Table of Contents

Preface and Conference Organization

Chapter 1: Composites

The Study on Synthesis and Impact Properties of Novel Dual Polymerization of Epoxy Composite Materials to Green Production Process H.L. Chang, C.M. Chen and C.H. Sun	3
Investigation of the Thermal and Optical Properties of Photopolymerizable Resin Enforced by Nanopowder in the Green Production Process H.L. Chang, C.M. Chen and C.H. Sun	7
Analysis of Micro Structure and Elastic Property on 3-D Tubular Woven Carbon Fiber	
Composite Z.H. Sun, Y. Chen and S.H. Zhou	11
Effects of CeO ₂ Addition on Mechanical Properties of LaB ₆ /B ₄ C Composites J.M. Guo, L. Yi, K.W. Peng, H.L. Ma and R. Chen	17
On the Damping Properties of a Polyurea Elastomer F. Ghezzo, X.G. Miao, C.L. Ji and R.P. Liu	21
Preparation and Characterization of Phosphorus Removal Agent by Lanthanum-Copper	
Composite Oxide L.L. Zhao, Y.Z. Yang, M. Zhang, Y.W. Li and Y.X. Jiang	26
Microstructure and Properties of the Dispersion-Strengthened Cu-ZrO ₂ Composite for Application of Spot-Welding Electrode	22
Y.S. Xu, C.P. Jin, P. Li and Y.H. Xu Study on the Mechanical Properties of Steel - Polyurethane Tube	32
X.F. Mi, X.Q. Jin and W.W. Zhao	39
The Study of Impact Rule of Si Element on Cu/Al Composite Interface Compounds M. Wang, P. Wang, D.X. Chang, Q. Zhang, X. Zhang and G.P. Liu	43
Preparation and Thermal Properties of Polybenzoxazine/TiC Hybrids N. Ramdani, J. Wang and W.B. Liu	49
Study on the Surfactant/Polymer Combination Flooding Relative Permeability Curves in Offshore Heavy Oil Reservoirs W.C. Jiang, J. Zhang, K.P. Song, E.G. Tang and B. Huang	53
Analysis of Composites for Best Designs of Refractive Solar Concentrators J.I. Pérez Calero	57
Experimental Investigation into Spall of Carbon Phenolic Composites Z.G. Zhu and Y.C. Li	62
Study on CF Reinforced Interface Properties of PES-C Resin Matrix Composite X. Cui, G.L. Liu, C. Lu and S. Wang	70
Thermal and Mechanical Properties of Aluminate Cementitious Functional Materials Enriched with Nano-SiO ₂ for Thermal Energy Storage Y. Shi, H.W. Yuan, Z.Z. Xu, C.H. Lu, Y.R. Ni and Y. Dong	77
Model I Interlaminar Fracture Toughness of Carbon Fiber Reinforced Polymer Matrix	
Composites A.H. Ji, M. Lu, M. Zha, B.Z. Dong, L.H. Gao and Z.D. Dai	81
The Influence of Bi ₂ O ₃ on SiO ₂ -Al ₂ O ₃ -B ₂ O ₃ -RO Glass Propertiesarts Y.L. Tian, J. Zhang, S.B. Sun and J.Y. Fan	86
Study of Synergistic Effects of Cerium Oxide on Intumescent Flame Retardant Polypropylene System	00
Y.L. Wang, X.P. Tang and X.D. Tang	90

Chapter 2: Micro/Nano Materials

A Copolymerization Modified Acrylate Resin and its Polyhedral Oligomeric Silsesquioxane Composites	
X.L. Hu, X. Lan, T.F. Lu, H.S. Yang and Y.L. Yang	97
Design and Experiment of T-Shape Glass Micro-Nozzle for Preparation of Microcapsules Z.A. Li, L.Y. Hou, W.Y. Zhang and L. Zhu	101
Morphology Controllable Preparation of Gold Nanoplates through an Eco-Friendly Wet- Chemical Route	
Z. Yi, J.S. Luo, X.B. Li, Y. Yi, X.B. Xu, W.D. Wu, Y.G. Yi and Y.J. Tang	108
Research on the Conductive Property of CNT Nanopaper Facilitates the Actuation in Shape Memory Polymer Composites A.Y. Zhang	112
The Crystallization Research on the Zr-Based Bulk Metallic Glasses by Ion Thinning Y.L. Bai and L.L. He	116
Influence of Temperature on the Preparation of GaN Nanowires X.Z. Wang, C.G. Wu and S.G. Li	121
The Effects of Discharge Parameters on the Surface Morphology of Nickel Microspheres by EDM Combined with Ultrasonic Field F.S. Bai, X.L. Li, Y.F. Liu, Y.T. Wang, N. Liu and Y.M. Ma	126
The Preparation of Porous TiO ₂ Nanostructure by Triblock Copolymers Co-Templating Method of TiOSO ₄ Solution Derived from Ilmenite Ore A.H. Yuwono, H. Latifa and A. Sholehah	132
Catalytic Degradation of Phenol by γ -Fe ₂ O ₃ Nanoparticles Y.R. Yao, Y. Zheng and X.C. Song	139
Size-Dependence of Photoluminescence Property of ZnO Nanoparticles X.F. Wang, Y.L. Fang, T.L. Li and F.J. Wang	143
Controlling the Size and Dispersion of ZnO@SiO ₂ Core-Shell Nanostructure by Addition of Triblock Copolymer Surfactant and pH Adjustment during Precipitation and Encapsulation Process	
N. Sofyan, A.H. Yuwono, B. Steven, A. Sholehah and M. Arief	147
Enhancing the Fluorescence of Graphene Quantum Dots with a Oxidation Way T. Han, X.J. Zhou and X.C. Wu	156
2D Assembly of Palladium Nanoparticles and AFM Characterization X.J. Liu, L.Y. Song, Z.C. Zhan, H. He, X.H. Zi and W.G. Qiu	161
Blocking Temperature of the System Core-Shell Nanoparticles L.L. Afremov, I.G. Iliushin and S. Anisimov	167
Growth Environment of Carbon Nanotubes by DC-PCVD H.D. Qi, L.Z. Wang and H.B. Liu	170
Reliable Solvothermal Growth of Diverse Heterostructures Based on CdS Nanowires F. Yang, S.C. Yan, B.J. Wang, Z.H. Shuai and M.X. Zhang	174
Hydrothermal Synthesis and Visible-Light-Driven Photocatalytic Activities of Bi ₂ WO ₆ Uniform Hierarchical Microspheres	101
Y. Lan and X. Wang	181
Chapter 3: Steel/Iron	
Study of Inclusion's Source and Character in Different T[O] Content Y. Wang, Q.X. Li, S.M. Wang and P.L. Han	187
The Influence of Transient Casting on Inclusions in Steel Y. Wang, C. Li, S.M. Wang and R.S. Wang	191
The Optimization of the Temper Technology of Production about Soft Steel W. Tang and Y.Z. Shen	195
Hot Ductility of Low Carbon Nb-Microalloyed Weathering Steel M. Zhang, X. Zhao, Y. Zhu, C.B. Huang, Q.S. Li, Y. Zhong and L. Li	200
Influence of Heat Treatment on Mechanical Properties and Microstructure of Low Alloy Cast Steel (ZG25MnNi)	207
T.S. Liu and Y.T. Yang Effect of Hydrogen Induced Additional Stress on the Influence on High-Strength Steels	207
H.L. Li, K.C. Shao, Q.H. Yang and J.N. Feng	214

Influence of Milling Time on Morphology and Properties of Precursor Powders for 9Cr Oxide Dispersion Strengthened Steel R. Xie, Z. Lu, C.Y. Lu and C.M. Liu	219
A Study on the Microstructure and Hardness Feature of 6CrW2MoVSi Steel after Heat Treatment	21)
Y.M. Dai, Y.Q. Ma, Y.B. Wu and Y.N. Ji	223
Microstructure Observation of the Tensile Fractured 430 Ferritic Stainless Steel S.J. Zang, J.J. Li, X.Q. Yin and J.B. Zhang	228
Influence of Oxide Morphologies on the Galvanizability of the Third Generation Automotive Steel S.M. Jiang, S.J. Feng, Z.H. Li and Q.F. Zhang	233
Effect of Heat Treatment Processes on Microstructure and Mechanical Properties of Nb-Ti-Stabilized 430 Stainless Steel Plate X.Z. Huang, S.Y. Chen, X. Zhang and Y.T. Yang	240
Research and Implementation of the Data Fitting Algorithm for Testing the Metallurgical Performance of Iron Ore H.B. Wang, J.L. Shi, D. Xie and D.J. Xue	248
The Research of Non-Oriented Electrical Steel Processed by Stress Relief Annealing Experiments	
Z. Li, J. Liu, S.D. Li and Z.L. Zheng Designing O.S. P. Bronness for Every evidential Stock with 0.47.9/ Courbon Contact.	252
Designing Q&P Process for Experimental Steel with 0.47 % Carbon Content V. Pileček, H. Jirková and B. Mašek	257
μRaman Analysis of the Rust Layer on Rusted Cast Iron Artifacts W.Z. Ouyang	262
Source of Inclusion in IF Steel End Slabs E.H. Tian, H. Cui, D.X. Li and Y.Q. Yan	266
Multiaxial Fatigue Life Prediction of 50CrVA Spring Steel under Proportional Loading K. Zhao, Y.H. He and X.L. Liu	270
Effect of Austenitizing Processes on Isothermal Quenching Microstructure in Bearing Steel L. Tian, S.L. Li, J.Z. Liu and X.H. Zhang	276
Effect of Carbon Content in Direct Reduction Process of Limonite Iron Oxide to Produce Pig Iron Substitute for Thin Wall Ductile Iron Process J.W. Soedarsono, V. Astini, F. Fazri, A. Kawigraha, R.D. Sulamet-Ariobimo, A. Rustandi and S. Tjahyono	281
Chapter 4: Ceramics	
Investigation on Electrical Properties of CaCu ₃ Ti ₄ O ₁₂ -Modified (Na,Bi)TiO ₃ -BaTiO ₃ Lead Free Piezoceramics	
J.C. Zhao and Z.L. Zhou	289
Brief Introduction of Microwave Ceramics Developed in our Labs for Dielectric Resonators X.G. Miao, J.J. Liu, F. Ghezzo, X.W. Fang, Z.Y. Zhao and R.P. Liu	294
The Effects of K/Na Ratio on the Electrical Properties of (Li, Sb, Ta) Modified KNN Piezoelectric Ceramics at Reduced Temperature with KNbO ₃ as Sintering Aid M.M. Jia and J. Ma	299
Structure and Performance of Calcined Bauxite B.Z. Fang, H. Li, J.W. Cao, J.F. Wu, X.H. Xu and X.D. Wang	305
Chapter 5: Metal Alloy Material	
Microstructure and Compression Deformation Behavior in the Quasicrystal-Reinforced Mg-6Zn-2Y Alloy Solidified under Super-High Pressure at Room-Temperature X.M. Han, Y. Dong, T.B. Zhao, X.P. Lin, J. Luo and H.G. Yang	311
Research on Compressive Behavior and Deformation Heating of 7075-T6 Aluminum Alloy	
during Hot Compression D.G. Wang, R.B. Mei, B. Cai, C.L. Zhang, L. Bao, B. Zhang and C.S. Li	315
Aircraft Bearings Fracture Failure Analysis H.P. Kong, C.K. Liu, D.L. Liu and T. Jiang	319

An Experimental Investigation on the Solubility of Zr in Cu-Sn Alloys Z.H. Pi, G.Q. Li, Y.P. Xiao, Z. Zhang, Z. Zhao and Y.X. Yang	324
Grain Structure and Precipitates in Squeeze Casting Al-Li-Mg-Zr Alloy L. Fan, Z.W. Chen and Q.T. Hao	329
Dynamics of Phase Transformation in Cu-Cr-Zr Alloy L. Peng, H.F. Xie, G.J. Huang, Z. Yang, X.J. Mi and B.Q. Xiong	333
Effects of Structures of Zinc/Substrate Interface on Coating Adhesion of Hot-Dip Galvanized DP Steels	220
S.M. Jiang, Y.P. Li and Q.F. Zhang Cube Texture Formation of Cu-33at.%Ni Alloy Substrates and CeO ₂ Buffer Layer for	338
YBCO Coated Conductors H. Tian, H.L. Suo, Y.R. Liang, Y. Zhao, L. Ma, Y.C. Meng, J.C. Grivel and N. Yi	345
Research on the Microstructure and Properties of Hypereutectic Al-Si Alloy for Semi-Solid Forming during Heat Treatment X. Fan and Y.T. Yang	349
Corrosion Behavior of Incoloy 800 in Molten Nitrate Salt Y.J. Zhang, L.L. Xiao, J.H. Liu, M.L. Liu and M.H. Fu	357
Effect of Ti on the Structure and Properties of Cu-15Ni-10Mn Alloy As-Cast Smelted at Atmosphere	
W. Cai, Y. Wu, J.Z. Yin, G. Wang, S.L. Yang and C.X. Wang	362
Influence of Etchants on Phase Morphology of Casting Ni-Based Superalloy J.J. Li, S.J. Zang and J.B. Zhang	366
The Measured Change in <i>d</i> -Electron of Ni in Ni-7.2at%Ti Alloy Studied by Electron Energy Loss Spectroscopy	
W.G. Yang	370
Effect of Homogenization Annealing on Microstructure and Property of Cu-7.5Ni-5Sn Alloy R.Q. Liu, S.L. Yang, G.J. Huang and Q.Q. Zhong	374
Effect of Alloying Elements V, Cr and Ni on the Electronic Structure and Mechanical Properties of FeAl from First-Principles Calculation	
Y. Chen, Z.J. Yao, P.Z. Zhang, D.B. Wei, X.X. Luo and F. Xue	378
Effects of Additives on the Surface Layers of Boronized TC4 Titanium Alloys L.N. Wang, F.H. Li, M.G. Dong and Y.N. Li	384
Characterization on the Microstructures and Optical Performances of TiO ₂ Doped with Transition Metals	200
X.H. Liu, Y. Deng, Y.C. Zhang and Y.H. Zhou Dynamic Strain - Induced Boundary Migration during Dynamic Recovery at a High	388
Temperature Deformation with a Lower Strain Rate F.Q. Ji	395
Numerical Analysis of Residual Stresses in Quenched High-Strength Aluminum Alloy	2,0
Ultra-Thick Plates and their Reduction through Single-Side Cold Compression Method J.C. Liu, J.L. Wang and H.Q. Chen	400
Influence of Three Pattern Materials on the Marginal Adaption of Co-Cr Alloy Inner Crown of PFM Endocrown	
H.B. Li, L. Liu, X.S. Li, X.Y. Wang, Y.X. Gao and J. Guo	407
Chapter 6: Optical / Electrical / Magnetic Materials	
The Thermally Stimulated Current (TSC) Technique on Evaluating Degradation of ZnO Varistors	
J.W. Fan, X.L. Zhang and H.J. Zhao	413
Design and Analysis of Self-Collimation-Based Photonic Crystal Beam Splitter H.J. Li and L.A. Chen	417
Electronic Structures and Spectral Properties of 4-Thiophene-1,8-Naphthalimide Derivatives	
Y. Wang, H.W. Tang and G.H. Nie	422
Fabrication of Shape Controllable Micro-Lens Arrays by Drop on Demand Printing on the Glass Micro-Holes Arrays	406
X.Y. Zhu, L.Y. Hou, L. Zhu, W.Y. Zhang and M. Yang	426

Analysis and Design of Transparent Microwave Absorbing Materials Based on the Destructive Interference at the Microwave Range Y. Ye, L.X. Song, X.L. Song and T. Zhang	432
Characteristics of Slow Light in a Photonic Crystal Coupled-Cavity Waveguide C.X. Zhang, X.S. Xu and W. Xi	437
Investigation on p-In _{0.51} Ga _{0.49} As LOPC Mode by Raman Spectra H.C. Gao, Z.J. Yin, Z.Q. Huang, Z.H. Li and Z.L. Xie	442
Influence of the Nitridation Time after the Al Pre-Seeded Layer on the Properties of GaN Layer Grown on Si (1 1 1) D.G. Zhang, Z.H. Li, D.Q. Peng and X. Dong	446
Growth and Spectrum Properties of Ho:BaY ₂ F ₈ Crystal F.M. Zeng, C. Li, H. Lin, Y.Y. Zhou, X. Liang, X.G. Fang, H. Liu, Y.J. Cui and J.H. Liu	450
Preparation and Surface Modification of SiO₂ Particles Used in Electronic Ink C.L. Yang and C.Y. Yang	454
The Photoluminescence Enhancement and Stability of Porous Silicon by Cathodic Reduction and Acid Treatment C.Q. Li, K. Wang, P.J. Liu and Q. Ming	458
Epitaxial Growth of SiC Epilayers for 10kV Schottky Diodes Using Chloride-Based CVD Y. Li, Z.F. Zhao and Z.H. Li	462
Microstructure and Compound Developed from the Ce-As-Fe at 1173K S.S. Zhu, J.Z. Zhang and W.Y. Yang	467
Chapter 7: Energy Materials	
Current Research of Biodiesel Used on IC Engine and Improved Measures of Emissions L. Chen, H.J. Ni, D.Q. She and Y.N. Yuan	473
Hot corrosion resistance of four graphite material in molten Solar Salt Y.T. Xu, W.P. Wang, T.D. Xia, B.L. Jia and G.L. Zhang	479
Current Situation of the Study on Oxidative Stability of Biodiesel H.J. Ni, L. Chen, D.Q. She and Y.N. Yuan	484
The Study on Oxidation Resistance of SiC Composites Used for Solar Absorber Coating X.H. Xu, Z.G. Rao and J.F. Wu	488
Influence of Activated Carbon to the Hydrogen Storage Characteristics of THF Hydrate Y.J. Fang, Y.M. Xie, X.F. Zhou, L. Yan and S.H. Wang	493
The Ni-MH Power Battery Electrode Material Admixture Process Fuzzy Control System G.J. Ma, S. Wu and Y.D. Gong	497
Kinetics Studies on Chemical Reaction of Producing Biodiesel Based on Transesterification Y. Wei, J. Zhang, M. Zhang and Y.D. Zhang	501
Chapter 8: Biomaterials and Technology	
Alpha-Glucosidase Immobilization Based on PMMA/Chitosan Core-Shell Microparticles B.Y. Sha, Q.S. Liu, J.L. Zhang and X.Y. Yin	507
Antibacterial Activity of the Extracts from Gentiana farreri Balf. f. A.M. Yang, X.L. Shi, J. Sun, L. Yang and Y. Men	512
Research on Compound Bone Oyster Sauce and its Development C.J. Wang, H.L. Xu, L.J. Zhang, Z. Zeng and Y.G. Zhong	516
A Preliminary Study of Crosslinked Alginate-Chitosan Microspheres for Delivery System J. Zhou, Y.L. Cui and Y. Qi	520
The Structure Design and Fabrication of Drug Releasing Porous Material L.L. Lin and Y.J. Lu	524
The Chemical Swelling Effect on Poplar APMP J.J. Hou, J.C. Chen, Z.Q. Pang and G.H. Yang	529
Effects of Cellulase Treatment on Surface Structure of Fast-Growing Poplar APMP Pulp Y.L. Chen, J.C. Chen, Z.O. Pang and G.H. Yang	533

Vasorelaxation of Rat Aorta Induced by Extract from <i>Clerodendranthus spicatus</i> S.J. Li, F. Li, J.Y. Yang, S.M. Yan, Y. Wang and C. Yang	537
Glutaraldehyde Cross-Linked Silk Fibroin Films for Controlled Release Y.X. Wang, Y.P. Qin, Z.J. Kong, Y.J. Wang and L. Ma	541
AMPK and Metabolisms of Glucose and Lipid Y. Chang, X. Jiang and Y.C. Wang	547
Isolation and Characterization of Abietic Acid W.J. Nong, X.P. Chen, J.Z. Liang, L.L. Wang, Z.F. Tong, K. Huang, R. Wu, Q.R. Xie, Y.H. Jia and K.X. Li	551
Comparison of Physicochemical Properties of Gelatins Prepared from Different Fish Skins through Hot Water Extraction at Mild Temperature Condition Y. Jiang, J. Yu and C.C. Liu	557
Establishment of a Sensitive Nitric Oxide Bioassay for Bioscreening Application Q. Yang, X.L. Zhang and H.L. Huang	562
Preparation and Properties and Application of Renewable Source (Palm Oil Polyol) Based Polyurethanes Coatings and its Thermal Stability Improvement by Clay Nanocomposites T. Rihayat, S. Suryani and X. Zaimahwati	566
Production of Liquid Fuel by Catalytic Reformation of Carbohydrates in Energy Crops C.H. Zhang, Y. Liu and F.G. Kong	570
Physicochemical Characterization of Oxidatively Degraded Calcium Lignosulfonate via Alkaline Hydrogen Peroxide	
L.H. Hu, J. Zhou, C.Y. Bo, B.C. Liang and Y.H. Zhou	575
Effects of Uranium (VI) Stress on Growth and Antioxidant System in Chinese Cabbage L. Xie and W.L. Tang	581
The Development of the Multi-Functional Wool/Aramid 1313 Blended Fabric H. Zhang and L.P. Shen	585
Anthocyanins Extracted from Chinese Blueberry and its Anticancer Effects on HepG2 Cells Y.W. Li, D. Wang, X.G. Li and Y. Jin	592
Application of Ferritin Modified Eggshell Membrane in Heavy Metal Ion Uptake and Recovery T. Zhang, J.C. Zang, S.L. Zhang and G.H. Zhao	596
Preparation and Antioxidant Activities of Peanut (<i>Arachin conarachin</i> L.) Protein Peptides by Bacillus Subtilis Solid State Fermentation Method	601
L.N. Yu, J.X. Feng, Q.Q. Ming, Q.L. Yang, C.S. Zhang, J. Sun and J. Bi Optimization of Aflatoxin Production of Aspergillus flavus on Peanuts C.S. Zhang, J. Sun, L.N. Yu, J. Bi, J.X. Feng and Q.L. Yang	605
Study on Antibacterial Mechanism of Hemp Fiber X.M. Hao, Y. Yang, L.X. An, J.M. Wang and L. Han	610
The Effect of Different Salt Additions on the Microstructure of YBCO Synthesized by a Biomimetic Method	010
Z.L. Zhang, H. Suo, L. Ma, A. Kursumovic, M. Liu, Y. Wang, J.L. MacManus-Driscoll and S.C. Wimbush	614
The Sensory Quality and Textural Property of Ready-to-Eat Sea Cucumber in Storage	
Period H.M. Hou, Y.N. Cui, L. Tang, G.L. Zhang and L.M. Sun	619
Application of Matlab Data Processing System in Research of Drug Microemulsion H. Wei, G. Lu, Y.C. Lu and Z. Fu	623
Study on Effect of Rice Flour on Isothermal Crystallization Kinetics of Biodegradable Poly(L-Lactic Acid) Y.H. Cai	627
Finite Element Analysis Based Ultrasonic Elastography X.X. Wu, Y. Ming and J. Wang	632
	032
Chapter 9: Chemical Materials	
Technique Status and Prospect of Synthetic Rutile S.L. Liu and J.Y. Xiang	639

Study on the Physicochemical Properties of the Mixture of Water and 1-butyl-3-methylimidazolium Hydrogen Sulfate Salt Ionic Liquids	
G.C. Tian and H.K. Feng	643
Function and Application of Calixarene Derivatives R.H. Tan	647
Study on the Clean Production Process of Basic Chromium Sulphate B. Zhang, W.H. Chi, P.Y. Shi, C.J. Liu and M.F. Jiang	651
To Measure the Absorbance at 328nm by Ultraviolet-Visible Spectrophotometer - an Alternative Pathway to Measure the Activity of Acetylcholinesterase D. Wu, H. Li, D. Zhang and M. Wu	657
Facile Synthesis and Crystal Structure of N-(3-Cyano-4,5,6,7-tetrahydrobenzo[b]thiophen-2-yl)-2,2,2-trifluoroacetamide	037
D.F. Wang, H. Gao, X.H. Tan, W.M. Li, J. Wang, Y.J. Wu and X.J. Song	661
Study of Phenyl Phenol Formaldehyde Resin and its Curing Performance of Aniline S.H. Liu	665
Preparation and Characterization of High Porosity and High Oil-Absorbent Block CMCS	
Aerogel W.T. Guo, L.B. Lu, J.J. Shi and J.Y. Sun	669
Chapter 9: Chemical Materials	
Theoretical Study on the Isomerization Reaction Mechanism of the Chain-Isomers of N_9H_9 S. Zhang, X.L. Wang, W.F. Cai, L.C. Li and A.M. Tian	677
Controllable Preparation Cu ₂ O/AC and Application in Photocatalytic Degradation of Organic Dyes	
Z.W. Wang, Y. Guo, F.F. Kang, Q.X. Cao and G.J. Wang	684
Polymerization and Chiroptical Behavior of Polymethacrylamides Bearing a Bulky Oxazoline Pendant Z. Fu, H. Wei, C. Yuan and Z.W. Li	688
Preparation and Photocatalytic Performance Study of Na ⁺ /K ⁺ -WO ₃ by Ultrasonic Micro	
Method X.Z. Diao and Z.L. Peng	693
Study on the Strengthening of Kraft Liner Board by the Application of Series WEC Cleaner Papermaking Chemicals	600
Y.Q. Zhu, P. Cao, D.S. Bi, Z.J. Zhang and T. Wang Synthesis and Crystal Structure of 4-[5-(2-Bromophenyl)-1,3,4-Thiadiazol-2-Ylthio]-2-	698
(trifluoromethyl)thieno[2,3-d]pyrimidine P. Yang, H. Gao, Y. Nie, Z. Zeng, J.S. Zhao and X.J. Song	703
Experimental Study on the Effective Separation of Chromium-Iron Ions in Multi-Component Solution System by Ihleite Method	707
C.J. Liu, Q.S. Zhang, P.Y. Shi, B. Zhang and M.F. Jiang Preparation of Modified Polyurethane Fiber and Study of its Lead Ions Adsorption X. Wu, X.H. Liu, C.E. Wang, W.C. Lv and H.Z. Li	707 711
Isothermal Crystallization Behavior and Kinetics of Poly (lactic acid) Filled with a Novel	/11
Nucleating Agent N. Xu, X.H. Wang, L.S. Pan, S.J. Pang, X. Chen, S.Y. Yang and Q. Lin	716
Study on the Prepartion of Slag Haycite for Phosphorus Removal Using Ammonium Hydrogen Carbonate as Pore Former	722
X.L. Li, X. Liu and G.P. Cao Preparation and Characterization of Polyurethane Foams from Modified Rosin-Based	723
Polyether Polyol M. Zhang, L.Q. Zhang and Y.H. Zhou	727
Synergistic Inhibition of Sodium Molybdate and Sodium Silicate on Carbon Steel in KCl Media	
Y.S. Cui, K.O. Oiao and B. Huang	731

Magnesium Diboride Superconducting Films Synthesized by Different Electron-Beam Annealing Currents	
Z. Xu, X.D. Kong, J. Wang, H. Li, Q. Dai and Q.R. Feng	737
Numerical Simulation of Film Thickness Uniformity Deposited by Planar Circular Magnetron Sputtering System Q.X. Zhou, C.Y. Wang, Z.B. Fu and Y.J. Tang	743
Effect of Cobalt Concentration on the Microstructure of Nickel-Cobalt Alloy Deposits Y. Marita and Ridwan	749
Electrochromic Properties of Co ₃ O ₄ /NiO Nanocomposite Films W.T. Li, Y. Zheng and X.C. Song	753
Thermal Stability of Ultralow k Carbon-Bridged Periodic Mesoporous Organosilica Film T. Jiang, S.J. Ding, Z.Y. Fan and W. Zhang	757
Study on Preparation of SnO ₂ Polyacrylate Thermal Insulation Film with Liquid Phase Precipitation Process	7.00
H.K. Zhao and H.L. Wang Investigation of the Preparation of Anodized Nanoporous Alumina Array H.L. Chang C.M. Chan C.H. Sun and J.S. Line	762
H.L. Chang, C.M. Chen, C.H. Sun and J.S. Lin Morphology and Orientation in Thin Film of Polystyrene-b-Polylactide Prepared by	766
Solution-Casting J.F. Zhou, J.A. Zhang and T. Chen	770
Biofilm-Electrode Process for Nitrate Removal from Micro-Polluted Water X.L. Li	775
Effective Anisotropy Constant of Bilayer Film L.L. Afremov, S. Anisimov and T. Agapova	779
Characterization of TiO ₂ Thin Films Prepared by Vacuum Evaporation L.L. Wang, Y.W. Zhang, C.M. Zhang, Z.D. Wang and T. Meng	783
Chapter 11: Building Materials	
onapter 11. Building Muterials	
Influence of Calcium Carbonate Powder on Water Requirement and Flowability of Self-Compacting Mortar Incorporating Bagasse Ash	790
Influence of Calcium Carbonate Powder on Water Requirement and Flowability of Self-Compacting Mortar Incorporating Bagasse Ash N. Makul, R. Sangsirimongkolying, S. Soottitantawat and L. Mathurasa	789
Influence of Calcium Carbonate Powder on Water Requirement and Flowability of Self-Compacting Mortar Incorporating Bagasse Ash N. Makul, R. Sangsirimongkolying, S. Soottitantawat and L. Mathurasa Development of Reinforced Structure Designed Composite Pavement Z.M. Hou, L. Duan, K. Yao and X.W. Zhao	789 793
Influence of Calcium Carbonate Powder on Water Requirement and Flowability of Self-Compacting Mortar Incorporating Bagasse Ash N. Makul, R. Sangsirimongkolying, S. Soottitantawat and L. Mathurasa Development of Reinforced Structure Designed Composite Pavement Z.M. Hou, L. Duan, K. Yao and X.W. Zhao Design and Experiment on the Road Pavement for Rush to Repair K. Yao, F.H. Wang, Z.M. Hou, X.W. Zhao and Z.B. Wen	
Influence of Calcium Carbonate Powder on Water Requirement and Flowability of Self-Compacting Mortar Incorporating Bagasse Ash N. Makul, R. Sangsirimongkolying, S. Soottitantawat and L. Mathurasa Development of Reinforced Structure Designed Composite Pavement Z.M. Hou, L. Duan, K. Yao and X.W. Zhao Design and Experiment on the Road Pavement for Rush to Repair K. Yao, F.H. Wang, Z.M. Hou, X.W. Zhao and Z.B. Wen Usage of Steel Slag in Concrete as Coarse Aggregates J.J. Feng, S.S. Wang and X.Q. Wang	793
Influence of Calcium Carbonate Powder on Water Requirement and Flowability of Self-Compacting Mortar Incorporating Bagasse Ash N. Makul, R. Sangsirimongkolying, S. Soottitantawat and L. Mathurasa Development of Reinforced Structure Designed Composite Pavement Z.M. Hou, L. Duan, K. Yao and X.W. Zhao Design and Experiment on the Road Pavement for Rush to Repair K. Yao, F.H. Wang, Z.M. Hou, X.W. Zhao and Z.B. Wen Usage of Steel Slag in Concrete as Coarse Aggregates J.J. Feng, S.S. Wang and X.Q. Wang Usability of Fly Ashes from Czech Republic for Sintered Artificial Aggregate V. Černý and Š. Keprdová	793 797
Influence of Calcium Carbonate Powder on Water Requirement and Flowability of Self-Compacting Mortar Incorporating Bagasse Ash N. Makul, R. Sangsirimongkolying, S. Soottitantawat and L. Mathurasa Development of Reinforced Structure Designed Composite Pavement Z.M. Hou, L. Duan, K. Yao and X.W. Zhao Design and Experiment on the Road Pavement for Rush to Repair K. Yao, F.H. Wang, Z.M. Hou, X.W. Zhao and Z.B. Wen Usage of Steel Slag in Concrete as Coarse Aggregates J.J. Feng, S.S. Wang and X.Q. Wang Usability of Fly Ashes from Czech Republic for Sintered Artificial Aggregate V. Černý and Š. Keprdová Effect of Surface Modification of Steel Fiber on Concrete Comprehensive Performance J. Lv and J.Z. Liu	793 797 801
Influence of Calcium Carbonate Powder on Water Requirement and Flowability of Self-Compacting Mortar Incorporating Bagasse Ash N. Makul, R. Sangsirimongkolying, S. Soottitantawat and L. Mathurasa Development of Reinforced Structure Designed Composite Pavement Z.M. Hou, L. Duan, K. Yao and X.W. Zhao Design and Experiment on the Road Pavement for Rush to Repair K. Yao, F.H. Wang, Z.M. Hou, X.W. Zhao and Z.B. Wen Usage of Steel Slag in Concrete as Coarse Aggregates J.J. Feng, S.S. Wang and X.Q. Wang Usability of Fly Ashes from Czech Republic for Sintered Artificial Aggregate V. Černý and Š. Keprdová Effect of Surface Modification of Steel Fiber on Concrete Comprehensive Performance J. Lv and J.Z. Liu Experimental Study of Compression and Carbonation in Concrete Subjected to Freeze-Thaw Environment	793 797 801 805 809
Influence of Calcium Carbonate Powder on Water Requirement and Flowability of Self-Compacting Mortar Incorporating Bagasse Ash N. Makul, R. Sangsirimongkolying, S. Soottitantawat and L. Mathurasa Development of Reinforced Structure Designed Composite Pavement Z.M. Hou, L. Duan, K. Yao and X.W. Zhao Design and Experiment on the Road Pavement for Rush to Repair K. Yao, F.H. Wang, Z.M. Hou, X.W. Zhao and Z.B. Wen Usage of Steel Slag in Concrete as Coarse Aggregates J.J. Feng, S.S. Wang and X.Q. Wang Usability of Fly Ashes from Czech Republic for Sintered Artificial Aggregate V. Černý and Š. Keprdová Effect of Surface Modification of Steel Fiber on Concrete Comprehensive Performance J. Lv and J.Z. Liu Experimental Study of Compression and Carbonation in Concrete Subjected to Freeze-Thaw Environment L.X. Wang, X.T. Shan, Y.Q. Zhang, C.S. Li, Z.X. Wang and X.H. Wang Effect of Coconut Coir Uniformity on Strength of Unfired Soil Lime Bricks	793 797 801 805 809
Influence of Calcium Carbonate Powder on Water Requirement and Flowability of Self-Compacting Mortar Incorporating Bagasse Ash N. Makul, R. Sangsirimongkolying, S. Soottitantawat and L. Mathurasa Development of Reinforced Structure Designed Composite Pavement Z.M. Hou, L. Duan, K. Yao and X.W. Zhao Design and Experiment on the Road Pavement for Rush to Repair K. Yao, F.H. Wang, Z.M. Hou, X.W. Zhao and Z.B. Wen Usage of Steel Slag in Concrete as Coarse Aggregates J.J. Feng, S.S. Wang and X.Q. Wang Usability of Fly Ashes from Czech Republic for Sintered Artificial Aggregate V. Černý and Š. Keprdová Effect of Surface Modification of Steel Fiber on Concrete Comprehensive Performance J. Lv and J.Z. Liu Experimental Study of Compression and Carbonation in Concrete Subjected to Freeze-Thaw Environment L.X. Wang, X.T. Shan, Y.Q. Zhang, C.S. Li, Z.X. Wang and X.H. Wang Effect of Coconut Coir Uniformity on Strength of Unfired Soil Lime Bricks P. Heru, R.G.R. Basmara Putra, R.M. Syaifulloh, I. Sulistyawan, E.A. Basoenondo and M. Satim Size Effect on Mechanical Properties of LVL	793 797 801 805 809 814 819
Influence of Calcium Carbonate Powder on Water Requirement and Flowability of Self-Compacting Mortar Incorporating Bagasse Ash N. Makul, R. Sangsirimongkolying, S. Soottitantawat and L. Mathurasa Development of Reinforced Structure Designed Composite Pavement Z.M. Hou, L. Duan, K. Yao and X.W. Zhao Design and Experiment on the Road Pavement for Rush to Repair K. Yao, F.H. Wang, Z.M. Hou, X.W. Zhao and Z.B. Wen Usage of Steel Slag in Concrete as Coarse Aggregates J.J. Feng, S.S. Wang and X.Q. Wang Usability of Fly Ashes from Czech Republic for Sintered Artificial Aggregate V. Černý and Š. Keprdová Effect of Surface Modification of Steel Fiber on Concrete Comprehensive Performance J. Lv and J.Z. Liu Experimental Study of Compression and Carbonation in Concrete Subjected to Freeze-Thaw Environment L.X. Wang, X.T. Shan, Y.Q. Zhang, C.S. Li, Z.X. Wang and X.H. Wang Effect of Coconut Coir Uniformity on Strength of Unfired Soil Lime Bricks P. Heru, R.G.R. Basmara Putra, R.M. Syaifulloh, I. Sulistyawan, E.A. Basoenondo and M. Satim	793 797 801 805 809
Influence of Calcium Carbonate Powder on Water Requirement and Flowability of Self-Compacting Mortar Incorporating Bagasse Ash N. Makul, R. Sangsirimongkolying, S. Soottitantawat and L. Mathurasa Development of Reinforced Structure Designed Composite Pavement Z.M. Hou, L. Duan, K. Yao and X.W. Zhao Design and Experiment on the Road Pavement for Rush to Repair K. Yao, F.H. Wang, Z.M. Hou, X.W. Zhao and Z.B. Wen Usage of Steel Slag in Concrete as Coarse Aggregates J.J. Feng, S.S. Wang and X.Q. Wang Usability of Fly Ashes from Czech Republic for Sintered Artificial Aggregate V. Černý and Š. Keprdová Effect of Surface Modification of Steel Fiber on Concrete Comprehensive Performance J. Lv and J.Z. Liu Experimental Study of Compression and Carbonation in Concrete Subjected to Freeze-Thaw Environment L.X. Wang, X.T. Shan, Y.Q. Zhang, C.S. Li, Z.X. Wang and X.H. Wang Effect of Coconut Coir Uniformity on Strength of Unfired Soil Lime Bricks P. Heru, R.G.R. Basmara Putra, R.M. Syaifulloh, I. Sulistyawan, E.A. Basoenondo and M. Satim Size Effect on Mechanical Properties of LVL Q.F. Lv, J.H. Qin and R. Zhu Influence of the Organic and Mineral Additions in the Porosity of Lime Mortars W. Martínez-Molina, E.M. Alonso Guzmán, H.L. Chávez-García, J.C. Arteaga-Arcos, A.A.	793 797 801 805 809 814 819
Influence of Calcium Carbonate Powder on Water Requirement and Flowability of Self-Compacting Mortar Incorporating Bagasse Ash N. Makul, R. Sangsirimongkolying, S. Soottitantawat and L. Mathurasa Development of Reinforced Structure Designed Composite Pavement Z.M. Hou, L. Duan, K. Yao and X.W. Zhao Design and Experiment on the Road Pavement for Rush to Repair K. Yao, F.H. Wang, Z.M. Hou, X.W. Zhao and Z.B. Wen Usage of Steel Slag in Concrete as Coarse Aggregates J.J. Feng, S.S. Wang and X.Q. Wang Usability of Fly Ashes from Czech Republic for Sintered Artificial Aggregate V. Černý and Š. Keprdová Effect of Surface Modification of Steel Fiber on Concrete Comprehensive Performance J. Lv and J.Z. Liu Experimental Study of Compression and Carbonation in Concrete Subjected to Freeze- Thaw Environment L.X. Wang, X.T. Shan, Y.Q. Zhang, C.S. Li, Z.X. Wang and X.H. Wang Effect of Coconut Coir Uniformity on Strength of Unfired Soil Lime Bricks P. Heru, R.G.R. Basmara Putra, R.M. Syaifulloh, I. Sulistyawan, E.A. Basoenondo and M. Satim Size Effect on Mechanical Properties of LVL Q.F. Lv, J.H. Qin and R. Zhu Influence of the Organic and Mineral Additions in the Porosity of Lime Mortars W. Martínez-Molina, E.M. Alonso Guzmán, H.L. Chávez-García, J.C. Arteaga-Arcos, A.A. Torres-Acosta, J.A. Bedolla-Arroyo, C.L. Gómez and A. Acha Palomares Research on the Mix Design of Cement Asphalt Concrete	793 797 801 805 809 814 819 824

Experimental Research on the Impact Damage of Composite Laminates at Different	
Energies A.Y. Zhang, H.X. Lv, Y. Zhang and D.X. Zhang	850
Chapter 12: Materials Mechanical Behavior and Fracture	
Deposition Effects on the Ultimate Strength of Tungsten Alloy Y.G. Xu and Z.W. Wu	857
Study on the Strength Properties of Superior Shoes Board and Furnish Y.X. Liu, Y.X. Liu, B. Sun, B. Shen and D.F. Zhang	861
A Comparative Study on the Performance of Domestic Cellulose Based Pressboards for Use in Transformers L. Song, J.F. Sheng and J. Liu	865
Model of Equal-Stressed Cylinder Based on the Mohr Failure Criterion V.I. Andreev, A.S. Chepurnenko and B.M. Jazyev	869
Fatigue Properties of Titanium Alloy TA11 under Multiaxial Loadings with Tension - Bending Vibration B. Li, N. Ma, X.L. Liu, Z.W. Qiu and H.R. Li	873
Study of Damage and Acoustic Emission Properties of Rocks under Uniaxial Cyclic Load- Unload	
L. Song, L. Gu and S.P. Wei Effect of Consolidation with Alanine and Glutaraldehyde on the Properties of Fragile Wool	878
Fabrics Z. Lin, N. Yu, Y.P. Li, Y.C. Yang, Z.Q. Peng, B. Wang and Z.W. Hu	882
The Influence of Temperature and Load on Dry Sliding Wear and Friction Property of Low Metallic Friction Material L.J. Gui, F.Y. Zhang, Z.J. Fan and J.L. Chen	886
Study on the Mechanical Property of Nomex Fiber in Different Temperature	
G.Y. Cao, X.F. Xiao and W.L. Xu Analysis of Hot Oil Pipeline Stress Influencing Factors X.N. Wu, S.J. Wu, H.F. Lu, J. Wan, J.L. Liu, W.T. Li and Z.L. Liu	895 899
Laboratory Investigation on Mechanical Behavior of Artificial Ice under Triaxial Compression X.T. Xu, J.H. Yuan and R.Q. Bai	903
Formulation of Equivalent Plastic Strain Accumulated in Rotating Bending Process of Metal Tubes for Severe Plastic Deformation Z.C. Zhang, K. Manabe, T. Furushima and K. Tada	907
Study on Development of Hemp Stem-Based Panel Y. Yang, X.M. Hao, X.Y. Chen, M.Z. Gao and G.J. Zhang	912
Optimization of Superior Shoes Board Immersion Condition Y.X. Liu, Y.X. Liu, B. Sun, B. Shen and D.F. Zhang	915
The HAM Solutions for Unsteady Boundary Layer Flow and Heat Transfer with Heat Source/Sink J. Zhu and Z. Liu	919
Influence of Vibration Stress Relief (VSR) on the Residual Stress and Microstructure in Welded Plate of DH36 Low Alloy High Strength Steel S.Q. Li, H.Y. Fang and X. Liu	924
Chapter 13: Materials Physics and Chemistry	
The Way of Obtain C ₃ H ₄ O ⁺ Fragments Laser-Induced by Cycloheptanone Ion Excited State H.B. Chen, Y. Zhu and J. Wu	931
The Pressure of CO ₂ Crystal Melting Temperature Dependence S. Zhang, L. Chen, Z.S. Wu and S.W. Hou	935
The Thermal Decomposition Characteristics of Sodium Pyroxenite Gangue in Baiyunebo Iron Ore G.P. Luo, S.L. Wu, X.L. Nie, Y.C. Wang and Y.C. Wang	939
THE LINE ALL VIII ALL INDESTITE AND AND AND A CONTRACT OF	414

Corrosion Characteristics of Grounding Grid in Resistance-Reducing Agents Q. Yi, S. Xu, X.Z. Li, B. Feng and B.T. Hu	947
Kinetics of Rubber-Modified Nylon 6 H.K. Zhao and H.L. Wang	951
Research on the Kinetics of Nylon Polymerized by Caprolactam Anionic Polymerization Using Adiabatic Method	
H.K. Zhao and H.L. Wang	955
Skyrmion Excitations in Graphene B.D. Zhao and M. Xiang	960
First-Principles Calculation of the Vacancy Formation Energy in VC S.Y. Sun, P.P. Xu, X.J. Liu and X. Tan	966
Antiplane Response of Cylindrical Inclusion with Eccentric Crack to Incident SH Waves J. Yang and D. Li	970
The Characteristic Dissolution and Physical Chemistry Parameter of Synthetic	
Pyromorphite X. Zhao, W. Zou, Z.L. Zhang, Z.Q. Zhu and Y.N. Zhu	975
Mathematical Simulation and Experimental Investigation of Propranolol Hydrochloride Loading/releasing from Ion Exchange Fibers H.M. Yao, J.Y. Zhu and G.Q. Xia	979
Study of Selected Characteristics of a Dry Cell Hydrogen Generator in Conditions of Long	717
Term Operation M. Kuracina, J. Fiala and M. Soldán	985
An Easy Route for the Preparation of Soluble High Molecular Weight Polymer Under	
Friedel-Crafts Conditions C.Q. Li, B. Yu, C. Wang, Y.X. Li and Y. Chen	989
Pyrolysis Characteristics of Blends from Coal and Polyethylene F.S. Yang, M. Zhang, B.L. Wei and M.Q. Lin	993
The Correction Factor in Elastic Modulus Determining by Indentation P.M. Ogar, V.A. Tarasov and D.B. Gorokhov	997
Shadowgraph of Pulse CO ₂ Laser Induced Breakdown in Different Pressure Air Y. Zhang, D.Y. Li and T. Wu	1001
Thermal Decomposition of Phosphate Ore by Using Differential Scanning Calorimetric	
Method L.Z. Ma, C. Huang, J.M. Guo and Z.Y. Wang	1005
Chapter 14: Selection, Testing and Evaluation of Materials	
A Material Selection Method Based on Finite Element Method	1010
S.B. Wu and X.B. Liu Passault on the Passault hat ween Consentuation of Superfine Pounder Entinguishing A cont	1013
Research on the Regular between Concentration of Superfine Powder Extinguishing Agent Explosion Scatter and Fire-Extinguishing Ability L. Yang, Q.L. Zhao, X.D. Chai and X.Y. Ma	1017
The Affecting Gene Research of Metal Sheet Drawing Force on Compensate Fuzzy Nerve	1017
Net Control Z.J. Liu	1024
The Study on the Pipe Retracting Shape Parameter Identify of Quantum and Immunity	
Algorithm Z.J. Liu	1028
Parameters Identification of Johnson-Cook Constitutive Equation for Aluminum Brass C.C. Di, K.B. Cui, J.Q. Qin and D.L. Wu	1032
Quality Control of Materials in Pressure Pipeline during the Installation P. Li	1036
Application of Distribution of Oxygen Coefficient in Explosive Neutron Detection W. Ding, T. Guo, C. Ji and R.Q. Shen	1040
Research and Manufacture of Tea-Cigarette C.J. Wang, N. Qu, Z.C. Hu and H.Y. Chen	1048

Fatigue Propagation Life Evaluating for Materials or Components Suffered Load Spectrum by Quantitative Fractography	
X.L. Liu, X. Chen and C.H. Tao	1053
Chapter 15: Surface Engineering / Coatings Technology	
Studies of Surface Roughening for Sapphire Substrate F.C. Tsai, T.C. Chang, Y.L. Lee and C.L. Lin	1063
Review of Conductive Coating and its Application in Power Grounding System X.Z. Li, S. Xu, Q. Yi, B. Feng and B.T. Hu	1068
Design of a Simple and Demountable Experimental Device for Drag Reduction of Super Hydrophobic Surface X.S. Fu, L. Mei and D.Z. Wang	1072
Characterization of Microstructure, Phase Composition and Corrosion Resistance of Al-Zn-Si-RE Waterborne Coatings Q. Jiang, Q. Miao, W.P. Liang, B.L. Ren, Y. Xu and Z.J. Yao	1072
The Application and Analysis of EDM on the Surface Light Trapping Structure Y. Yang, H.X. Lou and J.C. Huang	1080
Characteristics of Inconel 718 Filler Metal Affecting to Welding Metal Zones of Cast Steel for Piston Crown Material	1004
K.M. Moon, J.P. Won, D.H. Park, S.Y. Lee, Y.H. Kim and J.H. Jeong Study on Macroscopic Morphology and Microstructure of Single Ni60 Laser Clad Tracks Prepared Using a Variable Laser Beam Shaper Y.Z. Sun, S.Y. Wang, D. Wellburn, S. Shang, J. Cheng, S.Y. Chen, B. Zhang, J. Liang and C.S. LIU	1084
Comparison of Surface Properties of TiN and TiAlN Coating Prepared by Arc Ion Plating for the Improvement of Life-Time Extension of Tool Steel G.D. Sun, D.L. Yi and C.H. Liu	1091
Surface Roughness Study of Milled Carbon Fiber Reinforced Polymer (CFRP) Composite Using 4 mm 2-Flute Titanium Aluminum Nitride (TiAlN) Coated Carbide End Mills M. Konneh, S. Izman, M.E. Dzahi Padil and R. Roszat	1101
Study on the Fractal Behavior and Fractal Characterization of Guide Way Joint Surface Z. Yang, L.H. Wang, H.S. Shi and P.C. Wang	1107
Effect of Ca ²⁺ on Structure and Corrosion Resistance of Conversion Coating Formed on Cast AZ91D Magnesium Alloys W.Q. Zhou, S.W. Wu, L. Sheng and X. Li	1111
Surface Modification of Titanium and its Alloys for Biomedical Application L. Luo, Z.Y. Jiang, D.B. Wei and X.F. He	1115
Temperature Field Simulation of Laser Heated 1045 Steel Using with Shaped Laser Beam Profiles	
S. Wang, Y.Z. Sun, D. Wellburn, S. Shang, J. Cheng, S.Y. Chen, B. Zhang, J. Liang and C.S. LIU	1121
Chapter 16: Material Forming	
Temperature Controlling System Design of Non-Isothermal Deep Drawing Mould for Magnesium Alloy Sheet Z.J. Yu and J.H. Li	1129
Study on Micro Hydroforming of Metals L. Luo, Z.Y. Jiang, D.B. Wei and X. He	1123
Application of Mass Scaling Technology in Steel Tube Rolling by Finite Element Simulation N. Pang and Z.Y. Zhao	1139
The Research on the Simulation Metal Flow in Forging of Bevel Gears Z.J. Liu	1143
Multi-Objective Optimization and Research of Hot Stamping Process Parameters T. Wang, L.Y. Lou and G.H. Li	1147
Microstructure Analysis on GMAW Additive Manufacturing Parts Constrained by Electromagnetism F.J. Meng, D.M. Ba, F.L. Yin and J. Du	1152

Mini-Thixoforming of High-Alloyed CPM REX 121 Steel D. Aišman, K. Rubešová and Š. Mikmeková	1156
Characterization of Hot Deformation Behavior of Udimet720Li Superalloy Using Processing Map J.G. Wang, D. Liu, T. Wang and Y.H. Yang	1161
The Research on Penetration of New Annular MEFP	1101
T. Zhou, Z.H. Du and L.L. Song	1169
Chapter 17: Material Machining	
Extracting Acoustic Emission Signal Feature of Grinding Processing X.J. Huo, J.X. Teng, W.D. Wang, A.M. Shen and J.W. Yang	1175
Two-Step Identification of Instantaneous Cutting Force Coefficients and Cutter Runout H.Y. Hao, W.C. Tang and B.S. Wang	1179
Experimental Research of Workpiece Temperature in Orthogonal Turn-Milling Compound Machining	1104
Y.Z. Liu, F.Y. Peng, S. Lin, R. Yan and S. Yang	1184
Cutting Force Model for Heat Assisted Titanium Alloy Milling C.Y. Liu	1191
Optimization of Cutting Conditions of YG15 on Finish Cutting in WEDM Based on Taguchi Method	
Z. Chen, Z. Zhang, W.Y. Ming and H. Huang	1195
The Effect of Cutting Process Parameters on the Stability in Milling T.C. Hsiao and S.C. Huang	1200
Cutting Performance of TiB ₂ /WC/h-BN Micro/nano Composite Gradient Self-Lubricating Ceramic Tool when Machining Carbon Steel H. Chen, C.H. Xu, X.G. Xu, B. Fang and G.C. Xiao	1205
Combined Atomistic-Continuum Modeling of Nano-EDM Process H. Li, J.W. Guo, W.Y. Ming and Z. Zhang	1210
Influence on BTA Boring Bar Transverse Vibration Considering Inner Cutting Fluid Velocity and Axial Force W. Zhao, Q.B. Zhang, W.T. Jia and Z.Q. Hu	1215
Directly Manufacturing Table Tennis Mould by Hybrid Plasma Deposition & Milling X.H. Xiong, D.M. Quan and J.L. Chen	1219
The Straightening Scheme Analysis for the Copper-Clad Steel Tube L.Y. Xia, D.M. Sun, G.R. Kang and J. Sun	1223
Effect of Alumina Bubbles on Mechanical Properties and Microstructure of Metal Bond for Superabrasive Grinding Wheels	1005
C.Y. Ma, W.F. Ding, Z.z. Chen, H.H. Su, Y.C. Fu and J.H. Xu	1227
Germanium Crystal Anisotropy Affecting to Cutting Force in SPDT X.G. Xia, Y. Zhang and Q.M. Xie The Cutting Person step Affecting to Symfons Penghassa in Single Point Diamond Tunning	1232
The Cutting Parameter Affecting to Surface Roughness in Single-Point Diamond Turning W. Hao, Y. Zhang and Q.M. Xie	1236
Fast Prediction Model for Closure Pressure in Hot Isostatic Pressing D.Q. Zhang, J.X. Zhou, J.L. Tang and H. Wang	1240
Numerical Simulation of the Orthogonal Cutting of Carbon Fiber Reinforced Composite Material	1246
Z.K. Li, D. Lu, Q. Wang and Y.B. Wu Powder Partials Crinder Machanism Design and Exploration Tool	1246
Powder Particles Grinder Mechanism Design and Exploration Tool S.Y. Xu	1251
Chapter 18: Welding and Joining	
Kinematics Analysis of a 6-DOF Riveting Manipulator Based on ADAMS E. Liu, K. Zeng, S.W. Yuan, G.W. Cui, X.C. He, Y.F. Ding and Z.W. Ma	1257

A Performance Study on Self-Piercing Riveting and Adhesive Hybrid Joints of Different	
Adhesive F.L. Liu, X.C. He and Y.Q. Wang	1261
A Performance Study of Clinched Joints with Different Material F.L. Liu, X.C. He and L. Zhao	1265
Application of the Laser Welding Technique in Aircraft Repair J.R. Qi, H.K. Wei, Y.L. Li and L. Han	1269
Microstructure and Hardness of Friction Welded SSM 356 Aluminium Alloy K. Boonseng, C. Meengam, S. Chainarong and P. Muangjunburee	1273
Numerical Simulation of Temperature Fields by Welding of Ti-Al Alloys Applying Volumetric Heat Source E. Babalová and M. Behúlová	1280
Topology Optimization and Robust Analysis of Welding Spot Layout for a Heavy Duty Truck Cab Based on Element Strain Energy Density	
A. Cui, S.Z. Zhang, L.J. Xu and H.Z. Liu Study on Arc and Drop Transfer Behaviors of DCEN MAG Welding	1284
X.M. Wang and Q.X. Bi	1290
Evaluation of Welding Metal Zones in the Case Welded with 0.5 Mo Filler Metal to Forged Steel for Piston Crown Material K.M. Moon, J.P. Won, D.H. Park, S.Y. Lee, Y.H. Kim and J.H. Jeong	1294
Effect of Heat Treatments on Microstructure and Mechanical Properties of Low Carbon Steel Pipes Welded by Induction Process	12).
Z. Boumerzoug and L. Lakhdari	1301
Chapter 19: Materials Processing Technologies	
Numerical Simulation on Stress Field in Inside-Beam Laser Cladding M.D. Wang, X.L. Hang, K.B. Guo, S.H. Shi and L.N. Sun	1309
The Research on Ceramic Friction and Flow Stress of Plastic Forming Z.J. Liu	1313
6D Laser Measurement System Based on Double Longitudinal Modes Laser L. Dong, T. Zhang and Y.H. Wu	1317
Influence of High Energy Ball Mill Technology on Cube Texture Formation of Ni-8at.%W Alloy Substrates for YBCO-Coated Conductors	1000
Y.C. Meng, H.L. Suo, H. Tian, L. Ma, Y. Wang, Y.R. Liang and M. Liu	1323
The Effect of Electromagnetic Pulse Treatment on Thin – Wall Bearing Ferrules Dimensional Accuracy W.B. Qiu and W.X. Chen	1328
Multi-Objective Optimization for Rolling Schedule of High Strength Sheet Based on	
ACPSO W. Tang, X.Y. Ren, H.M. Gao and S.F. Wang	1333
The Grey Relation Analysis of Hemp Fiber Fineness and Chemical Composition after Plasma Assisted Degumming	,
D. Yin, Y.C. Ji, Y. Wang and H. Li	1341