Crystal structure of bis(homophthalato)-bis[2,2′-(1,2-ethanediyl)bis(1H-benzimidazole)]dicadmium(II), Cd₂(C₉H₆O₄)₂(C₁₆H₁₄N₄)₂

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Abstract
C₅₀H₄₆Cd₃N₆O₆, triclinic, P̅T (no. 2), a = 10.429(5) Å, b = 10.756(5) Å, c = 11.322(5) Å, α = 71.379(5)°, β = 70.437(5)°, γ = 88.038(5)°, V = 1130.3 Å³, Z = 1, Rₑ(F) = 0.031, wRₑ(F²) = 0.077, T = 293 K.

Source of material
A mixture of Cd(CH₃COO)₂ (69.1 mg, 0.3 mmol), 2,2′-(1,2-ethanediyl)bis(1H-benzimidazole) (78.7 mg, 0.3 mmol), 2-carboxymethylbenzoic acid (54.0 mg, 0.3 mmol), NaOH (24.0 mg, 0.6 mmol), and H₂O (14 mL) was sealed in a 25 mL Teflon-lined stainless steel container, which was heated at 423 K for 72 h and then cooled down to room temperature at a rate of 5 K/h. Hereafter, some colourless needle-like crystals were obtained with yield of 42 %.

Experimental details
H atoms were placed in geometrically idealized positions and allowed to ride on their parent atoms, with d(C—H) = 0.93 Å (amatic), d(C—H) = 0.97 Å (acyclic) with Uₑ(eq)(H) = 1.2 or 1.5 Uₑ(C). The hydrogen atoms bound to nitrogen atoms were found in the difference Fourier map and refined.

Discussion
Recently, there has been an upsurge of research in coordination polymers from their potential applications in microelectronics, fluorescence, non-linear optics, porous materials and catalysis [1]. Most coordination polymers are constructed by using appropriate organic ligands, especially bridging ligands containing ox-...
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