METHODOLOGY

Schiff bases in a broad sense have the general formula R₁R₂C=NR₃, where R is an organic side chain. In this definition, Schiff base is synonymous with azomethine. Thus the general formula RCH=NR'.

Schiff bases can be synthesized from an aromatic amine and a carbonyl compound by nucleophilic addition forming a hemiaminal, followed by a dehydration to generate an imines. Imines that contains an aryl group bounded to the nitrogen or to the carben atom are called schiff bases

Schiff bases are capable of forming coordination bond with many metal ions through both azomethin group and phenyl group.

Many Schiff bases were prepared by condensation reaction of certain aromatic amines with aromatic aldehydes derivatives

The study of physical properties like elemental analysis, %yield, M.P, conductivity, solubility & magnetic properties. The spectral study like IR, UV visible, mass spectroscopy, TGA, DTA, X-ray & microbial activity.[17]

Preparation of Schiff base & its Transition metal complex[30]

\[
\text{Ar-NH}_2 + \text{ArCHO} \xleftrightarrow{} \text{Ar-N=CH-Ar}
\]
\begin{align*}
\text{R1} & \equiv \text{Alkyl or Aryl} \\
\text{R1} & \equiv \text{C}_{2}\text{H}_4\text{Cl}, \text{Etc} \\
\text{X} & \equiv \text{OH, Cl, Br, I, CH}_3, \text{C}_2\text{H}_4\text{Cl}, \text{Etc}
\end{align*}

\textbf{WORK PLAN}

Work will be divided in the span of every half year. Total 4 half years will be utilize for this research work to be submitted.
**1st - 6 months**

1. Review of literature
   a. From the date of registration we will interact with the guide frequently for the discussions on various activities.
   b. We will visit various research laboratories in our district for finalization of carrying out research work.
   c. We will collect research papers on the same topic to get reviews and updation.
   d. E- Journals will be studied in libraries of Colleges and research Centre.

**2nd - 6 months**

3. preparation , study of Physical,chemical Properties of Schiff base & its transition metal complex
4. Study of different Solvent required for crystallization & recrystallization of Schiff base & its transition metal complex
5. Selection of solvent in which Reactant & Product are stable
6. Observation Time require for crystal growth
7. Purification, study Schiff base & transition metal complex

**Physical testing includes.**

A. Colour
B. Appearance
C. Melting point(MP).
D. Solubility
E. Odor
F. % Yield
Instrument testing includes

A. UV spectrophotometer
B. Infra red spectroscopy
C. XRD
D. Direct Mass
E. TGA
F. DSC

3rd - 6 months

1) Detail study of Schiff bases, Schiff base metal ion complex Prepared and their microbial test.

4th - 6 months (2nd Year)

1) Compliance of research work done in rough and to be finalized by Guide.

2) Compliance of research work done in Final and to be in process to submit in University for the award of degree.

3) Final Thesis to be submitted for the award of degree.