

Table of Contents

Preface

Structural and Electronic Features of Metal - Oxide Interfaces	
E. Gillet, C. Lemire and M. Gillet	1
Electronic Structure of Doped Grain Boundaries in SrTiO₃	
H.J. Chang, Y.M. Choi and J.D. Lee	17
Electrical Properties of the Surface Layer Formed on the Nb-Doped SrTiO₃ Single Crystal	
L.Q. Han, N. Iizawa, Y. Chiba, T. Yoneta, A. Kaimai, K. Yashiro, H. Yugami, Y. Nigara, T. Kawada and J. Mizusaki	29
Contrasting Dissolution Mechanisms of MgO and NiO: A Quantum-Chemical Study	
D. Simpson, T. Bredow and A.R. Gerson	43
Effect of Lattice Defects on Interface Morphology and Grain Growth in SrTiO₃	
S.J.L. Kang, S.Y. Chung and J. Nowotny	63
Comparison of Bioceramic Coatings on Metals from Sol-Gel, PACVD and Precipitation Processes	
N. Kawashima, P.G. Self, W.M. Skinner and R.S.C. Smart	73
Domain Boundaries in Ce-α-SiAlON as Revealed by HRTEM	
F.F. Xu, Y. Bando and M. Mitomo	89
Influence of the Surface Structure on the Growth of a Metallic Deposit on Oxide: Au/Al₂O₃ and Au/WO₃	
M. Gillet, C. Lemire and E. Gillet	103
Growth Behavior of Epitaxial MgO Films on Si(001) by Pulsed Laser Deposition	
T. Yamada, N. Wakiya, K. Shinozaki and N. Mizutani	119
Polymorphic Transitions and Surface Properties of Zirconia Modified by Doping with d, p and s Oxides	
Z. Sojka, P. Jakubus, A. Adamski and A. Kotarba	129
Interfacial Reaction-Controlled Deposition and Micropatterning of Oxide Thin Films for Gate Dielectrics	
K. Koumoto, Y. Masuda and D.J. Wang	139
Application of the High Temperature Fermi Probe in Studies of Charge Transfer at the Gas/Solid Interface. Example of the Oxygen/Zirconia System	
T. Bak, J. Nowotny, M. Rekas and C.C. Sorrell	151
Oxygen Transport at the Hetero Interfaces of Electrochemical Ceramic Devices	
T. Horita, K. Yamaji, N. Sakai, T. Kato, T. Kawada and H. Yokokawa	179
Properties and Interface Observation of Electrodeposited Calcium Carbonate	
H. Monma, M. Nakashima, S. Takahashi and T. Okura	197
Fabrication and Evaluation of Highly Proton-Conductive Inorganic-Organic Composites	
M. Nagai, S. Soma, S. Iiyama and Y.I. Park	205
Thermal Diffusivity Measurements of Metal Thin Films by Means of the Picosecond Thermoreflectance Technique	
N. Taketoshi, T. Baba and A. Ono	215
Nonstoichiometry and Diffusion in Ceria and Ceria Solid Solutions	
Y. Ikuma, M. Kamiya and E. Shimada	225
Preparation and Properties of 3Y-TZP — Al₂O₃ Nano-Composites	
O. Vasylkiv, Y. Sakka and V. Skorokhod	243
Synthesis of Intra-Particulate Composite of TiO₂-TiC by Thermal Plasma Oxidation of Titanium Carbide	
T. Ishigaki and Y.L. Li	255
Radiation Effects in Solids Designed for the Immobilisation of High Level Nuclear Waste	
E.R. Vance	263
Applications of Comminution Techniques for the Surface Design of Powder Materials	
M. Naito, T. Hotta and T. Fukui	275
Effect of Particle Orientation on the Anisotropic Sintering of Alumina Ceramics	
A. Shui, A. Makiya, S. Tanaka, N. Uchida and K. Uematsu	293