

# Table of Contents

<b>In Vivo Apatite Formation Induced on Titanium Metal and Its Alloys by Chemical Treatment</b>	
T. Kokubo, H.M. Kim, S. Nishiguchi and T. Nakamura	3
<b>Preparation and Characterisation of Hydroxyapatite and Carbonate Substituted Hydroxyapatite Granules</b>	
N. Patel, S. Best, I.R. Gibson, S. Ke, K.A. Hing and W. Bonfield	7
<b>Engineering Crystal Growth of Calcium Hydrogenphosphate Dihydrate</b>	
M. Sikirić, V. Babic-Ivancić, O. Milat, S. Sarig and H. Füredi-Milhofer	11
<b>Evaluation of the Quality of Calcium Phosphate Bioceramics via a Study of the Effects of Thermal Processing</b>	
B.J. Meenan, A. Boyd, E.R. Love and M. Akay	15
<b>Growth of Brushite Crystals in Sodium Silicate Gel and their Characterization</b>	
R.R. Kumar and M. Wang	19
<b>Surface Active Site Design Derived from Cattle Bone-Originated Apatites to Control the Characteristic Adsorption of Different Proteins</b>	
M. Kobayashi, T. Akazawa, T. Kanno and J. Horiuchi	23
<b>Hydrogencarbonate as a Biological Buffer in Simulated Plasma</b>	
P.A.A.P. Marques, M.C.F. Magalhães, S.V. Dorozhkin and R.N. Correia	27
<b>In Vitro Biomineralization of Chitosan</b>	
M.M. Beppu and C.C. Santana	31
<b>Blood Compatibility and SOD Activity of H<sub>2</sub>O<sub>2</sub>-Oxidated Titanium Substrates</b>	
S. Takemoto, K. Tsuru, S. Hayakawa, A. Osaka and S. Takashima	35
<b>Synthesis of Bioactive Organic-Inorganic Hybrid from Methacryloxypropyltrimethoxysilane and 2-Hydroxyethylmethacrylate</b>	
C. Ohtsuki, T. Miyazaki and M. Tanihara	39
<b>Bonelike Apatite Formation on Niobium Oxide Gel in a Simulated Body Fluid</b>	
T. Miyazaki, H.M. Kim, T. Kokubo, H. Kato, N. Nakamura and C. Ohtsuki	43
<b>Revised Simulated Body Fluid</b>	
H.M. Kim, T. Miyazaki, T. Kokubo and T. Nakamura	47
<b>TEM-EDX Study of Process of Apatite Formation on Bioactive Titanium Metal in Simulated Body Fluid</b>	
H.M. Kim, H. Takadama, T. Kokubo and T. Nakamura	51
<b>Affinity of Hydroxyapatite to Metal Cations - A Study on the Composition and Structure of Phosphates formed in the Presence of Titanium and Aluminium</b>	
C.C. Ribeiro and M.A. Barbosa	55
<b>Bioactivity Assessment of Hydroxyapatite Coatings Produced by Alkali Conversion of Monetite</b>	
M.H. Prado da Silva, G.D. de Almeida Soares, C.N. Elias, I.R. Gibson and S. Best	59
<b>Laser Deposited Calcium Phosphate Films, as Sublayers for Biomimetics Growth of Biocompatible Coatings</b>	
E.N. Antonov, V.N. Bagratashvili, L.I. Krotova and V.K. Popov	63
<b>In Vitro Dissolution of Various Calcium-Phosphate Coatings on Ti6Al4V</b>	
F. Barrère, P. Layrolle, M. Stigter, C.A. van Blitterswijk and K. de Groot	67
<b>Incorporation of Proteins into Biomimetic Hydroxyapatite Coatings</b>	
Y.L. Liu, P. Layrolle, C.A. van Blitterswijk and K. de Groot	71
<b>Sodium Silicate Gel Induced Self-Mineralization of Different Compact and Porous Polymeric Structures</b>	
A.L. Oliveira, P.B. Malafaya and R.L. Reis	75
<b>In Vitro and in Vivo Studies on the Thin and Defect-Free Calcium Phosphate Films Formed by Electron-Beam Evaporation</b>	
D.H. Kim, S.H. Kwon, S.H. Hong, H.E. Kim, I.S. Lee and Y.C. Jung	79
<b>A Novel Auto-Catalytic Deposition Methodology to Produce Calcium-Phosphate Coatings on Polymeric Biomaterials</b>	
I.B. Leonor and R.L. Reis	83

<b>Structured Porous Titania as a Coating for Implant Materials</b> F. Heidenau, F. Stenzel and G. Ziegler	87
<b>Biodegradation Study of Calcium Metaphosphate Coated by Sol-Gel Method in the SBF and Tris-Buffer Solution</b> S. Oh, S.Y. Kim, C.K. You and S.Y. Kim	91
<b>Calcium Phosphate Coatings Produced by Ion Beam Sputtering/Mixing Deposition: Their Manufacture, Structure and In Vitro Properties</b> C.X. Wang, Z.Q. Chen and M. Wang	95
<b>Porous Hydroxyapatite Template Grown on Self-Assembly of Lysozyme and Saccharose and Langmuir- Blodgett Thin Films</b> D. Cavinatto, C.A.C. Zavaglia and N. Costa	99
<b>Formation of Calcium-Phosphate Films with Gradient Composition on Alumina Ceramics by Spray-Pyrolysis Technique and Their Biocompatibilities by Cell-culture Tests</b> M. Aizawa, T. Yamamoto, K. Itatani, H. Suemasu, A. Nozue and I. Okada	103
<b>Influence of Target Density on Properties of Laser Deposited Calcium Phosphate Coatings</b> E.N. Antonov, V.N. Bagratashvili, M. Ball, S. Downes, D.M. Grant, S.M. Howdle, L.I. Krotova, W.J. Lo and V.K. Popov	107
<b>Hydroxyapatite's Solubility May Cause Loosening of Coated Implants</b> G. Berger, U. Ploska and G. Willmann	111
<b>Dry Mechanochemical Synthesis of Apatites and other Calcium Phosphates</b> P. Boudeville, B. Pauvert, M.P. Ginebra, E. Fernández and J.A. Planell	115
<b>In Vitro Carbonated Apatite Precipitation on Biphasic Calcium Phosphate Pellets Presenting Various HA/<math>\beta</math>-TCP Ratios</b> J.M. Bouler and G. Daculsi	119
<b>Bioactive Glass-Ceramics Coatings on Alumina</b> C. Vitale-Brovarone, E. Verné, F. Lupo, C. Moiesescu, L. Zanardi, M. Bosetti and M. Cannas	123
<b>Bioactive Hydroxyapatite Coating on PHEMA by Means of the Biomimetic Method</b> F. Branda, A. Costantini, G. Luciani, G. Laudisio, L. Ambrosio and L. Rimondini	127
<b>Biodegradation Study of Amorphous and Crystalline Calcium Metaphosphate in the SBF and Tris-Buffer Solution</b> S.S. Chun, J.H. Jeong, K.H. Kim and S.Y. Kim	131
<b>Control of Crystallinity and Composition in Calcium Phosphate Coatings</b> M. Cifuentes, M.V. Cabañas and M. Vallet-Regí	135
<b>Mechanical and Microscopic Features of Hydroxyapatite Coatings on Titanium Substrates with a Bond Coat</b> P. Parakala and R. Clegg	139
<b>Identification and Evaluation of HPO<sub>4</sub> Ions in Biomimetic Poorly Crystalline Apatite and Bone Mineral</b> C. Combes, C. Rey and S. Mounic	143
<b>Biomimetic Approach for Strontium-Containing Ca-P Bioceramics with Enhanced Biological Activity</b> S. Cazalbou, C. Combes and C. Rey	147
<b>Mechanical Behaviour of New Zirconia-Hydroxyapatite Ceramic Materials</b> J.A. Delgado, S. Martínez, M.P. Ginebra, L. Morejón-Alonso, N. Carlsson, E. Fernández, J.A. Planell, M.T. Clavaguera-Mora and J. Rodríguez-Viejo	151
<b>Solid-State Transformation of a Non-Stoichiometric Calcium Deficient Apatite into the Biphasic Calcium Phosphate</b> S.V. Dorozhkin	155
<b>Bioactivity of Hydrothermal-Electrochemically Deposited Apatite in Vitro and in Vivo</b> S. Ban, N. Arimoto, A. Harada, J. Hasegawa and S. Maruno	159
<b>The Precipitation of Bone-Like Apatite on the Surface of Calcium Phosphate - the Effect of Bovine Serum Albumin</b> H.S. Fan, S.X. Qu and X.D. Zhang	163
<b>Calcium Phosphate Coating on Titanium Induced by Phosphating</b> B. Feng, J.Y. Chen and X.D. Zhang	167
<b>On the Sintering Characteristics of Calcium Polyphosphates</b> M. Filiaggi, R.M. Pilliar and J. Hong	171

<b>Production and Characterisation of Hydroxyapatite to be Used as Coating on Prostheses via Powder Metallurgy</b>	
A. Gomes da Silva, V.P. Bavaresco, C.A.C. Zavaglia, I. Conte and N. Costa	175
<b>Cathodoluminescence Emission for Differentiating the Degree of Carbonation in Apatites</b>	
K.A. Gross, M.R. Phillips and Y. Suetsugu	179
<b>Particulate Generation in Plasma Sprayed Hydroxyapatite Coatings</b>	
K.A. Gross, N. Ray and M. Røkkum	183
<b>Structure and Composition Comparison of Bone Mineral and Apatite Layers Formed in Vitro</b>	
L.H. Guo, M. Huang, Y. Leng, J.E. Davies and X.D. Zhang	187
<b>Effect of Carbonate Contents on Crystal Structure of A-Type Carbonate Apatites</b>	
T. Ikoma, Y. Kubo, A. Yamazaki, M. Akao and M. Tanaka	191
<b>The Influence of Processing Parameters on the HA Products of RF Thermal Plasma-Sprayed HA/Ti Composite Coatings</b>	
M. Inagaki, Y. Yokogawa and T. Kameyama	195
<b>Resorbability Reduction by the Incorporation of Zinc into Tricalcium Phosphate</b>	
A. Ito, H. Kawamura, S. Miyakawa, P. Layrolle, R. Aomori and S. Tsutsumi	199
<b>Influence of Synthesis Parameters on the Particle Sizes of Nanostructured Calcium-Hydroxyapatite</b>	
D. Janačković, I. Petrovic-Prelevic, L. Kostic-Gvozdenovic, R. Petrović, V. Jokanović and D.P. Uskokovic	203
<b>Definition of Silver Concentration in Calcium Phosphate Coatings on Titanium Implants Ensuring Balancing of Bactericidity and Cytotoxicity</b>	
A.V. Karlov, V.P. Shakhov and Y.R. Kolobov	207
<b>Action of Bending Deformation on Electrochemical Properties of Ceramic Coatings on Titanium Implants</b>	
A.V. Karlov, O.I. Nalesnick, E.A. Eremkina and M.I. Mockshina	211
<b>Ceramic Coatings on the High-Strength Titanium as Prospective Material for Orthopaedic Implants</b>	
A.V. Karlov, Y.R. Kolobov, E.E. Saguymbaev, G.A. Shashkina and R. Valiev	215
<b>Phosphate Precipitation at Surface of Bioactive Glasses</b>	
K.H. Karlsson, M. Hupa and R. Backman	219
<b>Preparation of Calcium Phosphate Glass-Ceramics and their Coating on Titanium Alloys</b>	
T. Kasuga, M. Nogami and M. Niinomi	223
<b>Mechanical Properties of Bioactive Titanium Metal Prepared by Chemical Treatment</b>	
H.M. Kim, Y. Sasaki, J. Suzuki, S. Fujibayashi, T. Kokubo, T. Matsushita and T. Nakamura	227
<b>Production and Evaluation of Hydroxyapatite-Tricalcium Phosphate Functionally Graded Coating</b>	
R.R. Kumar, M. Wang and P. Ducheyne	231
<b>Calcium Phosphate Cement to Prepare Sr-Containing Biomaterials</b>	
L. Leroux, J.L. Lacout and M. Frèche	235
<b>Preparing Plate-Like HAP by the Pulse Addition</b>	
X.M. Chen, S.P. Li and F. Liang	239
<b>Emulsion Crosslinking as a New Manufacturing Route to Produce Hydroxylapatite Particulates in a Network of Starch</b>	
P.B. Malafaya, F. Stappers and R.L. Reis	243
<b>Synthesis and Characterisation of Silicon-Substituted Hydroxyapatite</b>	
P.A.A.P. Marques, M.C.F. Magalhães, R.N. Correia and M. Vallet-Regí	247
<b>Spectroscopic and Ultrastructural Analysis of Fluorhydroxyapatite-Coated Titanium Plates</b>	
D. Martini, M. Raspanti, V. Ottani, P. Monti, P. Taddei, A. Tinti, C. Fagnano and A. Ruggeri	251
<b>Control and Manipulation of Residual Gases during RF Magnetron Sputter Deposition of Calcium Phosphate Coatings</b>	
E.R. Love, M. Weimper, A. Boyd, M. Akay and B.J. Meenan	255
<b>Preparation of Porous Hydroxyapatite Tablets and Porous Hydroxyapatite Coatings for Orthopaedic Use</b>	
M. Méndez-González and J.V. Cauich-Rodríguez	259
<b>Biomimetic Deposition of Apatite on Electrochemically Oxidized Titanium Substrates</b>	
A. Osaka, D. Aslanidis, S. Hayakawa and K. Tsuru	263

---

<b>CaCO<sub>3</sub>/Ca-P Biphasic Materials Prepared by Microwave Processing of Natural Aragonite and Calcite</b>	
J. Peña, R.Z. LeGeros, R. Rohanizadeh and J.P. LeGeros	267
<b>Electrolytic Coating of Calcium Phosphate on Titanium: Optimisation of the Conversion of Monetite to Hydroxyapatite</b>	
J.F. Oliveira, L.Á. de Sena, M.H. Prado da Silva, G.D. de Almeida Soares and A.M. Rossi	271
<b>Textural and Surface Properties of Hydroxyapatite Synthesized in Different Conditions</b>	
A.M. Rossi, E.M. Lima, T. Moure, G.D. de Almeida Soares and C.A.C. Perez	275
<b>Glass-Ceramics as Coatings for Prostheses</b>	
B. Dubini, A. Krajewski, M. Mazzocchi, M.G.P. Bossi, A. Ravaglioli, G. Rizzi, F. Rustichelli, V. Stanic, R. Giardino, N. Nicoli-Aldini, E. Verné and C. Vitale-Brovarone	279
<b>Atomic Scale Interfacial Structure of Hydroxyapatite Observed with High-Resolution Transmission Electron Microscopy</b>	
K. Sato, T. Kogure, T. Ikoma, Y. Kumagai and M. Tanaka	283
<b>Single Crystal Growth and Structure Analysis of Monoclinic Hydroxyapatite</b>	
Y. Suetsugu, T. Ikoma and M. Tanaka	287
<b>Biomimetic Deposition of Calcium Phosphate on Thermally Oxidized Titanium and PTFE Substrates</b>	
D. Aslanidis, A. Osaka, S. Hayakawa and K. Tsuru	291
<b>Study on the Surface Modification of Medical Silicon Rubber by Biomimetic Synthesizing HA</b>	
X.Y. Wang, S.P. Li, Y.H. Yan and J. Yang	295
<b>Biomimetic Mineralisation on Plasma Sprayed Apatite Particles and Coatings in Different Simulated Physiological Fluids</b>	
J. Weng, M. Wang, X.D. Zhang and K. de Groot	299
<b>Preparation and Characteristics of Hydroxyapatite Whisker by Precipitation-Hydrolysis Method</b>	
Y.H. Yan, Y.F. Wang and H.Q. Zhang	303
<b>Calcium Phosphate Formation on the Phosphorylated Chitin Samples from SBF Solution</b>	
Y. Yokogawa, K. Nishizawa, F. Nagata, A. Hozumi, K. Teraoka, M. Inagaki and T. Kameyama	307
<b>Structural Characteristics of Porous Hydroxyapatite Coating on CaO-SiO<sub>2</sub> System Glass</b>	
H.Q. Zhang, Y.H. Yan and S.P. Li	311
<b>Analysis of Osteoblast Activity around Beta-TCP Particles Implanted into Bone: Expression of Bone Matrix Protein mRNAs</b>	
K. Ohsawa, M. Neo, H. Matsuoka, H. Akiyama, H. Ito and T. Nakamura	317
<b>Enhanced Surface and Mechanical Properties of Nanophase Ceramics to Achieve Orthopaedic/Dental Implant Efficacy</b>	
T.J. Webster, R.W. Siegel and R. Bizios	321
<b>The Effect of CaCO<sub>3</sub> and TiO<sub>2</sub> Nanometer Particles on A<sub>549</sub> and L<sub>929</sub> Cells</b>	
L.Y. Feng, S.P. Li, Y.H. Yan and C.S. Liu	325
<b>Examination of Zirconia, Alumina Ceramics and Titanium Interactions on Human Osteoblasts in Culture</b>	
Y. Josset, Z. Oum'Hamed, C. Dupont, C. Trentesaux and D. Laurent-Maquin	329
<b>Modulation of Adherence of Osteoblast-Like Cells by Electrical Polarization of Hydroxyapatite Ceramics</b>	
T. Kizuki, M. Ohgaki, M. Katsura, K. Hashimoto, Y. Toda, S. Udagawa and K. Yamashita	333
<b>Study of High Melting Bioactive Glass-Ceramic to Produce Bone Filling Material</b>	
A. Krajewski, A. Ravaglioli, M. Mazzocchi and G. Foresti	337
<b>Comparative Studies on Tissue Reaction of Newly Sintered and Conventionally Sintered Hydroxyapatite</b>	
K. Nishihara, T. Ueda, K. Hirota, A. Ravaglioli and A. Krajewski	341
<b>In Vitro Interactions of Bone Marrow Cells with Carbonate and Fluoride Containing Apatites</b>	
T. Sakae, K. Hoshino, Y. Fujimori, Y. Kozawa and R.Z. LeGeros	347
<b>Healing and Differentiation of Human Osteoblasts on Titanium-Zirconia Composite Material: The Effect of Different Brazing Fillers</b>	
N. Specchia, A. Pagnotta and A. Toesca	351
<b>Can Porosity Influence the Osteoconductive Properties of Synthetic Hydroxyapatite?</b>	
N. Specchia, A. Pagnotta and F. Greco	355

<b>Assessment of Immuno-Allergological Properties of Ceramic and Metallic Compounds in Vitro</b> P. Thomas	359
<b>Osteoblastic Tolerance of Some Bioactive Coverings for Zirconia First Results</b> S.H. Zhou, R.R.H. Coombs, A. Krajewski and A. Ravaglioli	363
<b>Quantification of Matrix Protein mRNAs Expression During Mineralized Tissue Formation in Rat Marrow Cell Culture by a Real Time Quantitative PCR Method</b> Y. Dohi, H. Nakajima, H. Ohgushi and K. Yonemasu	367
<b>Influence of Phase Purity on the in Vivo Response to Hydroxyapatite</b> K.A. Hing, I.R. Gibson, P.A. Revell, S. Best and W. Bonfield	373
<b>Tricalcium Phosphate/Hydroxyapatite Mixtures as Bone Allograft Expanders in Revision Total Hip Arthroplasty of the Femur: An Ovine Study</b> A.W. Blom, J.L. Cunningham, T.J. Lawes, G. Hughes, A.E. Goodship and I.D. Learmonth	377
<b>Tissue Response in the Femur of Rabbits after Implantation of a New Calcium Titanium Phosphate Composition</b> U. Gross, C. Müller-Mai, C. Voigt, M. Mesgarian, G. Berger and U. Ploska	383
<b>Effects of Zinc-Releasing Calcium Phosphate Ceramics Implanted in Rabbit Femora</b> H. Kawamura, A. Ito, S. Miyakawa, K. Ojima, N. Ichinose and T. Tateishi	387
<b>Biomimetic Calcium Phosphate Coatings and Their Biological Performances</b> P. Layrolle, C. van der Valk, R. Dalmeijer, C.A. van Blitterswijk and K. de Groot	391
<b>Evaluation of BONIT<sup>®</sup>, a fully Resorbable CaP Coating Obtained by Electrochemical Deposition, after 6 Weeks of Healing: A Pilot study in the Pig Maxilla</b> S. Szmukler-Moncler, D. Perrin, V. Ahoosi and P. Pointaire	395
<b>HA Coating with Different Crystallinity Percutaneously Implanted in Bone</b> B.C. Yang, J.Y. Chen, J.M. Feng and X.D. Zhang	399
<b>Bone Response to Zirconia Ceramic Implants; an Experimental Study in Rabbit</b> F. Di Carlo, L. Prosper, F. Ripari and A. Scarano	403
<b>Transformation of Different Calcium Phosphates after Implantation</b> A.M. Gatti, R.Z. LeGeros, E. Monari and D. Tanza	409
<b>Bioactivity of Bioactive Sol-Gel Glasses Coated Alumina Implants</b> M. Hamadouche, A. Meunier, D.C. Greenspan, C. Blanchat, J.P. Zhong, G.P. La Torre and L. Sedel	413
<b>Bone Bonding in Bioactive Glass Ceramics Combined with a New Synthesized Agent TAK-778</b> H. Kato, S. Nishiguchi, M. Neo, J. Tamura, K. Kawanabe and T. Nakamura	417
<b>Calcium Metaphosphate Fibers for Biomedical Use</b> Y. Ota, T. Iwashita, T. Kasuga, E. Spiecker and A. Seki	421
<b>Macroporous Calcium Phosphate Ceramics: Optimization of the Porous Structure and its Effect on the Bone Ingrowth in a Sheep Model</b> O. Richart, M. Descamps and A. Liebetrau	425
<b>Role of Peri-Implant Medullary Cisternae in the Osseo-Integration of Smooth Surface Endosseous Dental Implants</b> A. Ruggeri, M. Franchi, M. Raspanti, D. Martini, V. Ottani, R. Strocchi, V. De Pasquale and G. Tretola	429
<b>Starch Based Copolymers as Biomaterials in Vivo Biocompatibility Study</b> V. Souillac, J.C. Fricain, R. Bareille, R.L. Reis, D. Chauveaux and C. Baquey	433
<b>Effects of Hydroxyapatite Spots on New Bone Formation</b> K. Teraoka, T. Nonami, A. Kamiya, A. Watazu, Y. Yokogawa, H. Taoda, K. Naganuma, S. Tsutsumi and T. Kameyama	437
<b>Smart Calcium Phosphate-Based Bioceramics with Intrinsic Osteoinductivity</b> M.E. Thomas, P.W. Richter, J. Crooks and U. Ripamonti	441
<b>Mechanical Properties and Biocompatibility of Titanium-Hydroxyapatite Implant Material Prepared by Spark Plasma Sintering Method</b> A. Yokoyama, F. Watari, R. Miyao, H. Matsuno, M. Uo, T. Kawasaki, T. Kohgo, M. Omori and T. Hirai	445
<b>Histological Studies of Double Layer HA/CaO-P<sub>2</sub>O<sub>5</sub> Glass Plasma Sprayed Coatings using Rabbit Model</b> M.P. Ferraz, J.D. Santos, A. Afonso, A.R. Vasconcelos and F.J. Monteiro	449

<b>Osteoconduction and Bioresorption of Sintered Carbonate Apatite</b> M. Hasegawa, T. Ohashi, T. Tani and Y. Doi	453
<b>New Biomaterials, Stem Cells and Morphogens for Tissue Engineering</b> A.H. Reddi	459
<b>Ceramic Materials and Growth Factors</b> H. Ohgushi, Y. Dohi, T. Noshi, M. Ikeuchi, T. Yoshikawa, M. Okumura, H. Nakajima and Y. Takakura	463
<b>3-D Bone Tissue Engineering with Bioactive, Resorbable Microcarriers</b> Q. Qiu, P. Ducheyne and P.S. Ayyaswamy	467
<b>In Vivo Loading of Calcium Phosphate Ceramics with Osteogenic Cells</b> P. Frayssinet, D. Mathon and N. Rouquet	471
<b>Bone Regeneration with Cultured Human Bone Grafts</b> T. Yoshikawa, H. Ohgushi, T. Uemura, Y. Ueda, H. Nakajima, Y. Enomoto, K. Ichijima, Y. Takakura and T. Tateishi	475
<b>Apatite Coating in / on Rabbit Tendons Using an Alternate Soaking Process</b> S. Tanaka, M. Sakane, M. Tanaka, I. Yamaguchi, H. Shimojo, K. Kato, T. Tateishi and Y. Miyanaga	479
<b>Molecularly Engineered Hydroxylapatite</b> P. Sharrock, C. Zahraoui, K. Anselme, M. Rouahi, B. Noël, T. Grard, J. Jeanfils and P. Hardouin	483
<b>Fabrication and Animal Experiment of Nanocomposites of Hydroxyapatite Collagen and Polysaccharides</b> T. Ikoma, T. Muneta and M. Tanaka	487
<b>Osteogenic Potential of Porous <math>\beta</math>-Tricalcium Phosphate (<math>\beta</math>-TCP) Combined with Cultured Bone. - Tissue Engineered Bone Using a Biodegradable Material as a Scaffold</b> S. Fu, T. Yoshikawa, Y. Hibino, Y. Yamada, A. Niimi, M. Honda, Y. Okazaki, K.I. Hata and M. Ueda	491
<b>Bone Formation by Autogenous Grafting of Cultured Bone/Porous Ceramic Constructs in a Dog</b> J. Iida, T. Yoshikawa, Y. Ueda, H. Ohgushi, T. Uemura, Y. Enomoto, K. Ichijima, Y. Takakura and T. Tateishi	499
<b>In Vitro Bone Formation by Human Marrow Cell Culture on the Surface of Zinc-Releasing Calcium Phosphate Ceramics</b> M. Ikeuchi, Y. Dohi, H. Ohgushi, T. Noshi, K. Horiuchi, K. Yamamoto, M. Sugimura and A. Ito	503
<b>Porous Hydroxyapatite Cell Carrier for Tissue Engineering</b> R. Martinetti, A. Belpassi, A. Nataloni and C. Piconi	507
<b>Site Dependence of Bone Formation Induced by rhBMP-2: Comparing Rat Parietal Bone and Heterotopic Back Region</b> H. Nagatsuka, N. Nagai, T. Sakae and R.Z. LeGeros	511
<b>Development of Revolutionizing Biomaterials Substituting Various Mammalian Organs by Means of Sintered Bioceramics</b> T. Ueda, K. Hirota and K. Nishihara	515
<b>Apatite-Forming Ability of Zirconia / Alumina Composite Induced by Chemical Treatment</b> M. Uchida, H.M. Kim, T. Kokubo, M. Nawa, T. Asano, K. Tanaka and T. Nakamura	519
<b>Design of Ceramic Acetabular Components: A Retrospective</b> G. Willmann	525
<b>Micro-Separation in Vitro Produces Clinically Relevant Wear of Ceramic-Ceramic Total Hip Replacements</b> J. Nevelos, E. Ingham, C. Doyle, R. Streicher, A. Nevelos and J. Fisher	529
<b>Zirconia-Alumina: An Alternative Bearing for Hip Arthroplasty</b> W. Weber, W. Rieger, J. Clausen and H. Schmotzer	533
<b>Zirconia-Alumina Coupling: Aging of Zirconia Should be Kept out of Concern</b> F. Villiermaux	537
<b>How Much of What is Wear of THRs with Ceramic-on-Ceramic Articulation?</b> A. Walter	541
<b>High Strength and Toughness Alumina Matrix Composites by Transformation Toughening and 'In Situ' Platelet Reinforcement (ZPTA) - The New Generation of Bioceramics</b> W. Burger and H.G. Richter	545
<b>Limitations of Artificial Hip Joint Mobility Due to Wear and Ceramic Cup Design</b> R. Bader, E. Steinhauser, G. Willmann and R. Gradinger	549

<b>Ageing of Zirconia: Everything You Always Wanted to Know</b> L. Blaise, F. Villiermaux and B. Calès	553
<b>Transformation Kinetics of Y-TZP Zirconia Ceramics in Simulated Physiological Solution</b> S. Frangini, C. Piconi, A. di Bartolomeo and G. Magnani	557
<b>Wear of Alumina on Alumina Total Hip Prosthesis -Effect of Lubricant on Hip Simulator Test-</b> M. Ueno, H. Amino, H. Oonishi, I.C. Clarke and V. Good	561
<b>Ceramics for Joint Replacement: What are the Options for this Millennium</b> G. Willmann	565
<b>Biocompatibility of a New Alumina Matrix Biocomposite AMC</b> G. Willmann, W. von Chamier, H.-. Pfaff and R. Rack	569
<b>A Genetic Theory of Bioactive Materials</b> L.L. Hench	575
<b>Physiological Removal of Silicon from Bioactive Glass</b> W. Lai, J. Garino, C.M. Flaitz and P. Ducheyne	581
<b>Affect of Bioglass® Repeat Dosage on Mineralisation of Embryonic Bone 'in Vitro'</b> J. Maroothery and L.L. Hench	585
<b>Silicon Nitride - Bioglass® Composite for Biomedical Applications</b> J.D. Santos, M. Amaral, S.M. Oliveira, M.A. Lopes and R.F. Silva	589
<b>Absorbability of Bulk Sol-Gel Bioactive Glasses</b> M. Hamadouche, A. Meunier, D.C. Greenspan, C. Blanchat, J.P. Zhong, G.P. La Torre and L. Sedel	593
<b>A Novel Sol-Gel Derived Bioactive Glass Featuring Antibacterial Properties</b> M. Bellantone, N.J. Coleman and L.L. Hench	597
<b>Nanoscale Surface Structure of Bioactive Glass (S53P4) as a Function of Immersion Time in SBF</b> M. Jokinen, T. Peltola, J. Simola, J. Korventausta and A. Yli-Urpo	601
<b>55S® Bioglass Stimulates in Vitro Osteoblast Differentiation and Creates a Favorable Template for Bone Tissue Formation</b> S. Loty, J.M. Sautier, C. Loty, M.T. Tan, D.C. Greenspan and N. Forest	605
<b>Bioactive Sol-Gel Glasses in the CaO-SiO<sub>2</sub> System</b> P. Saravanapavan and L.L. Hench	609
<b>Comparison of Three Methods in Evaluation of Bone Ingrowth into Porous Bioactive Glass and Titanium Implants</b> H.O. Ylänen, C. Ekholm, N. Beliaev, K.H. Karlsson and H.T. Aro	613
<b>Bioactive Behaviour of Sol-Gel Derived Antibacterial Bioactive Glass</b> M. Bellantone and L.L. Hench	617
<b>Chemical Durability and Mechanical Properties of Calcium Phosphate Glasses with the Addition of Fe<sub>2</sub>O<sub>3</sub>, TiO<sub>2</sub> and ZnO</b> J. Clément, G. Avila, M. Navarro, S. Martínez, M.P. Ginebra and J.A. Planell	621
<b>Pore Characterisation and Interconnectivity Studies on Bioactive 58 S Sol-Gel Glass</b> R. Cook, E. Fielder, T. Watson, P. Robinson and L.L. Hench	625
<b>Effect of Particle Size on Bioglass® Dissolution</b> P. Sepulveda, J.R. Jones and L.L. Hench	629
<b>Processing of Bioglass Coatings by Excimer Laser Ablation</b> J. Serra, P. González, S. Chiussi, B. León and M. Pérez Amor	635
<b>Reaction Kinetics of Bioactive Glass and a Resorbable Polysaccharide</b> I. Thompson and L.L. Hench	639
<b>CaO-P<sub>2</sub>O<sub>5</sub> Glass Ceramics Containing Bioactive Phases: Crystallisation and in Vitro Bioactivity Studies</b> Y. Zhang, M.A. Lopes and J.D. Santos	643
<b>TEM Examination of the Interface between Bioglass®/Polyethylene Composites and Human Osteoblast Cells In Vitro</b> J. Huang, L. Di Silvio, M. Kayser and W. Bonfield	649
<b>Pre-Treated Bioactive Composite in Rat Soft Tissue</b> T. Tirri, T. Jaakkola, T. Närhi, J. Rich, J. Seppälä and A. Yli-Urpo	653

<b>In Vitro Formation of Bone-Like Apatite on the Surface of Solution-Cast Poorly Crystallised Hydroxyapatite/Chitin Composite</b> J. Weng and M. Wang	657
<b>Bone Cement Made of High Molecular Weight PMMA Resin with Bioactive Ceramic Filler Showed Higher Bone-Bonding Strength than That of Bis-GMA Resin and Bioactive Ceramic Fillers</b> T. Nakamura, H. Kato, Y. Okada, S. Shinzato, K. Kawanabe, J. Tamura and T. Kokubo	661
<b>Osteoconductivity and Mechanical Properties of a New Bioactive Bone Cement</b> S. Shinzato, T. Nakamura, T. Kokubo and Y. Kitamura	665
<b>Structure and Properties of Hydroxylapatite Reinforced Starch Bone-Analogue Composites</b> R.A. Sousa, R.L. Reis, A.M. Cunha and M.J. Bevis	669
<b>Preparation and Mechanical Properties of Chitosan/Hydroxyapatite Nanocomposites</b> I. Yamaguchi, K. Tokuchi, H. Fukuzaki, Y. Koyama, K. Takakuda, H. Monma and M. Tanaka	673
<b>In Vitro Test and Application for Guided Bone Regeneration of <math>\beta</math>-Tricalcium Phosphate / Poly-(Lactide-Glycolic acid-<math>\epsilon</math>-Caprolactone) Composites</b> M. Kikuchi, Y. Koyama, K. Takakuda, H. Miyairi and M. Tanaka	677
<b>Bioactivity and Mechanical Behavior of PTMO-Modified CaO-SiO<sub>2</sub> Hybrids Prepared by Sol-Gel Process</b> N. Miyata, K. Fuke, Q. Chen, K. Masakazu, T. Kokubo and T. Nakamura	681
<b>Bioactive Glass-Polymer Composite for Experimental Bone Reconstruction</b> A. Aho, T. Tirri, J. Seppälä, J. Rich, N. Strandberg, T. Jaakkola, T. Närhi and J. Kukkonen	685
<b>Is There a Chemical Interaction between Calcium Phosphates and Organic Compounds in the Organic/Inorganic Composites?</b> S.V. Dorozhkin	689
<b>Bioactive Polyurethane Implants with Hydroxyapatite</b> R. Rozhnova, I. KEBULADZE and N. Galatenko	693
<b>Apatite-Forming Ability of Polymers with Carboxy Groups in Simulated Body Fluid</b> K. Masakazu, M. Nakao, M. Minoda, T. Miyamoto, H.M. Kim, T. Kokubo and T. Nakamura	697
<b>Possibility for Obtaining Bioactive Glass-Ionomer Cements</b> M. Kamitakahara, K. Masakazu, T. Kokubo and T. Nakamura	701
<b>Development of Highly Bioactive and Mechanically Strong Starch Thermoplastic/Bioglass<sup>®</sup> Composite Biomaterials</b> I.B. Leonor, R.A. Sousa, A.M. Cunha, Z.P. Zhong, D.C. Greenspan and R.L. Reis	705
<b>Organ-Derived Dependence of Biomineralization in Type I Collagen Gel</b> T. Matsumoto, M. Okazaki, M. Inoue, Y. Hamada, M. Taira and J. Takahashi	709
<b>Apatite Formation on Ethylene-Vinyl Alcohol Copolymer Modified with Silane Coupling Agent and Calcium Silicate</b> A. Oyane, M. Minoda, T. Miyamoto, K. Nakanishi, K. Masakazu, T. Kokubo and T. Nakamura	713
<b>Coating of Bioactive Glass (13-93) Fibers with Bioabsorbable Polymer</b> T. Paatola, E. Pirhonen and P. Törmälä	717
<b>Bioactive Glass 13-93/P(L/DL)LA Composites in Vitro and in Vivo</b> H. Niiranen, T. Pyhältö, P. Rokkanen, T. Paatola and P. Törmälä	721
<b>Bioactive Glass Fiber/Poly lactide Composite</b> E. Pirhonen, G. Grandi and P. Törmälä	725
<b>Bioresorbable Polymers: Their Potential as Scaffolds for Bioglass<sup>®</sup> Composites</b> A. Stamboulis and L.L. Hench	729
<b>A Three-Dimensional Porous Scaffold of Biodegradable Synthetic Polymers and Porous Hydroxyapatite Beads for Bone Tissue Engineering</b> T. Ushida, T. Tamaki, G.P. Chen, Y. Umezū and T. Tateishi	733
<b>Microstructure and Mechanical Properties of Hot-Pressed Hydroxyapatite/Poly-L-Lactide Biomaterials</b> N. Ignjatović, K. Delijić, M. Vukčević and D.P. Uskoković	737
<b>Developing Tricalcium Phosphate/Polyhydroxybutyrate Composite as a New Biodegradable Material for Clinical Applications</b> M. Wang, J. Weng, J. Ni, C.H. Goh and C.X. Wang	741
<b>Hydroxyapatite Granules Implanted on Titanium Alloys</b> A. Watazu, A. Kamiya, J. Zhu, T. Nonami, K. Teraoka, T. Sonoda, K. Ushiki and K. Naganuma	745



<b>FTIR Studies on the Effect of Network Connectivity in the Cement Forming Ability of Sol-Gel Glasses in the SiO<sub>2</sub>-Al<sub>2</sub>O<sub>3</sub>-CaO-CaF<sub>2</sub> System</b> M.S. Zolotar and C.A.C. Zavaglia	749
<b>A Hybrid Sponge of Poly(DL-Lactic-Co-Glycolic Acid), Collagen and Apatite</b> G.P. Chen, T. Ushida and T. Tateishi	753
<b>NMR Spectroscopy of Bone and Bone Substitutes</b> A.P. Legrand, B. Bresson and J.M. Bouler	759
<b>Calcium Phosphate Emulsions: Possible Applications</b> M. Bohner	765
<b>Setting Reactions Involved in Injectable Cements Based on Amorphous Calcium Phosphate</b> A. Tofighi, S. Mounic, P. Chakravarthy, C. Rey and D. Lee	769
<b>Formation of Macropores in Calcium Phosphate Cements through the Use of Mannitol Crystals</b> M. Markovic, S. Takagi and L.C. Chow	773
<b>An Experimental Approach to the Study of the Rheology Behaviour of Synthetic Bone Calcium Phosphate Cements</b> J. Friberg, E. Fernández, S. Sarda, M. Nilsson, M.P. Ginebra, S. Martínez and J.A. Planell	777
<b>Improvement of the Mechanical Properties of an <math>\alpha</math>-TCP Cement by the Addition of a Polymeric Drug Containing Salicylic Acid</b> M.P. Ginebra, A. Rilliard, E. Fernández, C. Elvira, J. San Román and J.A. Planell	781
<b>Effects of Added ZnTCP on Mechanical and Biological Properties of Apatite Cement</b> I. Kunio, Y. Miyamoto, T. Toh, T. Yuasa, A. Ito, M. Nagayama and K. Suzuki	785
<b>Formulation of an Injectable Phosphocalcium Cement</b> S. Gonçalves, A. Brouchet, M. Frèche, F. Rodriguez, B. Delisle and J.L. Lacout	789
<b>In Vivo Resorption Behavior of a High Strength Injectable Calcium-Phosphate Cement</b> J.G.C. Wolke, E.M. Ooms and J.J. Jansen	793
<b>In Vivo Performance Evaluation of Two Processes of Macropores Elaboration for Biphasic Calcium Phosphate Ceramics</b> M. Schmitt, E. Aguado, E. Goyenvalle and G. Daculsi	797
<b>In Vivo Comparison of Two Injectable Calcium Phosphate Biomaterials: Ionic Cement and Polymer-Associated Particulate Ceramic</b> O. Gauthier, I. Khairoun, P. Weiss, J.M. Bouler, E. Aguado and G. Daculsi	801
<b>The Effect of Blood Contact on the Setting and the Osteointegration Ability of the Calcium Phosphate Bone Cement. Experimental Study in Rabbits</b> C. Faldini, A. Moroni, M. Rocca, S. Stea, E. Donati, M. Mosca and S. Giannini	805
<b>Effect of Bioglass Granules on the Physico-Chemical Properties of Brushite Cements</b> M. Bohner and S. Matter	809
<b>pH Variations of a Solution after Injecting Brushite Cements</b> M. Bohner	813
<b>Physico Chemical Characterization of two Processes of Macropores Elaboration for Biphasic Calcium Phosphate Ceramics</b> G. Daculsi and M. Schmitt	817
<b>Properties of the Cement Materials in <math>\alpha</math>-TCP-TTCP-C<sub>6</sub>H<sub>8</sub>O<sub>7</sub>-H<sub>2</sub>O</b> H.L. Dai, Y.H. Yan, S.P. Li and X.M. Chen	821
<b>Calcium Phosphate Bone Cement Containing ABK and PLLA - Sustained Release of ABK, the BMD of the Femur in Rats, and Histological Examination -</b> T. Kusaka, A. Tanaka, S. Sasaki, I. Takano, Y. Tahara and Y. Ishii	825
<b>Basic Properties of Apatite Cement Containing Carbonate Apatite and Its Resorption by Cultured Osteoclasts</b> Y. Miyamoto, T. Toh, T. Yuasa, M. Takechi, Y. Momota, M. Nagayama, I. Kunio and K. Suzuki	829
<b>Healing of Segmental Ulnar Defects in Dog Using Bioresorbable Calcium Phosphate Cement Added with Recombinant Human Bone Morphogenetic Protein-2</b> K. Ohura, H. Irie and C. Hamanishi	833
<b>Dynamic Examination of the Femur in a Rat Model of Osteoporosis after Injection of CPC Containing ABK and PLLA</b> A. Tanaka, T. Kusaka, S. Sasaki, I. Takano, Y. Tahara and Y. Ishii	837
<b>Hard Tissue Deposition in Dental Pulp Canal by <math>\alpha</math>-Tricalcium Phosphate Cement</b> M. Yoshikawa, T. Toda, Y. Mandai and H. Oonishi	841

<b>Effect of Apatite Cements on Human Osteoblasts in Vitro</b> T. Yuasa, Y. Miyamoto, I. Kunio, M. Takechi, Y. Momota, T. Toh, M. Nagayama and K. Suzuki	845
<b>Evaluation of Hydroxyapatite-Putty as a Hemostatic Agent</b> Y. Momota, Y. Miyamoto, I. Kunio, M. Takechi, T. Yuasa, T. Toh, M. Nagayama and K. Suzuki	849
<b>Study on the Applied Properties of Tobramycin-Loaded Calcium Phosphate Cement</b> Y. Huang, C.S. Liu, H.F. Shao and Z.J. Liu	853
<b>Factors in Antagonist Tooth Structure Wear from Dental Ceramic Restorations</b> J.A. Sorensen	863
<b>Bone Augmentation with Bioactive Ceramics before Insertion of Endosseous Dental Implants: Histories and Human Histology on Seventeen Consecutive Cases</b> M.R. Norton and J. Wilson	869
<b>Triphasic Phosphate/Titanate Composites for Preprosthetic Socket Augmentation (Experimental Study)</b> M. Werner, H.H. Beheri, L. Agameya and I. Zaki	873
<b>Bioactive Glass S53P4 in Frontal Sinus Obliteration. A 9-Year Experience</b> K. Aitasalo, M. Peltola, J. Suonpää and A. Yli-Urpo	877
<b>Porous Hydroxyapatite Custom Made Implants for Cranioplasty: Two Years of Clinical Experience</b> A. Nataloni, R. Martinetti, G. Staffa, F. Servadei and C. Piconi	881
<b>Degradation of Glass Eye Prostheses</b> K.A. Gross, S. Walters and B. Chen	885
<b>Blood Compatibility and Protein Adsorption Characteristics of Sol-Gel Derived Titania</b> S. Takashima, S. Takemoto, K. Tsuru, S. Hayakawa and A. Osaka	889
<b>Development of Revolutionizing Methods for Hybrid-Type Artificial Organs by Means of Bioceramics and Biomechanics</b> K. Nishihara, T. Ueda, M. Tanaka and K. Hirota	893
<b>Structural Variations of HCl-Demineralized Biotic Bones of Different Tissue Origins</b> G.T. El-Bassyouni and M. Werner	897
<b>Calcium Phosphate Ceramics as Drug-Delivery System for Anticancer Therapy</b> E. Landi, L. Orlandi, G. Spagna, A. Tampieri and N. Zaffaroni	901
<b>Effect of Antimicrobial Agents on Physical Properties of Dental Cements</b> A. Akashi, Y. Matsuya, E. Ito, M. Unemori and A. Akamine	905
<b>Sintering Specifics of Low-Fusing Ceramics for Pfm-Restorations</b> T. Klinke and R. Biffar	909
<b>Evaluation and Consequences of Follow-Up Studies of Dental Implant Systems</b> G. Heimke and W. Hund	917
<b>Clinical Long-Term Evaluation of Hydroxyapatite Granules Implantation in Periodontal Defects</b> A.M. Gatti, E. Monari, G. Poli and E. Galli	921
<b>Filling of Post-Extraction Dental Socket with Hydroxyapatite Granules APAFILL-G™</b> D. García, L. García, M.P. Pérez, M. Suarez, J.A. Delgado, R. García, Y. Rodríguez, I. Fernández and D. Márquez	925
<b>ZrO<sub>2</sub>-TZB in Dentistry - Material, Properties and Applications</b> W. Weber and W. Rieger	929
<b>Apical Canal Sealing Ability of Tetracalcium Phosphate / Dicalcium Phosphate Cements</b> M. Yoshikawa, Y. Mandai, Y. Hiraoka, T. Toda and H. Oonishi	933
<b>Bioactive Glass in Frontal Sinus and Skull Bone Defect Obliteration</b> M. Peltola, K. Aitasalo, J. Suonpää and A. Yli-Urpo	937
<b>Bone Formation by Distraction Clinical and Structural Studies</b> M. Mattioli-Belmonte, M. Fini, F. Gabbanelli, N. Nicoli-Aldini, E. Galliani, A. Bianchi, A. Bigi, R. Cocchi, N. Roveri, S. Svegliati-Baroni and G. Biagini	941
<b>Bone Graft Substitutes for Acetabular Reconstruction in Revision Total Hip Arthroplasty</b> R.P. Pitto	947
<b>Glass Ionomer as a Potential Osteoconductive Expander of Allograft in Revision Arthroplasty of the Hip</b> J.D.J. Eldridge, J.L. Cunningham, A. Samuels, T.J. Lawes, I.D. Learmonth and A.E. Goodship	951
<b>Ceramic Prostheses for the Radial Head Fractures</b> B. Martinelli, R. Valentini, A. Nataloni, R. Martinetti and A. Ravaglioli	955

<b>Comparison of Surface Morphology in Sol-Gel Treated Coralline Hydroxyapatite Structures for Implant Purposes</b> B. Ben-Nissan, J.J. Russell, J. Hu, A. Milev, D. Green, R. Vago, W. Walsh and R.M. Conway	959
<b>Hydroxyapatite-Tricalcium Phosphate as a Filler for Resected Bone Tumors or Bone Cysts of the Upper Extremity and Hand</b> K. Suzuki	963
<b>Long Term Clinical Results of Total Joint Replacement with Alumina/Alumina Articulation</b> L. Sedel, P. Bizot, R. Nizard, M. Hammadouche and D. Hannouche	969
<b>Metal-on-Metal Articulation in Total Hip Arthroplasty</b> P.G. Marchetti, R. Binazzi, V. Vaccari, A. Manca, R. Rossi, A. Campagna, M. Magnani, M. Baldarelli and E. Pasini	975
<b>Outcome of Modular Press-Fit Acetabular Components in Total Hip Arthroplasty - A Comparative Clinical Trial Using Polyethylene and Alumina Liners</b> R.P. Pitto, D. Schwämmlein and M. Schramm	979
<b>Total Hip Prostheses with Cup and Ball in Ceramic and Metal Sockets</b> P. Gardelin, J.P. Seminario, C. Corradini and J. Fenollosa Gomez	983
<b>Ceramic on Ceramic Couplings - Twenty Years' Experience</b> G. Gualtieri, P. Calderoni, A. Ferruzzi, S. Gnudi, P. Frontali, F. Calista and I. Gualtieri	989
<b>Comparison of Ceramic on Ceramic to Ceramic on Polyethylene Total Hip Replacement</b> B.R. Roy, A.B. Nevelös, E. Ingham, D.L. Shaw and J. Fisher	991
<b>Histological and Ultrastructural Analysis of Alumina Wear Debris</b> E.D. Santis, G. Maccauro, L. Proietti, G. Falcone and V. De Santis	995
<b>3 to 18 Year Clinical Results of Total Knee Replacement with Ceramic Components</b> H. Oonishi, N. Murata, M. Saito, S. Wakitani, K. Imoto, S. Kin, Y. Chen, H. Nakaya, M. Tanaka and H. Amino	999
<b>HA as a Fixation Agent for Proximal Femoral Prostheses</b> M.A.R. Freeman	1005
<b>Prognostic Factors in Lower Limb Joint Arthroplasty</b> S. Giannini, F. Catani, A. Ensini, G. Cucca, L. Bragonzoni and S. Toksvig-Larsen	1007
<b>Furlong Hydroxyapatite Coated Hip Prosthesis Versus the Charnley Cemented Hip Prosthesis - A Prospective Randomised Study</b> J.G. Bradley, C.M. Andrews, K. Lee, C.A. Scott and D. Shaw	1013
<b>Long Term Results with a Fully HA-Coated Prosthesis - Results, Lessons, and Comments from the Series Performed by the ARTRO Group (15-Year Experience)</b> J. Vidalain	1021
<b>Ceramic-Ceramic Surface Revision Surgery. Twenty Years of Experience.</b> D. Rueda and F. Barahona	1025
<b>9 to 11 Year Clinical Results of Interface Bioactive Bone Cement by Interposing Hydroxyapatite Fine Granules between Bone and Bone Cement</b> H. Oonishi, N. Murata, M. Saito, S. Wakitani, K. Imoto, S. Kim, S. Sakamoto, Y. Chen, H. Nakaya and M. Tanaka	1031
<b>Hydroxyapatite-Coated Pins Dramatically Improve the Strength of Fixation</b> A. Moroni, C. Faldini, F. Vannini, V. Stigliano and S. Giannini	1037
<b>Use of a Mineral Bone Substitute in Tibial Plateau Fractures</b> E. Betti, M. Accorsini, F. Calderazzi and M. Aliani	1043
<b>The Use of Synthetic Bone Substitutes in Total Hip Arthroplasty Revision Surgery</b> C. Schwartz, P. Frayssinet, P. Lecestre and A. Ray	1049
<b>Repair of Large Bone Defects by Autologous Human Bone Marrow Stromal Cells</b> M. Marcacci, E. Kon, R. Quarto, S.M. Kutepov, V. Mukhachev, A. Lavroukov and R. Cancedda	1053