

PREFACE

The ferrite materials are being increasingly harnessed for diverse applications in communication, defence, computer and aerospace technologies. Despite these, ferrite materials continue to be systematically examined for their structural and transport properties, basically for ascertaining the nature of correlation between these two and broadly for identifying their potential for being used for newer applications.

This dissertation work comprises five chapters in which an attempt has been made to present the work carried out on the subject consistent with the development of the topic concerned.

In the first chapter, important aspects like historical developments, spinel structure, properties, applications and theories of ferrimagnetism are discussed in brief. The orientation of the present work is included at the end. Chapter two deals with the methods of preparation of ferrite and actual method used in laboratory. Characterisation of ferrites is discussed with the help of X-ray diffractograms. Magnetic properties are included in chapter three in which magnetisation, hysteresis, a.c. susceptibility, permeability, Curie temperature are presented with necessary theoretical background. In chapter four, d.c. electrical resistivity, thermo emf studies are discussed and a summary of the work is given in chapter five.

A list of references is incorporated at the end of each chapter. Only in case of few references, it was not possible to refer the original work.

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