

**Multifunctional Luminescent Coordination Polymer Based on Tricarboxylic acid for
Detections of 2,4-Dinitrophenol and Iron(III) and Aluminum(III) Ions**

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Table S1. Selected bond distance (Å), angle (°) and hydrogen-bond geometry data for **1**.

Bond Lengths (Å)				
Zn1—O4 ⁱ	1.992 (8)	Zn1—O3 ⁱⁱ	1.975 (8)	
Zn1—O1	1.934 (8)	Zn1—N1	2.015 (8)	
Angles (°)				
O4 ⁱ —Zn1—N1	104.0 (4)	O1—Zn1—N1	134.4 (4)	
O1—Zn1—O4 ⁱ	100.8 (3)	O3 ⁱⁱ —Zn1—O4 ⁱ	108.6 (3)	
O1—Zn1—O3 ⁱⁱ	110.2 (3)	O3 ⁱⁱ —Zn1—N1	97.3 (3)	
Hydrogen-bond geometry (Å, °)				
<i>D</i> —H··· <i>A</i>	<i>D</i> —H	H··· <i>A</i>	<i>D</i> ··· <i>A</i>	<i>D</i> —H··· <i>A</i>
O7—H7A···O2 ^v	0.85	1.91	2.744 (13)	165
O7—H7B···O1 ^{vi}	0.85	2.01	2.848 (13)	169
O5—H5A···O7	0.82	1.75	2.53 (2)	159

Symmetry codes: (i) $-x+3/2, -y+1/2, -z+1$; (ii) $x, y+1, z$; (v) $x-1/2, -y+1/2, z+1/2$; (vi) $-x+1, -y+1, -z+1$.

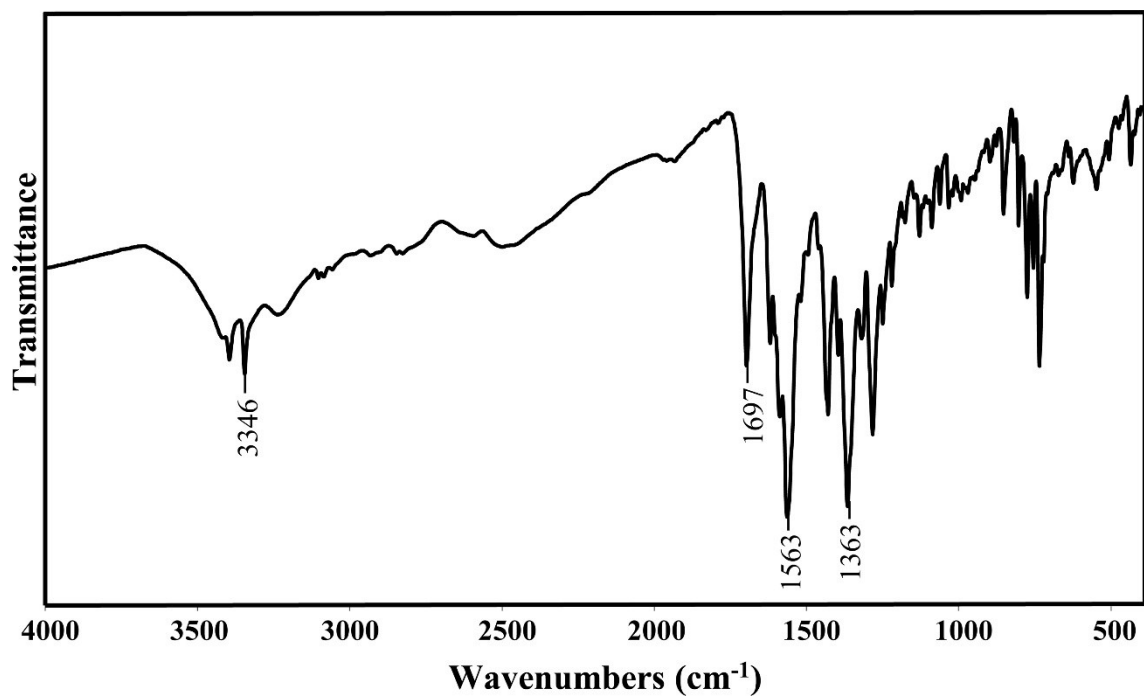


Fig. S1. IR spectrum of 1

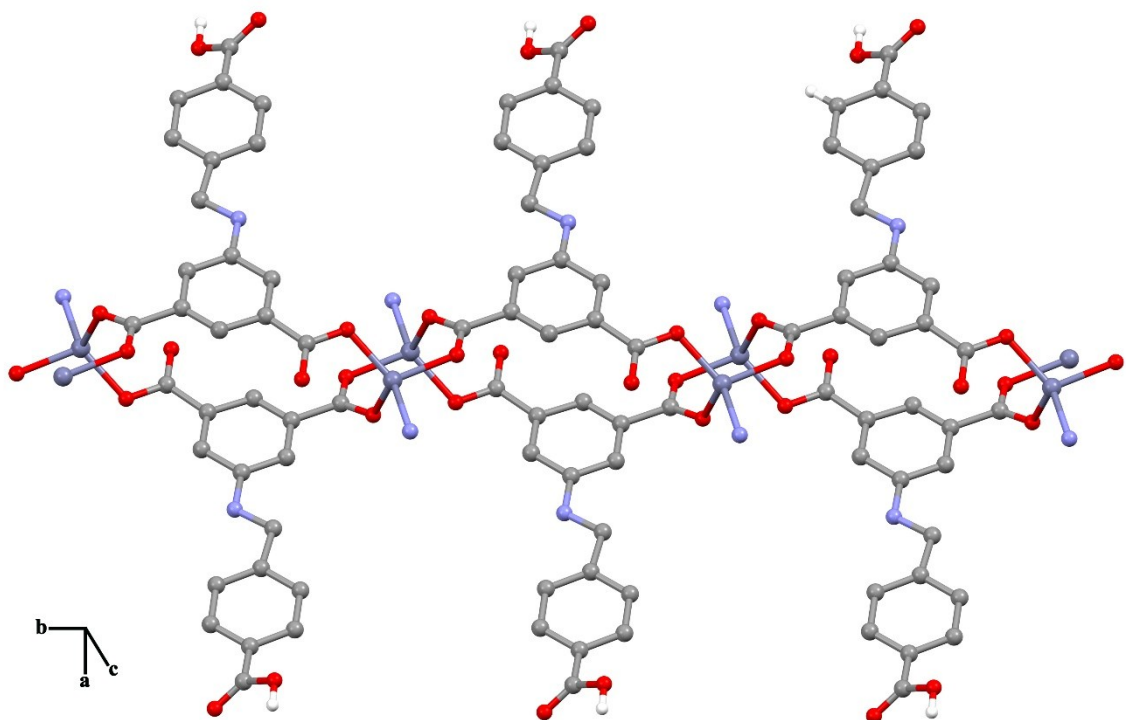


Fig. S2. 1D double chain of **1**

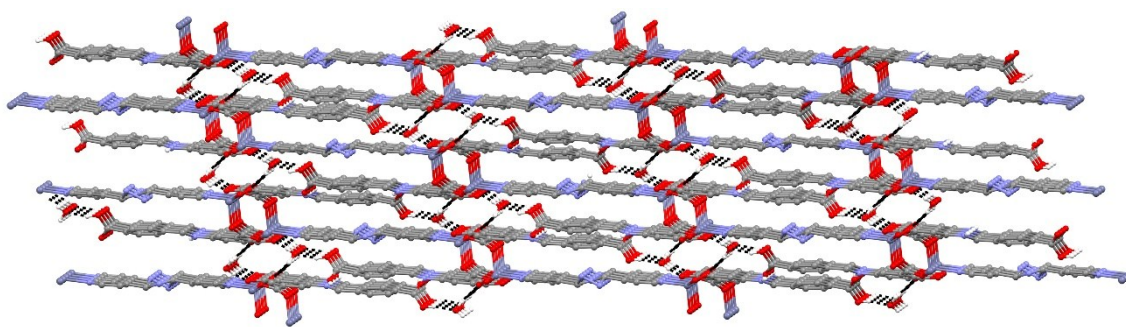


Fig. S3. 3D supramolecular structure of **1**

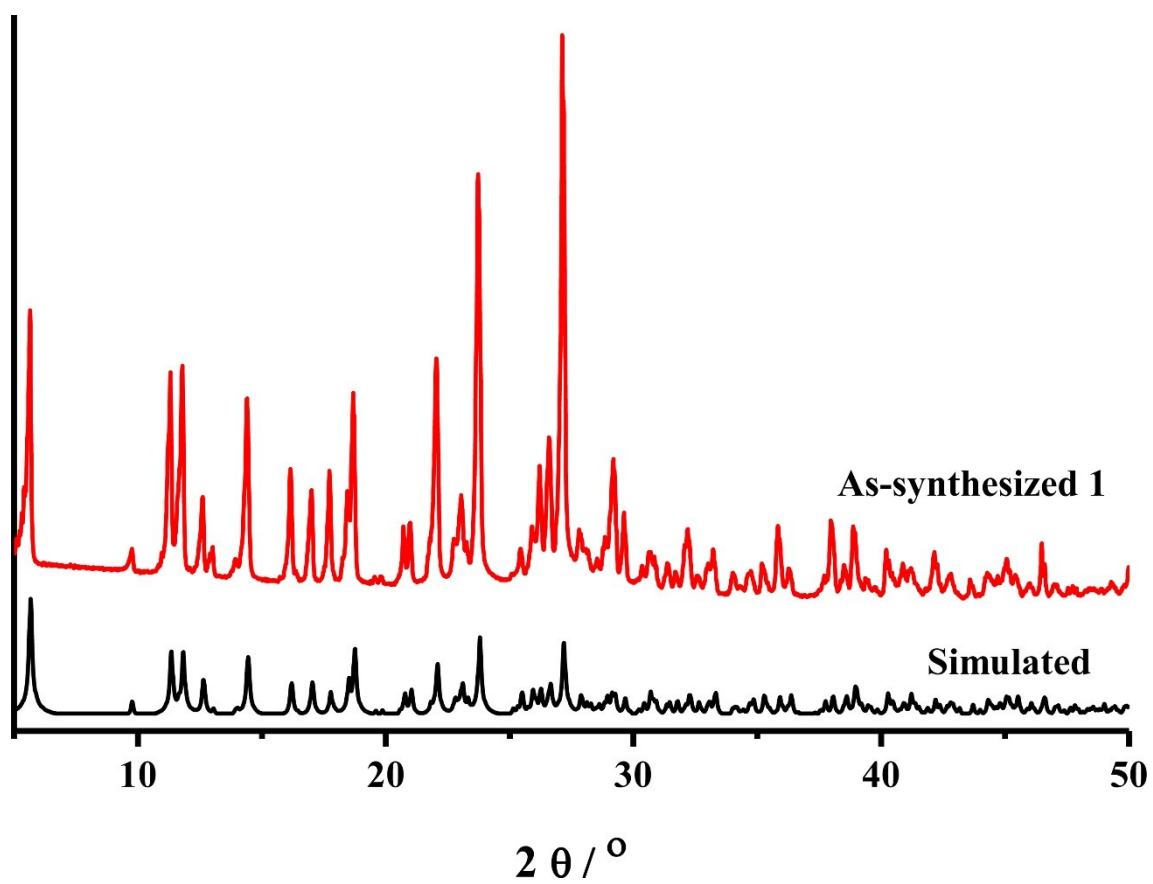


Fig. S4. PXRD patterns of simulated and as-synthesized 1

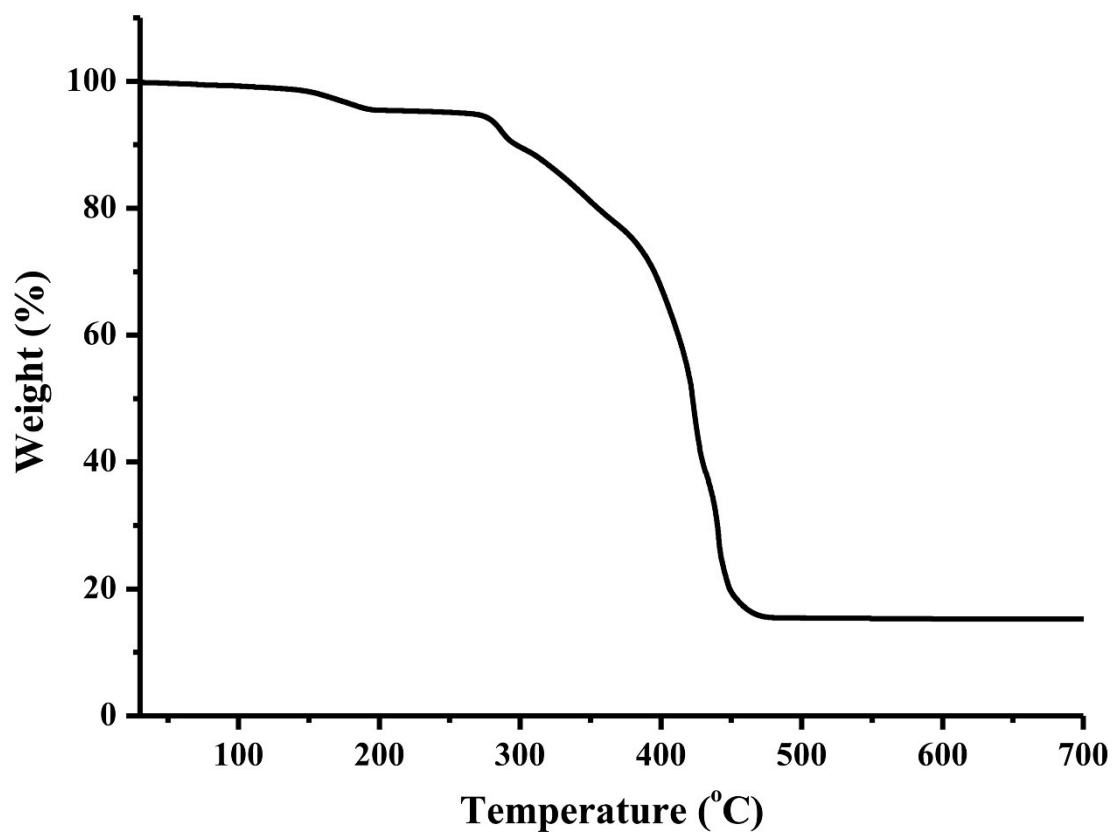


Fig. S5. TG curve of complex 1

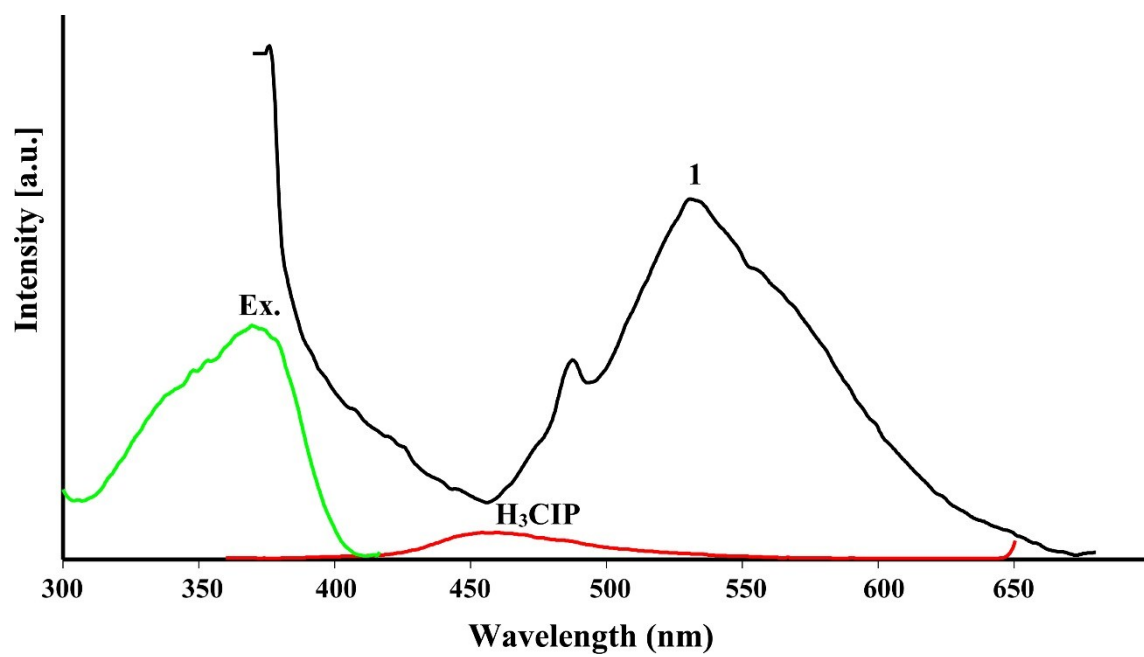


Fig. S6. Solid state excitation (Ex.) and emission spectra of free ligand H₃CIP and complex **1**

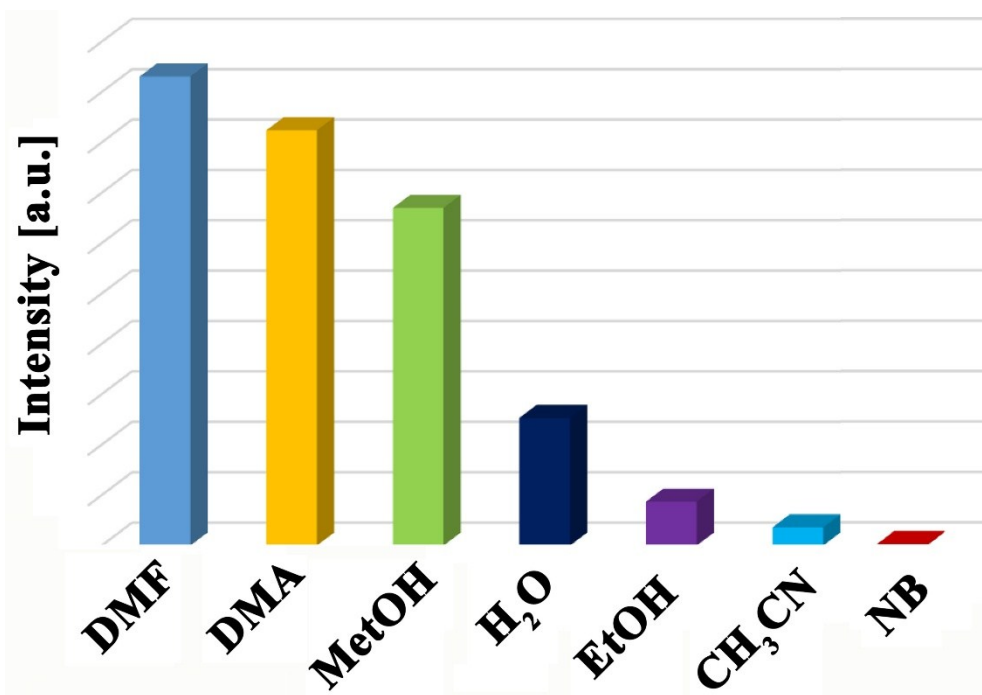


Fig. S7. A comparison of luminescence intensity of 1 dispersed in different organic solvents

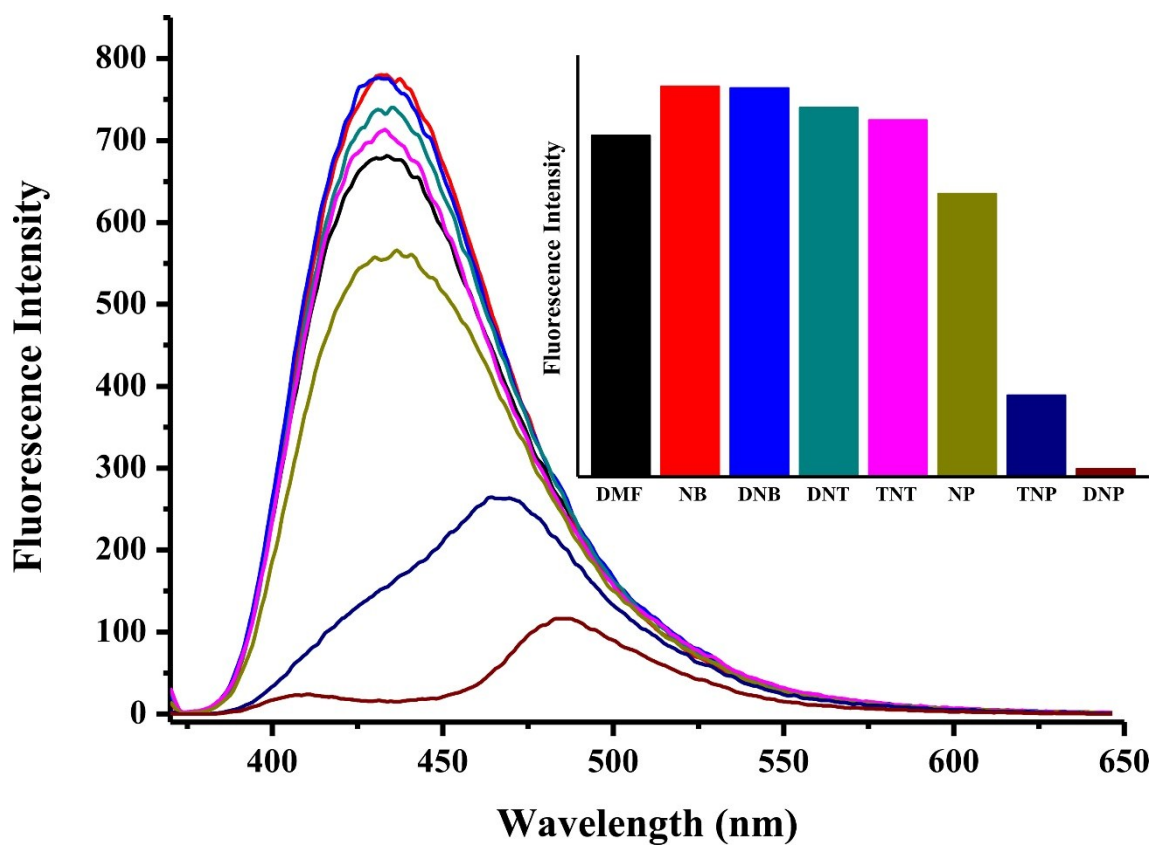


Fig. S8. Fluorescence spectra of complex **1** in the presence of various nitroaromatic compounds. Change of luminescence intensity histogram of **1** in the presence of different nitroaromatic compounds as a bar diagram (inset).

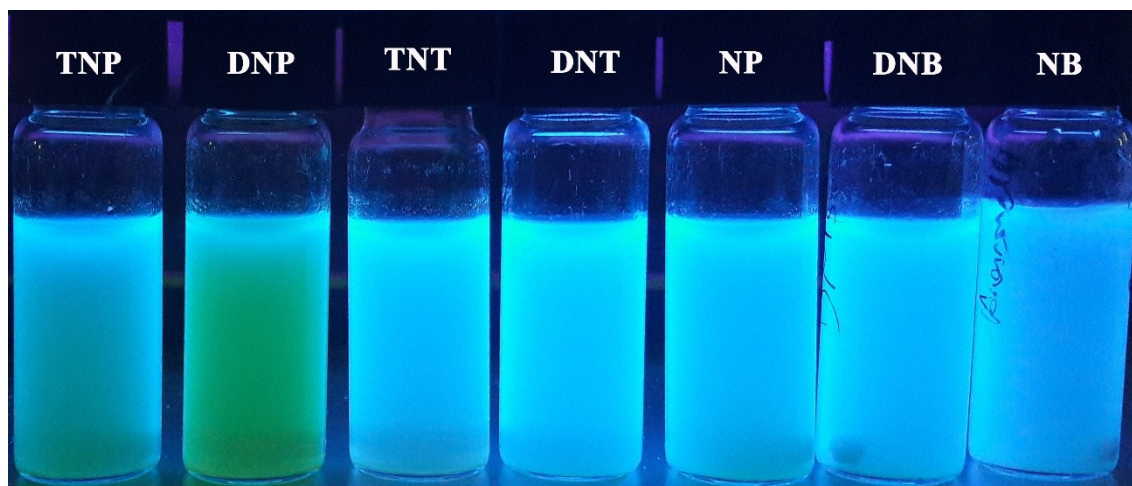


Fig. S9. The visual color changes of complex **1** dispersed in DMF after the addition of nitroaromatic compounds under UV-light

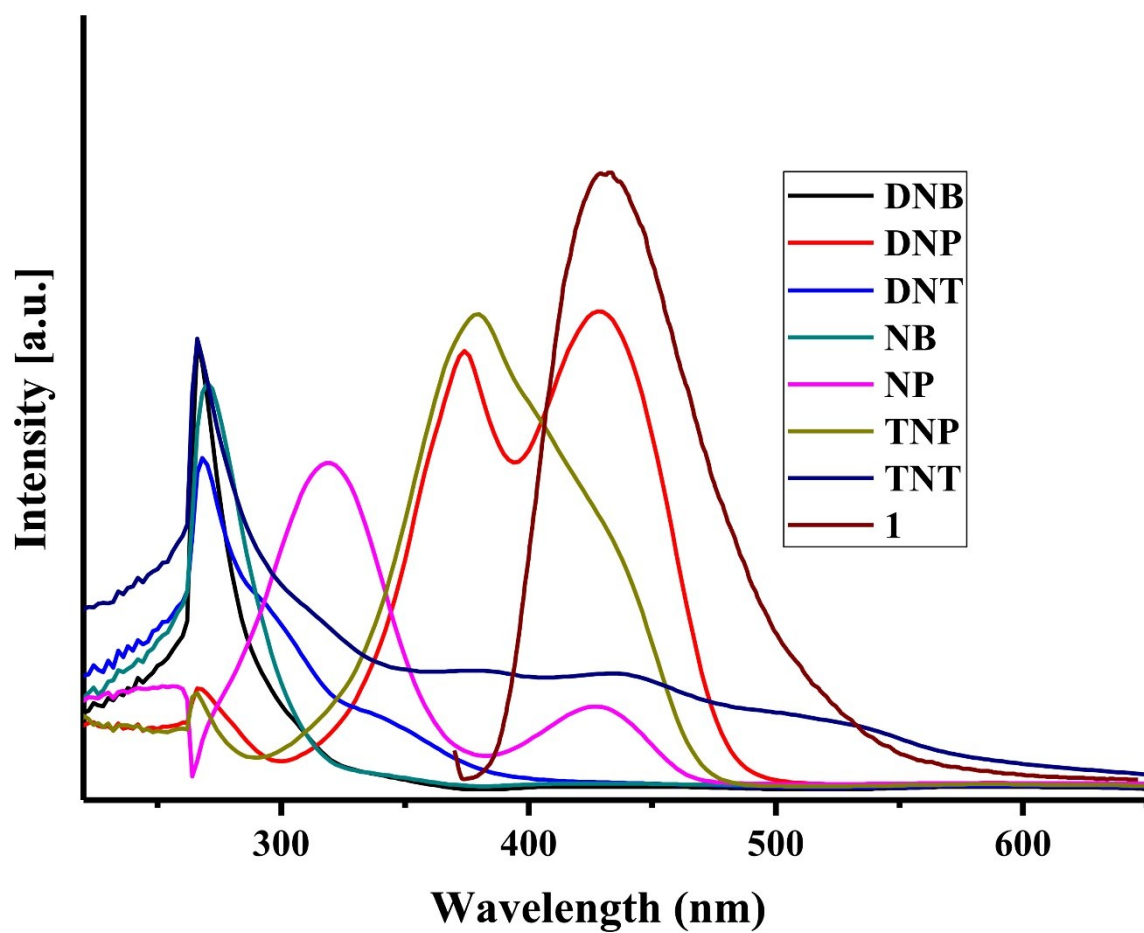


Fig. S10. Spectral overlap between the absorption spectra of nitroaromatic compounds and the emission spectrum of complex **1** in DMF

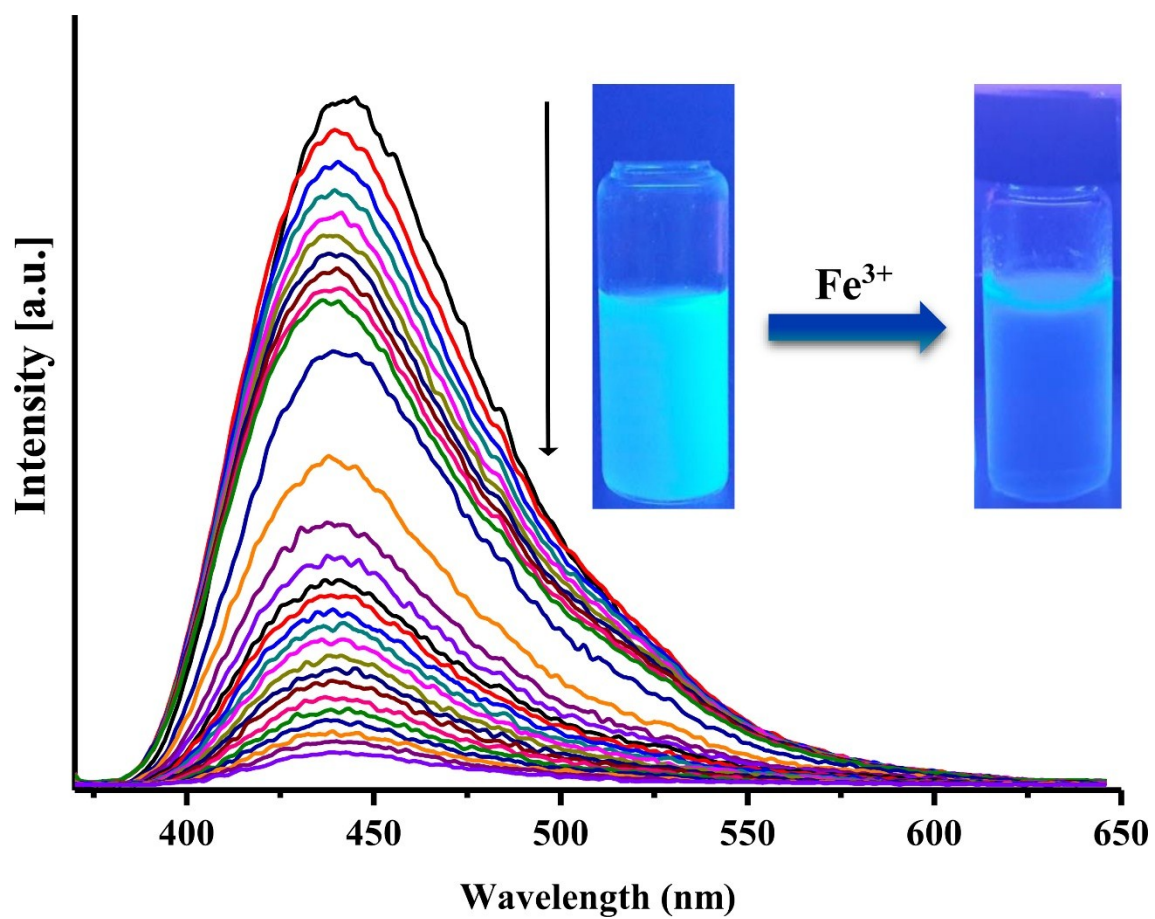


Fig. S11. Emission spectra of **1** dispersed in DMF upon incremental addition of Fe³⁺ in DMF

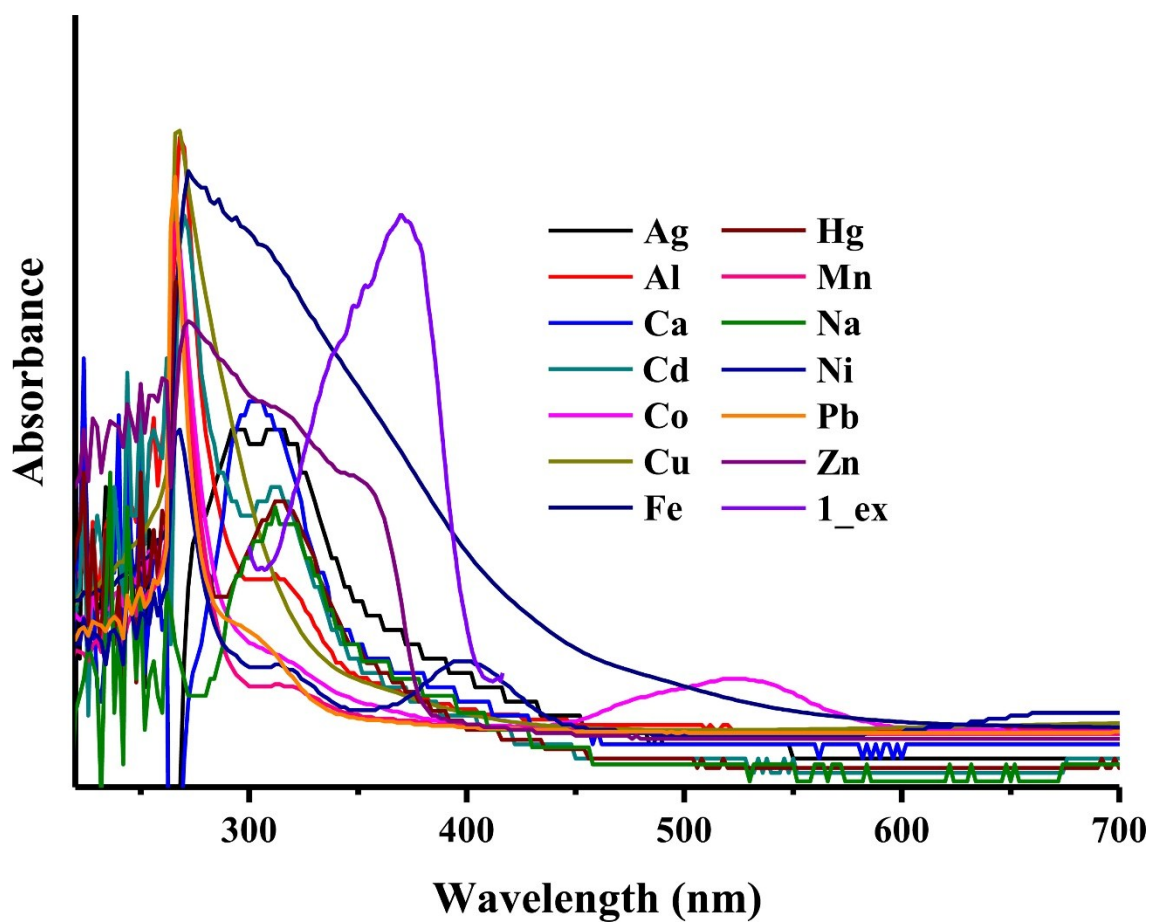


Fig. S12. The spectral overlap between absorption spectra of metal ion and excitation spectrum of **1** in DMF

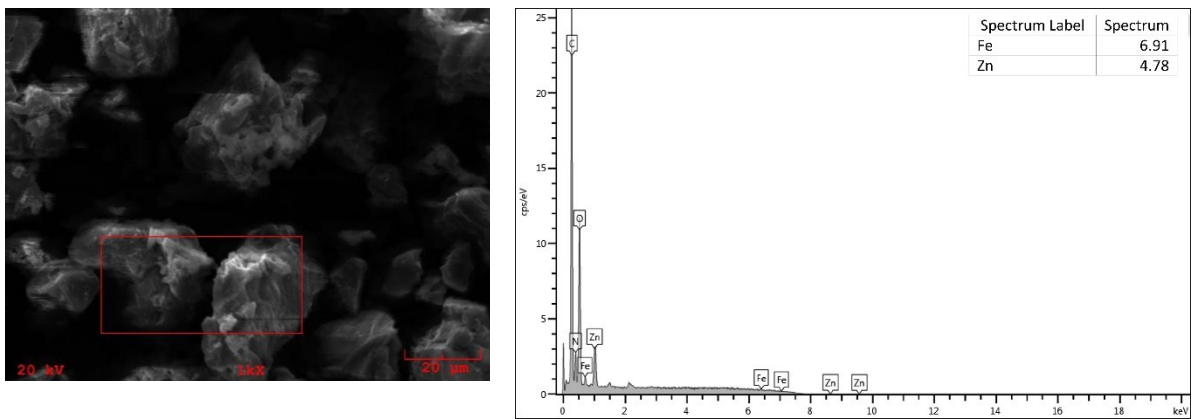


Fig. S13. SEM image and EDX spectrum of recovered complex **1** after immersed in Fe^{3+} solution.

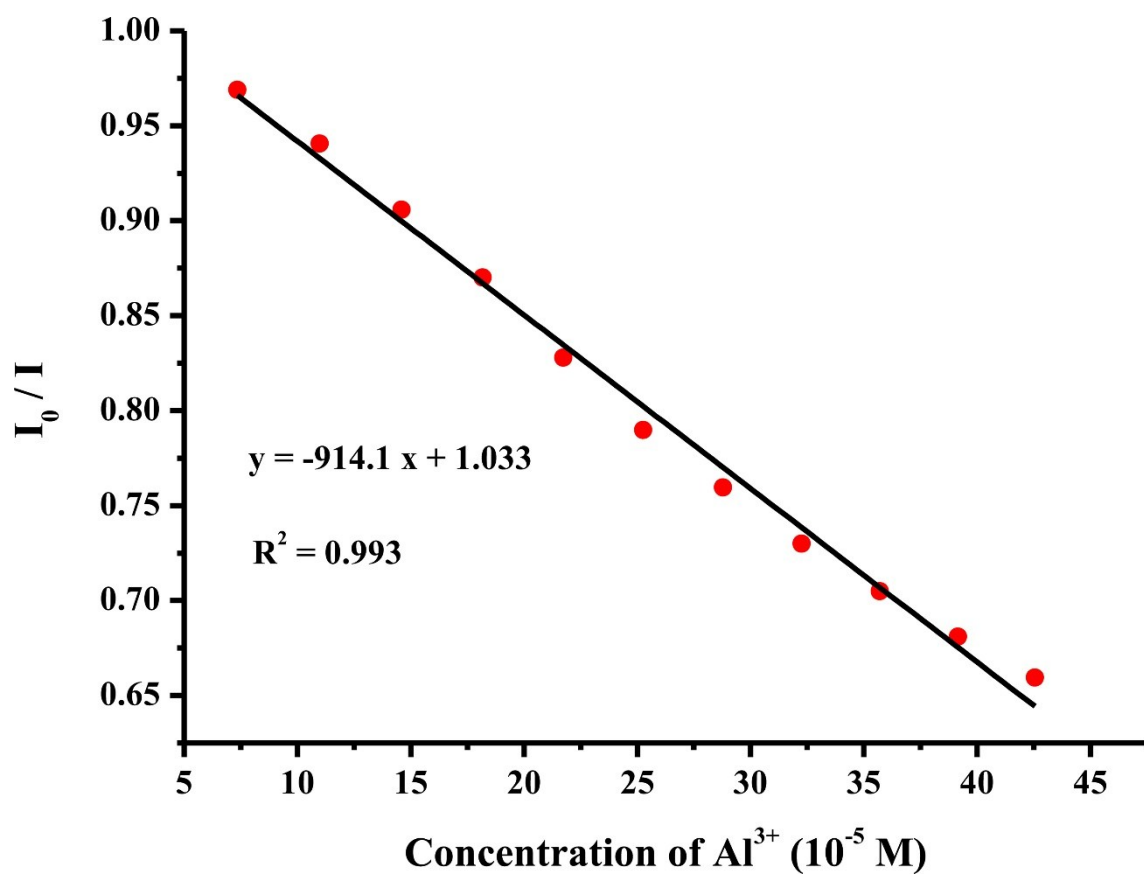


Fig. S14. Emission quenching linearity relationship at low concentration of Al^{3+}

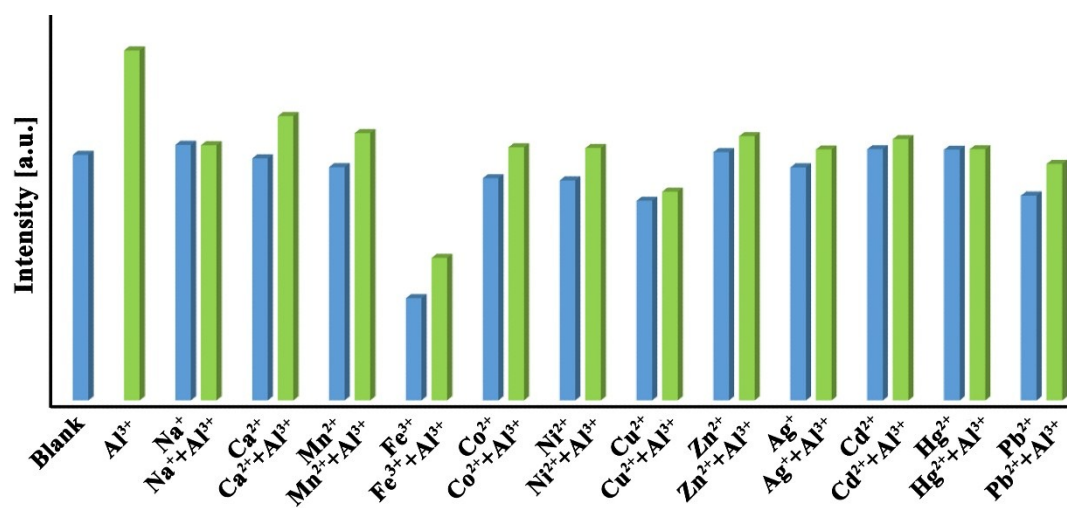


Fig. S15. Luminescence intensity histograms of **1** in the presence of various metal ions (10^{-2} M, 300 μ L) in DMF solution without and with Al³⁺ ions (10^{-2} M, 300 μ L).

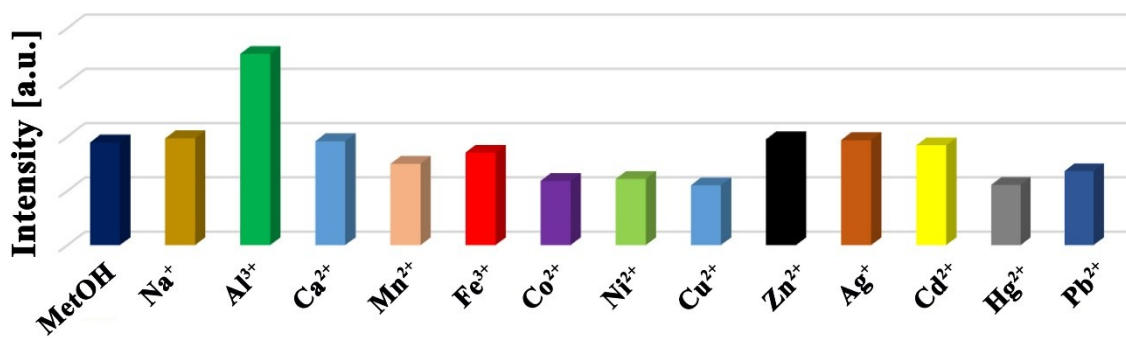


Fig. S16. Luminescence intensity histograms of complex **1** (3.0 mg, 2.7 mL) dispersed in methanol in the presence of different metal ions (10^{-3} M, 0.3 mL).

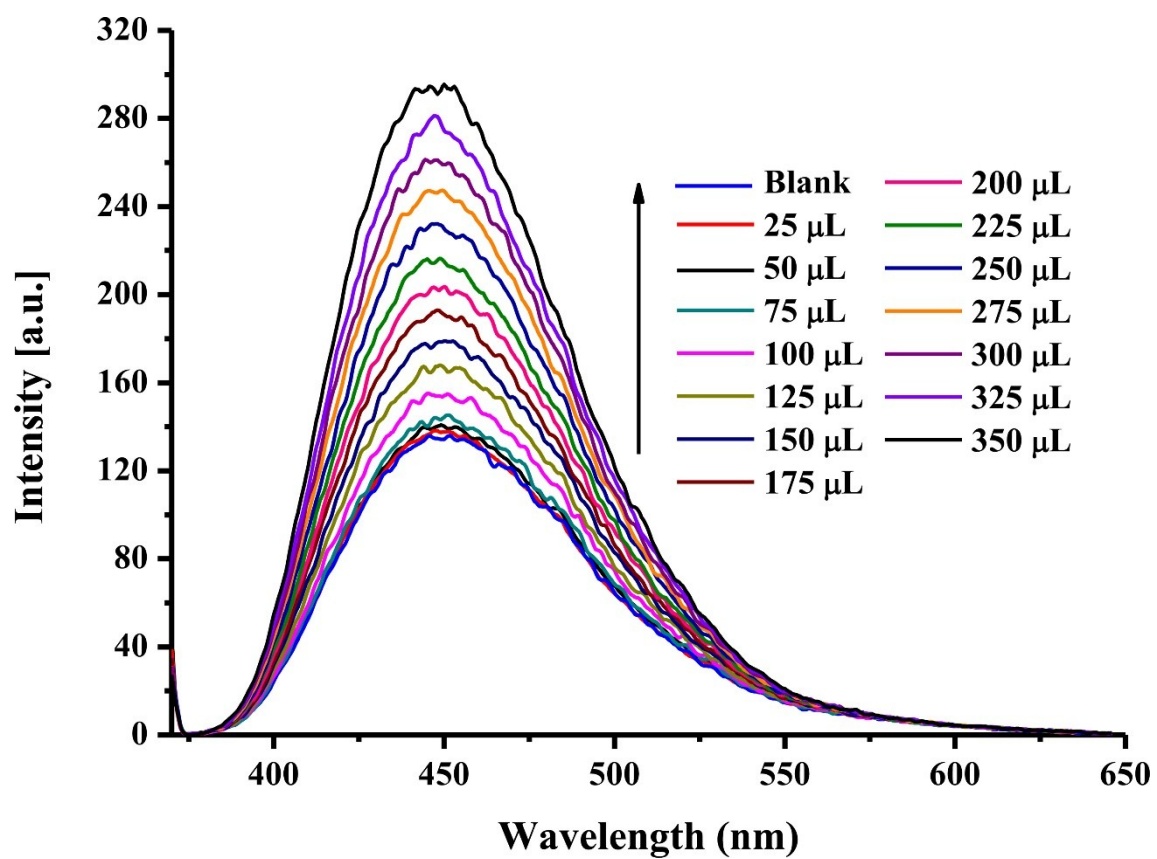


Fig. S17. Emission spectra of **1** dispersed in methanol upon incremental addition of Al³⁺ in methanol

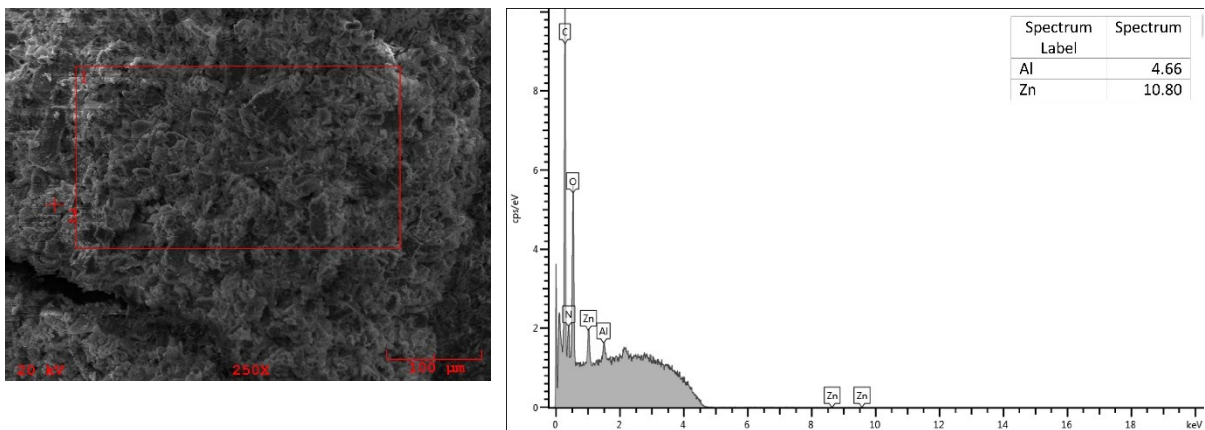


Fig. S18. SEM image and EDX spectrum of recovered complex after immersed in Al^{3+} solution.