

Electrochemical properties of new binuclear nickel(II) complexes formed by bridging $\{\mu\text{-O}_2\text{P(H)Ar}\}^-$ ligands

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Abstract

Electrochemical properties of binuclear nickel complexes $[\text{Ni}_2(\mu\text{-O}_2\text{P(H)Ar})_2(\text{bpy})_4]\text{Br}_2$, where Ar = Ph, 2,4,6-trimethylphenyl, 2,4,6-triisopropylphenyl, bpy = 2,2'-bipyridine, and $[\text{Ni}_2(\mu\text{-O}_2\text{P(H)Tipp})_2(\text{bpy})_4](\text{BF}_4)_2$ have been investigated using the methods of cyclic voltammetry and macroscale electrolysis. It has been established that electrochemical reduction/oxidation of the investigated organonickel species is chemically reversible process resulting in the formation of new complexes bearing nickel(II), nickel(I) and nickel(0) coordination centers.