Two New Ruthenium(II) Complexes with Cyclometalated 2-Phenylpyridine Ligands

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The reaction of \(\text{Ru}_3(\text{CO})_{12}\) and 2-phenylpyridine (Hppy) in hot methanol yields the dinuclear ruthenium(II) complex \([\text{Ru}(\text{OCH}_3)(\text{ppy})(\text{CO})_2]_2\) (3) in moderate yield. Heating of \(\text{Ru}_3(\text{CO})_{12}\) and Hppy in a cyclohexane–dimethoxyethane mixture generates the mononuclear complex \([\text{Ru-cis-}(\text{ppy})_2\text{-cis-(CO)}_2]\) (2). When 2 is treated with methanol at elevated temperature, only partial conversion into 3 can be achieved. The structures of complexes 2 (two polymorphs) and 3 were established by X-ray diffraction analysis.

Key words: Cyclometalated Ligands, Metallacycles, N Ligands, Ruthenium, Organometallic Compounds, Polymorphism