

Table of Contents

Foreword

Effects of Segregation in Ceramics

A. Bernasik, B. Dupre, J. Janowski, K. Kowalski, E.G. Moya, J. Nowotny and Z. Zhang 1

Oxygen Deficiency and V and Sb Doping in TiO₂ and SnO₂: Influences on Surface Electronic Structure

R.G. Egdell 11

Grain Boundary Electron Trap Levels in BaTiO₃ Positive Temperature Coefficient Type Ceramics

B. Huybrechts and M. Takata 39

AFM Observations of Ceramic Surfaces

K. Yamana, M. Miyamoto, S. Nakamura and K. Kihara 57

Surface Design for Catalytic Reduction of Nitrogen Monoxide by Hollandite Catalysts

T. Mori, S. Yamauchi, H. Yamamura and M. Watanabe 71

Surface Processes in Tritium Release from Lithium Ceramics

D. Yamaki, S. Tanaka and M. Yamawaki 83

Influence of Interfaces on the Properties and Performance of Zirconia Based Advanced Ceramics

S.P.S. Badwal, J. Drennan, R.H.J. Hannink and A.E. Hughes 109

Phase Equilibria Considerations in Ceramic-Metal Bonding

C.C. Sorrell 127

New Strategies for Joining Ceramics for High-Temperature Applications

M.R. Locatelli, A.P. Tomsia, K. Nakashima, B.J. Dalgleish and A.M. Glaeser 157

Interfaces between Alumina and Refractory Glasses for High Temperature Applications

A.P. Tomsia, A.M. Glaeser and J.S. Moya 191

The Adhesion of PbO-Based Glasses to Metal in Low O₂ Atmosphere

H. Seki, K. Satoh, H. Sato, K. Matusita and R. Sato 209

Roles of Internal Stress and Morphology on Adhesion and Cohesion of Ion-Plated Nitride Films

H. Ichimura 225

Low Firing Multilayer Ceramic Substrate Materials in the System of Al₂O₃-TiO₂-Co₃O₄-Flux

N. Sasaki, Y. Iguchi and H. Kishi 253

Recent Advances in Producing Cubic BN and Single Crystal Diamond Films by CVD Methods

Y. Moriyoshi, S. Komatsu and T. Ishigaki 267

Grain Orientation of Electrochemically Formed Precipitate within Micropores of Porous Alumina

M. Nagai and T. Nishino 281

Crystal Form and Calcium-Deficient Composition of Electrolytically Deposited Hydroxyapatite

H. Monma, S. Takahashi and H. Kobayashi 291

Thermodynamics and Diffusivity of Yttrium in Yttrium Chromite (YCrO₃)

T. Maruyama, K. Kawamura, A. Saiki and K. Nagata 303

Effect of Additives on Packing and Sintering of Bimodal Size-Distributed Alumina Powder Mixtures

S. Taruta, Y. Itou, K. Kawashima, K. Kitajima, N. Takusagawa, K. Okada and N. Ôtsuka 321

Temperature Profile during Microwave Sintering of Ceramics

Y. Ikuma 341

Modification of Ceramic Surfaces Using Adsorption, Plasma and Sol-Gel Reactions

R.S.C. Smart, P. Arora, B. Braggs, H.M. Fagerholm, T.J. Horr, D.C. Kehoe, J.G. Matisons, J. Ralston and J.B. Rosenholm 361

Role of Temperature on the Interfacial Chemistry of Ceramic Slurries

K. Uematsu, L. Guo, Y.L. Zhang and N. Uchida 405