

Abstract

The main goal of my work was the synthesis and characterisation of nickel and cobalt coordination compounds with pyridyl substituted ligands (simple pyridine alcohols). These simple ligands contain two functional groups: i) pyridine nitrogen atom and ii) hydroxo group of a pyridine side chain. Both can participate in coordination to metal centres either in chelating or bridging manner. Additionally, the hydroxo group may be deprotonated to give the alkoxo group, known as a good bridging function. Several coordination ways are thus possible. While the N,O-chelating fashion prevails in the case of *orto* substituted pyridyl alcohols, only N,O-bridging and N-monodentate fashion can be seen with *meta* substituted ligands. Based on the cases published in the literature I concluded that these simple and commercially available compounds will allow me to prepare several new compounds and therefore subsequently help me to investigate the factors affecting the aggregation of building blocks into a polymeric compound. By using different synthetic methods and crystallisation procedures I have managed to synthesise 29 coordination compounds in which pyridyl substituted ligands coordinate to nickel or cobalt, respectively. Herein described crystal structures illustrate the effects small changes in the ligand have on both the structure and the aggregation of building blocks in the crystal.

Key words: pyridyl substituted alcohols, cobalt, nickel, isomorphism, polymorphism