PREFACE

The magnetic oxides play an important role in the electronic industry. For each particular application many material parameters play a role. The distinction can be made between intrinisic parameters and those that are related to microstructure. The influence of grain size, porosity and orientation of crystallites on the magnetic properties of paractical importance is very considerable. From the study of sintering time and grain growth several characteristic types of microstructure have been found.

This small dissertation comprises of six chapters. Chapter I is introductory. It deals with spinel structure properties of ferrites, their applications and also conductivity and magnetization in ferrites along with the orientation of present problem Chapter II deals with preparation methods of ferrite with special reference to sintering process. In the same chapter the characterization of x-ray diffraction technique is fully discussed and carried out. In chapter III we have dealt with the conduction process through spinel ferrites with special reference to sintering time. In chapter IV magnetization and switching phenomenon are fully discussed along with the necessary theory. Chapter V"microstructure and ferrite" tries to exibit the dependence of microstructure on different parameters.

Sintering process, grain growth, porosity, magnetic permeability etc. are also described. Chapter VI is devoted to summary and conclusions of the present work. Each chapter ends with the results and discussion with necessary references. Only in few cases it was not possible to refere the original work. The therctical and experimental results are illustrated with proper figures and necessary tables.