PREFACE

The main scope of the study was the direct and derivative spectrophotometric determination of metal ions using new chromogenic organic reagents. Hydrazones are important class of chromogenic organic reagents for direct and derivative spectrophotometric determination of metal ions. In this point of view the author has shown interest to design and synthesize new chromogenic reagents and expected good analytical properties with various metal ions.

Simple, sensitive and easily adoptable methods were developed for the determination of various metal ions using new chromogenic organic reagents.

A comprehensive summary of work entitled “STUDIES IN THE CHEMISTRY OF METAL IONS USING SPECTROPHOTOMETRY” has been described as under.

Chapter 1

Introduction: This chapter includes the importance of the different chromogenic organic reagents and their use in spectrophotometric determination of metal ions.

Chapter 2

This chapter includes the detailed literature survey of the present investigation of metal ions.

Chapter 3

Theoretical analysis of present investigation was incorporated in this chapter. This describes the preparation of reagent solutions,
buffer solutions, solutions of various ions, purification of solvents, brief description of instruments employed in the present study and general experimental procedures of the present investigation.

**Chapter 4**

Experimental investigation of present study was incorporated in this chapter. It contains synthesis and characterization of new organic reagents 4-hydroxy 3,5-dimethoxy benzaldehyde –4-hydroxy benzoyl hydrazone (HDMBHBH) and 3,5-dimethoxy 4- hydroxy benzaldehyde benzoyl hydrazone (DMBBH). Direct and derivative spectrophotometric determination of metal ions using HDMBHBH and DMBBH also incorporated in this chapter.

**Chapter 5**

This chapter includes the experimental results of the prepared chromogenic reagents and spectrophotometric determination of metal ions using HDMBHBH and DMBBH.

**Chapter 6**

This chapter includes the discussion of results of the present investigation.

**Chapter 7**

This chapter describes the summary, conclusion and recommendations of the present investigation.

**Chapter 8**

References