

PREFACE

Technology in the 21st century requires the miniaturization of devices into nanometer sizes, while their ultimate performance is dramatically enhanced. In this respect nanocrystalline materials and nanotechnology play an important role. Nanocrystalline ferrites are being increasingly harnessed for diverse applications in communication and industrial technologies.

The present dissertation work comprises of five chapters. In the first chapter, historical background, properties and applications of nanocrystalline ferrites are discussed briefly. The orientation of the problem is given at the end of the chapter. Second chapter includes the preparation of nanocrystalline ferrites by chemical route and their characterization by XRD, IR absorption and scanning electron microscopy.

Chapter III covers the systematic study of electrical properties viz. d.c. conductivity and dielectric properties. The experimental results are supported by appropriate references and illustrated with necessary figures. Chapter IV has been devoted to the studies of magnetization behaviour in these ferrites. The V chapter contains summary and conclusions.

List of references is given at the end of each chapter.

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