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## CHEMICAL AND ANALYTICAL STUDIES OF SOME TRANSITION METALS COMPLEXES

Chapter(?) includes a literature survey on the previous studies on azo dyes and Schiff bases and their complexes with different metal ions. This survey includes spectrophotometer, conduct metric, potentiometer and voltammeter studies on azo dye and Schiff base complexes. Also this chapter contains a literature survey on the thermal studies which done on solid complexes of azo dye and Schiff base ligands. The experimental part chapter (??) includes the preparation of the azo dyes and Schiff bases under investigation, and their complexes with some transition metal ions. It comprises also information about the instruments and measurements which done for spectrophotometric, conductimetric, potentiometric, voltammetric, IR, as well as thermal analyses. Chapter (???) includes studies on the spectral characterization of the organic ligands, where the electronic absorption spectra were done in different organic solvents of protic and aprotic nature is discussed in terms of different macroscopic and microscopic parameters of these solvents on the electronic transitions of ligands under consideration also the spectral behavior of ligands in universal buffer solution to determine their ionization constants using three different methods. The IR spectra of ligands under investigation are studied and the different functional groups are assigned like  $\nu_{OH}$ ,  $\nu_{N=N}$  and  $\nu_{C=N}$ . on the other hand, the  $^1H$ -NMR spectra for different types of hydrogen proton expected for  $\alpha$ -b and  $\alpha$ -c under study can be numerated determined and correlated to the molecular structure of the ligands. Cyclic voltammetry was done as a qualitative study on ligands under investigation to give light on the reduction and oxidation behavior of such organic substance.