

Table of Contents

Preface and Conference Organization

Chapter 1: Non-Ferrous Metal Materials and its Alloys

Effects of Annealing on Microstructure and Phase Transformation Temperature of NiTiNb Shape Memory Alloy after Equal Channel Angular Pressing Y.Z. Huang, S.Q. Lu, J.W. Liu, K.L. Wang, G.F. Li and X.Y. Shu	3
Research on Dynamic Recrystallization Behavior of near-α Titanium Alloy during near-β Compression B. Zhou and S.Z. Zhang	8
Structure and Physical Properties of Liquid Ni₂Sb₉₈ Eutectic Alloy T. Lv, H.L. Zheng, F.X. Guo and X.L. Tian	12
The Microstructure Evolution and Twinning Characterization of AZ31 Mg Alloy Sheet in Low-Temperature Bending Process J.W. Liu, S.Q. Lu, K.L. Wang, G.F. Li and X. Xiao	16
An Experimental Study of High-Velocity Impact on Aluminum Foam Composite Shield Structure Q.Z. Li, Z.H. Du and K.K. Wang	20
Extraction of Tantalum from Ta₂O₅ Using SOM Process C.Y. Chen, Y.L. Lv and J.Q. Li	25
Reaction Mechanism on Preperation of Ta with SOM Process C.Y. Chen, Y.L. Lv and J.Q. Li	30
Sintering Characters Analysis of the Al₂O₃-86 Homogenized Bauxite H.Y. Yang, Y. Li, S.L. Liu, C.H. Gao, S.L. Ma and L.J. Wang	35
Step Reactive Sintering of Ti₂AlNb Based Alloy with Element Powders Y.X. Wang, K.F. Zhang and L. Zhen	40
Study on Microstructures and Mechanical Properties of Die Casting Mg-xGd-3Y-0.5Zr Alloys F. Wang, Z. Wang, Z. Liu and P.L. Mao	44
Study on Sintering Properties of Al₂O₃-70 Natural Mullite by New Processes S.L. Liu, Y. Li, H.Y. Yang, C.H. Gao, S.L. Ma and L.J. Wang	49
Study on the ZK60A and AZ31B Magnesium-Alloy in the Application on High-Speed Train Seats L. Song, Y.H. Zhao, J.Z. Liu, J.H. Mu and X.C. Guo	53
The Effect of Heat Treatment on Microstructure and Performance of Die Forging Copper G.R. Yang, W.M. Song, Y. Ma and Y. Hao	58
Yield of Alloying Elements Fed by Cored Wire into A Copper Melt B.H. Kang, W.H. Lee, J.Y. Cho, M.J. Lee and K.Y. Kim	62
Effect of Cooling Mode on Properties of a Cast Zinc Alloy F. Zhang and J.G. Wan	66
Effects of Cr Substitution of Mo on the Formation and Mechanical Properties of FeCoMoCrZr Amorphous Alloys C.X. Xie, Y.Z. Yang and M.Z. Chen	70
Study of Thermal Stability of Magnesium Alloys Z. Turnova, T. Chrebet, I. Turekova and K. Balog	74
Direct Electrolytic Reduction of Solid Cr₂O₃ to Cr Using SOM Process C.Y. Chen, Z.H. Mao and J.Q. Li	78
Electrochemical Behaviors of Die-Cast Mg-4Al-0.4Mn-Xpr (x=0, 1, 4) Alloys in NaCl Solution X.D. Niu, W. Sun, X. Qiu, J. Meng and J. An	82

Chapter 2: Iron, Steel and its Alloys

Alloy Design and Application for Avoiding Carbide Network of CrWMn Steel by Phase Equilibrium Thermodynamic Method Y.Q. Ma, X.J. Zhang and Y.F. Liang	91
Atmospheric Corrosion Behavior of Salvaged Marine Cast Iron Artifacts W.Z. Ouyang	97
Characterization of Passive Film Formed on X80 Pipeline Steel in Sodium Bicarbonate Solution P. Liang, Y.H. Shi, Y.X. Zhang and C.S. Hu	101
Development of Hot Rolled Ship Plate with High Strength and High Toughness X.D. Huo, L. Guo, J.S. Feng, C. Luo and J. Qu	106
Effect of Rare Earth on Microstructure and Mechanical Property of Ferrite Stainless Steel X. Liu and H.W. Dong	110
Effect of Slag Composition on Total Oxygen of High Speed Wheel Steel Y. Tang	114
Failure Analysis on Fracture of 16Mn Steel H.W. Wang, W.T. Li, H. Bai, H.Q. Xiao and H.M. Yu	118
Green Manufacturing Operation Mode for Iron & Steel Enterprise Z.P. He, H. Zhang, Y.H. Wang and Z.G. Jiang	122
Improvement of Radiation- and Thermal Stress-Induced Springback Degradations in Invar Alloy Using Repeated Radiation Plus Hot-Then-Cold Treatments C.F. Yang, W.W. Wang, E. Pan, S.S. Lin and J.J. Lin	128
Intergranular Corrosion Behavior of 00Cr12 Ferritic Stainless Steels Containing Cerium Y.B. Li, F.M. Wang and X.N. Cheng	133
Microstructure Evolution and Grain Boundary Characteristics of Oriented Silicon Steel during Primary Recrystallization in a Pulsed Magnetic Field L.H. Liu, L.J. Li and Q.J. Zhai	139
Microstructure Refinement of Hypereutectic High Chromium Cast Iron with Electric Current Pulse H. Chen, L. Zhang and S.M. Wang	147
Recrystallization Thermal Simulation Experiment for a Micro-Alloy Steel F. Liu	153
Research on a New Secondary Creep Model and Creep Damage Evolution for P92 Steel J. Yuan, H. Xu and Y.Z. Ni	157
Research on Fatigue Behavior of Beam with Corrugated Steel Webs X.L. Hu, L.F. Tan and Q.X. Wang	164
Research on Molten Steel Flow with Electromagnetic Stirring J. Zhang	168
Research on Powder Metallurgy High Nitrogen Stainless Steels D.W. Cui and J.L. Wang	172
The Effect of Finish Rolling Temperature on Microstructure and Mechanical Properties of Vanadium Containing Ferritic Stainless Steel S.Y. Chen, J. Xu, X. Zhang and Y.T. Yang	176
The Effect of Microstructure on Properties of High Deformation Pipeline Steel X70 X.L. Wan, K.M. Wu and Z.H. Xia	182
The Investigation in the Influence of Hardness to Transition Point after Tempering for Boric Carbon Steels H.H. Chung and T.H. Chen	186
Thermodynamic Analysis and Observation of Inclusions in H13 Die Steel with Rare Earth X. Liu and J.L. Liang	193
20#,60Si2Mn,9Cr18MoV Steel Ferrite Area Dynamic Recovery and Recrystallization Research L. Li, W.K. Xiao, T.T. Fan and Z.Q. Zhang	197
Beneficiation Study on an Oolitic Hematite J. Sun and J.Z. Zhang	202
Corrosion Property of a New Repair-Free Steel Developed for Bottom Plate of Cargo Oil Tanks F.L. Sun, X.Q. Cheng and X.G. Li	206

Effect of Loading Rate on Tensile Properties of Automotive Steel Sheet J.G. Qin, F.Y. Lu, Y.L. Lin and X.J. Wen	211
Effect of Secondary Cooling on Non-Oriented Electrical Steel Strips Produced by Twin-Roll Casting Process T. Zhang, X.M. Zhang, Z.Y. Guo, Y.Q. Wang and C.G. Li	218
Effect of Tempering Process on Residual Stress in Hot Rolled Low Carbon Martensite High-Strength Steel Strip L. Sun, Z.Y. Zhao, X.Z. Yang and R.D. Xue	222
Hot Ductility Behavior of 800MPa Ultra High Strength Niobium Containing Steels Q.S. Li, M. Zhang, C.B. Huang, R.Y. Wu, X. Zhao, Y. Zhong and L. Li	227
Numerical Simulation on Collision and Aggregation Process of Al₂O₃ Inclusions with Different Morphology Characteristics Y. Wang, H. Li and L.F. Guo	233
Research on Using Limestone for Slagging during BOF Steelmaking Process J. Feng, H. Li, C.X. Li, W.C. Song, W. Nian and L.F. Guo	237
Study on Desulfurization Kinetics Model of LF Refining Y. Yue, B. Zhang and Z.L. Xue	246
Study on Initial Oxidation Film Formation Mechanism of T23 Steel at 600°C W. Wang, Z.W. Wang, W.L. Zhong, T. Song and W. Wei	252
The Implementation of Steelmaking MES for Pangang Group J.B. Wu and J.G. Liu	256
The Investigation on Wire Rod Materials of Low Carbon Steels and Extra Low Carbon Steels H.H. Chung and T.H. Chen	262
Influence of Heat Treatment on Microstructure and Properties of Ultrahigh Strength Fe-Ni-Co Alloy J.Y. Zhong and P. Zhong	270
Corrosion-Resistant Alloys for Tubings and Casings and Alloy Material Selection in Oil and Gas Wells L.F. Li	276
Effect of Water Vapor on Oxidation of Ferritic Stainless Steel 21Cr-0.6Mo-Nb-Ti in Simulated Reheating Environment X.W. Cheng, Z.Y. Jiang, D.B. Wei, L. Hao, J.W. Zhao, J.G. Peng, S.Z. Lu and L.Z. Jiang	280
Study of the Effect of W and Mo Binary Alloying on Fe-Ni36 Invar Alloy Properties C. Wang, S.Q. Yuan, C.G. Yao and Z.P. Feng	290
Effect of Pre-Oxidation on the High Temperature Oxidation Behavior of Fe-Cr-Al Powder Porous Metal J.S. Oh, S.H. Lim, S.H. Choi, M.H. Park and K.A. Lee	294
Experimental Research on Size Effect of Magnetic Hysteresis Loop for Q235 Steel A.G. Li, J.H. Zhao and E.G. Xiong	298

Chapter 3: Composites

Analysis and Research on the Microstructure Fractal Characteristics of the Copper Matrix Composites R.B. Ma, S.M. Xu and J.H. Du	305
Dynamic Analysis of the Rotating Composite Thin-Walled Cantilever Beams with Shear Deformation Y.S. Ren and Q.Y. Dai	309
Finite Element Model and Bending for Marine Composite Flexible Pipes M. Wang, R. Bai and M.J. Zhou	314
High-Temperature Dry Sliding Friction and Wear Characteristics of As-Cast SiC_p/A356 Composite Y.X. Jin, X.Y. Wang, Q.Q. Tong, H.M. Chen and J.M. Lee	318
Influence of Fiber's Surface State on Mechanical Properties and Fiber-Matrix Interaction of CFRP J.J. Sha, Y.X. Zhang, J. Li, J.X. Dai, Z.Q. Wei, J. Hausherr and W. Krenkel	323

Microstructure and Properties of Deformation-Processed Cu–Cr <i>In Situ</i> Composites K.M. Liu, Z.B. Chen, J. Zou, S.Y. Wei, Q. Hu and D.P. Lu	329
Preparation of the High Temperature Resisting Material with Al-CrO₃ System by SHS Y. Wang	334
Study on High-Speed Milling Force of SiC_p/Al Matrix Composite L. Xin and J.J. Lv	338
Synthesis and Characterization of MgFe₂O₄ /MgO Composite Films from Layered Double Hydroxides Precursors Y.C. Zhang, T.T. Chen and L. Yang	342
Synthesis Method and its Influence Factors of Hydrotalcite-Like Compounds H.D. Xue, F.L. Wang, G.L. Li, P. Liu, Y.Q. Bai and K. Wang	351
The Influence of AC Perturbations on EIS Measurement of Copper/LDPE Composite with High Resistance Y. Wang and X.X. Hu	355
The Sorting Method of the same Pattern Compound Material Based on Basic Element Model of Surface Microstructure S.M. Xu, R.B. Ma, J.H. Du, J.H. Liu and Q. Jin	359
Vulcanization Kinetics of Starch Xanthate /Natural Rubber Composite W.J. Luo, S.D. Li, Z.F. Wang, L. Fang, H. Lin and T.J. Zhao	363
Application of Diffraction and X-Ray Microanalysis in Study of MMC Structure K. Gawdzińska	368
Influence of Temperature on Carbonation Pellet for Ferrous Dust Y. Shi, X.J. Li and C.Q. Hu	374
Innovative Utilization of a Borate Additive in Magnesium Production to Decrease Environmental Impact of Fluorides from Pidgeon Process F.L. Han, Q.X. Yang, L.E. Wu and C. Du	378
Microstructure and Formation Mechanism of Two-Liquid Bimetal Composite Interface Y.C. Zhu, S.F. Rong, H.S. Yang, Z.J. Wei and M.M. Han	390
Morphology and Property of Polypropylene Composites Filled with Modified Attapulgite L.S. Hu and S.P. Liu	394
Parameters Optimization of Steel Wire Reinforced Thermoplastics Composite Pipe P. Shang, Y.X. Qu and J.J. Zhao	399
Preparation and Characterization of Hydroxyapatite Whiskers M.H. Huang, Q.H. Chen, Y.S. Cui and W.B. Zhu	404
Preparation SiC Ceramic Composite Filtration Membrane Materials by Dry Pressing and Synchronous Sintering Method K.F. Su, L.M. Wang, X.Y. Deng, J.B. Li, C.P. Wang, G.Q. Zhang, Y.N. Jing and C.Y. Bai	409
Silty Clay and Fibre Interaction A. Chegenizadeh and H. Nikraz	415
Study on Film-Forming Technique of Aluminum Composite Membrane Prepared by Inorganic Precursor Sol-Gel Method L.L. Guo, H.M. Wang, W. Liu and M. Xu	421
The Research Progress of Nitinol Vascular Stent J.L. Ma, M. Zhu, W.D. Miao, J.T. Li and Y.M. Kou	425
Fabrication and Characterization of NiO_x/Bi₂WO₆ with Enhanced Photocatalytic Activity under Visible Light Illumination C. Ma	429
Study of Microstructure and Properties of Corundum-Calcium Hexaluminate Composite Aggregate L.P. Fu, H.Z. Gu, B. Du, A. Huang and Z.K. Li	433
Adsorption of Congo Red from Aqueous Solution onto Chitosan/Rectorite Composite T. Feng and L. Xu	438

Chapter 4: Micro / NanoMaterials and NanoTechnologies

A Molecule Computing Model for Maximum Independent Set Problem Based on DNA/AuNP Conjugation J. Yang, C. Zhang and H. Wang	445
--	-----

Preparation and Photocatalytic Activity of Gadolinium–Doped ZnO Nanocrystalline Powders L.F. Chen	450
Preparation of Nanosized Barium Titanate Powder by a Direct Reactive Precipitation Method H.B. Li, S.Y. Wu, J. Wang and C.J. Li	454
The Development of Nanocrystalline Materials Prepared by Electrodeposition M. Sun, N. Zhang, H.M. Kan, X.Y. Wang, F.Y. Yang and T.T. Fu	458
The Effect of PEG on the Preparation of Hydroxyapatite Q.Z. Sun and H.B. Wang	462
The Effects of Surfactants on the Topography of HA Q.Z. Sun and H.B. Wang	466
The Research of Influence on Fe-N Alloy Magnetism from Experiment Parameters X.Z. Guo, R.H. Chen and W.F. Song	470
A Novel Hybrid System for the Fabrication of Electrospun Mat with Microspheres S. Zhang and G.J. Jiang	475
Enhanced Field Emission from Carbon Nanotubes Coated by Nanoparticles of Turbostratic Stacked Graphenes Q.T. Li, R. Hu, X.R. Zhao, Z.G. Li and Y.P. Liu	479
Preparation of Aluminum Nanoparticles and Oxidation Mechanism of Nano- and Micro-Particles L. Chen, L. Liu, Z. Li, C.J. Xiao and T. Wei	485
The Preparation and Properties of Porous Scaffold Made of Nano-Hydroxyapatite/Polyamide66 Y. He, H. Lan, J. Liu and L. Guo	490
Studies on Crystallizations and Mechanical Properties of Polypropylene/Nano-TiO₂ Composites C.P. Yang, Y.J. Wu and C.G. Liu	494
Thin Film Microcircuit Preparation in a Diamond Anvil Cell J. Wang and B.J. Wu	499
Micro-Structure of a Special Sericite-Jade: A Preliminary Study Using XRD and SEM Analysis W. Fu, M.L. Yang, Q.H. Guo, X.R. Huang, M.C. Chai and W. Guo	503
Preparation of Expanded Graphite with Fe₃O₄ Nanoparticles C.Y. Wang, M. Ma, C.L. Qin and G.W. Wen	507
Study on Catalytic Efficiency of Ag/N Co–Doped TiO₂ Nanotube Arrays under Visible Light Irradiation X. Kang, J. Qi, L. Ye, H. You and L.J. Hu	511
A Novel 5-Fluorouracil-Loaded Polyelectrolyte Nanoparticle Formulation Y.L. Fan, B.Y. Fan, Q. Li, S. Leng and L.H. Ma	518
Aligned Nanofiber Arrays and Twisted Nanofiber Ropes via Electrospinning with Two Frames Collector J. Zheng, Y.Z. Long, B. Sun, H.D. Zhang, J.C. Zhang and J.Y. Huang	523

Chapter 5: Ceramic

Effect of Type and Amount of Wetting Agent on the Formability and Bending Strength of Vitrified Bond Diamond Abrasives W.S. Cheng, Y.B. Liu, W. Liu, D.T. Yang and Z.J. Jiang	529
Synthesis of Al₂O₃ Ceramics Matrix Composites by Thermal Explosion under Pressure and Hot Pressing G.L. Zhao, C.Z. Huang, H.L. Liu, B. Zou, H.T. Zhu and J. Wang	534
Fabrication of ZrB₂-Based Ceramics Doped with ZrSi₂ J. Li, Z.Q. Wei, Z.F. Zhang and J.J. Sha	538
Study of Domains and Size Effect of Curie Temperature in BaTiO₃ Nanoceramics C. Fang and L.Y. Chen	542

Study on Grindability Evaluation of Ceramic Materials Based on Interval Gray Principal Component Analysis	
J.M. Xia	546
The Progress of Amorphous Si-B-C-N Composite Ceramics	
F.Y. Yang, N. Zhang, M. Sun, T.T. Fu, H.M. Kan and X.Y. Wang	550

Chapter 6: Optical/Electronic/Magnetic Materials

Emission Color Variation of $\text{Sr}_3\text{SiO}_5\text{:Ce}^{3+}, \text{Li}^+$ Phosphor for Near-UV Light-Emitting Diodes by Co-Doping with Mg^{2+} and Ba^{2+}	
P.P. Zhu, T.W. Huang, X.J. Wang, H.L. Li and Z. Sun	555
First-Principles Investigations of Structural Stability of LuN	
X.C. Yang, E.J. Zhang, H.Y. Ma and J.P. Xiao	559
InAlN/GaN HEMT Small-Signal Parameter Extraction	
X.W. Zhang, P. Xu, K.J. Jia, Z.H. Feng and Z.P. Zhao	564
Influence of Deposition Temperature of ZnTe Films on Silicon by Thermal Evaporation	
J.S. Lin, S.S. Wei, Y.T. Yu, C.H. Hsu, W.H. Kao, W.S. Chen, C.F. Tseng, C.H. Lai, J.M. Lu and S.P. Ju	569
Preparation and Characterization of a Novel Gadolinium Triple-Decker Sandwich-Type Complex with Tetrabenzoporphyrin Ligand	
Q.F. Liu	573
An Integrated Evaluation Model for New Product Development in Light-Emitting Diode Plant Lighting Industry	
W.C. Chen, L.Y. Wang and H.P. Chang	577
Casted Strip Character of Twin-Roll Casted High Strength Non-Oriented Electrical Steel	
Y.Q. Wang, X.M. Zhang, T. Zhang and Z.M. Fan	582
DFT Studies on the Electronic Spectrum and the Second-Order Nonlinear Optical Properties of Donor-Acceptor Helicenes	
X.W. Zhang, J.Q. Xu and M.L. Liu	586
Ferromagnetic Material of the Nearly Half-Metallic Alloy Co_2TiGa	
H.P. Han	590
Luminescence Properties of ZnO:Eu^{3+} Red Emitting Phosphor Prepared by Precipitation Method	
L.Y. Jia, Z.B. Shao and J.F. Han	594
Magnetic Material Based on Full-Heusler Alloy Co_2CrGa	
H.P. Han	598
Structural Stability, Electronic and Optical Properties of Ni-Doped Boron Carbide by First Principles Calculation	
J.L. Fan, Y.S. Wei and S.K. Lu	602
Study the I-V and C-V Characterization of n-ZnO/p-Si Heterojunction	
X. Chao, L.H. Ding, X. Jin, C. Lei, H.C. Yuan, X.F. Zhu, Z. Yan and X.C. Zhou	607
Study of Optical Characteristics of H_2S Molecule Adsorption on Ag_n ($n=3,5$) Clusters	
H. Zhou, J.Q. Wen, J.F. Wang and J.F. Wang	611
Preparation of Stilbene-Eighteen Alkyl Quaternary Ammonium Salts as Fluorescent Brightening Materials and Surfactants	
M.S. Wan, C.B. Cao, H.Y. Sun, M.Y. Wang and W.Q. Ma	615
Synthesis and Properties of Novel Hole-Transporting Materials Containing Triphenylamine and Bipyridine Units	
H.J. Lv, Y.F. Yu, L. Liu, A.B. Chen, Z.C. Hu and K. Huang	619
Electronic Properties of ZnO Doped by Rare-Earth Elements from First-Principles	
L.L. Chen, H.D. Hu and Z.H. Xiong	623
The Influence of B_2O_3 on the Luminescence Behavior of ZnGa_2O_4 Phosphor at Different Sinter Temperatures	
R.X. Zhong, Z.R. Liu and J.Q. Qi	627

Chapter 7: Functional Materials

Carbon Cloth Diffusion Layer for Fuel Cell Electrode X.J. Zhang, Y.D. Li, Y.H. Tian, S.Q. Wang and L. Zhang	635
The Influences of Zirconia on the Properties of Magnesia Alumina Spinel Bricks S.S. Hong and Y. Li	639
Ti₂AlC/TiC Functionally Graded Material Fabricated by Reaction Sintering Y.L. Chen, M. Yan, P.J. Lu, Z.Y. Li and C.W. Zeng	643
The Microstructure and Thermochromic Properties of La_{1-x}Sr_xMnO₃ Smart Materials M. Xu, Z.H. Fu, L. Li, J.B. Wang, C.H. Wu, Y.Z. Zhao and H.P. Zuo	648
Investigation on the Creep property of Theoretical Composition Magnesia Alumina Spinel Bricks S.S. Hong and Y. Li	654
Influence of Fe₂O₃ on the Hydration Resistance of MgO-Al-C Bricks J.C. Wei, S.J. Yuan, X.M. Ji, L.X. Yu and J.B. Tu	658
Effects of Sodium Salt on Hot Mechanical Properties and Microstructure of MgO-Al-C Bricks J.C. Wei, X.M. Ji, J.K. Huang, C.H. Gao and J.B. Tu	662
Use of Waste Tire Rubber Particles as a Part of an Aggregate Added to Thermal Insulating Mortar D. Huang, X. He, H.L. Lin, K. Sun and Q. Ye	666

Chapter 8: Building Materials, Construction, Soil Behavior, Architecture and Urban and Land Planning Applications

Building Energy-Saving Technology and its Application Based on Low Carbon Concept H. Yan	673
Built-In Spiral Ripe Thin-Walled Square Steel Tube Concrete Column of Nonlinear Finite Element Analysis L.S. Wang and B.S. Li	678
Effects of Clay on Flow Properties of Polycarboxylate Superplasticizer and its Control Measure X. Liu, Z.M. Wang, H. Wu and H.Q. Li	682
Effects of Ferrocement in Strengthening the Serviceability Properties of Reinforced Concrete Structures S.U. Khan, M.F. Nuruddin, T. Ayub and N. Shafiq	686
Elementary Discussion on the Treatment of Old Road Problems in Upgrading and Reconstructing for the Road H.W. Feng and Y.M. Wu	691
Finite Element Analysis for Concrete Filled Double-Skin Steel Tubular Stub Columns Y.Z. Wang and B.S. Li	696
Preparative Techniques and its Performance of Chemically Foamed Cement Paste X.W. Ma and X.Y. Li	700
Research on Building Low-Carbon Hotels from the Perspective of Circular Economy Q. Li and L. Li	704
Research on Mass Concrete Construction Techonogy of Raft Foundation of Hongyun Building S.H. Yin, Y. Huang and Y.H. Yuan	709
Short- and Long-Term Deflection of Concrete Structures L. Zhang and J. Tian	714
Stability Bearing Capacity of Concrete Filled Thin-Walled Circular Steel Tubular Column under Axial Compression X.P. Zhang	720
Study on Clinker Production Using Magnesium Slag on a 4500tpd Line F. Lu, R.Y. Bai and J.W. Cai	724
Study on Crack Spacing and Width of Expansive Soil due to Evaporation J.H. Wu and S. Yang	728
Study on Medium Density Radial Bamboo Curtain Composite Plybamboo C.G. Du and C.D. Jin	734

Study on Particle Characteristics of Cement by Vertical Roller Mill Finish Grinding W.H. Liu, R.Y. Bai and J.W. Cai	738
Study on the Axial Ultimate Bearing Capacity of Concrete-Filled Square Steel Tubular Stub Columns P. Wu, J.F. Xu, J.H. Zhao, Q. Zhu and S. Wang	742
Test of Dynamic Strength Characteristics of Paleosol N.Q. Wang, X.L. Liu, Y.Q. Xue and X.P. Jiao	747
Test Research on Stiffness of Loaded Concrete Beams Strengthened with Prestressed CFRP Sheets D.H. Cheng and P. Zhang	752
The Affecting Factors of Slope Stability Based on Orthogonal Design Z.R. Jiang and L.H. Wang	756
The Effects of Steel Content for the Mechanics Performance of Fiber Modified Polymer Resin Concrete Y.J. Jin, L.G. Xiao and F. Luo	760
The Guidance Pattern of Countryside Sustainable Development of Three Gorges Reservoir in Chongqing J.X. Zhou and L. Peng	763
The Influence on the Concrete Durability in Bleed Air Performance Caused by Concrete Admixture Y.X. Zheng and X.G. Zhu	767
The Inhibition Studying of Many-Doped Mineral Admixture for Concrete Alkali Silicate Reaction X.G. Zhu and K. Cao	771
The Inhibition Studying of Single-Doped Mineral Admixture for Concrete Alkali Silicate Reaction X.G. Zhu and G.S. Chen	776
The Inspiration from the Slow-Traffic and Lingering Characteristics of the Inhabited Bridge C.X. Yang	781
The Studying of Reinforcement Mechanism of Fully Grouting Rock Bolt in Brittle Wall Rock Mass X.G. Zhu	786
Towards a Competitive City: Shanghai's Urban Development Z. Li and T.J. Zhang	793
Unified Solution of the Ultimate Bearing Capacity for Stiffened and Thin-Walled Square CFST Short Columns under Axial Compression J.F. Xu, P. Wu, J.H. Zhao, Y. Li and W.B. Liang	797
A Review of Detection, Evaluation and Repair Technology for Hydraulic Concrete Structures L.Y. Xiao	805
Active Countermeasure Mechanism to Waste Dump Based on Spatial Effect X.Y. Teng and H.B. Wang	811
Analysis on Characteristics of Ancient Kiln Village in Mengjiajing Y.X. Qu, X.D. Zhu and C.E. Wang	816
Analysis On Morphology Of Settlement and Residence In Wangyu Village J. Su and J.P. Wang	820
Analysis on Seismic Behavior of Structures Supported by Foundations with Different Locations L.P. Wang, H.P. Zhong and L.Q. Huang	824
Concrete Slab Value Stream Mapping of Brazilian Residential Buildings - a Lean Construction Study Case P.S.P. Fontanini, C.d.S. Milano, A. Fujimoto, R.C.C. Lintz, L.A. Gachet-Barbosa, A.E.P.G.A. Jacintho and L.L. Pimentel	829
Effect of Pore Structure on the Chloride Permeability of Concrete with Mineral Admixture Y.J. Hu and Y.L. Du	835
Energy Conservation Technology in BedZED and the Enlightenment for China Y.W. Xue and C.L. Meng	839

Evolution and Significance of the Residential Area of Landscape Design H.Y. Guo and Y.N. Cai	843
From the National Historical and Cultural City of Shanxi DaiXian see Ancient Frontier Town History Culture and the Characteristics of the Development of City Y.J. Liu and J.P. Wang	847
From the View of Qujia Courtyard House of Shan Xi Dwellings Traditional Cultural Value R. Du and J.P. Wang	851
Method and Trend of Residential Landscape Design H.Y. Guo and Y.N. Cai	856
Paying Attention to the Application of Ecological Strategy to Construction Design Z. Du and Y.S. Zhang	860
Production of Concrete Blocks with Residues for Civil Construction M.M.d. Camargo, R.C.C. Lintz, L.A. Gachet-Barbosa and M.S.G. Pires	865
Protection and Sustainable Development of Jiexiu Ancient City Y. Xu and J.P. Wang	870

Chapter 8: Building Materials, Construction, Soil Behavior, Architecture and Urban and Land Planning Applications

Research and Application of Corundum Based Self-Flowing Castable Refractories J.C. Wei, S.X. Liu, H.M. Zhang, L.X. Yu and J.B. Tu	877
Research on Axial Behavior of Thin-Walled T-Shaped Steel Stub Columns Filled with Recycled Demolished Concrete Lump A.H. Jin and B.S. Li	881
Research on Spacial Displacement Regulations in Soft Surrounding Rock Tunnel B.L. Lin	886
Soil Erosion Assessment in the Watershed of Dehua District of Fujian Province Y. Zhang, B. Song, J. Wang and H. Sun	890
Studies on RC Beams Strength with Steel Wires Using Nolinear Finite Element Method C. Song, J.Y. Zhou and H.M. Zhang	895
Study on Influencing Factors of CFST Arch Bridge Stability H.Y. Tao	900
Study on Recognized Mode of the Revolutionary Site Protected Object in Traditional Village N.N. He, X.D. Zhu and C.E. Wang	905
The Cause of Cracks in the Cement Concrete Pavement of County-Highway and Precautionary Measures Z.D. Guo, L.J. Yi, J.Y. Liu and D.Q. Xu	909
The Finite Element Analysis of Thin-Wall Ribbed Square Steel Tube Recycled Concrete Bias Column Mechanical Properties Y.H. Li and B.S. Li	914
Thermal Conductivity of Fired Clay Bricks Incorporated with Cigarette Butts N.A. Sarani and A. binti Abdul Kadir	919
Study on the Natural Vibration Characteristics of Jointed Slope M. Wang, H.B. Li, Y.Q. Liu and X.C. Huang	925
The Evaluation System of Urban Low-Carbon Level Y.T. Ma and C.J. Ma	933
Analysis of the Effect of Natural Slope Stability due to Tunnel Excavation in Mountainous Areas X.L. Liang, F. Wang and G.L. Hao	938

Chapter 9: Energy Materials

Effect of Argon Gas Flow on the Thermal Field in a Directional Solidification System for Multi-Crystalline Silicon X.R. Ma, W. Zan and X.L. Zhang	945
---	-----

Effect of Sodium-Based Slag Treatment on the Distribution of Impurities in Metallurgical Grade Silicon	
M. Fang, C.H. Lu, H.X. Lai, L.Q. Huang, J. Chen, J.T. Li, W.H. Ma, K.X. Wei, Z.L. Sheng, J.N. Shen and X.T. Luo	949
Maximized On-Demand Hydrogen Generator Design	
C.H. Chao and T.C. Jen	954
Purification of Silicon by Solvent Refining with Si-Sn Alloy	
C.H. Lu, M. Fang, H.X. Lai, L.Q. Huang, J. Chen, J.T. Li, Z.L. Sheng, J.N. Shen and X.T. Luo	962
Studies on the Electrochemical Behavior of SiO₂/C Anode Materials by AC Impedance Method	
J. Wang, J.M. Tian, J.C. Wei and C.M. Wang	967
Summarize the Studies on Improving the Electrochemical Performance of Spinel LiMn₂O₄	
F.L. Wang, H.D. Xue, K. Wang, P. Liu and Y.Q. Bai	971
Temperature Distribution of Multi-Crystalline Silicon Ingots in the Directional Solidification Process	
X.R. Ma, W. Zan and X.L. Zhang	977
Cathode Material Li [Li_{0.2}Mn_{0.44}Ni_{0.18}Co_{0.18}]O₂ Synthesized by Molten Salt Method	
G.X. Fan, H.L. Li, S.P. Dai, C.X. Zhang, X.M. Guan and Z.R. Chang	981
Fabrication of Micro DMFC Stack Using MEMS Technology	
C.G. Suo, W.B. Zhang and S. Su	985
Mathematical Modeling of a DMFC Cathode with a Double Catalyst Layered Structure Membrane Electrode Assemblies	
C.G. Suo, W.B. Zhang and D.D. Wang	989

Chapter 10: Environmental Friendly Materials, Treatment and Removal Technologies

A Technological Method to Improve the Filtration Efficiency of Fiber Materials	
W.J. Fu and W. Liang	995
Effects of Laccase on the Properties of Hemp Fabric	
X.L. Zhang and Y.D. He	999
Experimental Study on Cr⁶⁺ Adsorption in Water about the Daily Waste Peanut Shell	
C.J. Wang, T.H. Li, L.L. Tang, Z. Zou, W.J. Liu, J. Xie and Y. Wang	1003
Preparation and Mechanical Properties of the Environmentally Friendly Wood-Plastic Composites	
H.W. Lu, M.Y. Li, B. Zhang, H. Yu and X.N. Jiang	1008
Preparation of Calcium Sulfate Anhydrate Whisker and a Primary Investigation of its Arsenic Removal Performance	
X.J. Chen, L.C. Yang, J.F. Zhang and Y. Huang	1013
Removal of Natural Organic Matter of Artificial Lake by Modified Fly Ash	
C.N. Wu, L. Wang, Q. Ling, Y.C. Tang, J. Huang and F.K. Pan	1020
Study on the Environmental Friendliness of Biomass Dishware Based on Life Cycle Assessment	
A.F. Guo, J. Zhao, J.F. Li, F.Y. Li and A.Q. Wei	1024
Surface Morphology and the Adsorptive Behavior of Coconut Active Carbon	
X.Q. Li and L.J. Lan	1029
Adsorption Characteristic of Steel Slag Haydite for Phosphorus Removal from Wastewater	
X. Liu, M. Yang and Y. Yang	1033
Adsorption of Cr(VI) from Aqueous Solution by two Kinds of Pillared Bentonites	
Z. Wang, Z.S. Cheng, Y. Liu, N.N. Bo and S.P. Li	1037
Column Experiment on Cr (VI) Reduction with SiO₂-Coated Fe Nanocomposites	
Y.C. Li, K.J. Liu and B.Z. Ren	1041
Early Strength Characteristics of Palm Oil Fuel Ash and Metakaolin Blended Geopolymer Mortar	
M. Ismail, T.O. Yusuf, A.H. Noruzman and I.O. Hassan	1045
Influence of Organic Alkali on the Preparation of Lignin-Based Anionic Adsorbents and their Performance in the Removal of Nitrate	
Z. Wang, N.N. Bo, Z.S. Cheng, Y. Liu and Y. Liu	1049

Strength and Durability Characteristics of Polymer Modified Concrete Incorporating Vinyl Acetate Effluent	
A.H. Noruzman, M. Ismail, M.A.R. Bhutta, T.O. Yusuf, I.A. Shehu and I.O. Hassan	1053
Study on Production Technology of Paper Wooden Compound Pallets	
J.H. Guo, J.Y. Huang, X. Sun, S.L. Wu and J. Ma	1057
Synthesis of Epoxidized Soybean Oil via Phase Transfer Catalysis	
L. Jing, G.Q. Liu, X.Q. Liu and X.D. Wang	1061
Tertiary Treatment of Paper Industries Effluent with Advanced Electrochemical Oxidation Process in the Presence of Modified Bentonite Powdery Electrodes	
Z. Wang, Z.S. Cheng, Y. Liu, N.N. Bo and Y. Liu	1065
Analysis on Distribution Law of Damaged Filters for Bag Dedusters in Coal-Fired Power Plants	
Y.S. Zhang, M.F. Xu, H. Shen and Y.Y. Tao	1069
Factors Influencing the Removal of As(V) from Groundwater by NF/RO	
W.F. Ma, W.J. Liu, P.Y. Zhang and H. Guo	1074
Effect of Preparation Method on Photocatalytic Activity of Titanium-Bearing Blast Furnace Slag	
X.F. Lei, X.X. Xue and H. Yang	1081
The Influence Factors of Compressive Strength and Production of Mineral Polymer of Aluminum Rocks in Xiuwen County, Guizhou Province, China	
J. Zhang, Q.Q. Li and Y.Q. Xiong	1086
Characterization of some Key Industrial Waste Products for Sustainable Concrete Production	
I.O. Hassan, M. Ismail, A.H. Noruzman, T.O. Yusuf, T. Mehmannaavaz and J. Usman	1091
A Study on Wellsite Wastewater Reinjection Stratigraphic Control in Changqing Oilfield	
R. Chen, Z.W. Lei, D. He and P.K. Jin	1095
Effects of Latency Removal on the Fiber Properties of Poplar APMP	
L. Qu, J.C. Chen and G.H. Yang	1101
Green and Efficient Coal Slurry Drying Process	
Q.L. Zeng, X.P. Li, X.H. Wang, B. Zhang and Z. Cui	1105
Study on Factors and Operation of Granulation Method for Strontium Removal	
X. Luo, M.W. Shi and H.C. Yin	1109
The Influence of Ph Value on the Treatment of Direct Sun-Proof Dyes Wastewater by Iron Trichloride	
Y.P. Tian and B. Wang	1113
Preliminary Study of Utilizing Ozone in Treatment of Operationally Exhausted Metalworking Fluids	
K. Gerulova, E. Buranská, Z. Turňová and J. Fiala	1117
Purification Effect of Self-Aeration Constructed Wetlands on COD	
H.X. Xia and Q.H. Zhu	1122
Research on Removing Radioactivity Minerals Form Titanium Rough Concentration of Haibing	
H.P. Zhang, X.M. Chen, Y.Y. Tang and Q.B. Cao	1127
Selection of Substrate Diameter and Filling Thickness for Artificial Wetland	
H.X. Xia and Q.H. Zhu	1132
Study on Cyclone Dust Removal Equipment after Dense Phase Semi-Dry Flue Gas Desulfurization System	
B.R. Liang, C.Y. Song, Z.S. Tong, Q. Jia, X.N. Lu and Y. Zhang	1136
Effect of Wet Storage on High Yield Pulping with H₂O₂-CoSO₄	
Z. Shang, B. Sun, Y.X. Liu, H. Li, R.C. Zhu and L. Bao	1143

Chapter 11: Earthquake Resistant Structure, Materials and Design

Dynamic Response of the Compound Structure of Foam Aluminum Core Composite Sandwich Material to the Shock Wave of Gas Explosion	
X.H. Mao	1149
Seismic Hazard Estimation in East China Offshore Areas	
L.F. Zhang, Y.J. Peng and Z.M. Wang	1158

Aeolic and Seismic Structural Vibrations Mitigation on Long-Span Cable-Supported Bridges	
M. Domaneschi, L. Martinelli and C.X. Shi	1168
On the Generation of Seaquake Velocity Fields for Submerged Floating Tunnel Structures	
C.X. Shi and L. Martinelli	1172

Chapter 12: Biomaterials and Biotechnology

Activation Energy of Pure and Impregnated Lignocellulosic Materials Obtained by Isothermal Method	
T. Chrebet, M. Jozef, K. Balog and Z. Turnova	1179
Adsorption of Acid Red by Porous Chitosan Film	
T. Feng, L. Xu and F. Zhang	1184
Asymmetric Synthesis of Ethyl (<i>R</i>)-4-Chloro-3-Hydroxybutanoate with a Two Recombinant <i>Escherichia coli</i> System	
K.J. Jing and W.T. Ban	1188
Comparison of the Roles of Tea Polysaccharides and Polyphenols in Growth Inhibition of Hepatoma H22 Cells in Mice	
Y.L. Fan, W.H. Wang, Y.S. Hu, Q. Rong, A.G. Teng and A.J. Liu	1193
Effects of the Protein in Wheat Straw on Enzymatic Hydrolysis	
H. Chen, L.J. Wang, T. Zhang, M. Yu and X.M. Wang	1198
Enzymolysis Optimization of Walnut Residue Protein Using Trypsase	
S.Y. Zhang and Y.Z. Ren	1203
Immunomodulatory Activity in Vivo of Porcine Cartilage Polysaccharide Nanoparticles on Murine H₂₂ Hepatocarcinoma Cells	
J.J. Fang, Z.Y. Zhu, A.G. Teng, G.Q. Zheng, W.H. Wang, J. Zheng and A.J. Liu	1208
Influence of Cortical Layer Thickness of Alveolar Bone on Stress Distribution over Implant Supported Region	
C.T. Liao, C.G. Tseng, K.S. Shih and W.M. Chuang	1212
Kinetics Study of Vitamin A Precursor Synthesis by Immobilized Lipase-Catalyzed Regioselective Monoacetylation in <i>n</i>-Hexane	
K.J. Jing, R. Duan, J.P. Sun, S.Z. Wang and Y.H. Lu	1218
Mechanism of Peptide Changes during Drying Fermented Soybean Meal	
J.J. Guan, G.H. Yang, J.S. Wang and F. Jia	1224
Numerical Simulation of Cell Growth Pattern and Determination of Fractal Dimension of Cell Cluster	
J.Z. Wang and Q.J. Guan	1229
Optimization of Multi-Strain Solid State Fermentation to Improve the Content of Soybean Meal Protein by Response Surface Analysis	
G.H. Yang, J.J. Guan, J.S. Wang and F. Jia	1234
Optimization of Solid State Fermentation to Improve the Degree of Hydrolysis Soybean Meal Protein	
F. Jia, B.Q. Han, J.J. Guan, G.H. Yang, J.S. Wang and B.J. Qi	1239
Preparation and Characteristics of Chitin-Gelatin Composite Film	
Y.J. Wang, L. Jiang and S.X. Shao	1243
Prokaryotic Expression and Purification of Tomato Cnr Protein	
Y.H. Xie, H. Liu and H.X. Zhang	1247
Protein Extraction of the Long-Term Room Temperature Storage Wheat Straw	
T. Zhang, L.J. Wang and H. Chen	1252
Research on Oxidation of Phenanthrene to Phenanthrenequinone with TBHP	
Y.J. Luo and Z.Y. Liu	1256
Selectivity of the Cycloaddition of Tert-amyl Alcohol and α-methylstyrene	
C.C. Xu, F.P. Zheng, Y.P. Liu, H.Y. Tian and B.G. Sun	1261
Studies on Charcoal Block Production from Three Charcoal Types of Biomass Employing Screw Press Unit	
K. Laloon, S. Sudajan and C. Junsiri	1265

Study of Physicochemical Properties of Chinese Small Cabbage(<i>Brassica chinensis</i> L.) Stored at Four Temperatures	1275
L.P. Zhang, J. Xie, T. Wang and Q. Xiong	
Study on Hydrophobic Microorganism as Coal Bio-Desulfurizing Agent	1282
D.C. Zhang, Z.X. Hou, T. Wang and Q.Q. Zhou	
Study on the Isolation of Polysaccharide from Purple Sweet Potato by DEAE-Cellulose 52	1286
M.M. Guo, H.G. Tang, H.J. Yao and J.Z. Guo	
Synthesis and the Study of Oil Displacement Performance of Stearate-2-Hydroxy-3-Propane Sulfonic Acid Sodium Salt	1292
Y.L. Hao, J.Y. Wang, R.M. Zhang and Z.B. Ma	
The Assessment of Sweet Sorghum Straw Bio-Feed Fermentated by the Compound Microbial Agent in Bags and Cellar Pits	1297
S.Y. Wang, G.Q. Xiao, W.J. Li, J.H. Chen, J.P. Liang, J. Liu, X.Y. Zhang, H. Su and B.L. Jiang	
The Classification and Characteristic of Proteins in Wheat	1301
J.S. Wang, F. Jia, X.J. Yang, B.J. Qi and L.B. Qu	
The Effects of <i>Rhodiola Tibetica</i> on Lung Tissue of Rats with High Altitude Pulmonary Edema	1305
W.H. Li	
The Wool Shrink-Proof Technology of Sericin Bonding Wool	1310
H.E. Wang	
Construction of Expression Vector with Fruit-Specific Promoter and Genetic Transformation of Strawberry	1314
X.L. Song, Z.H. Wu, X. Zhang, M.X. Lu and B. Guo	
Determination and Identification of Chondroitin Sulfate from Tilapia Byproducts	1318
Z.H. Duan, C.Y. Cheng, Y. Hai and J.L. Wang	
Effect of Xylanase Treatment on Papermaking Properties of Poplar High Yield Pulp	1322
W. Wang, G.H. Yang and J.C. Chen	
Emulsifying and Foaming Properties of Wheat Gluten Influenced by High Pressure Microfluidization	1327
N.J. Yan, G.Q. Liu, L.Y. Chen and X.Q. Liu	
Flame Retardation of Wood	1331
L.M. Osvaldová and A. Osvald	
High-Purity Isolation of <i>Trans</i>-Resveratrol from <i>Rhizma Polygoni Cuspidati</i> by High-Speed Counter-Current Chromatography	1335
J.C. Deng, L.H. Li, X.Q. Yang, S.P. Lu, Y.Y. Wu, S.X. Hao and B. Qi	
Investigation of Airflow Influence on Self-Heating Process of Linseed Oil Using Safety Calorimeter SEDEX	1340
I. Hrušovský, K. Balog, J. Martinka and T. Chrebet	
Isolation of <i>Saccharomyces Cerevisiae</i> GJ03 from the Spontaneous Fermentation Orange Wine and Application in the Course of Orange Wine Brewing	1345
W. Xu, J. Wang and D.W. Zhang	
Mechanisms and Defiberation Point of <i>Dendrocalamus Giganteus</i> Munro Kraft Pulping	1350
C.B. Zhou, J. He, Y. Chen and H.Y. Gao	
Optimization of The-Hydrolysis Parameters of Dissolving Pulp of Fast-Growing Poplar Producing	1354
Y.B. Li, G.H. Yang and J.C. Chen	
Preparing Gambiered Guangdong Silk with Ultraviolet Radiation and Normal Mud/Fe²⁺	1358
C. Chen, X.M. Ji, G.X. Zhang, F.X. Zhang and H. Zheng	
Purification and Preliminary Characterization of a Thermostable Lactase from <i>Bacillus coagulans</i> T242	1362
S.J. Jiang, G.Q. Mu, T. Liu and F. Qian	
Research on the Antioxidation of <i>Torreya Grandis</i> Alcohol Extracts in Cholesterol-Fed Rats	1366
Q. Fang and S.L. Jin	
Simulating Glycolytic Metabolism of <i>Escherichia coli</i> by Using Optimal Control Models	1370
Q.H. Zhou, J. Xie, J. Cui and Y. Li	
Studies on the Preliminary Characterization of a Novel Exopolysaccharide Produced by <i>Streptococcus thermophilus</i> Strain from Tibetan Kefir Grain	1374
S.J. Jiang, F. Qian, X.H. Ren and G.Q. Mu	

Study on Deproteinization of Polysaccharide from Corn Silk with Cetyl Trimethyl Ammonium Bromide H.L. Zhou, G.Q. Song and M. Zhang	1378
Study on Furfural Production from Hemicelluloses B. Shen, Y.X. Liu, Y.X. Liu and J.H. Peng	1382
Study on Plant Growth Regulation Activity of the Low Polar Fractions from <i>Mikania micrantha</i> H.B.K. on <i>Phaseolus radiaus</i> R. Shi, B. Li, M. Ye, Y. Zhao, L.M. Fan and T.T. Cai	1386
Study on the Emulsifying Properties of Tilapia Skin Gelatin G.H. Xia, X.R. Shen, Z. Liu, P. Li and Z.Q. Jiu	1390
Study on Extraction of Wasabi Plant Material Bio-Activity Substances and Anti-Cancer Activities S.Q. Hu and W. Wei	1395
Study on Extraction Technology of Polysaccharide from <i>Pleurotus ostreatus</i> H.L. Zhou, L. Cheng and S. Lin	1400
The Ameliorative Effect of CPCC and Role of CRT in Hepatic Injury by Alloxan-Treatment H.M. Yuan, D.F. Ming, S.Q. Ma and W.J. Fan	1404
The Influence on the Milk Yield and Milk Composition of the Cows after Feeding with the Sweet Sorghum Straw Fermented by the Compound Microbial Agent in Bags S.Y. Wang, X.Y. Zhang, H. Su, G.Q. Xiao, W.J. Li, J.P. Lian, J.H. Chen, J. Liu and B.L. Jiang	1410
The Spectrum Properties of Type I Collagen Self-Assembly Film J.C. Zhang, H.P. Yan, G.W. Zhang and L. Zhang	1414
Theoretical Investigation on Tautomerization Mechanism of 6-Thioguanine H.J. Ren	1418
Ugonin K Induces Cell Cycle Arrest and Apoptosis through Reactive Oxygen Species/Apoptosis Signal Pathway in Human Skin Cancer Cells L.P. Chan, T.H. Chou, G.H. Wang, Y.P. Tseng, P.J. Chen, D.L. Cheng and C.H. Liang	1422
Clean Method for Stickies Control with StickAway Enzyme in ONP Pulps J.C. Pei, Q.X. Dun, H.Y. Wang and F.D. Zhang	1426
Influence of Surface Zeta Potential on Adhesion of <i>Chlorella sp.</i> to Substratum Surfaces X.R. Zhang, Z.Y. Jiang, H. Yuan, Y.X. Lu, L. Chen, A.H. Chou, H. Yan and X.X. Zhang	1431
Study on Amphiphilic Macromolecules Adsorbent of Cellulose Mixes Ether Based on Cotton Stalk H.Y. Hao and Z.Q. Shao	1435
Production and Utilisation of Non-Conventional Coke O. Němček, S. Honus and D. Juchelková	1440
High-Consistency Electrochemical Delignification of Poplar Kraft Pulp Y.J. Zhong, F.G. Kong, S.J. Wang, H.Y. Zhan and W.B. Wang	1444
Gold Immunochromatography Assay - A Newly Rapid Detection Technique for Aquatic Products Y. Wang, H.J. Yu, B.L. Qian, Y.Q. Cai, D.M. Huang, Y.H. Hui, H. Liu and B. Ma	1449
Using of Magnesium Hydroxide and Sodium Hydroxide in DP Beaching of NaOH-AQ Wheat Straw Pulp W.B. Wang, F.G. Kong, S.J. Wang, Y.J. Zhong and G.H. Yang	1455
Preparation and Characterization of Regenerated Wool Protein PAN Blended Fibers J. Wei, H. Liu, S.J. Xu, L.J. Zheng and B. Du	1461
Biocompatibility Research of the Biphasic Calcium Phosphate Composite Ceramic Film Obtained through Micro-Arc Oxidation on the Medical Titanium Surfaces S.J. Dong, J.H. Bao and S.J. Sun	1465
Determination of Ignition Temperature of Organic Dust Layers I. Turekova, Z. Turnová, J. Harangozó, I. Kasalova and T. Chrebet	1469

Chapter 13: Chemical Materials and Chemical Technology

Preparation and Characterization of Alkylethoxyethanesulfonate in Superbasic System KOH-DMSO R.X. Niu, H. Song, S.B. Sun and W.D. Ren	1475
---	------

Preparation and Properties of Modified Lignin Used as Additive of Brown Coal CWS J.M. Song, Y.X. Zhang and S.Q. Zhu	1479
Preparation of Aromatic Silanes as High Thermal Stability Coupling Agents Y.L. Pan, B. Arkles and J. Kendenburg	1483
Removal Efficiency and Distribution Characteristics of PAHs in Coking Plant Contaminated Soils by <i>In Situ</i> Chemical Oxidation Remediation W.F. Ma, H. Guo, J.D. Ye, D.M. Han and X.W. Ma	1490
Cascaded Columns of Total Reflux Batch Distillation with Periodic Liquid Exchange K. Tang and P. Bai	1495
Effects of Microwave Power on Performance of Pt/CeO₂MWCNTs Catalysts Prepared by Microwave-Assisted Polyol Process for Methanol Electrooxidation Y. Gu, C.T. Liu, J. Gao, K. Wang, Y.R. Sun and C.Y. Du	1500
Experimental Study of Optimal Coagulation Effect on Three Kinds of Direct Sun-Proof Dyes by FeCl₃ Y.P. Tian and B. Wang	1504
The Evaluation of Factors Affecting the Performance of Heavy Oil Emulsion Z.Z. Fan, T. Wang, P.P. Li, J.G. Wang and Q.W. Liu	1508
Kinetic of C.I. Reactive Black 5 by Fenton-Like Oxidation Y.J. Du, G.P. Jiang, X.P. Fang and M.Q. Qiu	1512
Research on Tubing and Casing Corrosion in Sour Gas Reservoirs and Corrosion-Resistant Material Selection L.F. Li	1516
Material Selection of Water-Ring Vacuum Pump in Yellow Phosphorus Tail Gas Industry H.M. Yu	1520
Preparation of Strontium-Barium Hydroxyapatite by Coprecipitation H.B. Shi, X. Tian, H. Zhong, Y. Liu and T. Wan	1524
Modified CuO/ZnO/Al₂O₃ Catalysts for Methanol Synthesis from Co and CO₂ Co-Hydrogenation W.G. Gao, H. Wang, W.Y. Liu and F.J. Zhang	1529
Study on the Reaction Kinetics and Catalytic Stability of Pillared Bentonite in Heterogeneous UV-Fenton Process X. Zhang, H.L. Jiang and X. Chen	1535
Distribution and Bioavailability of Nitrogen Species in Street Dust from Small Towns in Yongchuan, Chongqing S.M. Wang and H. Yu	1539
The Characteristics of Trace Metal Elements Accumulation and Distribution in Elsholtzia Harchowensis S.X. Xiong, W.Y. Xie, C.C. Huang and M.Q. Qiu	1543
Dyeing of Cotton Fabric Modified by 2, 3-Epoxypropyl Triethyl Ammonium Chloride with Reactive Dyes H. Liang, G.X. Zhang, F.X. Zhang, X.T. Xue and H. Zheng	1547

Chapter 14: Polymeric Materials

Adhesion Loss in Antistripping Agent Treated Asphalt Binders due to Moisture M. Arifuzzaman and R.A. Tarefder	1553
Experimental Research on the Solubility of Cellulose in Different Ionic Liquids X.J. Li, Y.S. Sun and Q. Zhao	1568
Influence Analysis of the Parameters on Sound Absorbing Performance for Polymer Wool Y.W. Huang, D.F. Wang, S.M. Chen, Z.W. Liu and H.L. Wang	1572
Preparation and Properties of Silane-Terminated Poly(urethane-Imide) X.X. Hu and Y. Wang	1577
Preparation of High Heat-Resistant Profile Based on PVC/α-MSAN/ABS Ternary Blends X. Wang, S.Y. Guo and F.H. Yang	1581
Study on Properties of Enzymatic Hydrolysis Lignin (EHL) and Chloride Polyethylene (CPE) Composites A.B. Wang, X. Wang, H. Hong, Q.W. Yin, Y.H. Ye, B. Liu and X.S. Cheng	1586

Study on Relationship between BPA Migration and Thermal-Oxidative Aging Degree of Polycarbonate	1590
Y.X. Zhao, L. Zhao, Y.Y. Zhao, J.G. Gao, Z.L. Xiao and H. Wang	
Synthesis of a New Water-Soluble Conjugated Polymers Containing Thiazoline Moiety for Antibacterial Activity Bioassay	1594
J.P. Liu, Y.H. Wu, L. Liu, Y.M. Xiao, X.D. Ma and B. Fu	
Synthesis of Quaternary Ammonium Cationic Polymer PEA	1599
R.M. Zhang, H.M. Shan, M. Zhao, D.H. Ma and W. Li	
Synthesis of UV-Writing Fluorinated Polymer for Organic Optical Waveguide	1604
X. Fei, S.Q. Fan, J. Tian and Y. Wang	
The Studies on Crystallization of Polypropylene (PP)/Nano-TiO₂ Composites under Microwave Irradiation	1609
C.G. Liu, Y.J. Wu and C.P. Yang	
The Swelling Kinetics Study of Hydrogels Prepared by the Different Finesses Degrees of <i>Eupatorium Adenophorum</i>	1615
H.B. Wen, X. Gao and H. Zhang	
Emulsifier-Free Core-Shell Hybrid Latexes from Castor Oil-Based Waterborne Polyurethane and Polyacrylate Containing Fluorine and Silicon	1620
C.Q. Fu, M. Xu, Z. Yang, Q.G. Lv and L. Shen	
Research on the Relationship between the Productivity of Antarctic Krill Chitin and its Fineness of Grind	1624
Y.J. Liang, Y.C. Ji, Y. Wang, Q.H. Wang and H. Li	
Synthesis and Properties of a Castor Oil-Based UV-Oligomer Comprising of Side-Chain Benzophenone	1628
C.Q. Fu, Z. Yang, Z.X. Lu and L. Shen	
The Best Dosage of Polymer Dispersant in WDG by Zata Potential Method	1632
S.J. Liu, Y.P. Li, W.H. Wu and Z. Wang	
The Surface Modification and Characteristics of Useful Expanded PTFE Composites by Photo-Radiation Methods	1636
T.H. Wu, K.S. Chen and L.H. Shen	
Study on Pretreatment Agent for Anti-Clogging in Polymer Flooding Wells	1641
Q.G. Dang, J.P. Bian, H.L. Cheng, P. Wang and H.R. Jiang	
Synthesis of Poly(acrylic Acid Dodecyl Ester-Styrene-Maleic Anhydride) Terpolymer and Surface Modification of Glass Fiber	1645
J.C. Wang, C.M. Liu, Q.C. Zhao and X. Dong	
Study on the Preparation of 2-Phenyl Imidazole Microcapsule and its Effect on Curing Epoxy Resin	1649
A.J. Ma, Q.Y. Zhang and Y.Q. Shi	

Chapter 15: Thin Films and Technology

Aluminum-Induced Crystalization of Amorphous Silicon Films Deposited by Megnetron Sputtering	1655
J. Qian, W.M. Shi, J. Jin, J.R. Li and Y. Liao	
Electrodeposition and Properties of CuInS₂ Thin Films	1659
H.F. Zhou and X.H. Chen	
On the Mechanism of Copper Oxide Reduction by Dielectric Barrier Discharge Plasma Using H₂ and Ar Mixture Gases	1664
Z.J. Xu, B. Qi and L.B. Di	
Preparation and Properties of Cu₂ZnSnS₄ Nanoparticles by Solvothermal Method	1668
J.R. Li, W.G. Yang, W.M. Shi, Y. Liao, J. Qian and X.W. Shen	
Properties of Ohmic Contact of Au Electrode on Polycrystalline Mercuric Iodide	1672
Y. Liao, W.M. Shi, W.G. Yang, J.R. Li, J. Qian and S.Y. Lu	
Characterization of TiO₂ Composite Film on Steel Obtained in Aluminate Electrolyte by PEO and the Photocatalytic Activities	1676
Y.L. Wang, M. Wang, Y.M. Qin, X.F. Shi, H.R. Guo and Z.J. He	
Effects of Preparing Conditions on NO₂-Sensing Properties of Sputtered WO₃ Nano-Films	1680
F.Y. Sun, M. Hu and P. Sun	

Electrochromic Property of Sputtered Amorphous NiO Films C.M. Wang, C.Y. Wen, Y.C. Chen, S.Y. Lin and S.T. Shiau	1685
Hydrogen Induced Modifications of Optical and Electric Properties in Mg Thin Films G.Y. Cao, F. Fang, A.L. Zou, J.H. Zhang, X.Y. He, Y.M. Gao and N.Y. Zou	1690
Structure Characterization of W-Doped Vanadium Oxide Thin Films Prepared by Reactive Magnetron Sputtering S. Chen, L.F. Zhang, S.J. Xiao and C.Z. Dong	1694
Study on Wurtzite-$\text{Sc}_x\text{Al}_{1-x}\text{N}$ Thin Film: A Review Y.B. Jia	1698
The Structure and Magnetic Properties of NiZn-Ferrite Films Deposited by Magnetron Sputtering at Room Temperature S.J. Nie, H. Geng, J.B. Wang, L.S. Wang, Z.W. Wang, R. Xu, G.H. Yue, Y.Z. Chen and D.L. Peng	1702
ZnSe Quantum Dot Films Deposition from Modified Chemical Solution with Sodium Citrate L.Y. Chen, L. Zhang, H. Zhang, F. Yang, Z.M. Luo and C. Fang	1707

Chapter 16: Mechanical Behavior, Fracture and Fatigue

Bending Ratcheting Behavior of Zircaloy-4 Alloy at Room Temperature H.Q. Guo, H. Li, Y.C. Sun and W.W. Yu	1713
Experimental Study on Fatigue Behavior of 35CrMo Steel after Torsional Prestrain S.Y. Wang, Z.Y. Wu, X.J. Yang and Z.Y. Ren	1718
First-Principles Study of the Elastic Properties of Hexagonal Phase ScA_x ($A=\text{H}, \text{He}$) K.M. Fan, L. Yang, J. Tang, Q.Q. Sun and X.T. Zu	1723
Improved Extend Finite Element Method for SIF Calculation N.L. Lu and W.G. Zhan	1728
Mechanical Behavior Research of a Novel Bridge Tower Structure Based on Model Test J. Zeng, W. Wang and X.J. Ye	1732
Numerical Simulation of the Effect of Temperature on the Failure Strength of Rock L. Bu, T. Xu and Y.J. Zhang	1737
Reliability Study on Crack Growth Rate of ADB610 Steel L. Wei, S.Y. Wang, G.S. Liu and X.J. Yang	1741

Chapter 16: Mechanical Behavior, Fracture and Fatigue

Statistical Analysis of Fatigue Crack Growth Rate of Q345E Steel E.C. Guo, S.Y. Wang, G.S. Liu and Z.Y. Ren	1749
Super Long Life Fatigue Properties of Rail Steel U71Mn and U75V Z.F. Luo, S.M. Cui, Y.Z. Wu and Q.Y. Wang	1753
Analysis on Creep Behaviors at High Temperature and Fracture Morphology of P92 Steels J. Yuan, H. Xu, X. Wang, Y. Yu, X.P. Mao and S.Y. Hu	1757
Comparison of the Simulation and Experimental Fatigue Endurance Behaviors in T6-Treated Nanosized SiC Reinforced Al Alloy Composite Y.S. Wei, S.K. Lu and P. Huang	1762
Experimental Study on Out-Plane Crack Extension in Rimmed Steel B.C. Yang, J.X. Liu, R.X. Guo and H.T. Xia	1767
Fracture Analysis on Drainage Pipe Socket of Boiler X.X. Xu, Y.T. Feng, Y. Wang, X.G. Niu, Q. Wang and J. Ouyang	1771
High Cycle Fatigue Behavior of Eco7075-T73 Aluminum Alloy G.Y. Kim, K.S. Kim, S.K. Kim, Y.O. Yoon, K.S. Cho and K.A. Lee	1775
Prediction of Fatigue Crack Growth of 2024-T351 by Grey $GM(1,1)$ Model with Rolling Check C.C. Ni	1779
Research on the Effect of Pre-Stress on Bending Stiffness of the Ball Screw Based on ANSYS H. Xiao, D.W. Zhang, Y.G. Shi and Z.H. Sun	1784

Study on Kinetic Competitions of Crystal Growth T. He	1788
Tensile Characteristics of Polygonaceae Weed Roots in Slope Collapse Watershed X.M. Zhang, S.W. Ding and S.X. Li	1792
The Fracture Failure Analysis of Shaft for Light Hydrocarbon Pump W.M. Song, G.R. Yang, Y.F. Zhang, Y. Ma and Y. Hao	1796
Applications of a New Element Model of Solid Bodies in Plasticity J. Ke	1800
Analysis of Fatigue Life and Influence Factors of Tubing with Initial Crack Y.P. Cao and Y.H. Dou	1806
Check on Structural Strength of Carbon Fiber Composite Field Kitchen Units X.H. Zhang, H. Yang, S.L. Sheng and Z.S. Gong	1810

Chapter 17: Tooling Testing and Evaluation of Materials, Measurement

Investigation and Analysis on Transverse Crack Spacing Distribution in Continuously Reinforced Concrete Pavement in China Q.M. Zhao, H.L. Zhang and Y.H. Wang	1817
Numerical Solution of Constant-Q Fractional Order Integral Modeling X. Li and H.L. Han	1821
Research of Baseball's Best Batting Position Changes with the Selection of Material of Baseball L.P. Du, W. Li and W.S. Han	1826
Development of Hard Rock Cutting Tool with Advanced Diamond Composites X.S. Li and Y. Sun	1831
Research on Properties of Materials Based on Extension Evaluation Method Y.L. Liu	1836
Influence of Rear Earth Yb on the Specific Heat of Liquid Fe-Co-Yb Alloy W.J. Yao, N. Wang and J.Y. Lee	1840
Lateral Non-Uniformity Charges Influence on Interface Trap Density (D_{it}) by Terman Method in the nMOS Fabrication S.L. Chen and Y.F. Chang	1846
Ablation/Erosion Test Technology on C/C Composite Material Based on Plasma B.L. Zha, D.Y. Huang, S.L. Qiao, D.W. Wang, W. He, Z.H. Zha and B.X. Li	1851
Evaluation of CO₂ Absorbent/De-Absorbent by AAO/CaO Membrane C.C. Chen and Y.P. Wang	1856
Application and Evaluation of New Cold Insulation Material in Cold Insulation Structure of Oil and Gas Processing Device S.W. Wang, L. Lin and G.Z. Wu	1860
On-Road Gaseous Emission Characteristics of China IV CNG Bus in Shanghai D.M. Lou, S.L. Qian, Z.Y. Hu and P.Q. Tan	1864
A New Experimental Technique for Dynamic Material Properties M.Z. Liang, X.Y. Li, F.Y. Lu and J.G. Qin	1872
On the Experimental Investigation of Rock Abrasiveness in Petroleum Engineering Z. Wei, Z.G. Wang, X.J. Zhao and G.T. Feng	1878

Chapter 18: Structural Strength and Robustness

Analysis on Sealing and Deformation of Exhaust Valve Housing of Marine Diesel Engine J. Wu, S.L. Duan, Z.H. Wu, H. Xing and W.C. Zhang	1887
Analyzing Bearing Capacity Influence due to Location of Bearing Push-Extend Reamed of the Push-Extend Multi-under-Reamed Pile Y.M. Qian, H. Yu and R.Z. Wang	1891
Characteristics of Thin Metal Plate Being Strengthened by Laser Irradiation S.D. Choi, G.M. Kim and S.H. Yun	1895
Design of Variable Airship Mechanism Based on Finite Element Method Z.Y. Xiao, M.Q. Yang, D.L. Ma and Z.N. Li	1899

Finite Element Analysis of the Strength of Ladder Type Structure of the Deep-Water AUV D.J. Wei, L.H. Zhang, H.W. Zhang and F. Liu	1903
The Coupled Thermal and Mechanical Load Analysis in the 6S50MC-C Type Marine Diesel' Piston J. Wu, S.L. Duan, Z.H. Wu, H. Xing and Q.A. Liu	1909
The Finite Element Analysis of Ultimate Bearing Capacity of Initial Bending on the T-Axis Compression Component Y.Y. Han, C.X. Zhang, Y.Q. Li, S.Y. Chen and C.S. Liu	1914
Theoretical and Numerical Solution of Deflection of the Circular Ring under a Concentrated Force X.Z. Wang	1919
Effect of Track Measuring Beam on the Bogie Frame Strength and Vibration Mode of Inspection Car L.F. Wu and S. Qu	1923
Enhancement Design on Composite Blade Structure of Small Wind Turbines Using Finite Element Analysis Y.T. Chou and S.Y. Hsia	1928
FEM Based Statics Analysis of the Main Steel Structure of Bucket Wheel Stacker-Reclaimer P. Shang, W. Zhou, C.X. Li and Y.M. Guan	1933
Finite Element Analysis for the Collapse Accident of One 110kV Transmission Tower M.J. Jian, D.Q. Zhang and G.C. Zhang	1940
Mechanical Strength Analysis and Structure Improvement of Diaphragm Chamber Based on Finite Element Method X.Q. Ling, P. Fu, W. Zhang and Y. Chen	1945
Numerical Simulation on Structural Strength of Cam Mechanism for Automobile Panel Die D.S. Bi, X.L. Chen and L. Chu	1950
Research on Screw Pump Rotor Eccentricitys Influence on Sucker Rod Partial Abrasion through Contact Analysis J. Zhu, L.Q. Zou, X.J. Yuan and L.W. Zhang	1955
The Application of AAR Load Spectrums in the Fatigue Assessment for G70 Tank Carbody S. Qu, P.B. Wu and Z.H. Liu	1960
The Mechanical Property Comparison of Two Kinds of Counterweight Booms of Stacker Reclaimer P. Shang, K.C. Qi, Y.X. Wang and Y.M. Guan	1966
Acoustic Emission Signals Characteristics of Q345R at Tensile Progress in the Normal and Low Temperatures F.F. Long, Q. Wang, Y. Song and W. Li	1972

Chapter 19: Theory and Application of Friction and Wear

Experimental Study of Dynamic Characteristics of Dry Friction Damping of Turbine Blade Steel P.F. Zhao, Q. Zhang, J. Wu and D. Zhang	1979
Fever Analysis and Engineering Applications of the Heavy Machine Tool's Main Bearing S.S. Chen, S.Q. Li, Z.P. Hua and C. Dai	1983
Key Aspects in Addressing Friction in Coaxial Hydraulic Sealing Systems T. Deaconescu and A. Deaconescu	1988
Progress on Facilities and Methodology to Evaluate Abradable Seal Coatings Q.Y. Lu, J. Shen, Y.G. Yu, X.J. Ren, H.J. Xuan and T. Liu	1992
Study on Tribological Performances for Textured Bearing of ICE F.M. Meng, T. Yang and T. Long	1999
The Analysis of the Influencing Factors about Friction and Wear Characteristics of the Piston Ring in Stirling Engine D.Y. Yang, H. Xie and J. Gong	2003
The Effect of Friction Coefficient on Fretting Fatigue Cracks T. Guo, L. Wu, X.N. Liu and R. Guo	2008

Study Film Temperature Including Cavitation Effect of Sliding Bearing by CFD Method F.M. Meng and T. Long	2012
Research on the Reinforcement Mechanism of Stretched Rock Bolt and Analyzing of the Impact Parameters X.G. Zhu	2016
Application of CBN Cutting Tools in Hard Turning and Tool Wear H.D. Zhao, L.B. An, P.Q. Yang and Y. Geng	2022
Experimental Investigation on Ultrasonic Vibration Assisted Turning of Stainless Steels with PCD Tool G.J. Dong, L. Zou and M. Zhou	2026
Study of the Effect of Tool Wear on Cutting Ti6Al4V Process S.B. Yang, H.C. Ni and G.H. Zhu	2030

Chapter 20: Surface Engineering/Coatings

Arc-Spraying Composite Coatings on Mild Steel for Long-Term High-Temperature Oxidation Protection Z.L. Zhang, Q.S. Wang, P.R. Wei and X. Gong	2039
Cracking Behavior of Two Kinds of Plasma Cladding Layers by Precursor Carbonization-Composition Process J.B. Liu	2046
Effect of Pt Content on TGO Growth in EB-PVD TBC Systems with Niptal Bondcoats P. Song and J.S. Lu	2051
Evaluation Hard Layers in Steel AISI 8620 N. Lopez-Perrusquia, M.A. Doñu-Ruiz, V. Cortes Suarez, D. Sánchez-Huitron, E.Y. Vargas-Oliva and I.J. Perez Montes De Oca	2055
Formation of Hard Layers in Tool Steels N. Lopez-Perrusquia, M.A. Doñu-Ruiz, S. Rodríguez-González, D.L. Rosado Cruz and F. Vasquez-Ramírez	2059
In-Flight Particle Behavior Measured by DPV-2000 System under Low Pressure Condition N.N. Zhang, B. He, Z.L. Zhang, D.Y. Li, M.P. Planche and C. Coddet	2063
Process Characteristics and Experiment on Micro Arc Oxidation of Light Metals Y. Wang, H.Y. Li and M.L. Shi	2067
Study on Water-Based Paint Stripper for Tinplate N. Duan, Y.W. Gao, T. Zhang, K.M. Wu and Y.F. Zhang	2071
Surface Activity Research of Cationic Gemini Surfactants Z.Z. Fan, L.L. Li, L.F. Zhang and Q.W. Liu	2076
Synthesis and Properties of Hydroxyapatite-Containing Porous Titania Coating on Titanium by Ultrasonic Shot Peening and Micro-Arc Oxidation Z.N. Deng, J.S. Liu, Y. He, S.Q. Wang and J.F. Ma	2081
The Irradiation Effects of Metal Gold Surface by Intense Pulsed Ion Beam D. Wu and Y.J. Du	2085
The Study of Aromatization Performance of HZSM-5 Catalyst Deposited Silicon on the Surface J. Zhu, Y.F. Ban, M.Z. Sun, B. Zhang and H.Y. Wang	2089
Analysis of Selective Absorber Coatings on Thermal Performance of the Solar Flat-Plate Collector X.D. Han, S.W. Zhang, C. Chen and Y. Tang	2093
Characteristics Evaluation of Coating Film by Thermal Spray in Seawater Solution K.M. Moon, M.J. Nam, Y.C. Lee, Y.H. Kim and J.H. Jeong	2098
Comparison Research on Mechanical Properties of Stainless Steel after Laser Peened and Ultrasonically Peened C. Wang, Z.L. Lai, D. Sun, L.C. Zhou and Z.B. An	2107
Effect of Electro-Spark Deposition Process Parameter on WC Coating Thickness of H13 Steel Surface M.W. Wang, R. Pan, W. Xin, W.Q. Chen, X.J. Zhao and S. Li	2112

Effects of Carrier Gases on the Microstructures and Properties of Ti Coating Layers Manufactured through the Cold Spraying M.J. Lee, H.J. Kim, I.H. Oh and K.A. Lee	2116
Influences of Surface Nanocrystallization Induced by High-Energy Spot Peening on Microstructure and Properties of Magnesium Alloy L.W. Tang, J. Sun, J. Zhang, X.B. Ou and Z.M. Zhou	2120
Investigations of Wetting Properties of Stainless Steel by Molten Multi-Component Oxides J. Wang, N. Matsuda, N. Shinozaki, H. Era and T. Shiraishi	2126
Polymer Mixtures as Colon Targeted Drug Delivery Systems M. Helmis and M. Kumpugdee-Vollrath	2131
Structure of Al₂O₃ Ceramic Coating on Super Alloy Prepared by Cathodic Plasma Electrolytic Oxidation Y.L. Wang, M. Wang, Y.M. Qin, X.F. Shi, H.R. Guo and Z.J. He	2137
Study on the Surface Plasma Hardening Treatment and Anti-Penetration Mechanism of Armor Steel K.P. Yu, F. Wang, R.G. Chen and J.J. Zong	2141
The Study on Preparation and Apply of Ni-Co-P Alloy Coating N.J. Li, M.M. Li and N.W. Li	2145
Electroless Nickel-Phosphorus Plating on TiB₂ Powder S. Sun, B. Su and W. Shi	2149
Phase Evolution and Mechanical Properties of Cr-C Coatings Deposited by Reactive Unbalanced Magnetron Sputtering Process Y.S. Yang and W.Y. Huang	2155
First-Principles Study on Elastic Properties and Electronic Structure of Ti_{1-x}Al_xN X. Tan, Z.Y. Xin, X.J. Liu, Q.B. Zhang and Y. Jia	2171
Preparation and Cutting Performance of YT15 Cemented Carbide Tools with Ti (C, N)/Al₂O₃ Composite Coating Y.X. Gao and G.L. Zhang	2175
Effect of Abrasives on the Lapping Performance of 6H-SiC Single Crystal Wafer W. Li, Q.S. Yan, J.B. Lu and J.S. Pan	2179
Fabrication and Characterization of Magnetic Polymer ICF Target by the Electroless Plating S.B. Cui, Z.Y. Lu and F.W. He	2185

Chapter 21: Materials Forming and Manufacturing Processes

A Study of the Microstructure and Mechanical Properties of C-Si-Mn Hot Rolled Dual Phase Steel B.B. Sun and Z.W. Jia	2191
Analysis and Research on the Failure Mode of Large Automobile Stamping and Countermeasure G.Y. Pan	2195
Analysis on Structure of Radial-Axial Ring Rolling Experimental Equipment by FEM Y.L. Tan, Q. Wang, S.H. Han and F. He	2201
Continuous Cooling Transformation Behavior of X70 Pipeline Steel H.M. Yang	2205
Design and Analysis of the Low-Speed Hydraulic Control System of 3.15MN Forging Press Y.B. Li, M.H. Huang, Q. Pan and M. Chen	2210
Design of a New Type Flexible Stretch-Forming Machine Q.G. Han, M.Z. Li, Q. Zhang, Y.D. Chen and W.Z. Fu	2218
Effect of Lubrications on Quick Plastic Forming Behavior of AZ31 Magnesium Alloy Sheet G. Wang, J.L. Wang, Z.P. Zhang and S.J. Yao	2222
Effects of Strip Thickness Difference on Deviation in Aluminum Hot Rolling L.Y. Ma, Y.L. Liu, X.Q. Zhao and C. Liu	2226
Effects of Surface Roughness Microtopography on Formability in Cold Rolled Steel Sheet J. Tang	2232

Forecast of Shrinkage Porosity of Aluminum Wheel Liquid Die Forging in Solidification Process and Process Optimization	
H.B. Yang, X.S. Zhao, W.Z. Fan, X.W. Chen and D.Y. Xu	2236
Hot Stamping and Blank Designing for a Vehicle Bumper Using Ultra High Strength Steel (UHSS)	
Z.X. Gui, Y.S. Zhang, H.Q. Li and M.T. Ma	2240
Investigation on over-Spray Powder of Spray Formed Al-22Si-5Fe-4Mn-3Cu-1Mg Alloy	
F.W. Kang, H.C. Li, Y.D. Jia, J.F. Sun and X.H. Zhang	2245
Study on Design Parameters of Strip Wound Prestressed Die Based on Fatigue Theory	
K.J. Chen, Q. Wang and F. He	2250
Study on Texture of AZ80 Magnesium Alloy Induced by Multi-Axial Forging	
Z.Y. Deng, X.G. Chen and J.Z. Cui	2254
Study on the Flow Stress of the High-Mn Austenitic Steel during Hot Deformation	
X. Xu, F.P. Li, C. Feng, P. Wang and S.Y. Song	2258
Study on the Parameters of Piercing Die with Finite Element Method	
Y.X. Yang	2265
The Effect of Pre-Strain and Strain Aging on Properties of X100 Line Pipe	
Q.R. Ma, H.D. Chen, Y.H. Li and H. Li	2270
A Review of Liquid Forging Process	
X.N. Huang, Z.P. Zhong, W. Wang, F.J. Li, D.H. Qiu and C. Peng	2275
Development of Intelligent Control of Optimum Parameters in Deep Drawing of Sheet Metal Using Genetic Algorithm and Finite Element Methods	
Y. Bernai-Aguilar, R. Urama, J.R. Marty-Delgado and O. Celestine N.	2280
Development of Secondary Controlled Hydraulic Pressure Forming of Sheet Metal for Energy Saving and Re-Utilization:	
O. Celestine N., O. Evans Chukwudi and R. Urama	2291
Effect of Initial Position of the Counterpunch on T-Shape Hydroforming	
B.G. Teng and K. Li	2302
Effects of Mandrel Structure on Ring Rolling Process for Large-Scale T-Sectioned Ring with Numerical Simulation	
P.Z. Zhou, L.W. Zhang, S.D. Gu, H.T. Duan and L.H. Teng	2307
Effects of Process Parameters on Wall Thinning Ratio during One Pass Hot Power Backward Spinning for 7075 Cast Aluminium Alloy Tube	
G.Y. Zhao, R.Y. Zhang and P. Fang	2311
FEM-Based Analysis on the Process of Tube Stamping	
Z.M. Wang, S. Dong and F. Li	2315
Finite Element Analysis for 40 MN Die Forging Press	
W.B. He, P. Zeng and F. Lin	2322
Finite Element Analysis of Main Stand of $\Phi 140$ Pipe Rolling Mill and Split Casting	
M.B. Han and L.F. Sun	2327
Flow Stress Models Analysis for Metal Powder Forming Simulation	
M.J. Liu, H.P. Chen and J.X. Jiang	2331
Investigation of Effective Parameters of Spring-Back in CK67 Steel Sheet Metal Using Finite Element Method	
S. Soleimani Darinsoo, H. Zoghi Shal and R. Khamedi	2336
Parameter Optimization of the Injection Molding Process for a LED Lighting Lens Using Soft Computing	
W.C. Chen, L.Y. Wang, C.C. Huang and T.T. Lai	2344
Plastic Instability Criterion of Radial Ring Rolling	
Z.H. Xu, D. Zhao and Q. Wang	2352
Pulse Current Auxiliary Tensile and Bulging of Light Metal Alloy	
J.Y. Liu, K.F. Zhang and S.S. Jiang	2356
Rolling Force Prediction System of Cold Rolling Process Based on BP Neural Network	
W. Teng and G.M. Wang	2361
Use of Acoustic Energy in Sand Casting of Aluminium Alloys	
H. Puga, J. Barbosa and J. Oliveira	2366
Study on Conventional Domed Bursting Disc Material and Burst Pressure Test	
W.P. Xu and Y.T. Liu	2371

Numerical Simulation of Stress-Strain of AZ31 Mg Alloy Profile during Warm Tension-Rotation Bending Process H. Xiao and L.B. Wu	2379
Small Module Involute Spline Processing with Position Requirements B.G. Zhang	2383
Research on Key Processing Technology of Nuclear Power Tapered Cylinder Forging S.M. Nie, Z.Q. Yu, D.N. Meng, R.S. Qi, X.G. Liu and M. Jin	2387

Chapter 22: Materials Machining

A Theoretical Model of Grinding Force and its Simulation D.L. Qin, F. Wang, F.J. Xi and Z. Liu	2395
An Experimental Study of Cutting Forces in Ball-End Milling of AISI H13 T.C. Ding	2403
Analysis on Milling Stability Performed under the Conditions of Positive and Negative Process Stiffness T.C. Hsiao, C.Y. Huang and J.J. Junz Wang	2408
Chip Formation Simulation in FE Modeling for Machining FRP Composite Y.L. He, H.Y. Ma and J.Y. Wang	2422
Cutting Force Modeling and Prediction in End Milling Including Flank Wear J. Wen, F.Y. Peng, S. Lin, R. Yan and Y.Z. Liu	2427
Effect of Microstructure on Cutting Force and Chip Formation during Machining of Ti-6Al-4V Alloy S.J. Sun, M. Brandt and J.P.T. Mo	2437
Experiment on Surface Roughness and Acoustic Emission Signal in Infeed Period of Cylindrical Plunge Grinding H.L. Li, H.Y. Cao and C. Jiang	2442
Experimental Study on Hardness of Titanium Alloy Ti-1023 by Milling H.C. Yang, Z.T. Chen and L.K. Jiang	2446
Grinding Parameters Optimization of Stainless Steel Surface Based on Grey Relational Analysis Y.L. Chi, H.L. Li, H.Y. Cao and X.K. Lin	2450
Machining Simulation of Equal Base Circle Bevel Gear Using Disc Cutter B. Wang, X.Z. Deng, Y.L. Zhao and B. Zhang	2456
Math Modules Establish for BUR Edge Chamfer and its Grinding Process Y. Wang, X.X. Ning and H.P. Jing	2460
Modeling and Analysis of Machining Force in Elliptical Vibration Cutting J.Q. Lin, J.H. Liu, X.P. Gao and S.Q. Wang	2464
Modeling of Force on Axial Power Ultrasonic Honing Z. Liu, X.J. Zhu, J.Q. Wang and Y.P. Shao	2470
Research of Bearing Crown Roller-Raceway by Non-Uniform Interelectrode Gap Electrochemical Mechanical Machining Z.F. Wei, X.H. Zheng and B. Tao	2475
Research on the Relation between Cutting Parameters and Axial Cutting Force in Helical Milling Process H.Y. Wang and X.D. Qin	2480
Research on the Rock Breaking by Double Disc Cutter Test-Bed P. Zhou, C. Wang, W.X. Gao and Y.H. Wu	2484
Simulation on Material Removal during Reciprocating Traveling WEDM of Insulating Ceramics Y.F. Guo, P.J. Hou, L.X. Sun, L. Wang and Z.F. Li	2490
Static and Modal Characteristic Analysis of a Horizontal Machining Center G.Q. Liang, M. Lin and T.T. Guo	2496
Study on Machinability of Pre-Hardened Plastic Mould Steel Y.A. Min, Y.P. Yang, Z. Zhang, Y. Wu and X.C. Wu	2501
The Analysis of Static and Dynamic Characteristic in Grinding Head of Roller Machine J.L. Cao and Y. Luo	2509

The Influence of Variable-Speed Waveforms on Vibration Suppression in Time-Varying Speed Cutting J. Cong, Y. Wang and W.N. Yu	2514
Drilling Simulation of Carbon Fiber Reinforced Plastic Composites Based on Finite Element Method Z.H. Sha, F. Wang and S.F. Zhang	2519
Experimental Investigation of Effect of Gear Milling Parameters of Al-B₄C Composite Gears on Surface Roughness D.S.R. Smart, P. Varghese and L.J. George	2523
Investigation on Delamination Factor in Drilling Medium Density Fiberboards with Variable Feed Pressure Using Multi-Spindle Drill K. Wang, C. Wang and M. Gao	2529
Parameter Recognition and Optimization of Residual Stress Prediction Model Based on Genetic Algorithm H.T. Liu, Y.Z. Sun and D.B. Shan	2535
Prediction of Surface Roughness on CNC Turning Based on Monitoring of Cutting Force and Cutting Temperature S. Tangjitsitcharoen	2540
Study on the Ultrasonic Characteristics in the Contact Interface under Ultrasonic Cutting M. Zhang, Z. Liu and F. Jiao	2550
The Effect of Tool Geometrical Parameters on Cutting Temperature Based on Deform-3D H.J. Zhang and Z.T. Tang	2554
The Nano-Cutting Mechanism Research of Polysilicon Based on Molecular Dynamics Y. Zhu, S.H. Qi, Z. Xiang and L.L. Xie	2559

Chapter 23: Welding & Joining

An Investigation on Vacuum Brazing of Dissimilar Nonferrous Metals of Cu and Al W.Y. Yu, T.D. Xia, W.W. Ding, X.J. Wang and W.J. Zhao	2565
Effect of Magnetic Field Current on Microstructure and Properties of AZ91 Magnesium Alloy Welded Joint Y.H. Su, J.L. Lin and Z.P. Kan	2570
Effects of Welding Heat Input on 22MnB5 Steel with Hot-Dipping Al Coating C.Y. Wang, L. Li, H.R. Li, C.L. Qin and H.Y. Zhao	2574
Influence of Reflow Soldering Process Parameters on the Lead-Free Reflow Profile W.L. Liang, X.D. Guan and P. Zhao	2578
Life-Cycle Energy Analysis as a Method for Welding Joint Design W.Y. Yu, T.D. Xia, W.W. Ding, X.J. Wang and W.J. Zhao	2583
Modeling and Simulation on Temperature Control System for Hot Pressure Welding B. Xie, F. Hu and S.M. Chen	2589
Weld Seam Deviation Detection Base on Laser Welding Pool's Centroid R.H. Zhen	2594
Analysis of Organizations of Brazeed Seam 5052 Al Alloy Contact Reactive Brazing F.F. Tan and K. Du	2598
Bayesian Probabilistic Approach to FE Model Updating of Vehicle Typical Spot Weld Structure C.Z. Yao, H.Y. Wang and Q. Rui	2601
Experimental Study of Effect of Adhesives on Strength of Composites Adhesive Joints Y.H. Yang	2608
Fracture Behavior of High-Frequency Welded Joints of GH4169 Alloy X.X. Duan and Y.H. Zhang	2612
Mechanism Research on Residual Stress's Elimination of Aluminum Alloy Welding by Ultrasonic G.J. Cui, T.T. Lv and X. Zheng	2616
Modeling and Analysis of Underwater Wet Weld Process Based on Regression Method B. Chen and J.C. Feng	2621
Numerical Simulation Research of Tailor-Welded Blanks W.G. Guo and Q.L. Jin	2625

Orthogonal Experiment of Resistance Microwelding of Insulated Copper Wire and Phosphor Bronze Sheet J. Qi	2631
Progressive Failure Analysis of Adhesively Bonded Laminates Joints with Spew Fillets Y.H. Yang	2635
Properties Effect of 16MnR Steel Weld Joint by Different Welding Methods L. Guo, T.H. Zhang, R.P. Xu and H. He	2639
Research on Welded Pipe and Tube Pass Design Virtual Methods G.C. Li	2643
The Friction Welding Characteristic Analysis of the Al 7075-T6 According to the Spindle Speed and Upset Pressure I.T. Lee, H.S. Kim, C. Park, D.P. Hong and H.Y. Kang	2647
The Temperature and Residual Stress Distributions of Butt Weld Pass on Nickel Alloy 690 Plate C.H. Yin, C.M. Hsu and J.H. Kuang	2651
The Welding Track Planning and Motion Control of T-Type Tube Autowelding Machine J.P. Zhou, X. Yi, Y. Xu, C.Y. Zhang and C.H. Liang	2655
Three-Dimensional Numerical Simulation of Temperature Field and Force Field of T-Type Turbe during Welding J.P. Zhou, X.F. Zhang, H.S. Liu, J.Y. Gao and Y. Xu	2659
Vacuum Brazing of Copper Tubes Using Ag-Cu Filler R.F. Li, Z.X. Shi, K. Qi and M.F. Wu	2664
Influence of Fluctuation Frequency on Stress Corrosion Cracking of X70 Pipeline Steel Welding Joint Q.L. Sun, W.W. Shao, X.G. Wang and C.B. Wang	2668
The Characteristics of Weld Metal Zone Welded with Various Filler Metals K.M. Moon, M.J. Nam, Y.C. Lee, Y.H. Kim and J.H. Jeong	2673

Chapter 23: Welding & Joining

A Method Based on the Morphology of Lead-Free Solder Powder Adhesive Particle Segmentation H.M. Wang, L. Lu, X.L. Liu and F. Gao	2681
Research for Viscoplastic Behaviors of SAC405 Pb-Free Solder Y.M. Li, T.Y. Zhao, J. Liu and B.Z. Huang	2686

Chapter 24: CAD/CAE/CAM

A New Method for Minimizing Cogging Torque in Permanent Magnet Machines Using Genetic Algorithm J.S. Shangguan and C.Z. Fan	2693
Ab Initio Molecular Dynamics Simulations of Cu under Vacuum and 473~1573K S.H. Sun, X.M. Chen, F.X. Zhang and B. Yang	2699
Application of Interactive Orthogonal Design on the Aerodynamic Drag Optimization of Hatchback Car H. Yu, H. Zhu and Z.G. Yang	2703
Application of Reverse Engineering for Redesigning and Manufacturing of a Printer Spare Part I. Buranský, L. Morovič and J. Peterka	2708
Computerized Numerical Control (CNC) Machining Engraving Processing of Surface Based on Master CAM S.W. Huang	2713
Design and Analysis of the Spiral Staircase in Large Steel Structure X.F. Ding, B.N. Qu and X. Zhao	2718
Design of Upswept Aft-Body of Civil Transport Based on CFD M.Q. Yang, D.L. Ma, Y.F. Liu and W.Y. Li	2722

Discrete Element Method Simulation of Mesomechanics of Railway Ballast during Tamping Process	2726
T.Y. Zhou, B. Hu, B. Yan and P. Xu	
Experimental and Numerical Study of Railway Ballast Compactness during Tamping Process	2730
T.Y. Zhou, B. Hu, B. Yan and J.F. Sun	
Finite Element Analysis of Light Cargo Van Frame	2734
J. Zhou, L.Q. Min and Z.S. Yang	
Finite Element Analysis of Sealing Structures for SF6 Gas Insulated Switchgear	2738
C. Li, F. Ying and H. Zhao	
Hand Sketching in 3D Computer Animation Model Rendering and Editing	2742
Z.F. Zhao	
Mohr Strength Theory in Simulation Stress Analysis	2746
Q. Wang, Z.J. Li, J.X. Zhang, Q.F. Xie and P. Tang	
Numerical Simulation and Optimization of Steel Pipe Cathodic Protection under the Condition of 3.5% Brine	2751
M. Zhang, J. Zhao, L.L. Zou and G. Wang	
Point-Based CAD/CAM Geometric Model Design	2757
F.J. Wang	
Simulation Calculation of the Braking Performance of Portal Cranes Based on ADAMS	2762
J.B. Hu, H. Zou, Y.G. Feng, H. Jin and X.L. Wu	
Surface Extension in Smoothing of Class a Surfaces for Auto-Body	2767
J.C. Xu, P.P. Fan, Z.X. Song and W.C. Zheng	
The Optimal Design of Injection Mold Gate Based on CAE	2772
J.W. Tang	
A New Method to Handle Temporal Planning in Flexible Graphplan Framework	2776
J.Y. Ren, L. Zhang, Z. Xiong and L.J. Qi	
A Universal Feature Definition Frame for 3-D CAD Model Conversion	2781
C.L. Sun, D.Y. Ning, W. Xiong and H.T. Wang	
Combination Regression and Neural Network for Short Term Load Forecasting	2787
Q.M. Chen, X.Z. Xu and N. Zeng	
Four - Wheel Steering Vehicle Modeling and Simulation Based on ADAMS	2796
W.T. Wang	
Multi-Dimensional Analysis of NO_x and Soot Formation in a Diesel-Fueled Hydraulic Free Piston Engine	2800
Y.X. Yu, Z.C. Yuan, J.Y. Ma and S.Y. Li	
New Downhole Intelligent Throttling System Based on the Poppet Valve	2805
C.Y. Deng, M.G. He, X.F. Zhao and G.F. Yin	
Numerical Analysis of Flat Circular Parachutes Inflation Process	2813
Y.X. Yu, J.L. Tian and Y. Chen	
Point Cloud Data Preprocessing Based on the Geomagic	2817
F.C. Xue	
Research on Three-Dimensional Topology Optimization for the Bed of NC Gear Shaper	2821
Q.H. Tian, R. Tao and Y.X. Du	
The Development and Simulation of the 3D FEM Software ---- Alpha System	2826
M.R. Xu, B.W. Wang, M. Li and J.X. Wang	
The Reliability Evaluation of Threaded Connections in Challenging Drilling by Three-Dimensional Finite Element Analysis	2831
F. Chen, Q.F. Di, W.C. Wang, W.P. Zhu, M.J. Wang and Z.J. Shen	
The Research of Deformation Compensation of the Unloading Mechanism of the Beam for XK-2535 Large-Scale CNC Gantry Milling Machine and Engineering Application	2840
S.S. Chen, X. Xu, Z.P. Hua and C. Dai	
Development of CAD Module for Gating System of Iron Castings Based on Sinovation	2845
H.L. Zheng, X.X. Yuan, L. Li and X.L. Tian	
Construction Method of Tool Path Based on Arc-Cell	2849
D.Z. Huang, Q.C. Zhao and T.L. Yang	
A Parting Surface Design of Multi-Cavity Mold Based on Pro/E Surface Technique	2855
J.G. Huang and C.Y. Li	

Chapter 25: Modeling, Analysis and Simulation of Manufacturing Processes

Air Flow Field and Fiber Motion in a Swirl Die Melt-Blowing Process S. Xie, Y.S. Zheng and Y.C. Zeng	2861
An Identification Method for Joint Parameters Based on Finite Element Z.Q. Chen, Y.F. Wang, Y.S. Zhu, Z.H. Xu and K.P. Song	2866
Analysis on micro-/poly-Crystalline SiGe Alloy Solar Cells Q.B. Zhang, W.S. Wei and F. Shan	2872
Dynamics Influences Discussion of Robot MiniQuad-II for Construction Member Structure Change Based on ADAMS L.W. Wang, C.P. Wang, X.J. Wang and X.Q. Mu	2881
Effects of Structural Parameters on Nanofiber from a Multihole Electrospinning Setup Y.S. Zheng, S. Xie and Y.C. Zeng	2886
Numerical Simulation Analysis on Repairing Hole of UAV Wing G.D. Jin, L.B. Lu, L.X. Gu and J. Liang	2891
Optimal Production LineLayout Model Based on Integer Programming Y. Zhao, X.Y. Pan, C.C. Li, G.H. Yao, J. Wu, X. Fu, D. Lai, D. Li and Q.W. Zhang	2896
Research and Application of the Structural Optimization Design Technique for the Large and Efficient Band Sawing Machine G.J. Chen, Y.P. Gong, T.T. Liu, H.P. Chen and J. Ni	2901
Research of Modeling and Simulation of Aviation Ignition Equipment K. Song, J.B. Liao and Q. Yang	2906
Simulation of the Nozzle Electro-Hydraulic Servo Valve with ITI-SimulationX E.Q. Jiang, S.H. Wang, J.K. Du, X.Y. Xu and W.Y. Li	2912
Simulation on the Hydraulic System of a Constant Tension Waves Compensation Winch N. Li, S.Y. Zhang and A.D. Ren	2918
Study on the Formability Rules with Precise Die Face for the Inner Clutch Shell of Automobile B.G. Mebrahtu, Y.J. Cai and Q. Yu	2923
Study on the Pressure Distribution on Solid-Plug Conveying of Centrifugal Extruder J. Zhao, S.J. Wang and X.R. Lv	2928
The FEA and Optimal Design of the Loader Based on Virtual Prototyping Y. Xu	2933
The Micro-Variation Principle of Mating Constraints and its Application to Simulation of Cumulative Deviations for Mechanical Assemblies B. Wang, J.L. Xu, G.L. Zheng and L.H. Duan	2938
The Spent Fuel Pool Analysis of Chinshan Nuclear Power Plant by Using TRACE/FRAPCON-3.4 J.R. Wang, H.T. Lin, W.W. Li, H.C. Chen and C.K. Shih	2947
The Study of Mechanism Analysis and Dynamical Simulation Based on Ultrasound Enhanced Supercritical and Subcritical CO₂ Dissolution B. Zhang, W.W. Liu, M.Z. Li and H.C. Zhang	2951
Design and Simulation of Rinsing Equipment of Cable Rolling Wire Rope P. Wang, H. Wang and J.Y. Jiang	2957
Design of Compressed Air Dehumidifying Equipment for Wire Rope and Simulation of Air Knife Flow Field P.H. Guo, W.H. Cui and H. Wang	2961
Effect of High Frequency Electromagnetic Fields on Liquid Steel in Soft-Contact Mold X.J. Wang, R. Liu and L.G. Zhu	2965
Effect of Insulators on the Power Consumption and the Oxygen Content of Si Ingots in Czochralski Growth J.S. Shin, W.K. Choi and K.Y. Kim	2969
Feasibility Analysis and Simulation of Minitype Combination Balance Y. Fan, Y.X. Wang and Z.C. Wang	2973
FEM Based Numerical Simulation of Delta Parallel Mechanism J.Z. Zhang, X.P. Xie, C.J. Li, Y.Y. Xin and Z.M. He	2978

Finite Element Analysis and Experimental Study of an Electromagnetic Shell Part with Flow Control Forming	
Z.W. Huang, Y.Y. Wan, Y.B. Wang, L.C. Che, C.L. Liu and G. Chen	2982
Finite Element Analysis of Frame on ZXZ90 Towing Machine for Cable	
H. Wang, J.N. Nie, P. Wang and P.H. Guo	2990
Optimization Design for the Longitudinal Structure of LED Light Guide Plate Using Soft Computing	
W.C. Chen, P.H. Liou and B.J. Chen	2994
Partial Least Squares Regression Analysis of Thermal Distortion Behavior for Linear Motor Drive Feed System	
X.K. Lin and Q.Q. Wu	3001
Single-Machine Scheduling to Minimize Makespan with Deterioration Jobs and Multi-Maintenance Activities	
C.J. Hsu and H.C. Chen	3007
Solute Distribution Ahead of Interface during Heteroepitaxial Growth	
W.J. Yao, Z.J. Jin, N. Wang and J.Y. Lee	3014
The Effect of Damping Block Design on Stability of Ploymer Coextrusion Process	
H.R. Zhang, X.F. Liu and B. Zhang	3018
The Modal Analysis for the Third Type of Internal Gear Motor	
J. Zhang, C.R. Tang, H.M. Tang, X.H. Li, M.M. Niu, Q.Y. Cai, X.W. Zhao and B. Zhang	3023
The Simulation Study of the Influence of Surface Error on Optical Properties for Optical Part	
T.R. Liu, X. Qiu, H. Li, Y.L. Li, C. Xu, Y. Hu and X.Q. Zhou	3027
Theoretical Analysis on Manufacturing Hypoid Left-Hand Gears by Generating-Line Method	
L.J. Yu, Z.J. Yang and X.P. Li	3032
Co-Simulation of Composite ABS Control for In-Wheel Motor Drive Electric Vehicle Based on Threshold Control Algorithm	
J.H. Li, C.X. Song and L.Q. Jin	3036
Design and Analysis of a CFRP Drive Shaft	
G.L. Zhang, Z.D. Zhou, J.G. Zhang, Y.F. Hu and J.W. Gong	3042
Research on Vibration and Sound Radiation from Submarine Functionally Graded Material Nonpressure Cylindrical Shell	
Y.B. Zhang, C.Y. Ren and X. Zhu	3046
Numerical Investigation for Fracture Saturation in Multilayer Sedimentary Rock in Unsymmetrical Case	
F.S. Han and L. Song	3050
Numerical Simulation for Rock Fracturing Process under Action of Disc Cutter	
L.J. Cao, S.J. Li and Z.C. Shang Guan	3054
The Preventing Coal and Gas Outburst Technology of Middle Distance and Low Permeability and Upper Protective Layer	
G.W. Dong	3059
The Roof Broken Mechanism of Fully Mechanized Coal Face with Super Thick and Loose Layer	
G.W. Dong	3068
Research and Prediction of Yellow Soil Moisture Content in Guizhou Province Based on ARIMA Model	
M. Liu and Z. He	3076
Energy Analysis and Optimization of Methyl Chlorosilane Separation	
J.H. Duan and X. Mei	3082
The Optimization of CO₂ Huff and Puff Well Location in Ultra-Low Permeability Reservoir	
D.F. Zhao, X.W. Liao, S.P. Wang, D.D. Yin and B.B. Shang	3086
Prediction of the Flow, Reaction and Heat Transfer for Glass Furnace Firing Petroleum Coke	
C.S. Hu, Y.B. Wang, P. Wang and J.Q. Bi	3090
A Coke Quality Prediction Model Based on Support Vector Machine	
H.J. Chen and J.F. Bai	3097

Research on Materials Corrosion Failure Model of Liquefied Natural Gas (LNG) Cylinder for Vehicle Y. Zhong and Y. Fei	3102
Simulation Studies on the Influence of Impact Velocity on the PELE Penetrated and Broken Reinforced Concrete X.J. Ye, Z.H. Du, C.H. Hu, C.J. Song and X. Sheng	3108
The Failure Finite Element Analysis of Pump Collision with Valve in the Oil Well Pump S.L. Wang, Y. Zhang, N.Y. Bai and Y.M. Cai	3112
The Main Structure Design and Motion Simulation of Spreaders Based on Virtual Prototype Technology P. Shang, Y.Z. Hu, X.Y. Yan and Y.M. Guan	3116
The Modal Analysis of the Main Steel Structure of Bucket Wheel Stacker Reclaimer P. Shang, Y.Z. Hu, L.H. He and Y.M. Guan	3121
Distribution of Stray Current in the Buried Metallic Pipeline Based on Inducted Electric Field C.H. Li, S.T. Zhang and W.P. Li	3125
Design of Terraced Spinneret Based on Simulation of Electric Field Distribution in Electrospinning G.J. Jiang and S. Zhang	3132
Micro Injection Molding and Strength Check of Polymer Micro-Needle L. Xue, G. Zhou, Y.J. Zhang, J. Zhuang and D.M. Wu	3136
Simulation Analysis on Height Change of 6010 Aluminum Plate Limit Drawing under Different Process Parameters J.P. Li	3141
Optimization and Improvement of Pile and Pull Coefficient Mathematical Model for Trapezoidal Stainless Steel Sieve Bar L. Pan, Y.Q. Wang, J.J. Wang and B. Sun	3145
Virtual Processing of Fish Fillets S.C. Fok and F.L. Tan	3149
Integrated Kinematics Optimization and Strength Analysis for a Wheel Loader Boom Mechanism N. Chen, J.N. Yang and Y.H. Liu	3157
Numerical Simulation on Thermal Field in the Fluidized Bed with Internal Heating Plates J.H. Duan and Q. Wang	3162
Modeling and Analysis of the Scavenging System for a Two-Stroke Cycle Hydraulic Free Piston Engine Y.X. Yu, Z.C. Yuan, J.Y. Ma and P. Li	3166
The Effect and Analysis of the Crankshaft Journal Fillet Rolling for Runout P.F. Zhao and Y.W. Zhang	3170
The Study of EDG GH3536 Surface Roughness Base on the Artificial Neural Network Modeling J. Gao, D. Wang and Y. Sun	3175
The Damage Evolution of the Flange Repaired Reinforcement Laminates Y. Wang, X.X. Chen and Z.Q. Jiang	3180
The Research on Dynamic Simulation of Rods and Cones Type Docking Mechanism J. Zhang, C.J. Liu and Y.T. Yu	3185
Reservoir Modeling and Numerical Simulation Controlled by Flow Units Y.C. Xue and L.S. Cheng	3190
A New Operational Pattern Optimization Method and Its Application in Nonferrous Metallurgy T.B. Wu, Y. Cheng, H.Q. Zhu, Y.G. Li and Z.K. Hu	3194
Spectral Element Approximation for the Eigenvalue Problem of Hydrogen Atoms Electronic Structure J.Y. Han and Y.D. Yang	3199

Chapter 26: High-Speed/Precision Machining, Inspection and Control Technologies

A Template-Matching-Based Fast Algorithm for PCB Components Detection H.M. Yin	3205
Abrasive-Free Polishing of Hard Disk Substrate with H_2O_2-$\text{K}_2\text{S}_2\text{O}_8$-$\text{NaHSO}_3$ Slurry W.T. Zhang and H. Lei	3209
Aspherical Surface Contact Detection Error Analysis H.H. Xu, Y. Zhang, X.G. Xia and Z.W. Wang	3213
Deep-Hole Precision Honing of Difficult-to-Cut Materials X.S. Xu, Z.Y. Sun, Z.F. Liu and H. Peng	3218
Effect of $\text{K}_2\text{S}_2\text{O}_8$ on Material Removal Rate in Abrasive-Free Polishing of Hard Disk Substrate R. Zhao and H. Lei	3222
Electrochemical Deburring of Miniature Holes X.H. Zheng, Z.F. Wei and Z.Y. Yu	3226
Numerical Analysis of the Ultrasonic Honing Chatter Based on the Stribeck Model J.Q. Wang and X.J. Zhu	3231
Quantitative Analysis of Lateral Setting Error in Two-Point Method G.Q. Ding, X. Chen, H. Wang, L.H. Lei and Y. Li	3235
Simulation Analysis of Thermodynamics on the Belt Spindle of the Machining Center Q. He, A.L. Li, Y. Zhang, Y. Jun and X.S. Li	3240
The Effect of Geometric Error on Machining Accuracy for Machining Center G.Q. Liang, A.R. Zhang and T.T. Guo	3244
Virtual Gear Measurement Center and its Application H. Chen and F. Wang	3249
A Novel Method for Kinematic Optimization of Camshaft Non-Circular Grinding J. Li, W. Zhang, N.Y. Shen and X.L. Wang	3253
Comprehensive Test of Electric Spindle Based on Thermal Stress Z.H. Sun, W.G. Gao and H. Xiao	3258
Estimation of the Time Constant of Precision Plunge Grinding in Dwell Period Based on Acoustic Emission Measurement C. Jiang, D.B. Guo and H.L. Li	3262
Experimental Investigation on Thermal Characteristics of Hollow Ball Screw in Different Working Conditions Y. Wang, W.G. Gao, D.W. Zhang and Z.H. Sun	3266
Inflection Points Processing of Continuous Tiny Line Segments for CNC System High-Speed Machining K.F. Wu, T.Y. Wang, Q.J. Liu, F.X. Lin and R.Y. Liang	3271
Research on the Influence of Harmonics on High-Speed Permanent Magnet Motor H. Cui and Y.Q. Gao	3275
Study on Spindle Dynamic Errors of Domestic NC Machine Tools J. Qiu	3279
Study on Ultrasonic Cavitation Field of Power Ultrasonic Honing C. Guo, X.J. Zhu and G.D. Liu	3284
Research and Application of Dynamic Secondary Cooling Control Method for Slab Caster of CISDI S.G. Wang, K. Feng, Z.W. Han, Y.W. Kong and J.F. Cao	3289
The Improvement of Laminar Cooling System for Hot Rolled Strip Base on Rolling Process H.F. Wang, X.G. Ren and Y. Rong	3295
Experimental Research on Acoustic Parameters and Saturation of Gas Hydrate-Bearing Sediments J. Zhang, Y.G. Ye and G.W. Hu	3299
Study on Flaw Detection in Welding Zone of Diamond Saw Blade M. Zhao, R.B. Gai and J. Zhang	3303
Study on Reaming High-Precision Thin Hole in Hardened Steel by Ultrasonic Vibration Reamer J.Z. Zhang, N.C. Zhang and Y. Zhang	3307
Development of an Automatic Inspection System for Manufacture of Plastic-Container Pump Assemblies S.W. Hwang, J.M. Kim, J.Y. Kim, J.M. Jun and D.S. Hong	3312

Finite Element Analysis of Contact between Laying Head Pipe and High-Speed Wire Rod C. Liu, Y.L. Liu, L.Y. Ma and P. Yuan	3316
Research on the Normal Error of Large Aspheric Mirror Employed in Bonnet Polishing W. Yang and C.J. Wang	3321

Chapter 27: Laser Processing Technology

Dry Sliding Wear Behavior of Laser Clad WC/NiCrBSi Metal Matrix Composite Coatings J.X. Yang and X.H. Miao	3327
Numerical Simulation of Feeding Powder Laser Cladding Temperature Field Based on ANSYS C.F. Song and M.D. Wang	3334
Optimizing BP Networks by Means of Genetic Algorithms in Quality of Laser Milling Z.M. Xu, Z.H. Hong, G. Yang and Q.A. Wang	3338
The Influence of Mixing Enthalpy on the Geometric Properties of Laser Solid Formed Ti-6Al-4V F.Y. Zhang, H. Tan, H. Chen and G.S. Liang	3343
3D Laser Remanufacturing of Damaged Parts Y. Fang, X.C. Yang and J.B. Lei	3350
Optimization on Selective Fiber Laser Sintering of Tri-Metallic Powders via Design of Experiments Method H.T. Liao, L.M. Trung and V.V. Truong	3354
Current Progresses of Laser Assisted Machining of Aerospace Materials for Enhancing Tool Life S.J. Sun, M. Brandt and J.P.T. Mo	3359

Chapter 28: Products Design, Manufacture and Industry

Analysis of New Features of Beer Packaging Design X. Man	3367
Innovative Vacuum Cleaner Design Using TRIZ Method S.J. Hu, L.H. Su, J.C. Chen and C.Y. Wei	3372
Research & Design of the Multifunctional Landscape Hedge Trimmer Y.M. Meng, J. Wei, J.Z. Liang, Z. Dong, C.W. Qin and Q.W. Chen	3377
Assessment System of Remaining Life for Bridge Crane Based on the Internet of Things W.H. Gao, M.F. Li, S.G. Cao and D.H. Liu	3381
Characteristics of Marks on Concave Key Duplicated by Machine Y. Jin	3386
Conceptual Approach for Design, Fabrication and Testing of Indoor Remotely Controlled Airship N.I. Motiwala, I.A. Khan, N.P. Yelve, B.E. Narkhede and R.S. Pant	3390
Deficiency Analysis of Different Ship Types Based on Taiwan PSC Data J. Chen, Y.X. Jin, J.M. Chen and J.Z. Yuan	3396
Design and Experiment of <i>Sinonovacula constricta</i> Purification Bacteria System W.F. Zhong, Y.H. Wang and H.Y. Liu	3401
Improvement of Packaging Structure and Materials about Daily Chemical Products Plastic Hose Packaging Y. Yang and Y. Li	3406
Improvement of Structure and Material about Plastic Emulsion Pump for Daily Cosmetic Products Packaging Y. Yang and Y. Li	3410
Optimization of a 17m Catamaran Based on the Resistance Performance D.Z. Wang, F. Ma and L. Mei	3414
Research on High-Grade Anti-Counterfeiting Scratchcard Invoice Printing Technology and Craft J. Ma, J.Y. Huang, S.L. Wu, X. Sun and R.L. Gai	3419

Research on the Influence Factors of the Wave Collar Style X.P. Zhang, M.H. Zhao and F.D. Kong	3423
SCA Based Exploratory Evaluation of Weapon Equipment Operational Effectiveness Z.F. Li, H. Yuan and F. Yang	3428
Slip-Resistance Assessment on Different Types of Emery Anti-Slip Strip C.C. Chen	3436
Study on a New Type Massage Device S.N. Yu and Q.C. Yang	3441
The Development of Santana 2000 Lighting Test Rig Y. Liu	3449
The Research on the Application of Kansei Engineering in the Product Design R.Y. Liang, D.X. Chen, T.Y. Wang, X. Zhang, K.F. Wu, F.X. Lin, X.F. Xu and Y.C. Li	3453
The Security and Function Improvement of Suitcase Based on Human Factors Engineering W.T. Sun and Y.H. Zhang	3457
Variation Analysis for a Manufacturing Stage Based on a Balanced One-Way ANOVA Model L. Zhang, Z.S. Zhang, Y.F. Zhou, M. Dai and J.F. Shi	3461
Weave and Process Design of Monolayer Two-Sided Velvet Fabric Y.Y. Qi, D. Zhou, Z.M. Jin and Y.X. Zhu	3466
Research on Material Selection and Sizes Optimization of Casing Material for Fracturing Wells under Existence of Brine Corrosion L.F. Li	3470
The Application of Parstat 2273 Electrochemical Workstation in Corrosion Experiment X.F. Guo, B. Xu and Y. Wang	3474
Research on Improving the Pass Yield of the Manufacturing of 0645 Type of Sharpener B. Su and Q.Y. Zeng	3478
Analysis of Current Situation of Digital Sculpture Development W. Deng, Y. Chen and S.J. Hu	3482
Analysis of Snow-Ice Characteristics and Clearing Performance on Urban Road Y.Q. Li, W.F. Wu, J.F. Wang, S.Y. Chen and X.X. Li	3486

Chapter 29: Mineral Materials, Mining and Mineral Process Engineering

Experimental Study on Coal Entry with Water Trickling and Burst Cracked Roof Supported by Anchor Net C.Q. Ma, B.Q. Dai, G.P. Qin and B. Xu	3493
Gaseous Fluorides Formation Mechanism in the Roasting Process of the Fluorite-Bearing Iron Concentrate Y.C. Wang, J.L. Zhang, J. Wang, F. Zhang and G.P. Luo	3498
Metallogenic Geological Characteristics and Metallogenic Model of Xiachen-Wangchangmu Fluorite Mine in Tiantai Basin, Zhejiang Province, China H. Zou, Z.Z. Xu, Y. Fang and P. Zhang	3506
Mine Laneway Modeling and Realization Based on the Matlab L.X. Chen and M.N. Zhao	3512
Separate the Anshan-Type Low-Grade Hematite Ore With Process of Low-High Intensity Magnetic Separation and Reverse Flotation Method Q.M. Jia, F.J. Li and Y. Li	3517
Study on Comprehensive Utilizations of Certain Complex Paragenetic Tin Polymetallic Ore X.Q. Chen, J.Z. Yang, Y.L. Mao, W.P. Yan and C.X. Li	3521
Mechanochemical Activation and Characterization of Low-Medium Grade Phosphorite Ore Y. Xing, H. Gao, Y.F. Ying and D.Z. Qu	3529
Various Morphology of Hierarchical Pore-Structured Compound: MCM-41/Diatomite and its Adsorption Behavior for Methylene Blue F.F. Li, M.S. Xia and Y.S. Jiang	3533
Preliminary Study on Leaching Mechanism of Manganese Using Ternary Compound Reductant W. Liu, C.C. Song, M. Sun, F.Z. Zong, Y. Zhang and J.G. Song	3541

Geostatistics Method for Identification of Minor Structure Seismic Attribute L.J. Zhang, Y.Q. Ma, Z.L. Yu and J.J. Wei	3545
Late Accumulation of Kunbei Area in Qaidam Basin H. Shi and H. Li	3549
Study on Leaching Manganese from Low-Grade Manganese Ores Using Different Reductants W. Liu, C.C. Song, Z.H. Wang and J.G. Song	3553
Experimental Study on Gas Hydrates Dissociation in Sands by Depressurization J.Y. Sun, Y.G. Ye, C.L. Liu and J. Zhang	3557
Leaching of Low-Grade Manganese Ores by Using Two Compound Reductants W. Liu, C.C. Song, X.Z. Wang and J.G. Song	3561
The Study of the Factors which Influences the Dissolution Rate of the Halite D.L. Lu, F.C. Jiang, C.S. Wei and X.Q. Fan	3565
Paste Thickening of Iron Tailings with Vibrating Lamella Thickener X.L. Zhou, Q.C. Xie, X.M. Zhang, Z.X. Shi, C.Q. Tian, L.Z. Chen and D.Y. Sun	3570
Corrosion Effect of Acid Rain on the Technical Properties of Mineral Aggregates X.J. Feng and X. Xiong	3576
The Analysis and Correction of Sampling Bias of Discontinuity Orientation Caused by Linear Sampling Technique Y.W. Wang, Z.Q. Luo and H.Y. Zuo	3580