IJARSCT
International Journal of Advanced Research in Science, Communication and Technology
International Open-Access, Double-Blind, Peer-Reviewed, Refereed, Multidisciplinary Online Journal
ISSN: 2581-9429
Volume 3, Issue 1, May 2023
Impact Factor: 7.301

Synthesis, Structural and Spectroscopic Characterization of a Ni(II) Dimeric Complex with a Tridentate NNO donor Schiff Base Ligand: Coexistence of Square Planar and Octahedral Geometries

Dr. Subrata Naiya[1] and Dr. Saptarshi Biswas[2]
Department of Chemistry, Sushil Kar College, Champahati, Baruipur, West Bengal, India[1]
Department of Chemistry, Katwa College, Katwa, Purba Bardhaman, West Bengal, India[2]

Abstract: *A new Ni(II) complex, $[Ni_2L_2(OH)(OH_2)]ClO_4{\cdot}CH_2Cl_2$ (**1**), was synthesized using a tridentate N,N,O-donor Schiff base ligand, HL, derived from the condensation of salicylaldehyde and N,N-dimethylethane-1,2-diamine. The complex was characterized by X-ray structural analysis and spectroscopic studies. The crystal structure reveals a Ni(II) dimer in which the two Ni atoms adopt distinct coordination environments: one in a square planar geometry and the other in an octahedral geometry. These Ni atoms are bridged by a phenoxo oxygen atom from the ligand and a hydroxo group.*

Keywords: Tridentate Schiff base, Nickel(II), Crystal structure, Dinuclear complex