

Two New Quadridentate Schiff Base Complexes of Nickel(II) and Cobalt(III): Synthesis, Structure and Spectral Characterisation

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Two novel quadridentate Schiff base complexes, $[\text{Ni}^{\text{II}}\text{LH}](\text{ClO}_4)_2 \cdot \text{H}_2\text{O}$ (**1**) and $[\text{Co}^{\text{III}}\text{L}](\text{ClO}_4)_2 \cdot \text{H}_2\text{O}$ (**2**) [LH, a Schiff base ligand: $\text{Ph}(\text{OH})\text{C}(\text{Me})=\text{NCH}_2\text{CH}_2\text{N}(\text{CH}_2\text{CH}_2\text{NH}_2)_2$] have been synthesised and characterised by elemental analyses, spectroscopic and electrochemical studies. The structures of both have been unequivocally established from single crystal X-ray diffraction studies. **1** and **2** crystallise in the monoclinic space group $P2_1/n$ having cell parameters $a = 8.536(1)$, $b = 13.832(4)$, $c = 18.194(2)$ Å, $\beta = 100.00(10)^\circ$, $Z = 4$ for **1**, and $a = 10.819(5)$, $b = 14.301(2)$, $c = 14.224(1)$ Å, $\beta = 97.04(2)^\circ$, $Z = 4$ for **2**. The complexes expose a square planar geometry around the metal centers chelated with three different types of nitrogen donor centers of the ligand.

Key words: Nickel(II)/Cobalt(III), Schiff Base Chelator, X-Ray Structure, Spectral Characterisation