

In situ oxidation of 2,9-dimethyl-1,10-phenanthroline for synthesis of nickel(II) complexes containing highly preorganized acidic ligand

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Preorganized ligands have proven to be important in inorganic chemistry, biomedical, environmental, and industrial fields.¹ Ligand preorganization means that the free ligand has the same conformation as is required to complex the target metal ion. These ligands have a rigid phen backbone, with only limited movement possible for the donor groups at the 2 and 9 positions of the phen, leads to high levels of preorganization. 1,10-Phenanthroline-2,9-dicarboxylic acid (H₂PDA) with flat and rigid skeleton is one of the most prominent preorganized ligands which is used to prepare coordination compounds with selectivity metal ion, luminescence and magnetic properties.² As continuation of our efforts to develop systems containing dicarboxylic acids,³ we employed H₂PDA to synthesis Ni(II) coordination complexes formulated as [Ni(PDA)(H₂O)₂] (**1**) and [Ni(PDA)(phen)].5H₂O (**2**) (Fig. 1). These compounds have been characterized by melting point, elemental analysis, infrared spectroscopy (IR), and thermogravimetric (TGA) analysis.

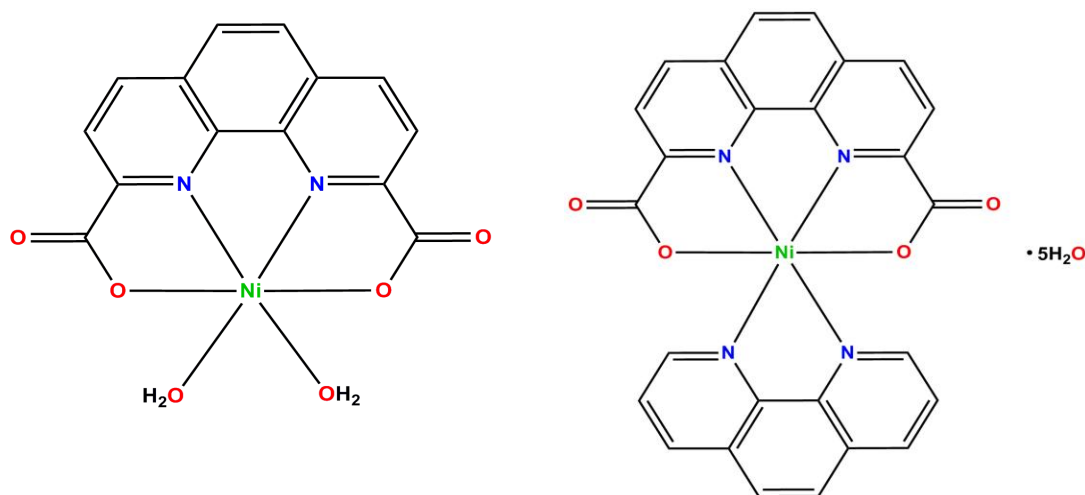


Fig.1 The molecular structures of **1** and **2**.

References

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