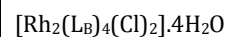
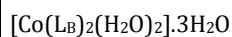
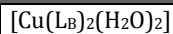
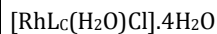
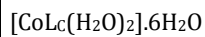
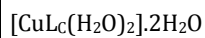


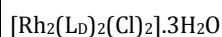
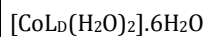
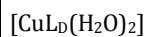
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Thesis Title	Synthesis and study of mixed ligand complexes of cobalt (ii), Copper (ii) and rhodium ion		
Year	<b>2008</b>		
Abstract	<p>There are several ways for preparing Schiff bases. The most common way is the condensation reaction between amines and aldehydes.</p> <p>The Schiff bases were prepared by the reaction of cyclohexylamine with piperonaldehyde and reaction of 2,4-dichloroaniline with salicylaldehyde with mole ratio 1:1 to prepare ligand [L<sub>A</sub>] (Piperonaldehyde cyclohexylimine) and ligand [L<sub>B</sub>] (Salicylidene-2,4-dichloroaniline) respectively.</p> <p>Also the reaction of dithiooxamide with salicylaldehyde and reaction of o-phenylenediamine with salicylaldehyde with mole ratio 1:2 to prepare ligand [L<sub>C</sub>] (bis salicylidene-dithiooxamide) and ligand [L<sub>D</sub>] (bis salicylidene -o-phenylenediamine) respectively</p> <p>The prepared ligands were characterized by TLC technique, melting points measurement, F.T.IR and UV-Vis spectroscopy</p> <p>The [L<sub>A</sub>, L<sub>B</sub>, L<sub>C</sub> and L<sub>D</sub>] have been used as ligands to prepare a number of transition metal complexes, which include [Cu (II), Co (II) and Rh (III)] ions.</p> <p>The preparation of complexes of [Cu(II), Co(II) and Rh(III)] with [L<sub>A</sub>] and complexes of [Cu(II), Co(II) and Rh(III)] with [L<sub>B</sub>] were done with mole ratio 1:2 (metal : ligand)</p> <p>While the preparation of complexes of [Cu (II), Co (II) and Rh (III)] with [L<sub>C</sub>] and complexes of [Cu(II), Co(II) and Rh(III)] with [L<sub>D</sub>] were done in mole ratio 1:1 (metal : ligand)</p> <p>The metal complexes of the prepared ligands have been obtained in solid state. They were characterized by F.T.IR, UV-Vis spectroscopy, metal analysis spectrophotometer, conductivity and magnetic susceptibility measurements</p> <p>According to the result of the above measurements, the following formula for new complexes were suggested</p> <p>1) The structural formula of complexes of Cu(II), Co(II) and Rh(III) ions with [L<sub>A</sub>] were as follows:</p> <p>[Cu(L<sub>A</sub>)<sub>2</sub>(ONO<sub>2</sub>) (H<sub>2</sub>O)].NO<sub>3</sub>.2H<sub>2</sub>O</p> <p>[Co(L<sub>A</sub>)<sub>2</sub>(ONO<sub>2</sub>)<sub>2</sub> (H<sub>2</sub>O)<sub>2</sub>].2H<sub>2</sub>O</p> <p>[Rh(L<sub>A</sub>)<sub>2</sub>(Cl)<sub>2</sub>(H<sub>2</sub>O)<sub>2</sub>].Cl.3H<sub>2</sub>O</p> <p>2) The structural formula of complexes of Cu(II), Co(II) and Rh(III) ions with [L<sub>B</sub>] were as follows</p>		



3) The structural formula of complexes of Cu(II), Co(II) and Rh(III) ions with  $[\text{L}_C]$  were as follows:



4) The structural formula of complexes of Cu(II), Co(II) and Rh(III) ions with  $[\text{L}_D]$  were as follows:



Different bonding and structural behavior were related during the study of coordination chemistry of the different new complexes. The **Racah** and other ligand field parameters which illustrate the bonding nature between metal ion and donor atoms of the ligand were calculated for Co (II) and Rh (III) complexes using (Tanabe-Sugano) diagram.