

Table of Contents

Preface

A. Materials for Renewable Energy and Energy Saving

Utilization of Gneiss in Asphalt Concrete Mixtures S.P. Wu, D.M. Hu, L. Pang and H. Wang	1
Preparation of Sb:F:SnO₂ Films and their Application in Low-E Glass G.Y. Zhao, X. Zhi, Y. Ren and T. Zhu	5
Evaluations of Hydrogen Properties on MgH_x-Nb₂O₅ Composite by Mechanical Alloying K.I. Kim and T.W. Hong	9
Fabrications and Evaluations of Hydrogen Permeation on TiN-5wt%Ni Membrane by Spark Plasma Sintering K.I. Kim and T.W. Hong	13
Synthesis, Characterization and Electrochemical Performance of Li₂Mn_{0.7}Fe_{0.3}SiO₄ Prepared from Solid-state Reaction W.G. Liu, Y.H. Xu and R. Yang	17
Ironmaking Process Parameter Analysis and Optimization for the Blast Furnace S.P. Yang, Y.H. Song and L.H. Xin	21
Evaluations of Hydrogen Permeation on γ-Al₂O₃ Synthesized by Sol-Gel Process J.H. Park, M.W. Jung and T.W. Hong	25
Porous TiO₂ Layer Encapsulated Silicon as the Anode Material for Lithium Secondary Batteries B.E. Kim, S.E. Park, S.W. Lee, J.C. Lim, B.W. Cho and J.K. Lee	29
Effect of SiC on Microstructures and Properties of Cordierite-Mullite Multiphase Ceramics Material J.G. Bai, B. Wang, G.L. Liu, J.Q. Gao, J.F. Yang, J.Z. Zhao and Z. Li	33
Development of an Automated Design System for Oil Pumps with Multiple Profiles (Circle, Ellipse and Involute) C. Kim, B.C. Hwang, H.K. Moon, H.W. Lee and M.J. Song	37
Electrochemical Properties of LiFePO₄/C Composite Improved by High Energy Milling C.S. Kim, S.I. Hwang and S.W. Kim	41
Research of BOF Protection Technology by Slag Splashing H.M. Guo and J. Yang	45
Study on Transition Characteristics of Poly(Ethylene Glycol)/ Selected Fatty Acids Phase Change Materials Q.S. Shi and T.Q. Liu	49
Preparation and Microstructural Characterization of Al₂O₃/ZrO₂ Nanocomposites to Use in the Femoral Head of Hip Replacement G. Zhou, S.W. Lee and Y.B. Li	53
Effects of Atomizing Gas on Microstructural Characteristics and Mechanical Properties of Spray Formed High Si Steels J.S. Shin, B.H. Kim, J.G. Lee, S.Y. Shin, G.B. Choi and B.M. Moon	57
Binder-Free Pellet Fabrication of Ultra-Fine Poly-Si Powder for Economical Production of Solar Grade Si Ingot B.H. Kim, J.S. Shin, D.S. Kim, K.Y. Kim, I.J. Shon and B.M. Moon	61
Influence of Different Interlayers Metals on Properties of Diffusion Bonding Joint of Tungsten to Copper J. Li, X. Fang, J.F. Yang and G.J. Qiao	65
Micro Mechanical Property Measurement of Nickel (99.9%) Thin Film Using Vision Strain Measuring Method A.R. Han, H.J. Lee, N.K. Lee, G.A. Lee and J.H. Song	69
Preparation and Characterization of Sulfonated Poly(ether Sulfone) Using 4,4-Bis(4-Hydroxyphenyl)valeric Acid for Proton Exchange Membrane Fuel Cell Application D.W. Seo, Y.D. Lim, M.S. Islam Mollah, S.H. Lee, S.H. Moon, S.Y. Pyun and W.G. Kim	73

Effects of Flow Characteristics in Polymer Electrolyte Membrane Fuel Cell H.G. Kim, L.K. Kwac, Y.S. Kim and Y.W. Kang	77
 B. Eco-Materials Processing and Design for Reduction of Environment Impact	
Estimation of Energy Requirements and Atmospheric Emission in Continuous Casting Process for Al Wire B.S. Lee, H. Cho and H.H. Jo	81
Synthesis and Microstructural Control of $\text{In}_2\text{O}_3(\text{ZnO})_3$ Layered Compound by Microwave-Heating S. Yanagiya, Y. Hayashi and H. Takizawa	85
Eco-Friendly Grain Refinement for A3003 Alloy H. Cho, J.H. Ha, B.S. Lee, S.H. Chang and J.S. Shin	89
Studies on Filming of Corn Starch Z.Z. Chen and J.Q. Wang	93
Analysis of the Grain Orientation and Texture of Friction Stir Welded Magnesium Alloy W.P. Xu, L. Xing and L.M. Ke	97
Densification of Alumina Powder by Using PECS Process with Different Pulse Electric Current Waveforms K.Q. Dang, M. Nanko, M. Kawahara and S. Takei	101
Experimental Study of Non-Sintering Block for Reducing Surface Temperature Using Recycling Bottom Ash J.B. Park, S.H. Lee, C.S. Gee and H.B. Pyun	105
Microstructures and Electrical Properties of Random-Oriented $(\text{Bi},\text{La})_4\text{Ti}_3\text{O}_{12}$ Thin Film Deposited by Pulsed-DC Sputtering Method M.W. Lee, S.L. Ryu, S.J. Yeom and S.Y. Kweon	109
A Method of Preparing Grinding Medium of White and High Performances Using Natural Bauxite Ore J. Han, B.L. Wu and S.P. Wu	113
Lignin-Quaternary Adsorbent: Synthesis, Characterization and Application for 2, 4, 6-Trinitrotoluene (TNT) Adsorption X.R. Zhuo, X.G. Luo, X.Y. Lin and C.G. Xu	117
Synthesis of Ca-Al-Si-O Compounds from Local Wastes U.S. Sanewirush and P. Saewong	121
Removal of Particles and Dissolved Metals in Motorway Runoff by Filtration and Adsorption Using the Expanded Polypropylene Media S.W. Kang, S.K. Kim, S.L. Yun, H.C. Oh and J.H. Ahn	125
Development of Eco-Debinding Process Using Supercritical Extraction of Low Molecular Organic Binders in Ceramic Bodies with Nano-Sized Capillary Structure S.W. Kim and J.S. Park	129
Thermoplastic Modification to Konjac Glucomannan with Methyl Acrylate X.G. Luo, F. Liu, Z.G. Zhang and X.Y. Lin	133
Reinforcement Design of Poplar Glulam Y.C. Hu and F.C. Cheng	137
The Optimum Design of Production Technology of the Poplar LVL L. Zhang, Y.C. Hu, P. Chen, J.P. Hu, F.P. Yuan, Q. Li and M. Zhang	141
Synthesis of Magnetite Nano-Particles and Powder Activated Carbon as a Novel Material for Water Treatment G.T. Seo, J.T. Kim, S.S. Kim and J. Kaewsuk	145
Development of Non-SF₆ Strip Casting Process for Mg Alloys D.I. Jang and S.K. Kim	149
The Influence of Sn Addition on the Corrosion Behavior of Mg-5Al-1Zn Alloy K.C. Park, B.H. Kim, J.J. Jeon, Y.H. Park and I.M. Park	153
Reliability Analysis of the Structural Laminated Veneer Lumber B. Xue and Y.C. Hu	157
Effect of Nitrogen Content on the Hot Ductility during Hot Deformation of Stainless Steels J. Liu, G.W. Fan, P.D. Han, J.S. Liu, J.Q. Gao and J.F. Yang	161

Effect of Warm Processing Parameters on the Precipitation of γ'-Phase in 2205 Duplex Stainless Steels	
G.W. Fan, J. Liu, P.D. Han, G.J. Qiao and J.F. Yang	165
Effect of Calcium on Solidification Behavior of Mg-Sn Based Alloys	
D.G. Kim, H.T. Son and J.S. Lee	169
A Study on the Formability of AZ31B Magnesium Alloy Sheet with Experiment and Simulation	
J.H. Song, G.A. Lee, H.J. Lee, N.K. Lee, S.H. Kim, K.T. Kim, K.D. Park and J.H. Jang	173
<i>In Situ</i> Fracture Behavior of AZ51 and AZT513 Alloy	
B.H. Kim, K.C. Park, S.H. Lee, Y.H. Park and I.M. Park	177
Evaluation on Solar Heat Reflective Coatings to Reduce Asphalt Concrete Temperature	
Z. Chen, S.P. Wu, M.Z. Chen and J.G. Wang	181
Eco-Fabrication of Metal Nanoparticle Related Materials by Home Electric Appliances	
Y. Hayashi, M. Inoue, I. Narita, K. Suganuma and H. Takizawa	185
Research on Crosslinking of Polylactide Using Low Concentration of Dicumyl Peroxide	
C.G. Xu, X.G. Luo, X.R. Zhuo and L.L. Liang	189
Sodium Lignosulphonate-Polyvinyl Alcohol Bioadsorbent: Synthesis, Characterization and Adsorption for Pb (II)	
X.Q. Luo, X.Y. Lin, X.G. Luo and Y. Chen	193
Synthesis and Thermal Properties of Etherified Konjac Glucomannan	
Q. Wu, X.Y. Lin, X.G. Luo and Y. Chen	197
Development of Environmental-Friendly Water-Retentive Asphalt and its Characteristics	
S.H. Lee, H.B. Pyun, C.S. Gee and J.B. Park	201
Field Applications of Urban Non-Point Source Pollutant Reducing Treatment System with the Expanded Polypropylene(EPP) Media for Treating PAHs from Road Runoff	
S.L. Yun, S.W. Kang, S.K. Kim, P.J. Kwak, J.H. Ahn and H.C. Oh	205
Effects of Pair-Mineralizer on Burnability of Clinker and Formation of Mineral	
W.T. Kwon, Y. Kim, Y.J. Lee, S.R. Kim and S.W. Ha	209
Effect of Final Annealing Temperature on Antibacterial Precipitate of Copper-Bearing Ferritic Stainless Steel	
D.N. Zou, Y. Zhang, Y. Han and W. Zhang	213
Collapse-Type Shrinkage in Plantation-Grown Eucalyptus Cells When Subjected to Heat-Steam Treatment	
Y.Q. Wu, H. Kazuo and Y.C. Cai	217
Characterization of Power Plant Bottom Ash and its Application to Cement Mortar	
W.T. Kwon, B.I. Kim, Y. Kim, S.R. Kim and S.W. Ha	221
The Effect of Aging on Synthesis of Zeolite at High Temperature	
Y.S. Yoo, H.J. Ban, K.H. Cheon and J.I. Lee	225
Synthesis of Zeolite Added Clay and Sewage Sludge	
Y.S. Yoo, K.H. Cheon, J.I. Lee, H.J. Ban and G.T. Seo	229
Explicit Finite Element Analysis of the Plunge Stage of Tool in Friction Stir Welding	
W.Y. Li, M. Yu, J.L. Li and D.L. Gao	233
Synthesis of Silicon Carbide Powders from Iron Tailings	
X.M. Zhang, L.H. Xu, H.S. Hao, J.Y. Yang and F. He	237
Key Technology for Extraction, Thermoplastic Modification and Application of Lignin	
X.G. Luo, X.Y. Lin and F. Liu	241
Influence of CdZnTe/Au Contact on the Wire Bonding Property between the Down-Lead and Au Electrode	
L. Fu, J. Ren and Z.M. Nie	247
Practical Recycling Application of Power Plant Coal Ash for High Performance Shotcrete Material	
C.W. Park and K.N. Kim	251
Recycling of Waste Concrete and Fly Ash for Recycled Aggregate Concrete: Fundamental Characteristics Evaluation	
C.W. Park	255
Tensile Properties of AZ91D Magnesium Alloy Coated by Plasma Electrolytic Oxidation	
D.H. Lee, B.S. Kim and S.Y. Chang	259

C. High Performance Materials

Study on Micro-Hardness and Electrical Conductivity in as Cast Cu-Fe-P Alloys

B. Gou, J.H. Lee, J.H. Gu, K.J. Euh and S.Z. Han

267

Fabrication and Characterization of AZ91/CNT Magnesium Matrix Composites

Y.H. Park, Y.H. Park, I.M. Park, J.J. Oak, H. Kimura and K.M. Cho

271

Numerical Simulation of Perforated Hollow Sphere Structures (PHSS) to Investigate Mechanical Properties

A. Öchsner, S.M. Hossein Hosseini and M. Merkel

275

Influence of SO₃ Content on Drying Shrinkage Cracking Resistance of Cement-Fly Ash Stabilized Crushed-Stones

X. Chen, M.K. Zhou and Z.Y. Fan

279

Research on Magneto-Rheological Fluids Torsional Damper and Control System Applied to Controlling Carbon Fiber Strain

Y. Peng, Z.D. Jiang and Z.Y. Duan

283

Effect of Deformation Parameters on Deformation Behavior of Ti14 Alloy during Semi-Solid Compression

Y.N. Chen, J.F. Wei, Y.Q. Zhao and X.D. Ma

287

Effect of CaO Addition on High Temperature Tensile Properties of Mg Casting Alloys

J.H. Seo and S.K. Kim

291

Precipitation Prediction and Experimental Clarification of Mg-Al-Sn System

J.Y. Kim, E.J. Kim and J.W. Han

295

Synthesis and Properties of Polyurethane-Based Actuator with Poly(dimethyl Siloxane)

N.J. Jo, D.H. Lim, Y.M. Song, G.M. Bark and W.K. Lee

299

Electrical Property Characterization of Plasma Sprayed Polycrystalline Silicon

Y.R. Niu, X.Y. Liu, Y. Zeng, X.B. Zheng, H. Ji and C.X. Ding

303

***In Vitro* Assessment of Antibacterial Activity and Cytotoxicity of Silver Contained Antibacterial HA Coating Material**

Z.Y. Zhu, F.Q. Zhang, Y.T. Xie, Y.K. Chen and X.B. Zheng

307

The Effect of Filler on the Properties of Silicone Rubber

J.S. Liu, S.P. Wu, M.Z. Chen and Y.X. Mi

311

Development of Composite Binder System for Shell Mold in Precision Casting of Thin Stainless Steel

W.R. Lee, E.H. Kim, J.Y. Kwon, J.H. Kim and Y. Jung

315

Improving Contact Damage Resistance of Thermal Barrier Coatings by Incorporating Buffer Layer

S.I. Jung, Y.S. Sim, J.H. Kim, J.H. Lee, Y. Jung and U.Y. Paik

319

An Investigation on Erosion Wear Characteristics of SiC Particle Reinforced Steel Matrix Surface Composite

Z.G. Xing, Z.L. Lu, Y.X. Zhou and J. Liu

323

Microstructure and Magnetic Properties of Undercooled Fe-80at%Ni Alloys

H. Xie, G.H. Bai, L. Jia, E.K. Liu and Z.L. Lu

327

Synthesis of High Purity Ti₃SiC₂ Powder by Vacuum Sintering

Y.R. Cui, Y.H. Xu, S.C. Xu, X.M. Li and J. Yang

331

Deformation Behavior and Microstructure of Low Carbon High Manganese Steels in Tensile Strain

L.L. Wang, G.X. Li, X.P. Ma, F. Jiang and J. Sun

335

Mechanical Property of FRP Bar and Design Method of Hybrid FRP Bar

X.S. Xu, N. Zhang and T. Ji

339

Fracture Behavior of Plasma-Sprayed Thermal Barrier Coatings with Different Bond Coats upon Cyclic Thermal Exposure

Y.S. Sim, S.I. Jung, J.Y. Kwon, J.H. Lee, Y. Jung and U.Y. Paik

343

Resistance to Permanent Deformation and Low-Temperature Cracking of Porous Asphalt Mixture Using the Ta-pack Super Additive

T.W. Cao, S.P. Wu, M.Y. Chen and J.T. Lin

347

Investigation on Preparation and Performance of Micro-Powder Rubber Modified Asphalt C.H. Liu, S.P. Wu, H. Wang and Y. Zhang	351
Influence of Aging Time on Sigma Phase Precipitation in SAF2507 Super-Duplex Stainless Steel W. Zhang, D.N. Zou, G.W. Fan and J. Li	355
Dielectric Property of Laminated AlN/BN Ceramic Composites T. Zhang, H.Y. Jin, R. Zhou, J.F. Zhao and Z.H. Jin	359
Fabrication and Hardening Treatment for SiC/AlN Ceramic Composites H.Y. Jin, Y. Li, X.Y. Jia and G.J. Qiao	363
Effect of Aluminum Addition on Synthesis of Ti_3SiC_2 by Vacuum Sintering J. Yang, S.C. Xu and Y.R. Cui	367
Influence of the Porosity of C/C on the Characterization of C/C-SiC Composites Prepared by Reactive Melt Infiltration Method J. Wang, M. Lin, Y.H. Zhang, Z. Xu and Z.H. Jin	371
Computer Simulation of Fluid Flow, Heat Transfer for the Production of Cu Thin Wire by OCC Process K.W. Jang, J.I. Lee, J.H. Lee, K.W. Cho, G.S. Choi, J.W. Lim and G.S. Yang	375
On Cold Materials of Pavement and High-Temperature Performance of Asphalt Concrete M.Z. Chen, W. Wei and S.P. Wu	379
Characterization of Nanocrystalline CoCrFeNiCuAl High-Entropy Alloy Powder Processed by Mechanical Alloying K.B. Zhang, Z.Y. Fu, J.Y. Zhang, W.M. Wang, H. Wang, Y.C. Wang and Q.J. Zhang	383
Application of Al-Mg Alloy in Bearing Steel W. Gong, Z.H. Jiang and D.P. Zhan	387
Sigma Phase Precipitation of Duplex Stainless Steel and its Effect on Corrosion Resistance Y. Han, D.N. Zou, W. Zhang and R. Huang	391
Fast Densification of B_4C Ceramics with Al_2O_3 as a Sintering Aid by Spark Plasma Sintering F. Zhang, Z.Y. Fu, J.Y. Zhang, H. Wang, W.M. Wang, Y.C. Wang and J. Shi	395
Fracture Characteristics of Vacuum Diffusion Bonded TA2 Titanium to 1Cr18Ni9Ti Stainless Steel Joint with Nb+Ni Interlayers J.L. Li, L.P. Huo, F.S. Zhang, J.T. Xiong and W.Y. Li	399
Investigating the Properties of Machinable Ceramics SiC/C(Graphite) Prepared by Plasma Activated Sintering H.W. Li, Q. Zhang, Z.H. Jin and G.J. Qiao	403
Research on the Hot Precision Processing of TiAl Alloys Y.Y. Chen, Y.F. Chen, S.L. Xiao, F.T. Kong, J. Tian and L.J. Xu	407
Low Temperature Transformation of 3 mol% Yttria Stabilized Zirconia Coatings Deposited by Air Plasma Spraying B. Liang, H. Chen and C.X. Ding	413
Analysis of Anti-Seismic Performance of HRB500 Steel in Fire H.B. Ma, J. Li and J. Yang	417
Preparation of C/C-SiC Brake Materials with Low Cost and High Friction Performance Y.H. Zhang, Z.C. Xiao, J.F. Yang, J. Wang and Z.H. Jin	421
Preparation and Mechanical Properties of Carbon Nanotubes Reinforced Barium Aluminosilicate-Silicon Nitride Composites R. Guo, B. Wang, J.Q. Gao and J.F. Yang	425
Effect of Precursors on Transmittance and Microstructure of Mullite Ceramics G.M. Zhang, Z.Y. Fu, Y.C. Wang, H. Wang, W.M. Wang and J.Y. Zhang	429
 D. Hybrid Composites for Solving Ecological Issues	
Microstructure and Flexural Property of $CaCO_3$ Whisker Reinforced Epoxy Composite Material P. Liu, H.C. Shi, H.Y. Jin, N.K. Gao and Z.R. Peng	433
Hybrid Tooling Using High Speed Cutting and Other RP (Rapid Prototyping) Technologies H.K. Kwon and K.S. Kim	437

Synthesis of Fe₃Si-Ti(C_{0.3}, N_{0.7}) Multiphase Composite Ceramic from Iron Tailings and its Properties	
X.W. Li, L.H. Xu, X.M. Zhang, M. Liu, H.S. Hao and J.Y. Yang	441
Fabrication and Characterization of Barium Aluminum Silicate-Silicon Nitride Composites	
B. Wang, R. Guo, J.Q. Gao and J.F. Yang	447
Environmentally Benign Material Removal Processes for the Fabrication of Microdevices	
S. Danyluk, T. Blackburn, D. Butler and L.C. Seng	451
Preparation of Ti/Cu Oxide Coating on Alumina by Sol-Gel Method	
K.Z. Sang, L. Liu, D.J. Zeng and Z.Z. Fan	457
 E. Nano-Structure Materials	
Preparation of Nano-Sized ZnO Powder by Freeze-Drying	
J.H. Jeong, H.M. Lim, D.S. Kim, U.Y. Paik and S.H. Lee	461
Preparation and Properties of PP/PLA /Multiwall Carbon Nanotube Composites Filaments Obtained by Melt Compounding	
J. Zou, Y.C. Zhang, J.N. Huang, H.Y. Wu and Y.P. Qiu	465
The Microstructural Deformation of the Montmorillonite Particles/Polypropylene/Polylactic Acid Nanocomposite Filaments Infused with Plasma Treated Montmorillonite	
H.Y. Zhu, Y.C. Zhang, J. Zou, H.Y. Wu and Y.P. Qiu	469
Effects of Eu²⁺, Dy³⁺ Contents and Particle Sizes on the Luminescent Properties of SrAl₂O₄ Phosphor by the Sol-Gel Process	
D.Y. Shin and K.N. Kim	473
Growth of Highly Orientated and Well-Aligned ZnO Nanowhiskers Using Aqueous Solutions	
X.L. Hu, Y. Masuda, T. Ohji and K. Kato	477
The Strain Rate Sensitivity of Plasma Treated Nano TiO_x Particles/PP/PLA Nano-Composites Filaments	
J.N. Huang, Y.C. Zhang, H.Y. Zhu, H.Y. Wu and Y.P. Qiu	481
Crystallization and Mechanical Properties of Nano ZnO/PP/PLA Composite Filaments	
Y.C. Zhang, J.F. Xie, H.Y. Wu and Y.P. Qiu	485
Investigation of Microstructure and Machinability of the B₄C/BN Composites	
T. Jiang, Z.H. Jin, J.F. Yang and G.J. Qiao	489
ZnO Nanorods Synthesized in Large-Scale via Sonochemical Method and its Sensing Potential towards Methyl Mercaptan	
S.L. Zhang, S.M. Park, J.B. Yu and J.S. Huh	493
Preparation and Properties of Nanoclay/TPS/Asphalt Ternary Binders	
S.P. Wu, J.G. Wang and Y. Zhang	497
Dispersing Single-Walled Carbon Nanotubes in Water by Adsorption of Polyphenols	
Q. Liao, J. Sun and L. Gao	501
Synthesis and Characterization of FePt Nanoparticle/Single Walled Carbon Nanotube Composites	
Y. Wang, L. Gao, J. Sun and Y.Q. Liu	505
Effect of Nano-Sized Metal Colloids on Color Change of Photosensitive Glass by Using X-Ray Irradiation	
Y.K. Park, I.C. Cho and Y. Choi	509
R-Curve Behavior of Machinable SiC/h-BN Nano-Composites	
H.Y. Jin, R. Zhou, G.J. Qiao, N.K. Gao, Z.R. Peng and J.Q. Gao	513
Preparation and Electrocatalytic Properties of Single Walled Carbon Nanotube/Platinum Nanoparticle Composite	
J. Zhang, L. Gao, J. Sun and Y. Wang	517
Fabrication Process for Nanorod Array Structure by Using Aluminization and Internal Oxidation of Nickel	
D.T.M. Do, K. Uemura and M. Nanko	521
Fabrication and Formation Mechanism of Flowerlike Bicephalous TiB₂ Nanowhisker Clusters	
F. Huang, Z.Y. Fu, A.H. Yan, T.K. Jia, W.M. Wang, H. Wang, Y.C. Wang, J.Y. Zhang and Q.J. Zhang	525
Fabrication of La Doped ZnO Nanorods via a Solvothermal Route	
T.K. Jia, W.M. Wang, Z.Y. Fu, F. Huang and H. Wang	529

Preparation of Silver Nanoplates in SDBS System Y.H. Song, Y. Yang, W.W. Gao and X.Z. Lan	533
Preparation of Chitosan Grafting Acrylic Acid Supported Palladium Fibrous Catalyst and its Application in Hydrogenation J.X. Yu and T.Q. Liu	537
Synthesis and Luminescent Properties of Porous $\text{YVO}_4\text{:Sm}$ Nanoplates J.A. Wang, Y.H. Xu, Q. Cen, X.M. Zhang and Y.R. Cui	541
Effect of Surface Nanocrystallization Method on Fatigue Strength of TA2 A.L. Wen, R.M. Ren, S.W. Wang and J.Y. Yang	545
Fabrication of Nano-MgO Reinforced Fe-Cr-Ni Composites by Reactive Hot Pressing C. Chen, J.F. Yang, J.Q. Gao and C.Y. Chu	551

F. Biomaterials

Adsorption and Deposition of Cu (II) on Modified Valonia Tannin Y. Li, X.G. Luo, Z. Liu, Y. Huang and X.Y. Long	555
Applied Study of Fibre Padding and Ceramic in Micro-Polluted Water Treatment X.D. Zhang, J.H. Chen and D.L. Xi	559
<i>In Vitro</i> Cytocompatibility of Plasma-Sprayed Dicalcium Silicate/Zirconia Composite Coating Y.T. Xie, X.B. Zheng, C.X. Ding, X.Y. Liu, Y. Zeng and S.W. Lee	563
<i>In Vitro</i> Cytocompatibility of Silver-Containing Hydroxyapatite Coatings Y.K. Chen, X.B. Zheng, B. Li, Y.T. Xie, C.X. Ding and S.W. Lee	567
Extraction of Lignin from Pulping Black Liquor by Organic Acid Z. Liu, X.G. Luo, Y. Li, L. Li and Y. Huang	571
Study of Machinable Dental Glass Ceramics X.P. Ma, G.X. Li, Z.H. Jin, J.H. Chen, M.J. Yang and Y.J. Han	575
Response of MG63 Osteoblast-Like Cells on Pyrolytic Carbon Coated Carbon/Carbon Composites H. Li, L.L. Zhang, K. Li, Y.G. He, X.N. Zhao and H. Zhao	579
Corelation of Colorimetric Parameters with Collapse-Shrinkage Properties in Plantation-Grown Eucalyptus Based on Eco-Furniture Materials Y.Q. Wu, H. Kazuo and Y.C. Cai	583
Study of Nano-Hydroxyapatite/Polycarbonate Composite for Bone Repair J.G. Liao, Y.B. Li, L. Zhang and Y. Zuo	587
Fabrication of a High Performance Ti Alloy Implant for an Artificial Hip Joint T.K. Jung, T. Abumiyah, N. Masahashi, M.S. Kim and S. Hanada	591
Polymerization and Characterization of Functionalized Poly(L-Lactide) Y.S. Jin, F. Xiao and W.L. Guo	595
Synthesis of Fluorine-Containing Organic Silane Reagent R. Weng, L.M. Zhang, C.H. Wang and S.P. Wang	599

G. Recycle and Re-Use/Replacement of Hazard Materials

The Comprehensive Utilization of EAF Dust and Pickling Sludge of Stainless Steel Works X.M. Li, J.X. Zhao, Y.R. Cui and J. Yang	603
Design of Inner Wedge-Form Tool in Precision Recycle of Digital Paper Display P.S. Pa	607
Removal of Zn (II) from Aqueous Solution by Copolymer of Grafting Acrylic Acid onto Deacetylated Konjac Glucomannan F. Liu, X.G. Luo and X.Y. Lin	611
Thermodynamic Consideration of CaO Added Mg Alloys in Recycling Process J.K. Lee and S.K. Kim	615
Improving Effect of Mineral Admixtures on Volume Stability of Steel Slag Mortar Y.X. Lun, M.K. Zhou and X. Cai	619
Properties of Cement Paste Using Mine Tailing and Polymer Materials K.N. Kim, J.H. Kim, D.Y. Shin, B.G. Lee and H. Park	623
Flexibility Modification of KGM Membranes by Maleic Anhydride Y. Chen, X.G. Luo and X.Y. Lin	627

Effect on Compressive Strength by Mixing Ratio of MSWI Melting Slag/Bottom Ash W.K. Lee, E.Z. Park, J.H. Lee and Y.S. Yoo	631
Use of Recycled Calcium Slag for Clean Steel Refining D.P. Zhan, H.S. Zhang, W. Gong, Z.H. Jiang and J.C. He	635
Compressive Strength of Brick Made from Waste Materials W.K. Lee, T.E. Kim and Y.S. Yoo	639
Adsorption of Phosphate from Aqueous Solution with Blast Furnace Slag Activated by Hydrated Lime as Sorbent L.B. Li, J. Zhu, Q. Wang and J. Yang	643

H. Photocatalysts

Investigation of Electronic Structures of F-Doped TiO₂ by First-Principles Calculation Y. Cui, H. Du and L.S. Wen	647
Indium-Sensitized UV Photocatalysts Made from Alkali Titanate Microfibers L.M. Torres-Martínez, C. Sánchez-Trinidad, V. Rodríguez-González and R. Gómez	651
Preparation and Characterization of Fe-Doped BiVO₄ L.L. Liang, X.G. Luo, X.Y. Lin, C.G. Xu and Z. Zhao	655
Influence by Difference of the Photocatalyst Nanoparticle Shape to Skin E. Watanabe, K. Nishizawa, T. Miki and H. Taoda	659
Preparation and Photocatalytic Performance of Nano Titania-Coated Beads J.W. Ha, Y.W. Do, J.H. Park and C.H. Han	663
Improvement in Photocatalytic Activity of TiO₂ by Addition of Small Amount of TiO_{2-x}N_y B. Liu, Y.H. Wang, S. Yin and T. Sato	667
Photocatalytic Properties of TiO₂-Coatings Mounted on CaAl₂O₄:Eu²⁺, Nd³⁺ without Light Source H.H. Li and Y.H. Wang	671
A New Preparation Method of Visible Light Responsive Titanium Dioxide Photocatalytic Films by Sol-Gel Method K. Nishizawa, T. Miki, E. Watanabe and H. Taoda	675
Effective of SiO₂ Addition on the Self-Cleaning and Photocatalytic Properties of TiO₂ Films by Sol-Gel Process D.Y. Shin and K.N. Kim	679
Synthesis of Mn-N-Codoped TiO₂ Photocatalyst and its Photocatalytic Reactivity under Visible Light Irradiation Y. Hu, X. Zhang and C.H. Wei	683
Preparation of Titanate Nanotubes by Hydrothermal Method D.N. Yu, W.X. Liu, J. Ma, X.G. Qu, W.B. Cao, Z.Y. Zhang and J.H. Mao	687
Photocatalytic Activity of Porous TiO₂ Film Prepared by Dip-Coating Technique Using Sol Containing Trehalose T. Miki, K. Nishizawa, E. Watanabe and H. Taoda	691
Preparation of TiO₂ Thin Films and its Superhydrophilic Properties J. Ma, W.X. Liu, X.G. Qu, D.N. Yu and W.B. Cao	695
Light Conversion by Size Control of Inorganic Phosphors I.C. Cho, Y.K. Park and Y. Choi	699
Properties Predicting of Transition Metal-Doped Anatase TiO₂ X.G. Qu, W.X. Liu, J. Ma, D.N. Yu, W.B. Cao and J.H. Mao	703
Buried-Layer Bared AZO/TiO₂ Semiconductor Coupled Films and their Photocatalytic Properties X.W. Zhang, C.C. Liu and G.R. Han	707

I. Multifunction of Materials

Effects of Electrical Discharge Energy on Machining Performance of Sintered NdFeB Magnet L. Li, G.M. Yuan, Z.W. Niu and R.G. Hou	711
Development of Porous Material with High Young's Modulus and Low Thermal Expansion Coefficient in SiC-Vitrified Bonding Material-LiAlSiO₄ System T. Ono, K. Matsumaru, I. Juárez-Ramírez, L.M. Torres-Martínez and K. Ishizaki	715

Viscoelastic Analysis on High Temperature's Stability of Asphalt Pavement H. Wang, S.P. Wu and L. Pang	719
Preparation of Superfine Molybdenum Powder by Reduction Process X.Y. Chen, C.Y. Bu, X.Z. Lan and X.R. Zhao	723
The Electrodeposition of Nanostructured Ni-TiN Composite Films C. Cai, J.Y. Yin, Z. Zhang and J.F. Yang	727
Electrodeposition of Nanocrystalline CoNiFe Thin Films Prepared by Cyclic Voltammetry C. Cai, Q.P. Wang, Z. Zhang and J.F. Yang	731
Multiferroic and Piezoelectric Behavior of Transition-Metal Doped ZnO Films F. Pan, X.J. Liu, Y.C. Yang, C. Song and F. Zeng	735
Preparation and Properties Fluoralkylpolysiloxane Modified Polyurethane Films R. Weng, C.R. Wang, L.M. Zhang and S.P. Wang	741

J. Porous Materials

Preparation of Bioactive Porous Titanium-Molybdenum Alloy through Powder Metallurgy Y. Yamada, Y.C. Li, J.Y. Xiong, T. Banno, P. Hodgson and C.E. Wen	745
Research on Physical and Mechanic Properties of Green-Growing Porous Concrete for Ecological Slope Protection X.B. Xiong, G.Q. Gui and Q.H. Zhao	749
Porous Silicon Nitride Ceramics Prepared by Reduction – Nitridation of Diatomite Y.H. Xue, Y. Lu, B. Wang, J.F. Yang, W.Z. Lu and J.Q. Gao	753
Structure Change and Improvement of the Mechanical Properties of Lotus-Type Porous Copper by ECAE Process J. Lobos, S. Suzuki, H. Utsunomiya and H. Nakajima	757
Fabrication and Properties of Pressureless Sintered Si₃N₄/BN Composite Ceramics with La₂O₃-Al₂O₃-Y₂O₃ as Sintering Additives Y.F. Li, P. Liu, G.J. Qiao, J.F. Yang, H.Y. Jin and X.D. Wang	761
Porous Materials with Hybrid Structure Produced by Nitriding Partially-Sintered Silicon M. Nanko	765
Abrasive Grain Efficiency and Surface Roughness in Machining Magnesium Alloys by Newly Developed Cup-Type Diamond-Grinding-Wheels T.D. Nguyen, K. Matsumaru, M. Takatsu and K. Ishizaki	769
A Novel Method for the Preparation of Porous SiC R.Z. Liu, B. Wang, J.K. Cheng, J.F. Yang and J.Q. Gao	773
Fabrication of Clay Foam Ceramics Using Silicon Carbide and Ferric Oxide as Foaming Agents G.L. Liu, J.G. Bai and J.F. Yang	777
Mechanical Behaviour of High Density Polyethylene Based Foams J. Lobos, M.A. Rodríguez-Pérez, M. del Carpio and J.A. de Saja	781
Fabrication of Porous Metals with Directional Pores through Solidification of Gas-Dissolved Melt H. Nakajima, T. Ide and S.Y. Kim	785
Geopolymer Concrete Fabricated by Waste Concrete Sludge with Silica Fume Z.X. Yang, N.R. Ha, M.S. Jang and K.H. Hwang	791