

# Table of Contents

## Preface and Committees

## Chapter 1: Composites

<b>Preparation and Properties of Nanocomposites Based on Poly(<i>Vinyl acetate</i>) and Montmorillonite Organized with Acrylic Acid</b> J. Wang	3
<b>Mechanism of Silicon/Carbon Reaction for <math>\beta</math>-SiC Bonded SiC Materials</b> C.J. Lv, Y. Yang, Z. Liu, L.F. Li, C. Chang and J.F. Gong	12
<b>Effect of Particles Diameter on the Properties of Ni Group ER Fluid</b> S.K. Tan, X.P. Song, L. Qiao, H.Y. Guo, S. Ji, H. Zhao and Y.S. Zhang	18
<b>Effect of Magnetic Field Treatment on Temperature-Sensing Property of Polyethylene-Based PTC Composites</b> C.M. Li, Y. Wang, X.W. Yan, Y.M. Yang, Y. Yang and S.M. Gao	23
<b>Preparation and Characterization of <math>\text{ZrO}_2/\text{CNTs}</math> by Hydrthermal Method</b> Y.Y. Zheng, W.J. Ji, J. Li, H.M. Huang and M. Sun	28
<b>Optical Properties of in-Doped Wurtzite ZnO Based on First-Principle</b> F.W. Xie, P. Li, L.Q. Zhang, X.L. Wang, H. Wang and X.F. Song	32
<b>Preparation and Microwave Absorption Property of the Core-Nanoshell Composite Materials Doped with Nd</b> R.X. Che, B. Yu and L.Q. Wei	36
<b>Illumination Control System and Drive Design of Large Power LED Lights</b> C.H. Li, L. Zhao, S. Hu and L.Y. Shen	40
<b>The Semantics of the Modern Ceramic Products</b> C.D. Wang and Z.X. Zhang	44
<b>Graphene-Poly(<i>Methyl Methacrylate</i>) Composites Prepared by Two Methods</b> L. Lei, J.H. Qiu, X.L. Wu, Y. Zhao and E. Sakai	49
<b>Fold-Resistant Characteristics of the Laminate Composites for Flexible Structure</b> Y.X. Liu, Y.Y. Liu, C.G. Wang and H.F. Tan	54
<b>Microstructural Observation of Ni-WC Surface Alloyed Carbon Steel</b> C.Q. Guo and Q.H. Wang	58
<b>Study on the Precipitation Behavior of the Drill Pipe Steel Microalloyed with Nb</b> X. Xu, S.Y. Song, Y.R. Feng and X.H. Wang	63
<b>The Innovative Design of New-Style Clamping Automobile Tires Conveyance Based on TRIZ</b> Q. He, Q. Su, M.Q. Zhang, R.J. Zhang and S. Qu	69
<b>Research and Application of New Oxygen Lance for BOF Steelmaking</b> J.P. Rao, G.Q. Li and Z.Z. Yang	74
<b><i>In Situ</i> Production of Fe-TiC Surface Composite</b> J. Wang, Y.C. Ding, H. Cheng and Y.S. Wang	80
<b>Preparation of a Simple Heat-Resistant Coating of the Optical Fiber Embedded in Composites</b> Y.Z. Yin, J.H. Wang, Z.H. Yang, J.X. Sun, H. Tian and L.L. Gong	86
<b>Synthesis of [1,2,5]thiadiazolo[3,4-C]pyridine: A Novel Analogue to BT</b> X.X. Sun, Y.Z. Lou, Q.Q. Chen, L. Li, X.X. Zhuang and Y.C. Li	90
<b>Preparation and Property of Epoxy Based Nano-<math>\text{SiO}_2/\text{TiO}_2</math>/Polyimide Hybrid Enhanced Sizing</b> C. Zhou, J.L. Cheng and Y. Sun	96
<b>Optimum Design of Composite Armor against Transverse Impact</b> J.G. Zhang, Z.Q. Zhu, D.Q. Ma, R.G. Wang and X.D. He	101
<b>Significant Enhancement of Triterpenoids Production by <i>Phomopsis</i> Elicitors in Cell Suspension Cultures of <i>Betula Platyphylla</i> Suk.</b> Q.L. Zhai, Y.G. Zhan, D.Q. Xu, X.D. Wang and G.Z. Fan	105

<b>Preparation, Characterization and Properties of Crosslinked Chitosan/Palygorskite Resin with Tannic Acid as Template Molecules</b>	
J. Wu, J. Zhang, H.J. Zhang and Y. Jing	111
<b>Interfacial Combination and Mechanical Properties of BC/PVA Multilayer Composite Hydrogels</b>	
J. Tan, Y.D. Zheng, R. Tian, S.B. Zhang and H.Y. Chen	116
<b>Effects of Phenolic Oligomer on the Dynamic Mechanical Properties of Nitrile Butadiene Rubber</b>	
C. Su, P. He, L.H. Xu and C. Zhang	120
<b>Effect of Emulsified Asphalt on Temperature Susceptibility of Cement Asphalt Mortar</b>	
Y.H. Zhang and F.Z. Wang	124
<b>Studied Catalysis of CuO Nanocrystal on KClO<sub>4</sub> Decomposition</b>	
S.H. Ba, Z.X. Sun, Z. Zhang and C.H. Zhang	128
<b>Inserting the GS1 to HACCP System to Guarantee the Food Safety</b>	
L.Y. Zhao, M. Xia and J.J. Guan	132
<b>Effect of Volume Fraction of Reinforcement on the Microstructure and Mechanical Properties of <i>In Situ</i> (TiB+TiC)/Ti Composite</b>	
Y. Chen, C.J. Zhang, F.T. Kong, H.Z. Niu, F. Wu and S.L. Xiao	137
<b>Tribological Properties of Aluminum Alloy Coating Deposited on Magnesium Alloy Surface by Cold Spray</b>	
S. Zhu, G.F. Han, X.M. Wang and W.B. Du	142
<b>Effect of Aspect Ratio of Micro Sphere Lens Arrays on the Optical Property of Diffuser</b>	
X.X. He, X.T. Zheng, D.M. Wu, Y.J. Zhang, J. Zhuang and Y. Zhou	147
<b>The Mechanical Characteristics of Straw/poly(<i>Lactic Acid</i>) Composite Materials</b>	
X.L. Wu, J.H. Qiu, L. Lei, Y. Zhao and E. Sakai	153
<b>Studies on Preparation and Methanol Permeability of PVDF-g-PAMPS Membrane</b>	
J. Xu and G.B. Guo	157
<b>Activated Carbon Supported Iron Catalyst for the Fischer-Tropsch Synthesis</b>	
H.Y. Ban, J. Wei, X.Z. Sun and Z.G. Fang	161
<b>Study on the Synthesis and Characterization of Polylactic Acid/Maleic Anhydride Copolymer</b>	
Y.N. Chen and J.C. Zhang	165
<b>The Preparation Method of Solid Electrolyte Lanthanum Fluoride Powder</b>	
Y.S. Han, Q. Zhang, S.F. Fang and C.Z. Wang	172
<b>Reaction Sintering of Carbon Fiber Reinforced Silicon Carbide Composite by Gel-Casting Method with Water Soluble Epoxy Resin as Gel Former</b>	
J. Wei, J.Z. Fang and A.F. Zhang	176
<b>Buckling and Post-Buckling Analysis of Symmetrically Angle-Ply Laminated Composite Beams under Thermal Environments</b>	
X.P. Chang, Z. Liang and Q.Y. Liu	182
<b>Chemical Preparation and Characterization of Polypyrrole-Polylactic Acid Conductive Composite Membranes</b>	
J.J. Chen and J.Y. Men	187
<b>Mechanical Study and Microscopic Characterization of Lignin/PE Composites</b>	
X.Y. Lv, Z.H. Gao, Y.H. Zhang and M.W. Di	191
<b>Investigation of Phase Composition and Microstructure of the B<sub>4</sub>C/BN Nanocomposite Powders Fabricated by Chemical Reaction and Heat Treatment Process</b>	
T. Jiang	195
<b>Influence of Processing Temperature on the Failure Behavior of Fabricated Composites</b>	
G.N. Liu, H.D. Zhao, Q. Zhu, J.R. Dong and M.H. Zhao	199
<b>The Thermal Properties of Polystyrene/Magnetic Polyhedral Oligomeric Silsesquioxane (POSS) Nanocomposites Prepared under Magnetic Field</b>	
X.Y. Song, B.W. Cheng and J.F. Xing	203
<b>Effect of Microelements on Sn-20Bi Solder</b>	
Y.S. Li, Y.F. Luo and X. Chen	207
<b>The Preparation and Characterization of Solid Superacid S<sub>2</sub>O<sub>8</sub><sup>2-</sup>/SnO<sub>2</sub>-SiO<sub>2</sub></b>	
X.Y. Hao, H.F. Guo, P. Yan and X. Li	212

<b>Intercalation Lithium Behavior of Molybdenum Disulphide as Anode Materials for Lithium Ion Battery</b>	
T.K. Zhao, G.M. Li, L.H. Liu, Y.N. Liu and T.H. Li	218
<b>Model Test Research on Subsidence of Geogrid-Reinforced and Pile-Supported Foundation</b>	
R.J. Chen, C. Zhang, Y.F. Tian and J. Guo	222
<b>Analysis of Patch Bonded Repair to Carbon Fiber Composite Laminates with Low Velocity Impact Damage</b>	
L. Wang, W.L. Zhou and X.G. Shi	226
<b>Removal Soil Lead (Pb) from EDTA Leachate by Bentonite and Modified Bentonite</b>	
Y. Fu and Y.S. Cui	230
<b>Study on Structures and Properties of CaSO<sub>4</sub> Whiskers/PVC Composites</b>	
S.H. Zhang, W.J. Gan, W.X. Sun, C.J. Ling, X. Wang and Q.F. Li	234
<b>An Experiment Study on the Moisture Absorption and Desorption Characteristic of Humidity-Controlled Composite Building Blocks in Greenhouse</b>	
F.L. Wei, C.L. Li, E. Liu and C.B. Zhang	240
<b>An Approach to Establish Interlaminar Micro Structure of 3-3 Connectivity in Laminated Composites</b>	
G. Liu, D.J. Zhang, P. Zhang and X.S. Yi	244
<b>Preparation of Carbon-Encapsulated Alloy Nanomaterials by Detonation Decomposition of Nitrate Complex Explosives Containing Multi-Metallic Ions</b>	
X.J. Li, N. Luo and K.X. Liu	249
<b>A Simple Method to Disperse Carbon Nanotubes by Shearing Process</b>	
X.W. Wu, J.Z. Xiao, F. Xia, Y.G. Hu and Z. Peng	255
<b>Preparation of Imidacloprid Microemulsion and its Formula Optimization</b>	
Y.Q. Wu, H.Y. Xia and F. Zhao	260
<b>Effect of Ceramic Powder Size on Microstructure and Mechanical Properties of Ti(C, N)-Based Cermets</b>	
B. Zhan, N. Liu, W. Xu and J.G. Shi	265
<b>The Damage and Texture Features of High-Speed Rail(THS) Wheel Tread Based on EBSD</b>	
H. Zuo, F.W. Wang and Y.H. Feng	273
<b>Evaluation Methods for the Dynamic Humidity Control Performance of Humidity-Controlled Composite Materials in Greenhouse</b>	
F.L. Wei, W. Chen, E. Liu and C.B. Zhang	277
<b>Research on Mechanical Properties of FML</b>	
C.H. Wang, J. Tian and X. Lu	281
<b>Effects of Modified Carbon Nanotubes on Curing and Mechanical Properties of N-Phenyl Maleimide/Bismaleimide Composites</b>	
L. Liu, J. Song and C. Wang	285
<b>The Effect of Carbon Substrates on <i>In Situ</i> Synthesis Carbon Nanotube and Carbon Nanospheres by CVD Process</b>	
Z.F. Sun, L.H. Qi, Q.J. Gong and Y. Shu	293
<b>Researches on the Strength of Composite Material Barrels Based on Continuum Damage Mechanics</b>	
Q.J. Wu, K.D. Zhou and L. He	297
<b>Numerical Simulation of the Change of Gas Hydrate Layer of Qinghai-Tibet Plateau in Global Warming Situation</b>	
Y.C. Qiao, Z.Q. Guo, B.G. Zhang and Y.L. Shi	302
<b>Study on Threading-up Characteristics of Buttress Thread of Petroleum Coupling</b>	
J. Liu, G. Li and Y.K. Song	308
<b>Effect of 11S/7S Ratios on Mechanical and Barrier Properties of Edible Films Based on Soybean Protein Isolate</b>	
X.Y. Zhao, K. Guo, C. Zhang, Y. Ma and X.H. Li	312
<b>Preparation and Properties of Antistatic SMS Composite Nonwovens</b>	
W.M. Kang, J. Yan and B.W. Cheng	320
<b>Influence of AC Driving Current on Magneto-Impedance Effect in Glass-Covered Co-Based Microwire</b>	
B. Tian and H. Shi	324

<b>Elastic Constants and Thermodynamic Properties of Cu, Cu<sub>2</sub>O and CuO from First-Principles Calculations</b>	
N.N. Liu, J.L. Sun and D. Wu	328
<b>Performance of Concrete Made with Manganese Slag</b>	
D.Q. Liang, F. Qin, X.G. Li and J.B. Jiang	333
<b>Study on Using Numerical Method to Predict Wear Volume of Rail</b>	
C.Y. Wang, P. Shen and Q.Y. Liu	339
<b>Anodic Oxidized Titania Nanotubes as Drug Delivery</b>	
D. Mao, X.F. Xiao, C.Y. Wang, H.Z. Tang and R.F. Liu	343
<b>Crystallization Properties of Polypropylene/Graphene Oxide Nanocomposites</b>	
Z.R. Ying, Z.M. Dang, X.H. Yan, X. Ouyang and Y.Y. Gao	347
<b>Finite Element Analysis of Centrally-Debonded Composite Sandwich Beam under Four Point Bending</b>	
M.K. Yeh and Y.W. Chiu	351
<b>A New Test Setup for Experimental Test of RC Beams under Combined Shear and Torsion</b>	
S.B. Talaeitaba and D. Mostofinejad	355
<b>Poly(<i>Imino Ketone</i>)s Containing Sulfone Group</b>	
G.J. Chang, X. Luo, L. Zhang and R.X. Lin	359
<b>Study on the Disaggregation of Photosensitizer Pentalysine <math>\beta</math>-Carbonyl-Phthalocyanine Zinc <i>In Vitro</i></b>	
C.Y. Li, G.Y. Ruan, S.X. Dong, X.L. Shi, J.C. Chen and M.D. Huang	363
<b>Synthesis and Characterization of Nickel-Based Monolithic Aerogel via Sol-Gel Method</b>	
Y.T. Bi, H.B. Ren, B.W. Chen and L. Zhang	368
<b>Research of Plastic Material Dynamic High-Speed Tensile Machine's Measurement and Control System Based on FPGA</b>	
X.H. Xu, G.Q. Li, Q. Guo, F. Lin and X. Cai	372

## Chapter 2: Micro/Nano Materials

<b>Review on Research Status of Friction Stir Welding Technology</b>	
D.F. Zhang, F. Long, X.W. Chen, X.Q. Wen and H.S. Luo	379
<b>Coupling Grafting Modification of Nano-ZnO Using N,N'-Carbonyldiimidazole as Activator</b>	
H.Z. Chen and L.L. Jia	383
<b>Injury on Blood Systems Caused by Silicon Dioxide Nanoparticles</b>	
Z.W. Huang, J. Sun, L.Y. Shi and D.W. Zhang	387
<b>Experimental Study on the Deformation Performance of Cement-Stabilized Macadam Reinforced with Fiber</b>	
C. Zhang, W. Wu and R.J. Chen	391
<b>Microstructures and Mechanical Properties of Cast Aluminum Bronze Enhanced by Modified Nano-SiC Powders</b>	
J. Yang, M.L. Chen and H. Gao	396
<b>Effects of Liquid Nitrogen on Cryogenic Machining of Aisi D2 Hardened Steel</b>	
S. Ravi and M. Pradeep Kumar	400
<b>A Study on Mathematical Modeling Technology for Magnetic-Fluid Grinding</b>	
S.Q. Wu and Y.M. Li	406
<b>Research on Fibrillated Nanofibers and Application of High Efficiency Filter Material</b>	
Y. Tian, Y. Liang, Y. Cui and Z. Zhang	411
<b>Study of Oxidation and Passivation Behavior of Fe Noparticles</b>	
M. Wang	415
<b>Preparation and Properties of Alginate Fibre</b>	
Y. Lian, J.Y. Wu, D.P. Zhou, H.M. Wang, D.W. Huang and Y.H. Huang	419
<b>Effect of Bentonite Binder on Adsorption and Cation Exchange Properties of Granulated Nano NaY Zeolite</b>	
A. Charkhi, M. Kazemeini, S.J. Ahmadi and S. Ammari Allahyari	423
<b>Controlling Aspect Ratio of Copper Group Nanowire Arrays by Electrochemical Deposition in the Nanopores of AAO</b>	
X.Y. Sun and F.Q. Xu	429

<b>Preparation of Nano-CuS by Phase-Transfer Method and its Application to CuS Modified Electrode</b> C. Xu, X.H. Zhang, J. Zhang and H.Z. Yin	433
<b>Study on Properties and Cross-Linking Structure of NR Dried by Microwave</b> Y.Z. Wang, F.Q. Zhang, M. Chen, M.Z. Lv and H.H. Huang	442
<b>Research on the Process of a Green Method for Preparing the Alumina Nanofibre</b> L. Li, W.M. Kang and B.W. Cheng	446
<b>A Simple and Sufficient Method to Fabricate ZnO Nanowire Thin-Film Transistors</b> Z.Q. Dai, B. Hui and Y.F. Zhang	451
<b>Trial Research on the Engineering Properties of the Roaming Polyurethane</b> W. Wu, C. Zhang and R.J. Chen	455
<b>Hydrothermal Synthesis and Photocatalytic Properties of Flower-Like CdS Nanostructures</b> H.M. Wang, D.P. Zhou, Y. Lian, M. Pang and D. Liu	460
<b>Influences of Additive Si on the Synthesis of Diamonds Using Fe Power as Catalyst</b> Y.J. Zheng, H.L. Huang, X.P. Jia and H.A. Ma	464
<b>Effects of Hydrogen on Electrochemical Behaviors of X80 Steel in Simulated Soil Solution</b> C. He, X. Chen, Y. Xu and Z.Y. Liu	468
<b>Formulation of Vanillin Cross-Linked Chitosan Nanoparticles and its Characterization</b> G. Wang, P.W. Li, Z. Peng, M.F. Huang and L.X. Kong	474
<b>The Controllable Flexible Features of ZnO Thin Film Gas Sensor</b> X.L. Cao	478
<b>Finite Element Analysis of the Effect of Blank Holder Force on Deep Drawing of Bottom of Vacuum Flask</b> L.R. Zhou and X.W. Hu	483
<b>Tribological Property of Nano-Cu as Additive in Lubricating Oil</b> S.X. Wang and X.R. Gao	487
<b>A Multi-Function Agent Used in Drilling Fluid and Completion Fluid MFA-1</b> P.Q. Wang, Z.X. Yu, D. Yin, H.J. Liang and K.B. Yang	491
<b>Numerical Exploration of the Defect's Effect on Mechanical Properties of Nanowires under Torsion</b> H.F. Zhan, Y.T. Gu, C. Yan and P.K.D.V. Yarlagadda	498
<b>First Principles Study on Shear Deformation of TiN/BN/TiN Interface</b> W. Gao, F. Xie and K.J. Jia	502
<b>Corrosion Behavior of TP95S Anti-Sulfur Casing Steel in High Temperature High Pressure H<sub>2</sub>S/CO<sub>2</sub> Environment</b> B. Wang, D.M. Zhou and J.H. Bai	506
<b>Study on the Precision Forging Processes of Gears Using FEM Analysis</b> Q.P. Zhang, Y.Z. Wang and H.Y. Cui	511
<b>Study on Antibacterial Efficacy and Catalytic Capability of Nanocrystalline Magnesia</b> X.D. You, M.F. Zhu, H.B. Su, P. Chen and C. Deng	515
<b>Preparation and Characterization of ZnO Nanowire Arrays Grown on Different ZnO Seed Layers by Hydrothermal Method</b> S. Liu, W.G. Yang, Z. Hu, Y.L. Wang, K. Tang, L.J. Wang and W.M. Shi	519
<b>Study on the Surface Quality of Fender NC Incremental Forming</b> L.R. Zhou	523
<b>Geometrically Nonlinear Analysis of Cross-Ply Laminated Composite Beams Subjected to Uniform Temperature Rise</b> X.P. Chang, X.D. Zhang and Q.Y. Liu	527
<b>Investigation on Dislocations in C-Plane Electron-Irradiated GaN Epilayers by Wet Chemical Etching</b> Y. Tian, L.M. Liang, W.C. Wu, Q.Y. Hao and C.C. Liu	531
<b>Soft Modeling of Wire Electrical Discharge Machining of WC-Co Composite</b> V. Muthuraman and R. Ramakrishnan	535

### Chapter 3: Steel and Iron

<b>Simulation and Experiment of Dynamics of Flange Structure with Bolted Joint</b> G.Y. Zeng and D.F. Zhao	543
---	-----

<b>Analysis on the Influence of Vibration Performance of Air-Gap of Ceramic Motorized Spindle</b>	
L.X. Zhang, Y.H. Wu and L.Y. Wang	547
<b>Microstructure and Properties of Forging Engine Valve Seat</b>	
Z.D. Huang	552
<b>Study on Recarburization by a New Carbon-Manganese Alloy Carburant</b>	
J. Chen, X.T. Liang, J.H. Zeng and T.M. Chen	556
<b>Study on the Relations between the Structural Parameters and the Dynamics Properties</b>	
D.F. Zhao and G.Y. Zeng	562
<b>Effect of Solid Solution Treatment on Corrosive Action of 00Cr26Ni5Mo2Cu3Re Duplex Stainless Steel in Acid Stage</b>	
H.P. Zhao and S.X. Wang	566
<b>Novel Active Disturbance Rejection Control for Permanent Magnet Linear Synchronous Motor without Sensor</b>	
C.S. Tang and Y.H. Dai	571
<b>Microstructure and Mechanical Properties of 45 Steel by Zero Time Holding Quenching</b>	
X.W. Chen, D.F. Zhang, G.W. Long, Q. Zou and L. Wang	577
<b>Research on the CAD / CAM Collaborative Mode Based on the IOT</b>	
L.J. Cao	583
<b>Precipitation Behavior and its Effect on Strengthening of High Strength and Toughness Drill Pipe Steel</b>	
F. Hu, L.H. Han, H. Wang, Y.R. Feng and H.L. Li	587
<b>Continues Cooling Transformation Behavior of Low Carbon Mn-Nb-B Steel</b>	
Z.T. Duan, Y.M. Li, F.X. Zhu and H.Y. Zhang	595
<b>Web Based Dss for Inventory and Scrap Optimization in a Printing &amp; Packaging Industry</b>	
V. Govindarajalu and V.S. Senthil Kumar	599
<b>Effects of Geometry on Aerodynamics of CFO</b>	
B. Han, Z.D. Su, Z.C. Jiang, Z. Du and Z.Q. Yin	606
<b>Performance of Externally Pressurized Dry Gas Seal</b>	
W.B. Zhu, S.R. Zhou and H.S. Wang	610
<b>The Study on the Low Yield Strength for Super Fine Grain and High Strength Bearing Nb if Steel</b>	
H.M. Zhang and L.F. Qiao	615
<b>Study on Kinematics and Simulation of Robotic Arm</b>	
X.L. Lei, R.C. Ma and W. Gou	619
<b>Design of a Generic Postprocessor Based on UG</b>	
T.G. Li, D.M. Liu, Z.G. Fan, C.L. Fu and W.S. Wang	625
<b>3-D Stress Analysis of Pneumatic Pen Cylinder with Preload in Mounting Nut</b>	
D. Jiang, P. Yang and R.T. Ma	629
<b>Size Dependent Pull-in Phenomena in Electro-Staticly Actuated Micro-Beam Based on the Modified Couple Stress Theory</b>	
J.F. Zhao, S.J. Zhou and B.L. Wang	633
<b>The FEM Analysis for Magnesium Alloy Honeycomb Panel</b>	
X. Gu, G.F. Quan and Z.M. Ding	641
<b>Influence of Carbon Content on the Microstructure and Precipitates of the V-N Microalloyed Steels</b>	
J.Y. Ma, X.Z. Zhang, Y. Guan and Z.J. Deng	645
<b>Dynamic Search Structure Failure Path Method Based on Element Birth and Death Technology for Overhead Traveling Crane</b>	
G.N. Xu, J.H. Wang and R.G. Yang	650
<b>The Effect of the Native Oxidation on the Characteristic of Surface Electron in the In<sub>0.13</sub>Al<sub>0.87</sub>N Epilayer Grown by MOCVD</b>	
W. Zhou, S.J. Xia, X. Li, J. Yang and W. Tang	655
<b>The Finite Element Analysis of Sandwich Variable Cross-Section Plate Bending Performance</b>	
Y.P. Sun, C.W. Min, J. Li and Z.L. Teng	659

## Chapter 4: Ceramic

<b>Effect of <math>\text{Gd}_2\text{O}_3</math>-<math>\text{Nd}_2\text{O}_3</math> Compound Additive on Crystallization and Sintering of Fused Quartz Ceramic Materials</b>	
H.Y. Wei, S.L. Liu, J.L. Bu, S.B. Shen, L.X. Yu and Z.F. Wang	665
<b>Synthesis and Luminescent Behavior of <math>\text{Mn}_{(1-x)}\text{S:A}_x/\text{ZnS}</math> Core/Shell Nanocrystals</b>	
L.H. Li, Y.J. Gu, R.S. Xie and J.G. Zhu	669
<b>Flaky and Porous Rod-Like <math>\text{MgO}</math> Powders Prepared by Molten Salt Synthesis</b>	
J.Q. Sun, H. Chen, F. Cao and Q.H. Hu	674
<b>Influence of Temperature on the Densification and Lattice Parameters of Sialon Ceramic</b>	
Z.X. Tang, H. Zhang, H.H. Tan and X. Zhao	678
<b>Numerical Simulation for Flow Field in Hydrocyclone</b>	
F.L. Zhang, S.S. Deng and W.X. Hua	683
<b>Microstructure Simulation and Toughening Mechanism of Ceramic Tool Material</b>	
X.H. Zhu, C.Z. Huang, H.L. Liu, B. Zou and H.T. Zhu	688
<b>Influence of Nano-<math>\text{ZnO}</math> on Crystallization Behavior and Sintering Performance of Fused Quartz Ceramic Materials</b>	
Y.J. Chen, Z.F. Wang, L.X. Yu, J.L. Bu, R.L. Wang and R.S. Wang	695
<b>Preparation and Microstructure of Pressureless Sintered <math>\text{Si}_2\text{ON}_2</math>-<math>\text{SiC}</math> Ceramic</b>	
H.H. Tan, Z.X. Tang, X. Zhao and H. Zhang	699
<b>Influences of Progressing Parameters on Flake <math>\text{BaBi}_4\text{Ti}_4\text{O}_{15}</math> Powder Synthesized by Molten Salt Synthesis Method</b>	
J.L. Huang, L.H. Li, Y.J. Gu and Q. Li	704
<b>Preparation and Performance of Micro-Arc Oxidation Ceramic Coating of Titanium Alloy in Low Current Density</b>	
J.J. Xi, J. Zhao and G.J. Niu	708
<b>Effect of <math>\text{Si}_3\text{N}_4</math>-<math>\text{Y}_2\text{O}_3</math> Compound Additive on Crystallization and Sintering of Fused Quartz Ceramic Materials</b>	
S.L. Liu, Z.F. Wang, J.L. Bu, S.B. Shen and L.X. Yu	713
<b>Technology Research of Silicon Carbide by Extruding</b>	
Z.X. Tang, X. Zhao, H.H. Tan and H. Zhang	717
<b>Effects of Monoclinic <math>\text{ZrO}_2</math> with Different Particle Size on Properties of Zirconia Refractories</b>	
H.G. Sun, S.Z. Yan, P.T. Li, Q.H. Tan and A.J. Wu	721
<b>Effect of <math>\text{Si}_3\text{N}_4</math>-<math>\text{Nd}_2\text{O}_3</math> Compound Additive on Crystallization and Sintering of Fused Quartz Ceramic Materials</b>	
S.B. Shen, J.L. Bu, L.X. Yu, S.L. Liu and Z.F. Wang	728
<b>Study on Transitional Metal Oxides Energy-Saving Materials with High-Emissivity</b>	
Q.P. Wang, X.X. Guo, J.S. Zhang and W.H. Wu	732
<b>Fabrication and Mechanical Properties of Nano-<math>\text{Al}_2\text{O}_3</math> Based Composite Ceramic Tool Material</b>	
X. Li, B. Fang, X.G. Xu and C.H. Xu	736

## Chapter 5: Metal Alloy Materials

<b>A Nonlinear Study on the Prestressed Structure of High Strength Concrete - Steel Fiber Concrete</b>	
H.B. Wen, Y.L. Zhan and H.B. Liu	743
<b>Corrosion Behaviors of <math>\text{QSn4-3}</math> under Two Kinds of Marine Advantage Bacteria Environment</b>	
C.X. Gu, X.H. Du, G.J. Zhu, Y.S. Yin and W.G. Li	752
<b>Variance Analysis from an Inter-Laboratory Comparison about Different Emission Test Methods by a Certified Green Building Material in Taiwan</b>	
L.Y. Liao, C.M. Chiang and C.C. Chen	756
<b>Preparation, Characterization and Properties of Ternary Blends with Epoxidized Natural Rubber, Poly (<i>Lactic Acid</i>) and Poly (<i>Butylene Adipate-Co-Terephthalate</i>)</b>	
T. Nampitch and R. Magaraphan	762

<b>The Microstructure and Properties of ZL116 Alloy Obtained by the Nearby-Liquidus Electromagnetic Casting</b> C.Y. Wei and P. Wang	769
<b>Effect of Heat Treatment and Composition on Grain Size and Lamellar Spacing of a Lamellar TiAl Alloy</b> X. Chang, X.B. Zhang and J. Zhang	774
<b>EIS Study of Corrosion Behavior of Hot-Dip Galvanized Steel in 5% NaCl Aqueous Solution</b> S.Q. He and H. Zhong	779
<b>Influence of Sr Addition on Microstructure and Mechanical Properties of Ignition-Proof AZ91D-0.3Be Magnesium Alloy</b> F.Y. Han, L.H. Tian, H.X. Wang, W. Liang and W.X. Wang	783
<b>Numerical Analysis and Experimental Results by Silicon-Based MHz Ultrasonic Nozzles to Product of Monodisperse Droplets</b> Y.L. Song, C.H. Cheng, C.F. Lee, L.M. Chang and Y.F. Chou	787
<b>The Porous TiNb<sub>24</sub>Zr<sub>4</sub> Alloys with Controllable Porosity Fabricated by Conventional Sintering</b> Y.X. Li, Z.D. Cui, X.J. Yang and S.L. Zhu	797
<b>Effects of Thermomechanical Treatment Process on the Microstructure and Properties of 7A04 Aluminum Alloy</b> S.X. Zhang, H.H. Wu and G.Y. Cai	805
<b>Study on Fatigue Crack Propagation at Negative Stress Ratio in 2A12 Aluminum Alloy</b> S.G. Bai, J.Z. Zhang and Y. Sha	809
<b>Optimization Parametric Study of Deep Drawing Process for a Standardized Cranial Implant</b> K. Sena and S. Piyasin	813
<b>Combination of Extrusion and Artificial Aging to Strengthen AZ80 Magnesium Alloy</b> D.L. Yin and X. Chen	818
<b>Effects of Solution and Two-Stage Ageing Treatment Process on Microstructure and Properties of 6061 Aluminum Alloy</b> S.X. Zhang, G.Y. Cai and H.H. Wu	822
<b>Electrochemical Behaviors of Pb-Ca Alloys and Pb-Ca-Sn<sub>x</sub>-Al Alloys under 60°C in 5mol•L<sup>-1</sup> H<sub>2</sub>SO<sub>4</sub> Solution</b> L.Z. Wang, K.Q. Zhang, S.H. Gu and Y. Zhang	826
<b>Peritectic Reaction of High Nb and W Pentatomic TiAl-Based Alloy</b> H.L. Sun, C. Sun, Z.W. Huang and D.G. Zhu	831
<b>Microstructure and Properties of Microwave Sintered 40 wt. % WC Steel-Bonded Carbides</b> J.M. Luo, Z. Wei, J.L. Xu and L.P. Deng	836
<b>Investigation on the Preparation Processes of Cu-Bi Master Alloy</b> L.N. Zhang and B.X. Liu	841
<b>Key Technology Development Trend for Recycled Aluminum Industry Based on Technology Roadmap</b> Z.S. Yang, S.X. Lv, P.C. Cao, M.I. Abdullah and W. Liu	845
<b>Preparation and Investigation on Properties of Shape Memory Epoxy Modified by Hyperbranched Polyester</b> C.M. Han, Y.Y. Liu and H.F. Tan	851
<b>Fabrication of Al<sub>2</sub>O<sub>3</sub> Based Ceramic Matrix Composite by Conventional Sintering and Sol-Gel Process</b> S. Senthil Kumaran, K. Chandra Sekhar, A. Preetam and S. Balasivanandha Prabu	856

## Chapter 6: Polymer Materials

<b>An Efficient and Environmentally Friendly Method for the Preparation of PMMA Microcapsules</b> S.W. Guo, G.X. Wang and F.L. Han	863
<b>The Analysis of Dynamic Viscoelastic Properties of Regenerated Cellulose at Different Temperature and Humidity</b> M.S. Yang	869

<b>Ac Conductivity and Dielectric Properties of Hexanoyl Chitosan-LiClO<sub>4</sub>-TiO<sub>2</sub> Composite Polymer Electrolytes</b> T. Winie, C.H. Chan and R.H.Y. Subban	873
<b>Synthesis and Properties of Polyurethane Modified with Hydroxyl Terminated Polysiloxane</b> J.L. Tian, Y.M. Cao and X.T. Zhou	881
<b>Crystallinity and Mechanical Properties of PLA/POE Blends</b> J.T. Zhou, Z.J. Yao and J.J. Zhou	886
<b>Synthesis and Characterization of Thermotropic Main-Chain Liquid Crystalline Polysiloxanes Containing 1,4-butylene bi-p-hydroxybenzoate Mesogens</b> S.L. Du, J.F. Gao, Z.Z. Sun and J.Y. Wang	891
<b>Design and Construction of Porous Structures in PVDF Membranes in Phase Separation Processes</b> G.L. Huan, J.L. Liu, Q.Y. Du and X.Y. Hu	895
<b>Study on Preparing Light Colored C<sub>9</sub> Petroleum Resins with High Softening Point</b> L.M. Yang, H.H. Zhang, J.H. Wang and M. Hu	899
<b>Application as Papermaking Retention Agent of Water in Water Cationic Polycaylamide in Bleached Soda Reed Pulp</b> Y.S. Ma and X.H. Sun	904
<b>Methanol Induced Changes in Structure and Properties of Dry Spinning Fibers of Regenerated Silk Fibroin</b> Y.L. Ma, J.X. Zhu, H.L. Shao and X.C. Hu	908
<b>The Choice of the Simulation Skin in the Experiment of Dynamic Moisture Transfer Based on Munsell Color Index</b> X.R. Wu and J.D. Cao	912
<b>Study on the Thermal Behaviors and the Morphology in PVP/ PA66 Blends</b> C.W. Hao, Q.F. Ma, Z. Wang, J.X. Jiang and G.Q. Lai	916
<b>Development of Surface Roughness Prediction for Steel in CNC Turning by Using Response Surface Method</b> S. Chanphong and S. Tangjitsitcharoen	921

## Chapter 7: Optical/Electronic/Magnetic Materials

<b>Study on Electrochromic Performance of the Copolymer Based on 4-(1<i>H</i>-Pyrrol-1-Yl) Phenyl 4-(1<i>H</i>-Pyrrol-1-Yl) Butanoate with 3,4-Ethylenedioxythiophene</b> M. Ou Yang, X.J. Lv, B. Hu and C. Zhang	929
<b>Fabrication and Magnetic Properties of Fe<sub>3</sub>O<sub>4</sub> Nanobranches via a Simple Solvothermal Method</b> Z.F. Zi, Y.N. Liu, Q.C. Liu, J.M. Dai and Y.P. Sun	934
<b>Synthesis and Characterization of Ln(Mg<sub>0.5</sub>Ti<sub>0.5</sub>)O<sub>3</sub> (Ln=La, Nd, Sm) Obtained by the Polymeric Precursor Method</b> B.L. Liang, X.H. Zheng, D.P. Tang and Y.L. Ai	940
<b>Synthesis, Spectra and Bond Studies on a Novel Cu-Ru Complex of Magnetic Dilution</b> W.Z. Wang, Y. Li and D.Z. Liao	944
<b>Effect of Surfactants on Modifying the Surface of Magnetic Nanoparticles by Thermal Decomposition</b> H.P. Shao, T. Lin, J. Luo and Z.M. Guo	951
<b>Low Temperature Sintering of Ca<sub>0.6</sub>La<sub>0.8/3</sub>TiO<sub>3</sub>-Li<sub>0.5</sub>Nd<sub>0.5</sub>TiO<sub>3</sub> Ceramics with ZnO-B<sub>2</sub>O<sub>3</sub>-SiO<sub>2</sub> Glass Addition</b> Y.J. Gu, J.L. Huang, W. Hu, Q. Li, L.H. Li and H. Xu	956
<b>Preparation and Characterization of Superparamagnetic Fe<sub>3</sub>O<sub>4</sub> Nanoparticles with Controlled Sizes</b> J.B. Qu, G.L. Jing, H.L. Xu and X.X. Zhang	960
<b>Influence of Ar/O<sub>2</sub> Ratio on the Properties of Transparent Conducting ZnO:Zr Films Deposited by DC Reactive Magnetron Sputtering</b> H.F. Zhang and X.F. Wang	964
<b>Effects of Low Concentration BiFeO<sub>3</sub> Additions on Microstructure and Piezoelectric Properties of (K<sub>0.5</sub>Na<sub>0.5</sub>)NbO<sub>3</sub> Ceramics</b> P. Xu, M.H. Jiang and X.Y. Liu	968

<b>Design and Preparation of Light-Weight Radar Absorbing Material Based on Resistive Frequency Selective Surfaces</b> L.K. Sun, H.F. Cheng, Y.J. Zhou and W. Jun	976
<b>Preparation and Luminescence Properties of the Nano- Composite Materials <math>\text{LaF}_3</math> - <math>\text{SiO}_2</math>: <math>\text{Eu}^{3+}</math></b> X.G. Wang and X.X. Wang	981
<b>Health Assessment Based on Fuzzy Synthetic Evaluation for Civil Aircrafts</b> B.H. Jia and Z.D. Sun	985
<b>Electrochemically Synthesis and Characterization of Copolymers Based on 1, 4-Diethoxybenzene and 3, 4-Ethylenedioxythiophene</b> M. Ouyang, Z.W. Yu, Y. Xu, Y.J. Zhang and C. Zhang	989
<b>Study on the Model of Magnetic Flocculation of Magneto-Rheological Fluid</b> S.H. Zhao and T.N. Luo	994
<b>Characterization of Cobalt Films on X-Ray Lithographic Micropillars</b> P. Sukonrat, C. Sripung, W. Rattanasakulthong and C. Sirisathitkul	1000
<b>Magnitude of Intrinsic Electrocaloric Effect in <math>\text{PbTiO}_3</math> at High Electric Fields</b> X.J. Wu and G.D. Li	1004
<b>Enhanced Luminescence Properties of Hexagonal-Phase <math>\text{NaYF}_4</math>: <math>\text{Eu}^{3+}</math> Microrods by Annealing Treatment</b> W.K. Zhang, X.X. Weng, H. Huang and X.Y. Tao	1009
<b>Determination of Mechanics Properties of a Piezoelectric Material Using Indentation Method with a Cylindrical Indenter</b> B. Zhao	1014
<b>Electrosyntheses and Electrochromic Properties of a Copolymer Based on 9-(4-Pyrrol-1-Yl-Phenyl)-Carbazole and 3,4-Ethylenedioxythiophene</b> B. Hu, M. Ouyang, X.J. Lv and C. Zhang	1021
<b>Growth and Absorption Spectrum of <math>\text{Tm, Ho:BaY}_2\text{F}_8</math> Crystal</b> F.M. Zeng, G.T. Zou and J.H. Liu	1025
<b>Theoretical Study on Photochromism and Spectrum Properties of Spiropyran</b> D.J. Zhang, H.F. Cheng, Z.Y. Chu, C.Y. Zhang and X. Xing	1029
<b>Investigation on the Spectroscopic Properties of <math>\text{Yb}^{3+}</math>-doped Phosphate Glass</b> Q. Sang, S.J. Wang, X.R. Wang and J.W. Lu	1035
<b>The Game Analysis on Risks of Logistics Enterprises Participate in Logistics Finance</b> R.L. Shi and C.X. Guo	1039

## Chapter 8: Materials Physics and Chemistry

<b>Theoretical Study on <math>\sigma</math>-Complexes in Ring-Chlorination of Toluene</b> G.Y. He, H.Q. Chen, J. Shi, F.L. Bei, X.Q. Sun and X. Wang	1047
<b>Influence of Synthesis Technics and Additives on Cerium Ion Compound Valence</b> Y. Mei, C. Xia, X.L. Chen and Z. Nie	1051
<b>First-Principles Study on Electronic and Thermal Properties of Zinc-Blende Metal Telluride</b> D. Chen and F. Peng	1056
<b>Dyeing Properties of Acetylated Wood with Red Disperse Dyes</b> Y. Zhao, X.Y. Tan, X.Q. Wan, W. Liu and Z.H. Yu	1061
<b>Photocatalytic Activity of <math>\text{Ag}^+</math>-Doped <math>\text{TiO}_2</math> Thin Films Prepared by Sol-Gel Method</b> S.K. Zheng	1067
<b>Relation between the Reflectivity and the Moisture Content of the Dynamic Moisture Transfer of Fabrics</b> J.D. Cao and X.R. Wu	1071
<b>Preparation and Thermal Decomposition of the Polyoxometalate Complexes of Ciprofloxacin with <math>\text{H}_n\text{XW}_{12}\text{O}_{40}</math> (<math>\text{X}=\text{B}, \text{Si}, \text{P}</math>)</b> D.J. Wang, Y.F. Kang and B.P. Xu	1075
<b>Fundamental Characteristics of <math>\text{SiC}</math> MIS Structure with <math>\text{Al}_2\text{O}_3</math> as Gate Dielectric</b> L. Liu, X.H. Ma and Y.T. Yang	1079
<b>Synthesis and Characterization of Novel Fluorene-Based Poly(<i>Imino Ketone</i>)s</b> L. Zhang, G.J. Chang, L.B. Miao and R.X. Lin	1086

<b>A Simulation of Half-Closed Extrusion Process for Steering Knuckle</b> Y. Tong	1090
<b>Experimental Research on Products Preparation by Hongquan Bentonite from Gansu</b> Y.X. Zhang, H.T. Liu and Y.B. Hou	1094
<b>Development of FE-Model for Al 5053 Sheet Plate Forming Using Electromagnetic Force</b> J.Y. Shim, I.S. Kim, J.H. Lee, I.J. Kim and B.Y. Kang	1099
<b>Photophysical Property Investigation of Nanometer Porphyrin Oligomer</b> Y.Y. Shi	1103
<b>Testing of Precast Lightweight Foamed Concrete Sandwich Panel with Single and Double Symmetrical Shear Truss Connectors under Eccentric Loading</b> N. Mohamad and H.M. Muhammad	1107
<b>Fabricate Dye-Sensitized Solar Cell with Electrospinning</b> Y.Y. Chu and Y.C. Chao	1117

## Chapter 9: Structural Materials

<b>Researching about Removing Cadmium from Thallium-Bearing Materials with Vacuum Distillation</b> S.Z. Yao, Y.N. Dai and H. Huang	1123
<b>A Rural Residential Building Products Quality Evaluation Algorithm Based on Rough Set Theory</b> T.B. Liu, F.J. Luan and S.J. Wang	1137
<b>Experimental Research on Pore Structure of RCA and its Impact on Drying Shrinkage</b> Y.X. He	1141
<b>Study and Analysis on Pile-Soil Stress Ratio of the Composite Foundation of Cement-Soil Mixing Pile under Flexible Foundation</b> X.R. Yang, L.Y. Zhang, H.C. Li and L.Y. Dong	1145
<b>Research on Fiber Shotcrete for Underground Engineering</b> M. Huang and B.Y. Pan	1151
<b>Research on Environment-Friendly Soil Stabilizer Solidifying Buildings Residues for Paving Materials</b> Q. Li and K.W. Sun	1155
<b>Configuration of Low-Strength Self-Compacting Concrete Adapted to Local Raw Materials</b> J. Li	1159
<b>Effect of Aggregate Pre-Wetting and Air-Entraining Agent on Durability of Lightweight Aggregate Concrete</b> W.X. Zhao, J.H. Liu, P. Yang, X.N. Yuan and M. Chen	1163
<b>Influence of Mineral Admixtures on Chloride Threshold Value for the Corrosion of Steel Reinforcement</b> P.P. Li, J.B. Xiong, Z.H. Fan and S.N. Wang	1168
<b>A Novel Approach of Chitosan Additive to Remove Formaldehyde from Building Materials</b> H.C. Wang, S.Y. Kang, C.H. Tseng, W.C. Shau and Z.Y. Chen	1174
<b>Research on Impact Damage of Polypropylene Fiber Mortar Based on Axial Compressive Strength</b> Y.Z. Chen, W.H. Xuan and X.H. Chen	1181
<b>Experimental Researches on Fire Resistance of CFS Shear Strengthened Reinforced Concrete Beams</b> H. Fan, J.Y. Liu and B.K. Ning	1186
<b>The Effect of Fly Ash on Water Transport of Concrete in Dry State</b> X.W. Zhang, L. Jiang and G.G. Liu	1190
<b>About on Low-Alloy Coupled Steel Bars Concretes Rigidity and Crack Opening Model Formula Establishment</b> B. Gao	1195
<b>Utilization of Lightweight Aggregate from Expanded Obsidian for Advanced Thermal Insulating Plasters Production</b> J. Zach, R. Hela, J. Hroudová and M. Sedlmajer	1199
<b>Study of Prediction Model for Compressive Strength of Lightweight Aggregate Concrete</b> H.Z. Cui	1204

<b>Method Study on Generation-Dissipation of Seismic Pore Water Pressure in Saturated Sands</b> P.A. Shi	1210
<b>Study on Inorganic Cohesive Glue</b> Z. Li, X.Y. Guo, D.Y. Wu and Y.H. Zhang	1215
<b>The Sucrose-Natural Gypsum Makes the Compound Retarder to the Cement and the Concretes Performance Influence Experimental Study</b> R.Q. Wang	1219
<b>Experimental Research on Isothermal Sorption of RAC Material</b> Y.C. Guo and X. Wang	1223
<b>Research on the Mechanisms of Soil Agent Solidifying Buildings Residues</b> Q. Li, K.W. Sun and Q.L. Chen	1227
<b>Research on Seismic Behavior and Cost Estimation of a New Concrete Filled Steel Tube Frame Structure</b> Y. Wang, X.Y. Li and M. Zhang	1231

## Chapter 10: Functional Materials

<b>Fabrication of Fuel Cells with High Power Density Using Micro Electrical Discharge Machining Milling</b> D.H. Chang and J.C. Hung	1237
<b>Influence of the Strain of AlN Buffer Layer on the Strain Evolution of GaN Epilayer Grown on 3-in 6H-SiC Substrate</b> Y.L. Fang, J.Y. Yin and Z.H. Feng	1242
<b>Research on Slaked Magnesium Slag as a Raw Material and Blend for Portland Cement</b> J.W. Cai, G.L. Gao, R.Y. Bai, F. Lu and L. Li	1246
<b>Bioactivity and Biocompatibility of Na<sub>2</sub>O-K<sub>2</sub>O-CaO-MgO-SrO-B<sub>2</sub>O<sub>3</sub>-P<sub>2</sub>O<sub>5</sub> Borophosphate Glass</b> K. Zheng, S.B. Yang, W. Liang and C. Rüssel	1250
<b>Fabrication and Preparation of Coal-Water Slurry Dispersant with Amphoteric Polycarboxylate</b> J.F. Zhu, G.H. Zhang, Z. Miao and H. Hao	1257
<b>Effect of Electrical Characteristics Modification on Viscosity of Kaolin Suspension</b> L.H. Zhao, J.R. Hu and B.H. He	1262
<b>Realization of a Wideband Microwave Noise Filter Used Magnetic Multilayer Thin Films by Using Exchange Bias Stacks Structure</b> L.C. Jin, D. Zhang, X.L. Tang, G.D. Lu and Z.Y. Zhong	1267
<b>Study on Operation and Control of Large Multi-Chiller System</b> Y.Y. Lu and A.P. Liao	1273
<b>Constructing a Syntheses Table of the Standard Amino Acid Based on the PAM250 Matrix</b> X.H. Shi and X.H. Wang	1279
<b>The Development of UMo/Al Dispersion Fuel</b> X. Liu, D.Z. Qian and T.C. Lu	1285
<b>A Technology of Self-Emulsification Coacervation to Prepare Starch Sodium Octenyl Succinate (SSOS) Microcapsules Consisting of Evening Primrose Oil (EPO)</b> Z.L. Liu, Y.F. Cao, X.J. Ma and X.D. Liu	1293
<b>Isothermal and Non-Isothermal Crystallization Behavior of Poly(<i>L</i>-Lactic Acid) with Nucleating Agents</b> X. Qian, M. Zhou, D. Xu, S.J. Xu and Y.F. Jin	1299
<b>Study on the Polyol Synthesis of LiFePO<sub>4</sub> for Lithium Ion Batteries</b> J.J. Wen, X.D. Guo, B.H. Zhong, H. Liu, W.M. Fang, Y. Tang and H. Tang	1303
<b>Manufacture of Carbon Supported PtCuLaO<sub>x</sub> Membrane Electrode with Low Pt Loading by IBS Technology</b> B. Yang, T. Xu and M.Z. Shen	1308
<b>Application of Magnetite Mill Tailings and Solvay Distiller Waste in Foamed Concrete <i>In Situ</i></b> J.W. Cai, Z.H. Lü, G.X. Hou, R.Y. Bai and M.M. Liu	1312

<b>The Foreground Analysis of Sewage Sludge Agriculture Application in China</b> J. Yu	1316
<b>Experimental Investigation on Simply Supported PFRP Channel Beams Subjected to Three-Point Loading</b> S. Seangatith and J. Thumrongvut	1321
<b>Sp<sup>2</sup> Hybridization Effects on Friction of Diamond-Like Carbon Film (110) Surfaces Studied by First Principles Molecular Dynamics</b> L.L. Wang, Q. Wan, Y.J. Tang and C.Y. Wang	1327
<b>Experimental Study of Magnetorheological Elastomer Vibration Isolator</b> S.S. Zhu, L.J. Qu and Y.H. Zhou	1334
<b>Deinking Technology and Deinking Agent of Waste Paper</b> Y.S. Ma, L.T. Wang and X.H. Sun	1340
<b>Preparation and Application of Talc-Fiber Composite Fillers in Paper-Making</b> X.H. Yao, G.X. Xue and X. Guo	1344
<b>Experimental Application of Salt Slurry in Zhongyuan High Density Polymer Saturated Brine-Based Drilling Fluid</b> L.J. Zhou, J.M. Feng, J.J. Lei and J.W. Yuan	1348
<b>Synthesis of Flavor 3-Methylthiopropionaldehyde Diethyl Acetal</b> W. Guan, Y.P. Liu, Z.W. Miao, D.L. Shen and Y. Cao	1352
<b>Net-Like ZnO/Carbon-Aerogel Composite as Anode Material for Ni-Zn Secondary Battery</b> H. Huang, S.J. Gu, Y.P. Gan and W.K. Zhang	1358
<b>Synthesis of LiFePO<sub>4</sub>/C by Carbon Thermal Reduction Method and its Electrochemical Properties</b> C. Chen, Y. Zhang, F. Wang and J.Z. Zou	1364
<b>Study of EDLC and its Usage in Stand-Alone Photovoltaic System</b> B.H. Li, X.S. Pan, Y.B. He and H.D. Du	1368
<b>Design and Optimization of Injector Structure in Diesel Engine Based on ISIGHT Platform DOE Methods</b> X.Y. Wu, G.Y. Ouyang and Y.X. Li	1376
<b>Flocculation Removal of Microcystis Aeruginosa by Chitosan-Bentonite Compound Material</b> B.G. Zheng, W.G. Peng, J.B. Zhang and Z. Zheng	1381
<b>Photocatalytic Degradation of Methylene Blue over Co-Ag<sub>3</sub>VO<sub>4</sub> under Visible Light Irradiation</b> S.W. Zhao, H. Xu, H.M. Li and Y.G. Xu	1385
<b>Water Barrier Property of Gelatin-Based Films Cross-Linked with Microbial Transglutaminase</b> D.Y. Zhu, L.Q. Jin, Y.L. Wang and H.X. Ren	1391
<b>Effect of Drying Treatments on Anthocyanin, Fumonisin B<sub>1</sub>, Aflatoxin B<sub>1</sub> Content of Anthocyanin Extract from Purple Corn (<i>Zea mays L.</i>) in North China</b> C. Zhang, Y. Ma, X.Y. Zhao and F. Wang	1396
<b>The Role of CdS Buffer Layer in ZnO Nanowire Arrays/SnS Thin Film Solar Cells</b> Z. Hu, W.G. Yang, S. Liu, K. Tang, L.J. Wang and W.M. Shi	1402
<b>Preparation of Cu<sub>2</sub>ZnSnS<sub>4</sub> Film by Printing Process for Low-Cost Solar Cell</b> Q.M. Chen, X.M. Dou, Z.Q. Li, S.Y. Cheng and S.L. Zhuang	1406
<b>Investigation of Thermal Insulation Materials Based on Easy Renewable Row Materials from Agriculture</b> J. Zach, J. Hroudová, V. Petranek, J. Kosíková and A. Korjenic	1412
<b>Ferroelectric Property of Ion Beam Enhanced Deposited Lithium Tantalate Thin Film</b> D.Y. Zhang, W. Qian, K. Li and J.S. Xie	1418
<b>The Effect of Concentration of Phosphoric Acid on the Degree of Reduction of VPO Catalyst</b> Y.L. Zhang, Y. Zhou, D.H. Hou, X.W. Fan and N.D. Tan	1424
<b>Extraction Behavior of Rare Earths in Ion Liquid Extraction System Using 1-Butyl-3-Methyl-Imidazolium Hexafluorophosphate and Benzoyl Acetone</b> Z.W. Pan, C. Ma, Y.W. Zhang, Y.X. Huang, X.L. Chen and X.P. Zhang	1428
<b>The Influence of Alkyl Group on Needle Coke Formation</b> S.L. Song and X.L. Cheng	1433

<b>Preparation and Properties of PLA Microspheres Containing ENRO by an S/O/W Emulsion Technique</b>	
Y.Y. Zhou, G.Y. Li, H.X. Wang, L. Tao and J.P. Liang	1439
<b>Dependence of Hysteresis Loops on Thickness of Thin Nickel Films Prepared by RF Sputtering</b>	
W. Rattanasakulthong, P. Sirisangsawang, S. Pinitsoontorn and C. Sirisathitkul	1443
<b>Hydrolysis of Glucose to 5-Hydroxymethylfurfural</b>	
L. Yang, Y.H. Liu and R.S. Ruan	1448
<b>Preparation of Porous HA Bioceramics by Gelcasting and Pressureless Sintering</b>	
J.X. Zhang, B.Q. Chen, D.L. Jiang, Q.L. Lin, Z.M. Chen and Z.R. Huang	1454
<b>Characteristics Analysis of Acoustic Emission Signals from Titanium under Tensile Fracture</b>	
J. Shi and P. Wang	1459
<b>Recovery of <math>\text{Sc}^{3+}</math> from Red Mud Leaching Solution by Emulsion Liquid Membrane</b>	
C.Z. Wang, G.Z. Zhou, X.Y. Kou and Z.L. Zheng	1465
<b>The Study of Using <math>\text{TiO}_2</math> Nanotube Arrays as a Drug Delivery for Alendronate</b>	
C.Y. Wang, X.F. Xiao, D. Mao, H.Z. Tang and R.F. Liu	1469
<b>Cutting Parameters Optimization Based on Radial Basis Function Neural Network and Particle Swarm Optimization</b>	
B.D. Li	1473
<b>Preparation and Properties of Bacterial Poly (3-hydroxybutyrate-co-3-hydroxyvalerate) Fibers</b>	
L. Wang, C.K. Ding, H.B. Shi, B.W. Cheng and W. Qiong	1477
<b>Research on Controllable Effects of HI Ultrasonic Radiation to Active Composition in Hippophae</b>	
B.Q. Wang and L.L. Yang	1481
<b>The Modification of VPO Catalyst Precursor and Characterization</b>	
Y.L. Zhang, D.H. Hou, Y. Zhou, X.W. Fan and N.D. Tan	1485
<b>Biosorption Behavior of U(VI) in Wastewater Containing U(VI) by Immobilized <i>Saccharomyces Cerevisiae</i></b>	
G.W. Peng and D.X. Ding	1489
<b>Preparation and Characterization of Poly(Lactic Acid) / Montmorillonite Nanocomposites via a Masterbatching Method</b>	
Y.N. He, K. Guo, J.Z. Chen, M.J. Niu, W.J. Wang and X.F. Li	1493
<b>Effect of Pretreatment of Traditional Chinese Medicine Residue on the Biogas Productivity</b>	
Y.Y. Li, W.L. Gao, M.H. Du, J. Li, Z.J. Cui and X. Cheng	1499
<b>Effect of Conformable Substrate Thickness on an Eddy Current Sensor Array's Output Characteristics</b>	
J.Q. Du, Y.T. He, H. Ding, H.W. Zhang and L.M. Wu	1503
<b>Photocatalytic Activities of Mo Ions Implanted <math>\text{TiO}_2</math> Thin Films</b>	
S.K. Zheng	1508
<b>Preparation and Properties of Polytriphenylamine/Multi-Walled Carbon Nanotube Composite as a Cathode Material for Li-Ion Batteries</b>	
C. Su, Y.P. Ye, X.D. Bu, L.H. Xu and C. Zhang	1512
<b>Evaluation on Combustion Properties of Nanoparticle as Fuel Additive</b>	
Y.Q. Ren, Z.N. Huang and Y. Fu	1516
<b>Managing Product Quality and Reliability under New Challenges</b>	
M.A. Karim and P. Yarlagadda	1520
<b>Energy Consumption and Emissions Analysis of Natural Gas Exploitation</b>	
Y.S. Gao and A.H. Wang	1525