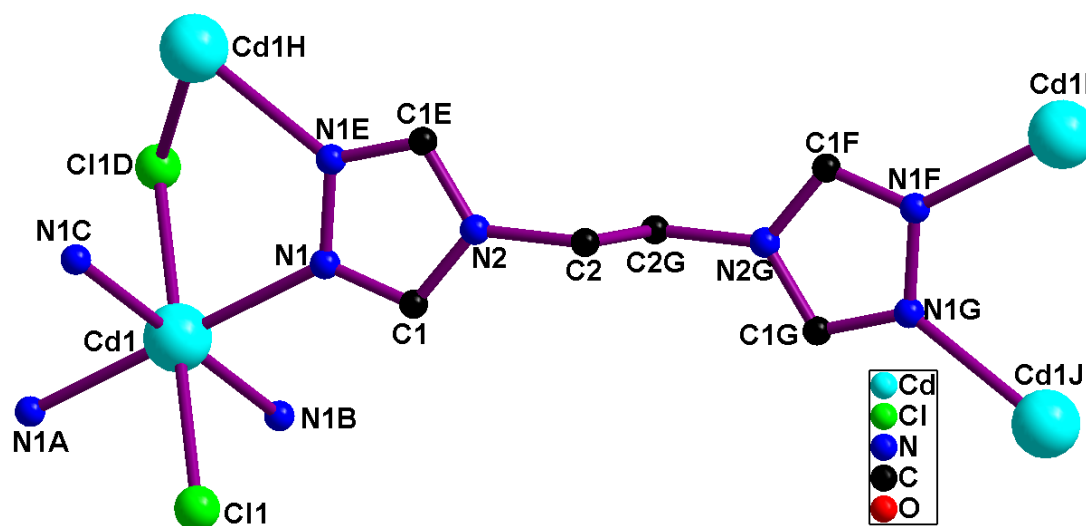


## Supporting Materials

### A polythreading coordination array formed from 3D microporous porous network and 1D ladders†

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**Fig. S1** The coordination of the Cd(II) atom in **1**. Symmetry transformations used to generate equivalent atoms: A  $1.5-x, 0.5-y, 0.5-z$ ; B  $1.5-x, y, 0.5-z$ ; C  $x, 0.5-y, z$ ; D  $-0.5+x, 0.5-y, 0.5-z$ ; E  $1-x, y, z$ ; F  $1-x, -y, -z$ ; G  $x, -y, -z$ ; H  $1-x, 0.5-y, z$ ; I  $-0.5+x, -0.5+y, -0.5+z$ ; J  $1.5-x, -y, -0.5+z$ .

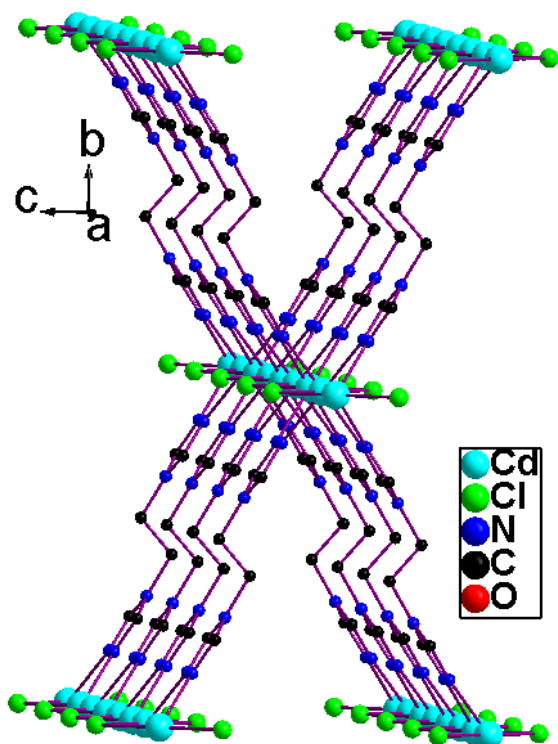


Fig. S2 One chain connects adjacent chains in **1** viewing along the *a* direction.

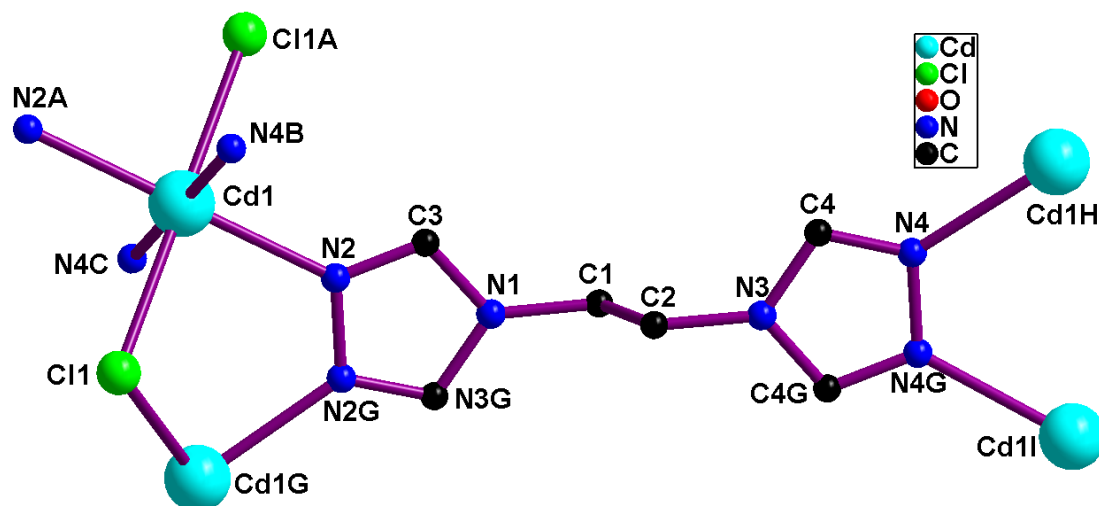


Fig. S3 The coordination environment of the Cd1 atom in **2**. Symmetry transformations used to generate equivalent atoms: A  $-x+1, -y+1, -z+1$ ; B  $-x+3/2, -y+1, z+1/2$ ; C  $x-1/2, y, -z+1/2$ ; G  $x, 0.5-y, z$ ; H  $1.5-x, 1-y, -0.5-z$ ; I  $0.5+x, 0.5-y, 0.5-z$ .

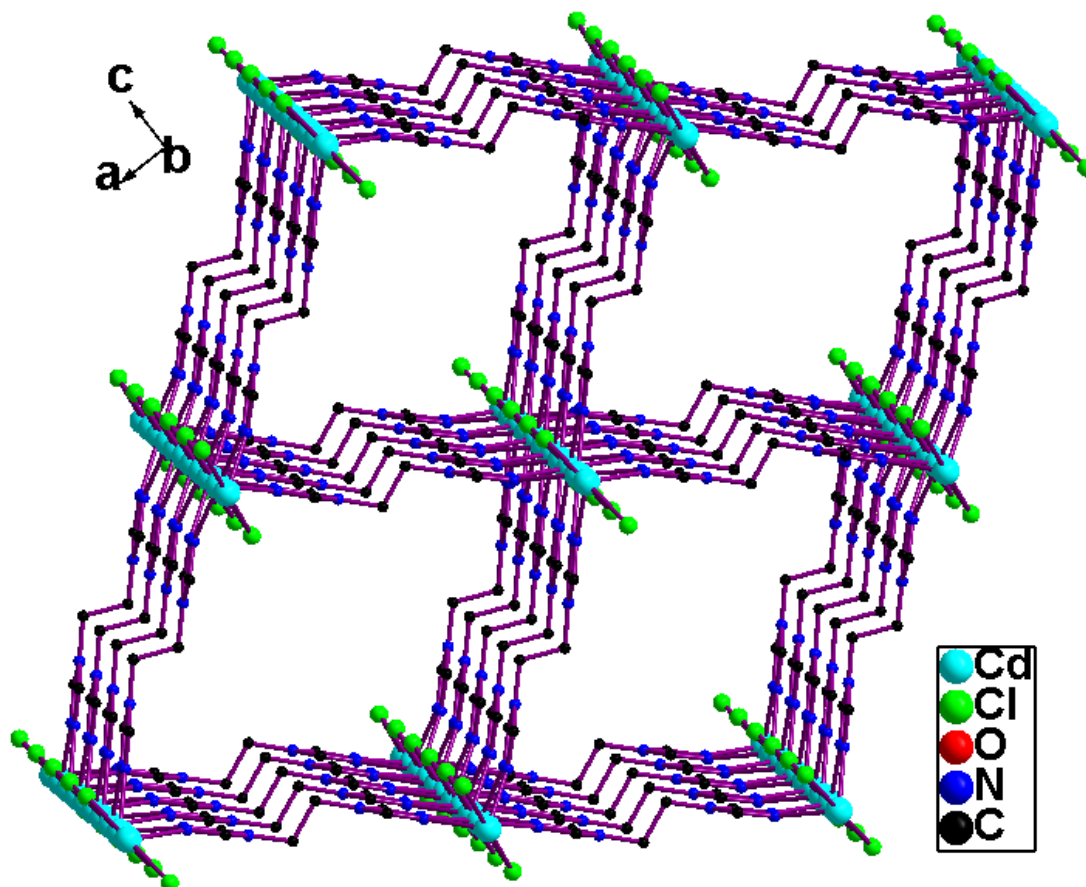


Fig . S4 The  $[\text{Cd}(\text{btre})\text{Cl}]_n^{n+}$  three-dimensional microporous cation network in 2.

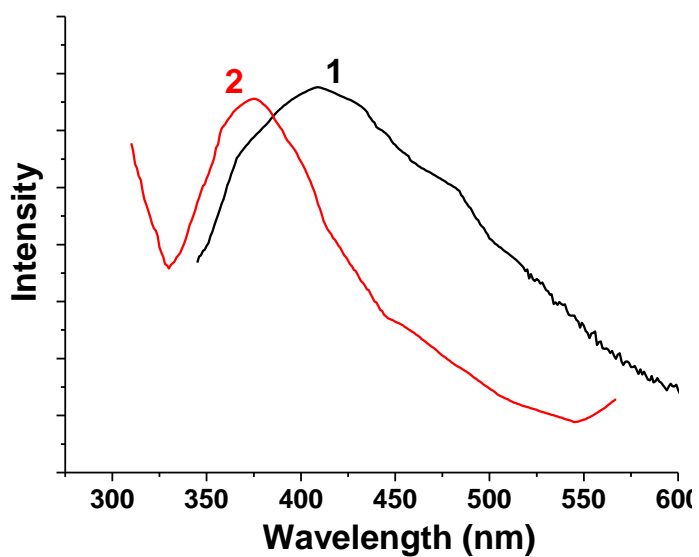


Fig. S5 Solid state emissions of 1 and 2.