

TABLE OF CONTENTS

| | |
|---|-----|
| Oxidation Mechanisms in High temperature FeCrAl(RE) Alloys H. Al-Badairi and G. Tatlock..... | 1 |
| Quantitative Assessment of Pore Development at $\text{Al}_2\text{O}_3/\text{FeAl}$ Interfaces during High Temperature Oxidation P.Y. Hou, C. Van Leiden, Y. Niu, F. Gesmundo..... | 15 |
| Formation of the Alumina-Zirconia Bonding Zone in EB-PVD Thermal Barrier Coatings C. Leyens, Y.Q. Yang, U. Schulz..... | 28 |
| Effect of Alloying Additions on Ionic Transport and Phase Distribution in Oxide Scales Formed During the Oxidation of Gamma Titanium Aluminide Alloys J. Fergus, B. Dang and W. Gale..... | 38 |
| ASSET, An Information System for Alloy Corrosion in High Temperature Gases R. John, A. Pelton, W. Thompson, A. Young, I. Wright..... | 49 |
| High Temperature Oxidation of Beryllium Modified Intermetallic Compounds of the Niobium-Chromium System R.J. Hanrahan, M.I. Peters, J.C. Cooley, W.L. Hults, D.J. Thoma, K.C. Chen..... | 77 |
| Investigation of the High Temperature Oxidation Behavior of Lately Developed MoSi₂-based Composites S. Lohfeld, F. Dettenwanger, M. Schutze, V. Guther, R. Rix, R. Scholl..... | 84 |
| Oxidation Properties of Cu-8Cr-4Nb L. Ogbuji, and D. Humphrey..... | 94 |
| Investigation of the Early Stage Oxidation on α-Titanium Single Crystal in Temperature Range 100-500°C Y. Mizuno, A. Tanaka, H. Tonda, Y. Takakuwa, J. Nakamura, Y. Yamauchi, T. Homma..... | 101 |
| Comparison of the Oxidation Kinetics of Boron Free and Boron Containing Precursor Derived Ceramics E. Butchereit, K.G. Nickel..... | 112 |

| | |
|---|-----|
| Degradation of Environmental Barrier Coatings (EBC) Due to Chemical and Thermal Expansion Incompatibility | |
| K. Lee..... | 124 |
| | |
| The Oxidation Behavior of HfC, HfN, and HfB₂ | |
| E.J. Wuchina and M.M. Opeka..... | 136 |
| | |
| Oxidation of ZrB₂ Ceramics Modified with SiC and Group IV-VI Transition Metal Diborides | |
| I.G. Talmi, J.A. Zaykoski, M.M. Opeka, S. Dallek..... | 144 |
| | |
| Oxidation of T-300 Carbon Fibers in Water Vapor Environments | |
| E. Opila..... | 159 |
| | |
| Effects of Fuel Dye on the Hot Corrosion Resistance of Marine Gas Turbine Materials | |
| D. Shifler..... | 169 |
| | |
| Carbon Effects on the Hot Corrosion Resistance of Coast Guard Materials in Marine Gas Turbines | |
| D. Shifler..... | 181 |
| | |
| Study of Surface Modified SS 304 as Current Collectors in Molten Carbonate Fuel Cells | |
| A. Durairajan, B. Veeraraghavan, B. Haran, R. White, B. Popov..... | 193 |
| | |
| Structural Stability and Transport Properties of Protonic Conductors BaPr_{1-x}Gd_xO_{3-δ} | |
| L. Li, J.R. Wu, S. Haile..... | 214 |
| | |
| Mass Transport in Doped Lanthanum Gallate | |
| J.B. Wolfenstine, K.C. Goretta, J.L. Routbort, A. Petric..... | 224 |
| | |
| A New Model for Interstitial Diffusion in BCC Alloys with Trap or Repulsive Sites | |
| T.P. Hennessey, J.E. Morral..... | 229 |
| | |
| Cluster Site Approximation (CSA) Calculation of Phase Diagrams | |
| F. Zhang, W.A. Oates, S.L. Chen, Y.A. Chang..... | 241 |
| | |
| Thermodynamics of Silicon Hydroxide Formation in H₂O Containing Atmospheres | |
| E. Copland, D. Myers, E.J. Opila, N.S. Jacobson..... | 253 |

| | |
|---|-----|
| Gas Phase Generation of Si-O-H Clusters: an Ab Initio Study of Structural and Thermodynamic Properties | 262 |
| A. Timoshkin..... | |
| Thermodynamic Analysis of the Corrosion of Alumina-Based Refractories by Alkali Hydroxides | 274 |
| K.E. Spear, M.D. Allendorf..... | |
| The Reaction Between bis-(2,4Pentanedionato)Copper(II) and Water Vapor | 285 |
| C. Vestal, T. DeVore..... | |
| The Reaction between 1,2-Dichloroethane and the Vanadium (III,IV,V) Oxides | 296 |
| J. Sumner, T. DeVore..... | |
| Electrochemical Behavior of a 2.25Cr-1Mo Steel in a Synthetic Salt and Fuel Oil Ash from 540°C to 680°C | 309 |
| A. Martinez-Villafane, F. Almeraya-Calderon, C. Gaona-Tiburcio, J.G. Chacon-Nava, M.A. Romero-Romo, J.M. Malo-Tamayo, G. Gonzalez-Rodriguez..... | |
| Vaporization Processes and Thermodynamic Properties of Zinc Phosphates | 316 |
| S Shornikov..... | |
| High Temperature Mass Spectrometric Study of Vaporization Processes and Thermodynamic Properties in the MgAl₂O₄-SiO₂ System | 322 |
| S. Shornikov, I. Archakov..... | |
| Anomaly in the Thermal Ion Emission from Crystalline BaF₂ at the Temperatures of Phase Transition to the Superionic State | 330 |
| M. Butman, L. Kudin, A. Smirnov..... | |
| Thermochemical Properties of Molecules and Ions in Saturated Vapor over CeCl₃ and SmCl₃ | 342 |
| A. Pogrebnoi, L. Kudin, V. Motalov, I. Khasanshin..... | |
| Thermodynamics of the Gaseous Beryllium Oxyacid Salts | 354 |
| S. Lopatin, G. Semenov..... | |