22nd Iranian Inorganic Chemistry Conference,
23-25 August, 2023
University of Kurdistan

Title: Synthesis, characterization and crystal structure determination of Ni(II) complex with N_2O_2 symmetrical tetradentate Schiff base ligand

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The low-spin square-planar nickel(II) complexes and high-spin octahedral nickel(II) complexes with Schiff base ligands have been received much attention in optical materials [1]. Nickel is also recognized as a considerable important biological metal forming the active site of a variety of metalloproteins such as hygrogenase, carbon monoxide dehydrogenase, and urease [2, 3].

A symmetrical Schiff base ligand has been prepared and characterized by elemental analyses and spectroscopic methods. The corresponding nickel(II) complex was synthesized with tetradentate Schiff base ligand derived from 5-bromosalicylaldehyde and 2,2-dimethyl-1,3 diaminopropane. This complex was characterized by ^{1}H NMR, FT-IR and its solid state structure was determined using single crystal X-ray diffraction. The Ni(II) ion is coordinated by two N atoms and two O atoms from the tetradentate Schiff base ligand in a distorted square-planar geometry (Fig. 1).

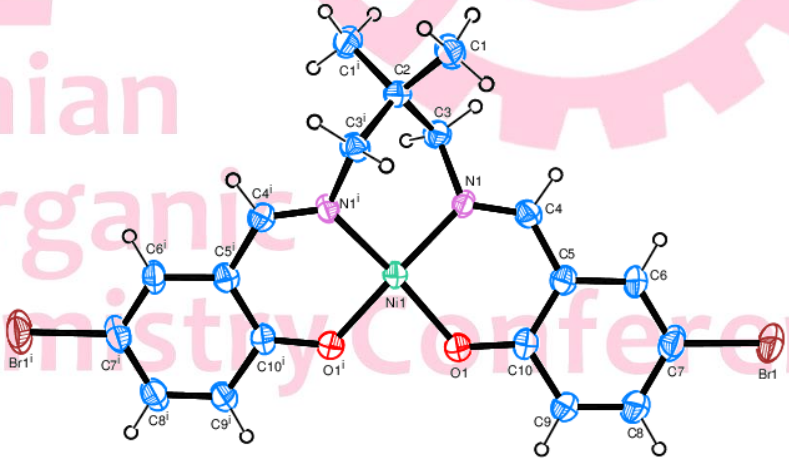


Fig. 1. The molecular structure of the title compound with 50% of ellipsoid probability.

Keywords: Schiff base, N_2O_2 donor, Nickel complex, Crystal structure

References

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