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Associate Professor Dr. Kenneth J. Haller
School of Chemistry
Institute of Science
Suranaree University of Technology
Nakhon Ratchasima 30000

SUPRAMOLECULAR STRUCTURE OF

$[\text{Cd}_2(\text{bpa})_3(\text{NO}_3)_4]_n$, bpa=1,2-bis(4-bipyridyl)ethane

Weenawan Somphon and Kenneth J. Haller

School of Chemistry, Institute of Science, Suranaree University of Technology, Nakhon Ratchasima 30000 Thailand

The design of polymeric compounds with open framework structures has been an active area of research in coordination chemistry [1]. Several examples of the 1:2 ratio with the divalent metal and 1,2-bis(4-bipyridyl)ethane (bpa) [2, 3, 4] have been reported. Here we report the coordination polymer complex of $[\text{Cd}_2(\text{bpa})_3(\text{NO}_3)_4]_n$ prepared from a 1:2 molar mixture of $\text{Cd}(\text{NO}_3)_2 \cdot 4\text{H}_2\text{O}$ and 1,2-bis(4-bipyridyl)ethane at room temperature.

The crystal data were collected using a Bruker-Nonius KappaCCD diffractometer equipped with a graphite monochromated $\text{MoK}\alpha$ x-radiation source. Indexing was done from ϕ/χ scans and integration using EvaCCD for profile fitting. The structure was solved with SIR97 and refined with SHELXL.

Crystal data of $[\text{Cd}_2(\text{bpa})_3(\text{NO}_3)_4]_n$. Crystal size: $0.25 \times 0.25 \times 0.30$ mm; monoclinic, space group $P2_1/c$ (No. 14) with $a = 9.4872(8)$ Å, $b = 17.1350(10)$ Å, $c = 12.4891(15)$ Å, $\beta = 92.63(12)^\circ$, $V = 2028.1(3)$ Å³; $T = 298$ K, $Z = 2$; $D_{\text{calc}} = 1.981$ Mg/m³; $\lambda_{\text{MoK}\alpha} = 0.71073$ Å; $T = 298$ K; $\theta_{\text{max}} = 27.50^\circ$.

The crystal structure consists of an infinite chain of alternating $[\text{Cd}(\mu_2\text{-bpa})_2\text{Cd}]$ and $[\text{Cd}(\mu_2\text{-bpa})\text{Cd}]$ units with two bidentate nitrate ligands coordinated to each Cd atom. The cadmium atoms are propagated along the chain by a series of inversion centers.

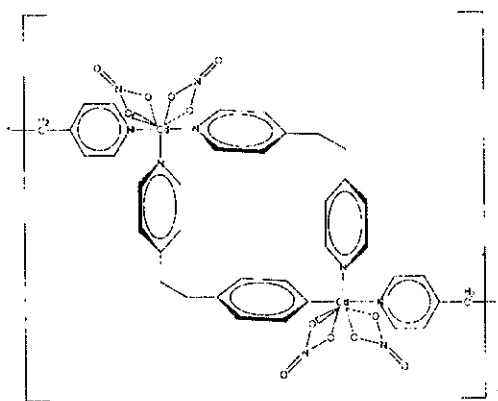


Fig. 1 View of the asymmetric showing thermal ellipsoid

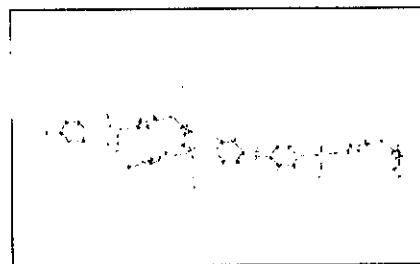


Fig 2. View of the extended framework showing the channel in 2D

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