PREFACE

The work embodied in this thesis entitled, "Physico-chemical studies on coordination compounds of imine acids with dioxouranium (VI) and trivalent lanthanide ions" was initiated in July 1984 in the laboratory of Dr. P.S.Roy, Department of Chemistry, University of North Bengal. The importance for the study of coordination chemistry of imine acids may be traced to several major factors. The remarkable work of Snell and his co-workers (1952 onwards) regarding the success of metal-pyridoxal-amino acid systems in reproducing the reactions of metal free or metal containing biological molecules, should be considered as one of the principal starting points in the development of "Inorganic Biochemistry". There is no other group of metal complexes which manifest as great a diversity of reactions of coordinated ligands, whether of biological significance or not, as do pyridoxylidene and pyridoxylimino chelates. They encompass reactions of coordinated ligands and catalyses. Many fundamental aspects like structural and electronic features of these complexes are yet to be understood; determination of absolute configurations/conformations of the relevant complexes from chiroptical methods are yet to be placed on a firm basis. All these facts of coordination compounds of imine acids should be thoroughly investigated, in order to provide a clear understanding of their reactivities.

This thesis comprises of six chapters. In Chapter I the known coordination chemistry of imine acids, uranyl entity and

trivalent lanthanides is briefly outlined along with the purpose of the present work. Chapters II to V delineate the coordination chemistry of several new series of uranyl complexes of imine acids. Finally Chapter VI is concerned with trivalent lanthanide complexes of the title ligands. Almost throughout this treatise configurational/conformational studies using chiroptical methods remain as the main theme.

Subject matter of Chapter II (section II) has been published as a paper in the Indian Journal of Chemistry. Materials of Chapter III (section II) have been published partly in the Journal Fur Praktische Chemie and partly in Inorganica Chimica Acta. Other portions of this work will be communicated shortly to other journals.