

P R E F A C E

The subject matter of this dissertation is divided into five chapters. The first chapter deals with the brief survey of magnetic materials - the ferrites. The orientation of the dissertation problem is given at the end of this chapter. In the second chapter the method of preparation - standard ceramic method is discussed in detail with reference to the preparation of mixed ferrite system $\text{Cu}_x\text{Ni}_{1-x}\text{Fe}_2\text{O}_4$ ($x = 0.0, 0.2, 0.4, 0.6, 0.8$ and 1.0). Also in the same chapter X-ray crystal structure characterization carried out on these samples. is presented. The third chapter is devoted to the study on magnetic properties particularly Curie temperature and saturation magnetization measurements. The fourth chapter deals with d.c. resistivity measurement and discussion of conductivity mechanism in $\text{Cu}_x\text{Ni}_{1-x}\text{Fe}_2\text{O}_4$ system. In the last chapter, summary and conclusion is discussed. The figures and photographs are given wherever relevant. The references are given at the end of each chapter.