

An unprecedented network with channels filled by 1D coordination polymer chains: cocrystallization of Ag(I)-4,4'-bipyridine and Ag(I)-benzimidazole complexes

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Supporting information

Preparation of **1**:

H₂BIC (24.3 mg, 0.15 mmol), Bpy (15.6 mg, 0.10 mmol) and AgNO₃ (34.0 mg, 0.20 mmol) were mixed in 6 ml 50% aqueous ethanol and the pH value was adjusted to about 8 by adding an appropriate of dilute NaOH solution carefully. The mixture was sealed into a 10 ml glass bottle and heated at 100 °C for 48 h under autogenous pressure, and then slowly cooled to room temperature at a rate of 2 °C/h. After filtration, the product was washed with distilled water and dried in air, and colourless block crystals of **1** were collected with yield of 67%. Anal. Calcd. for C₃₇H₃₃Ag₅N₁₂O₁₄: C, 31.54, H, 2.36, N, 11.93. Found: C, 31.48, H, 2.41, N, 11.89%. IR (KBr, ν/cm⁻¹): 3432s, 2919m, 2852w, 1604s, 1536m, 1488w, 1401m, 1337w, 1220m, 1046w, 853w, 809s, 775w, 638w, 487w.

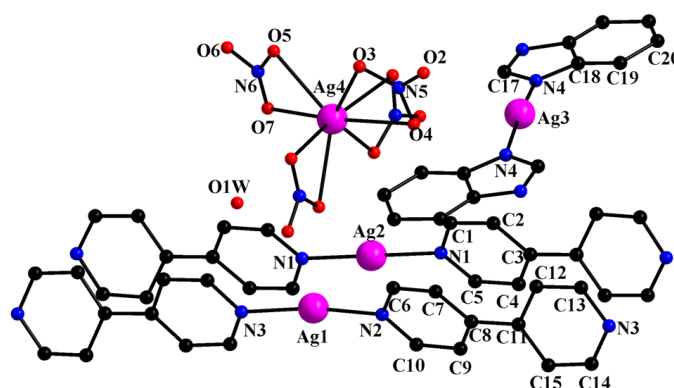


Fig. S1 The coordination environment of Ag(I) ions in **1**.

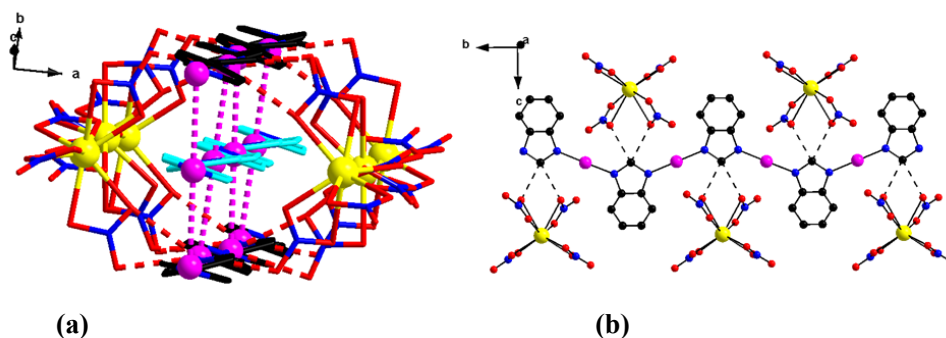


Fig. S2 (a) The Ag...Ag interaction between chain **I** and chain **II**; (b) the CH...O hydrogen bonds between chain **III** and [Ag(NO₃)₄]³⁻ anions. (Ag4 ions are highlighted in yellow, while other Ag(I) ions are display in purple)

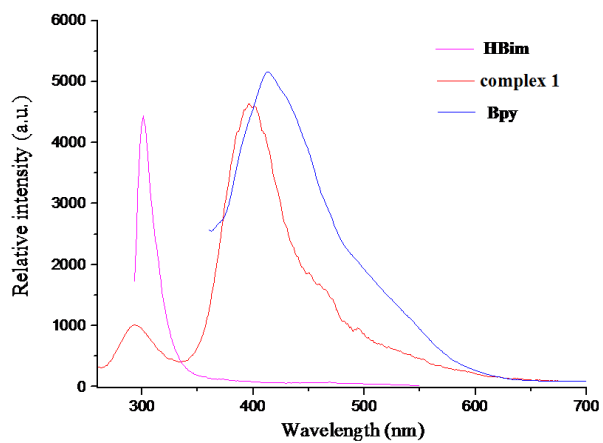


Fig. S3 The emission spectra of **1**.

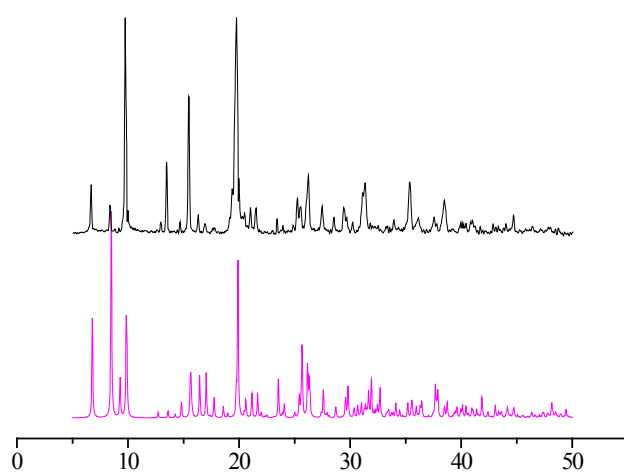


Fig. S4 The simulated X-ray powder diffraction patterns (lower) and the measured one (upper) of complex **1**.