Table of Contents

Preface and Conference Organization

Chapter 1: Polymers, Rubber and Elastomers

Characterization of Thermal Reversible Cross-Linking Agents for Flexible Poly(vinyl	
chloride) J. Wang, W. Fang, Y. Yuan and X.M. Liu	3
Compressive Behavior of a Polyurea Elastomer F. Ghezzo, X.G. Miao, C.L. Ji and R.P. Liu	7
Progress in Development of Catalyst Systems for Coordinated Polymerization of Olefins W. Zhou, L. Zhong and W.D. Li	11
Study of Molecular Structure of Water-Soluble Phenolic Resin with Different Molecular Weight by Infrared Spectrum X. Lei, G.L. Xu, J. Yang and J. Hu	15
Synthesis of a Surfactant Hexadecyl Methyl Dihydroxyethyl Ammonium Bromide by a Non-Solvent Synthesis Method L.P. Zhang, C. Zheng, Y.Q. Zhou and Y.K. Chen	20
Study on Solvent Resistance of Ternary Plastic Alloys of PEEK/PEI/PES J.B. Chen	27
Chapter 2: Metals and Alloys	
A Novel Iron Oxidation Process in Zinc Leaching Solution by Ozone Q.K. Jing, X.Y. Liu and J.K. Wen	35
Corrosion Behaviors of Mg-7Gd-5Y-1Nd-0.5Zr Alloys in CO ₂ Atmosphere under Different Relative Humidity Q.T. Jiang, X.G. Li, Y.J. Li, M.L. Ma, G.L. Shi and J.W. Yuan	39
Effect of Rotating Magnetic Field on Fluid Convection and Microstructure during Directional Solidification of Sn-Zn Alloy Z. Chen, X.L. Wen and C.L. Chen	43
Experiments on Effect of Red Mud-Based Slag on Distribution of Sulfur in Liquid Iron G.F. Zhang, Y.D. Yang, Z. Shi and L. Gao	49
Influence of Niobium or Molybdenum in Titanium Alloy for Permanent Implant Application Y. Marsumi and A.W. Pramono	53
Inner Connection of Bainite and Pearlite Transformation in Steels J.H. Chen, X.L. Zhou, L. Meng and W. Liu	64
Research on Impact Fracture and Microstructure of 40Cr Steel under Different Tempering Conditions	
Y.Q. Xiao, S.X. Liu, M.L. Kang, J.M. Zeng, G.A. Wang, Q.H. Meng and Y.Z. Deng	68
Simulation and Optimization of Flow Field in the Mold of Slab Continuous Casting Y.X. Wang, Z.F. Zhang and Y.T. Guo	72
Study on Fe-Mn-Si Shape Memory Alloy Anti-Loosening Bolt C.Y. Zhou, C.X. Lin and L.L. Liu	78
Study on the Forming Accuracy of TRIP Steel Products in ISF L.H. Li, B.P. Wang, J. Wang and C. Zhao	83
The High Temperature Oxidation Behavior of Hot-Dip Aluminized GH169 J. Lou and C.X. Ruan	87
Effect of Different Tempering Temperatures on Microstructure and Impact Property of 20CrMnTi Steel	02
S.X. Liu, Y.Q. Xiao, M.L. Kang, J.M. Zeng, G.A. Wang, Q.H. Meng and Y.Z. Deng Relationship between Heat Treatments and Corrosion of Al-Si-Mg Casting Alloy P. Chen, L.H. Liang, G. Luo and J.M. Zeng	92 96

The Effect of Process Parameter on the Second Phase Particles in Al-Ti-B Master Alloys L.J. Wei, H. Hu, Z.L. Hu and Y.J. Zhao	100
The Modification Research of Al-Ti-B Master Alloy (Progress) J.J. Wang, L. Mi and Z.L. Hu	105
A Closed Form Solution for Wave Propagation in a Rectangular Waveguide Filled with Time-Varying Media	110
B.K. Chen and F. Guo	110
Chapter 3: Ceramics	
Effect of Sintering Temperature on Microstructure and Electrical Properties of (1-x)BCZT-xBY Lead-Free Ceramics X.Q. Huang, Q.B. Liu and C. Zhang	119
Fused Silica Ceramics and Composites for Radome Applications X.G. Miao, Y.R. Qu, F. Ghezzo, X.W. Fang, Y.T. Yue, Z.Y. Zhao and R.P. Liu	123
Research Progress of Al_2O_3 Based and Si_3N_4 Based Ceramic Tool Materials H.X. Huang, Y.H. Feng, F.M. Li and H. Sun	130
1- xSm _x TiO ₃ Based Ceramics X.X. Cheng, D.X. Zhou, Q.J. Xiao and Z.X. Zhao	134
Chapter 4: Composites	
Microstructure and Mechanical Properties of Mg-Based Composites Reinforced with TiB ₂ Particles	
C.F. Fang, G.X. Liu, L.G. Meng and X.G. Zhang Preparation and Properties of Organosilicon-Modified Acrylate Resin	141
X.J. Hu, Q. Bian, Y.N. Chen, J. Feng, M. Chen and W. Qin	146
Preparation of Functional Particles Modified Epoxy Multilayer Composite and their Radiation Shielding Properties H.X. Zhang, S.Q. Chang, B. Kang, B. Sheng and Y.D. Dai	150
The Influences of Holmium on Microstructure and Properties of <i>In Situ</i> Mg ₂ Si/Al Composites	
Y.T. Liu, X. Tong, J.X. Lin, L.Y. Niu and G.Y. Li Fe ₃ O ₄ and TiO ₂ Embedded Sodium Alginate Beads of Composite Adsorbent for Pb(II)	154
Removal	160
L. Jiao, P.S. Qi, Y.Z. Liu and B. Wang	160
Chapter 5: Micro/Nano Materials	
Development of Nano Magnesium Phosphate Materials for Biomedical Application Y.H. Deng, X.P. Dong, X.H. Ma, X.J. Chen, Y.Q. Xu, Y.M. Zhang, C.C. Jin and J. Wei	167
Effect of Temperature on Fe ₃ O ₄ Magnetic Nanoparticles Prepared by Coprecipitation Method J.M. Niu and Z.G. Zheng	172
Synthesis and Characterization of Nanosized Inorganic-Organic Hybrid between Phosphotungstic Acid and Rhodamine 6G	
Y.B. Ren, L. Chen and H.C. Pan Research on New Technology to Prepare Magnesium Hydroxide from Magnesium Sulphate	177
L. You and Q. Qiao	181
Investigation on the Structure and Luminescence Performance of Tb-Doped ZnO Nanocrystals Prepared by Direct Precipitation Z. Xiao, W. Zhong, K.P. Xu, Y. Huang, S.G. Li and H. Ou	187
Study on Nanocomposite Membranes with Enhanced Performance for Forward Osmosis	
N. Ma, C. Liu, P.J. Wang and C.Y. Tang	191

Chapter 6: Optical/Electrical/Magnetic Materials

L. Meng, X.L. Zhou and J.H. Chen	199
First Principles Studies on Structural, Electronic and Optical Properties of SnO ₂ T.T. Shao, F.C. Zhang and W.H. Zhang	203
Optimal Design and Preparation of Novel Radiation Shielding Materials Used for Low Energy \(\gamma \text{X-Ray} \)	209
Simulation and Size Optimization of PbSe Quantum Dots Luminescent Solar Concentrator	213
Study on Electronic Structure of GaN under Pressure	217
Study the Coupled-Cavity Waveguides Photonic Crystal Power Splitter Y.B. Chen, X.M. Xu and W. Li	222
Chapter 7: Energy Materials and Research	
Effect on Coal Physicochemical Properties from Added Foreign Chemicals X.Z. Liu, Y. Liang, L.H. Liang and F.X. Xu	229
Effects of Preparation Process Parameters on Performance of Microencapsulated Paraffin/Polyurea Phase Change Materials W.S. Luo, S.F. Yu and J.M. Zhou	233
Experimental Studies on Coal Permeability Characteristics under Different Pore Pressure	238
Hydrothermal Synthesis and Electrochemical Performance of LiFePO ₄ /Graphene Composites for Lithium-Ion Batteries X.L. Lei, H.Y. Zhang, Y.M. Chen, W.G. Wang, Z.D. Huang and Y.P. Ye	242
Novel Honeycomb Glassfiber Mat as the Core of Vacuum Insulation Panel C.D. Li and Z.F. Chen	247
Preparation and Characterization of LLM-105 Cocrystal Explosives S.H. Zhang and H.L. Zhao	251
	256
Bethe Approximation in the Theory of "Average Spin" L.L. Afremov and A. Petrov	260
Chapter 8: Biomaterials	
Antioxidant Activity of Sorbus sibirica Fruit Extracts J. Wei, J. Shi, J. Gao, Z.Q. Zhou and J.G. Fan	267
Hydrophilic Mechanism of Sunflower Leaves and Simulation Research Q.C. Wang, X.D. Yang and G.R. Shang	275
Influences of the Relative Dimension of Cell and Micropipette and Compressibility of Cells on the Determination of Elastic Properties of Chondrocytes during Micropipette Aspiration Y.S. Li, Q.Y. Zhang and W.Y. Chen	279
Properties of OQPaP Bleached Pulp of <i>Pinus kesiya</i> and <i>Dendrocalamus giganteus</i> Munro Made by Low-Temperature Kraft Pulping Q.X. Liu, Y. Chen, J. He and X. Gao	285
Research on Hydrophilicity and Microstructure of Several Plant Leaves Q.C. Wang, X.D. Yang and G.R. Shang	289
Study on the Optimal Hydrolysis Conditions of <i>Ganoderma lucidum</i> Spore Powder under Microwave Irradiation B. Wu, Q.H. Feng, L.L. Geng, K.W. Shu and D. Zhang	293

Study on the Y ³⁺ -Trpptophan-Curcumin-SDBS System by Spectrophotometry and its Analytical Application F. Wang, W. Huang and S.W. Wei	297
Synthesis and Properties of Esters of Amino Acids' Composite and Palmityl Alcohol X.H. Wang, X.H. Du and L.M. Dong	301
Preparation and Characterization of a Novel γ-PGA/β-Tricalcium Phosphate Composite for Tissue Engineering	301
X.L. Shu, Q.S. Shi, X.B. Xie, X.M. Huang and Y.B. Chen	306
Hydrolytic Activity of a Neodymium(III) Complex in DNA Cleavage S.L. Cai, F.M. Feng, K.Q. Qiao, Y. Zhang and X.L. Zhang	312
Double-Chain Tight-Binding Model to Calculate Conductance of DNA Q.F. Zhang	316
Physical Properties and Antimicrobial Activity of a Poly(lactic acid)/poly(ε-caprolactone) Film Antimicrobial Coating with Chitosan M.W. Yuan, Y. Wu, Y.Y. Qin, M.L. Yuan and H.L. Li	320
Chapter 9: Chemical Materials and Testing Technology	
Density Functional Calculations on the Alkaline Hydrolysis of Phosphate Triesters F.T. Xia, W.Y. Li, Z. Yang and H. Zhu	327
Growth of Near-Stoichiometric Lithium Tantalite Crystal and its Optical Characterization F.W. Meng, B. Xu and Q. Tian	333
Influence of Raw Material Concentration on Product Characterization of Magnesium Hydroxide Prepared via Ammonia Method H.F. Li, L.J. Li, Z.Q. Liu, X.W. Peng, D. Shi, X.X. Song, F. Nie, Y.Q. Ma and Y.L. Zhang	337
One-Bath One-Step Dyeing Process of Reactive Dyes to Cotton/Hemp Fabric J.F. Liu and X.P. Zeng	344
Preparation of the Lithographic Printing Ink Cleaning Solution in Plateaus Y. Wang, Y. Liao, L.X. Mo and Y.L. Li	348
Research on Electrochemical Polymerization of Conductive Heteroaromatic Polymers Y.Q. Wu, F.L. Zhang, Q.F. Chen, S.C. Gong and C.L. Du	352
Rheological Property of Sodium Alginate-Agar-Montmorillonite Ternary Solution N.S. Ma, S.J. Pang, N. Xu, L.S. Pan, G.M. Li and Q. Lin	357
Study on Synthesis of Ester of Citric Acid and Palmityl Alcohol X.H. Wang, X.H. Du and L.M. Dong	361
Synthesis and Application of Fluorosilicone Polymer X.T. Cheng, W.H. Li, C.S. Zhang and Y. Bai	365
Synthesis and Evaluation Methacrylate-Based Monolithic Materials Mixed with Carbon Nanotubes	250
R. Feng Electrochemical Oxidation of o-Amiophenol in the Presence of NaCI for Wastewater	378
Treatment C.H. Nie and B.H. Wang	382
Modified Unsplitted Perfectly Matched Layer Absorbing Boundary Conditions for Truncating Anisotropic Medium Z.C. Cai, L.X. Yang, H.C. Deng, X. Wei and H.C. Yin	386
Designing of In Situ FTIR Cell and its Application M.J. Luo, B. Hu and X.Y. Liu	390
	370
Chapter 10: Films	
Co-Electrodeposition and Characterization of Ag-Ag ₂ S-PbS Thin Films on Indium-Tin-Oxide Coated Glass Y.M. Zhang, L. Chen and H.C. Pan	397
Experimental and Simulation Study of Magnetron Sputtering MgO Film Thickness Distribution	/
Y.P. Han, J.Y. Feng, Q. Fu, F.D. Zeng and G. Wang	401

Review of the Study on Load Capacity of Oil-Film Bearings X.J. Yu, Z.X. Li, K.N. Shen, S. You and A.J. Wu	405
Study of Atmospheric Pressure Plasma Jet on Surface Modification of Polyimide Film S. Peng, W. Li, Y. Xu, C.L. Wang, Y. Guo, J.J. Shi and J. Zhang	410
The Research of the Zn₂TiO₄ Films Grown by Magnetron Sputtering S.J. Zhang, M.S. Li, S.L. Feng and C. Cao	415
Chapter 11: Building and Road Materials, Construction Techniques	
A Three Dimensional Microstructure Sphere Model of Cement Hydration X.L. Qiu, Y.R. Zhou, L. Wu and B. Lei	421
Bond-Slip Constitutive Relationships of the CFRP/Concrete Interface X.Y. Wu and H. Wang	426
Design of an Innovative Large FRP Pultruded Structure G. Boscato and A. Dal Cin	430
Effect of Dowel Looseness on Response of Jointed Concrete Pavements Using Three- Dimensional Finite Element Analysis	125
H.B. Sii, G.W. Chai, R. van Staden and H. Guan Experimental Study of Rockfill Particle Breakage	435
Z.H. Xu and D.W. Sun First Evaluations on Structural Response of FRP Pultruded Applications Subjected to	445
Seismic Actions G. Boscato	449
Performance of Different Connections for a SFGP-RC Prototype Panel G. Boscato and A. Dal Cin	455
Research Application of Colored Asphalt Mixture Pavement Z.G. Xin	459
Structural Behaviour and Comparison of CGF Panels G. Boscato, A. Dal Cin and R. Destro	463
Structural Performance of a New Column's Prototype Made by FRP Pultruded Material and Light Concrete G. Boscato	468
Ultimate Bearing Capacity of Steel-Reactive Powder Concrete Composite Beams L.Z. Han, J.Q. Zhang and J.G. Nie	473
Analysis of Bearing Capacity of Eccentrically Loaded GFRP Tube Columns Filled with Reinforced Concrete	
T. Li, X.Y. Zhou, Y.J. Wu, D.C. Wu and H.W. Guan Test Study on Mechanical Performance of the Flexible Connections of the Precast Concrete	483
Wall Panel R.N. Liu, K.Y. Zhang and M.L. Tao	487
Process Parameters of Rubber Powder Particles Modified Asphalt Y. Mao, Y. Liu, P.W. Hao and H.N. Wang	491
Road Performance Study on Gap-Graded and Dense-Graded of Rubber Powder Particles Modified Asphalt Mixture Y. Mao, Y. Liu, P.W. Hao and H.N. Wang	499
Technical Standards of Rubber Asphalt and Crumb Rubber Modified Asphalt Y. Mao, F.Y. Gong, P.W. Hao and H.N. Wang	505
Analysis of Obstacle of Development and Application that Coal Gangue Used in China Road Engineering	
Q.Q. Ma and H. Liu	510
Chapter 12: Surface Engineering/Coatings Technology	
Cathodic Arc Evaporated CrAlSiN Coatings with Multi-Cycle Depositions Y.S. Chang, W.Y. Ho, P.Y. Tsou and C.L. Lin	517

Corrosion Behavior of the Composite Coatings Prepared on Magnesium Alloy AZ91 in Na ₂ SO ₄ Solution	
W. Shang, Z.L. Yin, Y.Q. Wen and X.F. Wang	522
Impedance Behavior of the Composite Coatings Prepared on Magnesium Alloy AZ91 in Simulated Seawater Solution W. Shang, Z.L. Yin, Y.Q. Wen and X.F. Wang	526
Jet Stabilities in the Electrospraying of Macro-Molecules Solutions for Controllable Micro-	320
Printing Z.K. Tan, Z.H. Xie, H.J. Wang, B. Liu, C.Y. Tong and Y.J. Tan	531
Thermal Behavior of AlTiN Free-Standing Coating by Cathodic Arc Deposition P.Y. Tsou, W.Y. Ho, Y.S. Chang, G.K. Jiang, C.J. Chiu and C.L. Lin	538
Influence of the Polymer Modified Mortar Coating on Gas Permeability of Steel Fiber	
Concrete W.X. Zhao, W.P. Wang, K. Zhao, X.N. Cai and G.Y. Niu	543
A Study on Multi-Focus Images Fusion Technology Based on Fiber Natural Boundaries X. Xu and R.W. Wang	547
Chapter 13: Materials Processing and Manufacturing Technology	
Adhesion Model and Shedding Limit's Identification of the Oxide Film on the Surface of ELID Grinding Wheel	
J.C. Kuai	557
Application of Incremental Forming in Sheet Metal Bending Process X.B. Dang, K. He, S.G. Wei, J.H. Li and R. Du	561
Characteristic of Hyperbaric GMAW Metal Transfer at 1-12 Bar Argon Environment K. Li, H.M. Gao, H.C. Li and S. Gong	565
Development and Application of a Cutting - Abrasive Impregnated Diamond Bit H.S. Zhao and K. Zhang	570
EWR Research on PZT Excited Discharge Channel Compression Micro-EDM L.M. Du, Q.H. Zhang and J.H. Zhang	575
Experimental Study on the Grinding Concentration of Dahongshan Copper Q.H. Wang, G.Z. Zhuang, C.M. Wang and H.Y. Xie	579
Grinding Model of Processing Aspheric Parts by Bending Method C.M. Shang, D.M. Zhang and J.D. Yang	583
Hot Deformation Behavior and Constitutive Equation of Mg-4Al-3Ca -1.5Zn-1Nd-0.2Mn Magnesium Alloy As-Extruded	
G. Čhen, W. Chen, G.W. Zhang, J. Zhai, L. Ma and H.Y. Xing	588
Lapping Parabolic Parts Using the Bending Lapping Tool C.M. Shang, D.M. Zhang and J.D. Yang	592
Orthogonal Experimental Study on Moulding Conditions of Amino Moulding Plastic J. Liu, J.Y. Nan, C.P. Wang, T.L. Jin and R.Q. Chen	596
Research on the Precision Machining on SiC Q. Xiao and X.L. He	601
Research on Wear Mechanism in High-Speed Milling GH4169 with Coated Carbide Tool W.W. Liu, H. Chen and F. Li	605
Simulation and Stress Analysis of U-Shaped Seam Welding Process Based on ABAQUS H.Z. Zhang and X.Y. Sheng	612
Study on the Double Pulse Laser Dynamic Electronic Speckle Measurement Based on FPGA	615
F.S. Yu, T.F. Li, Y.C. Wu, Z.G. Sun and S.J. Yin Synchronous Ontimization of Clamping Force and Cutting Personators for Thin Welled	617
Synchronous Optimization of Clamping Force and Cutting Parameters for Thin-Walled Parts L. F. Yue, W. F. Chen, T. Feng and W. T. Ma	623
L.F. Xue, W.F. Chen, T. Feng and W.T. Ma The Development of the Microwave Assisted Rock Breaking Device	023
G.T. Feng, Ž.G. Wang and Z. Wei	627
The Effect of Electron Beam Energy Density on Temperature Field for Electron Beam Melting	
Y.X. Chen, X.J. Wang and S.B. Chen	631

The Effect of Welding Speed on Mg/Al Dissimilar Stirring Brazing H.B. Sun, H.Y. Chen, S. Tang, L. Luo and H.B. Xu	639
Etching of Magnetic Materials Using Ar-CO/NH ₃ in a Reactive Ion Etching System S.X. Liu, M.G. Wang and Y. Xia	643
FE Analysis of Hot Strips' Temperature Distribution in Laminar Cooling Process Y.Q. Zheng and J.Y. Cui	647
Influence of Lithography Distortion due to Metal Fill on CA X.M. Chen, K.Q. Wang and S.S. Li	651
Beneficiation of Collophanite from Ores by Reverse Flotation J.L. Zhao, Y.Y. Ge, Z.C. Yang, L.M. Zeng and J. Zhu	656
Study on Lateral Pressure-Transfer Regularity of Tube SGMF under High Pressure L.J. Wu, C.C. Zhao and M.Y. Cao	661
Chapter 14: Mining and Mineral Processing	
Flotation Tests on Ultra-Fine Oolitic Cellophane W.C. Jin, P. Zhou, H.Y. Xie, W. Tan and B.W. Yang	669
High Temperature Oxidation Behaviour of DSS 2205 in Humid Air J.G. Peng and M.C. Li	673
On the Feasibility of Applying Electric Field to Increase Oil Recovery in Old Oil Field C.H. Nie	677
Study on the Concentration of a Carbon-Containing Oolitic Low-Grade Collophane W.C. Jin, P. Zhou, H.Y. Xie, W. Tan and B.W. Yang	681
The Study of Optimization Experiment on Injection Timing and Injection Pattern of Binary Compound Flooding after Polymer Flooding of Heavy Oil in Offshore Field D.L. Li, J. Zhang, K.P. Song, E.G. Tang and B. Huang	685
Characteristics and Sequences of Fractures in the Tight Conglomerate Reservoirs of Jiulongshan Structure	689
L. Gong, S. Gao, S.J. Guo, J.G. Huang and X.X. Tao	089
Chapter 15: Mechanical Behavior and Fracture	
Analysis on Waterfall Tube Corrosion and Strength Calculation for Boilers Exceeding Service Life	
H.Y. Du, X.H. Sun, Y.M. Li and Z.A. Ren Intensity Variation of the Electromagnetic Emission (EME) of Rock Masses Failure under	695
Dynamic Load G.X. Wan, Q.S. Wang and W.B. Zeng	699
Least Squares – Boundary Element Method of Calculating Minimum Anisotropic Stress and Displacement	0,7,7
W. Zhang	703
On the Bending of a Thin Plate at Nonlinear Creep V.I. Andreev, B.M. Yazyev and A.S. Chepurnenko	707
Reliability of Cu to Cu Joints Fabricated Using SnAg Capping Layer for 3D TSV Applications	711
S.W. Ma, J.H. Lee, J.S. Lee, K.B. Kim, M.S. Suh, N.S. Kim and Y.H. Kim Properties of Hand Woven Cotton for Thai Children Standard Sizes Models S. Jatuphatwarodom	711 715
High Strain Rate Superplasticity and Microstructure Evolution in a Coarse-Grained Mg-	/13
Gd-Y-Zr Rolled Sheet Y. Zheng, C.P. Tang and Y.L. Deng	719
Study on Sinter Microhardness of WISCO	
S.P. Wang, X.G. Bi and D.M. Weng	725

Study on the Influence of Deformation of the Slipper of Axial Piston Pump under High Pressure on Oil Film Structure H.C. Wu and Y.L. Yu	734
Research on Dispersion Mechanism of Extinguishing Agent Scattered by Grenade	
Explosion X.Y. Guan and S.G. Liu	738
Simulation Analysis of Isolation about Spray Boom Y.J. He, B.J. Qiu and Y.F. Yang	742
Dynamic Response Analysis of Super-Long Hybrid Jib Structure under Impact Load Q. Dong, G.N. Xu, M.L. Yang, H.L. Ren and B. Zhang	746
Dynamic Stability of an Axially Moving Yarn with Time-Dependent Tension Y.G. Li	753
Gelled Crude Oil Particle Deformation under Hydraulic Suspension Transport Investigated by Numerical Simulation	
X.Y. Liu, Y.H. Li, X.Q. Li, C.C. Zhao and L.J. Liu	757
Chapter 16: Friction, Wear and Lubrication	
Analyzed on the Lubrication Characteristics Orthogonal Test of the Low Speed and Heavy Load Equipment	
S.Y. Chen, C.S. Liu, Y.Q. Li, X.X. Li and J.F. Wang	763
Effect of Cryogenic Treatment on Friction and Wear Property of DLC Film/304 Stainless Steel	
Y. Zhao, C.Y. Nie, Y.D. Jin, W. Zhu, X.D. Liu and Y.Z. Nie	767
Gas Turbine Engines Lubrication System Design Y.Y. Zuo	773
System Modeling and Characteristic Analysis for a Permanent Magnet Orbital Friction Vibration Actuator Used in Orbital Friction Welding F. Xu, J.H. Hu, J.B. Zou and Y. Li	777
The Optimization Design and Research of CX20 Clutch Friction Plate	///
L.M. Shi, S.L. Feng, Z.H. Wang, Y.M. Shao and X.C. Jian	781
Theoretical Simulation of the Temperature Increasing Induced by the Friction between Cotton Packages and Iron Floor during the Transportation by Train Y. Yang and Y.F. Zhang	787
Study on Friction and Wear Behaviors of Aluminium Matrix Composites Reinforced with <i>In Situ</i> Formed TiB ₂ Particles	
B. Huang, J.M. Zeng, Z.L. Hu, H. He, C.Y. He and J.L. Yan	794
Study of Analysis Method for Hertz Contact Problem in Friction Drive L. Ling and J.Q. Yi	798
Chapter 17: Heat Generation and Conduction	
Analysis on the Waste Heat Utilization of Lower Temperature of Steelworks Based on the Theory of Total Energy System	
M.R. Han, L.Q. Huang and J.G. Yin	805
Numerical Study on Heat-Flow Density of Aerospace Plane S. Chen and H.B. Mai	810
Numerical Study on Structure Thermal Protection of Aerospace Plane S. Chen and Q.F. Zhang	814
Thermal Analysis of Blood Pump Rotor System K. Sun, X. Wu, J.F. Wang, J. Ge and Z. Yun	818
Transient Thermal Analysis of Wheel-Mounted Brake Disc of Gray Cast Iron D.M. Xia, Y. Xi, P. Zhag and Q. Ye	822
Simulation on Temperature Characteristics of Solar Cell Y.C. Jiang, F.Q. Yang and G.L. Hu	828