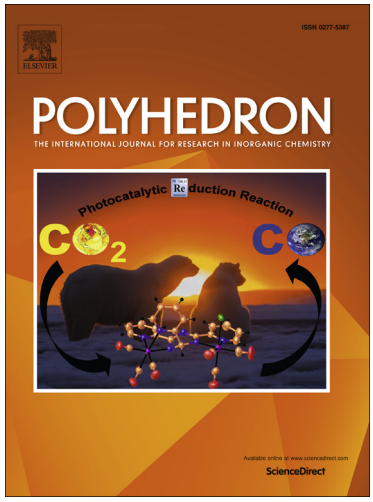

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Polymeric and monomeric copper(II) thiophene- and furancarboxylato complexes. Bridging and terminal coordination of 3-pyridylmethanol.

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Abstract

The synthesis and characterization of eight new coordination compounds $[Cu(2\text{-tpc})_2(\mu\text{-3-pyme})_2]_n$ (**1**), $[Cu(3\text{-Me-2-tpc})_2(\mu\text{-3-pyme})_2]_n$ (**2**), $[Cu(5\text{-Me-2-tpc})_2(\mu\text{-3-pyme})_2]_n$ (**3**), $[Cu(5\text{-Cl-2-tpc})_2(3\text{-pyme})_2]$ (**4**), $[Cu(2\text{-fuc})_2(\mu\text{-3-pyme})_2]_n$ (**5**), $[Cu(3\text{-fuc})_2(\mu\text{-3-pyme})_2]_n$ (**6**), $[Cu(2,5\text{-Me}_2\text{-3-fuc})_2(\mu\text{-3-pyme})_2]_n$ (**7**), and $[Cu(5\text{-NO}_2\text{-2-fuc})_2(\mu\text{-3-pyme})_2]_n$ (**8**) (where 2-tpc is 2-thiophenecarboxylato, 3-Me-2-tpc is 3-methyl-2-thiophenecarboxylato, 5-Me-2-tpc is 5-methyl-2-thiophenecarboxylato, 5-Cl-2-tpc is 5-chloro-2-thiophenecarboxylato, 2-fuc is 2-furancarboxylato, 3-fuc is 3-furancarboxylato, $2,5\text{-Me}_2$-3-fuc is 2,5-dimethyl-3-furancarboxylato, 5-NO_2-2-fuc is 5-nitro-2-furancarboxylato and 3-pyme is 3-pyridylmethanol) is reported and their X-ray structures were determined. X-ray analysis revealed samples **1–3** and **5–8** to be coordination polymers**,** whereas the complex **4** is monomeric. The polymeric extension is achieved through bridging *N,O* -3-pyridylmethanol molecules, resulting in the observation of 2-D (**1–3**, **5–7)** or 1–D polymeric chains (**8**). In addition, the coordination polymers are also stabilized by strong intramolecular hydrogen bonds. On the other hand, the monomeric compound **4** with monodentate *N*-coordinated 3-pyridylmethanol ligands forms 1-D supramolecular chain due to