

Table of Contents

Preface

Thermal Stress Simulations of SOFC Membrane-Electrode Assembly T.Y. Yeh, D.H. Kuo and R.K. Shiue	1
Functionally Gradient 3YSZ-IN713LC Composites D.H. Kuo, R.K. Shiue, W.Y. Tseng, C.H. Shih, T.Y. Yeh and M.H. Wei	5
Time-Frequency Signal Analysis for Nondestructive Evaluation of Pile with Cap K.F. Lo, S.H. Ni, J.J. Charng and Y.H. Huang	9
Parametric Study of Machining Effect on Residual Stress and Surface Roughness of Nickel Base Super Alloy UDIMET 720 S.V. Joshi, S.P. Vizhian, B.R. Sridhar and K. Jayaram	13
Nonlinear Acoustic NDE – Qualitative and Quantitative Effects J. Engelbrecht, A. Ravasoo and J. Janno	17
Thermal and Tensile Properties of PP Nanocomposite Blends C. Rosales, V. Contreras, M. Matos, R. Perera, N. Villarreal, R. Gallego and J.M. Pastor	21
Formation of Chemical Elements under Superdeep Penetration of Lead Microparticles in Ferrous Target V.V. Sobolev and S.M. Usherenko	25
Shape Memory Alloy Combined with Piezoelectric Materials Applied for Structure Vibration Control C.Y. Hsu	29
Sensitivity in Large Deflection of Bossed and Pre-Tensioned Layered Plate under Lateral Load C.F. Chen and Y.C. Wu	33
Using FEM Analysis for Evaluating Lifetime of the Turbine Blades Repaired by Different Kinds of Titanium and Nickel Alloys A. Korjakins, S. Gluhihs, A. Popovs and A. Tiskunov	37
Influence of Secondary Oxide Phases on Microstructural and Gas Sensitive Properties of Nanostructured Titanium Dioxide Thin Films M.R. Mohammadi, M. Ghorbani and D.J. Fray	41
Design of Finish System Using Rotational Magnetic-Assistance in Ultrasonic Electrochemical Finishing of Freeform-Surfaces P.S. Pa	45
Development of a Safety Network System for Highway Structures in Korea K.T. Park, W.S. Lee, B.C. Joo and Y.K. Hwang	49
A Study on the Problems with Long-Term Bridge Monitoring Systems, and Suggested Solutions K.T. Park	53
Sound Transmission through Lightweight All-Metallic Sandwich Panels with Corrugated Cores F.X. Xin, T.J. Lu and C. Chen	57
Development of Miniaturized Piezoelectric Multimode Transducer for Projection Purpose T. Li, Y.H. Chen and J. Ma	61
Macroscopic Differential Model for Hysteresis and Butterfly-Shaped Behavior in Ferroelectric Materials L.X. Wang, Y. Chen and W.L. Zhao	65
Feedback Linearization of Hysteretic Thermoelastic Dynamics of Shape Memory Alloy Actuators with Phase Transformations L.X. Wang, R. Liu and R. Melnik	69
Characteristics of BNT Films Synthesized by a Hydrothermal Method F.C. Xu and K. Kusakawa	73
Electromagnetic Wave Shielding and Fire Retardant Multifunctional Polymer Composites V.G. Shevchenko, V.P. Volkov, A.N. Zelenetsky, A.T. Ponomarenko and O. Figovsky	77
Multifunctional Polymer Composites for "Intellectual" Structures: Present State, Problems, Future A.T. Ponomarenko, O. Figovsky and V.G. Shevchenko	81

Monitoring Vibrating Structures Using PZT Impedance Transducers A.W. Miao and Y.W. Yang	85
Development of High Performance Fiber Reinforced Composite with Negative Thermal Expansion Property H. Yang, Q.Q. Ni, A. Yamanaka and T. Natsuki	89
Prevulcanized Natural Rubber Latex/Modified Lignin Dispersion for Water Vapour Barrier Coatings on Paperboard Packaging H. Wang, A.J. Easteal and N. Edmonds	93
Seamless Morphing Wing with SMP Skin W.L. Yin, Q.J. Sun, B. Zhang, J.C. Liu and J.S. Leng	97
Kinetics of Martensitic Phase Decomposition in the Cu-10wt.%Al Alloy with Ag Additions A.T. Adorno and R.A.G. Silva	101
Flame Stabilization and Emissions of a Natural Gas/Air Ceramic Porous Burner N. Djordjevic, P. Habisreuther and N. Zarzalis	105
Preparation of NbB₂-Al₂O₃ <i>In Situ</i> Composites by SHS Involving Thermite Reactions C.L. Yeh and R.F. Li	109
Effects of Particle Size and Size Distribution on the Mechanical Properties of EPDM/Silica Vulcanizates M.N. Ichazo, C. Albano, M. Hernández, J. González and A. Carta	113
A Novel Dynamic Absorber Using Enhanced Magnetorheological Elastomers for Powertrain Vibration Control N. Zhang, N. Hoang and H.P. Du	117
Mechanical Behavior of Non Sintered and Sintered Steel Wool J.P. Masse, K. Beyer, D. Bouvard, O. Bouaziz, Y. Bréchet and L. Salvo	121
Experiments and Numerical Simulations of Interlocked Materials C. Brugger, Y. Bréchet and M. Fivel	125
Temperature Effects on Guided Wave Structural Damage Detection C.Y. Park and S.M. Jun	129
Improvement of Fatigue Strength and Impact Properties of Plain-Woven CFRP Modified with Micro Fibrillated Cellulose N. Takagaki, K. Okubo and T. Fujii	133
Active Vibration Control of Smart Hull Structure Using Piezoelectric Composite Actuators J.W. Sohn and S.B. Choi	137
Design and Control of Magnetorheological Fluid-Based Multifunctional Haptic Device for Vehicle Applications Y.M. Han, C.J. Kim and S.B. Choi	141
Damping Force Control of MR Damper for a Passenger Vehicle Considering Hysteretic Compensator M.S. Seong, K.G. Sung and S.B. Choi	145
Natural Fiber Reinforced Plastic Foams from Plant Oil-Based Resins M.Z. Rong, S.P. Wu and M.Q. Zhang	149
A Planar Dielectrophoretic Microdevice for Particle Manipulation Q.Z. Teng, X.Z. Zhang, W.H. Li, D.F. Chen and H.J. Du	153
Development of a Variable Stiffness and Damping Isolator Using Magnetorheological Fluid Technology W.H. Li, X.Z. Zhang and X.Y. Wang	157
Potentials of Plastic Optical Fibers for Sensor Technology H. Golnabi, M. Kavei and K. Azizi	161
Multifunctional Materials via Molecular Self-Organization into Liquid-Crystalline Phase S.W. Tam-Chang, D. Mahinay and L.M. Huang	165
The Influence of the Marine Bacterium <i>Vibrio Natriegens</i> Growth on Metallic Corrosion as Studied by Microscope Technologies Y.S. Yin, S. Cheng, K.T. Lau, S.G. Chen and T. Liu	169
Super-Hydrophobic Surfaces Improve Corrosion Resistance of Fe₃Al-Type Intermetallic in Seawater T. Liu, K.T. Lau, S.G. Chen, S. Cheng and Y.S. Yin	173
Investigation on Fe₃Al Corrosion Behavior in Simulating Marine Biofilm Environment X.T. Chang, Y.S. Yin, T. Wang, C.W. Yin, S. Cheng and T. Liu	177

Cellular Morphology, Peel Strength and Thermal Conductivity for Wood/NR and Expanded EPDM Laminates for Roofing Applications	181
W. Yamsaengsung and N. Sombatsompop	
The Influence of Aging Treatments on the Notched Tensile Strength of Ti-6Al-6V-2Sn Laser Welds	185
L.W. Tsay, C.X. Lee, W.C. Chung and C. Chen	
A Smart Flow Sensor for Flow Direction Measurement	189
C.Y. Lee, Y.H. Wang, T.H. Hsueh, R.H. Ma, L.M. Fu and P.C. Chou	
Date Palm Tree Fiber as Polymeric Matrix Reinforcement, DPF-Polypropylene Composite Characterization	193
A. Alawar, A.M. Hamed and K. Al-Kaabi	
Synthesis of $\text{Bi}_{0.5}(\text{Na}_{0.7}\text{K}_{0.2}\text{Li}_{0.1})_{0.5}\text{TiO}_3$ Powders through Molten Salt Method	197
T. He, Q. Lv, H.T. Yang, J.H. Dai and T. Liu	
Facile Synthesis of Conducting Polypyrrole/Non-Aggregated Magnetite Nanocomposites and their Magnetorheological Characteristics	201
F.F. Fang, J.L. You and H.J. Choi	
Quantum Chemical and Electrochemical Studies on the Inhibitive Effect of Carboxymethylchitosan for Mild Steel in Different PHs	205
S.G. Chen, S. Cheng, K.T. Lau and Y.S. Yin	
Multifunctional Performance of Europium-Doped Feldspar Ceramics	209
L. Zhang, N. Bu, H. Yamada and C.N. Xu	
The Effect of Calcium Sulfate with Alloplast on the Periodontal Regeneration in One-Wall Intrabony Defect of Beagle Dogs	213
S.B. Hong, Y.T. Kim, K.J. Chai, S.H. Choi, K.S. Cho, J.K. Chai and C.K. Kim	
A Study on Ultrasonic Vibration Assisted Tapping of Titanium	218
K.L. Kuo	
Vibration Damping of Automotive Driveshafts with Piezofiber Composite Structures	222
J.M. Lee, C.H. Lee and S.B. Choi	
Positive Temperature Coefficient Behavior of the Graphite Nanofibre and Carbon Black Filled High-Density Polyethylene Hybrid Composites	226
Q. Li, J.W. Kim, T.H. Shim, Y.K. Jang and J.H. Lee	
Swelling Behavior of Poly(Acrylamide) Nanoclay Composite Hydrogels	230
P. Li, Siddaramaiah, O.K. Park, N.H. Kim, S.B. Heo and J.H. Lee	
Miscibility Behaviour of Polyethylene Oxide/Hydroxypropyl Methyl Cellulose Blends	234
T.M.M. Swamy, Siddaramaiah and J.H. Lee	
Synthesis, Characterization of Phenethyltrimethoxysilane (PE) Modified Organic-Inorganic Hybrid Silicalite-1 Molecular Sieves and its Transformation into Solid Acid Materials	238
Y.F. Yeong, A.Z. Abdullah, A.L. Ahmad and S. Bhatia	
Magnetorheological Fluids Behaviour in Tension Loading Mode	242
S.A. Mazlan, A. Issa and A.G. Olabi	
Stick-Slip Compensation of Micro-Positioning Using Elastic-Plastic Static Friction Model	246
M.G. Jang, C.H. Lee and S.B. Choi	
Crack Growth Characteristics Evaluation Method in Ceramics Based on DT Technique	250
T. Hitoo, H. Kinoshita, K. Ikeda and K. Kaizu	
Strain Transfer Models for Strain Actuators	254
S.D. Bahador, Y.W. Yang and L. Zhang	
Solution-Responsive Shape-Memory Polymer Driven by Forming Hydrogen Bonding	258
H.B. Lv, Y.J. Liu, D.X. Zhang, J.S. Leng and S.Y. Du	
Novel Magnetostrictive Bimetal Actuator Using Permendur	262
M. Ghodsi, T. Ueno and T. Higuchi	
Micro-Forming of $\text{Au}_{49}\text{Ag}_{5.5}\text{Pd}_{2.3}\text{Cu}_{26.9}\text{Si}_{16.3}$ Metallic Glasses in Supercooled Region	266
C.W. Tang, Y.C. Chang, T.T. Wu, J.C. Huang and C.T. Pan	
Fabrication and Characterization of Microscale Sensors for Strain Measurement in Flexible Polymer Heart Valve Leaflet	270
Y.L. Lin, K.T. Su, G.S. Chen and J.S. Liu	
Microstructure and Mechanical Properties of 0.63C-12.7Cr Martensitic Stainless Steel during Various Tempering Treatments	274
Y.L. Lin, C.C. Lin, T.H. Tsai and H.J. Lai	

Fracture Behavior of Polypropylene /Elastomer Blends M. Hernández, M.N. Ichazo, J. González, C. Albano and O. Santana	278
Self-Healing of Cracks in Epoxy Composites T. Yin, M.Z. Rong and M.Q. Zhang	282
Melamine Resin-Walled Microcapsules Containing Styrene: Preparation and Characterization H.P. Wang, Y.C. Yuan, M.Z. Rong and M.Q. Zhang	286
Synthesis and Characterization of a Novel Epoxy with Improved Processability Q. Tian, Y.C. Yuan, M.Z. Rong and M.Q. Zhang	290
Preparation and Characterization of a Novel Flame Retardant X.W. Jia, M.Z. Rong and M.Q. Zhang	294
Analysis of the Novel Strain Responsive Actuators of Silicone Dielectric Elastomer L.W. Liu, J.M. Fan, Z. Zhang, L. Shi, Y.J. Liu and J.S. Leng	298
Mechanical Properties of Polybenzimidazole Reinforced by Carbon Nanofibers L. Zhang, Q.Q. Ni and T. Natsuki	302
Health Monitoring of Laminate Plates with AE Signals and Wave Propagation C. Du, T. Natsuki and Q.Q. Ni	306
Fabrication of Titania Film on NiTi Alloy by a Deposition-Assisted Advanced Oxidation Method C.L. Chu, T. Hu, S.L. Wu, C.Y. Chung, K.W.K. Yeung and P.K. Chu	310
Effects of Electro-Fenton Process on Blood Compatibility and Nickel Suppression of NiTi Shape Memory Alloy C.L. Chu, T. Hu, S.L. Wu, Y.P. Pu, C.Y. Chung, K.W.K. Yeung and P.K. Chu	314
Preparation and Properties of Nano-Silica Filled Self-Reinforced Polypropylene W.H. Ruan, M.Q. Zhang, M.H. Wang, M.Z. Rong, T. Bárány and T. Czigány	318
Development of the Green Composite Consists of Woodchips, Bamboo Fibers and Biodegradable H. Kinoshita, K. Kaizu, M. Fukuda, T. Hitoo, K. Koga and K. Ikeda	322
Transport and Magnetic Properties of CrO₂-Polymer Magnetic Composites V. Sandu, S. Popa, C. Plapcianu, E. Sandu, N. Hurduc and I. Nor	326
Oxide Films Produced on Fe₁₉Cr₅Al Steel Coated with Al, Pt and Al+Pt Composite Nanofilms: Technological Aspects and Catalytic Properties K. Reszka, Z. Żurek, J. Morgiel and J. Rakoczy	331
Catalytic Destruction and Removal of Toluene by Microwave/Fe₃O₄ System K.Y. Cheng, C.Y. Chang, Y.H. Hsieh, K.S. Yao, T.C. Cheng and C.Y. Cheng	335
Using Catalyst and Electrolysis Diaphragm Method to Produce Multiple Oxidants to Remove the Scaling and Slime in Cooling System K.S. Yao, C.Y. Chang, T.C. Cheng, Y.H. Hsieh and S.R. Weng	339
Bio-Chemical Sensor Based on Smart Material A. Babchenko, V. Chernyak, M. Levantovsky, E. Vilge and L. Babchenko	343
Study on Semi-Solid Magnesium Alloy Fabricated by Ultrasonic Stirring Method H. Yan, Z. Hu and Z. Pan	347
Optimization of Preparation of the TiO₂ Photocatalytic Reactor Using the Taguchi Method T.C. Cheng, C.Y. Chang, K.S. Yao, Y.H. Hsieh, L.L. Hsieh and P.S. Wang	351
Synthesis and Characterization of Bamboo-Like Carbon Nanotubes G. Zhu, X.P. Zou and J. Cheng	355
Preparation of Silica Nano-Rods by CVD G. Zhu, X.P. Zou, J. Cheng, M.F. Wang and Y. Su	359
Synthesis of Mono-Sized Silica Nanoparticles by Combustion Technique G. Zhu, X.P. Zou, J. Cheng, M.F. Wang and Y. Su	363
Synthesis of Straight Y-Shaped Silica Nanorods G. Zhu, X.P. Zou, J. Cheng, M.F. Wang and Y. Su	367
Optimization of Dimensions of a Sandwich Structure Using Genetic Algorithm (GA) M.R. Khoshnavan and M. Hosseinzadeh	371
Effect of Substrate Temperature and Incident Energy for Alloyzation of Co onto Cu(001) Substrate Z.H. Hong, S.F. Hwang and T.H. Fang	375

Three-Dimensional Charge Redistribution of Ionic Polymer-Metal Composites with Uncertainty in Surface Conductivity L. Zhang and Y.W. Yang	379
InGaP/GaAs pnp Heterojunction Bipolar Transistor with δ-Doped Sheet between Base-Emitter Junction J.H. Tsai, S.Y. Chiu, W.S. Lour, C.M. Li, Y.Z. Wu, N.X. Su and Y.S. Huang	383
Thermal Post-Buckling Analysis of Functionally Graded Panels in Hypersonic Airflows S.B. Kim and J.H. Kim	387
Distributed Pressure Sensing as Smart Mat Applications with Hetero-Core Fiber Optic Nerve Sensors M. Nishiyama, H. Sasaki, S. Nose, K. Takami and K. Watanabe	391
Superdeep Penetration as the New Physical Tool for Creation of Composite Materials S. Usherenko and O. Figovsky	395
Effect of Flame Retardant on Mechanical Properties and Flammability of Sisal/PP Composites N. Suppakarn, K. Jarukumjorn and S. Tananimit	403
Fiber Bragg Gratings Array for Structural Health Monitoring B.L. Chen and C.S. Shin	407
Precision Transfer and Replication of Ultrasonic Nanoimprint C.F. Huang, J.L. Lee, Y.K. Shen, Y. Lin and C.W. Wu	411
Thermal Degradation of Novel Exfoliated PLLA/LDH Nanocomposites M.F. Chiang and T.M. Wu	415
Application of Schottky Bulk-Layer Design on Double-Heterojunction Pseudomorphic AlGaAs/InGaAs/AlGaAs High Electron Mobility Transistors (DH-HEMTs) M.K. Hsu, J.H. Tsai, S.Y. Chiu, C.H. Wu, K.C. Liang, K.P. Liu, T.S. Huang and W.S. Lour	419
Superdeep Penetration of the Microparticles Accelerated by Explosion in Metals and Alloys of Iron L.G. Korshunov, V.I. Zeldovich, S. Usherenko, A.E. Kheifets, I.V. Khomskaya, N.L. Chernenko and N.Y. Frolova	423
Natural Rubber and EPDM Rubber as an Impact Modifier in Vetiver Grass-Polypropylene Composites Y. Ruksakulpiwat, J. Sridee, N. Suppakarn and W. Sutapun	427
An Impact Events Monitoring System for Wind Turbine Blades C.S. Shin, B.L. Chen and J.R. Cheng	431
Bionanocomposites of Grass J.K. Pandey, W.S. Chu, C.S. Kim, C.S. Lee and S.H. Ahn	435
Analysis for Replication and Surface Roughness of Micro-Feature of Silicon Mold Insert by UV-LIGA Method C.F. Huang, J.L. Lee, Y.K. Shen, C.W. Wu, Y. Lin, S.C. Hsu, M.W. Wu and C.Y. Kao	443
Effect of FGM on Film Quality of Al onto Cu(001) Substrate by Considering Incident Energy and Deposition Rate M.J. Jheng, S.F. Hwang and Z.H. Hong	451
Influence of Low-Level Oxidation on Mechanical Property of Two-Dimension Carbon/Carbon Composites L. Li, X.R. Zeng, H. Li, X.B. Xiong, X.H. Li and S.H. Xie	455
Study of the Decrease in Adhesion Force between Chloride-Isobutene Rubber and Stainless-Steel by Plasma Treated on the Rubber Surface J.H. Kim, H. Kousaka, N. Umehara, M. Shimada and M. Hasegawa	459
Shape Memory Characteristics of $\text{Ti}_{50}\text{Ni}_{50-x}\text{Cu}_x$ ($x=35, 40$) Alloy Strips Y.W. Kim, T.H. Nam and S.H. Lee	463
Surface Modification of Ti Dental Implants by Grit-Blasting and Micro-Arc Oxidation Y.W. Kim	467
Photocatalytic Degradation of Methylene Blue Using Porphyrin/TiO_2 Complexes Activated by Visible Light M.Y. Chang, C.Y. Chang, Y.H. Hsieh, K.S. Yao, T.C. Cheng and C.T. Ho	471
Electromagnetic Shielding of Multi-Walled Carbon Nanotube/Epoxy Nanocomposites M.K. Yeh, N.H. Tai, G.C. Ling and C.Y. Huang	475
A NO_x Sensor Based on Solid-Electrolyte Impedance Transducer Y. Shimizu, S. Takase and D. Koba	479

Mathematical Modeling of Thin Multiphysical Structures C. Licht and T. Weller	483
Mechanical and Morphological Properties of Sisal/Glass Fiber-Polypropylene Composites K. Jarukumjorn, N. Suppakarn and J. Kluengsamrong	486
Chicken Eggshell as a Filler for Polymer Composites: Preparation and Characterizations S. Sanmuang, Y. Ruksakulpiwat, N. Suppakarn and W. Sutapun	490
Optimization of Crack-Free Polytypoidally Joined $\text{Si}_3\text{N}_4\text{-Al}_2\text{O}_3$ Functionally Graded Materials (FGM) Using 3-Dimensional Modeling S.H. Ryu, J.H. Park, C.S.Y. Lee, J.C. Lee, S.H. Ahn, J.H. Chae and D.H. Riu	494
Structural Transition of Stabilized Martensite in CuZnAl Alloy Z. Li, Z.A. Xiao and Z. Xiao	499
A Comparative Study of the Hydrostatic Performances of 1-3 Piezoelectric Composites with a Porous Matrix C.N. Della and D.W. Shu	503
Friction Characteristic of Sliding Direction and Angle of Micro-Grooved Crosshatch Patterns under Lubricated Contact M.S. Suh and Y.H. Chae	507
Vascularized Multi-Functional Materials and Structures A. Bejan and S. Lorente	511
TEM Studies on the Microstructure in Ferromagnetic Shape Memory Alloys Y. Murakami, T. Yano and D. Shindo	515
Experimental Observation on Domain Front Morphology in NiTi Microtube during Tensile Unloading P. Feng and Q.P. Sun	519
Fabrication and Simulation of a Ni-Al_2O_3 Crack-Free Joining for Multiple Metal-Ceramic Composites Using a New Functionally Graded Material (FGM) Method J.H. Park, S.H. Ryu, C.S.Y. Lee, Y.H. Choa, J.C. Lee and S.H. Ahn	523
The Application of Thermosensitive Magnetic Nanoparticles in Drug Delivery Y.H. Lien and T.M. Wu	528
Light-Induced Functional VO_2 Films H.M. Liu, S. Lysenko, A. Rua and F. Fernandez	532
Effects of EPON on Mechanical and Thermal Properties of Epoxy Resins H. Ku, F. Cardona, D. Rogers and A. Vandenbroucke	536
Microstructure and Tribological Performance of a-CN_x/TiN_x Composite Films Prepared by Pulsed Laser Deposition X.H. Zheng, J.P. Tu and R.G. Song	540
The Preparation and Application of Shell Powder in UHMWPE-Fiber Unidirectional Plate S.J. Liu, X.J. Si, W. Li, Y.M. Wang and A.K.T. Lau	545
Effects of Temperature on Microstructure and Tribological Performance of a-CN_x Films Prepared by Pulsed Laser Deposition X.H. Zheng, J.P. Tu, H.X. Li and R.G. Song	549
Structure and Mechanical Properties of Ceramic Coatings Fabricated by Micro-Arc Oxidation H.X. Li, R.G. Song and J. Zhao	554
Fabrication of Poly(diphenylsilylenemethylene) Matrix Nanocomposite Thin Films by Laser Ablation R.G. Song, F.E. Yang, X.H. Weng and W.Z. He	558
Synthesis and Properties of Barium Strontium Titanate Thin Films on Copper Foils Y.H. Fan, S.H. Yu, R. Sun, L. Li, R. Du, Y.S. Yin and Y.B. Yao	562
Carbon Foam with High Strength and High Thermal Conductivity Doped by Nano-Titanium Y. Wang, L.L. Cao and Y.M. Wang	566
Structure, Magnetic and Transport Properties of $\text{Mn}_x\text{Ge}_{1-x}$ S. Qiao, D.L. Hou, Q. Zhang and C.M. Zhen	570
Asymptotic Derivation of a Curved Piezoelectric Interface Model and Homogenization of Piezoelectric Composites S.T. Gu, Q.C. He, V. Pensée and J.Z. Zhou	575
Microstructures and Magnetic Properties of Nanocomposite FePt Multilayer Films S.C. Chen, P.C. Kuo, C.L. Shen, Y.H. Fang, K.T. Huang and G.P. Lin	579

Microstructures and Magnetic Properties of Sputtered Expitaxial Co₃Pt/Pt Multilayer Films	
S.C. Chen, P.C. Kuo, C.L. Shen, Y.H. Fang and S.L. Hsu	583
Effect of N₂ Partial Pressure on the Microstructure and Texture of MgO Films Deposited by Rf-Magnetron Sputtering	
S.C. Chen, P.C. Kuo, C.L. Shen, Y.H. Fang, K.T. Huang, G.P. Lin and W.H. Hong	588
Tensile and Fatigue Testings of Hybrid Al/APC-2 Nanocomposite Laminates at Elevated Temperature	
M.H.R. Jen, Y.C. Sung and Y.D. Lai	592
Effect of Tin Content on the Microstructure and Property of Brazed WC-Co/CrMo Alloy Steel Joints	
H.F. Wang, L.H. Chiu and H. Chang	596
Structural and Magnetic Properties of Cobalt and Aluminum Co-Doped ZnO Powders	
Y.Y. Wei, D.L. Hou, R.B. Zhao, Z.Z. Zhou, C.M. Zhen and G.D. Tang	600
Resorbable Metallic Implant: Findings from an Animal Model	
C.K. Yuen and W.Y. Ip	604
Dynamic Response of Functionally Graded Circular Cylindrical Shells	
S.M.R. Khalili, K. Malekzadeh and A. Davar	608
Impact Behavior of Cracked Plate Repaired with Composite and FML Patches	
M. Sadeghinia, S.M.R. Khalili and R. Ghadjar	612
Preparation and Tribological Properties of Amorphous Ti/C Multilayers by Pulsed Laser Deposition	
C.F. Hong, J.P. Tu, R.L. Li and X.H. Zheng	617
Nickel Foam-Supported NiO/Ag Porous Spheres Prepared by Electrodeposition as Anode for Lithium-Ion Batteries	
X.H. Huang, J.P. Tu, X.H. Xia and X.L. Wang	621
Electrochromic and Electrochemical Properties of Nickel Oxide Thin Films Prepared by a Modified Sol-Gel Method	
X.H. Xia, J.P. Tu, J. Zhang and X.L. Wang	625
Implementation of Magnetostrictive Material Terfenol-D in CNG Fuel Injection Actuation	
H.A. Chowdhury, S.A. Mazlan and A.G. Olabi	630
Enhancement of Gas Response of ZnO Micro-Nano Structured Layers through Plasma Treatment	
J. Delaunay, I. Nagatomo, R. Uchino, Y.B. Li, M. Shuzo and I. Yamada	634
Novel Surfactant Free and Solid State Polymerization to Dendritic Polyaniline Nanofibers	
X.S. Du, C.F. Zhou, Z.W. Liu, S.P. Ringer and Y.W. Mai	638
Synthesis and Characterization of Luminescent Rod-Coil Poly[2,7-(9,9- Dihexylfluorene)] - Block-Poly(2-(Dimethylamino) Ethyl Methacrylate) by Atom Transfer Radical Polymerization	
Y.Y. Yu, W.C. Chien and C.L. Tsai	642
Preparation of Nanoporous Mondispersed Silica Nanoparticles Films Using Poly(styrene)-Block-Poly(2-Vinyl Pyridine) as Template	
Y.Y. Yu, W.C. Chien and S.T. Chen	646
Microstructure and Properties of Polyimide /Monodispersed Colloidal Silica Hybrid Films Prepared by Sol-Gel Process	
Y.Y. Yu, W.C. Chien and T.W. Tsai	650
Preparation and Patterning of Optical Hybrid Thin Films Based on Photosensitive Polyimide and Monodispersed Colloidal Silica	
Y.Y. Yu, W.C. Chien and C.L. Lai	654
Synthesis of Green-Emitting Phosphors by Bicontinuous Cubic Phase Process	
W.C. Chien, Y.Y. Yu and C.Y. Chien	658
Synthesis and Characterization of Photopolymerized Poly(acrylic)/Monodispersed Colloidal Silica Hybrid Thin Films	
W.C. Chien, Y.Y. Yu and S.Y. Chen	662
Imaging Laminar Damage in Plates Using Lamb Wave Beamforming	
M. Veidt, C.T. Ng, S. Hames and T. Wattinger	666
Effect of Nitrocarburized Layer on the Resistivity Properties of Stainless Steels	
Y.Y. Su, F.S. Chen, L.H. Chiu and H. Chang	670

Polycarbonate with Pineapple Leaf Fiber to Produce Functional Composites P. Threepopnatkul, N. Kaerkitcha and N. Athipongarporn	674
Effect of Pretreatment on Properties of Coir-Based Green Composite C. Asasutjarit, S. Charoenvai, J. Hirunlabh and J. Khedari	678
Effect of Brazing Temperature on the Microstructure and Property of Vacuum Brazed WC-Co and Carbon Steel Joint L.H. Chiu, H.F. Wang, C.P. Huang, C.T. Hsu and T.C. Chen	682
Effects of Nitriding Processes on the Mechanical Properties of SACM 645 Steel S.H. Yeh, L.H. Chiu and H. Chang	686
Influence of Radialization Dosage on Shape Memory Effect of Polystyrene Copolymer D.W. Zhang, J.S. Leng and Y.J. Liu	690
Tensile Deformation Behaviours of Nylon 6 Based Nanocomposites S.H. Lim, Z.Z. Yu and Y.W. Mai	694
X-Ray Micro-Tomography as a Tool for Quantitative Characterization of Advanced Materials Manufacturing Processes I. Tisceanu, T. Craciunescu, G.V. Aldica and M. Iovea	698
Wear Behaviors of Nano Grained Aluminum Alloys W.S. Lee, K. Song, J.M. Jang, S.H. Ko and I.H. Kim	702
Magnetic and Relaxation Properties of $(\text{CO}_{45}\text{Fe}_{45}\text{Zr}_{10})_x(\text{Al}_2\text{O}_3)_{1-x}$ Thin Films L.N. Kotov, Y.Y. Efimets, V.S. Vlasov, A.P. Petrakov, V.K. Turkov, Y. Kalinin and A.V. Sitnikov	706
The Technique for Fabricating Submicron Moiré Grating Using FIB Milling H.M. Xie, Y.J. Li, H. Du, B. Pan, Q. Luo, C.Z. Gu and H.C. Jiang	710
Investigate of Electrical Conductivity of Shape-Memory Polymer Filled with Carbon Black X. Lan, J.S. Leng, Y.J. Liu and S.Y. Du	714
Complex Multifunctional Materials for Special Applications I. Carceanu, G. Cosmeleata, A. Popa, I. Nedelcu, E. Jalbă, P. Manicattide Neagu and I. Roceanu	718
The Preparation and Study on UHMWPE/Epoxy Gel-Spun Fibres X.J. Si, S.J. Liu, D.H. Liu, X.P. Wang and Y.M. Wang	722
Development of a High Performance Peristaltic Micropump M. Pham, N.S. Goo and M.J. Lee	726
Couple Stress Model of Steric Stiffening in Nanoporous Solids J. Wang, Y.X. Ren and D.C.C. Lam	730
Synthesis and Modification of Epoxidized Natural Rubber from Natural Rubber Latex C. Ruksakulpiwat, S. Nuasaen, C. Poonsawat and P. Khansawai	734
Small Punch Test of Advanced <i>In Situ</i> Synthesized Ti Metal Matrix Composites J. Mak, R. Wuhner, G. Heness, W.Y. Yeung, M. Callaghan, T. Wei, J. Qin, W. Lu and D. Zhang	738
Synthesis of Locally-Ordered Carbon Nanotube Arrays from Patterned Catalyst by Self-Assembly Technique X.P. Zou	742
High-Quality Single-Walled Carbon Nanotubes Synthesized by Floating Catalyst Chemical Vapor Deposition J. Cheng, X.P. Zou, G. Zhu, M.F. Wang and Y. Su	746
Development of Noble Metal Oxide Electrode for Low Oxygen Evolution S.H. Son, D.W. Chung and W.S. Lee	750
A Kinetic Study on the Electrodeposition of Ni-Cr Alloy on Copper for Embedded Resister Layer in PCB S.H. Son, D.W. Chung, D.C. Kwon and H.K. Lee	754
Characteristics of Silver Electrodeposition Solution and Silver Film Fabricated by Electrodeposition with Additives for Interconnection S.H. Son, D.C. Kwon and H.K. Lee	758
Polymer Brush-Stabilized Polyplex for a siRNA Carrier with Long Blood Circulatory Half-Life A. Kano, T. Yamano, S.W. Choi and A. Maruyama	762
Preparation and Characterization of Polyurethane/Multi-Walled Carbon Nanotubes Composites with Multi Functional Performance F.D. Jiang, G.H. Hu and L.Q. Zhang	765

Development of an Ultra-Small Smart Temperature Sensor with Quartz Tuning Fork Resonators	
J. Xu, L.H. Hu, J. Ma, J.A. Cui and B. You	769
Prediction of Inelastic Behavior of Composite Laminates Using Multi-Surface Continuum Damage-Plasticity	
B. Mohammadi, H. Hosseini-Toudeshky, M.H. Sadr-Lahidjani and S. Aivazzadeh	773
Real 3D Crack-Front and Crack Trajectory Analyses of Single-Side Repaired Thick Aluminium Panels	
H. Hosseini-Toudeshky, M. Saber and B. Mohammadi	777
Exchange Effect in TM-TbCo/RE-TbCo Double Layer Films	
G.P. Lin, P.C. Kuo, Y.H. Fang, S.L. Ou and S.C. Chen	781
Magnetic Properties of TbCo/(SiN_x/Co)_n Films	
G.P. Lin, P.C. Kuo, P.L. Lin, Y.H. Fang and K.T. Huang	785
Singularity-Reduced Integral Representations for Discontinuity in Smart Materials	
J. Rungamornrat and T. Senjuntichai	789
Self-Protection Multi-Ring-Architecture Fiber Sensing System	
C.H. Wang, C.H. Yeh, F.Y. Shih, C.W. Chow, K.C. Hsu, Y. Lai and S. Chi	793
The Fabrication of Nanoporous Hydroxyapatite Ceramics	
A. Ruksudjarit, K. Pengpat, G. Rujijanagul and T. Tunkasiri	797
Effect of Copper Oxide on the Sintering of Alumina Ceramics	
R. Singh, K.L. Aw, C.H. Ting, C.Y. Tan, I. Sopyan and W.D. Teng	801
The <i>In Vivo</i> Study of Biomimetic Chitosan Substrates' Osteoinduction Effects	
S.Y. Chou and M.H. Ho	805
The Strength Deterioration of Aramid Fiber in High Temperature	
E. Nakanishi, Y. Ando and S. Maki	809
Effects of Bi Doping on the In₁₅Sb₈₅ Phase Change Recording Thin Film	
S.L. Ou, P.C. Kuo, S.C. Sheu, C.H. Hsiao, D.Y. Chiang and W.T. Tang	813
Carbon Nanotube Composites for Vibration Damping	
R.L. Dai and W.H. Liao	817
Synthetic Biomimetic Carbonate-Hydroxyapatite Nanocrystals for Enamel Remineralization	
N. Roveri, E. Battistella, I. Foltran, E. Foresti, M. Iafisco, M. Lelli, B. Palazzo and L. Rimondini	821
Influence of Ru(II) Bipyridyl Complex on the Photocatalytic H₂ Evolution over TiO₂ Nanoparticles with Mesostructures	
T.Y. Peng, D.N. Ke, C. Wu, C. Ping, L. Ma and L. Zan	825
Study on the Deformation of TiNi/AlSi Composite Alloy Using DSCM Method	
Q.H. Wang, H.M. Xie, H.C. Jiang, B. Pan and F.L. Dai	829
Crystallization Behavior of Polypropylene (PP)/ Polyethylene Terephthalate (PET) Composite Fibres	
D.H. Liu, X.J. Si, J. Gao, L.L. Cao and Y.M. Wang	833
The Phenotypes of Osteoblastic Cells on Surfaces with Different Mechanical Properties	
C.B. Hung, M.H. Ho and S.W. Hsiao	837
Dynamic Reinforced of Casting Alloys after Superdeep Penetration	
A.A. Andrushevich and Y.K. Krivosheev	841
Fabrication of Poly(L-Lactic Acid) Scaffolds with Wool Keratin for Osteoblast Cultivation	
J.S. Li, Y. Li, L. Li, A.F.T. Mak, F. Ko and L. Qin	845
Antibacterial and Nontoxic Nano Silver PLLA Composites for Tissue Engineering	
L. Li, Y. Li, J.S. Li, L. Yao, A.F.T. Mak, F. Ko and L. Qin	849
Microstructural Evolution during Warm Compression of Medium Carbon Steel Quenched	
X. Zhao	853
Mass-Production of Practical Mussel Adhesive Protein in <i>Escherichia Coli</i>	
D.S. Hwang, S.H. Lim, Y.J. Yang and H.J. Cha	857
Smart Hybrid Mussel Adhesive Materials for Cell and Tissue Engineering	
D.S. Hwang, S.H. Lim and H.J. Cha	861
Characterization of a Functionally Graded Hypereutectic Al-Si Alloy Produced by Centrifugal Method	
E. Oveisi and F. Akhlaghi	865

Towards a Generalized Macro-Level Damage Model for Unidirectional Composites V. Murari and C.S. Upadhyay	869
Process Development of Low-Cost AgNi and AgFe Contact Materials with no Range of Solid Solubility S.K. Kim	873
Modeling of the Cyclic Behavior of Shape Memory Alloys during Localized Unstable Mechanical Response B. Azadi, N. Rajapakse and D.M. Maijer	877
Nonlinear Model on Torsional Behaviors of CFRP Strengthened Reinforced Concrete Beams W. Raongjant and M. Jing	881
Pseudoelastic Behavior of Cu–Al–Be Shape Memory Wires Subjected to Varied Loading and Unloading Cycles S. Lu, J. Chen and L.Q. Chen	886
Synthesis and Characteristic of Molecularly Imprinted Polymer Immobilized Mesoporous Silica Sphere for Selective Binding of S-Naproxen N.C. Bing, Z. Tian, S.W. Chen, Q.H. Li and Z.L. Xu	890
High-Temperature Thermal Cyclic Oxidation Behavior of Wide-Gap Brazed IN738 Superalloy Y.H. Kim and K.T. Kim	894
Preparation of CuMgAl Hydrotalcite-Like Compounds at Low M^{II}/M^{III} Molar Ratios Y.M. Shen, J. Wu, C.H. Liu and Z.X. Zhang	898
Shape-Controlled Synthesis and Characterization of CuS Crystal from a Low Temperature Hydrothermal Route L.F. Chen, H.Q. Xie, Y. Li and W. Yu	903
Precise Quantitative Evaluation of Nano-Ordered Intermetallic Compounds in Sn-3.0Ag-0.5Cu Lead-Free Solder Bump by Using TEM C.W. Lee, Y.S. Shin and J.H. Kim	907
Influence of Carbon Sources and Catalytic Precursors on the Products Prepared by Catalytic Combustion M.F. Wang, X.P. Zou, J. Cheng, G. Zhu and Y. Su	912
Effect of Particle Size of Fully Porous-Coated (FPC) Implants on Osseointegration C. Rungsiyakull, Q. Li, W. Li, R. Appleyard and M. Swain	916
Effects of Silver Nanostructures on Fluorescence Modulation of Rhodamine B and Fluorescein X. He, X.J. Zhao, J.Y. Feng and X.T. Sui	920
About the Elaboration and Characterization of Fe-Based Composite with Friction Destination A. Popa, I. Carceanu, C. Coman, V. Candea and G. Matache	924
Synthesis of Strontium-Doped Hydroxyapatite Powder via Sol-Gel Method I. Sopyan, C.M. Mardziah, A.R. Toibah and R. Singh	928
Effect of Slurry Preparation on Physical Properties of Porous Hydroxyapatite Prepared via Polymeric Sponge Method I. Sopyan, J. Kaur, A.R. Toibah, M.H. Bin Abdul Shukor and R. Singh	932
Porous Barium Strontium Titanate-Titania Nanocomposites for Photocatalytic Applications G.G. Zhang, H.T. Huang, H.L.W. Chan and L.M. Zhou	936
Development of Novel Environment-Friendly Magnesium Alloys J.K. Lee and S.K. Kim	940
Improvement of Microstructural Controllability of Cellular Ceramic for Multifunctional Composites L. Yin, H.X. Peng, S. Dhara, L. Yang and B. Su	944
Wetting and Adhesion Behavior of Undulated a-C:H Film Deposited on Nano-Scale Copper Dot Y.J. Jang, J.W. Yi, J.J. Rha and S.S. Kim	948
Study of Nanometer Al_2O_3 Composite Electroless Deposit Strengthened by Different Laser Power Q.L. Zhang, J.H. Yao and Y. Pan	952
A Novel Method to Synthesize Nanocrystalline Calcium Phosphates R.L. Xin, F.Z. Ren, G.J. Huang and Y. Leng	956

Porous Ceramics for High Temperature Filters C. Ghitulica, E. Andronesco, O. Nicola and M. Birsan	960
Continuum Modeling on Macroscopic Domain Patterns during Stress Induced Phase Transition in NiTi Tubes Y.J. He and Q.P. Sun	964
Preventing Metal Structure from Water-Seepage by Organic Sealants Comparing Research J. Xiao, L.H. Su, Q.Y. Zhang, J.M. Chen and H.T. Fan	968
Study on the Dielectric Properties of Hybrid and Porous Polyimide-Silica Films Y.H. Zhang, Q.S. Su, L. Yu, H. Zheng, H.T. Huang, G.G. Zhang, Y.B. Yao and H.L.W. Chan	973
Preparation and Characterization of Functional Geopolymer Y.H. Zhang, J. Xing, L. Yu and J.H. Li	977
Preparation of CF/BR Composite Used for Electromagnetic Shielding Y.H. Zhang, J.B. Lu, H.T. Huang, X.Y. Hao and H.L.W. Chan	980
Synthesis of Si₃N₄/Polyimide Hybrid Films Y.Q. Wen, Y.H. Zhang, W. Zhen, Q.S. Su and L.H. Zhao	984
Preparation of Low-K Fluorinated Polyimide/Phlogopite Nanocomposites Y.H. Zhang, Q.S. Su, L. Yu, L.B. Liao, H. Zheng, H.T. Huang, G.G. Zhang, Y.B. Yao, C. Lau and H.L.W. Chan	987
Platinum-Ruthenium-Multiwalled Carbon Nanotube-Nafion Nanocomposite for Methanol Electrooxidation Y.C. Tsai, Y.H. Hong and P.C. Hsu	991
Microstructures and Oxygen Reduction of Recycled TiH₂ Powders during Sintering J.M. Jang, W.S. Lee, S.H. Ko, I.H. Kim, S.H. Son and D.W. Jung	995
Comparison of Bone Formation in Rabbits Using Hydroxyapatite and β-Tricalcium Phosphate Scaffolds Fabricated From Egg Shells S.H. Kim, W. Kim, J.H. Cho, N.S. Oh, M.H. Lee and S.J. Lee	999
Plasma Non-Transferred Arc Cladding of Alumina Powder on Mild Steel-Parameters Optimization Using Taguchi Method A.R. Bushroa and C.C. Ying	1003
Statistical Analysis on Bonding Strength and Failure Mechanism of Plasma-Sprayed HA Coating with Reinforced Intermediate Layers C.W. Yang and T.S. Lui	1007
Layer-by-Layer Finite Element Analysis of Smart Composite Plates V.L. Sateesh, C.S. Upadhyay and C. Venkatesan	1011
Cuprous Oxide Films Prepared by Using a Microwave Atmospheric Pressure Plasma Torch H.Y. Chen, L.T. Kuo, W.Y. Chang and C.H. Tsai	1015
Composites of Pet and PBT/PP with Bentonite R. Perera, C. Rosales, M.A. Araque and M.A. Coelho	1019
Analytical Solutions for Crack-Tip Higher Order Stress Fields in Thermal Barrier Coating Y. Dai, C.Q. Sun, S. Qi and W. Tan	1023
The Discontinuous Higher Order Fields for Anti-Plane Crack at Interface Y. Dai, S.M. Li and W. Tan	1027
Effect of Electrospun Fibers on the Interlaminar Properties of Woven Composites A.D. Kelkar, R. Mohan, R. Bolick and S. Shendekar	1031
Functionally Graded Dental Implant and its Effect on Bone Remodeling D. Lin, Q. Li, W. Li and M.V. Swain	1035
A Study on Improvement Capture Velocity for Increasing Inhalation Efficiency of Hood in Local Ventilation System Y.K. Oh, Y.S. Kim and H.S. Yoon	1039
Study on Three-Dimensional Thermal Deformation of Aluminum Casting Tire Mold by Numerical Analysis and Experiment Y.K. Oh and J.S. Choi	1043
Anisotropy Control of Cold Rolled Cu-Ag Alloys H. Cho, B.S. Lee, J.H. Ha and H.H. Jo	1047
Ageing Behavior of Cu-Ag Alloys H. Cho, B.S. Lee, B.H. Kang and K.Y. Kim	1051
Microcosmic Growth Process of ZnO Microrods W.W. Wang, L.P. Zhu, Z.Z. Ye, J.R. Wang, Y.F. Yang, H.P. He and B.H. Zhao	1055

Composite Ceramics Reinforced with Zirconia Nanopowders O. Nicola, C. Ghitulica, E. Andronescu, C. Visan and B.S. Vasile	1059
Bioglasses in the SiO₂-CaO-P₂O₅ System C. Birsan, C. Ghitulica, E. Andronescu, C. Ionita and M. Birsan	1063
Heat and Fluid Flow Characters of Single-Screw for Extrusion Molding by Finite Element Analysis H.H. Chung, M.S. Ko, S.H. Chol, J.Y. Kim and K.S. Song	1067
A Study on Corrosion Defect Evaluation of Painted Metal by Using Nondestructive Tests K.S. Song, M.S. Ko and J.Y. Kim	1071
Ultra-Small Superparamagnetic Iron Oxide Nanoparticles as MRI Contrast Enhancing Agents M.A. Do, H.J. Lee, J.H. Yeum, Y.M. Chang, H.D. Ghim and J.H. Choi	1076
Novel Synthesis of Ultra-Small Silver Nanoparticles with High Antimicrobial Activity H.J. Lee, M.A. Do, E.J. Kim, J.H. Yeum, H.D. Ghim and J.H. Choi	1080
Influence of Annealing on the Magnetic Properties of Fe₅₀Co₅₀ Films Y.Q. Li, G.X. Guo, L. Wang and X.L. Li	1084
A New Method for Temperature Measurement by the Nanometer Particles L.H. Su, Y.J. Sun, J.Q. Zhang, S.R. Qiao, Y.L. Ai, L. Zhang and Y.L. Wang	1088
Characterization of Iron Doped Titanium Nitride Thin Films Prepared by Magnetron Sputtering W.S. Lin, J. Chen and J. Zhou	1093
Toxicology Studies of a Superparamagnetic Iron Oxide Nanoparticle <i>In Vivo</i> S.Y. Liu, Y. Han, L.P. Yin, L. Long and R. Liu	1097
Preparation of Aspect Ratio-Controlled Carbon Nanotubes D.Y. Kim and H.J. Jin	1101
Fabrication of Organic Silk Fibroin/Multiwalled Carbon Nanotube Composite Cryogels by Freeze-Drying Method S.M. Kwon, H.S. Kim and H.J. Jin	1105
Multiwalled Carbon Nanotubes-Incorporated Polyurethane Nanocomposites Y.S. Kim, R. Jung, H.S. Kim and H.J. Jin	1109
Nanosize Copper Dispersed Ionic Liquids as an Electrolyte of New Dye-Sensitized Solar Cells F.L. Chen, I.W. Sun, H.P. Wang and C.H. Huang	1113
Sensing of Ethanol with Nanosize FeZnO Thin Films G.H. Kuo, H.P. Wang, H.H. Hsu, C.J.G. Jou, Y.M. Chiu and F.L. Chen	1117
Applications of Cu@C Nanoparticles in New Dye-Sensitized Solar Cells C.Y. Liao, H.P. Wang, F.L. Chen, C.H. Huang and Y. Fukushima	1121
Chemical Structure of Nanosize Copper Wires in MCM-41 H.L. Huang, H.P. Wang, Y.L. Wei and T.L. Hsiung	1125
Analysis of Infrared Thermography during Tensile Test of GFRP J.W. Kim, D.G. Lee, J.K. Sim, J.Y. Kim and S.H. Choi	1129
Thermal Viscoelastic Analysis of 3D Fabric Nanocomposites N.J. Zhou, A. Beyle and C.C. Ibeh	1133
Periodic and Chaotic Motions of a Simply Supported FGM Plate with Two Degrees-of-Freedom Y.X. Hao, W. Zhang, J. Yang and L.H. Chen	1137
Blending of Natural Fibres and Thermoplastics by Screwless Extrusion K. Jayaraman and R. Halliwell	1141
The Influence of Surface Modification of Multi-Walled Carbon Nanotubes on the Electrical Property of its Polyethylene Composites N. Xie, Q.J. Jiao and C.G. Zang	1145
Preparation, Adhesive Performance and Stability of Natural Rubber Latex Grafted with N-Butyl Acrylate (BA) and Methyl Methacrylate (MMA) P. Chumsamrong and J. Mondobyai	1149
Investigating Nanoparticle Effect on the Mode I Fracture Toughness of Glass/Epoxy Composites J.L. Tsai and Y.L. Cheng	1153

Diagnostic Imaging for Structural Damage Z.Q. Su, L. Cheng, X.M. Wang and L. Yu	1157
The Effect of Octa(Maleimidophenyl)Silsesquioxane on Thermal and Dielectric Properties of Bismaleimide-Triazine Resins D.S. Yu, H.W. Cao and R.W. Xu	1161
Polycarbonate-Carbon Nanofibers Composites: An Electron Spin Resonance Study M. Chipara, W.J. Brittain, K.T. Lau and M.D. Chipara	1165
Stretching-Induced Orientation for Improving the Mechanical Properties of Electrospun Polyacrylonitrile Nanofiber Sheet S.Z. Wu, F. Zhang, X.X. Hou and X.P. Yang	1169
Electric Field Distribution in Macro Fiber Composite Using Interdigitated Electrodes H. Nasser, A. Deraemaeker and S. Belouettar	1173
Two-Dimensional Fractal Structures of Metal Oxides Synthesized at Room Temperature L. Chen, J. Xu and M.A. Morris	1177
Synthesis and Characterization of Europium Ternary Luminescence Coordination Compound Nanorods H.J. Ren, Z.F. Cui, F.H. Chen and G.Y. Hong	1181
Fourier Transform Infrared Study on Sol-Gel Derived Manganese-Doped Hydroxyapatite A.N. Natasha, I. Sopyan and A. Zuraida	1185
Fracture Behavior of Natural Fiber Reinforced Biopolymer Matrix Composite Y. Yusliza, A. Zuraida and I. Sopyan	1189
Photo- and Thermo-Chromic Study of the Ethylenediamine Trimolybdate D.H. Sun, H.J. Zhang, J.L. Zhang and J.B. Yu	1193
Titanium Alloy Ti6Al4V's Corrosion Resistance Behavior by Double Glow Discharge Plasma Hydrogen-Free Carburizing Process G.H. Zhang, P.Z. Zhang, M.Z. Yu and Z. Xu	1197
Study on Osteoinductivity of Injectable Calcium Phosphate Cement Scaffold H. Liu, C.R. Zhou, H. Li and Z.Z. Li	1201
Study on the Low-Velocity Impact Behavior of CFRP with Nanoclay-Filled Epoxy Matrix I. Kosar, K. Shafi Ullah, J.K. Kim and A. Munir	1205
Fabrication of Highly Ordered Titania Nanotubes in Viscous Organic Electrolytes F. Zhang, S.G. Chen, L.J. Yang and Y.S. Yin	1209
Tensile Properties of Different Silkworm Silk Fibers H.Y. Cheung, K.T. Lau, Y.Q. Zhao and J. Lu	1213
Preliminary Study on a High Strength Nanoclay/Epoxy Coating for Ocean Engineering Applications M.L. Chan, K.T. Lau, M.P. Ho, T.T. Wong and Y.S. Yin	1217
Manufacture of a Homogenous Nano-Diamond/Poly (Lactic Acid) Bio-Engineered Composite Y.Q. Zhao, K.T. Lau and H.L. Li	1221
Production of a Green Composite: Mixture of Poly (Lactic Acid) and Keratin Fibers from Chicken Feathers Y.Q. Zhao, K.T. Lau, T. Liu, S. Cheng, P.M. Lam and H.L. Li	1225
Noise Reduction by Using Composite Plate C.W. Chau, Y.S. Choy, K.T. Lau and Y. Liu	1229
Plastic Optical Fiber Sensors for Measurement of Large Strain in Geotextile Materials K.S.C. Kuang, S.T. Quek, C.Y. Tan and S.H. Chew	1233
High-Energy Influences of Substance's Flows on Structural Changes in Materials V.I. Ovchinnikov, A.S. Kalinichenko, E.A. Doroshkevich, O.V. Roman and U.A. Kalinichenko	1237
Glass Substrate with UV Imprinted Polymer Moth Eye Structure S.H. Hong, E.J. Hong, B.J. Bae and H. Lee	1241
Study on Non-Halogen Flame-Retarded HIPS with High Strength HIPS Z.W. Wu, Q.J. Jiao, C.G. Zang and H. Lan	1245
Optimal Design of Nanostructures Used in Vibration Control A. Muc	1250
Homogenization, Numerical Analysis & Optimal Design of MR Fluids A. Muc and M. Barski	1254

Variational Approach in Optimal Design of Piezoelectric Sensors & Actuators A. Muc and P. Kędziora	1258
Application of Three-Dimensional Displacement and Strain Distribution Measurement by Windowed Phase-Shifting Digital Holographic Interferometry Y. Morimoto, T. Matui and M. Fujigaki	1262
Development of Model of the Superdeep Penetration of Microparticles V.A. Simonenko, V.V. Bashurov, N.A. Skorkin and T. Elperin	1266
Possible Reasons of Degradation of Elements of Space Vehicle Control-Systems J. Owsik and V.V. Sobolev	1270
Determination of Damages in Superdeep Penetration and Alteration of Properties of Materials under the Extreme Conditions A.I. Belous, V.I. Ovchinnikov, L.D. Buiko, T.V. Petlitskaya and E.A. Doroshkevich	1274
Characterisation and Novel Applications of Fibrillar Polymer Composites D. Bhattacharyya, R.J. Shields and S. Fakirov	1278
Behavior of CFRP Wrapped Concrete Columns with Partial Deteriorated Strength H. Wei, J.S. Li and X. Guo	1282
Nano-Cellulose as Promising Biocarrier M. Ioelovich and O. Figovsky	1286
Surface Characteristics of Magnesium Alloys Treated by Anodic Oxidation Using Pulse Power Y.K. Kim, M.H. Lee, M.N. Prasad, I.S. Park, M.H. Lee, K.W. Seol and T.S. Bae	1290
Bone-Implant Contact of Surface-Modified Titanium Implants N.G. Kim, I.S. Park, H.K. Yi, S.G. Ahn, K.Y. Song, T.S. Bae and M.H. Lee	1294
Irradiation of Synthesized Magnetic Nanoparticles and its Application for Hyperthermia K.P. Chang, C.H. Cheng, Y.C. Chiang, S.C. Lee, C.Y. Lin, B.T. Hsieh, C.C. Ko and Y.L. Huang	1298
Surface Morphological Changes Accompanying Dissolution of Bioactive Glass: Effect of Residual Stress J.A. Nychka and D. Li	1302
Effect of pH Value on Synthesis of Calcium Phosphates Y.Q. Huang, L.J. Sun, A.H. He, Q.Q. Wang and C.C. Han	1307
Surfaces Modified by Amphiphilic Copolymer: Preparation and Application X.N. Chen, Z.Q. Qi, Y.Q. Huang, R. Pelton and R. Ghosh	1311
Near-IR Sensitive Au-Au₂S Nanoparticles with Biocompatibility for Drug Delivery W. Liu, Z.Y. Wang, P. Yin, L. Ren and Q.Q. Zhang	1315
Novel Organic-Inorganic Hybrid Nanoparticles as Non-Viral Gene Vector Y. Zhao, P. Yin, Z.Y. Wang, L. Ren and Q.Q. Zhang	1319
Bioassay Based on Photonic Crystal X.W. Zhao, H. Xu and Z.Z. Gu	1323
Distinctive Degradation Behaviors of Electrospun PGA, PLGA and P(LLA-CL) Nanofibers Cultured with/without Cell Culture Y.X. Dong, S. Liao, S. Ramakrishna and C.K. Chan	1327
A Retrievable Polymer Urethral Stent for Treatment of Urethral Strictures Z.Q. Zhang, K. Hu, H.X. Huo, K.N. Chen, B. Meng and F.Z. Cui	1331
Activation of MAPK and NF-κB Induced by Biomaterials in Vascular Endothelial Cells J. Sun, X.N. Mu and T.T. Ding	1335
An Evaluation of CaF₂ Doping Tricalcium Silicate as Dental Restorative Materials Z.Z. Xu, Q. Lin, Y.B. Li, X.H. Lan and C.H. Lu	1339
Construction of Nonbiofouling Biofunctional Glass Surface by Self-Assembled Monolayer and Graft Hydrophilic Polymer Z.B. Liu, B. Zhang, B.Y.F. Pow, M. Yang and A.F.T. Mak	1343
Poly(L-Lactide)/Multiwalled Carbon Nanotube Composites: Interaction with Osteoblast-Like Cells <i>In Vitro</i> B.Y.F. Pow, A.F.T. Mak, M.S. Wong and M. Yang	1347
<i>In Vitro</i> Bioactivity of Potassium Titanate Whiskers Y.B. Li, Q. Lin, J.S. Chen, X.H. Lan, C.H. Lu, D.X. Li and Z.Z. Xu	1351
Kinetic Effect of Cationic Comb-Type Copolymers on DNA Hybridization A. Maruyama, L.L. Wu, N. Shimada and A. Kano	1355

Bio-Fabrication of Patterned Cellulose Nano-Fibers G. Wang, X.F. Chen, X.D. Shi, L.J. Yu, B.F. Liu and G. Yang	1359
Electrospinning Nanocomposite Nanofibers of Hydroxyapatite/Chitosan Y.Z. Zhang, B. Su and C.T. Lim	1363
Plasma Polymerized Thin-Films for Biosensors C.C. Chang, S.L. Wang, W.C. Tseng and M.J. Wang	1367
The Design of Novel Scaffolds by Integrating Microbial Cellulose onto Plasma Treated Polypropylene N. Wibowo, M.J. Wang, C.C. Chang and C.K. Lee	1371
Study on Blood Compatibility of SIS Modified by Plasma Surface Grafting Y.F. Zhao and X.F. Wang	1375
An Experimental and Computational Study on Zn-Substituted Hydroxyapatite F.Z. Ren, R.L. Xin, X. Ge and Y. Leng	1379
Biocompatibility and Osteogenesis of Calcium Phosphate Cement Scaffolds for Bone Tissue Engineering H. Guo, J. Wei, H. Kong, C.S. Liu and K.F. Pan	1383
Electrochemical Deposition of Fluoridated Calcium Phosphate Thin Film on Titanium Substrates X. Ge, F.Z. Ren and Y. Leng	1387
Deformation and Fracture of Bone Analogue Biomaterials Having Different Polymer Matrices M. Wang, Y. Liu, C.L. Au, P.K. Lai, L.Y. Leung and B.H. Chua	1391
Totally Biodegradable and Osteoconductive Composite Material Consisting of Polyhydroxybutyrate and Tricalcium Phosphate for Bone Tissue Repair Y. Liu and M. Wang	1395
<i>In Vitro</i> Degradation and Protein Adsorption Characteristics of PHBV/PLLA Blends and PHBV/PLLA-Based Tissue Engineering Scaffolds N. Sultana and M. Wang	1399
Characteristics and Chemical Stability of the Bioactive Titania Layer Formed on Ti, Ti-6Al-4V and NiTi SMA through a Low Temperature Oxidation Process T. Sun and M. Wang	1403
Investigation of Platelet Adhesion Behavior on Si-N-O Films Synthesized by Unbalanced Magnetron Sputtering Z.Y. Shao, P. Yang, Y.X. Leng, Q. Zhang, G.J. Wan, H. Sun, G.J. Cai and N. Huang	1407
Adsorption CD34 Antibody onto the Col/Hep Coating Film on Titanium to Improve Cytocompatibility of Titanium J.L. Chen, Q.L. Li, J.Y. Chen and N. Huang	1411
Deposition of Diamond-Like Carbon Films on Polyoxymethylene Substrates by Magnetic Filtered Cathodic Vacuum Arc Deposition L.X. Xu, P. Li, J. Wang, Y.X. Leng, H. Sun, G.J. Cai and N. Huang	1415
Study the Restenosis after Percutaneous Transluminal Coronary Angioplasty(PTCA) in the Organ Culture System A.S. Zhao, H.Y. Zhang, J.Y. Chen, G.J. Cai and N. Huang	1419
MCP-1 Expression Associated with Inflammation and Biomaterials T.T. Ding, J. Sun and P. Zhang	1423
The Biomedical Material of Functional ePTFE Hydrogels by the Cold Plasma Method and Radiation Technique T.H. Wu, K.S. Chen, S.C. Chen, Y.C. Yeh and L.H. Shen	1427
Influence of Hydrogen-Plasma Treatment on Blood Compatibility of Titanium Oxide Films Z.H. Yang, Y. Xu, P. Yang, Y.X. Leng and N. Huang	1430
Novel Silicon Based Anodic Spark Deposition Treatment for Dental Implant L. Sarinnaphakorn, P. Mesquida, R. Chiesa, C. Giordano, M. Fenlon and L. DiSilvio	1434
<i>In Vitro</i> Biocompatibility Study of Nano TiO₂ Materials W. Han, Y.D. Wang and Y.F. Zheng	1438
Insertion Behavior of Microneedles for Drug Delivery K.T. Shek and D.C.C. Lam	1442
Microstructure Control and Pseudoelasticity of Ti-Nb-Ge Alloy W.Y. Kim and H.S. Kim	1446

Effect of Oxygen Content on Microstructure and Mechanical Properties of Ti-Nb-Ge Alloys for Biomedical Application W.Y. Kim and H.S. Kim	1450
An Investigation into Dual-Source and Dual-Power Electrospinning of Nanofibrous Membranes for Medical Applications J.C. Kang, M. Wang and X.Y. Yuan	1454
Preparation of Lactic Acid Based Polyurethanes Modified by Castor Oil B. Fu, L. Xiao, L.J. Yu and G. Yang	1458
Preparation and Characterization of Golden-Colored Pigments Based on Silver Coated with Metal Oxides Y. Tateishi, H. Einaga and Y. Teraoka	1462
Effects of Lead and Boride Inhibitors on the Passivity of Nickel Alloy 600 Surface D.J. Kim, H.C. Kwon, S.S. Hwang, H.P. Kim and J.Y. Park	1466
A Study on the Tribological Behavior of Valve Train System by Low Friction Coating J.H. Seo, B.C. Na, J.Y. Kim, S.U. Park, Y.M. Lee, H.C. Kim, B.H. Lee and D.S. Lim	1470
Fabrication of Chemiluminescence Sensor Based on the Fucinalized MWCNT-Nafion Composite Film S.H. Kim, J.H. Oh, B. Yoo, D.J. Jung, M.H. Piao and S.H. Choi	1474
Radiolytic Deposition of Pt-Ru Catalysts on the Conductive Polymer Coated MWNT and their Catalytic Efficiency for CO and MeOH H.B. Bae, J.H. Ryu, B.S. Byun, S.H. Choi, S.H. Kim and C.G. Hwang	1478
Synthesis and Characterization of (C, N)-Alloyed Stainless Steel Coatings by High Energy Ion Assisted Magnetron Sputtering Deposition E. Grigore, C. Ruset, X.Y. Li and H.S. Dong	1482
Mechanical Mechanisms of Chemical Mechanical Polishing S. Danyluk and S.H. Ng	1486
Tribological Properties of a Partially Transformed Carbon Layer from SiC H.T. Bae, H.J. Choi, J.H. Jeong and D.S. Lim	1490
Effects of Surfactant Concentration on Step Height Reduction of SiO₂ in Chemical Mechanical Polishing with Ceria Slurry B.J. Cho, Y.M. Lee, D.H. Shin, D.S. Lim, J.H. Shin, J.Y. Park and Y.S. Choi	1494
The Characteristics and Thermal Stability of CrN/AlSiN Multilayer Coatings S.M. Kim, G.S. Kim, S.Y. Lee and B.Y. Lee	1498
Effect of Foreign Metal Doping on the Gas Sensing Behaviors of SnO₂-Based Gas Sensor K. Suematsu, T. Honda, M. Yuasa, T. Kida, K. Shimanoe and N. Yamazoe	1502
Deposition of Pd onto SnO₂ Nanoparticles-Based Gas Sensors Using a Pd Complex as the Precursor T. Kida, H. Kurachi, M. Yuasa, K. Shimanoe and N. Yamazoe	1506
H₂ Sensing Performance of TiO₂-Based Diode-Type Sensors Y. Shimizu, K. Sakamoto, M. Nakaoka, T. Hyodo and M. Egashira	1510
Characterization of Intercalation Type Organic/MoO₃ Nanohybrids and their VOC Sensing Properties I. Matsubara, T. Itoh, W. Shin, N. Izu and M. Nishibori	1514
Effect of Supported Transition Metal on CO Sensing Performance Using SnO₂ in Reducing Atmosphere H. Yamaura, M. Nakaoka and H. Yahiro	1518
Resistive Type Sensor Using Ceria Thick Film with Nano Particles N. Izu, T. Itoh, M. Nishibori, W. Shin and I. Matsubara	1522
Fabrication of Nano Particles on Vertically Aligned Multi-Wall Carbon Nanotubes by E-Beam Evaporation T.F. Hsieh, C.C. Chuang, Y.C. Chou and C.M. Shu	1526