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Supporting information for article:

Three new Zn^{II} coordination polymers constructed from a semi-rigid tricarboxylic acid: structural changes caused by flexibility and luminescence sensing for hexavalent chromate anions

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Table S1 Comparison of various CPs sensors for the detection of Cr(VI).

Sensors based on CPs	Analyte (CrO ₄ ²⁻ /Cr ₂ O ₇ ²⁻)	K_{sv}	LOD(μ M)	Media	Reference
{[Cd(L)-(BPDC)]·2H ₂ O} _n	Cr ₂ O ₇ ²⁻	6.4×10^3	37.6	H ₂ O	Chen et al.,2016
{[Cd(L)(SDBA)(H ₂ O)]·0.5H ₂ O} _n	Cr ₂ O ₇ ²⁻	4.9×10^3	48.6		
[Zn(BIPA)(tfbdc)] _n	Cr ₂ O ₇ ²⁻	1.98×10^4	0.069	DMF	Wang et al.,2018
{[Cd(BIPA)(tfbdc)(H ₂ O)]·DMF} _n	Cr ₂ O ₇ ²⁻	1.77×10^4	0.091		
{[Zn ₃ (mtrb) ₃ (btc) ₂]·3H ₂ O} _n	Cr ₂ O ₇ ²⁻	4.62×10^3	2.83	H ₂ O	Zhang et al.,2018
	CrO ₄ ²⁻	2.77×10^3	4.52		
[Cd ₃ (cpota) ₂ (phen) ₃] _n ·5nH ₂ O	Cr ₂ O ₇ ²⁻	1.00×10^4	3.62	H ₂ O	Li et al., 2018
	CrO ₄ ²⁻	3.51×10^3	8.06		
[Zn(HL)(phen)(H ₂ O)]·2H ₂ O	Cr ₂ O ₇ ²⁻	1.61×10^4	0.434	H ₂ O	This work
	CrO ₄ ²⁻	8.52×10^3	0.776		

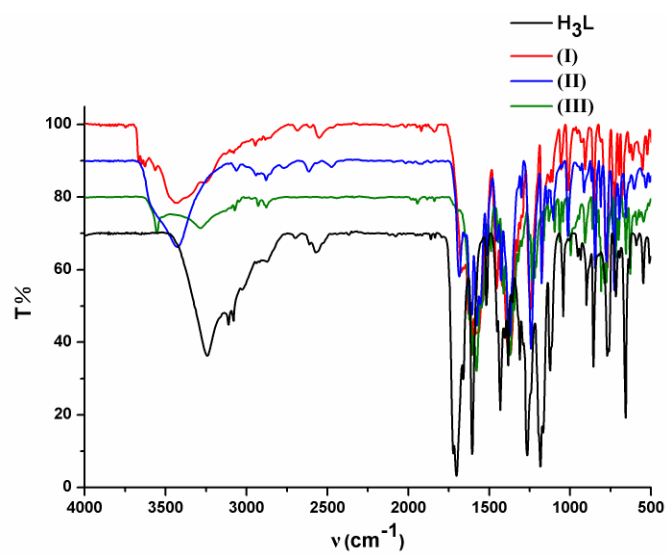


Fig. S1 The IR spectra of H₃L ligand and CPs (I-III).

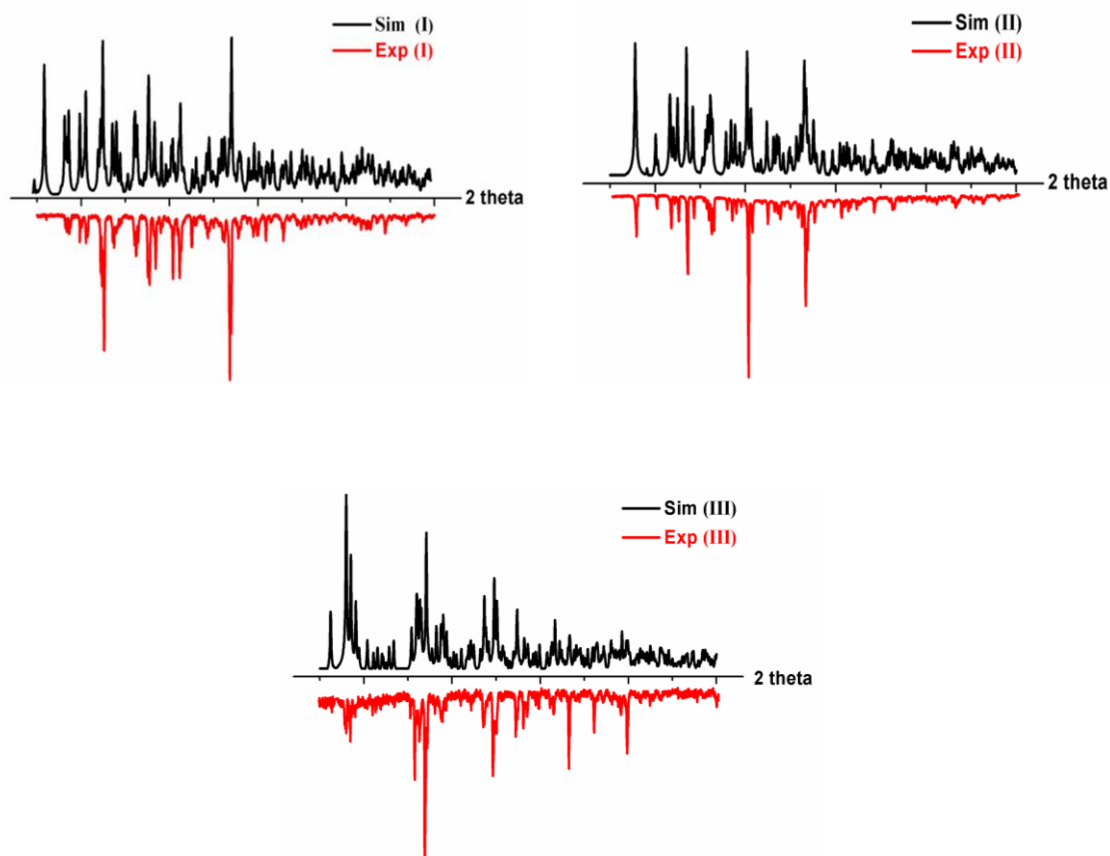


Fig. S2 PXR D patterns of CPs (I-III) at room temperature.

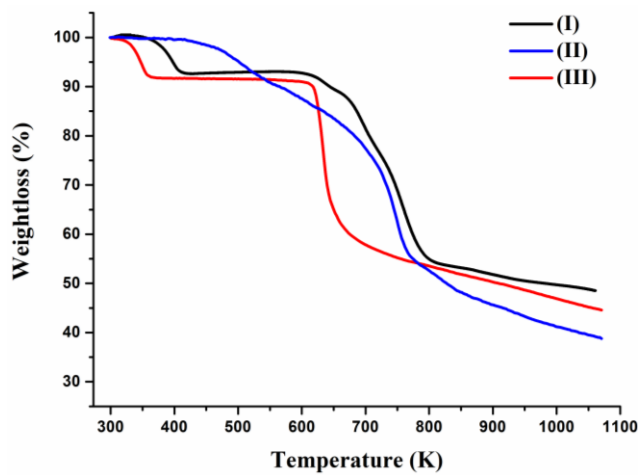


Fig. S3 The thermal curves of CPs (I-III).

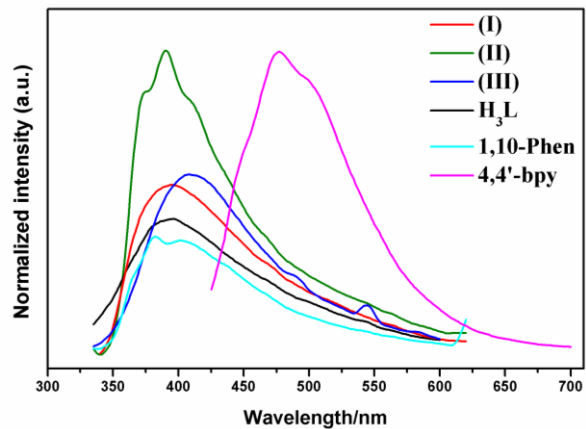


Fig. S4 The solid-state emission spectra of H₃L, 1,10-Phen, 4,4'-bpy, and CPs (I-III) at room temperature.

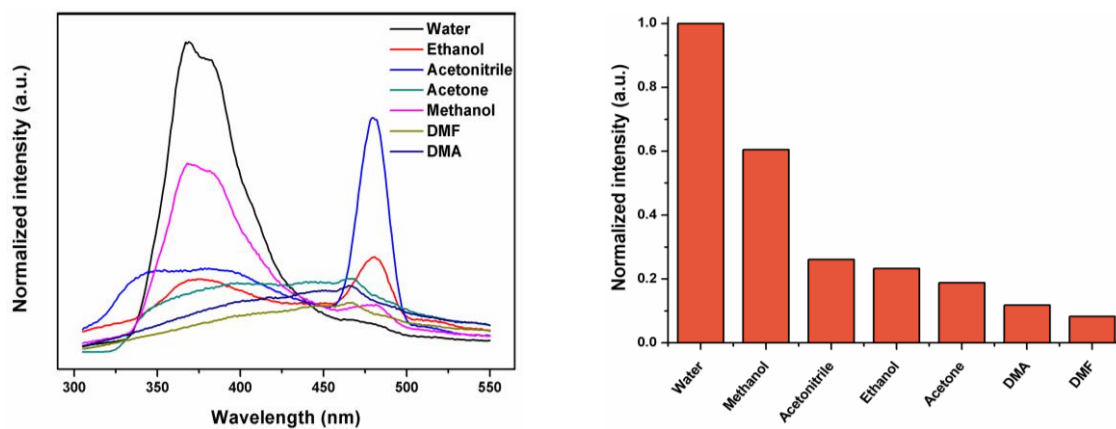


Fig. S5 (a) The emission spectra of (II) in seven common different solvents; (b) The emission intensity of (II) in different solvents.

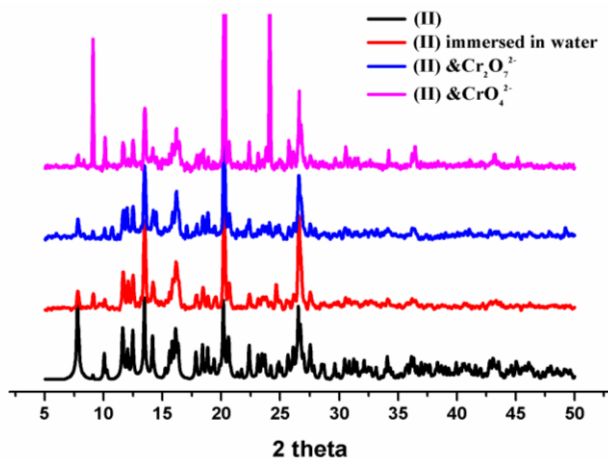


Fig. S6 The PXR D patterns of simulated (II), the PXR D pattern of (II) immersed in water, and the PXR D patterns for the recognition of Cr₂O₇²⁻ and CrO₄²⁻ after five recycling processes.

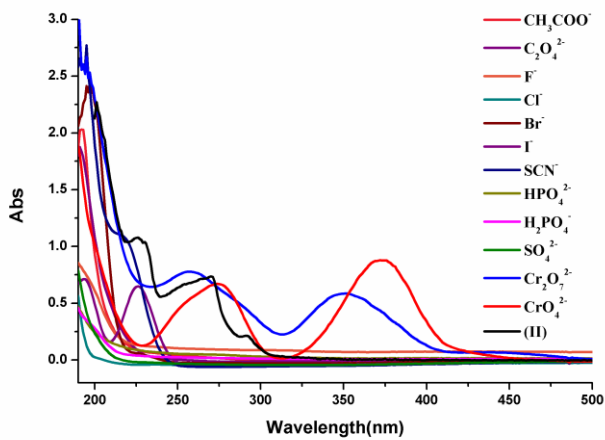


Fig. S7 Liquid UV-vis spectra of (II) and different anions in the aqueous solution.