

Table of Contents

Preface

Electrochemical Characteristics of Silicon-Doped Tin Oxide Thin Films for Application of Lithium Secondary Micro-Battery Anode C.H. Park, Y.G. Son and T. Ko	1
Sol-Gel Derived TiO₂ Coating for Chemical Protection of Stainless Steel D.Y. Shin, K.N. Kim and S.M. Han	5
Gas Sensing Characteristics of ZnO-doped SnO₂ Sensors for Simulants of the Chemical Agents K. Yun, K. Yun, G. Cha, B.H. Lee, J.C. Kim, D. Lee and J.S. Huh	9
Effect of Hydrogen Peroxide on the Photocatalytic Decomposition of 4-Nitrophenol over TiO₂/Cr-Ti- MCM-41 Catalysts in Visible Light G.D. Lee, Y.J. Do, S.S. Park and S.S. Hong	13
A Rainwater Harvesting Technology by Roof Coating Using TiO₂ R.H. Kim, S.H. Lee, J.H. Lee and Y.M. Kim	17
Structure and Photoluminescence Properties of ZnO:Al/Porous Silicon Thin Films H.A. Park, K. Prabakar, Y.C. Yoo, S.K. Hwang and C.M. Lee	21
Morphology and Microstructure of Graphitic Nanofibers Synthesized by the CVD Method Using Nickel-Copper as a Catalyst K.K. Cho, B.K. Lee and J.P. Ahn	25
Sensitivity and Thermal Property of Polyaniline Sensor J.S. Kim, J.H. Cho, J.B. Yu, S. Sohn and J.S. Huh	29
Characteristic of Titania Photocatalyst Fine Particles Added Zirconia E. Watanabe, M. Takagi, M. Fukaya and H. Taoda	33
The Preparation of Rutile TiO₂ Nanopowders, Phase Transformation and Their Photocatalysed Properties J. Sun and L. Gao	37
Decomposition of Dioxins in Gas and Water Using Photocatalytic Silica-Gel H. Taoda	41
Bond Cleavage of Nitrogen-Bearing Organics with "Molecular Scissors" of Titania for Aquatic Remediation H. Hidaka, Y. Mitsutsuka, P. Calza and E. Pelizzetti	45
Photocatalytic Activities of Plasma Sprayed TiO₂-Based Coatings H. Chen, S.W. Lee, H.S. Kim, E.A. Lee, T.H. Kim, J.H. Shin, H.S. Aum and B.Y. Hur	49
The Preparation of Rutile TiO₂ Doped with Rare Earth Metal Ions, Sulfur and Their Photocatalytic Properties L. Gao, H.Y. Liu and J. Sun	53
Photocatalytic Behavior of Na₂ZrTi₅O₁₃ Sol-Gel L.L. Garza-Tovar, L.M. Torres-Martínez, J.S. Ramos-Garza and L.G. Castillo-Torres	57
Semiconductor-Mediated Photocatalysed Degradation of Various Pesticide Derivatives and Other Priority Organic Pollutants in Aqueous Suspensions D.W. Bahnemann, M. Muneer, M. Qamar, M.A. Rahman and H.K. Singh	61
Correlation of Thickness with the Photocatalytic Characteristic of TiO₂ Thin Films S.W. Lee, H.S. Jung, D.W. Kim and K.S. Hong	65
Photocatalytic Performance of Plasma Sprayed TiO₂-ZnFe₂O₄ Coatings J.T. Liu, Y. Zeng, X.B. Zhao and C.X. Ding	69
Effect of H₂ on Microstructure and Property of Nano-Titania Coatings X.B. Zhao, X.Y. Liu and C.X. Ding	73
Preparation and Antibacterial Effect of Doped Tetra-Needle Like ZnO Whiskers Z.W. Zhou, J.J. Liu and L.S. Chu	77
Preparation and Characterization of the Visible Light Responsive TiO₂ Thin Film Photocatalysts Prepared by Magnetron Sputtering Method and Their Photocatalytic Activities for the Water Splitting Reactions M. Matsuoka, M. Kitano, M. Takeuchi, M. Anpo and J.M. Thomas	81
Sol-Gel Synthesis and Photocatalytic Properties of Bi₂MNbO₇ (M = Al, Fe, In y Sm) L.L. Garza-Tovar, L.M. Torres-Martínez, D. Bernal-Rodríguez and N.N. Treviño	85

Influence of Spraying Power and Distance on Porosity and Microhardness of Plasma Sprayed TiO₂ Coatings	89
H. Du, H. Chen, B.K. Moon and J.H. Shin	
Preparation of Nano-Sized TiO₂ Photocatalysts by a Multi-Gelation Method and Their Application to the Degradation of 2-Propanol Diluted in Water	93
B. Neppolian, H. Yamashita, Y. Okada, H. Nishijima and M. Anpo	
High Temperature Oxidation Behavior of Ti₃SiC₂ in Air	97
J.H. Ko, S.S. Hwang, S.W. Park and D.B. Lee	
Fabrication of Zirconia-Hydroxyapatite Composites for Biological Materials	101
B.K. Moon, D.H. Choi, R.J. Sung, S.H. Kim and K. Niihara	
Thermal and Leaching Behaviors of EAF Dust-Clay Systems	105
J.H. Kim, K.G. Lee, Y.T. Kim and S.K. Kang	
Increased High Temperature Oxidation Resistance of Ni₂₀Cr₂₀Fe₅Nb₁Y₂O₃ Alloy with Nano-Sized Grains	109
I.H. Kim and S.I. Kwun	
Changes in Mechanical Properties of the Wide-Gap Region Brazed with Various Brazing Temperatures and Times	113
Y.H. Kim and S.I. Kwun	
Preparation of Porous Hydroxyapatite/TCP Composite Block Using a Hydrothermal Hot Pressing Method	117
Y. Kim, S.R. Kim, H. Song and H. Yoon	
Life Cycle Improvement Assessment of Al and Mg Diecasting Processes	121
S.K. Kim and Y.J. Kim	
Effects of the Duration of Potentiostatic Anodizing on the Corrosion Resistance and Surface Morphology of Films Formed on Mg-Al Alloys	125
S.J. Kim, S.K. Jang and J.I. Kim	
Surface Morphology Characteristics and Improvements on Corrosion Resistance in Anodized Mg-Al Alloys as a Result of Sealing Treatments	129
S.J. Kim, J.I. Kim and M. Okido	
Effects of Post-Weld Heat Treatment on Optimum Cathodic Protection Potential of High-Strength Steel in Marine Environment Conditions	133
S.J. Kim, S.K. Jang and J.I. Kim	
Sliding Wear Behavior of Steam Generator Tube Materials in Nuclear Power Plants	137
G.G. Kim, J.H. Kim, K.Y. Lee, S.J. Kim, D.H. Lee, D.H. Hur, M.S. Choi and J.H. Han	
Characterization of Long-Term Oxidized Nickel Aluminide Coating by Photoluminescence Spectroscopy	141
J.W. Byeon, N. Mu, J. Liu and Y.H. Sohn	
Characterization of Isothermally Oxidized ZrO₂-8wt.%Y₂O₃ Thermal Barrier Coatings by Electrochemical Impedance Spectroscopy	145
J.W. Byeon, B. Jayaraj and Y.H. Sohn	
Transmission Electron Microscopy of Isothermally Oxidized EB-PVD Thermal Barrier Coating on (Ni,Pt)Al Bondcoat	149
J.W. Byeon, S. Laxman and Y.H. Sohn	
Surface Characteristics of Ni-Diamond Composite Powders by Electroless Plating Method	153
J.G. Ahn, D.J. Kim, H.T. Hai, J.R. Lee, H.S. Chung and C.O. Kim	
Self-Lubricating Composite Coating on Air Foil Bearing Shaft by Hollow Cathode Plasma Jet	157
M.K. Yang, H.S. Yang, J.K. Park, K. Ryu, Y.B. Lee and J.K. Lee	
Surface Coating of Reactive Layer with Inner Nano-Pores on Lanthanum Gallium Based Oxide	161
K.S. Lee, T.H. Shin, S.W. Lee, S.K. Woo, J.K. Yang and Y.H. Choa	
Oxidation of SiOC Composite Having Dispersoids of Mo_{4.8}Si₃C_{0.6} and MoSi₂	165
D.B. Lee and S.W. Woo	
Corrosion of Ni-W Coatings in SO₂ Atmosphere between 500 and 700 °C	169
D.B. Lee and J.H. Ko	
Fluxless Brazing of Al6061 Alloys Using Ag-28Cu Insert	173
Y.S. Lee, C.H. Lee, C.H. Lim, D.C. Cho and S.Y. Shin	
Phosphate Recovery from Water as Hydroxyapatite with Activated Oystershell	177
C.W. Lee, H.B. Kwon, H.P. Jeon and B. Koopman	

Mechanical and Thermal Properties of Silicon Nitride Hot Pressed with Adding Rare-Earth Oxides	
D.H. Choi, B.K. Moon, R.J. Sung, S.H. Kim and K. Niihara	181
Stress Concentration Regions in Ceramic Ball Heads for Total Hip Replacement Considering Trauma-Like Loading	
H.S. Aum, M.C. Curiel and D.G. Carillo	185
Biodegradable Porous Nano-Hydroxyapatite/Alginate Scaffold	
F.L. Xu, Y.B. Li, J. Han and G.Y. Lv	189
Effect of Plasma Spraying Gas on Microstructure and Properties of 95vol.%Al₂O₃-5vol.%SiC Nanocomposite Coatings	
P.H. Tram, J.W. Min, H. Chen and S.W. Lee	193
Mechanical Properties of Al₂O₃-TiO₂-SiC Nanocomposites for the Femoral Head of Hip Joint Replacement	
S. Visbal, J. Lira-Olivares, T. Sekino, K. Niihara, B.K. Moon and S.W. Lee	197
Plasma-Sprayed Wollastonite Coatings for Biomedical Application	
W.C. Xue, X.Y. Liu, X.B. Zheng and C.X. Ding	201
Study of Corrosion Resistance of Anodized Ti6Al4V in SBF	
Y. Zhao, T.Y. Xiong, H. Jin, L.B. Wang and T.F. Li	205
Mechanical and Wear Properties of Silicon Nitride Added with AlN	
R.J. Sung, S.H. Kim, T. Kusunose, T. Nakayama, T. Sekino and K. Niihara	209
Tribological Behaviors of Al₂O₃/SiC Nanocomposites during Dry Sliding	
S.H. Kim, T. Sekino and K. Niihara	213
Contact Fracture Behaviors of Ti₃SiC₂ Synthesized by Hot Pressing Using TiC_x and Si Powder Mixture	
S.S. Hwang, S.W. Park, S.J. Cho and D.B. Lee	217
Sintering Effects of ZnO Nanopowders Synthesized by Solution-Combustion Method	
S. Park, J.C. Lee, J.U. Seo and J.H. Lee	221
In-Vitro Hertzian Fatigue Properties of Glass Infiltrated Ceramic Composites for Dental Crowns	
Y.S. Song, I.S. Park, J. Jang, D.Y. Lee and S.J. Lee	225
Probabilistic Assessment for Failure Probability of Pipe Lines by Extreme Value Distribution	
S.H. Lee, B.H. Choe, Y.P. Kim, W.S. Kim, Y.T. Ko, J.H. Lee and U.Y. Paik	229
Analysis of Pipe Flow during Transportation of Magnesium Alloy Melt	
H.G. Lee, D.J. Kim, J.W. Han, B.D. You and J.Y. Byun	233
Effect of Sintering Atmospheres on the Microstructure Evolution of Alumina/Alumina:SiC Whisker Laminate Composites	
S.Y. Park and H.G. Bang	237
Embrittlement Fracture in a 17-4 PH Stainless Steel after Aging at 400°C	
W. You, J.H. Lee, S.K. Shin, B.H. Choe, U.Y. Paik and J.H. Lee	241
Hardness and Wear Resistance of Reaction Bonded SiC-B₄C Composite	
K.S. Lee, I.S. Han, Y.H. Chung, S.K. Woo and S.W. Lee	245
Friction Stir Welding of Dissimilar Formed Mg Alloys (AZ31/AZ91)	
C.Y. Lee, W.B. Lee, Y.M. Yeon and S.B. Jung	249
Fabrication and Thermoelectric Properties of N-Type Bi₂Te₃ Based Compounds by Spark Plasma Sintering	
D.M. Lee, C.H. Lim, D.C. Cho, S.Y. Shin and W.S. Cho	253
Equilibrium and Metastable Eutectics Near the Ni₃Al Composition	
Y. Lu, J.S. Lee, J.H. Lee, D.M. Wee and M.H. Oh	257
Effect of Skin Pass Mill Elongation on Characteristics of Surface Friction and Formability	
B.Y. Hur, S.H. Cho and S.Y. Kim	261
The Combustion Characteristics of Refuse Derived Fuels Using Coke/Waste Tire	
M.H. Park and D.Y. Shin	265
Optimum Shear Height for Evaluation of Pb-Free Solder Ball Shear Strength	
J.W. Kim, S.K. Park and S.B. Jung	269
Growth Kinetics of Intermetallic Compound and Interfacial Reactions in Pb-Free Flip Chip Solder Bump during Solid State Isothermal Aging	
D.G. Kim, H.S. Jang, Y.J. Kim and S.B. Jung	273

An Approach to Legal and Technical Norms to Manage Hazardous Materials and Wastes in Latin America	
N. Grüber, S. Gerdler, J. Rodriguez and J. Lira-Olivares	277
Low Temperature Synthesis of Zeolite Using Ultrasonic Energy	
S.G. Lee, J.K. Kim, J.Y. Kwon, C.H. Lee, H.C. Park, S.M. Son and S.S. Park	281
Ferroelectric Properties of Lead-Free (Bi,Li)₄Ti₃O₁₂ Thin Film Deposited on MTP Cell Structure for High Density FeRAM Device	
K.W. Cho, N.K. Kim, S.H. Oh, E.S. Choi, H.J. Sun, S.J. Yeom, K.N. Lee, S.S. Lee, S.K. Hong, S.K. Choi, T.W. Hong, I.H. Kim, J.I. Lee, S.C. Ur, Y.G. Lee, S.L. Ryu and S.Y. Kweon	285
Interfacial Reaction and Shear Strength of Pb-Free Sn-3.5Ag/Ni BGA Solder Joints during Reflow	
J.W. Yoon, S.W. Kim and S.B. Jung	289
Fabrication of Calcium Based Fine Ceramic Materials by Recycling Eggshell	
S.J. Lee and S.Y. Chun	293
Nitride-Related Compounds Preparation from Waste Aluminum Dross by Self-Propagating High-Temperature Process	
J.R. Lee, I. Lee, H.Y. Shin, J.G. Ahn, D.J. Kim and H.S. Chung	297
Dual Ion Beam Sputtering for Chromium Nitride as an Alternative to Electroplated Hexavalent Chromium	
K.C. Shin, J.M. Lim and C.M. Lee	301
The Effect of Pozzolans on the Recycled Aggregates by Surface Treatment	
J.J. Kim, S.H. Youn, M.J. Cho, H.T. Shin, J.B. Yoon, K.H. Hwang and D.S. Lee	305
Effect of RO Components on Some Properties of Pb Free Glass Frit for PDP	
J.H. Hwang, T.Y. Lim, C.Y. Kim, S.M. Han, J.S. Park and T. Masaki	309
Application of a Cold ECAP to Magnesium Alloy (AZ31) by a Combination of Extrusion Process	
J.W. Song, H.T. Lim, J.W. Han, M.S. Kim and S.K. Hwang	313
Effect of Particle Size on the Extraction of Metallic Components from Oxidized PCB in High Frequency Induction Furnace	
J.C. Lee, J.K. Jeong, E. Kwon, S.H. Jang and J.W. Han	317
Optical Properties of Bi₂O₃-ZnO-SiO₂ Glass System for Eco Transparent Dielectric in PDP	
J.S. Jeon, M. Cha and H.S. Kim	321
Comparison of Transmittance of Pb-Free Transparent Dielectric Made by Screen Printer and Die Coater	
M. Cha, J.S. Jeon and H.S. Kim	325
Alumina/Aluminum Composite Fabricated by Freeze and Dry Process with Water-Soluble Polymer Slurry	
M. Nakata and K. Suganuma	329
Fabrication of Tubular Mullite-Alumina Porous Ceramics by Polymer-Aided Extrusion	
Y.A. Hua, K. Yang and R.D. Wang	333
Microstructural Evolution of Electromagnetically Stirred Al Alloy during Isothermal Reheating in Solid-Liquid Region	
D.Y. Lee, K.B. Kim and D.H. Kim	338
Effect of Ternary Alloying Elements on Microstructure and Mechanical Property of Nb-Si Based Refractory Intermetallic Alloy	
W.Y. Kim, H.S. Kim, S.K. Kim, T.Y. Ra and M.S. Kim	342
Influences of Fiber Orientation on the Progressive Damage in Glass Reinforced Hybrid Composite	
C.W. Kim, S.H. Song and D.J. Oh	346
Characteristic of the Residual Strength Rate by Variation of Impact Velocities for the Leaf Spring in Ankle Foot Orthosis	
C.W. Kim and D.J. Oh	350
The Effect of Defect Locations on the Stress Distribution and Crack Initiation in Monolithic Aluminum vs. GLARE Hybrid Composite	
C.W. Kim, S.H. Song and D.J. Oh	354
Vibration and Impact Noise Damping Properties of Wood/Polymer Composites	
H.J. Lee, B.G. Lee and D.Y. Shin	358

Processing and Microstructural Characteristics of Bi-Materials Composed of Al and Its Composite	
S.Y. Chang, J. Kim and K.M. Kang	362
Mechanical and Electrical Properties of Y-TZP Containing TiNi-Base Intermetallic Compounds	
N. Tanaka, T. Sekino, T. Nakayama, Y. Hayashi, T. Kusunose and K. Niihara	366
Electrical and Thermal Properties of Carbon-Coated Porous Ceramic Fiber Composites	
J.S. Yu, S. Park, J.C. Lee, I.S. Hahn and S.K. Woo	370
The Solidification Microstructure and Carbide Formation Behaviors in the Cobalt-Based Superalloy ECY768	
J.S. Lee, J.H. Lee, B.G. Choi, C.Y. Jo, U.Y. Paik and S.G. Gang	374
Synthesis of SiC Ceramics from Coal Gangue	
S.H. Jia	378
Heavy Metal Leaching Behavior of Glasses Containing EAF Dust	
H.T. Eun, S.G. Kang, Y.T. Kim, G.K. Lee and J.H. Kim	382
Nutrients Recovery by Struvite Formation from Wastewater in a Fluidized Bed Reactor	
C.W. Lee, H.B. Kwon, Y.J. Kim and H.P. Jeon	387
The Effect of Sodium Tripolyphosphate on Sodium Silicate-Cement Grout	
H.M. Lim, H.C. Yang, B.S. Chun and S.H. Lee	391
Fabrication and Properties of Wall and Floor Tiles Using Waste Glass	
Y.K. Kim, Y. Jung, J.B. Song, M.C. Shin and H.S. Lee	395
Utilization of Waste Plastics as a Fuel in the Fluidized Bed Calciner for Cement Kiln Process	
W.T. Kwon and S.Y. Bae	399
Synthesis and Characterization of Clay Brick Using Coal Wastes	
J.W. Yoo, J.H. Jung and H.T. Kim	403
Preparation of K₂O-CaO-P₂O₅ Eco-Glass Fertilizers and Effect in Crops	
H.K. Lee, S.J. Hwang and W.H. Kang	407
Effect of Warm Rolling on Microstructure and High Temperature Mechanical Behavior of a Nano-Structured Al-8Fe-2Mo-2V-1Zr Alloy	
W.Y. Kim, J.S. Park and M.S. Kim	411
Effects of Si Content and Cold Rolling Condition on Brazeability of Al-Mn-Zn Alloy Core Brazing Sheet	
S.J. Noh, M.S. Kim, D. Jung, J.W. Han and B.D. You	415
Effect of Ti Addition on the Fracture Toughness of Al-Ti-B Alloys Synthesized by High-Energy Ball Milling and Spark Plasma Sintering	
J.H. Kim, K.Y. Lee, G.G. Kim and S.J. Kim	420
Die-Casting Capabilities of Heat Resistant Mg-Al-Ca Alloys	
J.M. Kim, B.K. Park, J.H. Jun, K.T. Kim and W.J. Jung	424
Formation of AlN in the N Added 18Cr Ferritic Stainless Steels	
H.C. Kim, J.H. Lee, Y.G. Heon, C.Y. Jo, J.W. Kim and S.G. Kim	428
Petroleum Separation through Polymer Blend Membranes Using Pervaporation	
H. Huh, J.W. Rhim, J.S. Park and S.Y. Nam	432
Synthesis and Characterization of Nanosized Zn_xMn_{1-x}Fe₂O₄ Powders by Glycothermal Process	
D.S. Bae, E.J. Kim, S.W. Park and K.S. Han	436
Synthesis and Characterization of Nanosized ITO Powders by Glycothermal Processing	
D.S. Bae, H.K. Kim, R.H. Kim, J.W. Kim, J.H. Lee, S.W. Park and K.S. Han	440
Preliminary Studies to Develop Environmentally Compatible Hydraulic Components	
S.Y. Lee, S.D. Kim, G.W. Kim and Y.S. Hong	444
Cellular Solidification Behavior of Fe-18Cr Ferritic Stainless Steels	
H.C. Kim, J.H. Lee, J.W. Kim, S.K. Kim, S.Z. Liu and R. Trivedi	448
Substrate Bias Effects on the Structure of the Film by a Hybrid PVD and Plasma-Based Ion Implantation Process	
S.Y. Chun and S.J. Lee	452
Development of Strip Casting Process for Electrolytic Tough Pitch Copper	
S.K. Kim, H. Cho, J.K. Lee, W.Y. Kim and H.H. Jo	456

Effect of Boron on Solidification Microstructure in a Single Crystal Superalloy C.Y. Jo, D.H. Kim, Y.S. Yoo, D.H. Ye and J.H. Lee	460
Rheology Characteristics of Al-Si Alloy and Mg Alloy for Metal Foam Manufacturing S.H. Park and B.Y. Hur	464
Sound Absorption Properties of Al Foam S.Y. Kim, S.H. Park, Y.S. Um and B.Y. Hur	468
Compressive Properties of Open Cell Aluminum Foams B.Y. Hur, B.K. Park, S.Y. Kim and H. Bae	472
Synthesis of Cordierite Using High Energy Ball Milling S.J. Kim, H.G. Bang and S.Y. Park	476
Brazing Al₂O₃ to Kovar Alloy with Ni/Ti/Ni Interlayer and Dramatic Increasing of Joint Strength after Thermal Cycles G.J. Qiao, H.J. Wang, J.Q. Gao and Z.H. Jin	481
Effect of Operating Temperature on Characteristics of Single-Walled Carbon Nanotubes Gas Sensor H.Q. Nguyen, M. Van Trinh and J.S. Huh	485
Micromechanical Mean-Field Analysis for Stress-Strain Curve of Lotus-Type Porous Iron M. Tane, S.K. Hyun, T. Ichitsubo and H. Nakajima	489
Preparation and Properties of Carbon Nanofiber/Polyimide Composite Films A. Yamamoto, H. Sano, G.B. Zheng and Y. Uchiyama	493
Thermal Stability and Mechanical Properties of Hydrogenated Zr-Ni-Nb-Co Amorphous Alloy S. Jayalakshmi, E. Fleury, Y.C. Kim and K.B. Kim	497
Fabrication of Silicon Nitride Ceramics with Electrical Conductivity Y.H. Kim, T. Sekino, H. Kawaoka, T. Kusunose, T. Nakayama and K. Niihara	501
Microwave Dielectric Properties of LTCC Materials Consisting of BaO-TiO₂-SiO₂-Al₂O₃ Glass - BaNd₂Ti₅O₁₄ Ceramic Composites Y.J. Kim, S.J. Hwang and H.S. Kim	506
Removal of Cu⁺⁺ Ions from Aqueous Cu-EDTA Solution Using ZnO Nanopowder J.H. Lee, B.S. Kim, J.C. Lee and S. Park	510
Reactive Sputter Deposition of WC_x Films for Replacing Hexavalent Chromium Y.K. Park, S.M. Kang, D. Kim and C.M. Lee	514
Characterization of Iron and Its Nitride Nanoparticles Prepared by CVC Process without Using a Chiller D.W. Lee, T.S. Jang, D.H. Lee and B.K. Kim	518
Synthesis of Heterogeneous β-SiC Nano-Particles and Nano-Whisker from TEOS/SiO₂ Bead/PMMA Ternary Xerogel J.W. Kim, S.S. Lee, S.K. Hur, Y. Jung and C.Y. Jo	522
Effect of Oxidizing Agent of Polypyrrole Layer Prepared by Vapor Polymerization J.H. Cho, J.S. Kim, J.B. Yu, S. Sohn and J.S. Huh	526
Various Applications of Silver Nano-Particles by Ultrasonic Eco-Fabrication Y. Hayashi, H. Takizawa, Y. Saijo, T. Sekino, K. Suganuma and K. Niihara	530
Influence of Heat-Treatment on the Mechanical Properties of Lotus-Type Porous Carbon Steel Fabricated by Continuous Zone Melting Method T. Kujime, S.K. Hyun and H. Nakajima	534
Effect of Oxide Additives on the Aspect Ratio Control of Mullite Whiskers S.Y. Park, S.W. Kim and H.G. Bang	538
Synthesis of Calcium Carbonate from Calcium Chlorine Solution Using Homogeneous Precipitation Method K.N. Kim, D.Y. Shin, S.G. Son and Y.D. Kim	542
Synthesis of Calcium Carbonate Particles Modified by Coating with Nickel Precursor K.N. Kim and Y.D. Kim	546
Influence of the Electromagnetic Stirring on Globularization of Primary Solid Phase in Solid-Liquid Region D.Y. Lee, K.B. Kim and D.H. Kim	550
Thermoelectric Properties of Co_{1-x}Nb_xSb₃ Prepared by Induction Melting J.B. Park, S.-. You, K.W. Cho, J.I. Lee, S.C. Ur and I.H. Kim	554

Electrochemical Characteristics of Si/Mo Multilayer Anode for Microbattery in MEMS J. Jung, M.H. Kim, H.S. Moon and J.W. Park	558
Characteristics of SnO_x-Coated Lithium Manganese Oxide Thin Film for MEMS Power System J.H. Lee, Y.J. Kim, H.S. Moon and J.W. Park	562
Characteristics of Polymer Composite Electrolyte for MEMS Power System J.N. Kim and J.W. Park	566
Effect of PVP Addition on Microstructure of SrZrO₃ Thin Films on Bi(2223) Tapes Y.S. Song, D.Y. Lee, S.J. Lee, B.Y. Kim and S.N. Hong	570
Effect of Solvent Extraction on Removal of Heavy Metal Ions Using Lignocellulosic Fiber B.G. Lee, H.J. Lee and D.Y. Shin	574
Sound Absorbing Properties of Foamed Glasses H.Y. Cho, C.H. Choi, J.Y. Kim, D.H. Choi and S.W. Lee	578
Hydriding/Dehydriding Behavior of Mg-Ni Systems T.W. Hong, I.H. Kim, S.C. Ur, Y.G. Lee and Y.J. Kim	582
Hydrogenation Properties of Mg-TiNi Hydrogen Storage Composites Materials T.W. Hong	586
Electrical and Electrochemical Properties of Poly(P-Phenylene)-Based Carbon for Lithium Rechargeable Batteries J. Kim, J.U. Kim, M. Kong and H.B. Gu	590
Electrochemical Characteristics of Li/S Secondary Battery with (PEO)₆LiBF₄-Al₂O₃ Composite Polymer Electrolyte Prepared by Ball Milling S.S. Jeong, Y.T. Lim, B.S. Jung and K.W. Kim	594
Effects of MWNT and GNF on the Performance of Sulfur Electrode for Li/S Battery J. Kim, Y.J. Choi, S.S. Jeong, K.K. Cho and K.W. Kim	598
Thermoelectric Properties of Co_{1-x}Nb_xSb₃ Prepared by Induction Melting J.B. Park, S.-. You, K.W. Cho, J.I. Lee, S.C. Ur and I.H. Kim	602
Charge/Discharge Characteristics of SnO₂ Electrodes for Lithium Polymer Batteries J.U. Kim, J.K. Kim, J.W. Choi, Y.H. Kim, J.H. Ahn, G. Kim, D.K. Jun and H.B. Gu	606
Effect of Organic Additives in Electrolytes for Rechargeable Lithium/Sulfur Battery J.K. Kim, J.W. Choi, Y.H. Kim, J.U. Kim and J.H. Ahn	610
Synthesis and Electrochemical Study of Zr-Doped LiNi_xMn_yCo_(1-x-y)O₂ as Cathode Material for Secondary Li-Ion Battery S. Na, H.S. Kim and S.I. Moon	614
Transformation Behavior and Mechanical Properties of an Equiatomic Ti-Ni Alloy with Surface Sulfide Layers T.H. Nam, S.M. Park and G.B. Cho	618
Thermal Sulfidation Behavior of Ti-Ni Alloys T.H. Nam, S.M. Park and K.K. Cho	622
Microstructure and Electrical Properties of R.F. Magnetron Sputtering Derived PZT Thin Films Deposited on PbO Buffer Layer C.H. Park and Y.G. Son	626
Self-Discharge Behavior of Lithium/Sulfur Battery Using Aluminum Current Collector H.S. Ryu and H.J. Ahn	630
Discharge-Charge Property of Lithium/PEO/Sulfur Battery with High Sulfur Content H.S. Ryu, C.W. Park, W. Shin, T. Kim, J.Y. Lee and H.J. Ahn	634
Ionic Conductivity of Sodium Ion with NaCF₃SO₃ Salts in Electrolyte for Sodium Batteries T. Kim, C.W. Park, H.S. Ryu and H.J. Ahn	638
Mechanical Alloying and Thermoelectric Properties of CoSb₃ Skutterudite M.K. Choi, S.C. Ur, J.C. Kwon, K.W. Cho, I.H. Kim, Y.G. Lee and S.L. Ryu	642
Orientation Distribution in Bi₂Te₃-Based Compound Prepared by Spark Plasma Sintering K.T. Kim, C.H. Lim, Y.H. Kim, D.C. Cho, Y.S. Lee and C.H. Lee	646
Application of a Ti-Ni Alloy as a Current Collector of Positive Electrode for Lithium/Sulfur Batteries G.B. Cho, S.S. Jeong, S.M. Park and T.H. Nam	650
Synthesis and Thermoelectric Properties of N-Type Bi₂Te_{2.7}Se_{0.3} Compounds by Spark Plasma Sintering D.C. Cho, C.H. Lim, K.T. Kim, S.Y. Shin, D.M. Lee, Y.S. Lee and C.H. Lee	654

Electrochemical Properties of Primary Li/FeS₂ Batteries J.W. Choi, J.K. Kim, Y.H. Kim, J.U. Kim and J.H. Ahn	658
Synthesis of Ni-YSZ Cermet for an Electrode of High Temperature Electrolysis by High Energy Ball Milling H.S. Hong, U. Chae, K.M. Park and S. Choo	662
Emissive Carbon Coating for Energy Saving J.S. Yu, J.H. Sung, S. Park and J.C. Lee	666