

Table of Contents

Preface

Stimulation of Bone Repair by Gene Activating Glasses L.L. Hench	3
In Vitro Simulation of Calcium Phosphate Crystallization from Dynamic Revised Simulated Body Fluid C.L. Deng, Y. Tan, C.Y. Bao, Q. Zhang, H.S. Fan, J. Chen and X. Zhang	7
Control of Calcium Phosphate Crystal Nucleation, Growth and Morphology by Polyelectrolytes H. Füredi-Milhofer, P. Bar-Yosef Ofir, M. Sikirić and N. Garti	11
Fabrication and Characterization of Apatite Sintered Bodies with c-Axis Orientation K. Ohta, M. Kikuchi and M. Tanaka	15
Hydrothermal Preparation of Granular Hydroxyapatite with Controlled Surface K. Ioku, M. Toda, H. Fujimori, S. Goto and M. Yoshimura	19
Influence of the Network Modifier Content on the Bioactivity of Silicate Glasses J.P. Borrajo, S. Liste, J. Serra, P. González, S. Chiussi, B. León, M. Pérez Amor, H.O. Ylänen and M. Hupa	23
Textural Evolution of a Sol-Gel Glass Surface in SBF D. Arcos, J. Peña and M. Vallet-Regí	27
Bioactive Behaviour in Biphasic Mixtures of Hydroxyapatite-sol Gel Glasses in the System $\text{SiO}_2\text{-CaO-P}_2\text{O}_5$ J. Román, S. Padilla and M. Vallet-Regí	31
Concentrated Suspensions of Hydroxyapatite for Gelcasting Shaping S. Padilla and M. Vallet-Regí	35
Sinterability, Mechanical Properties and Solubility of Sintered Fluorapatite-Hydroxyapatites K.A. Gross and K.A. Bhadang	39
Synthesis and Characterisation of Hydroxyapatite M. Utech, D. Vuono, M. Bruno, P.A. De Luca and A. Nastro	43
Effect of Ag-Doped Hydroxyapatite as a Bone Filler for Inflamed Bone Defects J.W. Choi, H.M. Cho, E.K. Kwak, T.G. Kwon, H.M. Ryoo, Y.K. Jeong, K.S. Oh and H.I. Shin	47
Mechanical Testing of Chemically Bonded Bioactive Ceramic Materials J. Löf, H. Engqvist, L. Hermansson and N.O. Ahnfelt	51
Assessment of Cancellous Bone Architecture after Implantation of an Injectable Bone Substitute C.A. Davy, O. Gauthier, M.-. Lucas, P. Pilet, B. Lamy, P. Weiss, G. Daculsi and J.M. Boulter	55
Fabrication of Bioactive Glass-Ceramics Containing Zinc Oxide C. Ohtsuki, H. Inada, M. Tanihara, M. Kamitakahara and T. Miyazaki	59
Apatite Hydrogel and Its Caking Behavior Y. Yokogawa, Y. Shiotsu, F. Nagata and M. Watanabe	63
Measuring the Devitrification of Bioactive Glasses H. Arstila, E. Vedel, L. Hupa, H.O. Ylänen and M. Hupa	67
Investigation of the Influence of Zirconium Content on the Formation of Apatite on Bioactive Glass-Ceramics U. Ploska, G. Berger and M. Sahre	71
Bioactivities of a $\text{SiO}_2\text{-CaO-ZrO}_2$ Glass in Simulated Body Fluid and Human Parotid Saliva P.N. De Aza and S. De Aza	75
Homogeneous Octacalcium Phosphate Precipitation: Effect of Temperature and pH Y. Liu, R.M. Shelton and J.E. Barralet	79
Investigation of the Specific Energy Deposition from Radionuclide-Hydroxyapatite Macroaggregate in Brain Interstitial Implants B.M. Mendes and T.P.R. Campos	83
Radiological Response of Macroaggregates Implants in an "In-Vitro" Experimental Model B.M. Mendes, C.H.T. Silva and T.P.R. Campos	87

Sintering Effects on the Mechanical and Chemical Properties of Commercially Available Hydroxyapatite	
F.P. Cox, M.J. Pomeroy, M.E. Murphy and G.M. Insley	91
³¹P Nuclear Magnetic Resonance and X-Ray Diffraction Studies of Na-Sr-Phosphate Glass-Ceramics	
R.A. Pires, I. Abrahams, T.G. Nunes and G.E. Hawkes	95
A MAS NMR Study of the Crystallisation Process of Apatite-Mullite Glass-Ceramics	
A. Stamboulis, R.G. Hill, R.V. Law and S. Matsuya	99
Dry Mechano-synthesis of Strontium-Containing Hydroxyapatite from DCPD +CaO +SrO	
H. El Briak-BenAbdeslam, B. Pauvert, A. Terol and P. Boudeville	103
Obtention of Silicate-Substituted Calcium Deficient Hydroxyapatite by Dry Mechano-synthesis	
C. Mochales, H. El Briak-BenAbdeslam, M.P. Ginebra, P. Boudeville and J.A. Planell	107
Fabrication of Hydroxyapatite Ceramics via a Modified Slip Casting Route	
E.S. Thian, J. Huang, S. Best and W. Bonfield	111
Newly Improved Simulated Body Fluid	
H. Takadama, M. Hashimoto, M. Mizuno, I. Kunio and T. Kokubo	115
Preparation and Properties of Zinc Containing Biphasic Calcium Phosphate Bioceramics	
A.M. Costa, G.D. de Almeida Soares, R. Calixto and A.M. Rossi	119
Effects of Lead on Calcium Phosphate Ceramics Stability	
E. Mavropoulos, N.C.C. da Rocha, G.D. de Almeida Soares, J.C. Moreira and A.M. Rossi	123
Mg-Substituted Tricalcium Phosphates: Formation and Properties	
R.Z. LeGeros, A.M. Gatti, R. Kijkowska, D.Q. Mijares and J.P. LeGeros	127
Apatite Formation on HA/TCP Ceramics in Dynamic Simulated Body Fluid	
Y.R. Duan, Z.R. Zhang, C.Y. Wang, J.Y. Chen and X.D. Zhang	131
Biocompatibility of Si-Substituted Hydroxyapatite	
J.H. Lee, K.S. Lee, J.S. Chang, W.S. Cho, Y. Kim, S.R. Kim and Y.T. Kim	135
Process of Bonelike Apatite Formation on Sintered Hydroxyapatite in Serum-Containing SBF	
T. Kokubo, T. Himeno, H.M. Kim, K. Masakazu and T. Nakamura	139
Ceramics In Vitro Mineralisation Protocols: a Supersaturation Problem	
P.A.A.P. Marques, M.C.F. Magalhães, R.N. Correia, A.I. Martin, A.J. Salinas and M. Vallet-Regí	143
Characterization of Bioactive Glass-Ceramics Prepared by Sintering Mixed Glass Powders of Cerabone® A-W Type Glass/CaO-SiO₂-B₂O₃ Glass	
J.H. Seo, H.S. Ryu, K.S. Park, K.S. Hong, H. Kim, J.H. Lee, D.H. Lee, B. Chang and C.K. Lee	147
Effect of B₂O₃ on the Sintering Behavior and Phase Transition of Wollastonite Ceramics	
K.S. Park, H.S. Ryu, J.H. Seo, K.S. Hong, H. Kim, J.H. Lee, D.H. Lee, B. Chang and C.K. Lee	151
SiO₂- MgO-3CaO.P₂O₅- K₂O Glasses and Glass-Ceramics: Effect of Crystallisation on the Adhesion of SBF Apatite Layers	
C.M. Queiroz, J.R. Frade and M.H.F.V. Fernandes	155
Potassium Containing Apatitic Calcium Phosphate Cements	
F.C.M. Driessens and M.G. Boltong	161
HRTEM and EDX Investigation of Microstructure of Bonding Zone between Bone and Hydroxyapatite In Vivo	
Q.Z. Chen, W.W. Lu, C.T. Wong, K.M.C. Cheung, J.C.Y. Leong and K.D.K. Luk	165
Acetabular Construction Using a Glass-Ceramic Artificial Bone Graft	
S. Yoshii, M. Oka, M. Shima and T. Yamamuro	169
In Vivo Aging Test for Bioactive Bone Cements Composed of Glass Bead and PMMA	
S. Shinzato, T. Nakamura, K. Goto and T. Kokubo	173
In Vitro and In Vivo Behaviour of Bioactive Glass Composites Bearing a NSAID	
J.A. Méndez, A. González-Corchón, M. Salvado, F. Collía, J.A. de Pedro, B. Levenfeld, M. Fernández, B. Vázquez and J. San Román	177
Osteogenic Activity of Human Marrow Cells on Alumina Ceramics	
Y. Tanaka, H. Ohgushi, S. Kitamura, A. Taniguchi, K. Hayashi, S. Isomoto, Y. Tohma and Y. Takakura	181
In Vitro and In Vivo Evaluation of Non-Crystalline Calcium Phosphate Glass as a Bone Substitute	
Y.K. Lee, J. Song, H.J. Moon, S.B. Lee, K.M. Kim, K.N. Kim, S.H. Choi and R.Z. LeGeros	185

Evaluation of Macroporous Biphasic HA-TCP Ceramic as a Bone Substitute K.S. Oh, J.L. Kim, K.O. Oh, J.W. Choi, E.K. Kwak, H.M. Ryoo, K.H. Kim and H.I. Shin	189
Maxillary Sinus Bone Grafting with an Injectable Bone Substitute: a Sheep Study A. Saffarzadeh, O. Gauthier, T. Humbert, P. Weiss, J.M. Boulter and G. Daculsi	193
The Influence of Condensing Technique and Accelerator Concentration on Some Mechanical Properties of an Experimental Bioceramic Dental Restorative Material J. Lööf, H. Engqvist, G. Gómez-Ortega, N.O. Ahnfelt and L. Hermansson	197
A New Porous Osteointegrative Bone Cement Material G. Georgescu, J.L. Lacout and M. Frèche	201
Low Porosity CaHPO₄-2H₂O Cement L.M. Grover, U. Gbureck, A. Hutton, D. Farrar, C. Ansell and J.E. Barralet	205
Effects of Polysaccharides Addition in Calcium Phosphate Cement T. Sawamura, M. Hattori, M. Okuyama and K. Kondo	209
Characterization of Magnetite and Maghemite for Hyperthermia in Cancer Therapy K.M. Spiers, J.D. Cashion and K.A. Gross	213
Effects of TCP Particle Size Distribution on TCP / TTCP / DCPD Bone Cement System S.H. Cho, I.S. Hwang, J.K. Lee, K.S. Oh, S.R. Kim and Y.C. Chung	217
Evaluation of Hydroxylapatite Cement Composites as Bone Graft Substitutes in a Rabbit Defect Model M.J. Voor, J.J.C. Arts, S. Klein, L.H.B. Walschot, N. Verdonschot and P. Buma	221
Animal Study of Alpha-Tricalcium Phosphate-Based Bone Filler J.H. Lee, K.S. Lee, J.S. Chang, W.S. Cho, J.K. Lee, S.R. Kim and Y.T. Kim	225
Influence of Gelatin on the Setting Properties of α-Tricalcium Phosphate Cement A. Bigi, B. Bracci and S. Panzavolta	229
Synthesis and Comparison Characterisation of Hydroxyapatite and Carbonated Hydroxyapatite R. Martinetti, M.F. Harmand and L. Dolcini	233
Synthesis and Properties of Bone Cement Containing Dense β-TCP Granules K.S. Oh, S.R. Kim and P. Boch	237
The Expression of Bone Matrix Protein mRNAs around Calcium Phosphate Cement Particles Implanted into Bone M. Mukaida, K. Ohsawa, M. Neo and T. Nakamura	241
Tissue Response of Calcium Polyphosphate in Beagle Dog. Part II: 12 Month Result S.M. Yang, S.Y. Kim, S.J. Lee, Y.K. Lee, Y.M. Lee, Y. Ku, C.P. Chung, S.B. Han and I.C. Rhyu	245
Thermodynamic Study of Formation of Amorphous β-Tricalcium Phosphate for Calcium Phosphate Cements U. Gbureck, J.E. Barralet and R. Thull	249
Effect of Albumen as Protein-Based Foaming Agent in a Calcium Phosphate Bone Cement A. Almirall, J.A. Delgado, M.P. Ginebra and J.A. Planell	253
Construction of an Interconnected Pore Network Using Hydroxyapatite Beads K. Teraoka, Y. Yokogawa and T. Kameyama	257
Correlating In-Vitro Dissolution Measurement Methods Used with Bone Void Filler Bioceramics T. Jones and M. Long	261
An Injectable Bone Void Filler Cement Based on Ca-Aluminate N. Axén, T. Persson, K. Björklund, H. Engqvist and L. Hermansson	265
Study of Particle Size Dependant Reactivity in an α-TCP Orthophosphate Cement C.L. Camiré, S.J. Saint-Jean, I. McCarthy, S. Hansen and L. Lidgren	269
Microporosity Affects Bioactivity of Macroporous Hydroxyapatite Bone Graft Substitutes K.A. Hing, S. Saeed, B. Annaz, T. Buckland and P.A. Revell	273
Mechanically Induced Phase Transformation of α- and β-Tricalcium Phosphate J.E. Barralet, U. Gbureck, L.M. Grover and R. Thull	277
Cements from Biphasic β-Tricalcium Phosphate K.J. Lilley, U. Gbureck, D. Farrar, C. Ansell and J.E. Barralet	281
Development of Novel PMMA-Based Bone Cement Reinforced by Bioactive CaO-SiO₂ Gel Powder S.B. Cho, S.B. Kim, K.J. Cho, C. Ohtsuki and T. Miyazaki	285

Influence of Molarity and Liquid/Powder Ratio on the Synthesis of a Calcium Phosphate Cement	
M.E. Murphy, R. Streicher and G.M. Insley	289
PLA/HAp Microsphere-Based Porous Materials for Artificial Bone Grafts	
F. Nagata, T. Miyajima and Y. Yokogawa	293
Rietveld Analysis in Sintering Studies of Ca-Deficient Hydroxyapatite	
L.E. Jackson, J.E. Barralet and A.J. Wright	297
Sol-Gel Derived Nano-Coated Coralline Hydroxyapatite for Load Bearing Applications	
B. Ben-Nissan, A. Milev, R. Vago, M. Conway and A.D. Diwan	301
Hardening and Hydroxyapatite Formation of Bioactive Glass and Glass-Ceramic Cement	
C.Y. Kim and H.B. Lim	305
Influence of Acetylation on In Vitro Chitosan Membrane Biomineralization	
M.M. Beppu and C.G. Aimoli	311
Dissolution Behaviors of Thermal Sprayed Calcium Phosphate Splats in Simulated Body Fluid	
K.A. Khor, H. Li and P. Cheang	315
Confocal Microscopy Characterization of In Vitro Tests of Controlled Atmosphere Plasma Spraying Hydroxyapatite (CAPS-HA) Coatings	
K.A. Khor, M.E. Pons, G. Bertran-Vidal, N. Llorca-Isern, M. Jeandin and V. Guipont	319
Effects of Some Variables on R.F. Magnetron Sputtered Hydroxyapatite Coatings on Titanium	
R.A. Silva, M. Sousa, F.J. Monteiro, R. Barral, J.D. Santos and M.A. Lopes	323
The Influence of Glucose and Bovine Serum Albumin on the Crystallization of a Bone-Like Apatite from Revised Simulated Body Fluid	
S.V. Dorozhkin, E.I. Dorozhkina, S. Agathopoulos and J.M.F. Ferreira	327
Synthesis and Characterization of Fluoridated Hydroxyapatite with a Novel Fluorine-Containing Reagent	
K. Cheng, W.J. Weng, P.Y. Du, G. Shen, G.R. Han and J.M.F. Ferreira	331
Novel Fluorapatite-Mullite Coatings for Biomedical Applications	
J. Bibby, P.M. Mummery, N. Bubb and D.J. Wood	335
Identifying Calcium Phosphates Formed in Simulated Body Fluid by Electron Diffraction	
Y. Leng, X. Lu and J.Y. Chen	339
Novel Calcium Phosphate Fibres from a Biomimetic Process: Manufacture and Cell Attachment	
E.C. Kolos, A.J. Ruys, R. Rohanizadeh, M.M. Muir and G.J. Roger	343
CaO-P₂O₅ Glass-Hydroxyapatite Thin Films Obtained by Laser Ablation: Characterisation and In Vitro Bioactivity Evaluation	
M.P. Ferraz, F.J. Monteiro, D. Gíão, B. León, P. González, S. Liste, J. Serra, J.L. Arias and M. Pérez Amor	347
A Study of Bone-Like Apatite Formation on Calcium Phosphate Ceramics in Different Simulated Body Fluids (SBF)	
Y.R. Duan, C.Y. Wang, J.Y. Chen and X.D. Zhang	351
In Vitro Bioactivity Study of PLD-Coatings and Bulk Bioactive Glasses	
S. Liste, P. González, J. Serra, C. Serra, J.P. Borrajo, S. Chiussi, B. León and M. Pérez Amor	355
Calcium Phosphate Porous Coatings onto Alumina Substrates by Liquid Mix Method	
J. Peña, I. Izquierdo-Barba and M. Vallet-Regí	359
Apatite Layers by a Sol-Gel Route	
I. Izquierdo-Barba, N. Hijón, M.V. Cabañas and M. Vallet-Regí	363
Tribological Behaviour of Prosthetic Ceramic Materials Sliding Against Smooth Diamond-Coated Titanium Alloy	
C. Met, L. Vandenbulcke, M.C. Sainte Catherine and L. Quiniou	367
The Role of Processing Parameters on Calcium Phosphate Coatings Obtained by Laser Cladding	
F. Lusquinhos, J. Pou, J.L. Arias, M. Boutinguiza, B. León, M. Pérez Amor, S. Best, W. Bonfield and F.C.M. Driessens	371
Effect of Surface Morphology and Crystal Structure on Bioactivity of Titania Films Formed on Titanium Metal via Anodic Oxidation in Sulfuric Acid Solution	
T.Y. Xiong, X. Cui, H.M. Kim, K. Masakazu, T. Kokubo, J. Wu, H. Jin and T. Nakamura	375

Wollastonite Coatings on Zirconia Ceramics J.A. Delgado, F.J. Gil, S. Martínez, M.P. Ginebra, L. Morejón-Alonso, J.M. Manero and J.A. Planell	379
Tribological Study of Plasma Hydroxyapatite Coatings J. Fernández, M. Gaona and J.M. Guilemany	383
Structure Modification of Surface Layers of Ti6Al4V ELI Implants J. Marciniak, W. Chrzanowski, G. Nawrat, J. Zak and B. Rajchel	387
Preparation and Properties of Bioactive Calcium Phosphate Fibers C. Klein, F.A. Müller and P. Greil	391
Consolidation of Multi-Walled Carbon Nanotube and Hydroxyapatite Coating by the Spark Plasma System (SPS) M. Omori, A. Okubo, M. Otsubo, T. Hashida and K. Tohji	395
Influence of Carboxyl Groups Present in the Mineralising Medium in the Biomimetic Precipitation of Apatite on Collagen E.K. Girija, Y. Yokogawa and F. Nagata	399
Apatite Deposition on Silk Sericin in a Solution Mimicking Extracellular Fluid: Effects of Fabrication Process of Sericin Film A. Takeuchi, C. Ohtsuki, M. Kamitakahara, S. Ogata, M. Tanihara, T. Miyazaki, M. Yamazaki, Y. Furutani and H. Kinoshita	403
In-Vitro Surface Reactions of Bioceramic Materials R. Gildenhaar, A. Bernstein, G. Berger and W. Hein	407
A New Procedure of a Calcium-Containing Coating on Implants of Titanium Alloy U. Ploska, G. Berger and M. Willfahrt	411
Mechanical Evaluation of the Use of a Buffer Layer in Hydroxylapatite Coatings Produced by Pulsed Laser Deposition at High Temperature E. Jiménez, J.L. Arias, B. León and M. Pérez Amor	415
Influence of Ca/P Ratio on Electrochemical Assisted Deposition of Hydroxyapatite on Titanium A. Sewing, M. Lakatos, D. Scharnweber, S. Roessler, R. Born, M. Dard and H. Worch	419
Sol-Gel Apatite Films on Titanium Implant for Hard Tissue Regeneration H.W. Kim, H.E. Kim and J.C. Knowles	423
Bioactive Glass Coating for Hard and Soft Tissue Bonding on Ti6Al4V and Silicone Rubber Using Electron Beam Ablation J. Schrooten, S.V.N. Jaecques, R. Eloy, C. Delubac, C. Schultheiss, P. Brenner, L.H.O. Buth, J. Van Humbeeck and J. Vander Sloten	427
Reliability Weibull Analysis for Structural Evaluation of Bioactive Films Obtained by Sol-Gel Process A. Peláez, C.P. García, J.C. Correa and P. Abad	431
Diamond-Like Carbon Coatings on Ti-13Nb-13Zr Alloy Produced by Plasma Immersion for Orthopaedic Applications E.T. Uzumaki, C.S. Lambert and C.A.C. Zavaglia	435
Nano-Sized Apatite Coatings on Niobium Substrates M.H. Prado da Silva, A.M. Monteiro, J.A.C. Neto, S.M.O. Morais and F.F.P. dos Santos	439
Control of Morphology of Titania Film with High Apatite-Forming Ability Derived from Chemical Treatments of Titanium with Hydrogen Peroxide S. Kawasaki, K. Tsuru, S. Hayakawa and A. Osaka	443
The Effect of Magnesium Ions on Bone Bonding to Hydroxyapatite Coating on Titanium Alloy Implants P.A. Revell, E. Damien, X.S. Zhang, P. Evans and C.R. Howlett	447
Preparation of Novel Bioactive Titanium Coatings on Titanium Substrate by Reactive Plasma Spraying M. Inagaki, Y. Yokogawa and T. Kameyama	451
Adhesion of Sol-Gel Derived Zirconia Nano-Coatings on Surface Treated Titanium R. Roest, A.W. Eberhardt, B.A. Latella, R. Wuhler and B. Ben-Nissan	455
Bonelike Apatite Formation on Anodically Oxidized Titanium Metal in Simulated Body Fluid K. Masakazu, X. Cui, H.M. Kim, T. Kokubo and T. Nakamura	459

Photocatalytic Bactericidal Effect of TiO₂ Thin Films Produced by Cathodic Arc Deposition Method	
B. Kepenek, U.Ö.Ş. Seker, A.F. Çakır, M. Ürgen and C. Tamerler	463
Bonelike Apatite Formation on Synthetic Organic Polymers Coated with TiO₂	
K. Masakazu, F. Balas, H.M. Kim, C. Ohtsuki, T. Kokubo and T. Nakamura	467
Organic-Inorganic Hybrids of Collagen or Biodegradable Polymers with Hydroxyapatite	
M.F. Hsieh, R.J. Chung, T.J. Hsu, L.H. Perng and T.S. Chin	473
Effect of the Solvents on the Solution Mixture Derived Polylactide/Hydroxyapatite Composites	
Y. Li, W.J. Weng, K. Cheng, P.Y. Du, G. Shen, G.R. Han, M.A. Lopes and J.D. Santos	477
Bioactive Organic-Inorganic Hybrids Based on CaO - SiO₂ Sol-Gel Glasses	
A.J. Salinas, J.M. Merino, N. Hijón, A.I. Martín and M. Vallet-Regí	481
Injectable Composite Hydrogels for Orthopaedic Applications. Mechanical and Morphological Analysis	
V. Sanginario, L. Ambrosio, M.P. Ginebra and J.A. Planell	485
Drug Release from Poly(D, L-Lactide) / SiO₂ Composites	
M. Vaahtio, M. Jokinen, A. Rosling, P. Korteso, J. Kiesvaara and A. Yli-Urpo	489
Synthesis and Characterization of Hydroxyapatite on Collagen Gel	
L.Á. de Sena, P. Serricella, R. Borojevic, A.M. Rossi and G.D. de Almeida Soares	493
Preparation of Bonelike Apatite Composite Sponge	
H. Maeda, T. Kasuga, M. Nogami, H. Kagami, K. Hata and M. Ueda	497
Bone-Like Apatite Forming Ability on Surface Modified Chitosan Membrane in Simulated Body Fluid	
S.H. Rhee	501
In Vitro of Self-Reinforced Composites of Highly Bioactive Glass Loaded Bioabsorbable Polymer	
H. Niiranen, T. Niemelä, M. Kellomäki and P. Törmälä	505
In Vitro Degradation of Osteoconductive Poly-L/DL-Lactide / β-TCP Composites	
T. Niemelä, M. Kellomäki and P. Törmälä	509
Water Uptake of Poly(ethylmethacrylate)/Tetrahydrofurfuryl Methacrylate Polymer Systems Modified with Tricalcium Phosphate and Hydroxyapatite	
F.F. Rahman, W. Bonfield, R. Cameron, M.P. Patel, M. Braden, G. Pearson and S.M. Tavakoli	513
Composite Mesh Consisting of Titanium, Apatite and Biodegradable Copolymer	
S. Ban, A. Yuda, Y. Izumi, T. Kanie, H. Arikawa and K. Fujii	517
Apatite-Forming Ability and Mechanical Properties of Poly(tetramethylene Oxide) (PTMO)-Ta₂O₅ Hybrids	
M. Kamitakahara, K. Masakazu, N. Miyata, H.M. Kim, T. Kokubo, C. Ohtsuki and T. Nakamura	521
Effect of Sulfonic Group and Calcium Content on Apatite-Forming Ability of Polyamide Films in a Solution Mimicking Body Fluid	
T. Kawai, C. Ohtsuki, M. Kamitakahara, T. Miyazaki, M. Tanihara, Y. Sakaguchi and S. Konagaya	525
Drug Delivery Behaviour of Hydroxyapatite and Carbonated Apatite	
A.J. Melville, L.M. Rodríguez-Lorenzo, J.S. Forsythe and K.A. Gross	529
Preparation of Calcium Carbonate / Poly(lactic acid) Composite (CCPC) Hollow Spheres	
H. Maeda, T. Kasuga and M. Nogami	533
The Role of Phosvitin for Nucleation of Calcium Phosphates on Collagen	
N. Kobayashi, K. Onuma, A. Oyane and A. Yamazaki	537
Biomimetic Coating of Laminin -Apatite Composite Layer onto Ethylene-Vinyl Alcohol Copolymer	
A. Oyane, M. Uchida and A. Ito	541
Apatite Deposition on Organic-inorganic Hybrids Prepared from Chitin by Modification with Alkoxysilane and Calcium Salt	
T. Miyazaki, C. Ohtsuki, M. Tanihara and M. Ashizuka	545
Bioabsorbable and Bioactive Composite Structures from SiO₂ Glassfibres and Polylactides	
A. Haltia, H. Heino and M. Kellomäki	549
The Degradation and Bioactivity of Composites of Silica Xerogel and Novel Biopolymer of Hydroxyproline	
M. Väkiparta, M. Jokinen, M. Vaahtio, P.K. Vallittu and A. Yli-Urpo	553

Bioactive Glass (S53P4) and Mesoporous MCM-41-Type SiO₂ Adjusting In Vitro Bioactivity of Porous PDLLA	
J. Korventausta, A. Rosling, J. Andersson, A. Lind, M. Linden, M. Jokinen and A. Yli-Urpo	557
Porous Body Preparation of Hydroxyapatite / Collagen Nanocomposites for Bone Tissue Regeneration	
M. Kikuchi, T. Ikoma, D. Syoji, H. Matsumoto, Y. Koyama, S. Itoh, K. Takakuda, K. Shinomiya and M. Tanaka	561
In Vivo Behaviour of Bonelike®/PLGA Hybrid: Histological Analysis and Peripheral Quantitative Computed Tomography (pQ-CT) Evaluation	
J.M. Oliveira, T. Kawai, M.A. Lopes, C. Ohtsuki, J.D. Santos and A. Afonso	565
Effect of Melt Flow Rate of Polyethylene on Bioactivity and Mechanical Properties of Polyethylene /Titania Composites	
H. Takadama, M. Hashimoto, Y. Takigawa, M. Mizuno and T. Kokubo	569
Preparation and Characterization of Injectable Chitosan-Hydroxyapatite Microspheres	
P.L. Granja, A.I.N. Silva, J.P. Borges, C.C. Barrias and I.F. Amaral	573
In Vitro Mineralisation of Chitosan Membranes Carrying Phosphate Functionalities	
I.F. Amaral, P.L. Granja and M.A. Barbosa	577
In Vitro Bioactivity in Glass-Ceramic / PMMA-co-EHA Composites	
B.J.M. Leite Ferreira, M.G.G.M. Duarte, M.H. Gil, R.N. Correia, J. Román and M. Vallet-Regí	581
In-Vitro Dissolution Characteristics of Calcium Phosphate/Calcium Sulphate Based Hybrid Biomaterials	
C.P. Cleere, G.M. Insley, M.E. Murphy, P.N. Maher and A.M. Murphy	585
Hybridized Hydroxyapatite Bioactive Bone Substitutes	
K. de Arruda Almeida and A.A.A. de Queiroz	589
Phase Mapping: A Novel Design Approach for the Production of Calcium Phosphate-Collagen Biocomposites	
A.K. Lynn, R. Cameron, S. Best, R.A. Brooks, N. Rushton and W. Bonfield	593
pH Changes Induced by Bioactive Glass Ionomer Cements	
H. Yli-Urpo, E. Söderling, P.K. Vallittu and T. Närhi	599
Chiral Biom Mineralization: Epitaxial and Helical Growth of Calcium Carbonate Through Selective Binding of Phosphoserine Containing Polypeptides, and the Dental Application onto Apatite	
H. Yamamoto, M. Yamaguchi, T. Sugawara, Y. Suwa, K. Ohkawa, H. Shinji and S. Kurata	603
A New Knee Prosthesis with Bisurface Femoral Component Made of Zirconia-Ceramic (Report 2)	
T. Nakamura, E. Oonishi, T. Yasuda and Y. Nakagawa	607
Effects of Polymer Molecular Weight and Ceramic Particle Size on Flexural Properties of Hydroxyapatite Reinforced Polyethylene	
M. Wang, L.Y. Leung, P.K. Lai and W. Bonfield	611
Diffusion of Ions from a Calcium Phosphate Cement for Dental Root Canal Treatment and Filling	
S. Munier, H. El Briak, D. Durand and P. Boudeville	615
Biomimetic Coatings vs. Collagen Sponges as a Carrier for BMP-2: A Comparison of the Osteogenic Responses Triggered In Vivo Using an Ectopic Rat Model	
Y. Liu, E.B. Hunziker, C. Van de Vaal and K. de Groot	619
A Randomised RSA Study of Peri-Apatite™ HA coating of a Knee Prosthesis	
U. Hansson and S. Toksvig-Larsen	623
Manufacture of Paste Opaque Porcelains Using Glycols as a Solvent and Evaluation of their Physical Properties	
K.M. Kim, S.H. Kim, D.J. Ko and K. Nam	627
Successful Osteoinduction by Macroporous Calcium Metaphosphate Ceramic-Osteoblastic Cell Complex Implantation	
S.H. Oh, S.Y. Kim, E.K. Park, S.Y. Kim, J.H. Chung, H.M. Ryoo, K.H. Kim and H.I. Shin	631
Do Calcium Zirconium Phosphate Ceramics Inhibit Mineralization?	
U. Gross, C. Müller-Mai, G. Berger and U. Ploska	635
Effect of Acetabular Cup Position on the Contact Mechanics of Ceramic-on-Ceramic Hip Joint Replacements	
M.M. Mak and Z.M. Jin	639

Excellent Bone Ingrowth into HA Granules Filled in Acetabular Massive Bone Defect under Weight Bearing Condition	
H. Oonishi, S.C. Kim, H. Dohkawa, Y. Doiguchi, Y. Takao and K. Oomamiuda	643
Optimum Fixation at Bone / Bone Cement Interface by Interposing HA Granules (IBBC)	
H. Oonishi, S.C. Kim, H. Dohkawa, Y. Doiguchi, Y. Takao and K. Oomamiuda	647
Biomechanical Analysis of Hydroxyapatite-Coated External Fixation Pins Removed from Osteoporotic Trochanteric Fracture Patients	
F. Pegreff, M. Romagnoli, A. Moroni and S. Giannini	651
A Radiological Follow-Up Study of Plasma Sprayed Bovine Hydroxyapatite (BHA) Coatings	
S. Ozsoy, K. Altunatmaz, L.S. Ozyegin, F.N. Oktar, T. Yazıcı, O. Bayrak, E. Demirkesen and D. Toykan	655
Study of a Silicate Cement for Dental Applications	
S. Pereira, J. Cavalheiro, R. Branco, A. Afonso and M. Vasconcelos	659
Surface Analysis of Explanted Alumina-Alumina Bearings	
G.M. Insley and R.M. Streicher	663
Tricalcium-Phosphate/Hydroxyapatite Bone Graft Extender for Use in Impaction Grafting Revision Surgery – an In Vitro Study in Human Femora	
E.H. van Haaren, T.H. Smit, K. Phipps, P.I.J.M. Wuisman, G. Blunn, G.M. Insley and I.C. Heyligers	667
Bone-Bonding Ability of Zirconia Coated with Titanium and Hydroxyapatite under Load-Bearing Conditions	
T. Suzuki, S. Fujibayashi, Y. Nakagawa, I. Noda and T. Nakamura	671
Next Generation Ceramics Based on Zirconia Toughened Alumina for Hip Joint Prostheses	
G.M. Insley and R.M. Streicher	675
Silica/Calcium Phosphate Sol-Gel Derived Bone Grafting Material — From Animal Tests to First Clinical Experience	
T. Traykova, R. Bötcher, H.G. Neumann, K. Henkel, V. Bienengrüber and T. Gerber	679
The Effect of Dental Grinding and Sandblasting on the Biaxial Flexural Strength and Weibull Modulus of Tetragonal Zirconia	
T. Kosmač	683
Rapid Prototyping Applications in the Treatment of Craniomaxillofacial Deformities - Utilization of Bioceramics	
J.V.L. Silva, M.F. Gouvêia, A. Santa Barbara, E. Meurer and C.A.C. Zavaglia	687
Clinical Investigation on Bioactive Glass Particles for Dental Bone Defects	
A.M. Gatti, E. Monari and L. Simonetti	691
Apatite Remineralization: In Vivo Long Term Study in Dental Tissue	
R.L. Mourão, H.S. Mansur, F.R. Tay and L. Dlanza	695
Zirconia/Alumina Composite Dental Implant Abutments	
D.J. Kim, J.S. Han, S.H. Lee, J.H. Yang and D.Y. Lee	699
The Wear Resistance Testing of Biomaterials Used for Implants	
R. Sedlacek and J. Rosenkrancova	703
Finite Element Analysis of Ceramic Dental Implants Incorporated into the Human Mandible	
A.H. Choi, R.C. Conway and B. Ben-Nissan	707
Quantitative Analysis of Osteoprotegerin and RANKL Expression in Osteoblast Grown on Different Calcium Phosphate Ceramics	
C.Y. Wang, Y.R. Duan, B. Markovic, J. Barbara, C. Rolfe Howlett, X.D. Zhang and H. Zreiqat	713
Properties of Two Biological Glasses Used as Metallic Prosthesis Coatings and after an Implantation in Body	
Y. Barbotteau, J.L. Irigaray, E. Chassot, G. Guibert and E. Jallot	717
Comparative Study of the Biomineral Behavior of Plasma-Sprayed Coatings in Dynamic Porous Environment	
Q.Y. Zhang, J.Y. Chen, C.L. Deng, Y. Cao, J.M. Feng and X.D. Zhang	721
Tissue Responses to Titanium with Different Surface Characteristics after Subcutaneously Implanted in Rabbits	
Y. Wu, B.C. Yang, C.Y. Bao, J.Y. Chen and X.D. Zhang	725
Effect of Electrophoretic Apatite Coating on Osseointegration of Titanium Dental Implants	
G.A. Soares, L.A. de Sena, A.M. Rossi, M. Pinto, C.A. Muller and G.D. de Almeida Soares	729

The Dualism of Nacre	733
E. Lopez, C. Milet, M. Lamghari, L. Pereira Mouries, S. Borzeix and S. Berland	
Osseointegration of Grit-Blasted and Bioactive Titanium Implants: Histomorphometry in Minipigs	737
C. Aparicio, F.J. Gil, U. Thams, F. Muñoz, A. Padrós and J.A. Planell	
Mechanism of Apatite Formation on Anodically Oxidized Titanium Metal in Simulated Body Fluid	741
H.M. Kim, H. Kaneko, K. Masakazu, T. Kokubo and T. Nakamura	
Osteogenetic Effect on Cortical Bone of Cultured Bone/Ceramics Implants	745
N. Satoh, T. Yoshikawa, A. Muneyasu, J. Iida, A. Nonomura and Y. Takakura	
Effect of Enamel Matrix Protein-Coated Bioactive Glasses on the Proliferation and Differentiation of the Osteogenic MC3T3.E1 Cell Line	749
S. Hattar, A. Asselin, D.C. Greenspan, M. Oboeuf, A. Berdal and J.M. Sautier	
Apatite-Forming Ability of Calcium Phosphate Glass-Ceramics Improved by Autoclaving	753
T. Kasuga, T. Fujimoto, C. Wang and M. Nogami	
Radiological and Histological Examination of Gap Healing on Plasma Sprayed HA Coating Surface	757
Y. Cao, W. Lu, B. Zhang, L.P. Wang, C.Y. Bao, B.C. Yang, C.Y. Wang, J.Y. Chen, J.M. Feng, S.P. Chow and X.D. Zhang	
α-Tricalcium Phosphate Cements and the Granules to Dental Pulp and Periapical Tissue	761
M. Yoshikawa and T. Toda	
Surface Modification of 58S Bioactive Gel-Glass with an Aminosilane	765
R.S. Pryce and L.L. Hench	
Study of Osteoblasts Mineralisation In Vitro by Raman Micro-Spectroscopy	769
I. Notingher, J.E. Gough and L.L. Hench	
Characteristic of Osteoblast Vacuole Formation in the Presence of Ionic Products from BG60S Dissolution	773
P. Valério, A. Goes, M. Pereira and M.F. Leite	
Evaluation of Osteoblasts Viability, Alkaline Phosphatase Production and Collagen Secretion in the Presence of TiHA	777
P. Valério, F.N. Oktar, G. Göller, A. Goes and M.F. Leite	
A549 Lung Carcinoma Cells: Binary vs. Ternary Bioactive Gel-Glasses	781
P. Saravanapavan, S. Verrier and L.L. Hench	
Indirect Cytotoxicity Evaluation of Soluble Silica, Calcium, Phosphate and Silver Ions	785
P. Saravanapavan, J. Selvakumaran and L.L. Hench	
Bioactive Glass Coatings on Ti6Al4V Promote the Tight Apposition of Newly-Formed Bone In Vivo	789
A. Merolli, C. Gabbi, M. Santin, B. Locardi and P. Tranquilli Leali	
Orientation of Human Osteoblast Cells on Biphasic Calcium Phosphates Tablets with Undulated Topography	793
E.A. dos Santos, A.B.R. Linhares, A.M. Rossi, M. Farina and G.D. de Almeida Soares	
Changes in Distant Organs in Response to Local Osteogenic Growth Factors Delivered by Intraosseous Implants: a Histological Evaluation	797
E. Damien and P.A. Revell	
Experimental Study on Construction of Vascularized Bone Graft with Osteoinductive Calcium Phosphate Ceramics In Vivo	801
C.Y. Bao, H.S. Fan, C.L. Deng, Y. Cao, Y. Tan, Q. Zhang and X. Zhang	
Neural Cells on Iridium Oxide	805
I.S. Lee, J.C. Park, G.H. Lee, W.S. Seo, Y.H. Lee, K.Y. Lee, J.K. Kim and F.Z. Cui	
The Effect of Surface Treatment and Corrosive Etching on Flexural Strength of a Dental Porcelain	809
E.M. Reis, W.C. Jansen, M. Pereira, R. Giovani and P.R. Cetlin	
Osteoblast Responses to Sintered and Tape-cast Bioactive Glass	813
J.E. Gough, D.C. Clupper and L.L. Hench	
Chondrocyte Maturation on Biphasic Calcium Phosphate Scaffold: A Preliminary Study	817
C.C. Teixeira, R.Z. LeGeros, C. Karkia and Y. Nemelivsky	
In Vitro Mineralisation of Human Bone Marrow Cells Cultured on Bonelike®	821
M.A. Costa, M. Gutierrez, L. Almeida, M.A. Lopes, J.D. Santos and M.H.F.V. Fernandes	

Biological Activity of Two Glass Ceramics in the Meta- and Pyrophosphate Region: a Comparative Study	
A.G. Dias, M.A. Costa, M.A. Lopes, J.D. Santos and M.H.F.V. Fernandes	825
In Vivo Evaluation of Hydroxyapatite and Carbonated Hydroxyapatite Fillers	
C. Mangano, A. Scarano, R. Martinetti and L. Dolcini	829
Processing of Ca-P Ceramics, Surface Characteristics and Biological Performance	
S. Cazalbou, C. Bastié, G. Chatainier, N. Theilgaard, N. Svendsen, R. Martinetti, L. Dolcini, J. Hamblin, G. Stewart, L. Di Silvio, N. Gurav, R. Quarto, S. Overgaard, B. Zippor, A. Lamure, C. Combes and C. Rey	833
Biocompatibility Evaluation of Dentine, Enamel and Bone Derived Hydroxyapatite	
P. Valério, F.N. Oktar, L.S. Özyeğin, G. Göller, A. Goes and M.F. Leite	837
Effects of Bioactive Glass 60S and Biphasic Calcium Phosphate on Human Peripheral Blood Mononuclear Cells	
C.C.P. Silva, A. Bozzi, M. Pereira, A. Goes and M.F. Leite	841
Biological and Physical-Chemical Characterization of Phase Pure HA and SI-Substituted Hydroxyapatite by Different Microscopy Techniques	
C.M. Botelho, R.A. Brooks, S. Best, M.A. Lopes, J.D. Santos, N. Rushton and W. Bonfield	845
Osseous Cell Response to Electrostatic Stimulations of Poled Hydroxyapatite Ceramics in Canine Diaphyses	
S. Nakamura, M. Nakamura, T. Kobayashi, Y. Sekijima, S. Kasugai and K. Yamashita	849
Platelet Adhesion on Metal Oxide Layers	
S. Takemoto, T. Yamamoto, K. Tsuru, S. Hayakawa and A. Osaka	853
In Vitro Cytocompatibility of Osteoblastic Cells Cultured on Chitosan-Organosiloxane Hybrid Membrane	
Y. Shirosaki, K. Tsuru, S. Hayakawa, A. Osaka, M.A. Lopes, J.D. Santos and M.H.F.V. Fernandes	857
Hydroxyapatite Ceramic Particles as Material for Transfection	
P. Frayssinet, E. Jean and N. Rouquet	861
Platelet Adhesion on Titania Film Prepared from Interaction of Ni-Ti Alloy with Hydrogen Peroxide Solution	
S. Hayakawa, K. Tsuru and A. Osaka	865
Orthosilicic Acid Increases Collagen Type I mRNA Expression in Human Bone-Derived Osteoblasts In Vitro	
M.Q. Arumugam, D.C. Ireland, R.A. Brooks, N. Rushton and W. Bonfield	869
Mechanical Properties and Biocompatibility of Surface-Nitrided Titanium for Abrasion Resistant Implant	
F. Watari, Y. Tamura, A. Yokoyama, M. Uo and T. Kawasaki	873
Adhesion and Proliferation of Human Osteoblastic Cells Seeded on Injectable Hydroxyapatite Microspheres	
C.C. Barrias, C.C. Ribeiro and M.A. Barbosa	877
Preliminary Radiological In Vivo Study of Calcium Metaphosphate Coated Ti-Alloy Implants	
S.W. Kim, S. Oh, C.K. You, M.W. Ahn, K.H. Kim, I.K. Kang, J.H. Lee and S.Y. Kim	881
Preparation of Nano-HAp as Vectors for Targeting Delivery System	
Y.R. Duan, Z.R. Zhang, Y. Huang and C.Y. Wang	887
Nanostructure of Hydroxyapatite Coatings Sprayed in Argon Plasma	
E.I. Suvorova, Y.D. Khamchukov and P.A. Buffat	891
Modulating the Nanotopography of Apatites	
M. Böhner	895
In Vitro Evaluation of Zirconia Nanopowders	
S. Braccini, C. Leonelli, G. Lusvardi, G. Malavasi and L. Menabue	899
Preparation and Characterization of Calcium Phosphate Nanoparticles	
C.M. Manuel, M. Foster, F.J. Monteiro, M.P. Ferraz, R.H. Doremus and R. Bizios	903
Modulation of Defense Cell Functions by Nano-Particles in Vitro	
M. Lucarelli, E. Monari, A.M. Gatti and D. Boraschi	907
Micropatterning of Apatite by Using CaO-SiO₂ Based Glass Powder Dispersed Solution	
T. Matsumoto, N. Ozawa and T. Yao	911
Microstructural Changes of Single-Crystal Apatite Fibres during Heat Treatment	
M. Aizawa, A.E. Porter, S. Best and W. Bonfield	915

Effects of Micro/Nano Particle Size on Cell Function and Morphology K. Tamura, N. Takashi, T. Akasaka, I.D. Roska, M. Uo, Y. Totsuka and F. Watari	919
Comparative Study of Sonochemical Synthesized β-TCP- and BCP-Nanoparticles M. de Campos, F.A. Müller, A.H.A. Bressiani, J.C. Bressiani and P. Greil	923
Specific Characteristics of Wet Nanocrystalline Apatites. Consequences on Biomaterials and Bone Tissue D. Eichert, H. Sfihi, C. Combes and C. Rey	927
Influence of Water Addition on the Kinetics of Mechanochemical Synthesis of Hydroxyapatites from DCPD+CaO H. El Briak-BenAbdeslam, C. Mochales, J.A. Planell, M.P. Ginebra and P. Boudeville	931
Manufacturing of Biocompatible TiO₂-Surface-Structures with a Water Based Tape Casting J. Will, S. Zuegner, H. Haugen, U. Hopfner, J. Aigner and E. Wintermantel	937
Processing and Characterisation of a Potential TiO₂ Scaffold H. Haugen, J. Will, A. Köhler, J. Aigner and E. Wintermantel	941
Development of a New Calcium Phosphate Glass Ceramic Porous Scaffold for Guided Bone Regeneration M. Navarro, S. del Valle, M.P. Ginebra, S. Martínez and J.A. Planell	945
Fabrication and Characterization of Porous Hydroxyapatite and Biphasic Calcium Phosphate Ceramic as Bone Substitutes N. Koç, M. Timuçin and F. Korkusuz	949
Osteoinduction of Bioactive Titanium Metal S. Fujibayashi, M. Neo, H.M. Kim, T. Kokubo and T. Nakamura	953
Calcium Phosphate Porous Scaffolds from Natural Materials L.M. Rodríguez-Lorenzo and K.A. Gross	957
Thermally Sprayed Scaffolds for Tissue Engineering Applications K.A. Gross and L.M. Rodríguez-Lorenzo	961
Fabrication of α-Tricalcium Phosphate Porous Body Having a Uniform Pore Size Distribution M. Kitamura, C. Ohtsuki, S. Ogata, M. Kamitakahara and M. Tanihara	965
Bioactive Behaviors of Porous Si-Substituted Hydroxyapatite Derived from Coral S.R. Kim, J.H. Lee, Y.T. Kim, S.J. Jung, Y.J. Lee, H. Song and Y. Kim	969
Porous Bioactive Glasses with Controlled Mechanical Strength L. Fröberg, L. Hupa and M. Hupa	973
Development of Hydroxyapatite Ceramics with Tailored Pore Structure U. Deisinger, F. Stenzel and G. Ziegler	977
Optimising the Strength of Macroporous Bioactive Glass Scaffolds J.R. Jones, L.M. Ehrenfried and L.L. Hench	981
Osteoblast Nodule Formation and Mineralisation on Foamed 58S Bioactive Glass J.E. Gough, J.R. Jones and L.L. Hench	985
Macroporous Bioactive Glasses V.J. Shirliff and L.L. Hench	989
In Vitro and In Vivo Validation of a New Bonesubstitute for Loaded Orthopaedic Applications G.M. Insley and R.M. Streicher	993
Porous Hydroxyapatite and Glass Reinforced Hydroxyapatite for Controlled Release of Sodium Ampicillin A.C. Queiroz, S. Teixeira, J.D. Santos and F.J. Monteiro	997
Fabrication of Low Temperature Hydroxyapatite Foams A. Almirall, G. Larrecq, J.A. Delgado, S. Martínez, M.P. Ginebra and J.A. Planell	1001
Osteoinductive Properties of Micro Macroporous Biphasic Calcium Phosphate Bioceramics G. Daculsi and P. Layrolle	1005
Multi-Scale Structure and Growth of Nacre: A New Model for Bioceramics M. Rousseau, E. Lopez, A. Couté, G. Mascarel, D.C. Smith, R.R. Naslain and X. Bourrat	1009
In Vitro Calcium Phosphate Formation on Cellulose – Based Materials L. Jonášová, F.A. Müller, H. Sieber and P. Greil	1013
Performances of Hydroxyapatite Porosity in Contact with Cells and Tissues A. Ravaglioli, A. Krajewski, M. Mazzocchi, R. Martinetti and L. Dolcini	1017

Porous Triphasic Calcium Phosphate Bioceramics J.S.V. Albuquerque, R.E.F.Q. Nogueira, T.D. Pinheiro da Silva, D.O.d. Lima and M.H. Prado da Silva	1021
Macro Porous Hydroxyapatite with Designed Pores E. Adolfsson	1025
Extensive Studies on Biomorphic SiC Ceramics Properties for Medical Applications P. González, J.P. Borrajo, J. Serra, S. Liste, S. Chiussi, B. León, K. Semmelmann, A. de Carlos, F.M. Varela-Feria, J. Martínez-Fernández and A.R. de Arellano-López	1029
New Method for the Incorporation of Soluble Bioactive Glasses to Reinforce Porous HA Structures A.F. Lemos, J.D. Santos and J.M.F. Ferreira	1033
Designing of Bioceramics with Bonelike Structures Tailored for Different Orthopaedic Applications A.F. Lemos and J.M.F. Ferreira	1037
Combining Foaming and Starch Consolidation Methods to Develop Macroporous Hydroxyapatite Implants A.F. Lemos and J.M.F. Ferreira	1041
The Valences of Egg White for Designing Smart Porous Bioceramics: as Foaming and Consolidation Agent A.F. Lemos and J.M.F. Ferreira	1045
Osteogenic Potential of Cryopreserved/ Thawed Human Bone Marrow-Derived Mesenchymal Stem Cells M. Hirose, N. Kotobuki, H. Machida, S. Kitamura, Y. Takakura and H. Ohgushi	1051
In Vitro Osteogenic Activity of Rat Bone Marrow Derived Mesenchymal Stem Cells Cultured on Transparent Hydroxyapatite Ceramics N. Kotobuki, D. Kawagoe, H. Fujimori, S. Goto, K. Ioku and H. Ohgushi	1055
The Functional Expression of Human Bone-Derived Cells Grown on Rapidly Resorbable Calcium Phosphate Ceramics H. Zreiqat, G. Berger, R. Gildenhaar and C. Knabe	1059
Osteogenic Potential of Multi-Layer-Cultured Bone Using Marrow Mesenchymal Cells - for Development of Bio-Artificial Bone T. Yoshikawa, J. Iida and Y. Takakura	1063
In Vitro Study on the Osteogenetic Capacity of Expanded Human Marrow Mesenchymal Cells - for Development of Advanced Bio-Artificial Bone K. Miyazaki, T. Yoshikawa, K. Hattori, N. Okumura, J. Iida and Y. Takakura	1067
Osteogenic Effect of Genistein on In Vitro Bone Formation by Rat Bone Marrow Cell Culture - for Development of Advanced Bio-Artificial Bone N. Okumura, T. Yoshikawa, J. Iida, A. Nonomura and Y. Takakura	1071
Experience of Osteogenetic Therapy with Advanced Bio-Artificial Bone - a Study in 25 Cases T. Yoshikawa, Y. Ueda, T. Ohmura, Y. Sen, J. Iida, M. Koizumi, K. Kawate, Y. Takakura and A. Nonomura	1075
Fabrication of Macroporous Scaffold Using Calcium Phosphate Glass for Bone Regeneration Y.K. Lee, Y.S. Park, M.C. Kim, K.M. Kim, K.N. Kim, S.H. Choi, C.K. Kim, H.S. Jung, C.K. You and R.Z. LeGeros	1079
Oriented Collagen-Based/Hydroxyapatite Matrices for Articular Cartilage Replacement R. Zehbe, U. Gross and H. Schubert	1083
Antimicrobial Macroporous Gel-Glasses: Dissolution and Cytotoxicity P. Saravanapavan, J.E. Gough, J.R. Jones and L.L. Hench	1087
Mineralised Membranes for Bone Regeneration P. Mesquita, R. Branco, A. Afonso, M. Vasconcelos and J. Cavalheiro	1091
Inspired Porosity for Cells and Tissues R. Martinetti, L. Dolcini, A. Belpassi, R. Quarto, M. Mastrogiacomo, R. Cancedda and M. Labanti	1095
Repair of Full-Thickness Defects in Rabbit Articular Cartilage Using bFGF and Hyaluronan Sponge T. Yamazaki, J. Tamura, T. Nakamura, Y. Tabata and Y. Matsusue	1099
Bioactive Porous Bone Scaffold Coated with Biphasic Calcium Phosphates H.W. Kim, H.E. Kim and J.C. Knowles	1103

A Self Setting Hydrogel as an Extracellular Synthetic Matrix for Tissue Engineering P. Weiss, C. Vinatier, J. Guicheux, G. Grimandi and G. Daculsi	1107
Biomimetic Apatite Formation on Chemically Modified Cellulose Templates F.A. Müller, L. Jonášová, P. Cromme, C. Zollfrank and P. Greil	1111
Preparation of a Composite Membrane Containing Biologically Active Materials T. Itoh, S. Ban, T. Watanabe, S. Tsuruta, T. Kawai and H. Nakamura	1115
Effect of Inorganic Polyphosphate on Periodontal Regeneration T. Shiba, Y. Takahashi, T. Uematsu, Y. Kawazoe, K. Ooi, K. Nasu, H. Itoh, H. Tanaka, M. Yamaoka, M. Shindoh and T. Kohgo	1119
PLGA-CMP Composite Scaffold for Articular Joint Resurfacing J.H. Jeong, S.K. Park, D.J. Lee, Y.M. Moon, D.C. Lee, H.I. Shin and S.Y. Kim	1123