# Table of Contents

**Preface**  
iii

**Chapter 1  
Thermodynamics and Reaction in Molten Salts**

Thermochemistry of Neutral and Charged Vapor Complexes over NaBr-LnBr₃ Systems  
_L. S. Kudin and D. A. Ivanov_  
3

Acid-Base Reaction of Eutectic LiCl-41m/o KCl Melt Equilibrated with Gas Atmospheres Containing HCl, H₂O, and O₂ at 600°C  
_N. Otsuka_  
13

Status of Carbonate Fuel Cell Materials  
_C. Yuh, A. Hilmi, L. Chen, A. Franco, and M. Farooque_  
21

**Chapter 2  
Corrosion in Mixed Gas Environments**

Effect of Copper on the Dusting of Fe-Ni Alloys  
_J. Zhang and D. J. Young_  
37

Metal Dusting Corrosion: Mechanisms and Control  
_T. A. Ramanarayanan and C. Chun_  
47

Metal Dusting Resistant Copper-Based Materials  
_C. Chun, S. Desai, and T. A. Ramanarayanan_  
61

Fireside Corrosion in Oxy-Fuel Combustion of Coal  
_G. R. Holcomb, J. Tylczak, G. H. Meier, K. Jung, N. Mu, N. Yanar, and F. Pettit_  
73

Evaluating Materials and Fuels Using an Atmospheric-Pressure Low-Velocity Burner Rig  
_D. A. Shiflet_  
85
Chapter 3
Corrosion of Ceramics

Hysteresis in the Active Oxidation of SiC
   N. Jacobson, B. J. Harder, and D. D. Myers 105

Development of Refractory Ceramics for the Oxygen Evolution Reaction (OER)
   Electrode Support for Water Electrolysis at Elevated Temperatures
   A. V. Nikiforov, C. Prag, J. Polonský, I. M. Petrushina, E. Christensen, and
   N. J. Bjerrum 115

Chapter 4
Oxidation

Issues Concerning the Oxidation of Ni(Pt)Ti Shape Memory Alloys
   J. L. Smialek 127

Interactions between Metallic Interconnects and Ceramic Electrodes in SOFC Operating
   Environments
   R. Amendola, P. E. Gannon, S. W. Sofie, and A. J. Weisenstein 137

Oxidation Behavior of Stainless Steel 441 and 430 in Dual Atmosphere - Effects of
   Alloy Grain Boundaries
   Y. Zhao and J. W. Fergus 147

Author Index 155