

Supplementary materials

Designed Synthesis of Co(II) Coordination Polymers for Evaluation of Structural Transformations

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Fig. S1. The infrared spectra of complexes **1** – **4**.

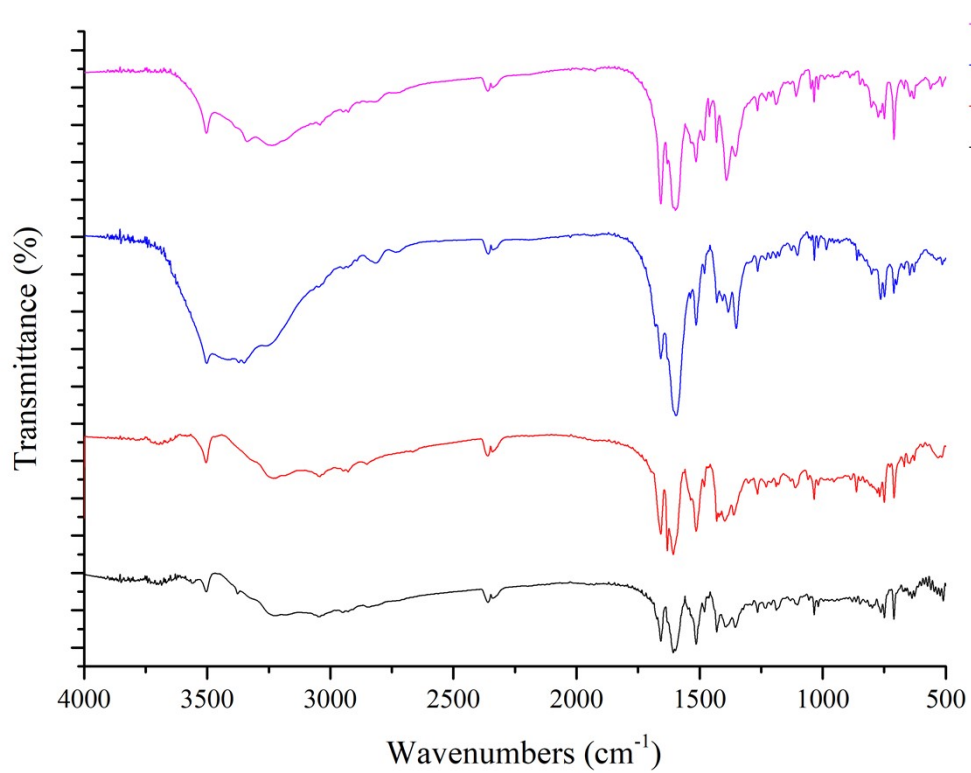


Fig. S2. The infrared spectrum of complex **5**.

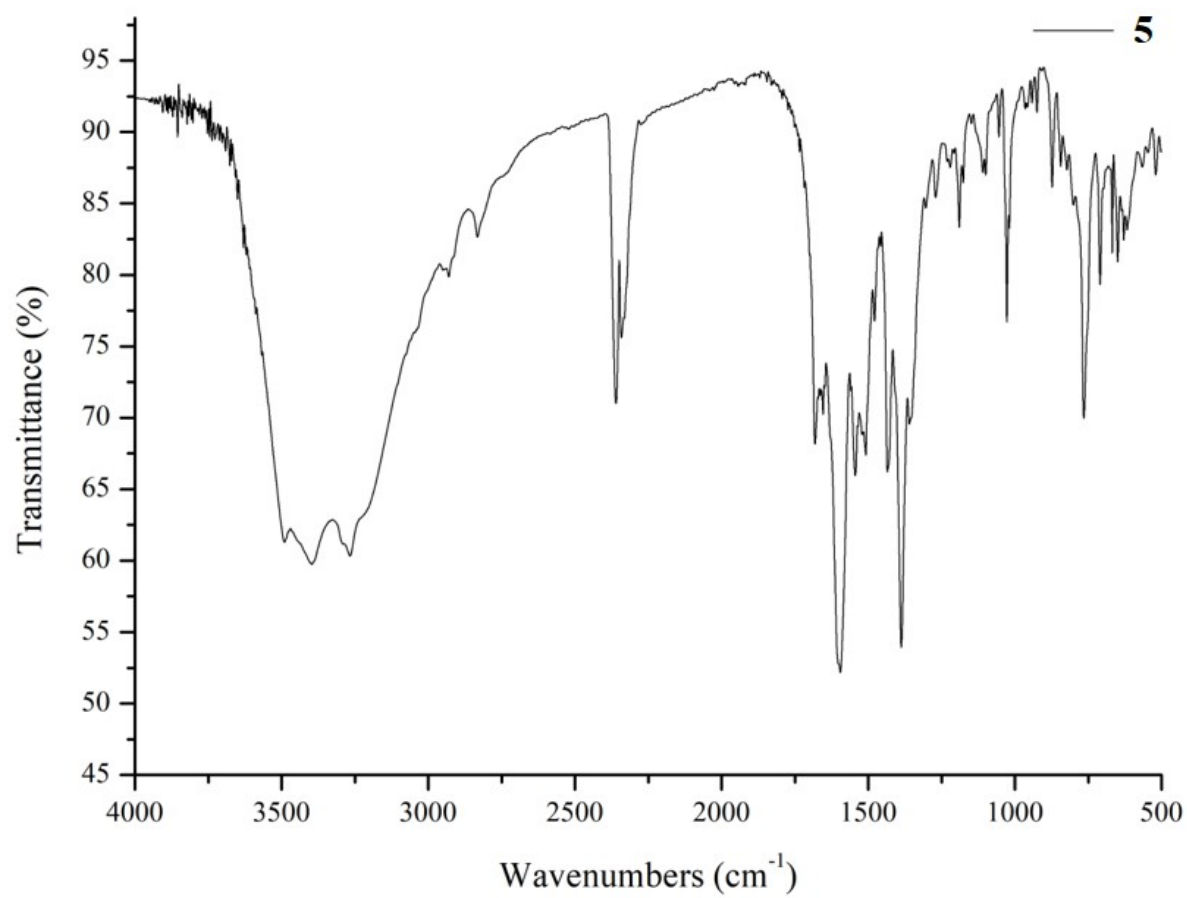


Table S1. Reaction conditions and yields for each attempt to prepare **1 – 5**.

Reagents	Solvent	Temp., Time	Complex	Yield, %
Co(OAc) ₂ (0.2 mmol) + L (0.1 mmol) + H ₂ MBA (0.1 mmol)	10 mL H ₂ O	60 °C, 2 days	4	19.53
		80 °C, 2 days	4	20.90
		100 °C, 2 days	3	7.99
			4	4.66
		120 °C, 2 days	3	22.79
	8 mL H ₂ O	60 °C, 1 days	2	2.75
		4	14.85	
	+ 2 mL	60 °C, 2 days	2	2.44
			4	15.01
	MeOH	80 °C, 2 days	4	20.74
		80 °C, 4 days	1	20.08
	5 mL H ₂ O + 5 mL MeOH	60 °C, 1 days	2	23.26
		60 °C, 2 days	2	16.78
			5	0.39
		60 °C, 4 days	5	15.78

Fig. S3. The PXRD patterns of complex 1.

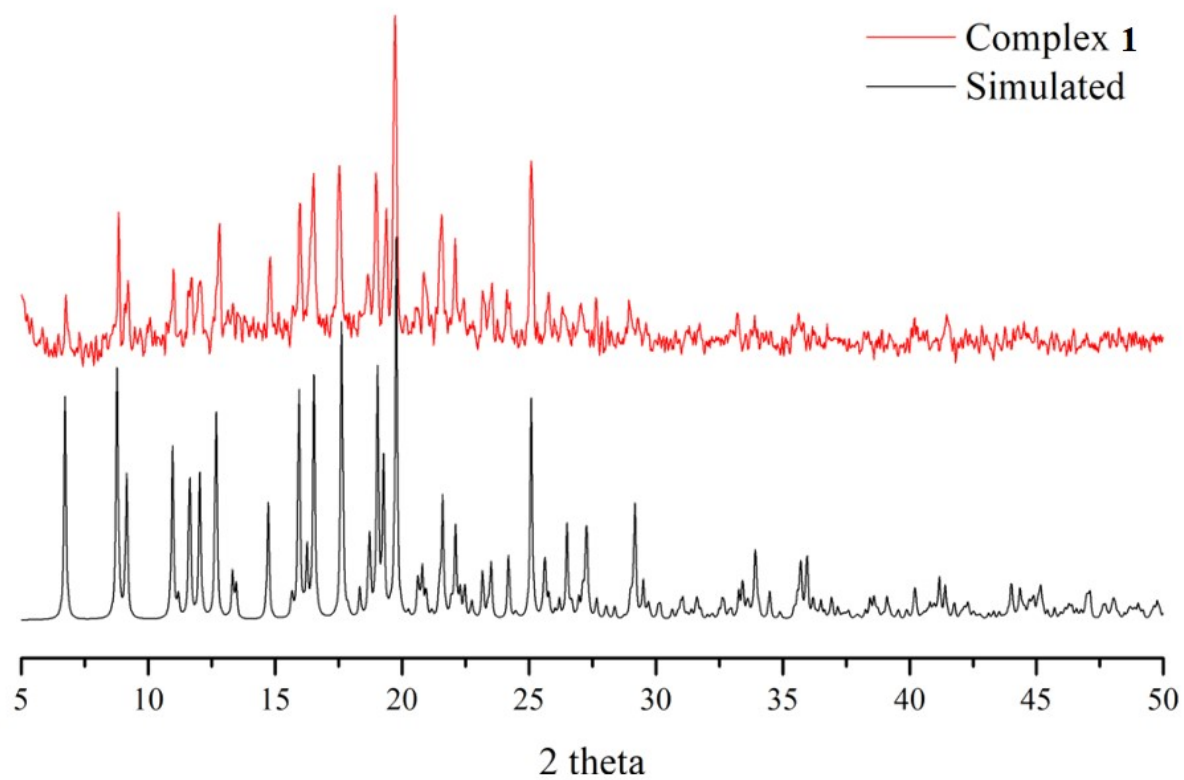


Fig. S4. The PXRD patterns of complex 2.

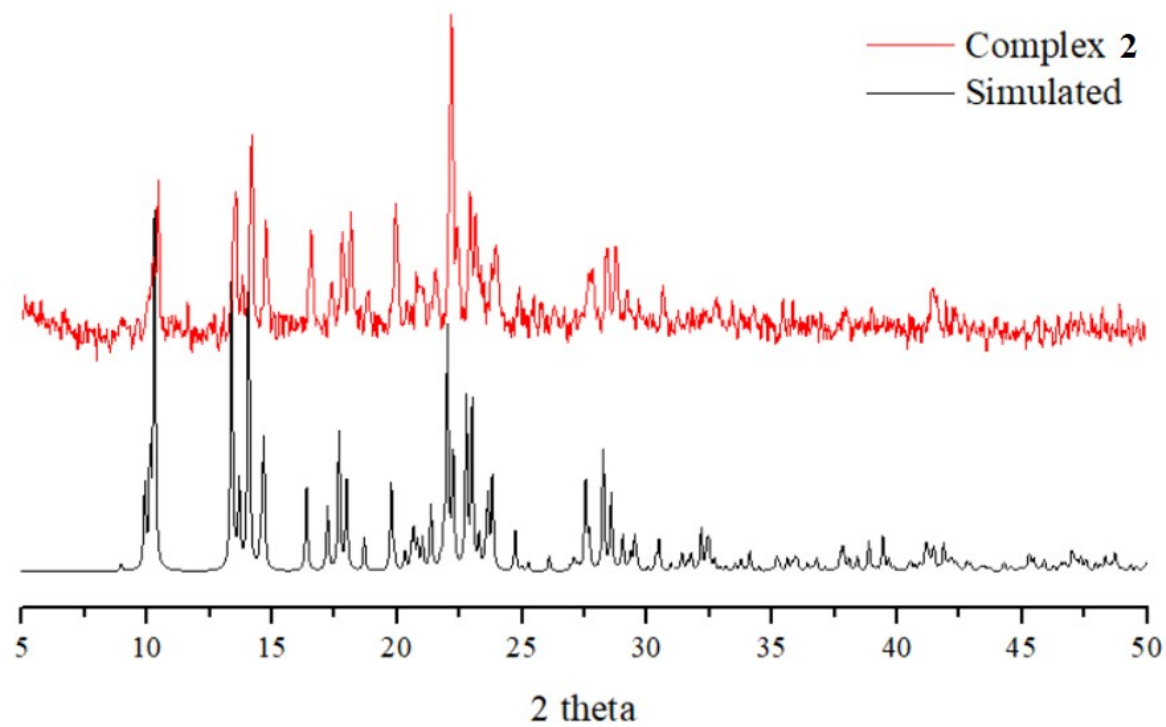


Fig. S5. The PXRD patterns of complex **3**.

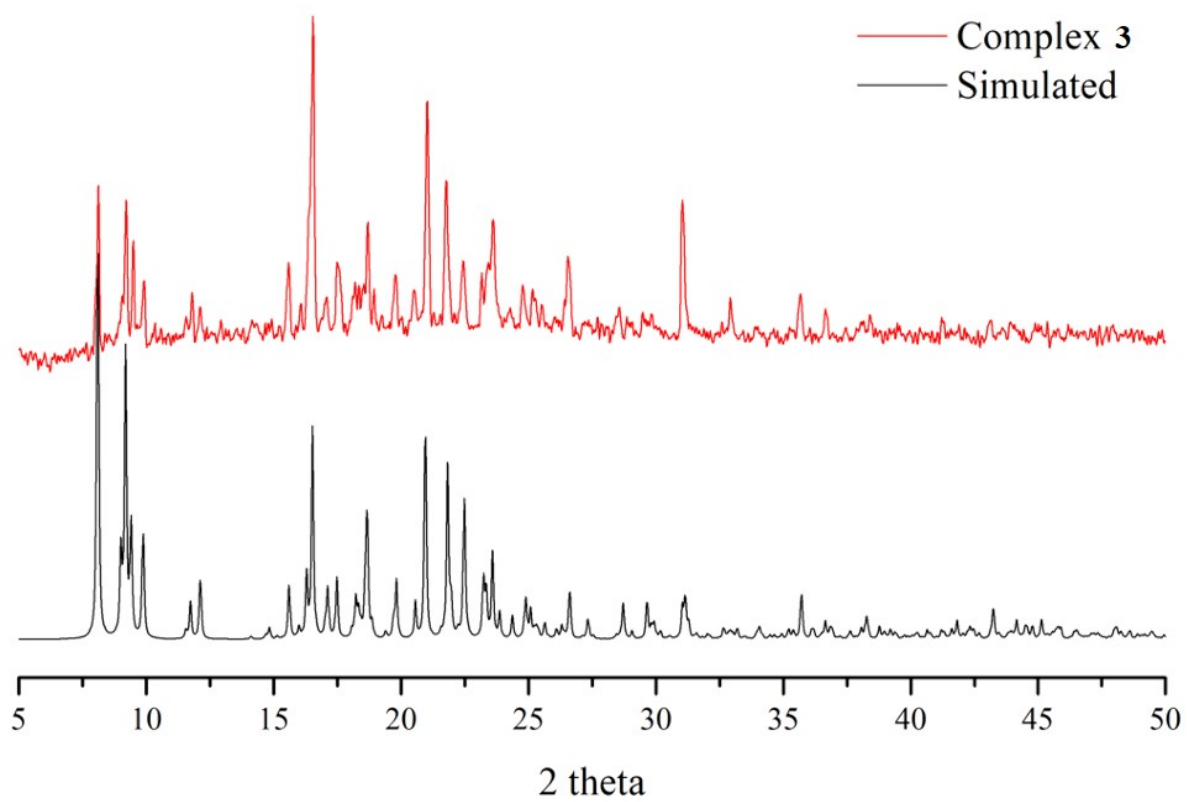


Fig. S6. The PXRD patterns of complex **4**.

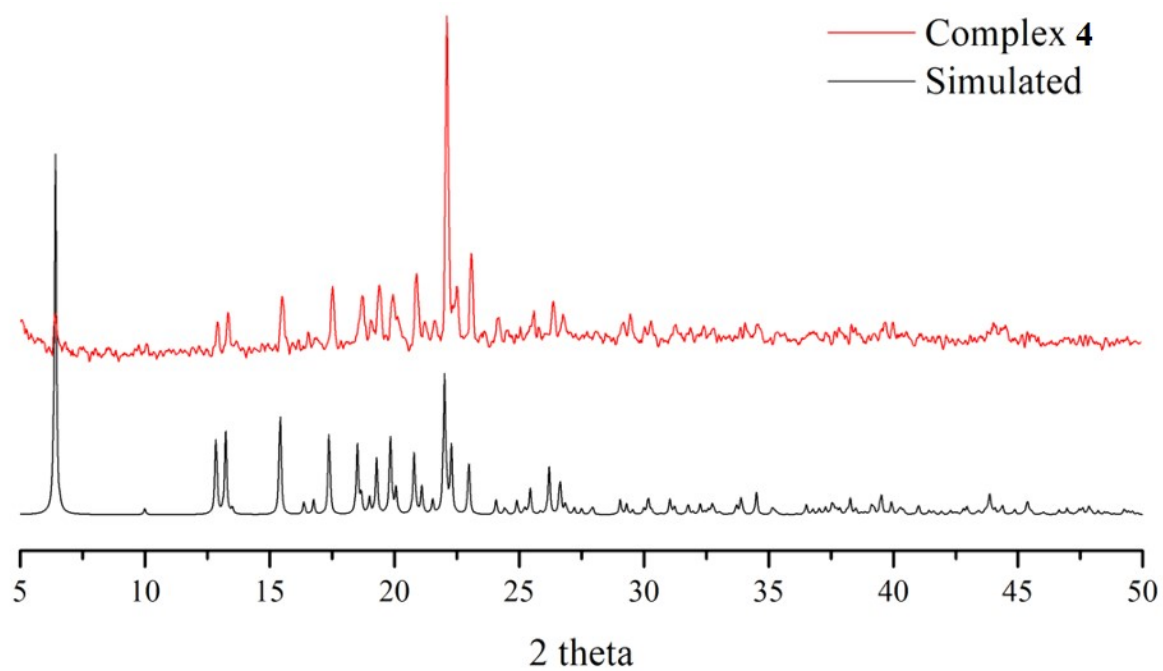


Fig. S7. The PXRD patterns of complex **5**.

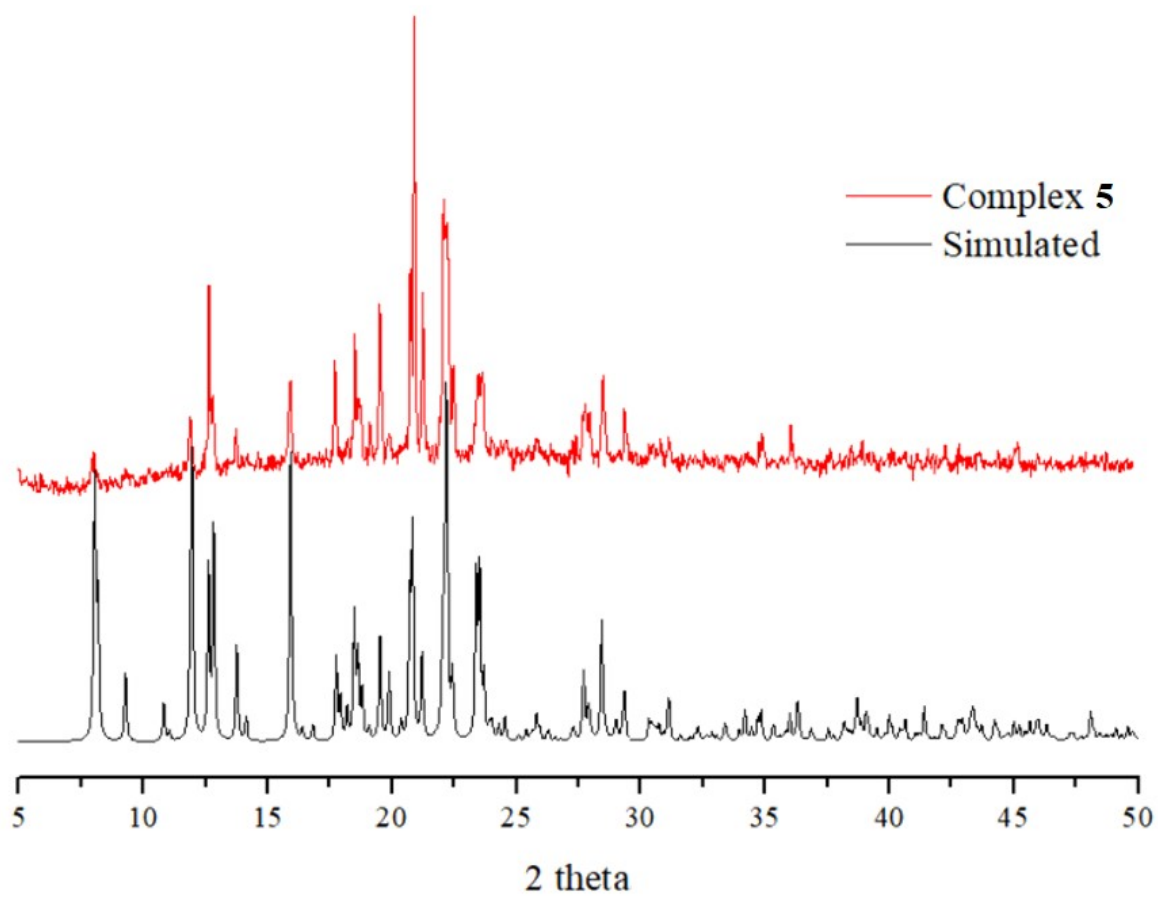


Fig. S8. TGA curve of complex **1**.

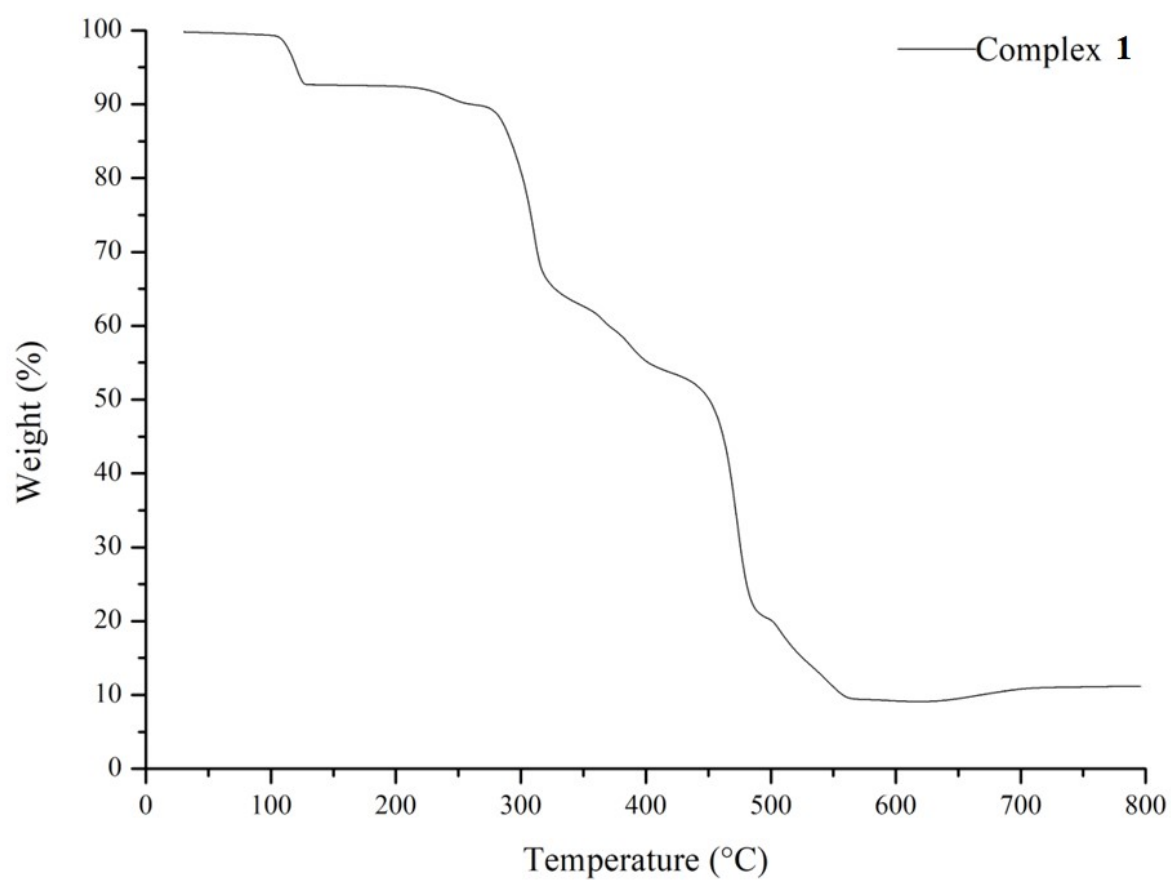


Fig. S9. TGA curve of complex 2.

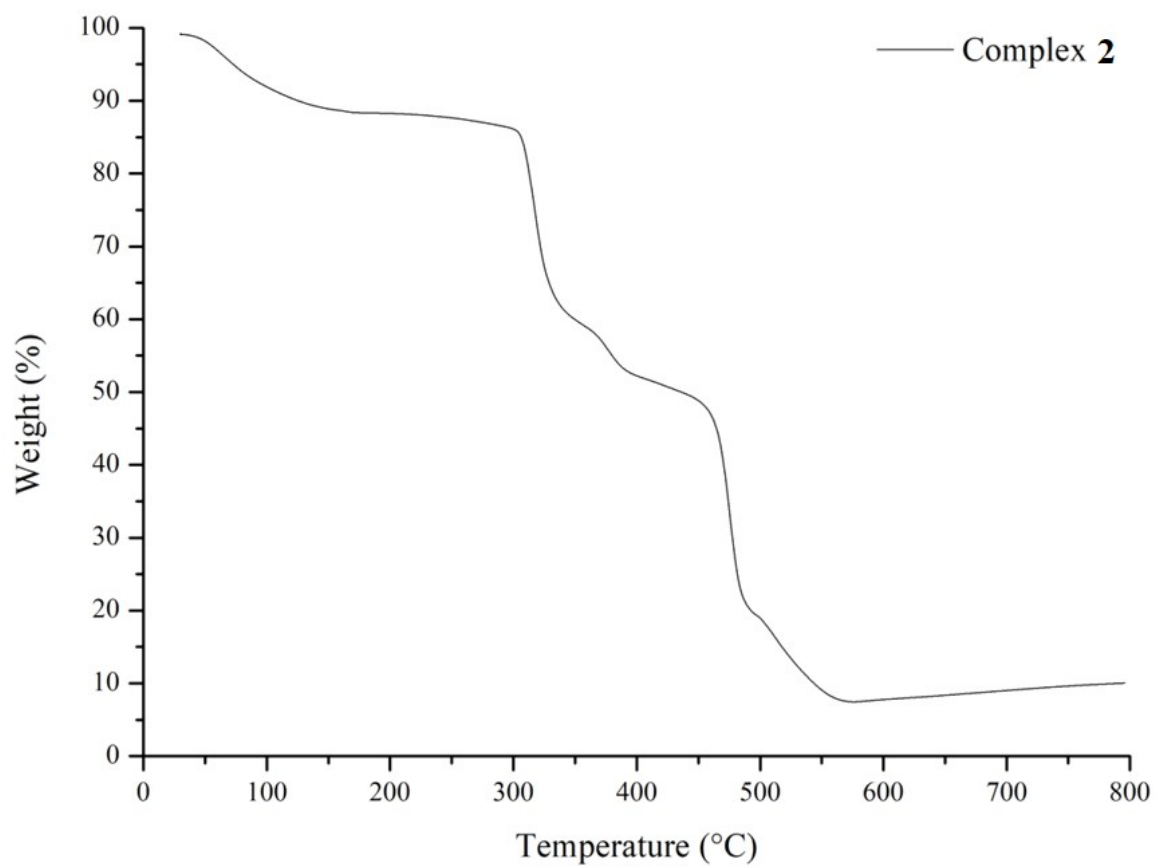


Fig. S10. TGA curve of complex **3**.

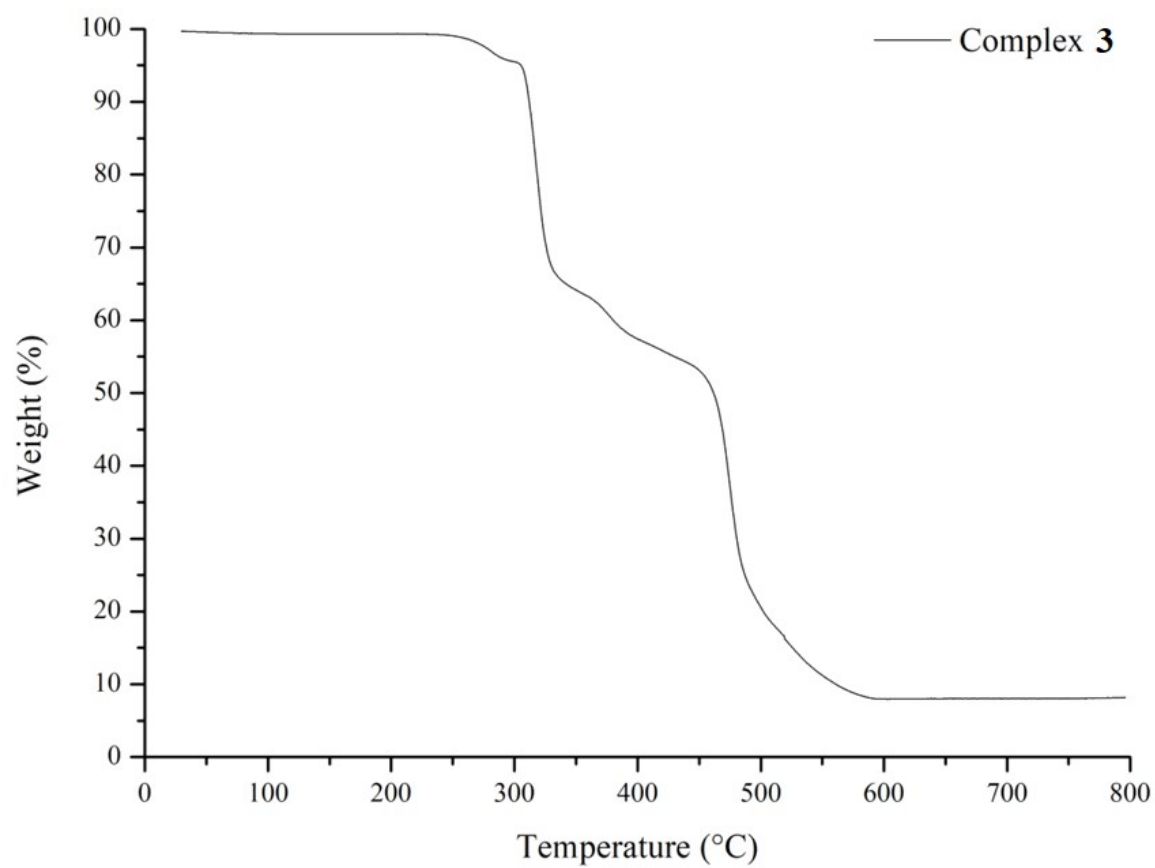


Fig. S11. TGA curve of complex 4.

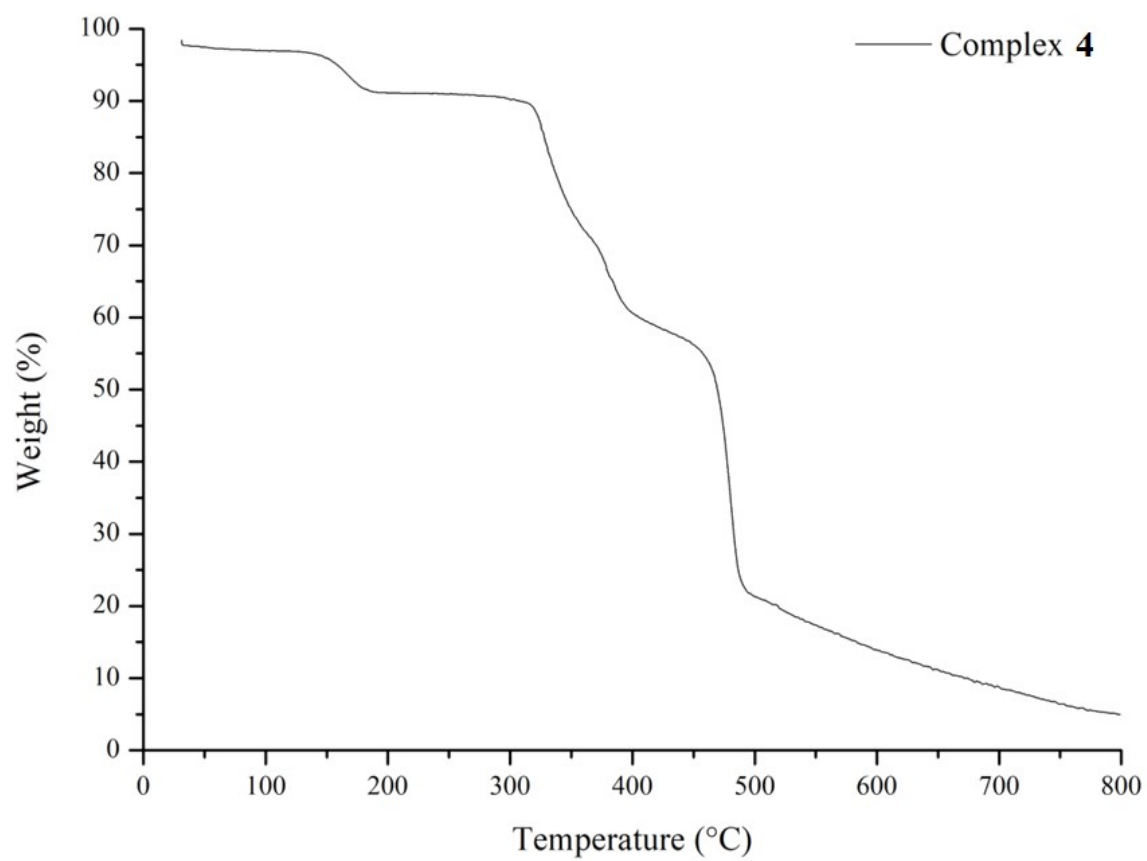


Fig. S12. TGA curve of complex **5**.

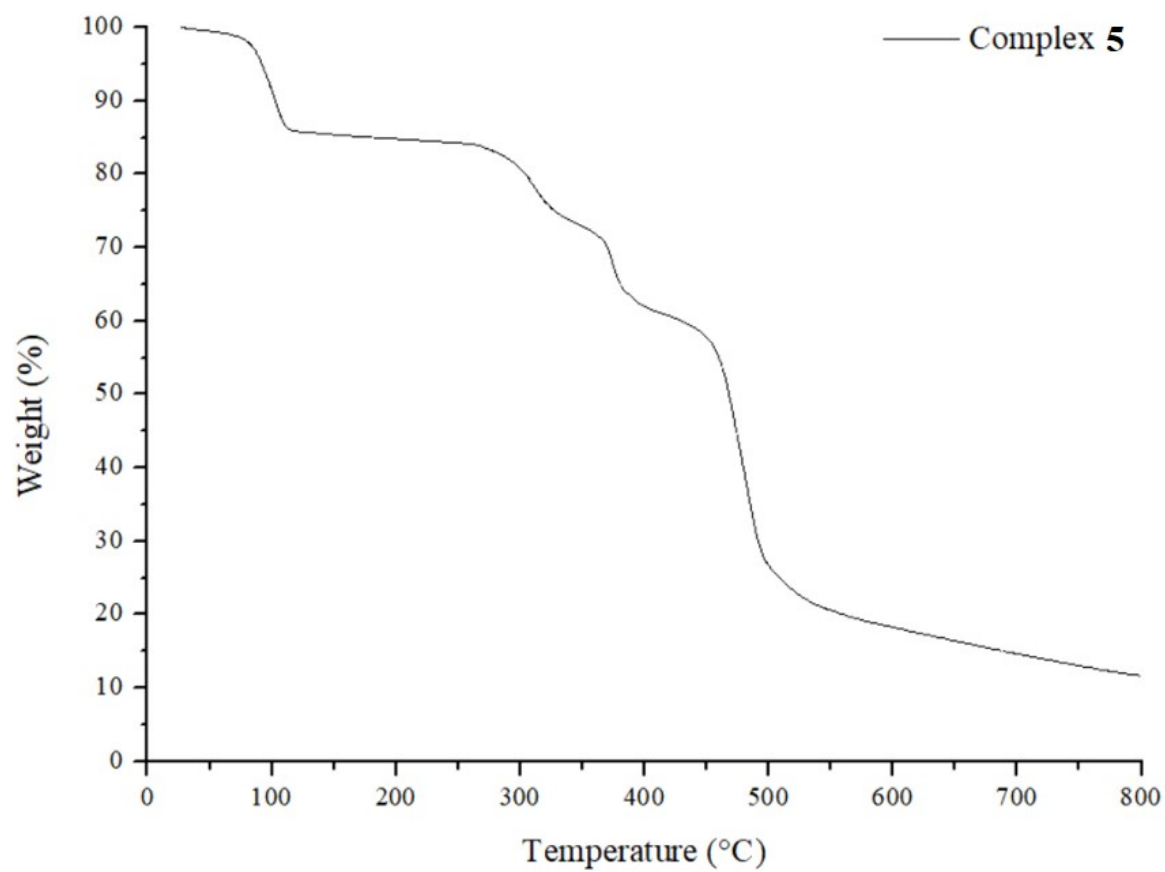


Fig. S13. PXRD patterns of complex **1** immersed in solvents.

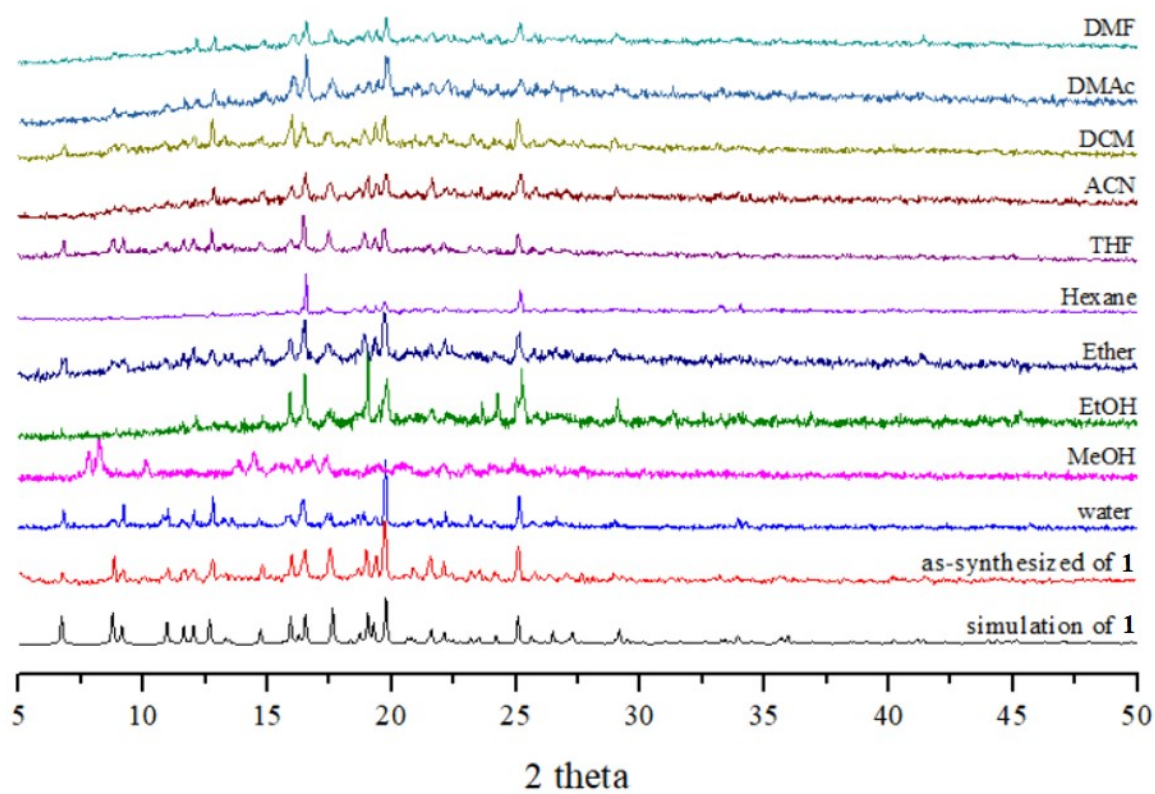


Fig. S14. PXRD patterns of complex **2** immersed in solvents.

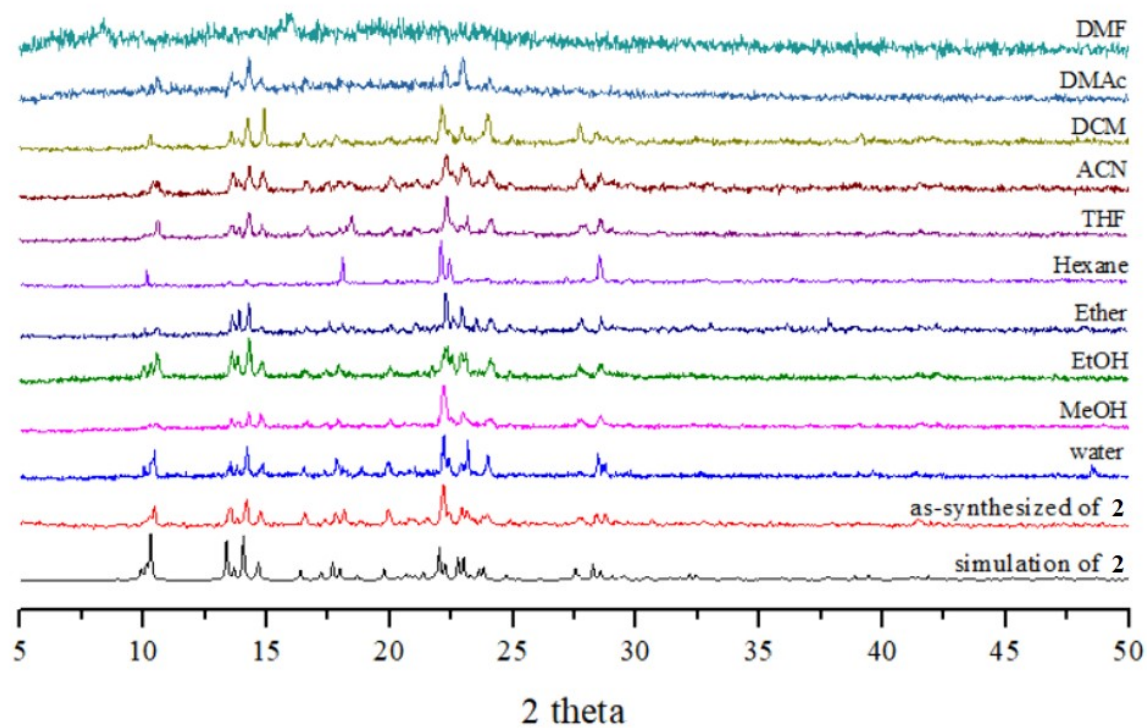


Fig. S15. PXRD patterns of complex **3** immersed in solvents.

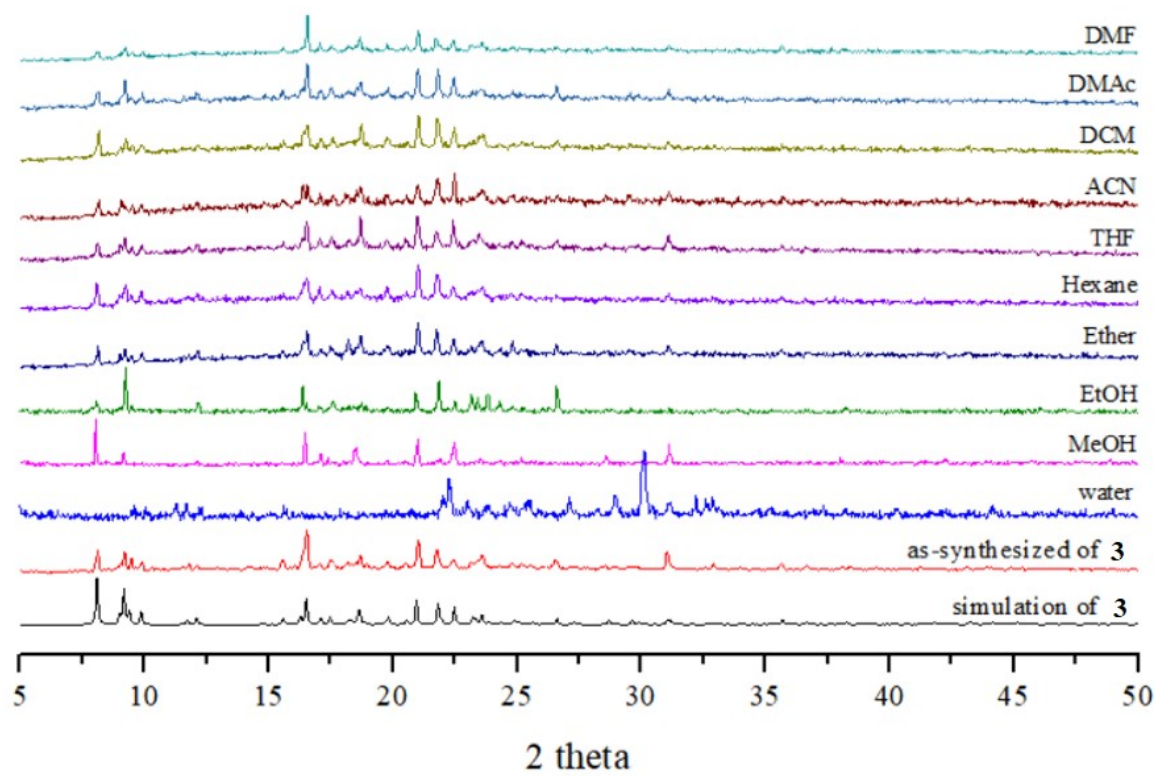


Fig. S16. PXRD patterns of complex **4** immersed in solvents.

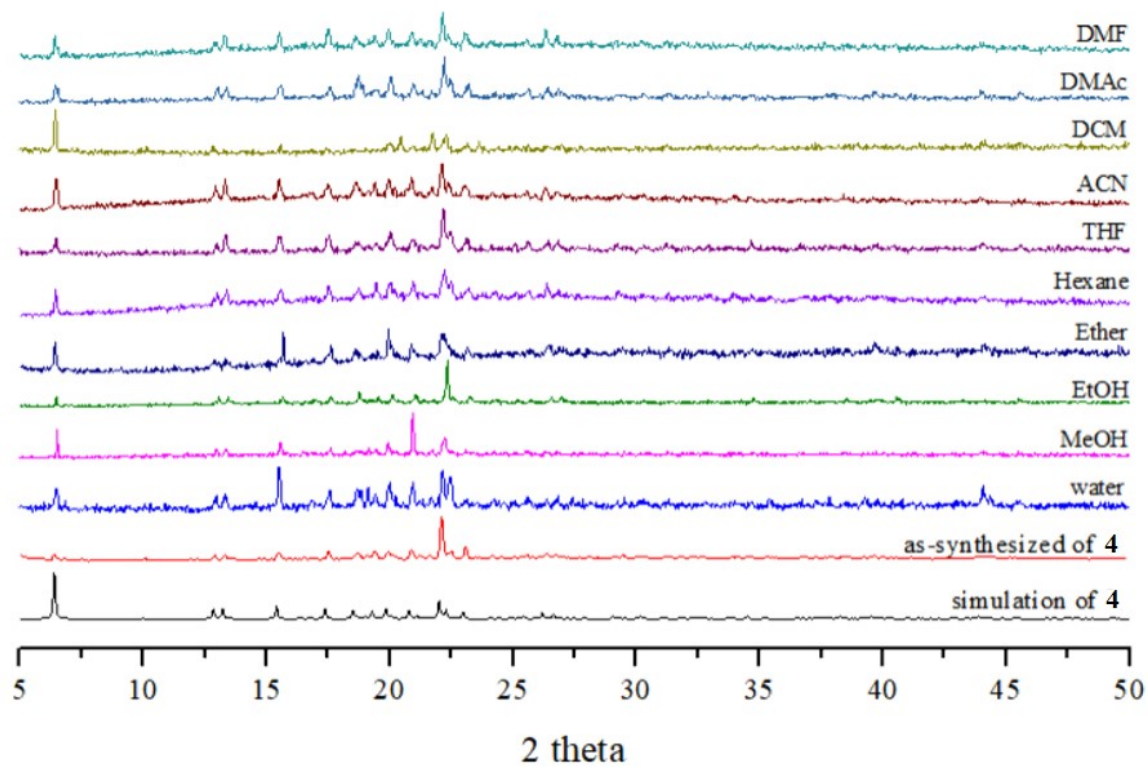
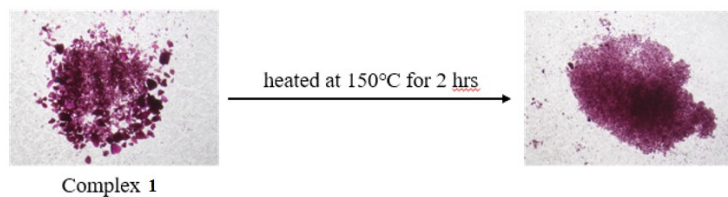
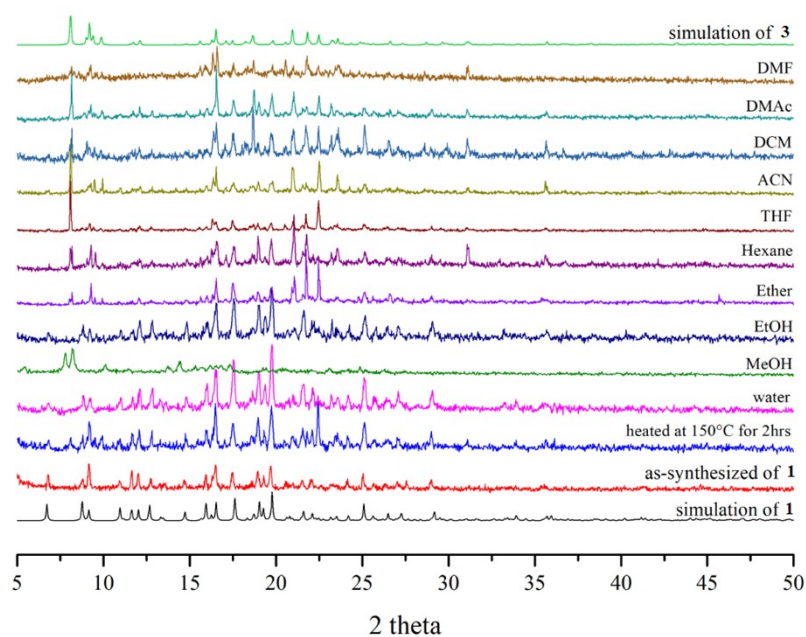


Fig. S17. (a) Photo and (b) PXRD patterns of complex **1** heated at 150 °C for 2 hrs and then immersed in a variety of organic solvents.



(a)



(b)

Fig. S18. Photo and PXRD patterns of complex **2** heated at 200 °C for 2 hrs.

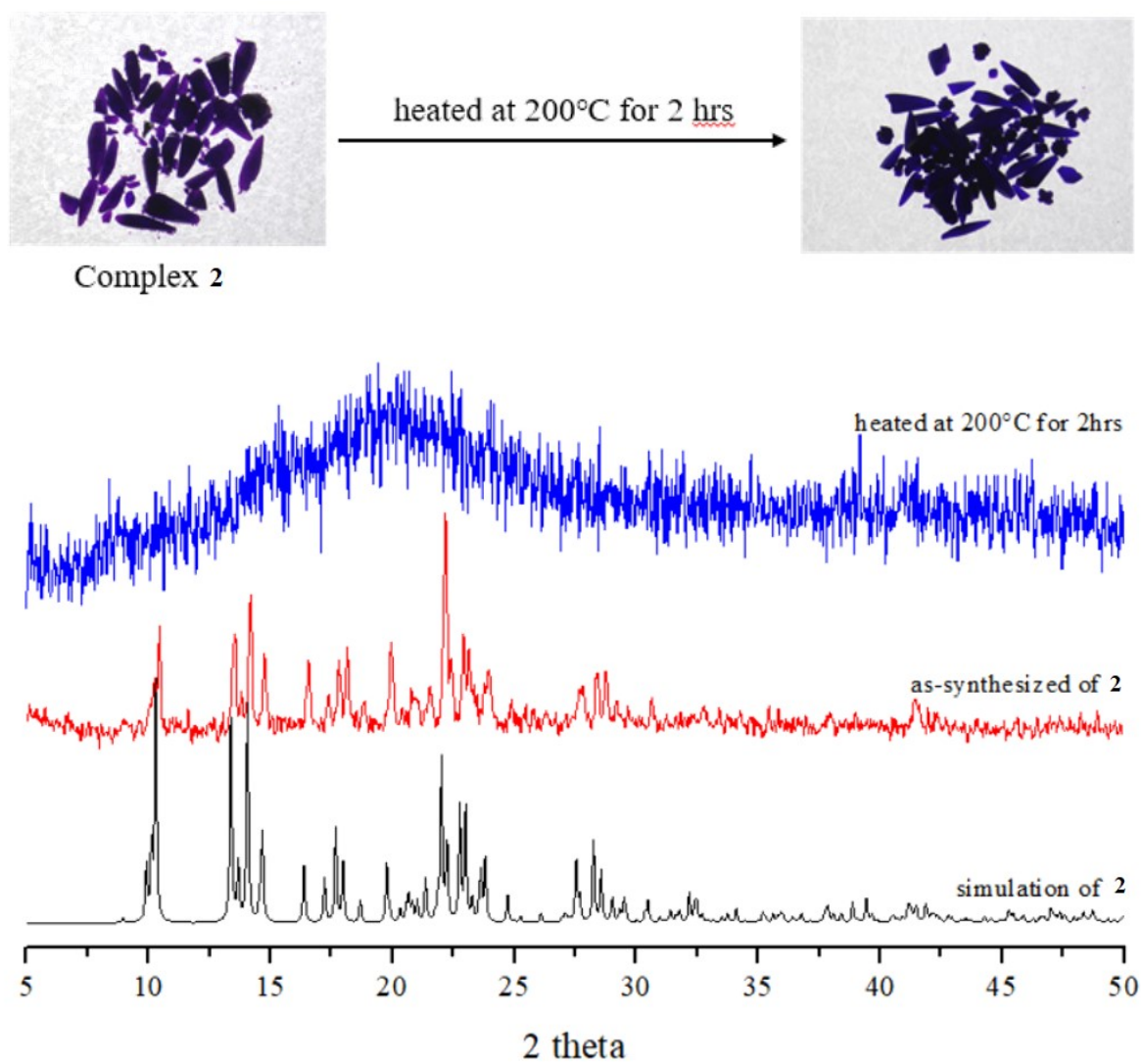


Fig. S19. Photo and PXRD patterns of complex **3** heated at 100 °C for 2 hrs and then immersed in a variety of organic solvents.

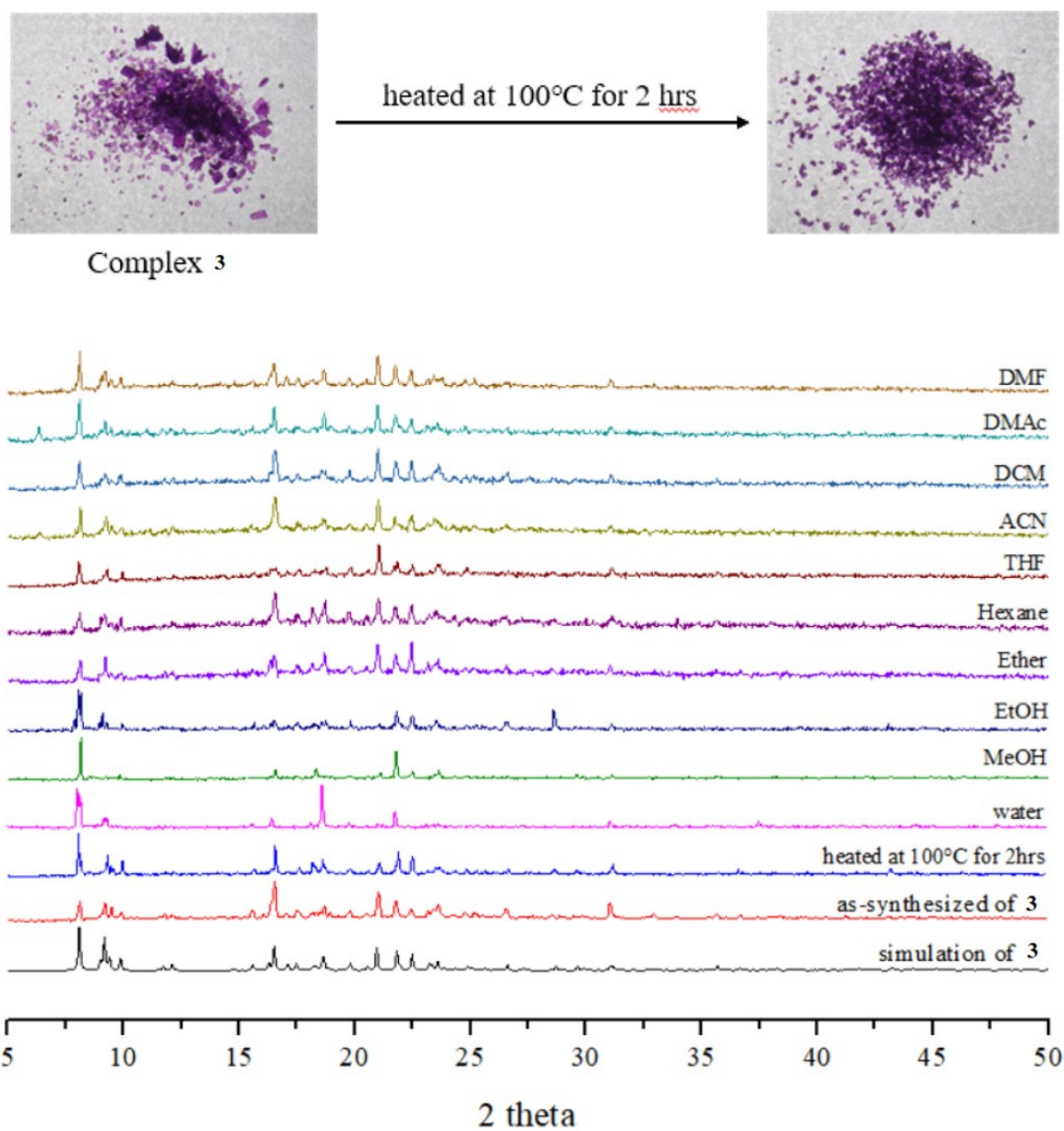
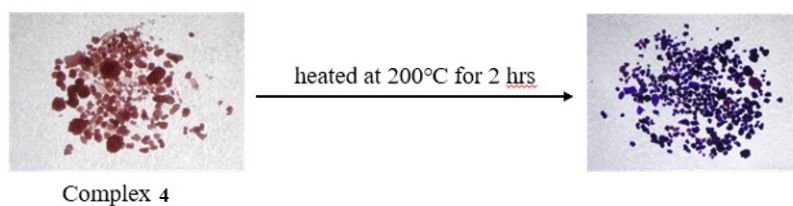
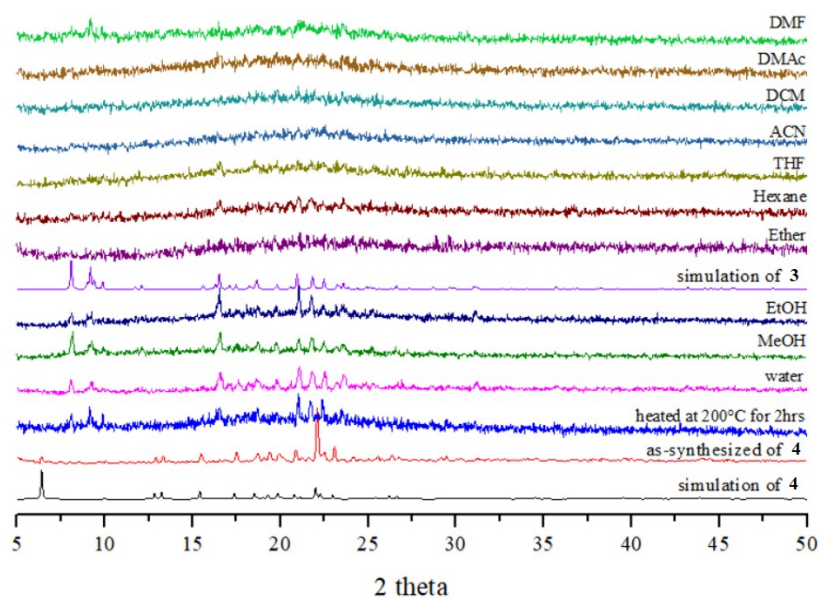


Fig. S20. (a) Photo and (b) PXRD patterns of complex 4 heated at 200 °C for 2 hrs and then immersed in a variety of organic solvents.



(a)



(b)

Fig. S21. PXRD patterns of complexes **1 - 4** heated hydrothermally at 120 °C.

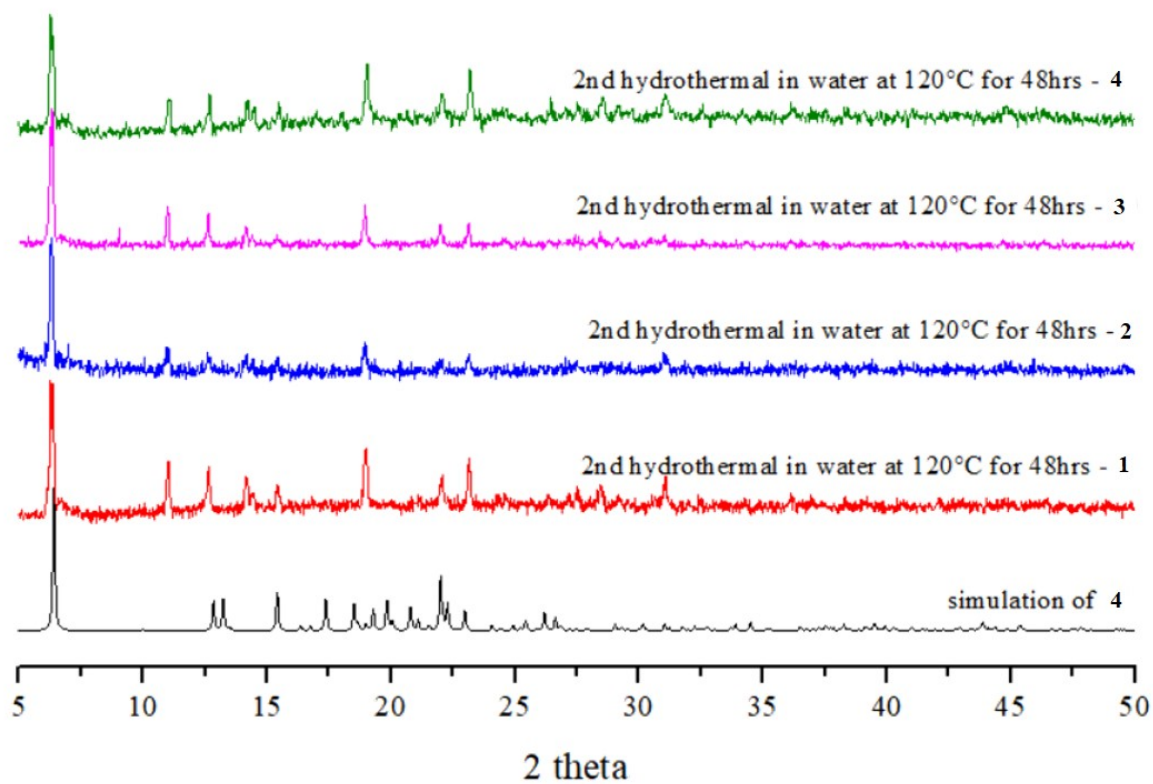


Fig. S22. IR spectra for complexes **1** - **4** heated hydrothermally at 120 °C.

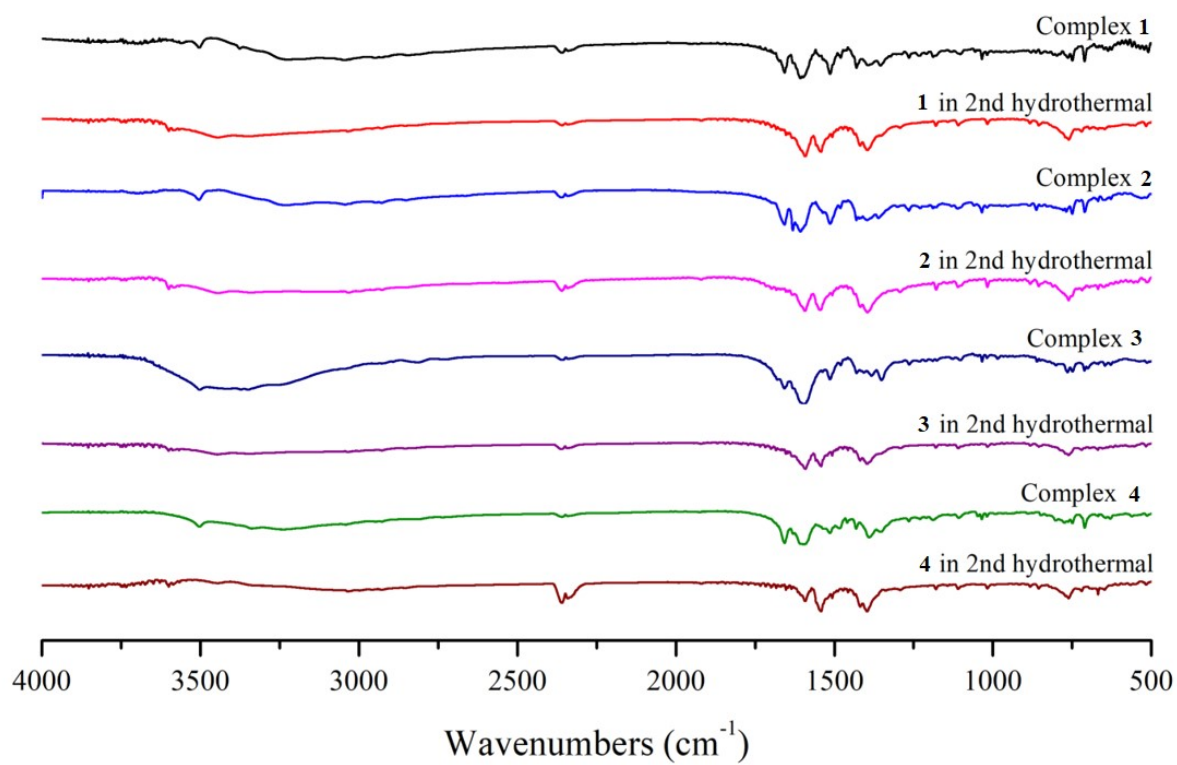


Fig. S23. Element analysis for MBA-unknown.

analytic functional testing
UNICUBE
serial number: 04.00.201071

Samples													
	Weight [mg]	Name	Method	N [%]	C [%]	H [%]	S [%]	N Area	C Area	H Area	S Area	Date	Time
49	1.992	MBA-UNKNOWNC	2mg Standard	0.85	48.84	3.568	0.206	635	27 132	7 379	32	2023/5/23	01:30
50	1.989	MBA-UNKNOWNC	2mg Standard	0.87	48.94	3.562	0.153	648	27 149	7 358	19	2023/5/23	01:42