PREFACE

Much work is done on the oxide pyrochlores. Many workers reported that oxide pyrochlores could be used in various devices and other applications due to their various properties. Though these oxide pyrochlore materials continue to be systematically examined for their structural and transport properties. Very less information is available on cerium-titanates with neodymium content. We have made the study on electrical properties of $Ce_{2-x}Nd_xTi_2O_7$, defect pyrochlore structure. The subject matter of dissertation is presented in five chapters.

Chapter I is introductory with structure, applications and orientation of work. In the chapter II methods of preparation of pyrochlore material is described with special reference to standard ceramic method, which was followed. The material is characterized by x-ray diffraction method for confirmation of pyrochlore structure. In chapter III studies on d.c. conduction of material and thermoelectric power are reported. Chapter IV deals with studies on a.c. conductivity and dielectric losses are reported. In chapter V the whole work is summarized.

The list of references is given at the end of each chapter. The necessary experimental as well as theoretical discussions are presented with appropriate illustrations figures, tables and graphs.

N. M. BURANGE