

TABLE OF CONTENTS

<u>Recent Advances in the Understanding of the Halogen Effect in the Oxidation of Intermetallic Titanium Aluminides</u>	
M. Schültze	1
<u>Cyclic Oxidation of Gamma Met PX</u>	
J. W. Fergus, V. L. Salazar, C. J. Long, N. L. Harris, and W. F. Gale	16
<u>Effect of Mo Addition on the Oxidation Behavior of Nb-Al-Cr Base Alloys in a Temperature Range 1473-1673 K in Air</u>	
S. Taniguchi, and H. Tanaka	24
<u>Effect of Zr Additions on Protective Al₂O₃ Scale Formation of BNiAl/Ni-40at%Cr Alloys in High Temperature Oxidation at 1273 K</u>	
Y. Shibata, H. Takahashi, M. Noguchi, and T. Narita	34
<u>Effects of Water Vapor on Cyclic Oxidation of Ni-Al Binary Alloys</u>	
R. Kartono and D. J. Young	43
<u>The Formation of Oxide Scale on FeCrAl at 900°C in O₂ and O₂ + 40% H₂O</u>	
H. Josefsson, F. Liu, J.-E. Svensson, M. Halvarsson, and L.-G. Johansson.	56
<u>Oxidation of High-Temperature Alloy Wires in Dry Oxygen and Water Vapor</u>	
E. J. Opila, J. A. Lorincz, and J. J. DeMange.	67
<u>Effects of Thermal History on the Anomalous Oxidation Behavior of Stainless Steels under SOFC Interconnect Exposure Conditions</u>	
G. Xia, Z. Yang, M. S. Walker, P. Singh, and J. W. Stevenson	81
<u>TDS Measurement of Hydrogen Released from Cr₂O₃ Scale Formed in N₂-O₂-H₂O Atmospheres</u>	
A. Yamauchi, Y. Yamauti, Y. Hirohata, T. Hino, and K. Kurokawa.	93
<u>Metal Dusting Corrosion of Ferritic Steels with Varying Chromium Content</u>	
C. M. Chun and T. A. Ramanarayanan	101
<u>The Behavior and Mechanism of High Temperature Corrosion of SCH2 Heat Resistant Cast Steel Grate Bars in a Public Waste Incinerator</u>	
H. Takahashi, T. Oka, Y. Urakami, H. Jimbo, H. Yakuwa, M. Noguchi, and T. Narita	116
<u>Hydrogen Permeation Measurement of Iron and Its Oxide Membranes by Using a Dew Point Hygrometer</u>	
M. Ueda, H. Kurokawa, K. Kawamura, and T. Maruyama	127

<u>High-Temperature Oxidation of Macro- and Nano-Composites Made of Al₂O₃ Matrix and Ni Particles</u>	
M. Nanko, T. Nguyen Dang, M. Mizumo, K. Matsumaru, and K. Ishizaki . . .	139
<u>Densification of Ceramic Composite Films Coated on Steel by a Wet Process</u>	
Y. Muroya, A. Motoki, K. Shimanoe, T. Maeda, Y. Haruta, Y. Teraoka, and N. Yamazoe.	148
<u>Oxidation Protective Coating onto Ferritic Interconnect by Nanocrystalline Perovskite Thin Films</u>	
X.-D. Zhou, I. Belogolovsky, B. J. Scarfino, S. T. Reis, R. K. Brow, P. Hou, and H.U. Anderson	159
<u>Development of Performance Evaluation Testing Method for SOFC</u>	
K. Sato, H. Omura, T. Hashida, K. Yashiro, T. Kawada, J. Mizusaki, H. Yugami, and A. Atkinson.	170
<u>The Diffusion Bonding of Diamond to Titanium by the Energization Pulse Sintering Method</u>	
J. Tanabe	177
<u>In-Situ XAFS Study on the Self-Regeneration of Palladium-Perovskite Oxide</u>	
Y. Nishihata, J. Mizuki, H. Tanaka, M. Uenishi, M. Taniguchi, K. Kato, and T. Uruga	182
<u>Electrical Conductivity of Rare Earth Aluminate</u>	
K. Kawamura, H. Ohyama, M. Ueda, and T. Maruyama.	195
<u>High Temperature Photovoltaic Effect at the Interface of ITO/Nb Doped SrTiO₃</u>	
F. Horikiri, T. Ichikawa, A. Kaimai, K. Yashiro, H. Matsumoto, T. Kawada, and J. Mizusaki	203
<u>Effect of Doping on High Temperature p-n Junction of NiO-ZnO System</u>	
J. Orai, H. Kurokawa, K. Kawamura, and T. Maruyama.	210
<u>Oxidation Rate of Magnesia-Carbon Refractory under Low Oxygen Partial Pressures</u>	
H. Sunayama and M. Kawahara.	222
<u>Stress Development on Carburization and Decarburization of Transition Metal Monocarbides (TMMCs)</u>	
A. G. Metcalfe, N. B. Elsner, E. Wuchina, and M. Opeka.	230
<u>Oxidation of Hafnium-Based Mixed Nitrides and Borides</u>	
E. J. Wuchina and M. M. Opeka.	240

<u>Thermodynamics-Based Materials Selection for Corrosion-Resistant Performance in High-Temperature Missile Propulsion Systems</u>	
M. M. Opeka	253
<u>The Effect of Dissociated Oxygen on the Oxidation of Si, Polycrystalline SiC, and LPCVD Si₃N₄</u>	
B. R. Rogers, Z. Song, J. Marschall, N. Queralto, and C. A. Zorman.	268
<u>Stress Development during Growth of Oxide Films</u>	
R. Krishnamurthy and D. J. Srolovitz	279
<u>Substrate-Coating Interactions and Their Effects on Hot Corrosion Resistance</u>	
D. A. Shifler	294
<u>Gallium Suboxide Vapor Attack of Chromium, Cobalt, Molybdenum, Tungsten and Their Alloys at 1200°C</u>	
D. G. Kolman, T. N. Taylor, Y. S. Park, M. Stan, D. P. Butt, C. J. Maggiore, J. R. Tesmer, and G. J. Havrilla	306
<u>Modeling the Equilibrium Behavior of Chemically Complex Oxide Glass Solutions</u>	
K. E. Spear, T. M. Besmann, and M. D. Allendorf	318
<u>High Temperature Calorimetry in Metallic Systems</u>	
G. Borzone.	335
<u>The Oxidation of Ni-Base Alloys –Thermodynamic Modeling and Calculations</u>	
H. J. Seifert, H. Mozaffari, H. L. Lukas, and F. Aldinger.	347
<u>Measuring the Thermodynamics of the Alloy/Scale Interface</u>	
E. Copland.	361
<u>Congruent Kinetic Steady-State Vaporization of Al₂O₃ Surfaces in Presence of Graphite by High Temperature Mass Spectrometry</u>	
M. Heyrman, G. Berthomé, A. Pisch, and C. Chatillon	370
<u>Thermodynamic Investigation of the Vaporization of Solid Polycrystalline Alumina with Knudsen Effusion Mass Spectrometry</u>	
T. Markus and K. Hilpert.	382
Subject Index	389