



SALAHALDIN UNIVERSITY  
COLLEGE OF SCINENCE  
CHEMESTRY DEPARTEMENT

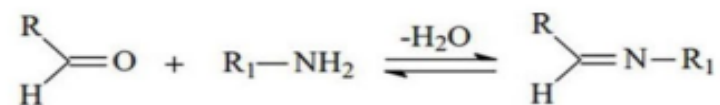
# Schiff Base Complexes With Transition Metals

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# Introduction

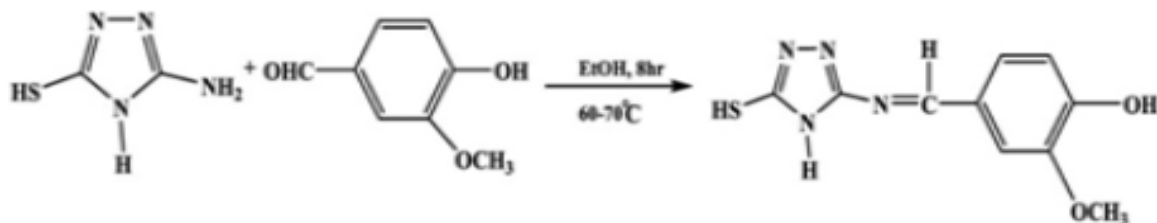
Hugo Schiff reported the first synthesis of imines or azomethine in 1864, introducing a new class of organic compounds. Schiff bases is organic compound derived from aromatic amines and aromatic aldehydes are a very important class of organic compounds because of their applications in many fields.



# Preparation of ligand

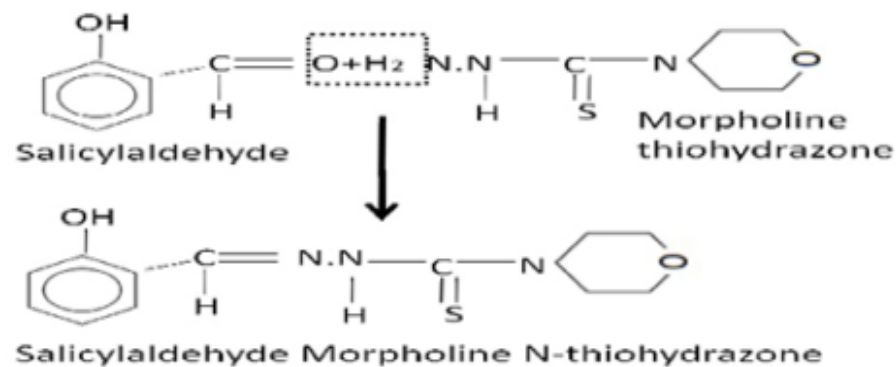
## 1. Preparation, spectral characterization and biological applications of Schiff base ligand:

Most of the Schiff bases are easily synthesized by using simple synthetic procedures with the reaction of an amine and a carbonyl compound. In coordinate chemistry, a lot of Schiff bases can act as ligands.



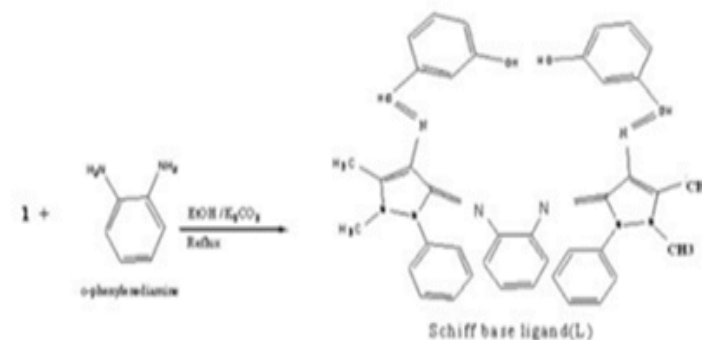
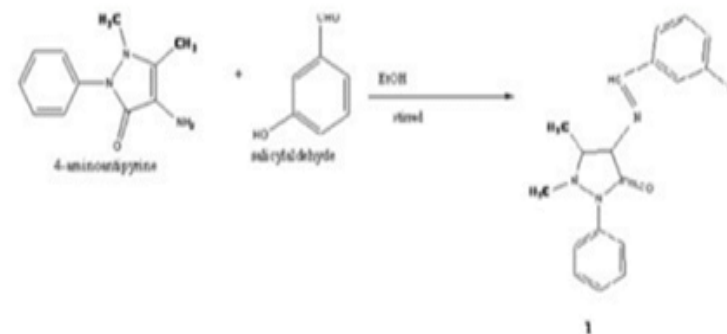
## 2. Synthesis and characterization of Schiff base from salicylaldehyde and thiohydrazone and its metal complexes:

The ligand salicylaldehyde & thiohydrazone was synthesized & characterized by elemental analyses & IR spectra.



### 3. Synthesis and characterization of Schiff base transition metal complexes:

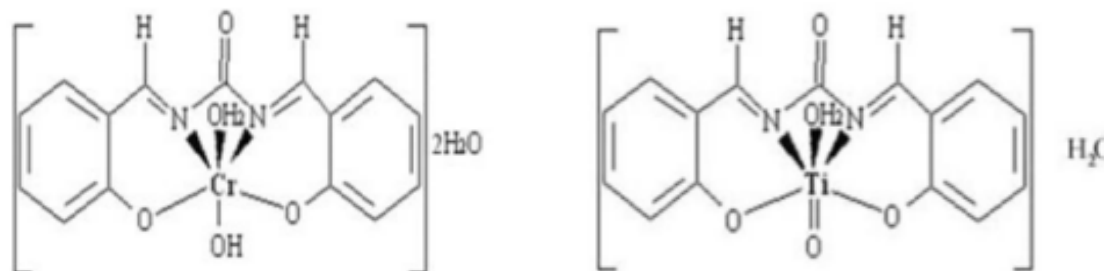
Many metal complexes of Cu (II); Ni (II); Co (II); Mn (II); Zn (II); VO(IV) and Cd (II) have been synthesized from the Schiff base (L) derived from 4-amino antipyrine, salicylaldehyde and O-phenylene diamine.



# Preparation of complex

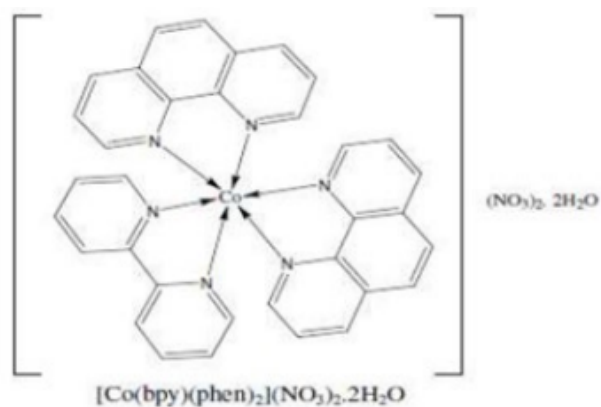
1. Preparation and spectroscopic investigation of a Schiff base metal complexes:

A metal complexes of Cr (III) and TiO (IV) ions with a Schiff base derived from salicylaldehyde and urea have been investigated.



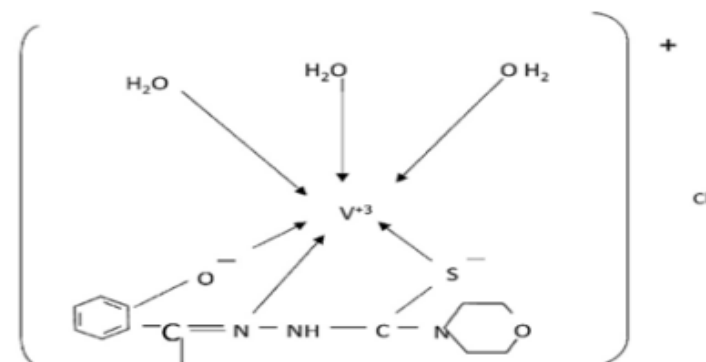
## 2. Synthesis and characterization of some transition metal complexes:

The complex synthesized from 1,10-phenanthroline and 2,2'-bipyridine mixed-ligand  $[\text{Co}(\text{bpy})(\text{phen})_2](\text{NO}_3)_2 \cdot 2\text{H}_2\text{O}$



### 3. Synthesis and characterization of Schiff base salicylaldehyde and thiohydrazone and its metal complexes:

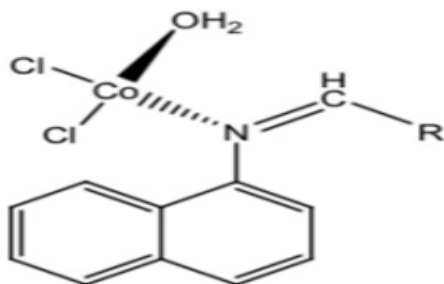
The ligand salicylaldehyde and thiohydrazone was synthesized & characterized by elemental analyses, IR spectra. Its metal complexes with the metals Ti (III), V (III), VO (IV), Co (II) and Mn (III) were synthesized & characterized by the determination of MP, molar conductance and magnetic susceptibilities.





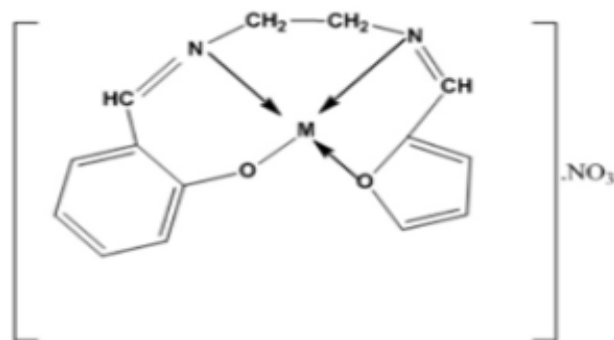
**4. Synthesis of metal complexes Fe (II), Co (II), Ni (II) of monodentate Schiff bases derived from aromatic aldehyde:**

synthesize the Fe (II), Co (II) and Ni (II) metal complexes of Schiff bases produced from condensation of 1-Naphthyl amine hydrochloride with benzaldehyde or naphthalene-1-carbaldehyde.



**5. Cu (II) and Ni (II) complexes of Schiff base: Synthesis, characterization and antibacterial activity:**

Cu (II) and Ni (II) metal ions complexes of Schiff base derived from the condensation reaction of appropriate amount of ethane-1,2-diamine, Salicylaldehyde and 2-furfuraldehyde in alcoholic medium.



# Reference

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Musarat Farjana Yesmin, Md. Sajjad Hossain, Saiyad Nasira, Nayon Uddin, Md. Ashrafuzzaman, Md. Masuqula and Laila Arjuman Banu, Cu (II) and Ni (II) Complexes of Schiff Base: Synthesis, Characterization and Antibacterial Activity , *“International Journal of Advanced Research in Chemical Science (IJARCS)”*, 7(1), 2020, PP 9-15.

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