Supporting information

Syntheses, structures and photoluminescent properties of lanthanide coordination polymers based on pyridyl functionalized imidazole dicarboxylic acid

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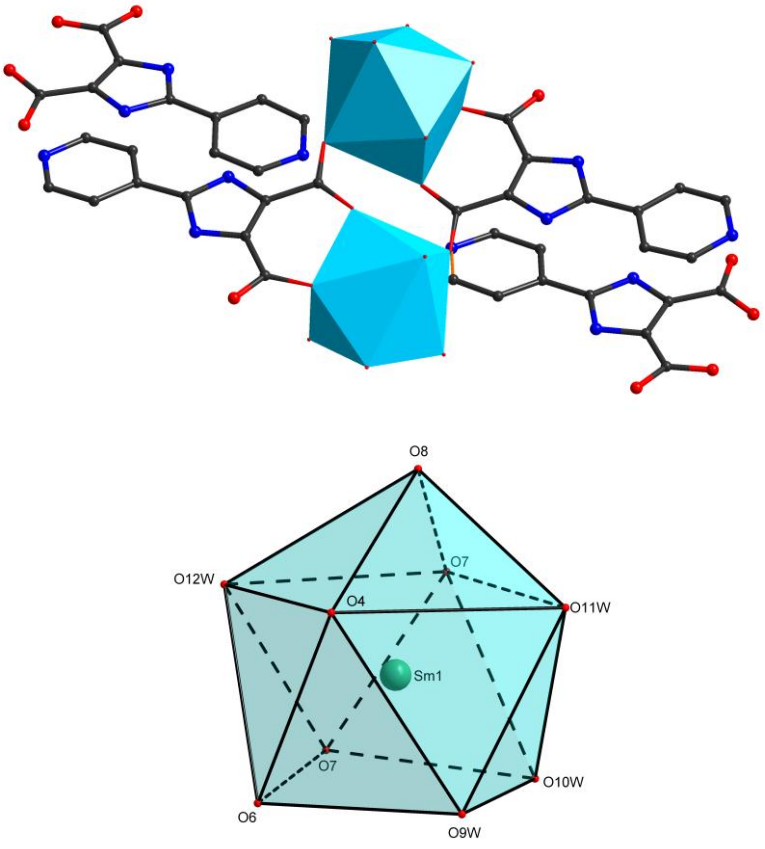


Fig. S1 The coordination polyhedron of Sm(III) ions in **1**.

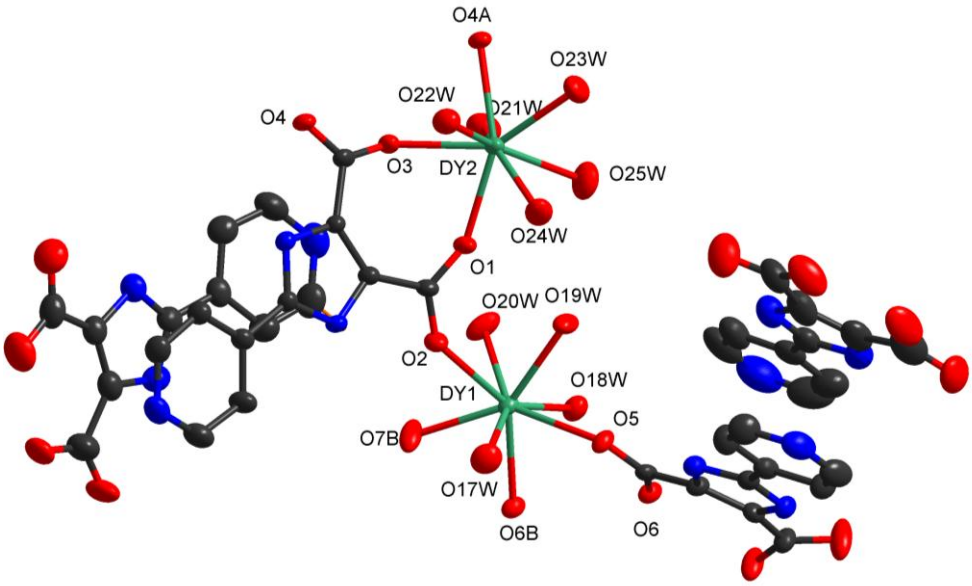


Fig. S2 the coordination environments of Dy(III) ions in 3. Hydrogen atoms and uncoordinated water molecules were omitted for clarity.Symmertry codes: A, 1-*x*, 1-*y*, 1-*z*; B, 2-*x*, 1-*y*, -*z*.

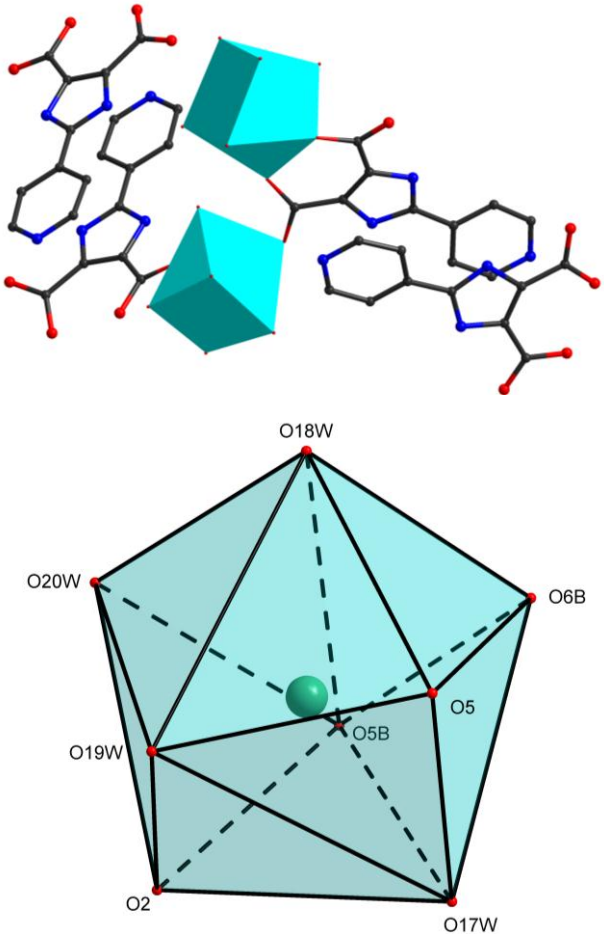


Fig. S3 The coordination polyhedron of Dy(III) ions in **3**.

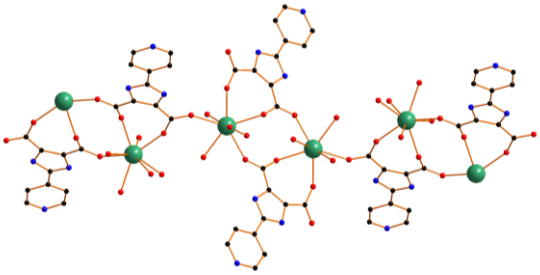


Fig. S4 Carboxyl-connected chain of **3**.

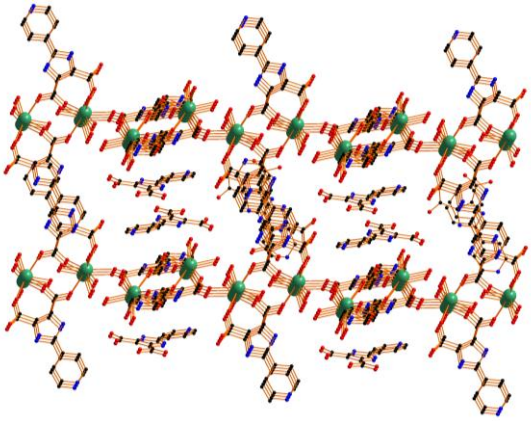
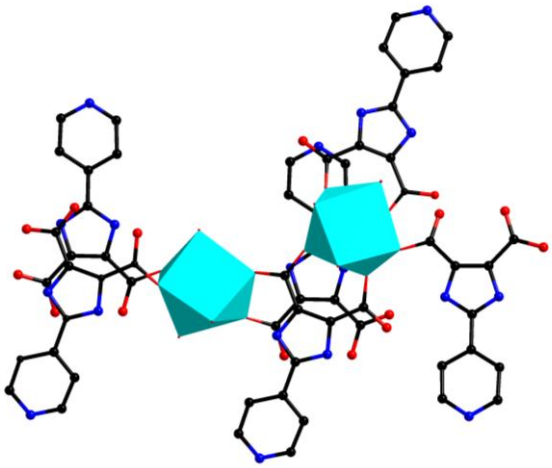


Fig. S5 The packing modes of complex **3** in 3D space.



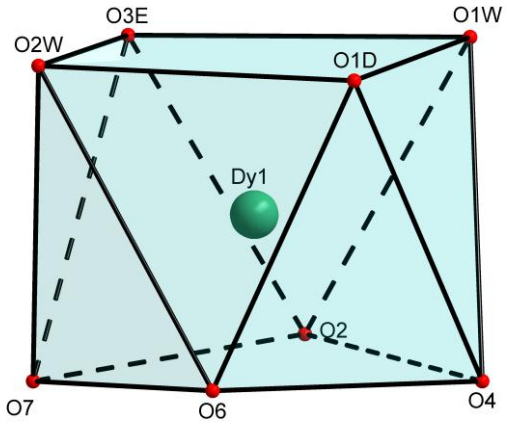


Fig. S6 The coordination polyhedron of Dy(III) ions in **4**.

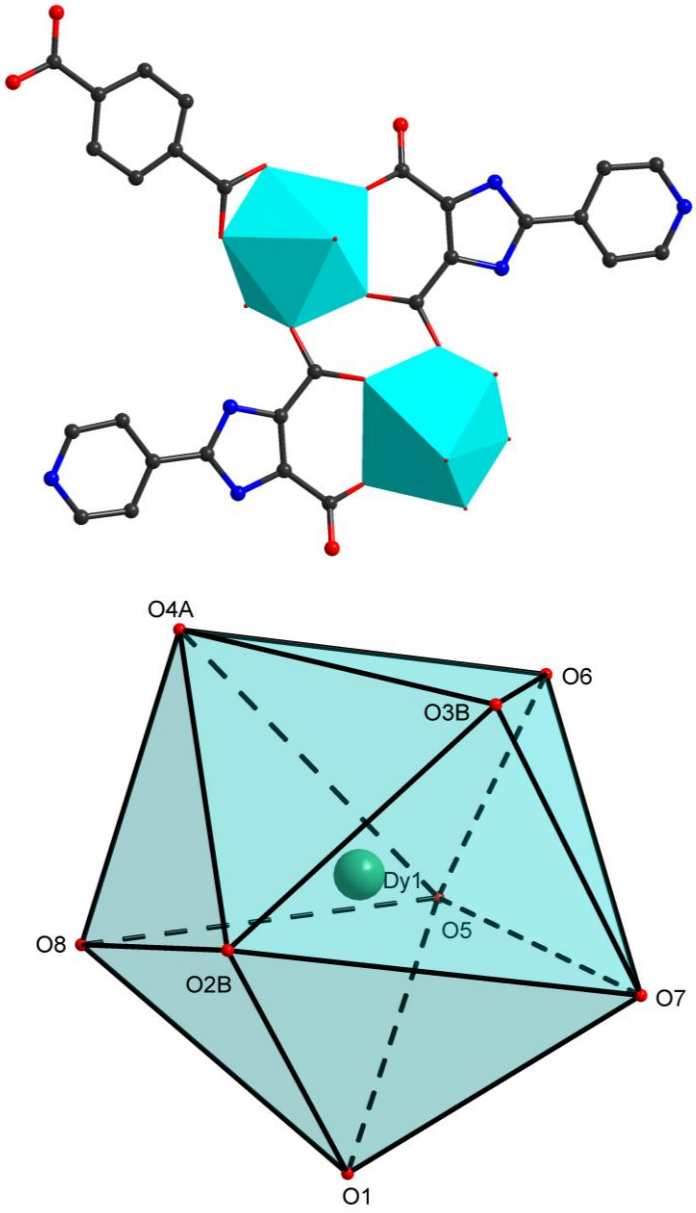


Fig. S7 The coordination polyhedron of Dy(III) ions in **5**.

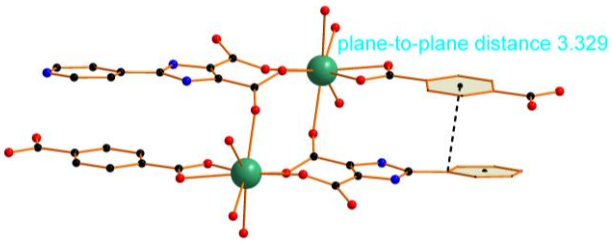


Fig. S8 Diagrammatic drawing of π-π stacking interaction in coordination polymer **5**.

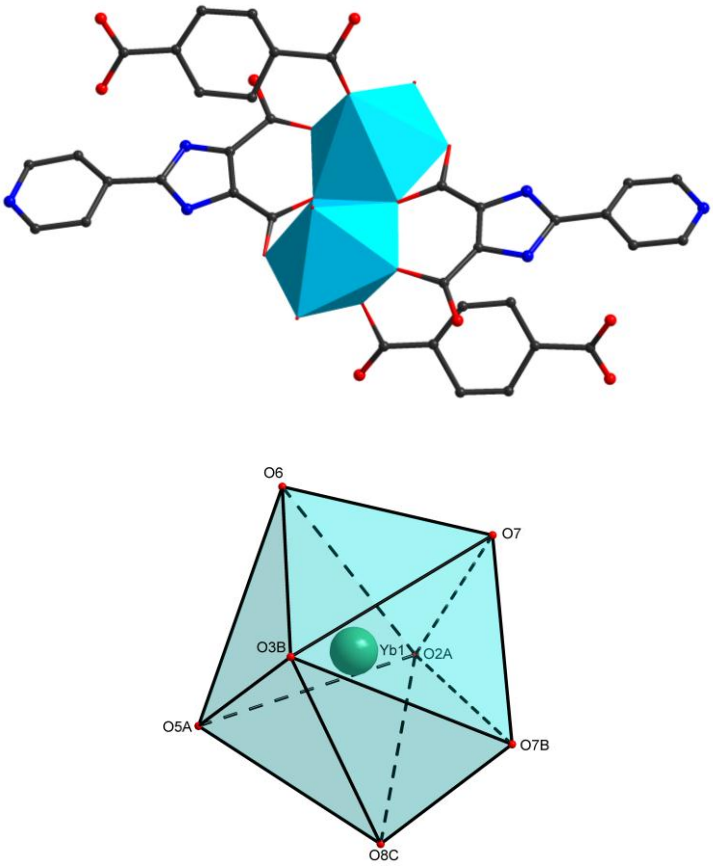


Fig. S9 The coordination polyhedron of Yb(III) ions in **8**.

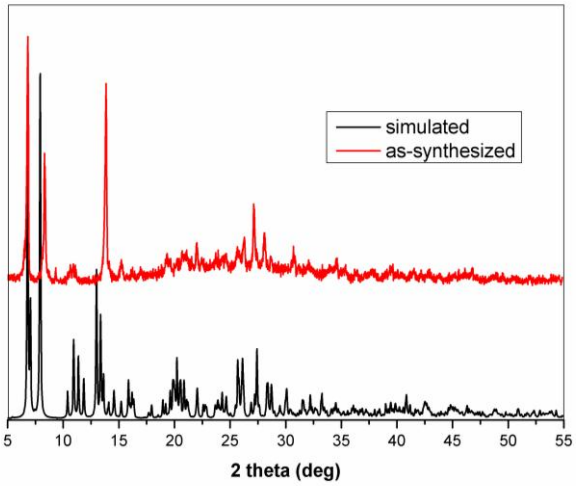


Fig. S10 PXRD patterns of complex **1**.

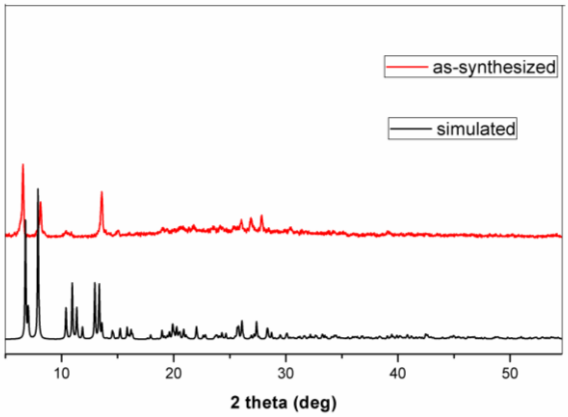


Fig. S11 PXRD patterns of complex **2**.

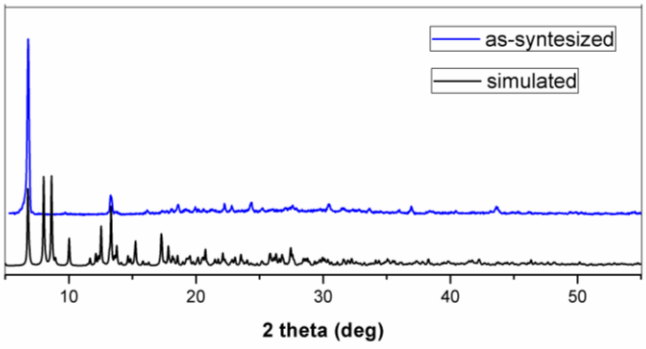


Fig. S12 PXRD patterns of complex **3**.

The crystal of complex **3** contains many solvent molecules. The single-crystal X-ray diffractions were performed using sealed-tube. However, the PXRD tests of the

powders were performed in the air, so the solvent molecules may be lost (See Fig. R1.), which may affected the flexible 2D layer structure (*ChemPlusChem*, 2012, 77, 743). The crystallinity of compound may change weak and the Bragg intensities in the PXRD changed poor. We randomly picked several crystals of **3**, to collect the single X-ray diffraction data, all crystals of **3** have the same unit cells, confirming the purity of **3**.

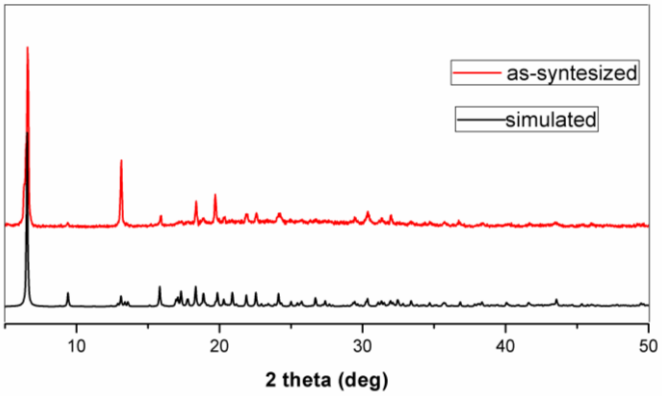


Fig. S13 PXRD patterns of complex **4**.

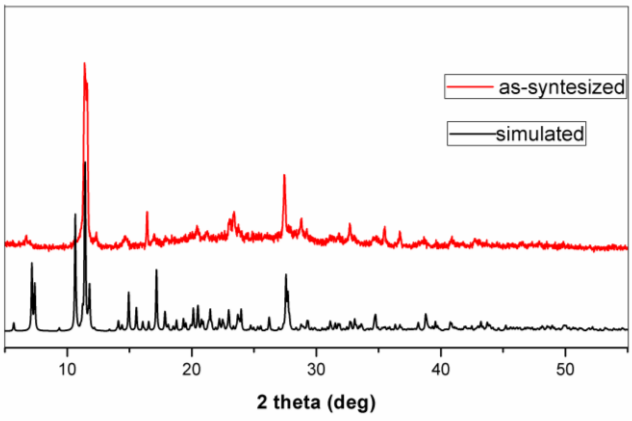


Fig. S14 PXRD patterns of complex **5**.

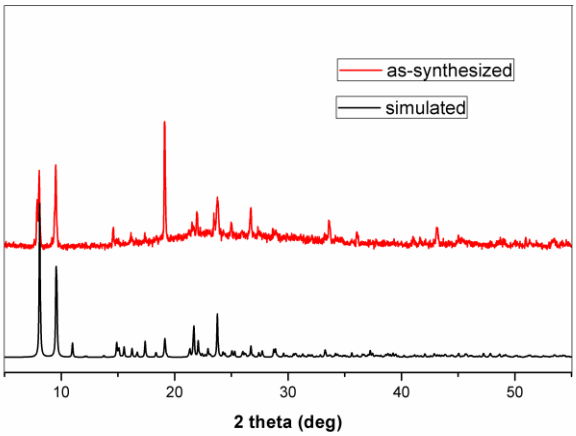


Fig. S15 PXRD patterns of complex **6**.

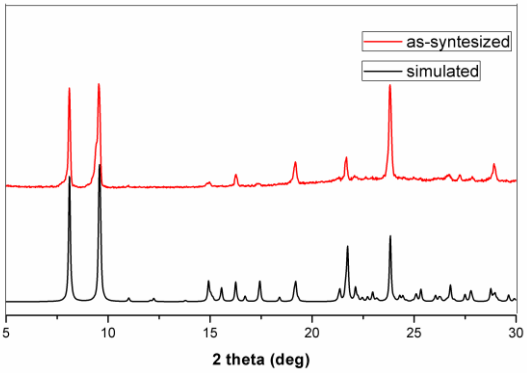


Fig. S16 PXRD patterns of complex **7**.

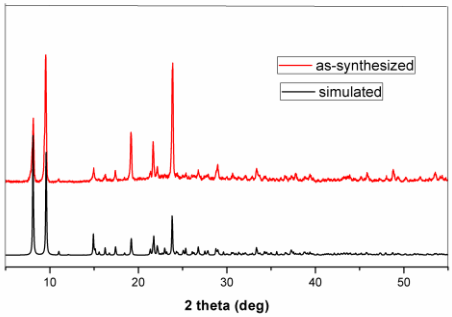


Fig. S17 PXRD patterns of complex **8**.

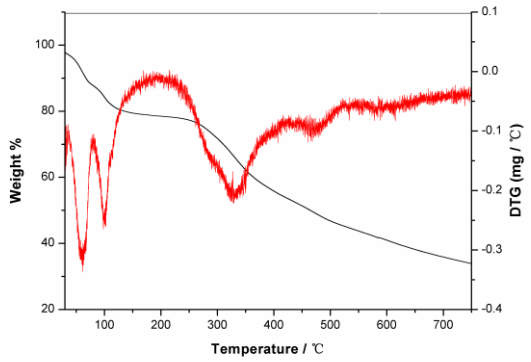


Fig. S18 The DTG and TGA curves of complex **1**.

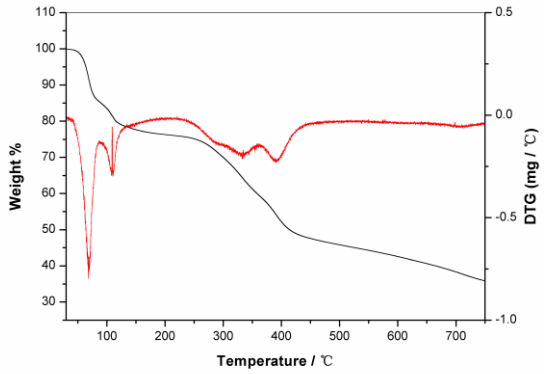


Fig. S19 The DTG and TGA curves of complex **2**.

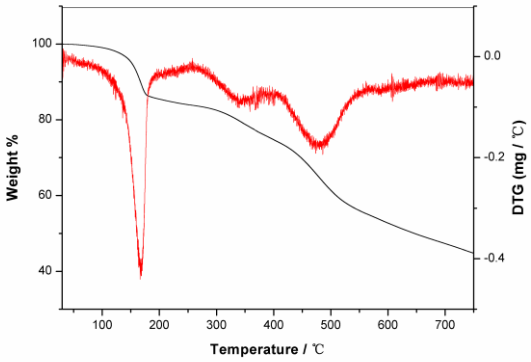


Fig. S20 The DTG and TGA curves of complex **3**.

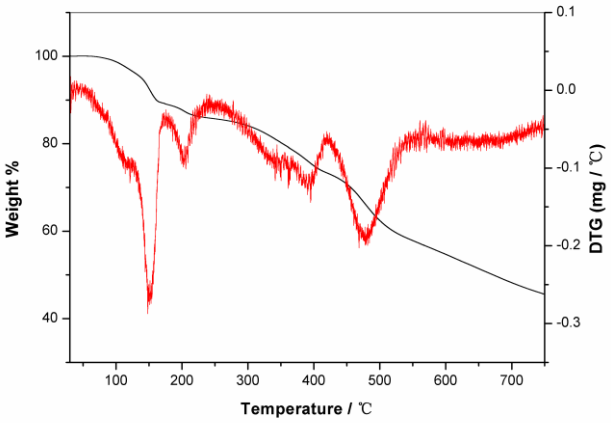


Fig. S21 The DTG and TGA curves of complex **4**.

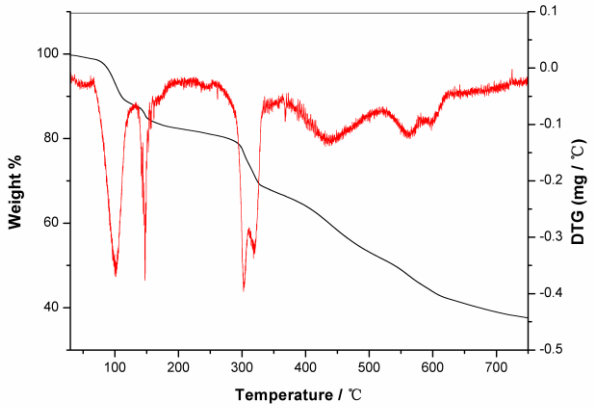


Fig. S22 The DTG and TGA curves of complex **5**.

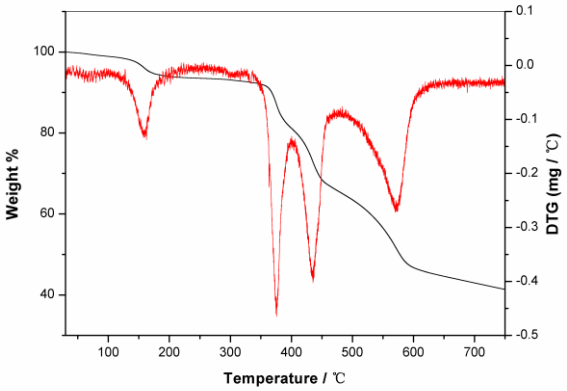


Fig. S23 The DTG and TGA curves of complex **6**.

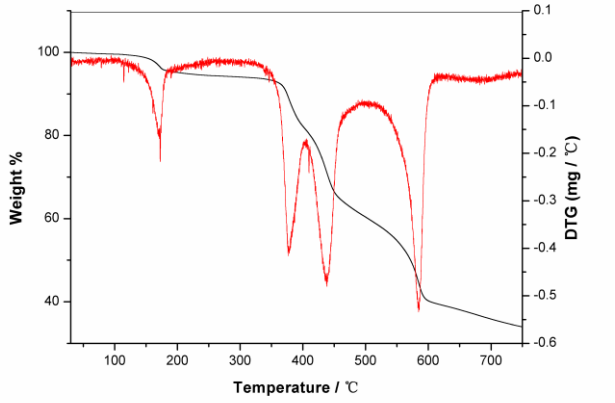


Fig. S24 The DTG and TGA curves of complex **7**.

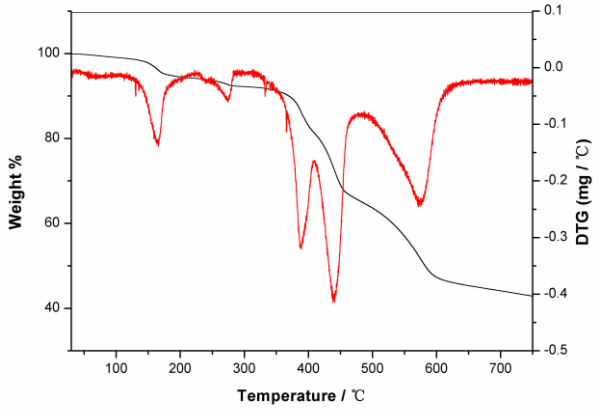


Fig. S25 The DTG and TGA curves of complex **8**.