Synthesis and Characterization of Osmium(III) complexes with Substituted nitrones

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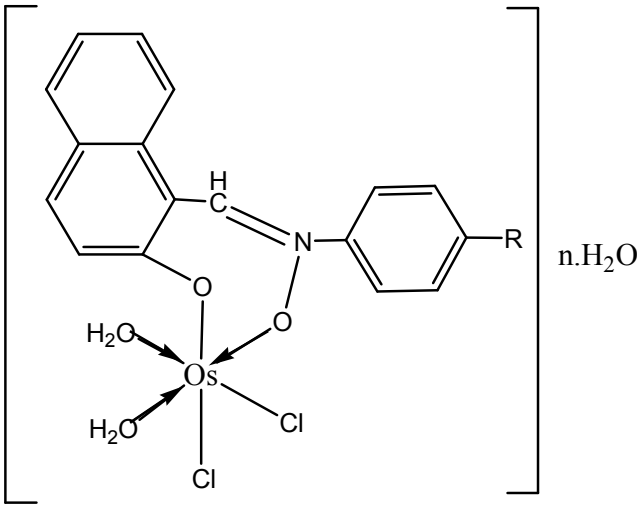
ABSTRACT

New Series of complexes of general formula $[OsCl_2(H_2O)_2.L].nH_2O$; where LH=[α-(2-hydroxy-1-naphthyl)-N-(*para*-R-phenyl)nitrone], n=0-6 and R = H, Cl, Br, $COCH_3$, $NHCOCH_3$, NH_2, and CH_3 were synthesized and characterized by their elemental analysis (CHN) ,molar conductance , magnetic moments infrared and electronic spectral measurements. The ligands (LH) were prepared according to the reported procedure[1] and acted as a bidentate, univalent toward the osmium (III) ion via the oxygen atoms of both, the nitrone and naphtholic groups forming with the presence of two chloride ions and two aqua molecules the most probable octahedral geometry around each osmium ion in each complex as shown in Figure depicted below. The elemental analysis as well the infrared spectra revealed the presence of crystallization water molecules outside the coordination sphere. Their molar conductance measurements revealed the non-electrolytic behavior. The following equation represent the reaction of the ligands with osmium(III)chloride to yield the desired complexes:-

$OsCl_3 + LH \rightarrow [OsCl_2(H_2O)_2L].nH_2O + KCl$

n=0-6 ; R = H, Cl , Br, $COCH_3$, $NHCOCH_3$, NH_2, and CH_3



Reference

[1] P. R. West and G. C. Davis, *J. Org. Chem.* **1989**,*54*,5176.