

TABLE OF CONTENTS
Volume I



UNIVERSIDAD NACIONAL DE ENTRE RÍOS
 FACULTAD DE INGENIERIA
 CENTRO DE MEDIO
 BIBLIOTECA

GENERAL SCIENCE AND DEVELOPMENT

Bioactive Ceramic-Bone Interface	3
S. F. Hulbert	
Bioactive Glasses and Glass-Ceramics: A Perspective.....	7
Larry L. Hench	
Hard Materials-Tissue Interface: General Considerations and Examples for Bone Bonding and for Epithelial Attachment	25
Ulrich M. Gross and Christian Müller-Mai	
Bonding Mechanism of Bioactive Glass-Ceramic A-W to Living Bone	41
Tadashi Kokubo	
Bone-Bonding Capability and Mechanical Properties of Modified A-W Glass-Ceramic (Animal Studies).....	51
Satoru Yoshii, Takao Yamamuro, Toshiaki Kitsugi, Takashi Nakamura, Tadashi Kokubo, Masanori Oka, Takehiro Shibuya, and Masataka Takagi	
The Influence of Substituting B_2O_3 for CaF_2 on the Bonding Behavior of A-W Glass-Ceramic to Bone Tissue.....	65
Toshiaki Kitsugi, Takao Yamamuro, Satoru Yoshii, Tadashi Kokubo, Masataka Takagi, and Takehiro Shibuya	
Reactions of Fluoride and Nonfluoride Containing Bioactive Glasses	73
A. E. Clark, C. Y. Kim, J. West, J. Wilson, and L. L. Hench	
Experimental Studies on Glass-Ceramics for Hard-Tissue Substitutes	89
M. Sakagami, S. Ishida, and S. Enomoto	
Biological Response to Glasses in the $SiO_2-Na_2O-CaO-P_2O_5-B_2O_3$ System.....	97
Kari Kangasniemi and Antti Yli-Urpo	
New Calcium Phosphate Glass-Ceramics for Bone Implants and Castable Dental Crown	109
Yoshihiro Abe, Hideo Hosono, Masahiro Hosoe, Shin-ichi Imura, and Yoshitaka Tanaka	
Surface Reaction of Biologically Active Glass in Simulated Body Fluid	115
Hitoshi Ishizawa, Masami Fujino, and Makoto Ogino	
Surface Reactions of Calcium Phosphate Ceramics and Glass-Ceramics to Various Physiological Solutions	125
Katsufumi Hyakuna, Takao Yamamuro, Yoshihiko Kotoura, Masanori Oka, and Tadashi Kokubo	

COMPOSITES AND COATINGS

Bioactive Glass-Ceramic Composite Toughened by Tetragonal Zirconia	137
T. Kasuga, K. Nakajima, T. Uno, and M. Yoshida	
Development of Bioactive Glasses and Glass-Ceramics	143
Örjan H. Andersson and Kaj H. Karlsson	
Mechanical Properties of Bioactive Glass-Ceramic Composite Reinforced by SiC Whiskers	155
O. Sakamoto and S. Ito	
<i>In Vivo</i> Bone-Bonding Study of Bioglass®-Coated Titanium Alloy.....	161
Jon K. West, A. E. Clark, Matthew B. Hall, and Glenn E. Turner	
Stability of Supersaturated Solutions in Contact With SiC Whisker-Reinforced Calcium Phosphate Ceramics.....	167
Kiyoshi Imai, Takashi Yuge, Kazuhiro Kitano, Toshio Kawase, and Shigeru Saito	
Apatite Biologically Active Glass Composite (ABC)	175
Masaaki Mochida, Masami Fujino, and Makoto Ogino	
Elastic and Mechanical Properties of Glass-Ceramic and Metal Composites for Orthopedic Applications	183
R. Rogier and F. Pernot	
TISSUE AND ORGAN CULTURE STUDIES	
The Use of Cell and Tissue Culture to Investigate Bone Cell Reactions to Bioactive Materials	195
J. E. Davies	
The Effects of Bioactive Glass on the Function of Lymphocytes	227
Sozo Itoh, Kanji Ishibashi, Katsuya Inada, and Masao Yoshida	
Fibroblast-Bioactive Glass Interactions	235
Lari Häkkinen	
Characterization of Human Periodontal Ligament Fibroblast-like Cells Cultured on Various Biomaterials and Their Cellular Responses in Relation to Mechanical Stress	245
Toshio Kawase, Masato Nakajima, Tohru Matsumoto, Kiyoshi Imai, Hideki Kubo, Yasuaki Tamada, Makoto Ukiya, and Shigeru Saito	
New <i>In Vitro</i> Method for Evaluation of Biocompatibility and Toxicity of Biomaterials	251
Atsushige Sato, Kazuko Sato, Toru Kanaoka, Yashuhiro Kumei, Yasumi Tsuge, Hitoshi Mukohyama, and Takashi Ohyama	

Tissue Reaction to Biologically Active Glass in Cultured Embryonic Chick Femurs	259
Atsuhige Sato, Kazuko Sato, Tsuyoshi Kodama, Yasuji Rikitake, Tohru Nakajima, Toru Kanoaka, Hitoshi Mukohyama, Takashi Ohyama, Hitoshi Ishizawa, and Makoto Ogino	
<i>In Vitro</i> Detection and Evaluation of Pathophysiological Effects of Ions Released From Bioactive Glass-Ceramics	267
H. Wolf, H. Lucht, M. Staudt, R. Schubert, G. Berger, and R. Sauer	
A Method for Toxicological Evaluation of Ceramic Materials Based on Colony Formation of V79 Cells	275
Yoshihiko Kotoura, Masanori Oka, Takao Yamamuro, Katsufumi Hyakuna, Haruki Takagi, and Takashi Matsumoto	
PRECLINICAL AND CLINICAL RESULTS	
Bonding of Soft Tissues to Bioglass®	283
June Wilson and David Nolletti	
Surface Structure and Bone Adhesion: Histological and Biomechanical Studies	303
H.-J. Schmitz, V. Strunz, R. Kinne, G. Fuhrmann, and U. Gross	
Bioactive Hydroxylapatite-Glass Composite Coating on an Unicondylar Knee Prosthesis in Rabbit	311
E. A. Suominen, R.-P. Happonen, A. J. Aho, and A. Yli-Urpo	
Review of Bioactive Materials for Otologic and Maxillofacial Applications	323
Gerald E. Merwin	
Clinical Test of Artificial Dental Roots Coated With Bioactive Glass	329
G. Ito, S. Yamashita, T. Jimi, and T. Sueda	
Reconstruction of the Iliac Crest With Bioactive Glass-Ceramic Prostheses	335
Takao Yamamuro	
Replacement of the Spine With Bioactive Glass-Ceramic Prostheses	343
Takao Yamamuro	
Addendum: Glass-Ceramics for Medicine and Dentistry.....	353
W. Vogel, W. Höland, K. Naumann, J. Vogel, G. Carl, W. Götz, and P. Wange	
Index	359