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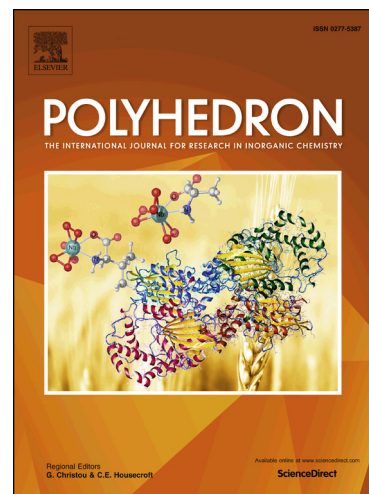
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Oxygen Atom Exchange in Rhenium Bipyridine and Phenanthroline Tetracarbonyl Cations with H₂¹⁸O

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Abstract

[Re(bpy)(CO)₄][OTf] **1** and [Re(phen)(CO)₄][BF₄] **2** (bpy = 2,2'-bipyridine and phen = 1,10-phenanthroline) in acetonitrile have been shown to undergo oxygen atom exchange reactions with 18-oxygen labelled water regioselectivity at the axial CO ligands. This process is proposed to proceed *via* an hydroxycarbonyl intermediate, with a $\Delta H^\ddagger = 49.9 \pm 4.1 \text{ kJ/mol}$ in the case of complex **1**.

Keywords: oxygen exchange; carbonyls; kinetics; infrared; H₂¹⁸O

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