

Accepted Manuscript

Research paper

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PII: S0020-1693(18)30032-X
DOI: <https://doi.org/10.1016/j.ica.2018.09.082>
Reference: ICA 18540

To appear in: *Inorganica Chimica Acta*

Received Date: 5 January 2018
Revised Date: 9 September 2018
Accepted Date: 30 September 2018

Please cite this article as: F. Akbari Afkhami, G. Mahmoudi, J.M. White, J. Lipkowski, I.A. Konyaeva, D.A. Safin, Möbius-like metal chelates constructed from CdHal_2 (Hal = Cl, Br, I) and benzilbis(pyridin-2-yl)methylidenehydrazone, *Inorganica Chimica Acta* (2018), doi: <https://doi.org/10.1016/j.ica.2018.09.082>

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Möbius-like metal chelates constructed from CdHal_2 (Hal = Cl, Br, I) and benzilbis(pyridin-2-yl)methylidenehydrazone

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Abstract We report design and structural characterization of three new coordination compounds fabricated from $\text{Cd}(\text{NO}_3)_2 \cdot 4\text{H}_2\text{O}$ and a helical organic ligand benzilbis((pyridin-2-yl)methylidenehydrazone (**L**) in the presence of two equivalents of NaHal (Hal = Cl, Br, I) in a mixture of MeOH and EtOH, namely $[\text{CdCl}_2\text{L}] \cdot 1.5\text{MeOH}$ (**1**), $[\text{CdBr}_2\text{L}] \cdot \text{EtOH}$ (**2**) and $[\text{CdI}_2\text{L}]$ (**3**). The synthesis and design strategy involved using a branched tube, where temperature differential led to slow crystallization of the compounds. The ligand **L** is bound via two pyridyl-imine units with a tetradentate coordination mode yielding the 12π electron chelate ring. All the structures are stabilized by intermolecular hydrogen bonding and $\text{C-H} \cdots \pi$ interactions. Hirshfeld surface analysis showed that the structures of all the complexes are highly dominated

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