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

Joy Chakraborty\textsuperscript{a}, Raj K. Bhubon Singh\textsuperscript{b}, Brajagopal Samanta\textsuperscript{a}, Chirantan Roy Choudhury\textsuperscript{a}, Subrata K. Dey\textsuperscript{a}, Pritha Talukder\textsuperscript{a}, Manob J. Borah\textsuperscript{b}, and Samiran Mitra\textsuperscript{a}

\textsuperscript{a} Department of Chemistry, Jadavpur University, Kolkata: 700 032, W.B., India
\textsuperscript{b} Department of Chemistry, Nagaland University, Mokokchung 798601, Nagaland, India

Reprint requests to Prof. Samiran Mitra. Fax: 91-033-2414 6414. E-mail: smitra_2002@yahoo.com

Z. Naturforsch. \textbf{61b}, 1209 – 1216 (2006); received April 10, 2006

Two novel quadridentate Schiff base complexes, \([\text{Ni}^{II}\text{LH}]\)(\text{ClO}_4)^2\cdot\text{H}_2\text{O}\ (1)\) and \([\text{Co}^{III}\text{L}]\)(\text{ClO}_4)^2\cdot\text{H}_2\text{O}\ (2)\) \([\text{LH}, \text{a Schiff base ligand: Ph(OH)C(\text{Me})=NCH}_2\text{CH}_2\text{N(\text{CH}_2\text{CH}_2\text{NH}_2)}]\) 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. \textbf{1} and \textbf{2} crystallise in the monoclinic space group \textit{P}2\textsubscript{1}/\textit{n} having cell parameters \(a = 8.536(1), \ b = 13.832(4), \ c = 18.194(2) \ \text{\AA}, \ \beta = 100.00(10)^\circ, \ Z = 4\) for \textbf{1}, and \(a = 10.819(5), \ b = 14.301(2), \ c = 14.224(1) \ \text{\AA}, \ \beta = 97.04(2)^\circ, \ Z = 4\) for \textbf{2}. The complexes expose a square planar geometry around the metal centers chelated with three different types of nitrogen donor centers of the ligand.

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