
Characteristic studies of some tetraimine macrocyclic molecules and their chelates with transition metals

This thesis includes three chapters; the introduction, experimental and results and discussions. In this chapter, a literature survey of the previous studies carried out on macrocyclic compounds and their complexes with transition metal ions is given. This survey includes electronic absorption spectra in the UV and visible regions, studies on the metal chelates formed with different transition metal ions, the different techniques of structure elucidation of metal macrocyclic complexes. This chapter describes the experimental part where it includes the preparation of the Fe(III), Co(II), Ni(II) and Cu(II) macrocyclic complexes by template reaction. It comprises also a description of the instruments used for spectrophotometric, conductometric, IR, thermal analysis, electron spin resonance spectroscopy of Cu(II) complexes, x-ray diffraction, scanning electron microscope, magnetic susceptibility measurements, catalytic studies and electrical conductivity measurements. This chapter includes the results and discussions and it comprises three main parts.