
Contents

Preface	vii
Introduction	ix
BIOCERAMICS	
Fabrication of Hydroxyapatite–Calcite Nanocomposite E. K. Girija, G. Suresh Kumar, A. Thamizhavel, Y. Yokogawa, and S. Narayana Kalkura	3
Preparation and Protein Adsorption of Silica-Based Composite Particles for Blood Purification Therapy Jie Li, Yuki Shirosaki, Satoshi Hayakawa, and Akiyoshi Osaka	13
Collagen-Templated Sol-Gel Preparation of Ultra-Fine Silica Nanotube Mats and Osteoblastic Cell Proliferation Song Chen, Toshiyuki Ikoma, Jie Li, Hiromi Morita, Akiyoshi Osaka, Masaki Takeguchi, and Nobutaka Hanagata	19
Tissue Ingrowth in Resorbable Porous Tissue Scaffolds Janet Krevolin, James J. Liu, Adam Wallen, Kitu Patel, Rachel Dahl, Hu-Ping Hsu, Cathal Kearney, and Myron Spector	25
Selective Laser Sintered Ca-P/PHBV Nanocomposite Scaffolds with Sustained Release of rhBMP-2 for Bone Tissue Engineering Bin Duan, William W. Lu, and Min Wang	37
Microbeam X-Ray Grain Averaged Residual Stress in Dental Ceramics Hrshikesh A. Bale, Nobumichi Tamura, and Jay C. Hanan	49

Bioactive Glass Scaffolds for the Repair of Load-Bearing Bones M. N. Rahaman, X. Liu, and T. S. Huang	65
Do Cell Culture Solutions Transform Brushite ($\text{CaHPO}_4 \cdot 2\text{H}_2\text{O}$) to Octacalcium Phosphate ($\text{Ca}_8(\text{HPO}_4)_2(\text{PO}_4)_4 \cdot 5\text{H}_2\text{O}$)? Ibrahim Mert, Selen Mandel, and A. Cuneyt Tas	79
Hydroxyapatite Scaffolds for Bone Tissue Engineering with Controlled Porosity and Mechanical Strength Vincenzo M. Sglavo, Marzio Piccinini, Andrea Madinelli, and Francesco Bucciotti	95
Hollow Hydroxyapatite Microspheres for Controlled Delivery of Proteins H. Fu, M. N. Rahaman, and D. E. Day	101
Expression of Mineralized Tissue-Associated Proteins is Highly Upregulated in MC3T3-E1 Osteoblasts Grown on a Borosilicate Glass Substrate Raina H. Jaina, Jutta Y. Marzilliera, Tia J. Kowala, Shaojie Wangb, Himanshu Jainb, and Matthias M. Falka	111
POROUS CERAMICS	
High Porosity In Situ Catalyzed Carbon Honeycombs for Mercury Capture in Coal Fired Power Plants Xinyuan Liu, Millicent K. Ruffin, Benedict Y. Johnson, and Millicent O. Owusu	123
Not All Microcracks are Born Equal: Thermal vs. Mechanical Microcracking in Porous Ceramics Giovanni Bruno, Alexander M. Efremov, Chong An, and Seth Nickerson	137
SiC Foams for High Temperature Applications Alberto Ortona, Sandro Gianella, and Daniele Gaia	153
Porous SiC Ceramic from Wood Charcoal S. Manocha, Hemang Patel, and L. M. Manocha	163
Fabrication of Beta-Cristobalite Porous Material from Diatomite with Some Impurities Osman Şan, Cem Özgür, and Remzi Gören	177
Microstructural Study of Alumina Porous Ceramic Produced by Reaction Bonding of Aluminium Powder Mixed with Corn Starch Juliana Anggono, Ida A. O. R. S. Shavitri, and Soejono Tjitro	185
Characterization of Ceramic Powders during Compaction using Electrical Measurements Timothy Pruyn and Rosario A. Gerhardt	199
Author Index	211