

TABLE OF CONTENTS

Calculation of Phase Equilibria in the Y_2O_3 - Yb_2O_3 - ZrO_2 System.....	1
<i>Nathan S. Jacobson, Zi-Kui Liu, Larry Kaufman, Fan Zhang</i>	
Effect of Synthesis on the Phases in Scandia-Stabilized Zirconia (ScSZ).....	9
<i>Conghua Wang, Wayne L. Worrell</i>	
Synthesis and Characterization of Mixed-Conducting Praseodymia-Doped Yttria-Stabilized Zirconia.....	16
<i>Jiu-Qi Huang, Wayne L. Worrell</i>	
Thermodynamic Correlation Among Defects in Ceria-Zirconia Solid Solutions.....	26
<i>H. Yokokawa, N. Sakai, T. Horita, K. Yamaji, Y. -P. Xiong</i>	
The Influence of Grain Size and Oxygen Activity on the Electronic Conductivity of Ceria.....	38
<i>Xiao-Dong Zhou, Harlan U. Anderson</i>	
Zirconia Electrolyte Based Fuel Cells.....	43
<i>S. C. Singhal</i>	
Recent Developments in Material Science and Technology for Solid Oxide Fuel Cells.....	54
<i>Nguyen Q. Minh</i>	
Anode Development for Direct Oxidation of Hydrocarbons.....	60
<i>Raymond J. Gorte</i>	
Characterization of SDC Electrolyte-Supported SOFCs for Direct Oxidation of Hydrocarbon Fuels.....	72
<i>C. Lu, W. L. Worrell, J. M. Vohs, R.J. Gorte</i>	
Structural and Catalytic Properties of Copper Oxide/Nickel Oxide Modified Zirconia Prepared by Sol-Gel Technique.....	79
<i>Mohan Dongare, Kusum M. Malshe, Chinnakoda S. Gopinath, V. B. Tare, Erhard Kemnitz</i>	
Characterization of a $Cu_{0.8}Ni_{0.2}$ - CeO_2 -YSZ Anode-Composite For the Direct Oxidation of Dry Methane.....	88
<i>C. Lu, W. L. Worrell, H. Kim, R. J. Gorte, J. M. Vohs</i>	
Partial Electronic Conductivity of Sr and Mg Doped $LaGaO_3$	97
<i>Jin Ho Jang, Gyeong Man Choi</i>	
Solid Oxide Fuel Cells: Materials Concept for Single Element Arrangements (SEAs)	106
<i>V. Thangadurai, W. Weppner</i>	

Growth of $\text{La}_{0.8}\text{Sr}_{0.2}\text{CrO}_3$ Thin Films From a Fluoride Sputtering Process.....	116
<i>Eric L. Brosha, Rangachary Mukundan, David R. Brown,</i> <i>Fernando H. Garzon</i>	
Mixed-Conducting Oxides in Electrochemical Power Sources.....	124
<i>Karen E. Swider-Lyons</i>	
Ionic Conductivity of Perfluorosulfonic Acid Membranes as a Function of Temperature, Humidity and Equivalent Weight.....	132
<i>William B. Johnson, Wen Liu</i>	
Applications of Proton Conducting Perovskites.....	142
<i>Rangachary Mukundan, Eric L. Brosha, Fernando H. Garzon</i>	
Solid Electrolyte Based Sensors for Use in Processing Molten Aluminum.....	148
<i>Jeffrey W. Fergus</i>	
The Evolution of High Temperature Electrochemical Gas Sensors.....	157
<i>Fernando H. Garzon, Eric L. Brosha, Rangachary Mukundan</i>	
Study on Phase Transformation and Thermal Shock Resistance of MgO-PSZ.....	169
<i>Qingguo Liu, Xianghua Kong, Shengli An</i>	
Stabilized Zirconia-based Inert Anodes for Green Synthesis of Metals from Their Oxides.....	177
<i>U. B. Pal, A. Krishnan, T. Keenan, C.P. Manning</i>	
A Concept and an Experimental Study on O^\bullet ion Source Using Solid Oxide Electrolytes.....	185
<i>Yukio Fujiwara, Atsushi Kaimai, Jeong-Oh Hong, Keiji Yashiro,</i> <i>Yutaka Nigara, Tatsuya Kawada, Junichiro Mizusaki</i>	
Role of Coupled Transport in the Fabrication of Sodium \bullet^- -Alumina- Containing Ceramics by a Vapor Phase Process.....	200
<i>Anil V. Virkar, Tad J. Armstrong, Niell Weber, Kuan-Zong Fung,</i> <i>Jan Fong Jue</i>	
Absolute Electrode Potential in Solid and Aqueous Electrochemistry.....	212
<i>D. Tsiplakides, D. Archonta, C. G. Vayenas</i>	
Knudsen Cell Studies of Ti-Al Thermodynamics.....	226
<i>Nathan S. Jacobson, Evan H. Copland, Gopal M. Mehrotra,</i> <i>Judith Auping</i>	
Evolution of Thermal Cycling Techniques for Aerospace Solar Panels.....	233
<i>Robert W. Francis, Charles Sve, Timothy S. Wall</i>	
High-Temperature Oxidation Behavior of $\text{ReSi}_{1.75}$	240
<i>Kazuya Kurokawa, Hisashi Hara, Akiko Shibayama, Hideaki Takahashi</i>	

On the Mechanism of Metal Dusting Corrosion.....	247
<i>C.M. Chun, J.D. Mumford, T. A. Ramanarayanan</i>	
Mullite + CAS Bond Coat for Environmental Barrier Coatings for Si-Based Ceramics.....	263
<i>Kang N. Lee, Elizabeth J. Opila</i>	
Chemistry, Physics and Electrochemistry of Lithium Intercalated Carbon.....	274
<i>Samar Basu</i>	
Author Index.....	281
Subject Index.....	283