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## Structural and Magnetic Properties of Polynuclear Oximate Copper Complexes With Different Topologies

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### Abstract

Two new copper(II) complexes containing the methyl(2-pyridyl)ketone oxime ligand (mpkoH)  $[\text{Cu}_3(\text{OH})(\text{ClO}_4)_2(\text{mpko})_3] \cdot \text{CH}_3\text{OH}$  (**1**) and  $[\text{Cu}(\text{ClO}_4)(\text{mpko})(\text{mpkoH})]_n$  (**2**) have been prepared from  $\text{Cu}(\text{ClO}_4)_2$  and mpkoH in different metal-to-ligand molar ratios. In addition, the compound  $[\text{Cu}\{(\text{mpko})_2\text{BF}_2\}(\text{H}_2\text{O})](\text{BF}_4)$  (**3**) [ $(\text{mpko})_2\text{BF}_2$  is the fluoroboration product of the oxime] has been obtained when replacing  $\text{Cu}(\text{ClO}_4)_2$  by  $\text{Cu}(\text{BF}_4)_2$ . Compound **1** is an isolated triangle with a  $\{\text{Cu}_3(\mu_3\text{-OH})\}^{5+}$  core, whereas **2** is a chain of  $\text{Cu}^{\text{II}}$  ions linked by anionic  $\text{mpko}^-$  bridges. **1** exhibits strong antiferromagnetic competing interactions, as well as antisymmetric exchange. On the other hand, very weak ferromagnetic interactions are found in **2**. The magnetic properties of these compounds have been analyzed by magnetic measurements and EPR spectra.

### Keywords

Copper(II) complexes, methyl(2-pyridyl)ketone oxime, magnetic properties

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