Cadmium(II) carboxyphosphonates based on the mixed ligands: syntheses, crystal structures and recognition properties for amino acids

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Supplementary Materials

Fig. S1 The experimental powder XRD patterns and the simulated XRD patterns of compound 1.



Fig. S2 The experimental powder XRD patterns and the simulated XRD patterns of compound 2.



Fig. S3 The experimental powder XRD patterns and the simulated XRD patterns of compound 3.



Fig. S4 The IR spectrum of compound 1.



Fig. S5 The IR spectrum of compound 2.



Fig. S6 The IR spectrum of compound 3.



Fig. S7 The TG curve of compound 1.



Fig. S8 The TG curve of compound 2.



Fig. S9 The TG curve of compound 3.



Fig. S10 Solid–state emission spectra of $H_2L'(a)$, 1,10-phen (b) and compound 1 (c) at room temperature.



Fig. S11 Solid–state emission spectra of H₂L' (a), H₂biim (b) and compound 2 (c) at room temperature.



Fig. S12 Solid–state emission spectra of H₂L' (a), H₂biim (b) and compound 3 (c) at room temperature.



Fig. S13 (a) The quenching efficiency for compound **1** into 20 kinds of amino acids aqueous solutions. (b) The fluorescence properties of compound **1** emulsions in the presence of various volumes (100uL–1000uL) of 20 kinds of amino acids aqueous solutions.



Fig. S14 Possible weak interaction mechanisms of tryptophan.



Fig. S15 The powder X–ray diffraction of compound **3** simulated–XRPD (a), experimental–XRPD (b) and after soaking in tryptophan aqueous solution after aging–XRPD (c) at room temperature.



Fig. S16 The structures of aromatic amino acids, (a) His, (b) Phe, (c) Tyr, (d) Trp.



Fig. S17 The fluorescence spectra of compound 3 before grind (black line), grind three times (red line), grind six times (green line) at room temperature.