
Contents

Preface	ix
Introduction	xi
Slurry Characterization by Stress Relaxation Test for Tape Casting Process Takamasa Mori, Tomofumi Yamada, Tatsuya Tanaka, and Junichiro Tsubaki	1
Preparation of Stable Nano-Sized Al ₂ O ₃ Slurries Using Wet-Jet Milling Toshihiro Isobe, Yuji Hotta, Kimiyasu Sato, and Koji Watari	11
Design of Mold Materials for Encapsulating Semiconductors Using Epoxy Compounds Satoshi Kitaoka, Naoki Kawashima, Keiji Maeda, Takaki Kuno, and Yoshinori Noguchi	19
Evaluation of an Environmentally Friendly Plasticizer for Polyvinyl Butyral for Use in Tape Casting Richard E. Mistler, Ernest Bianchi, Bruce Wade, and Jeffrey Hurlbut	27
Mutual Linkage of Particles in Ceramic Green Bodies through Reactive Organic Binders Kimiyasu Sato, Miyuki Kawai, Yuji Hotta, Takaaki Nagaoka, Koji Watari, and Cihangir Duran	35
Drying Dinetics of Slip Cast Body by Microwave Heating Takashi Shirai, Masaki Yasuoka, Yoshiaki Kinemuchi, Yuji Hotta, and Koji Watari	47

Microwave Sintering Techniques—More than Just a Different Way of Heating? G. Link, S. Miksch, M. Thumm, and S. Takayama	55
The Effect of the Electrical Properties on the Pulsed Electric Current Sintering Behavior of ZrO ₂ Based Ceramic Composites K. Vanmeensel, B. Neirinck, S. Huang, S. Salehi, O. Van der Biest, and J. Vleugels	67
Smart Processing Development on 3D Ceramic Structures for Terahertz Wave Applications Y. Miyamoto, W. Chen, H. Kanaoka, and S. Kirihaara	79
Fabrication of New Dielectric Fractal Structures and Localization of Electromagnetic Wave Y. Nakahata, S. Kirihaara, and Y. Miyamoto	91
Micro-Fabrication and Terahertz Wave Properties of Alumina Photonic Crystals with Diamond Structure H. Kanaoka, S. Kirihaara, and Y. Miyamoto	99
Texture Development of Bi ₄ Ti ₃ O ₁₂ Thick Film Promoted by Anisotropic Shrinkage Y. Kinemuchi, P.H. Xiang, H. Kaga, and K. Watari	105
Anisotropic Properties of Al Doped ZnO Ceramics Fabricated by the High Magnetic Field Hisashi Kaga, Yoshiaki Kinemuchi, Koji Watari, Hiromi Nakano, Satoshi Tanaka, Atsushi Makiya, Zenji Kato, and Keizo Uematsu	113
Porous Anatase Titanium Dioxide Films Prepared in Aqueous Solution Yoshitake Masuda, Tatsuo Kimura, Kazumi Kato, and Tatsuki Ohji	121
Preparation of Micro/Mesoporous Si-C-O Ceramic Derived from Pre ceramic Route Manabu Fukushima, You Zhou, Yu-ichi Yoshizawa, Masayuki Nakata, and Kiyoshi Hirao	133
Porous Alumina Ceramics by Novel Gelate-Freezing Method Masayuki Nakata, Manabu Fukushima, and Yu-ichi Yoshizawa	139
New Production Approaches for Large and Very Complex Shapes of Silicon Nitride and Silicon Carbide Ceramics Karl E. Berroth	145
Fabrication and Mechanical Properties of Porous Silicon Nitride Materials Tatsuki Ohji	155

Application of Taguchi Method in the Optimization of Process Parameters for Conicity of Holes in Ultrasonic Drilling of Engineering Ceramics	167
R.C.S. Mehta, R.S. Jadoun, Pradeep Kumar, and B.K. Mishra	
Simulation of Material Removal Rate in Ultrasonic Drilling Process Using Finite Element Analysis and Taguchi Method	179
R.S. Jadoun, B.K. Mishra, Pradeep Kumar, and R.C.S. Mehta	
Author Index	195

