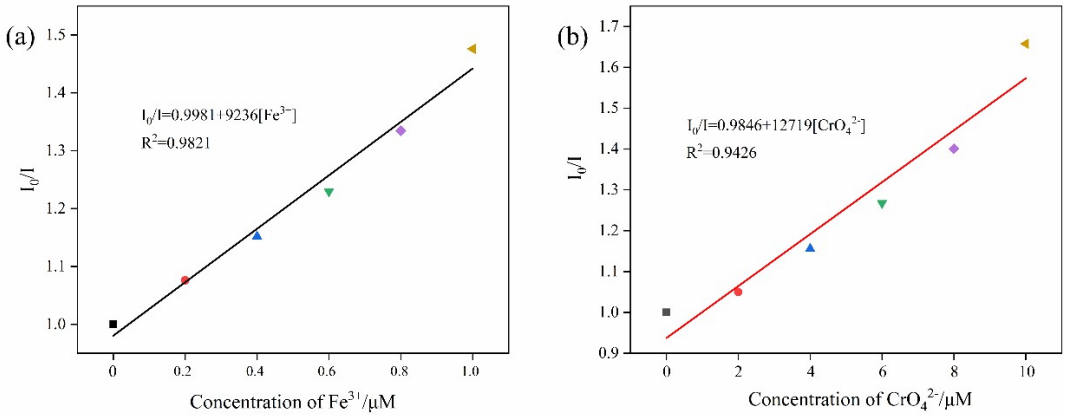

Figure S8 (a) The relationship between [I_0/I] and concentration of Fe^{3+} for **HLC-NH$_2$**. (b) The relationship between [I_0/I] and concentration of CrO_4^{2-} for **HLC-NH$_2$**.

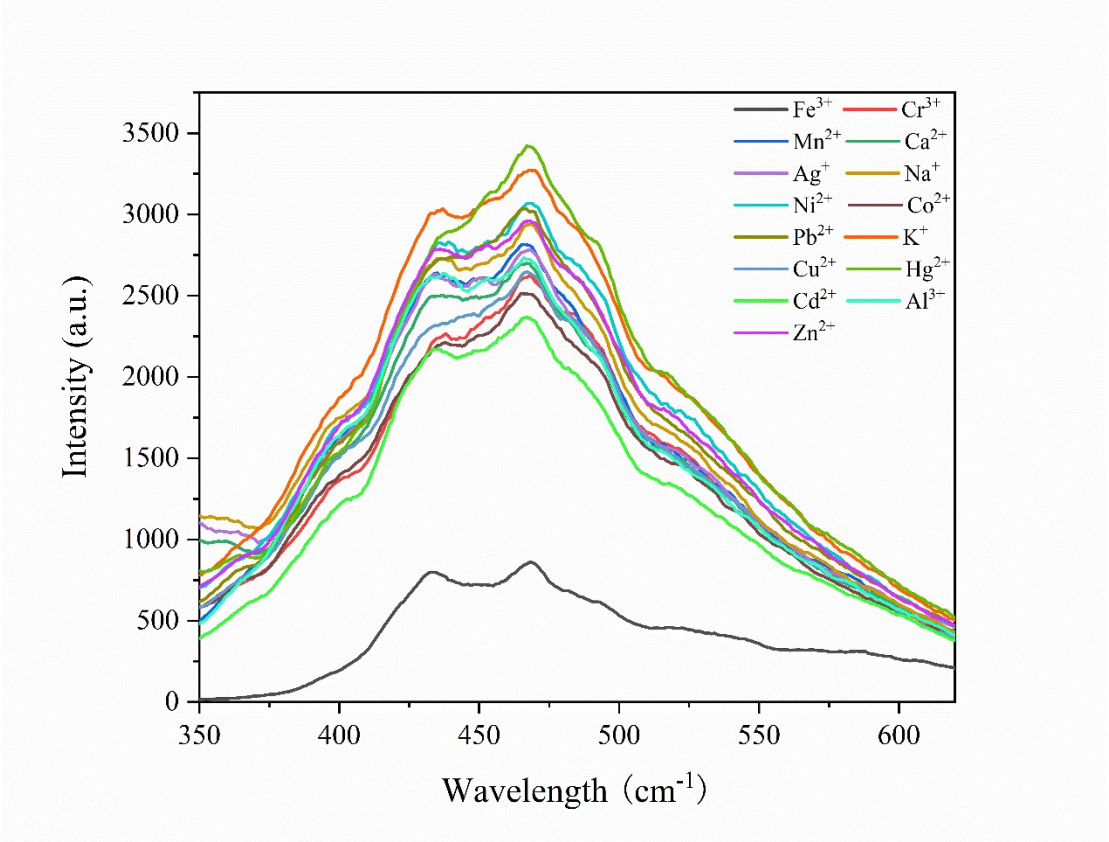

Figure S9 Fluorescence intensities of **HLC-NH_2-TPE** in the solution of different metal ions.

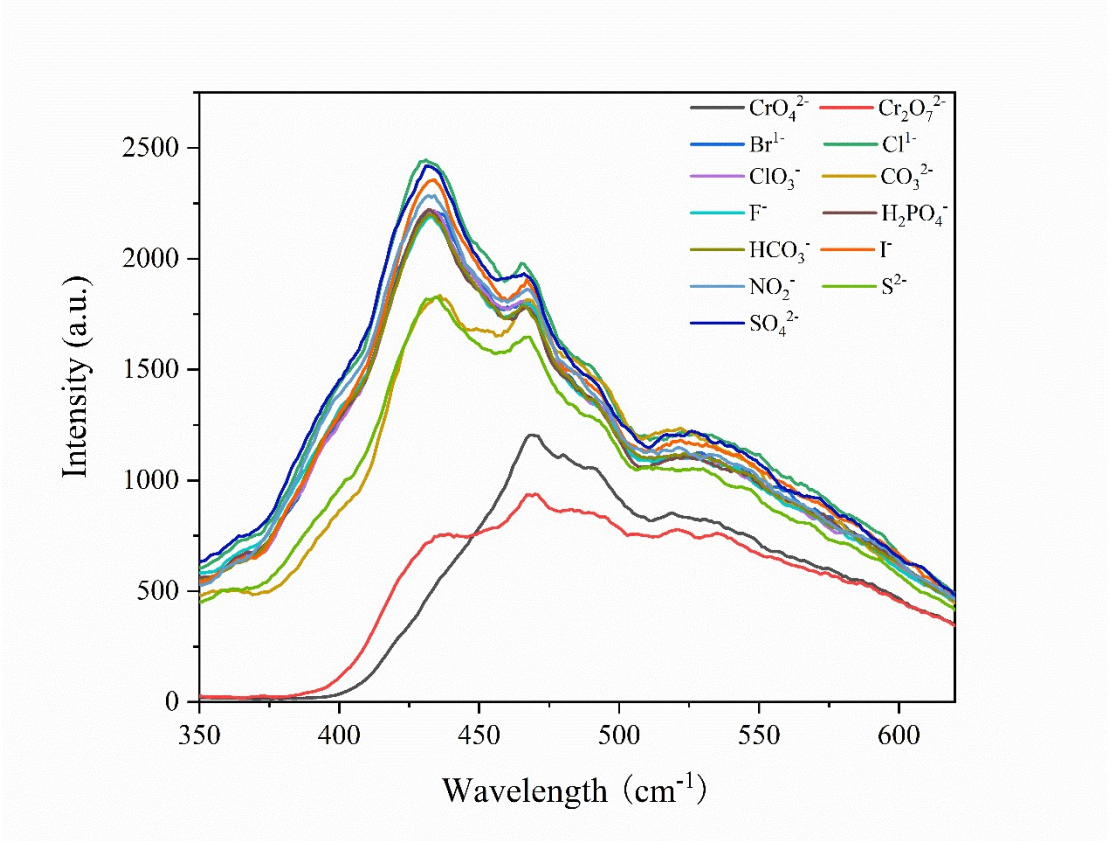

Figure S10 Fluorescence intensities of **HLC-NH_2-TPE** in the solution of different anions.

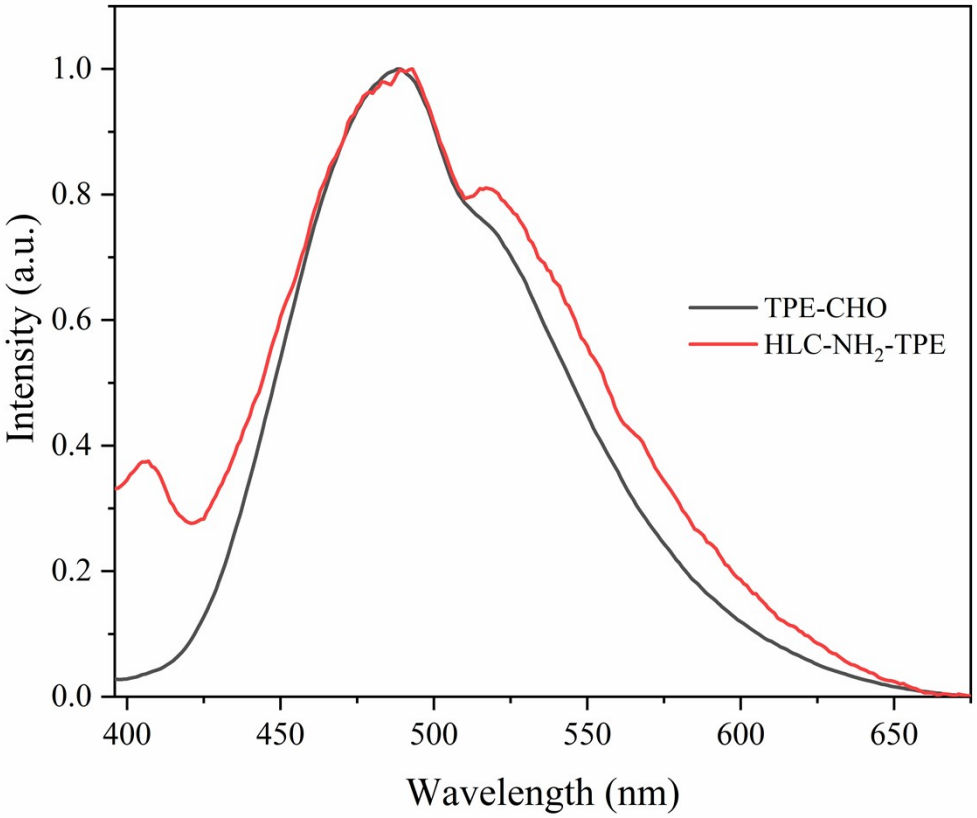

Figure S11 Luminescence spectrum of **HLC-NH_2-TPE** and TPE-CHO in THF/H_2O solution

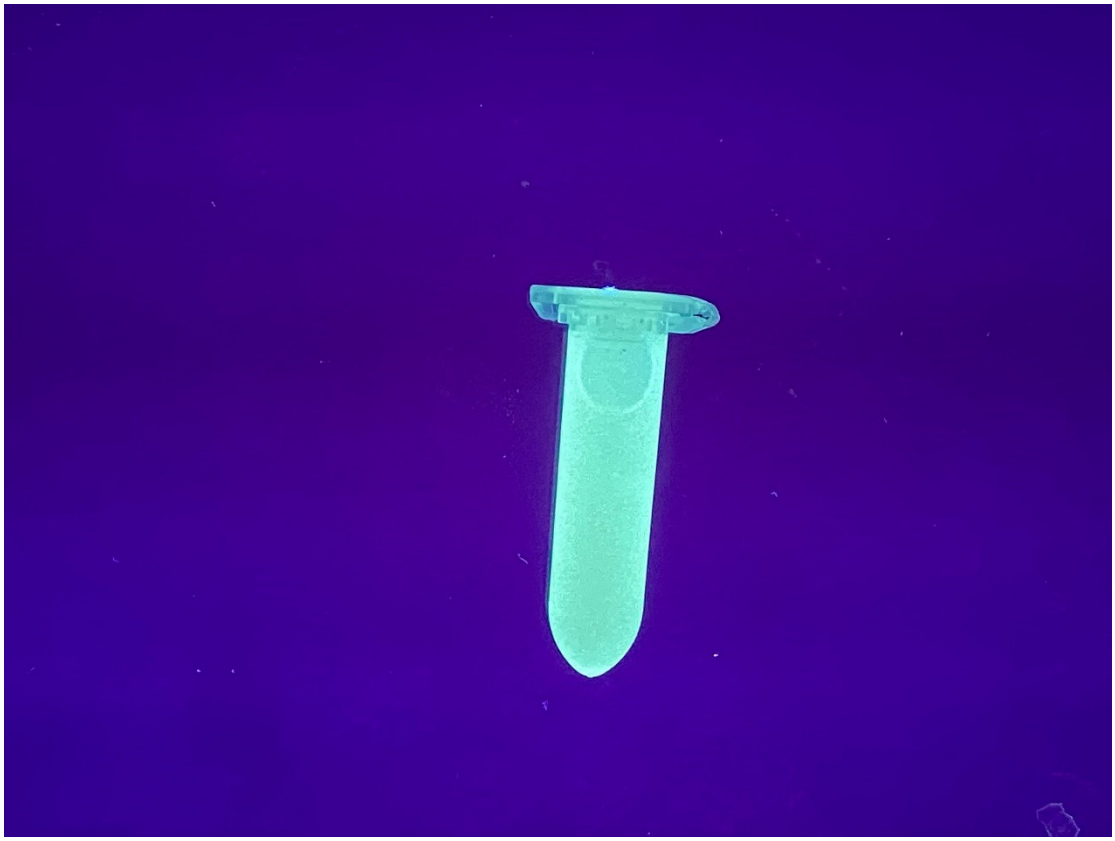

Figure S12 Luminescence photo of **HLC-NH_2-TPE** in water under UV light.

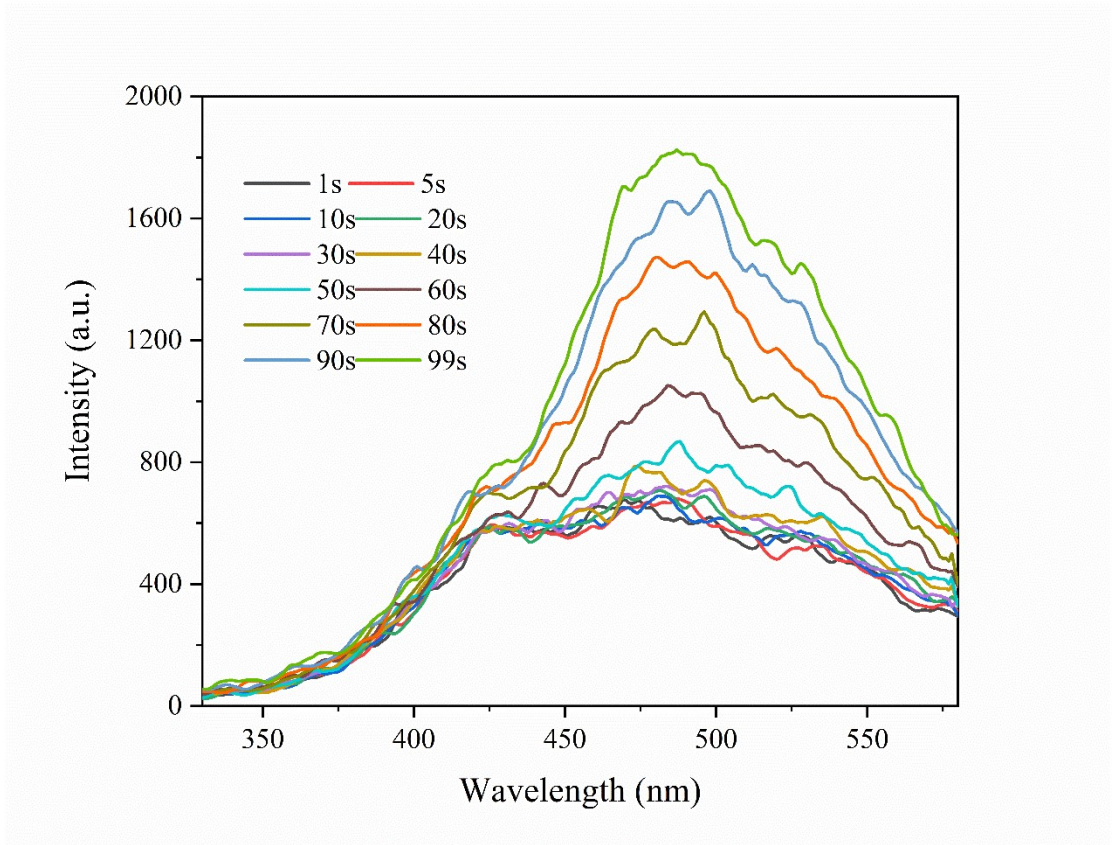

Figure S13 Luminescence spectrum of **HLC-NH_2-TPE** in DMSO/H_2O solution

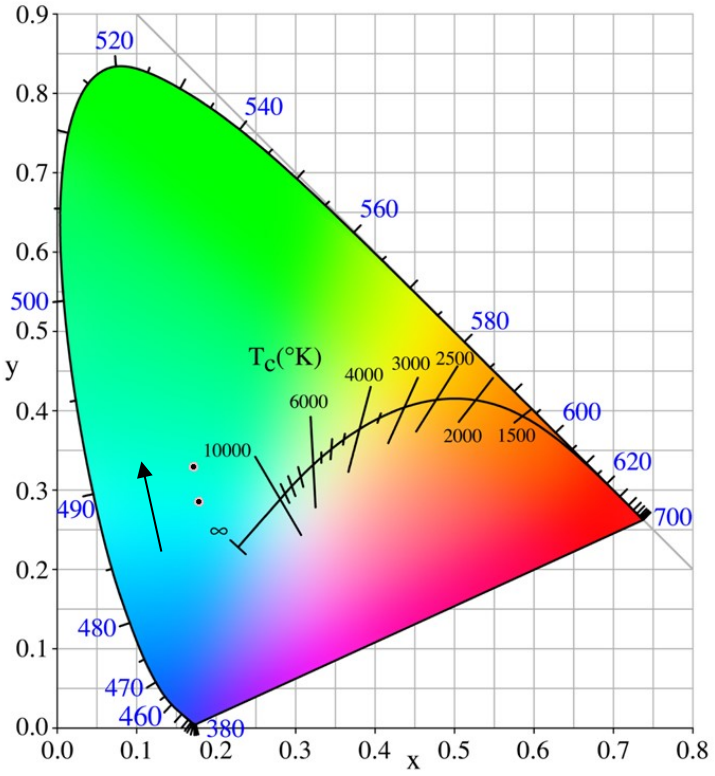

Figure S14 CIE properties of **HLC-NH_2-TPE** in DMSO/H_2O solution

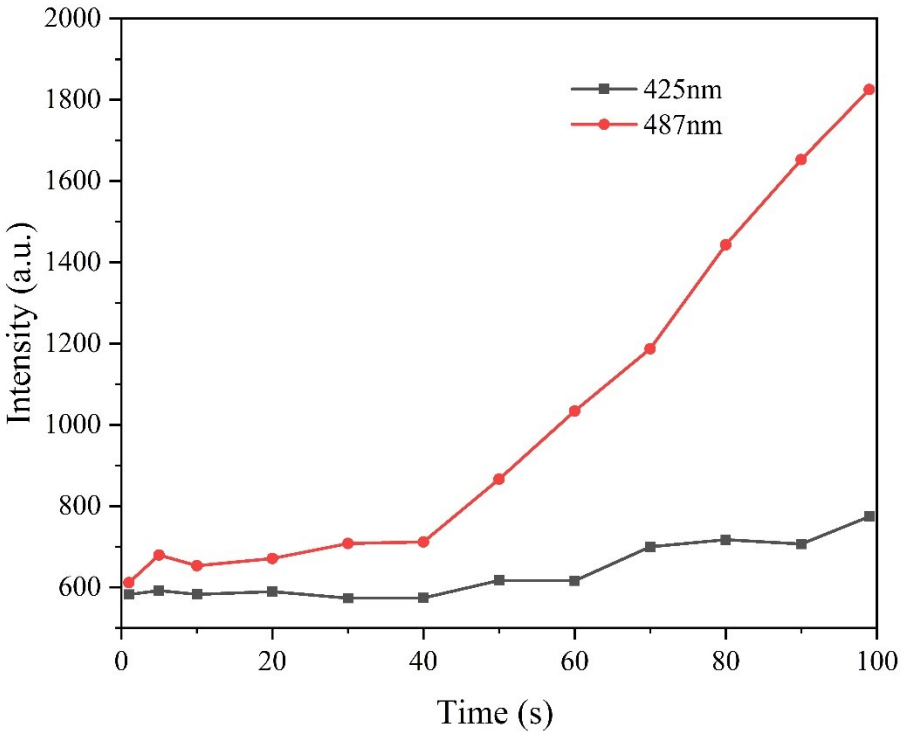

Figure S15 Luminescence intensity of **HLC-NH_2-TPE** in DMSO/H_2O solution

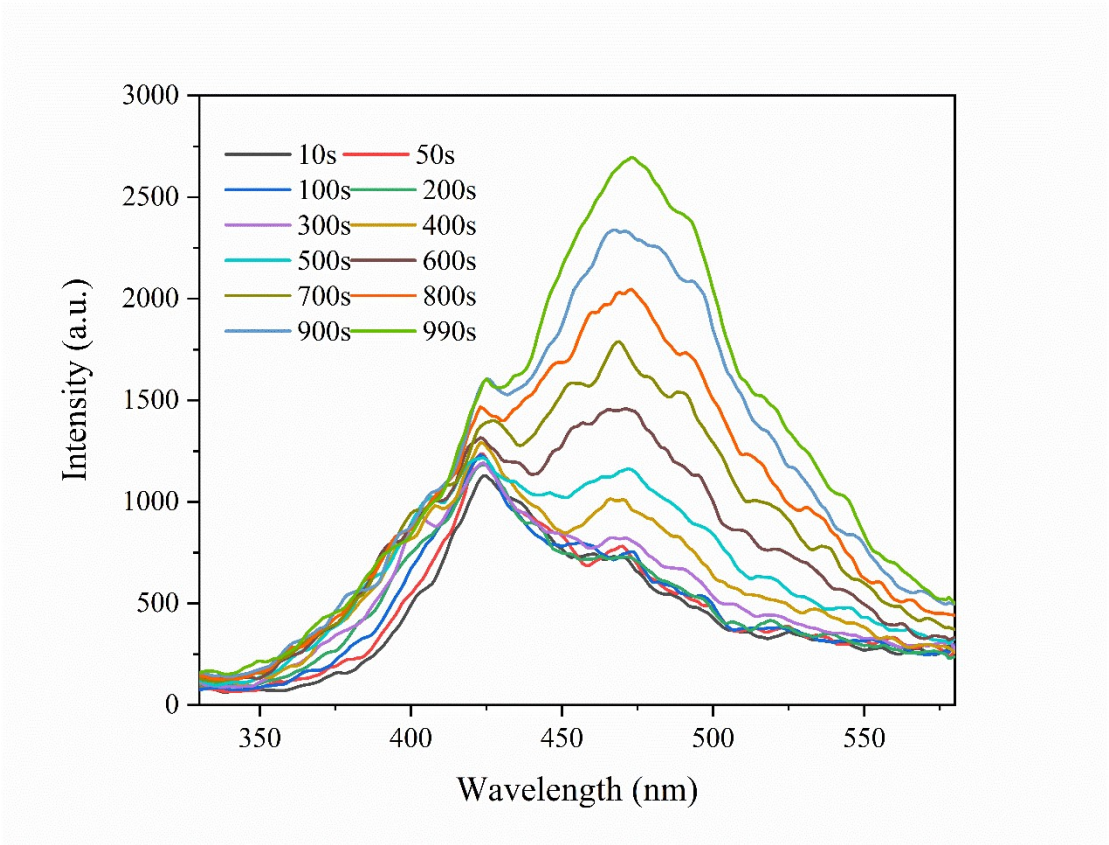

Figure S16 Luminescence spectrum of **HLC-NH_2-TPE** in THF/H_2O solution

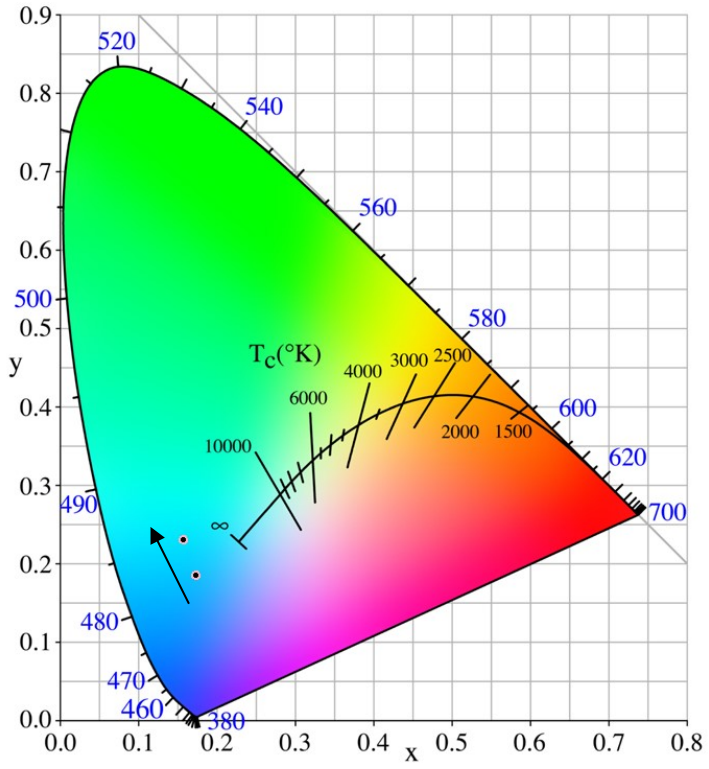

Figure S17 CIE properties of **HLC-NH_2-PE** in THF/H_2O solution

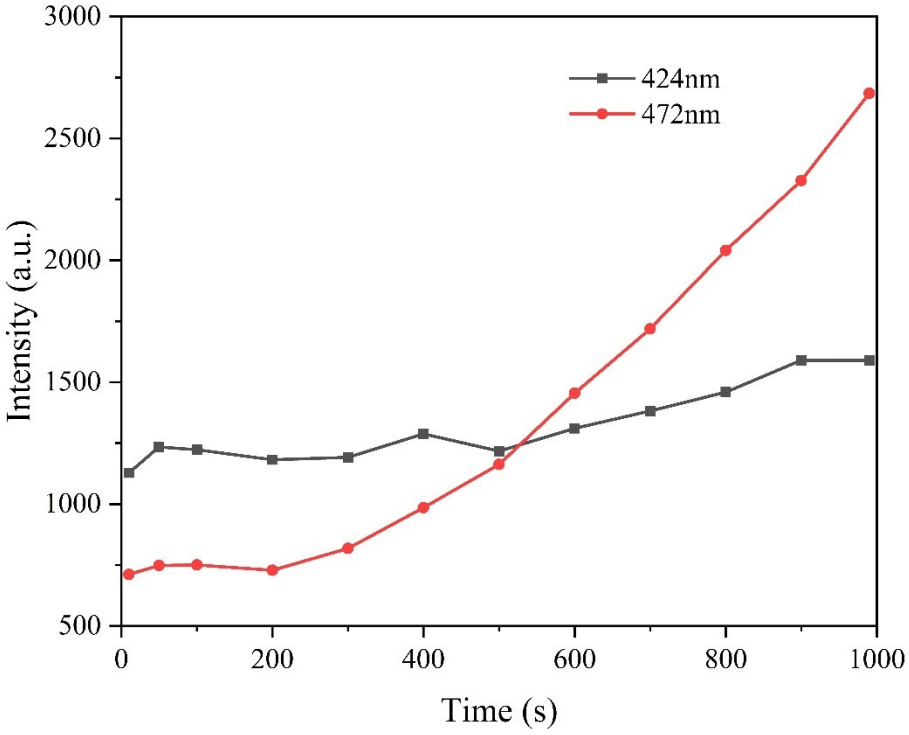

Figure S18 Luminescence intensity of **HLC-NH_2-TPE** in THF/H_2O solution

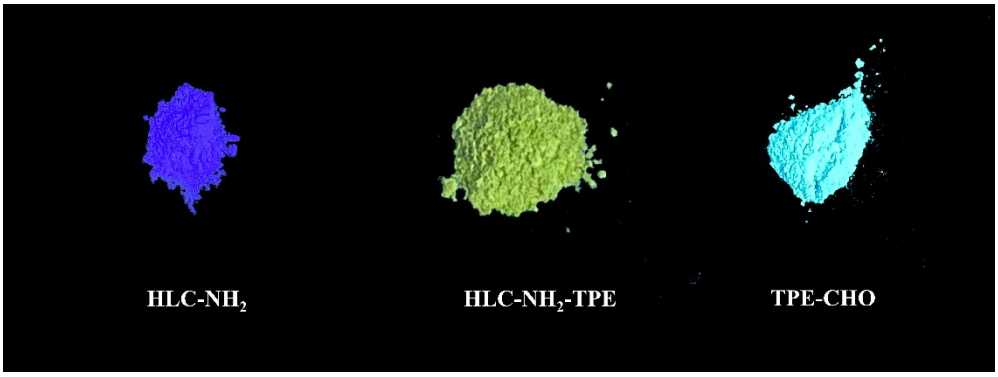

Figure S19 Photographs of **HLC-NH_2**, **HLC-NH_2-TPE**, TPE-CHO under the UV light

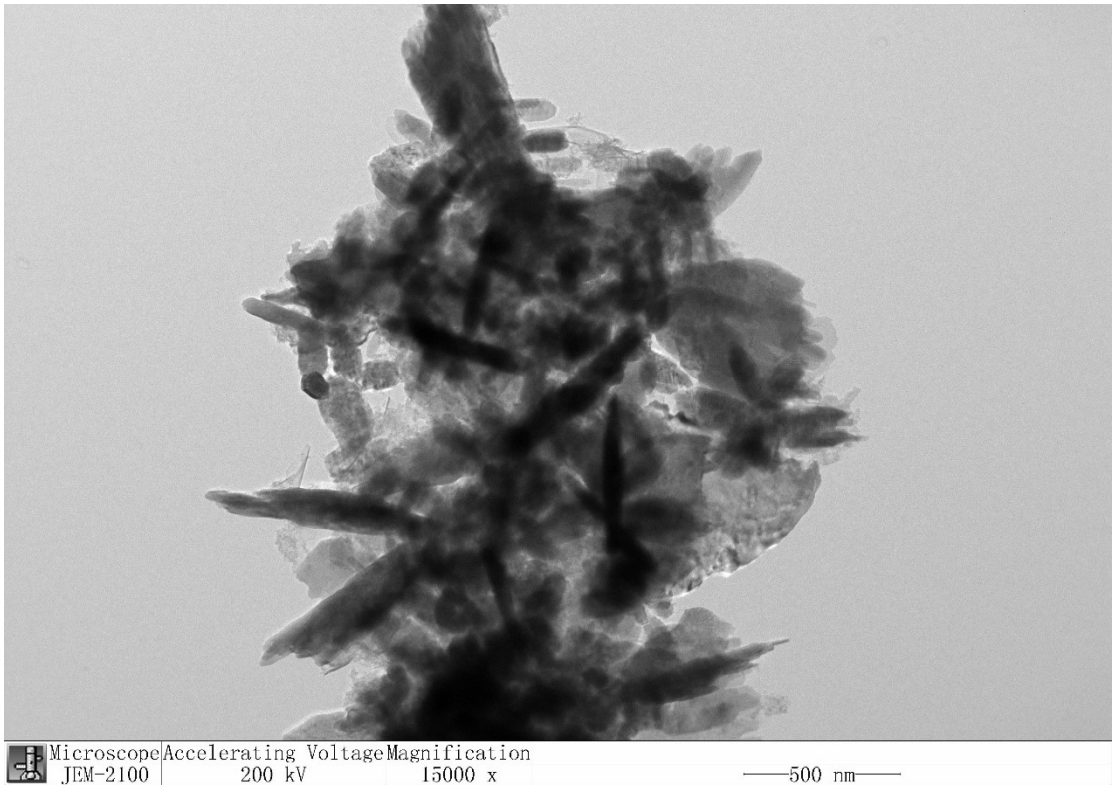

Figure S20 TEM photographs of **HLC-NH_2-TPE**

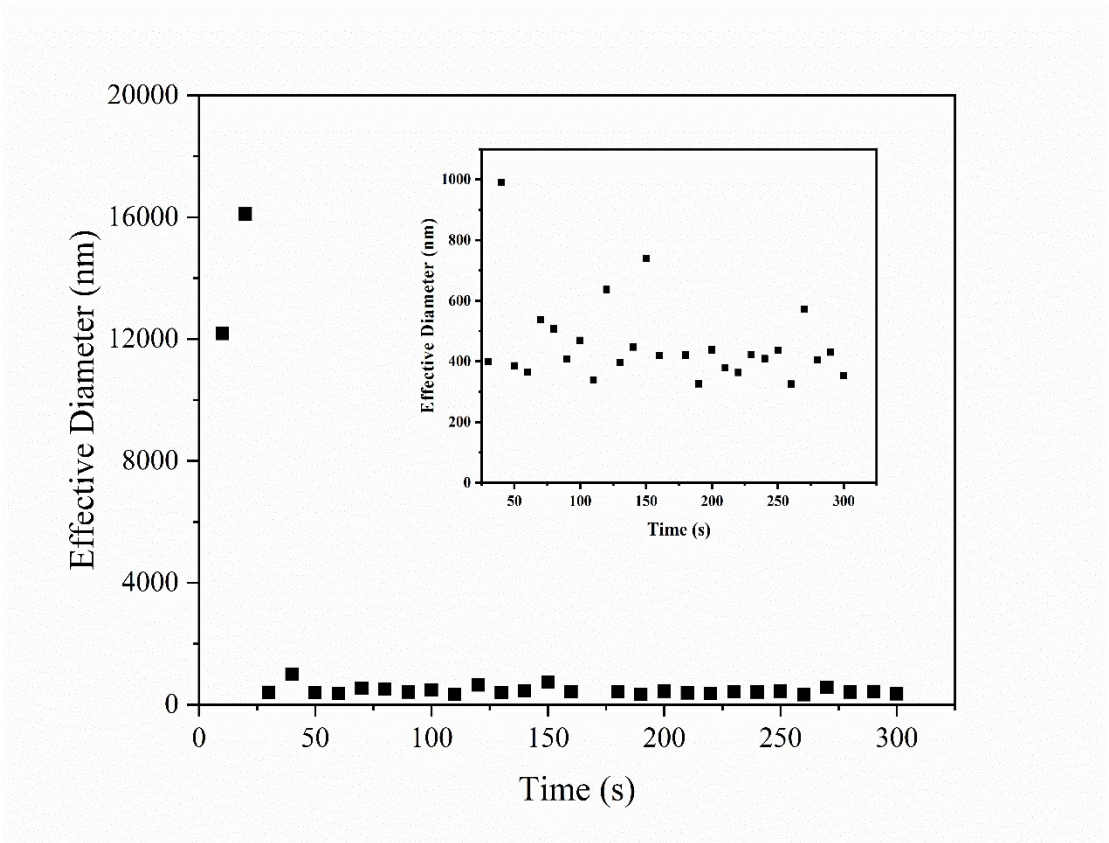

Figure S21 DLS photographs of **HLC-NH_2-TPE** in DMF/H_2O system

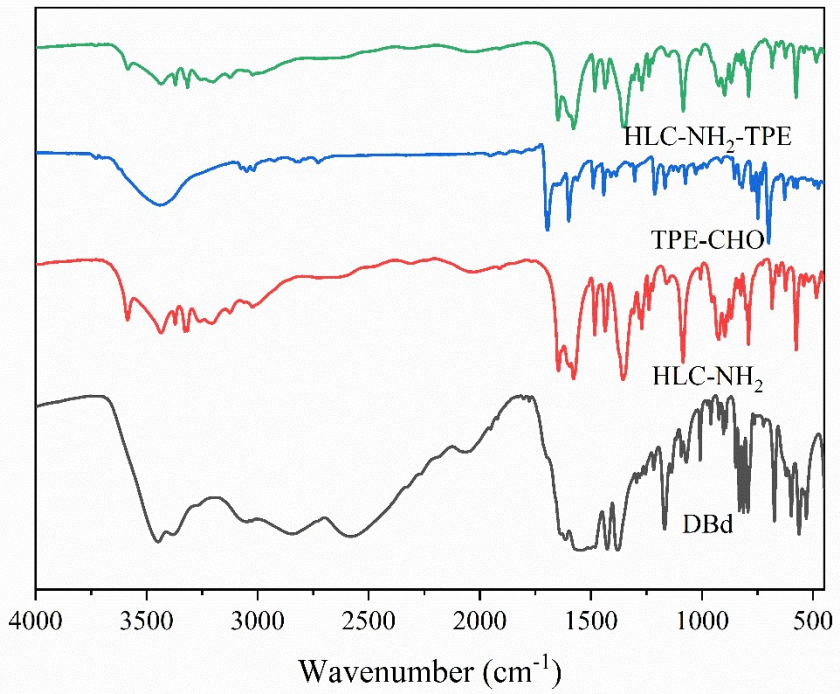

Figure S22 FTIR spectrum of DBd ligand, **HLC-NH_2**, TPE-CHO and **HLC-NH_2-TPE**

Table S1. The comparation table on AIEgens modified MOFs and CP

Skeleton	AIEgens	Method	Application	Reference
ZIF-8	APMP and its derivatives	binding	Fluorescent probe[1]	1
ZIF-8	AuNCs	encapsulation	Fluorescent probe[2]	2
CD-MOF	L-Cys/Au(I)	co-crystallization	Fluorescence Complex[3]	3
MOF-199	TPATrzPy-3+	load	Photodynamic Therapy[4]	4
KUMOF	TPE-CL4	crosslinking reaction	Crystal crosslinked gels[5]	5
ZIF-8	HDBB	encapsulation	Fluorescent probe[6]	6
Cu-MOF	PS	load	Photodynamic Therapy[7]	7
NUS-13	BODCA	organic ligand replacement	Fluorescence sensor[8]	8
UiO-66	TPE-COOH	organic ligand replacement	Fluorescence sensor[9]	9
MIL-100	PS	encapsulation	Photodynamic Therapy[10]	10
γ-CD-MOF-K	TPE	encapsulation	Fluorescence detectors[11]	11
UiO-68	H_2-etpdc	organic ligand replacement	Photocatalytic and Fluorescent probe[12]	12
HLC-NH_2	TPE-CHO	covalent post-synthetic modification	Fluorescence sensor	This work

Table S2. Crystal Data and Structure Refinement Summary for **HLC-NH_2**

Name	**HLC-NH_2**
formula	$C_{28}H_{26}N_4O_{11}Zn_2$
molecular weight	725.27
crystal system	Monoclinic
space group	$P2_1/n$
a (Å)	7.9486 (9)
b (Å)	12.9217 (15)
c (Å)	13.9630(17)
α (deg)	90
β (deg)	90.085 (6)
γ (deg)	90
V (Å^3)	1434.1 (3)
Z	2
D_{calcd} (g·cm^{-3})	1.680
μ (MoK_α) (mm^{-1})	1.742
F(000)	740.0
reflections collected/unique	13943/2885
R_{int}	0.0834
data/restraints/parameters	2885/0/211
GOF on F_2	1.087
R_1[a]/wR_2[b] [$I > 2\sigma(I)$]	0.0565,0.1350
R_1[a]/wR_2[b] [all data]	0.0868,0.1599
largest residues (e A^{-3})	0.81/-0.97

[a] $R1 = \sum||F_o|-|F_c||/\sum|F_o|$, [b] $wR^2 = [\Sigma w(F_o^2 - F_c^2)^2 / \Sigma w(F_o^2)^2]^{1/20}$

Table S3. Selected bond lengths [Å] and angles [°] for **HLC-NH_2**

Zn1-O5	1.983 (3)	Zn1-O3	1.975 (3)
Zn1-O1	1.978 (3)	Zn1-N1	2.028 (4)
O1-C1	1.314 (6)	O3-C6	1.295 (6)
O4-C6	1.232 (6)	O2-C1	1.239 (6)
N1-C7	1.444 (6)	N2-C4	1.417 (6)
O5-Zn1-N1	116.65 (15)	O1-Zn1-O5	112.19 (14)
O1-Zn1-N1	107.11 (16)	O3-Zn1-O5	105.00 (15)
O3-Zn1-N1	116.08 (16)	O3-Zn1-O1	98.43 (14)

Reference

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