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Copper(II) complexes of pyridine-oxazoline (Pyox) ligands: Coordination chemistry, ligand stability, and catalysis

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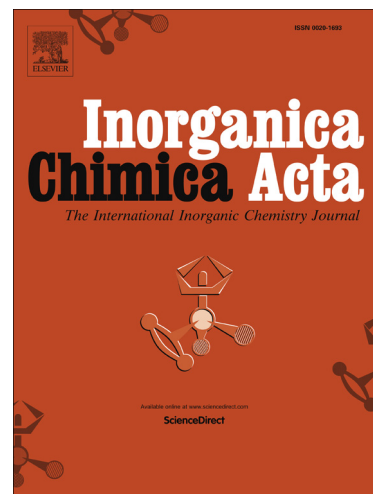
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## Revised manuscript

**Copper(II) complexes of pyridine-oxazoline (Pyox) ligands:  
Coordination chemistry, ligand stability, and catalysis**

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**Abstract**

The coordination chemistry of copper(II) complexes bearing pyridine-oxazoline (“Pyox”) ligands has been studied, with an aim of investigating their catalytic ability. Interestingly, the stability of the coordinated ligands has been shown to be much less than previously assumed: hydrolysis of the ligands by fortuitous water gives rise to 2-pyridine carboxylate formation, which encapsulate the copper in a two-dimensional coordination polymer **3**. The complexes [Cu(R-Pyox)(NCMe)<sub>2</sub>(ClO<sub>4</sub>)<sub>2</sub>] {R = benzyl (Bn) **2a**, phenyl (Ph) **2b**, isopropyl (iPr) **2c**} have been prepared, of which the benzyl derivative has been analysed by CW EPR spectroscopy. The complex [Cu(Bn-Pyox)(NCMe)<sub>2</sub>(ClO<sub>4</sub>)<sub>2</sub>] and the afore-mentioned coordination polymer have been crystallographically characterised. The performance of complexes **2a–c** in the asymmetric allylic oxidation of cyclohexene is described.

Keywords: epr spectroscopy, coordination chemistry, oxazoline ligands, copper, oxidation catalysis, X-ray crystallography

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