

## CONTENTS

### EXTRACTION AND PURIFICATION

Rare Earth Resources, Their Extraction and Purification	3
Preparation and Purification of Rare Earth Metals and Effect of Impurities on Their Properties	25

### PHASE RELATIONS

Phase Relationships in Rare Earth Metal Alloy Systems-Contribution to the Theory of Alloy Formation	51
Phase Equilibria in Rare Earth-Cobalt Systems	77
Phase Relationships, Reaction Mechanisms, and Defect Structures in Rare Earth-Oxygen Systems	99

### ELECTRONIC STRUCTURE THEORY

Electronic Structure of Rare Earth Systems	121
Crystal Field Effects in Rare Earth Intermetallic Compounds	143
Interconfiguration Fluctuations in Rare Earth Intermetallics	155
Interrelation of Superconductivity and Long-Range Magnetic Order in Ternary Rare Earth Compounds	167

### ELECTRONIC STRUCTURE EXPERIMENT

Nuclear Magnetic Resonance Studies in Rare Earth Systems	197
Mossbauer Studies of Rare Earth Systems	215
Pressure-Induced Electronic Transitions in Rare Earths	247
Magnetic Inelastic Neutron Scattering Studies of Rare Earth Metals and Laves Phase Compounds	261
Study of Electron States in Rare Earth Materials by Photoelectron Spectroscopy	291

### APPLICATIONS

Intermetallic Compounds: Surface Chemistry, Hydrogen Absorption, and Heterogeneous Catalysis	329
Hydrogenation of Intermetallic Compounds: Thermodynamic Aspects	353
Ferroelectrics and Superionic Conductors	375
Magnetic Properties of 2:17 Rare Earth Systems	393
Rare Earths in Steel Technology	415
Index	435