

Table of Contents

Preface and Committee

Chapter 1: Material Science and Chemical Engineering

Effect of Equal Channel Angular Pressing on Corrosion Resistance of Al-Mg Alloy D.R. Fang, F. Li, F.F. Liu, J.J. Li and N.Q. Zhao	3
Influence of Stress Ratio on Fatigue Crack Propagation in TiAl Alloy R.C. Feng, Z.Y. Rui, Y.R. Zuo, G.T. Zhang and C.F. Yan	7
Study on Corrosion Behavior of 16MnR in the Circulating Water System Y.G. Fan, G.N. Li, B. Chen and S.P. Zhou	11
Fabrication of Polyacrylonitrile Nanoporous Fibers via Electrospinning N. Si, L. Xu, F.J. Liu and H.Y. Liu	15
Illustration of Fracture Mechanism in High Temperature for TiAl Alloys G.T. Zhang, Z.Y. Rui, R.C. Feng, Y.R. Zuo and C.F. Yan	19
Research on Numerical Simulation of Quad Bundle Conductor on Galloping X.P. Zhan, K.J. Zhu, C.L. Liu, B. Liu, J. Zhang and G.R. Tang	23
Functional Studies on Coffee Yarn Knitted Clothing Fabrics J.H. Zhu, J. Yang, C.H. Ge, H.X. Zhang, C.Y. Zhu and J.T. Li	28
The Experimental Study on Consolidation of RTV for Wet-Area Earthen Ruins in Southwest China Y. Wu	32
The Characterization of Two-Direction Vector-Valued Wavelets and its Applications in Material Engineering Q.J. Chen, H. Chen and H.W. Gao	36
Preparation and Performance Evaluation of PU Foam Composite Board J.H. Lin, Y.C. Chuang, C.W. Lou, T.T. Li and C.H. Huang	40
Effects of 1-Ethyl-3-(3-Dimethylaminopropyl) Carbodiimide Cross-Linking Duration on the Structure of Chitosan/Gelatin Composite Bone Scaffolds J.H. Lin, S.P. Wen, H.Y. Chung, W.C. Chen and C.W. Lou	44
Polyester/Low Melting Point Polyester Nonwoven Fabrics Used as Soilless Culture Mediums: Effects of the Content of Low Melting Point Polyester Fibers J.H. Lin, J.C. Hsieh, J.H. Lin, M.C. Lin and C.W. Lou	49
Recycled Polypropylene/SEBS Polyblends: Manufacture and Mechanical Property Evaluation J.H. Lin, J.H. Lin, J.M. Chen and C.W. Lou	53
Effects of Tooth Number of Drive Gear on Mechanical Properties of Polypropylene/Polyester Composite Tubular Knits C.W. Lou, J.M. Chen, C.T. Hsieh and J.H. Lin	57
Mechanical and Physical Property Evaluations of Kevlar/Polyester Complex Nonwoven Fabrics C.W. Lou, W.H. Hsing, C.T. Hsieh and J.H. Lin	61
Synthesis of Polyurethane Dendrimers and Transfer Properties of Dye J.R. Jia	65
The Start-Up of A/O Biofilm Process with Silicon-Based Zeolite Filter Material J.T. Wang, Y.Z. Yu and Y.H. Zhao	72
Treatment of Domestic Wastewater by A/O Biofilm Process of Silicon-Based Zeolite Filter Material J.T. Wang, Y.Z. Yu and Y.H. Zhao	76
Preparation of Nanometric Mixed Crystals of TiO₂ by TiCl₄ and TiCl₃ T. Lu and C.C. Xu	81
Experimental Research on the Adsorption Behavior of NH₃ at the Surface of CaO X.Y. Hu, S.D. Ju, L.N. Wu, M.S. Zhao and C.Q. Dong	88

Effect of the Doping Ni and Overdosing Lithium for Synthesis LiMn_2O_4 Cathode Material by the Solid State Reaction Method	
Y.C. Liu, M.C. Liu, R.L.H. Liu and M.C. Chi	93
Nanocrystalline TiO_2 Composte Films for Enhanced Photocatalytic Activity	
M.L. Dai, J.J. Feng, F. Li and M.M. Yao	98
Effects of Dicyandiamide on the Accumulation and Leaching Risk of Soil NO_3^--N in Aquic Brown Soils	
D.B. Qiao, Y.L. Zhang, L.L. Xiang, C.Y. Lu and X. Chen	102
Study on Aging of Zinc Oxide/Poly(butylene succinate) Composite	
C.N. Cui and J.T. Huang	108
Adsorption Thermodynamics Study on CCl_2F_2 over Solid Base $\text{Na}_2\text{O}/\text{ZrO}_2$	
T.C. Liu, Y.J. Guo, G.Y. Tang, M.L. Yuan and P. Ning	112
Study on Preparation and Properties of PMMA Composite Microspheres as the Matrix of Low Density Proppant	
Y.C. Xu, T. Chen, J.L. Hu, C.H. Tang, R. Ma, J. Gao and F. Bao	116
Development and Research of Nanostructured Multi-Layered Composite Coatings for Tool Made of Tungsten-Free Carbides (Cermets)	
A.A. Vereschaka, O.K. Hojaev, A.S. Vereschaka and I.S. Ruziev	120
Investigation of the Influence of Deep Rolling on the Thermal Fatigue Cracking for AISI H13 Steel	
L.L. Zhang, L.P. Lei and P. Zeng	127
Microstructure and Properties of SiC Particle Reinforced Aluminum Matrix Composites by Powder Metallurgy Method	
T. Fan, C.L. Xiao, Y.R. Sun and H.B. Li	131
Experimental Study of Lanthanum Boride Ceramic Powder Synthesis Process	
F.J. Wang, H.R. Zhu, Q.D. Xiu and J. Luo	135
Synthesis, Characterization, and Crystal Structure of Several Novel Acidic Ionic Liquids: 1-ethyl-2-alkyl-benzimidazolium Tetra-Fluoroborate	
M.T. Wang, C.P. Pan, W.P. Gai, X.X. Lv, M.G. Zhai, W. Wang, Z.Y. Peng and S.H. Chen	139
Investigation of the Strain Distribution of T-Peel Flexible Polymers Using Digital Image Correlation	
Y.B. Yang, P. Zeng and L.P. Lei	144
Preparation and Properties of Thermosensitive Poly(N-isopropylacrylamide-co-glycyrrhetic acid) Microgels for Controlled Growth Factor Release	
Y.M. Zhao, X.L. He, J.Q. Li, X.X. Li, L. Chen and D.S. Wei	148
On the Performance of $17\text{Ni}/(10\text{NiO}-\text{NiFe}_2\text{O}_4)$ Cermet by Hot-Press Sintering Technology: Sintering Temperature Effects	
W.Z. Dong, Q.Q. Lin, T. Jiang and Z.G. Wang	152
Numerical Simulation Analysis on Porthole Dies Extrusion of Aluminum Mini-Thin Harmonica-Shaped Tube	
F.L. Lu, J.S. Song and J. Zhang	156
Experimental Investigation on Laser Milling of Al_2O_3 Ceramic	
Z.M. Xu and Z.H. Hong	160
Application Study of Flotation Column in Reverse Flotation of Magnetic and Hematite Mixed Iron Ore	
W.Z. Wang, L.P. Chen and L.B. Zhao	164
Design and Processing of Temperature Resistant Enamel Coating Materials	
X. Fu, C.H. Zhang, C.Q. Li, K.J. Li and Y.B. Zuo	168
The Process Experimental Study on High Efficiency Deep Grinding for 9SiCr Alloy Steel with a CBN Wheel	
Z.F. Guo, X.M. Sheng, G.Z. Xie, D.Z. Yin and W.X. Li	172
Study on the Texture of Materials in Stop Motion	
W.S. Yang	177
The DFT Studies on a Novel Hydrogen Storage Material $\text{Mg}_{12}\text{Ni}_{6-x}\text{Cr}_x(x=0,1)$	
Y. Liu, L.P. Meng, S.J. Zheng and S.W. Zhang	181
Calculations and Modeling of Material Constants in Hyperbolic-Sine Creep Model for 316 Stainless Steels	
F.Q. Yang, H. Xue, L.Y. Zhao and J. Tian	185

Synthesis of Lithium-Ion Battery Cathode Material $\text{LiFe}_{0.95}\text{Mn}_{0.05}\text{PO}_4/\text{C}$ Using FeCl_3 Etching Waste as Iron Source	191
G.H. Guo, S. Chen, F.F. Liu and L.Y. Zhang	
Novel Anticaking Materials of Bentonite, Biological Carbon and Abandoned Animal/Plant Oil in Compound Fertilizer	197
P. Hu, Y.H. Zhang, Y. Wang, M. Fu and F.S. Zhou	
Hydrothermal Synthesis and Investigation of Photocatalytic Properties of Fe-N Co-Doped NaTaO_3	202
Y.R. Zhao, T.C. Xiang and P.L. Han	
Preparation and Properties of $\text{Cf-Ti}_3\text{SiC}_2\text{-Cu}$-Graphite Composites	206
S.F. Xu, S.P. Xu, C.N. Zhu and Q.B. Zhao	
Investigation on the Effect of Complexing Agents and Concentrations on Electrodeposition of ZnS Film	211
F. Fan, L.D. Shi and K.G. Liu	
Effect of Pulse Magnetic Field on Primary Silicon in Al-20Si Alloy	215
Y. Zhu, W.Y. Jiang, E.J. Guo, J. Li and K.F. Wang	
Anti-Wear Performance of Novel Tri(hydroxymethyl) Propane Esters as Additives in Rapeseed Oil	219
X.B. Ji and Y.X. Chen	
Preparation of Novel B, N, S-Containing Tri(hydroxymethyl)propane Esters and its Friction-Reducing Performance as Additives in Rapeseed Oil	223
X.B. Ji and Y.X. Chen	
Mechanical Properties of Rice Straw Particle/HDPE Composites	227
G.H. Chen and D.D. Wang	
Starch-Based Biodegradable Packaging Materials of Antimicrobial	231
J.W. Wang	
Study on Grinding Kinetics of a Unique Double-Sphere Grinding Media for Cassiterite-Polymetallic Sulphide Ores	236
J.P. Feng, X. Feng, S.J. Ma, J. Liu, W. Mo, J.L. Yang and X.J. Su	
A New Purification Way for Multiwalled Carbon Nanotubes	240
L. Shen and M. Liu	
Morphology of Polyethylene/Montmorillonite Nanocomposites Prepared by <i>In Situ</i> Polymerization	244
M. Li, L.G. Xiao and H.K. Zhao	
Effect of Ce Co-Deposition on Phase Structure and Thermal Stability of Ni-Cu-P Alloy	248
H. Sun, H.F. Ma, L.M. Feng and X.F. Guo	
Phase Structure and Thermodynamic Stability of Various Nickel-Base Multicomponent Alloy Coating	252
H. Sun, H.F. Ma, L.M. Feng and X.F. Guo	
Virtual Material Model of Joint Interfaces Considering Elastic-Plastic Deformation of Asperities	257
L.G. Cai, T.Y. Xu and Y.S. Zhao	
Preparation of PVAc/CNT/Carbon Black Composite Particles	262
G.Q. Wang and Y. Cui	
Preparation and Characterization of Al_2O_3 High Density Ceramic Materials	266
C.Y. Jia, D.H. Li and Y.H. Liu	
Microwave-Assisted Precipitation Synthesis and Photoluminescence Properties of SrWO_4 Mesocrystals with Different Shapes	270
G.J. Xing, Y. Wang, C.N. Yu, C. Zhao and G.M. Wu	
Influence of Ultrasonic Energy on Pore Structure of Ni-P Ultra-Black Films Produced by a Novel Blackening Process	276
Y.Z. Jin, K. Yang, X.G. Zen, P.P. Yue and G.Q. Zeng	
The Effect of HNO_3 on Functionalization of CNTs	280
F.X. Wang	
A Phase-Selective Supramolecular Gelator as Oil Solidifier	284
S.Z. Liu, W.L. Liu, Z.G. Liu, J.C. Li, X.C. Zhang, Y.Y. Liu and Y.Z. Wang	
Biomimetic Fabrication and Infrared Properties of Hierarchically Structured ZnO Derived from Cotton Fibers	288
T. Zhang, Y.M. Zhou, Y.J. Wang, X.H. Bu, J.J. Xue and Z.J. Chen	

Dynamic Mechanical Properties and Phase Structure of Polyethylene/Montmorillonite Nanocomposites Prepared by <i>In Situ</i> Polymerization M. Li, L.G. Xiao and H.K. Zhao	293
Characterization of Gamma Irradiated Isotactic Polypropylene by Mixtures of Hindered Amine/Organo-Phosphite Stabilizers M. Li, L.G. Xiao and H.K. Zhao	297
Simulation Research on Three Kinds of Alloy Material for Penetration X.F. Huang, W.L. Wang, Y.Z. Jiang, L. Fu and Z.Q. Fan	301
Study of Matrix Transfer Multipliers for Normalized Pseudoframe Wavelets and Applications in Material Engineering H.W. Gao	305
Preparation and Performance of Polysulfone Hollow Fiber Ultrafiltration Membranes Y. Bai, Z. Liu and D.B. Sun	309
The Benzoin Condensation Reaction under Different Ultrasonic Frequency and Phase Transfer Catalyst C.L. Xiao, T. Fan and Z.Q. Gao	313
Influence of Mineral Admixtures on Early-Age Autogenous Shrinkage of High-Performance Concrete L. Xie	318
Research on Fabricating of Square Aperture Spherical Micro-Lens Array through the Laser Lithography Y.J. Sun and Y.X. Yu	323
Study on Hollow Microspheres with Conductive and Magnetic Properties H.F. Xu, H.J. Zhang, Y.H. Xu, W. Dong and L.C. Zhang	329

Chapter 2: Mechanical Engineering and Manufacturing

Deformation Analysis for Hydrostatic Rotary Table of Heavy Duty CNC Machine Tool X.M. Dong, L.G. Cai, Y.S. Zhao and X. Shi	335
The Car Brake System Design and Calculation Y. Wang	340
Eddy Current Detection for Weld Defect and Automatic Separating System for Defective HFW Pipe X.Q. Shen, F.S. Yu and Y. Bao	344
Thermal Management Simulation of Lithium Ion Batteries for EV/HEV F.G. Hadia and Y.T. Zhang	350
Numerical Implementation of a Multi-Physical Fields Coupling Constitutive Model Y.J. Sun, Q.C. Cui, S.H. Zhang and L.J. Yan	354
Solutions for the Finite Deformation Elastic Rod Nonlinear Wave Equation J. Shi, X.L. Yan and Q.T. Deng	358
Design and Analysis of a Transmission Mechanism for Aerostatic Guideway M.M. Deng and W. Long	362
Reliability Analysis on Anti-Overturning Stability for Truck Crane R.X. Zhao, Z.H. Shan, H.G. Ding, H.Y. Zhang, L. Zhu and X.F. Li	367
Manufacturing Technique and Bacteriostatic Property Evaluation of Polyvinyl Alcohol/Sodium Alginate/Angelicae Dahuricae Radix Fibrous Membrane C.W. Lou, M.C. Lin, C.T. Lu, C.H. Huang and J.H. Lin	371
Manufacturing Technique and Property Evaluations of Protective Textiles C.W. Lou, T.T. Li, M.C. Lin, J.Y. Lin and J.H. Lin	375
Study on Release Process of Micro-CAES Used Screw Expander G.B. Liu, Q.C. Yang, Z.G. Qian, Y.Y. Zhao, L. Wang, L.S. Li and B. Tang	379
Investigation on a New Type of Pneumatic Flexible Joint X.M. Liu, D.X. Geng, Y.W. Zhao and G.B. Wu	384
Similar Structure of Solution for the Model of Nonlinear Spherical Seepage in Composite Reservoir P.S. Zheng, S.C. Li, L.H. Leng, H.P. Liu, D.D. Gui and D.X. Li	389
Analysis of Turbine Impeller Vibration Test Equipment H.G. Pan, Y.N. Xu, D.L. Yi, J.C. Sun, P.F. Du and C.M. Zhang	395

Thermal Analysis and Optimization of High Power LED Automotive Headlamp Cooling Device	
X.J. Zhao, Y.X. Cai, J. Wang, X.H. Li and C. Zhang	399
Biomechanics Quick Response System Research of Vault Technical Training	
J.H. Zhou, Z.L. Gao, Y. Liu and L. Liu	405
Fracturing Well Production Dynamic Simulation in Fractured Tight Sandstone Gas Reservoir	
C.Y. Xie, Y.Q. Hu, X. Chen, Y.C. Ma, J.Z. Zhao and L.M. Mou	410
The Achievement of Dynamic Load Simulator of Servo Mechanism of Multiple DOF Thrust Vector	
J. Song, J.Y. Zhang, M. Sun and M. Sun	416
High Temperature and High Pressure ESP Performance Testing System Design	
X.Q. Li and X.Y. Liu	423
Torsional Vibration Analysis for Large-Scale Reciprocating Compressor Crankshaft	
K. Zhan, X.L. Yu, B.Y. Yu and J. Xie	428
The Mechanical Design and Simulation of Marine In-Pipe Robot Based on Metamorphic Mechanism	
L.B. Fei, Y.P. Wei and F. Cui	433
Influence of Cutting Parameters on Vibration Acceleration in Micro-End-Milling	
L.J. Ma, X.B. Wang and Y.F. Li	439
Life Estimation of Hub Bearing Unit Based on Test Load Spectrum	
R.J. Niu, C. Niu and X.J. Dai	443
Parameters Optimization of Multistage Pump-Off Propped Fracturing in Thick Formation	
S.G. Jia, Y. Zhang, Y.Y. Wan, D.L. Teng, Y.Z. Jia and P. Sun	447
A Gluing Device Based on PLC for Manufacturing Flap-Disks	
X. Zhang, D. Yan, Q. Wang and Q.B. Lv	454
Analysis on Mechanical Parameters at SCC Tip in Fusion Boundary Region of Dissimilar Weld Joint	
L.Y. Zhao, H. Xue, F.Q. Yang and Y.K. Gui	459
Optimization Techniques in Numerical Simulation of Casting Process	
G.H. Zhang, R.D. Li, C. Tian, K.Q. Qiu and J.X. Ma	463
Vibration Performance Analysis on Gear Systems	
L. Fang, J.F. Li and L.L. Si	467
Parallel Machine Scheduling with Fuzzy due Date Using Improved Simulated Annealing in Lean Production	
H.B. Yang, F.Y. Mao, J.H. Xu and H.X. Shi	470
The Disassembly Process and Apparatus of Waste Printed Circuit Board Assembly for Reusing the Components	
D. Xiang, Z.F. Pang, D.F. Long, P. Mou, J.P. Yang and G.H. Duan	474
Principle Analysis of Profiled Bar Turning Peeling Machine	
H. Zhang and Y. Chen	486
Finite Element Modeling and Strength Analysis of Boom System of Concrete Pump Truck	
H.B. Tang, W. Ren and S. Wang	490
Load Spectrum Research of CNC Machine Tools Based on the Machining Information	
J.Y. Yao and Y. Jia	494
Research on Test-Bed of Durable Performance Experiment for Pilot Operated Directional Valve	
X. Zhang, L. Ni, H. Zhou, M. Yu, Y.Q. Liu and D.L. Wang	498
Experiment Study on Improving Lubrication of Gundrill under MQL by Shoulder Dub-Off Modification	
Z.Y. Zhang, W. Zhang, F.B. He and J.Z. Hu	502
Tubing Cleaning Nozzle Assembly Structure Improvement and Numerical Simulation	
Y. Zhang, Z.J. Ai, Y. Wu, Q.P. Jian, Y.D. Yang, S. Wang, P. Chen and X. Liu	510
Study on Diffusive Wear and Hardness of Driller of Machining Deep Hole in Sheet	
X.C. Xu, Q.L. Ning, H. Qiu, W.B. Zheng, B. Lin and F.H. Liu	514
Exploring Autofrettage Process to Improve the Fatigue Life on High-Pressure Cylinder	
F.L. Yang and S.J. Zhang	518

Research on the Anti-Vibration Technology of Large Cross-Section Conductor J. Zhang, K.J. Zhu, Z. Liu and X.P. Zhan	522
Study of Cell Electrowetting Characteristic on the Bio-Electrode Surface G. Qin, M.D. Ma, Y.F. Deng, P.M. Ming and Y.Y. Yin	527
Research on the Turbocharger Technology of Piston Aircraft Engine Z.J. Pan, Q.H. He, Y. Guo, Y.M. Zhao and J. Yang	531
The Analysis of Bioprosthetic Heart Valve with Different Suture Densities Q. Yuan, X. Zhang, J. Zhang and X. Huang	536
Comparison of Cell Wall Microstructure of Aluminum Foams Produced by Melt Foaming and Gas Injection Foaming Processes Y.T. Zhou, Y.X. Li, X.N. Liu and W.W. Yuan	540
Numerical Analysis of General Groove Geometry for Dry Gas Seals J.B. Hu, W.J. Tao, Y.M. Zhao and C. Wei	544
Study on the Removal Function of Annular Polishing Pad Based on the Computer Controlled Polishing Technology W.B. Zhang, S.M. Wan, B. Lin and X.F. Zhang	552
Effect of Cracked Blade Distribution on Vibration Characteristics of Centrifugal Impeller G. Cheng, J.F. Li, W.Q. Wang and J. Sun	556
Experimental Study on Double-Piston Gas Prover H.Y. Chen, J. Cheng, Z.W. Huang and W.X. Shen	560
Numerical Simulation of Temperature Field of Gears in Quenching Process H.L. Zhu, S.Y. Li and C.R. Wang	566
CNC Machining Based on UG for Stamping Die of Waveform Spring H. Liu and L.L. Luo	571
Study on the Value Chain System and the Operation Mechanism of the Service Enhanced Construction G.F. Qiu and M.M. Zhang	576
Investigation of Shape Retention of Inflatable Structures Based on Experiments and Fluid-Structure Interaction Analysis Y.J. Xu, P. Zeng and L.P. Lei	581
Study on Fatigue of Hinge Sleeve of Cubic Press based on ANSYS X. Sun, W.Z. Qi, H. Zhao and H.X. Li	585
Mechanics Simulation of Lathe Tool Fixture and Tool Carrier in CNC Machine Tool for Guide Disc K. Yang, S.J. Guan and C.H. Li	589
Effect of Strength Matching of Welded Joint on Stress Corrosion Cracking in Nuclear Power Structures H. Xue, Z.W. Wang, L.Y. Zhao, M. Qiao and W.B. Wang	593
Parameter Optimization Experiment of Magnetorheological Bearing R. Li, P.F. Du, S.M. Zhou and T.X. Zheng	597
Study on Rolling Element Bearing Fault Diagnosis Methods Based on Ensemble Empirical Mode Decomposition Z.L. Lv, Y.L. Liu, X.W. Han and M. Liu	602
N-C Lathe Cutting Force Measurement Research M.X. Shao and X.M. Zhang	608
Workspace and Control System Study for Arc Welding Robot D. Zhang, Z.M. Lun, C.Y. Lv, S.X. Zhao, W.Y. Pan, R. Wang, H.T. Wang and H.B. Gao	612
A Comparative Study of Firefly Algorithm and Shuffled Frog-Leaping Algorithm for Constrained Free and Manufacturing Optimization Problems P. Aungkulanon, I. Srikun and L. Ruekkasem	618
Research on Characteristics of Joint Point of Power Transmission Tower Y.T. Feng, H. Ke, X.X. Xu, X.H. Dai, H. Fan, X.G. Niu and H.J. Ma	624
An Image-Based Method for Automatic Crack Detection for the Mechanical Test of Clinch Joints K. Zeng, X.C. He, C.J. Deng, H.Y. Yang, S. Zhou and E. Liu	629
Pipe Length Limit Analysis to Tunnel Vertical Well of Natural Gas Pipeline X. Tian and C.Y. Ren	633

Modeling and Simulation of Gait Analysis of Hexapod Robot B.B. Yan, Y. Li, W.B. Ren and B.L. Yin	639
Studying and Simulation Analysis for Rubber Track of Rescue Robot H.W. Ma and C.W. Wang	643
Thermal Design of Automotive Headlamp with High Power LED J. Wang, Y.X. Cai, C. Zhang, X.J. Zhao, X.H. Li and J. Wang	649
Optimization of Pin-Fin for Electronic Cooling Using Entropy Generation Minimization C. Ding, M. Liu and J. Wang	655
The Simulation Study of Shunt Active Power Filter in the Power System Harmonics Restraint B. Rao, Q.Y. Zou, T.J. Zhong and Q.P. Liu	661
A Framework of Prototype Compressor Impeller Auto-Test System J.K. Ma and Z.F. Liu	667
Design and Simulation of a Variable Structure Mobile Robot Z.J. Sun, J.L. Yan, C.Q. Li, Y.J. Li and C. Di	672
Rapid Development of Novel Integrated Pressure Compensating Emitters J. Liu, G. Lu, Q.S. Wei and Y.S. Shi	677
The Stability of Weft Insertion of CRT – 83 Carpet Rapier Loom Y.D. Cai and S.B. Ma	684
Investigation of the Electric Vehicle Motor Constant Power Characteristics H.H. Zhang, K.B. Ye and G.P. Yang	688
Fracture Parameters Optimization of BZ Oilfield Horizontal Well Integral Fracturing W.J. Xu, Y.Q. Hu, J.Z. Zhao and Z.Q. Li	692
Simulation of Wind Characteristics Surrounding a Container Terminal X.R. Qin, X. Liao, Y.Y. Liu, Q. Zhang and Y.T. Sun	699
Research on the Insulation Performance of Sound-Isolating and Decoupled Tiles D.J. Qian, X.R. Wang and X.H. Miao	703
A New Method of Design of Epicyclic Gear Trains P.W. An and Z.L. Lv	707
Development and Research of Foundation Pit Fluid-Solid Coupling Finite Element Analysis Software Based on Automatic Parametric Modeling X.H. Pan, G.L. Li and Q. Yu	713

Chapter 3: Automation, Information Technologies and Data Processing

Electromechanical Hybrid Transmission Control System of Tension Leveler B. Chen and R.J. Guo	727
The Characters of Dual Harmonic Frames of Subspaces and Applications in Signal Processing Theory Y.Y. Huang and J.F. Zhou	731
Multisource Image Fusion Based on DWT and Simplified Pulse Coupled Neural Network N.Y. Wang, W.L. Wang and X.R. Guo	736
Research on ACO Algorithm Based on Scholarship Mechanism H. Xia	741
The Research on Hydraulic Components Data Monitoring and Management System Based on Network Real-Time Monitoring Q. Zhang, Z.J. Zhang and X. Jin	745
The Implementation Based on the Improved IEEE802.15.4e Network of the Elder Monitoring System P. Wang, Y.Y. Zhang, Y. Hong and L. Dong	751
Performance Test Method of the Mixed-Mode Interface of an Integrated-Sensor RFID System S.Z. Qi and S.B. Zhou	755
A New Kind of Infinite Series and its Applications on Neural Networks D.Y. Zhang	761
The DES Algorithm Based on DSP Technology H. Wang, D.R. Chen and S. Sha	765

Research on Multiple Security Authentication Protocol in RFID System H. Xia	770
Development of Electronic Control Unit for Air Suspension with Fuzzy Control C. Chen	774
Research on Obstacle Avoidance Behavior of Ultrasonic Sensor-Based Robot L.N. Gao, J.W. Deng and S.Y. Xiao	778
A Model of Detector Generation Based on Immune Recognition and Redundancy Optimization Y.P. Jiang, J.W. Zhao and Y.X. Tian	783
Simulation Analysis of Automatic Grouting Network Control System Based on Matlab G.Q. Qiu, M. Li, Y. Long and Y.C. Yu	788
Maintaining and Updating the Storing Data by the Control Points I. Mimorov, I. Livshits and V. Vasilev	793
Three-Dimensional Seepage Field Analysis of Thick Overburden CFRD after Sealing Failure W.S. He and L.M. Wang	797
Calculating the Synthetic Efficiency of Hydroturbine Based on the BP Neural Network and Elman Neural Network L. Zhang, Y.M. Wang and D.F. Liu	801
Research on Control Strategy of Triple Bi-Directional DC/DC Converter M.X. Chen, Y.F. Ren, H. Bu, Z.Q. Gao and S.H. Xu	806
Research on the Algorithm of Intelligent Test System H.B. Xiao and S.L. Huang	811
Evaluation of Measurement Uncertainty from Imperfect Data X.Z. Zhang, A.D. Ge, J.W. Ma and Y.J. Bai	815
Medium Access Control Based on Adaptive Sleeping and Probabilistic Routing for Delay Tolerant Mobile Sensor Networks Z. Chen, Y.X. He and S.Y. Huang	821
A Distributed Peer to Peer Simulator L. Yan and R. Shen	830
HKad: A Hierarchical Kademlia Model L. Yan	834
Scheduling System for Cloud Federation across Multi-Data Center M.D. Yao, D.L. Chen and X. Chen	839
Research on Ship Course Control Based on Course Signal Filter R.H. Jiang, Y.P. Shi and W.J. Song	844
Multitarget Track-Before-Detect via MeMBer Filtering and Track Consistency Test R.H. Zhan and S.Q. Liu	848
Robust Control of Uncertain Singular Systems with Distributed Delays Y.B. Li and B.R. Li	856
A Dynamic ID-Based Authentication Scheme Based on ECC for Telecare Medicine Information Systems X. Xu, Z.P. Jin, H. Zhang and P. Zhu	861
Remote Supervisory System of Classroom Lighting Based on LonWorks Fieldbus L.J. Yin, Y. Zhen and Q.L. Fan	867
Design of Automobile-Reversing Radar Control System Based on Ultrasonic Y.X. Yu and R.C. Sun	872
Design of High Speed Data Acquisition System Based on FPGA Y.X. Yu and Y. Chen	878
Design of Audio Spectrum Display Based on ARM L.N. Duan and J. Zhao	883
Decoupling Control of the Gas Collectors' Pressure System Based on Neural Network Inverse System Q. Tian and J. Sun	888
Palmprint Authentication Based on DCT-Based Watermarking P.F. Yu, P.C. Yu and D. Xu	893
The Sinter Mixture Moisture Control System Based on Fuzzy PID Controller T.G. Li and Q.H. Gong	899

Control Design of the Micro-Flow Liquid Feeding System in the Drop Analyzer Q. Song, X.F. Mao, L. Yang, G.J. Meng and D.Q. Du	905
Format Optimization for Periodical Snapshot Output in CFD Simulation X.G. Ren, Y.H. Tang and X.H. Xu	910
An Improved Clustering Method Based on Data Field Y.H. Liu, C. Xu, K. Xu and J.Z. Jin	919
Design of Visual Interface for Underwater Robot Control Based on VC ++ X.H. Kong, Y.X. Guo, X.J. Chen, W.G. Qian, Y. Liu and H. Wang	926
Platform of Image Acquisition and Processing Based on DSP and FPGA R.C. Sun and Y. Piao	932
Analysis and Simulation System for Stepper Motor Controller R.C. Sun and M.Q. Li	938
Real-Time Driver Fatigue Detection Based on Eye State Recognition C. Sun, J.H. Li, Y. Song and L. Jin	944
Design of Slope Deformation Monitoring System Based on WSN L.P. Zhang and P. Wang	953
A Design for Carrier Wave Catching to Micro-Dynamic Signal in USB/UCB X.Y. Xu, X.F. Yu, W. Shi and P. Li	960
The Research and Design of Data Aggregation Technique in WSNs Q. Rao and J.L. Wang	965
Application of Local Wave Method in the Structural Health Monitoring Signal Decomposition L. Yang	969
Truncation Method for Chance Measure C.Q. Zhang and Y. Fang	974
Comparison of Sewage Treatment Mixer in Three Pool Face Boundary Conditions F. Tian, W.D. Shi and H. Jiang	979
Research of User Experience and Data Mining for Stereo Vision B.B. Wan, T.Z. Zhang, J.P. Chai and F.L. Yin	984
Study on Molecular Weight of Natural Rubber with Different Initial Moisture Contents Dried by Microwave F.Q. Zhang, Y.Z. Wang, M. Chen and M.F. Huang	988
The New Fast Algorithm Based on Transposed Matrix for Frequent Sets Mining of Association Rule S.Y. Song and B.H. Zhang	992
Classification Research of Rotation Speed Measurement Z. Zheng and R.J. Zhang	998
The Stability of the Second-Order Model of the Damping Single Maching Infinite Bus Bar System H.Y. Luo, J. Liu and L.X. Li	1004
Stabilization of a Class of Two-Dimensional Critical Control Systems J. Liu, H.Y. Luo, Y.Y. Guo and B. Wu	1008
A New Approach for 3D Edge Extraction by Fusing Point Clouds and Digital Images Y. Wang, D. Ewert, D. Schilberg and S. Jeschke	1012
Study on the Application of Damping Control Method in Multi-Solution Interval of the QZS System Q.C. Yang, J.J. Lou and A.M. Diao	1017
Parallel Rendering Strategies for 3D Emulational Scene of Live Working X.F. Li, P. Fan, X.H. Liu, X.C. Wang, C. Hu, C.X. Liu and S.G. Bie	1021
Robust Visual Tracking Using Particle Filtering on SL(3) Group Y.H. Xie and C.D. Wu	1028
Gaussian Noised Single-Image Super Resolution Reconstruction F.Q. Qin, L.H. Zhu, L.L. Cao and W.N. Yang	1032
The Simulated Annealing Algorithm Based on Multi-Populations Application of TSP Q.H. Gong	1037
Design and Realization of a Certain Type of Radio RF Circuit Board Detecting and Teaching Platform Z.C. Shao, G.Y. Liu and X.L. Tan	1042

A Urinary Sediment Segmentation Algorithm of Cast and Epithelial Cells Y.H. Wu and M. Kang	1046
Research on Target Tracking Algorithm Based on Particle Filter and Mean-Shift Y.H. Wu, X.M. Xie and Z.S. Han	1050
The Design of Car Taillight Controller Based on VHDL J. Wang and Y. Wang	1054
Calculation of Angular Variation of Spacecraft Assembly Considering Measurement Uncertainty J.Z. Yang, G.X. Li and B.Z. Wu	1058
A Modified Version of the K-Means Algorithm Based on the Shape Similarity Distance D. Li and X.B. Li	1064
Consensus of Discrete-Time Second-Order Multi-Agent Systems with Partial Information Transmission L. Ding	1069
The Design of Speed Detector Based on Wireless Sensor Network X.H. Kong, Y.X. Guo, Z.F. Hu, W.G. Qian, K.X. Lu and X. Pan	1074
Asymptotic Stability of Discrete Singular Bilinear Systems J. Zhang and C. Ling	1082
Dependence of Oscillation of Spiking Neural Population on Strength of Inhibitory Feedback J.L. Xie, J.Y. Zhao, Q.J. Zhao and Y.Y. Li	1087
Intraoral Dental Directly Study of the Three-Dimensional Measuring Method C. Chen and D.F. Wang	1093
An Image Fusion Method Based on Fuzzy Regional Characteristics J.Y. Ma, S.W. Zhang and C.B. Yue	1097
Stock Index Prediction Based on Multi-Level Transfer Function Quantum Neural Tree H. Teng, S.H. Liu and Y.H. Chen	1102
AC-DC Decoupling Algorithm of Optimal Power Flow with HVDC System C. Ji, Z.N. Wei, G.Q. Sun and Y.H. Sun	1107
A Shunt Active Filter Based on Voltage Detection for Harmonic Filtering and Resonance Suppression Y.Y. Liang, X.T. Xu, J.Z. Liu, Y. Wang and Q.X. Yang	1113
Temperature Data Gathering System Based on A-Wire Bus T. Wu	1118
Material Texture Image Model Optimization and Result Analysis Y. Zhou, L.W. Chen and R.Y. Tang	1122
Research on Application of Extended Mean-Shift Algorithm in Image Smoothing D.L. Zhu	1126
Design of SCR Control Software Based on Dual-Core Processor J.H. Li, Q. Yu, L.Y. Zhang and T.N. Huang	1130
Research on the Network Security Protocols Based on the Strand Spaces Theory B.J. Liu and J.X. Wang	1134
Identification of Excitation Forces and Prediction of the Radiation by Measured Structural Vibrations from an Underwater Structure J. Gang, Q. Zhou and C.W. Huang	1139
Car GPS Antenna Electromagnetic Compatibility of the Simulation Study Y.D. Chi, S.Q. Zhang, H.L. Gu and Y.S. Mu	1144
Calculation of the Average Length of Functionalized MWCNTs Y.Y. Wang and M. Liu	1148
Application of Encryption Lock in the Power Simulation Training Software Information Protection Y.X. Yang, J. Tu, Y.J. Liu and C.X. Liu	1152
Research on Application of Wavelet Denoising Method Based on Signal to Noise Ratio in the Bench Test J.J. Zhong, S.N. Fang and C.Y. Linghu	1156
Research in Test Case Method in Software Testing H.B. Xiao and S.L. Huang	1163

Extraction Method for the Surface Image Defects of the Magnetic Tile Based on Adaptive Gaussian Filtering	
L.Q. Du, C.N. She and Y.W. Yu	1167
Using Open Source to Construct a UAV-Based Photogrammetric Data Acquisition System	
H.W. Hsiao	1172
The Technology of Ultrasound for Measuring the Thickness of the Pipe Lining	
X. Wang, G.X. Li and X. Zhou	1176
Research on the Risk Assessment of IPD Mode Based on the Fuzzy Comprehensive Evaluation	
Y.G. Xu and P. Lv	1181
The Research of New Selective Leakage Protection Device Based on Additional DC and Zero-Sequence Power	
Y.W. Wang and Y.S. Wang	1185
Research on the Online Verification Instrument for Diaphragm Gas Meter	
Z.W. Huang, R.D. Yin, W.J. Zhu, W.X. Shen and S. Ge	1189
Experimental Study of Fuzzy PI Controller of HEV DC/DC Converter	
Y.B. Zhang and L.Y. Kang	1195
A Method of Extracting Feature of Phonic Signal Based on the Matrix Analysis	
Y. Xu and F.C. Hu	1200
Fuzzy Domain Image Segmentation Based on Space Information	
X.B. Zhang and X.L. Zhu	1204
Frequency-Dependent Transmission Line Fractional Model and its Solution Based on Skin Effect	
J. Guo, G.S. Liang and X. Liu	1208
Research on Soft-Sensing Technique of Vehicle State Parameters	
F. Du, Z.W. Guan, C.H. Liu and C. Kong	1212
Simulation Analysis for Sensitivity Distribution of Aero-Engine Inlet Electrostatic Sensor	
J. Liu, H.F. Zuo, Y. Fu and Y.B. Yin	1216
A Developing Flood Automation System	
H.C. Lai, T.S. Yeh, J.H. Chang, Y.K. Yen, H.T. Ouyang, H.M. Hsu and C.Y. Liu	1220
Authentication System for Biometric Applications Using Mobile Devices	
J.F. Hu and Z.D. Mu	1224
Authentication System Using EEG Biometric for Smart Home	
J.F. Hu and Z.D. Mu	1228
Research of Flatting of Image Data of Human Movement	
Y. Liu, J.H. Zhou and A. Yang	1232
A Solution to Multi Objective Optimal Power Flow Using Hybrid Cultural-Based Differential Evolution	
I. Srikun, L. Ruekkasaem and P. Aungkulanon	1236
A Novel Chipless RFID Tag with Multi-Resonators Based on Frequency Selective Surface	
H.X. Li, W.J. Hong and S.F. Li	1241
A Ceramic Filter Counter Blowing Regeneration Control System	
X.L. Diao	1245
Based on the LabVIEW Electrified Railway Signal Acquisition and Processing System of Electromagnetic Radiation	
Y.D. Chi, Y.S. Mu and H.L. Gu	1249
Eye State Detection Based on Embedded Linux System	
R. Li, X. Wang, J.C. Jiang and H.Y. Yang	1253
Control and Communication Techniques of High-Speed Railway Train Wheel-Set Running-In Test Based on LabVIEW	
H. Li and Q. He	1257
Secure and Efficient Certificateless Signature and Blind Signature Scheme from Pairings	
M.Q. Chen, Q.Y. Wen, Z.P. Jin and H. Zhang	1262
Coordinated Control Strategy of Distributed Photovoltaic Generation and Load	
L. Zhang, X.Y. Chen, K. Chen, X.H. Ding, X.Y. Chen, Y.C. Liao and K. Yu	1266
The Method of Infrared Point Target Detection and Tracking Based on DSP+FPGA	
Y. Chen, Y.X. Yu and T. Zhao	1272

Design and Implementation of Selcal Controller J. Gao and Y.Y. Zhang	1278
Hybridizing Adaptive Biogeography-Based Optimization with Differential Evolution for Global Numerical Optimization S.L. Feng, Q.X. Zhu, S. Zhong and X.J. Gong	1283
Application of Artificial Potential Fields in the Hydrographic Measurement Control System G.X. Jia, H.C. Dong, D.D. He and H.D. Zhang	1288
Texture Feature-Based Particle Filter Video Tracking Using Cooccurrence Matrices T. Zhang, Y.Q. Chen and X.Y. Yu	1294
Research on the Cooperative Control Method for Trajectory Tracking of Automatic Guided Vehicle Based on Dynamic Position/Force X.Z. Liu, Q.Y. Yan and F.Y. Tang	1298
Automotive CAN Bus Diagnostic Device Development F. Luo, H.Y. Feng and C. Liu	1303
Research on Electrohydraulic Position Servo System Control of Honing Machine Z.H. Ma, Y.Z. Huang, S.L. Cai and F.F. Luo	1310
The Research of the Straddled Jaeger Salto with a 1/2 Turn of the Olympic Champion Kexin He J.H. Zhou and Y. Liu	1314
A Palmprint Recognition Based on Collaborative Representation X.M. Guo, L.M. Wan and C.Y. Wang	1317
Research on Core Competitiveness of Real Estate Enterprise Based on Factor Analysis and Clustering Analysis Y. Wang and E.T. Wang	1323
Surface Roughness Measurement Analysis J.L. Zhou, S.Q. Wu, G.Q. Wu and H. Cheng	1330
Study on Dynamic Phase Correction Method for Improving the Test Accuracy of the Pneumatic Shape Measuring Roll X.G. Sun, C.H. Wang, S.Y. Shan and C.L. Feng	1334
Research of Radar Waveform Based on Pulse Position Jitter and Relative LPI Performance Analysis G. Tian, Y. Yang and W. Qi	1338
Control of Pneumatic Servo System Based on Neural Network PID Algorithm Q.H. Gong	1344
The Research on Development Status and Key Technology of Elastic Wave CT L. Yang	1348
A New Method Based on Position Sensitive Detectors to Measure Spatial Angle of Large-Scale Gyroidal Z. Sun, Q. Song, C.Q. Liu and H.F. Wu	1352
The Research of Intelligent Seat Belt Pretension System Based on Active Safety Z.W. Guan, L. Yang, M.F. Zheng and G.H. Yan	1357
Research on Passivity-Based ADRC of Direct-Drive Wind Power System Back to Back PWM Converter X.Q. Ma and J.H. Wang	1363
The Application of the UPFC in Power System X.H. Xiong, Z.N. Min and T.J. Zhong	1371
Machine Vision and Applications Y. Wang and H. Guo	1377
Servo-Control System Design of Automatic Production Line Based on PLC and HMI S.Y. Lei	1381
Research on Computer Controlled Optical Surfacing (CCOS) Working Function at Wear State W.L. Liu, B. Lin, X.F. Zhang and B. Wang	1386
Design of Embedded Controller with Flexible Programming for Industrial Robot Z.D. Wang, K. He, H.T. Fang and R. Du	1390
Design of Brushless DC Motor Controller Based on DSP Y.X. Yu and R.C. Sun	1396

Chapter 4: Engineering Management and Product Design

A Holistic Incentive Model of Information Sharing in Supply Chain H.W. Wang, Y.S. Yan and L. Wei	1403
Affective Product Design Based on Random Forest and Association Rules J. Shi and S.Y. Zhang	1407
Supply Chain Design Strategy Based on E-Commerce Y. Zhou and J. Qi	1411
Study of Agricultural Product Logistics Information System Based on Multi-Agent X.L. Huang	1415
Research on Evaluation of the Modern Logistics Enterprise Technological Innovation Ability Based on SEM C.J. Wang and M.M. Gou	1419
The Obstructions that Hamper the Use of BIM in China and its Solutions B.L. Shao, B.Q. Liu and M.M. Yang	1423
Comparative Study of Well Known Sequencing Methodologies and Differential Evolution: A Case Study of Thailand Garment Industries L. Ruekkasaem, I. Srikun and P. Aungkulanon	1427
Empirical Investigation on the Regional Correlation of Housing Price Fluctuations - Take Shaanxi as an Example B. Guo and L.H. Pan	1432
Cognitive Characteristics of Industrial Architecture J.H. He	1436
The Design and the Development of Shading Jacquard Fabrics for Curtains L.L. Yang, D.M. Yu, X.F. Chen, S.C. Zhang and H.X. Zhang	1440
Lean Cost Analysis Based on BIM Modeling for Construction Project Y.G. Xu and C. Qian	1444
Development Status and Prospect of Forestry Machinery in China Y.Y. Li and Z.C. Ban	1448
A System Model for Assessment on Creation Capabilities of Construction Service Enterprises in China Y.B. Sun and H.L. Fu	1453
Optimization Model and Algorithm for Smart Distribution Grid Maintenance Scheduling W. Wei, X.Y. Chen, K. Chen, C.N. Wang and K. Yu	1457
Offshoring Floating Wind Turbine Platform Initial Design Requirement Considering Whole-Life Cycle H.F. Wang and Y.H. Fan	1463
Simulation and On-Site Performance of a Novel 3D Concentrator for Photovoltaic Application P. Lei, J.Y. Lai, J. Ma and P. Jin	1467
The Excavating Stability Study of a Power Station Underground Plan W. Zou	1474
Architecture Analysis Method Study Based on EID M.M. Zhang, A.M. Luo, W.S. Yang and X.K. Zhang	1479
Using the Concept of Utility Solution Resource Allocation Problem with the Order Q. Li and X.G. Zhu	1486
Semi-Definite Programming Based Waveform Design for Spectrum Sensing X.L. Wu, L.K. Sun and W.J. Zhao	1491
Living Comfortable Strategies for Offices in Taiwan's Hot-Humid Climate W.P. Sung, R. Chen, H.C. Chang and Y.K. Zhao	1498
Design and Exploration on Automobile Crane Mobile Counterweight Balance X.C. Cheng, X.W. Jiang and Z.X. Cheng	1503
Drilling and Riveting Agencies Rigid Structural Dynamics Analysis of Virtual Prototype C. Chen and L. Zhang	1507
Research of the Self-Balanced Cable Support System for Large Cross-Section Cable Tunnel S.N. Liu, B. Zhang and R.G. Gu	1512

The Finite Element Analysis for Mechanical Properties of Reinforced FRP Pipe Concrete under Axial Compression - Discussing the Impact of Reinforcement Ratio, Concrete Strength	
W. Li, H.N. Yan, P. Wang, X.G. Chen and L.N. Yao	1517
Numerical Simulation on Penetration into Double Plates of Annular Jet	
L. Fu, W.L. Wang, X.F. Huang, Y.Z. Jiang and Z.Q. Fan	1523
Key Techniques of Direct Driving of Rapid Prototyping Machine within CAD System	
W.C. Wang	1527
The Study Summarize of Computational Method on Transition Process in Hydropower Units	
B.Y. Wu, N. Tang and S.G. Tong	1531
Discussion on Development and Application of Remove Automatic Metering Technology of Oil Well	
L.N. Wang, J. Liang, S.L. Zhang and L.Y. Wang	1538
Design and Antiknock Impact Performance Analysis of New Mine Refuge Chamber Cabin of Waterproof and Antitoxic	
X.Y. Gong, N.N. Li, X. Gao, J. Guo, Z. Wu and H. Xue	1542
The Design of Force-Displacement Characteristics Test System for Electromagnet	
X. Zhang, Y.B. Cui, P. Xia, X.X. Liu and M. Yu	1546
Best Scheduling Plan Choice Based on Mathematical Model	
Y.M. Zheng, J.F. Zhang and Q.Z. Liu	1550
Analysis and Simulation of Mineral Grading Sieve Mechanism Motion Based on ADAMS	
X. Cheng and W.M. Dong	1554
Dynamic Response Analysis of Asphalt Pavement on Steel Deck under Design Loads	
F. Gao, D.K. Wei, X.P. Wang and G.Z. Tian	1558
Error Sensitivity Analysis for Machine Tool Based on Three-Dimensional Vector Chain	
Q. Huang and C.J. Gao	1562
Analysis and Optimization of the Rubik's Cube Center Shaft Injection Based on Moldflow Software	
H. Li and Y. Chen	1566
Effect of Turbulence Model on Simulation of Vehicle Aerodynamic Characteristics Based on XFlow	
S.L. Han, R.X. Yu, Z.Y. Li and Y.Y. Wang	1571
Economic Analysis on Application of Large Section Conductor in Ultra-High Voltage DC Engineering	
Z. Liu, K.J. Zhu, J.C. Wan, J. Zhang, J.J. Si and H.J. Niu	1575
Evaluation of Groundwater Quality at an Industrial Park Site Zone Using Statistical Analyses: A Case Study in Taiwan	
B.M. Yang, Z.H. Yang, J.K. Liu, H.Y. Lee and C.M. Kao	1581
Research of Integrated Distribution Scheme of Reactive Power Compensation Based on SVG for Coal Mine Power System	
Y.W. Wang and D. Lu	1585
Study on the Optimization of Public Construction Project Duration	
F.Z. Luo, J.Y. Shang and Y. Zhou	1589
A Study on Public Construction Project Duration Risk Identification and Evaluation	
F.Z. Luo, Y. Zhou and J.Y. Shang	1593
Reasons for Formation Damage and Preparation for Disentanglement Agent in Low Permeability Oilfield	
J.P. Cao, F.L. Zhao and K. Zhang	1597
Modal Analysis and Application Based on Finite Element Method	
S.Q. Wu, G.Q. Wu, J.L. Zhou and W.N. Zhu	1601
Design of a New Piezoelectric Vibrating Feeder	
Y.H. Shen, J. Su, Y. Liu and Z.G. Yang	1605
Experimental Study on the Stability Properties of Different Design of Tandem Wing Airship Models	
Y. Liu, P. Zeng and L.P. Lei	1611
The Commercial Real Estate Operation Stages Risk Analysis Based on the ISM Model	
Y. Wang and M. Jiang	1615

Advanced Technology Research on the System of City Passenger Rail Vehicle Doors S.J. Guan, K. Yang and J.L. Zhang	1619
Application of Frequency Conversion Technology in the Constant Pressure Water Supply System J.B. Zhu and Y.H. Zhang	1623
Design of Temperature Detection Alarm Circuit Based on Multisim W. Xu and T. Wu	1627
The Design of Ultrasonic Ranging Car Collision Prevention Alarm System X. Qu and W.G. Zheng	1631
A Differentiated Registration Method for Complex Surfaces G.S. Tan, L.Y. Zhang, S.L. Liu and Q.L. Shi	1635
Optimization for Limited Resource Schedule in Public Construction Project H.W. Li and F.Z. Luo	1639
Design and Simulation of a High-Isolation Series/Shunt Mixed MEMS Switch Z.L. Deng, S. Fan, H. Wei, C.H. Chen and H. Gong	1644
Application of Operations Research in Management Y. Zhou and J. Qi	1648
A Windchill-Based PDM Application to Enhance Agricultural Machinery Chassis Design X.P. Jin, T. Zhang and Z.H. Song	1653
Twin Gating System Design for Typical Thin Wall Stainless Steel Castings Based on Fast Pouring Mechanism D.C. Yang, S.L. Li and F. He	1657
Robust Optimization of RFID's Investment in Supply Chain with Inaccurate Inventory Q.S. Lei and L.Y. Zhou	1661
Operation Optimization of the Airport Check-In System S.Z. Xu, R.M. Wang, B. Zhu, J.F. Zhu and J. Du	1665
Application of Building Information Model Technology in Shanghai Disaster Tolerant Center Construction Q. Li and H.Y. Ke	1669
A Modular Factory Planning Approach Based on Vertical Integration of the Information Flow M. Hoffmann, T. Meisen, D. Schilberg and S. Jeschke	1673
Genetic Algorithm for Single Machine Scheduling Problem with Setup Times Q. Ouyang and H.Y. Xu	1678
Research of Risk Control of Public Construction Project Based on Fault Tree L. Chang and F.Z. Luo	1682
Studies on Sprinklers Arrangement in Sprinkler Systems F.L. Cui, F. Qu, Y.Y. Cui and L. Mai	1686