

Table of Contents

Preface and Committees

Chapter 1: Materials Science and Engineering Science

Research on State of Charge Estimation of Lithium Iron Phosphate Battery Used on Electric Vehicle C.L. Liao, L.Y. Wang and L.F. Wang	3
The Three Dimensional Numerical Analysis of Consolidation of Rock Mass with Pre-Stressed Anchor Cables Z.C. Wang	9
Development of Red Laser Positioning Computer-Aided-Signage System L.H. Kun, C. Feng and L.Y. Li	13
Analysis for TCSC in Single Phase Power System Simulation W.J. Dai and X.J. Chen	20
The Impact of Corrosion on the Mechanical Properties of Smooth Steel Rebar HPB235 X.Y. Li and Z.G. Zhang	28
The Method to Construct Elementary Dependent Function Whose Discussion Field is an Infinite Interval and Positive Field Finite Q.X. Li, S.C. Chen and X.S. Li	32
Numerical Simulation for the System of Ordinary Differential Equations X. Cai	37
Robust Reliability Design for Networked Control Systems Based on Information Scheduling Z.H. Huo, Y. Zheng and B. Qu	43
Materials Formation Mechanism and Experimental Verification of Micron Long Fiber C.M. Yang and Y. Ma	49
A New Algorithm of Association Rules Mining Based on Relation Matrix P.S. Wang	55
Improved CPN Network Applying in the Failure Diagnosis of Electronic Gasoline J. Kong and S.S. Bao	60
High Accuracy Computational Method for Ordinary Differential Equation with Two Small Parameters X. Cai	64
Effect of Warm-up Temperature Rates on Morphologies of Porous Polyimide Membranes J.M. Xiao	70
Study of Deformation Behavior of Ultra-High Molecular Weight Polyethylene (UHMWPE) J.M. Xiao, X.C. Shang and B. Wen	75
Rigid Body Spring Model for Large Aggregate Concrete H.L. Wang	79
Research on the Short-Time Bias Stability of the Solid Vibration Beam Gyroscope X.L. Bai, Y.L. Lu and Y. Liu	86
A Scan-Line-Based Hole Filling Algorithm for Vehicle Recognition W.Q. Wang, W.H. Wang and Y.H. Yan	92
The Improved Algorithm of Edge Detection Based on Canny Operator W.Q. Wang, H.F. Ding, X.J. Xiao, J. Xu and Y. Zhang	97
Quasi-Blind Adaptive Video Watermarking Algorithm Based on Human Visual System S.B. Che, J.K. Luo and B. Ma	103
Measuring Vehicle Queue Length with Video Z. Qin, G.T. Su, Y. Chen, Q.Z. Liu and M. Huang	109
Vehicle Segmentation Approach Based on the Space-Time and Self-Similarity of Background Z. Qin, G.T. Su, D.H. Li, Y. Mei, Y.W. He and Q.S. Chen	115
Computer Simulation of Controlled Hydraulic Impactor System G.P. Yang, J.H. Gao and B. Chen	122

The Application of Neural Network in Nonlinear System L. Shi and X.C. Wang	128
Development of a Forward Scattering Spectrometer Probe L.B. Bu, L. Tian, Y.Z. Zhu and X.Y. Huang	135
The Morphology and Phases of Cu-In-2Se Powders Prepared by Hydrothermal Method K.G. Liu, S. Lei, B. Xu and Y. Liu	141
CSLA.NET Based N-Layer Application Framework of Warehouse Management System X.H. Zhang, Y.B. Cui, R. Li and F. Zhang	145
Yarn Feeding Compensation Algorithm and Implementation for Needbar Transverse Shifting of Carpet Tufting Machine G.F. Chen, W.B. Wang, H.C. Sun and Q.Q. Li	150
Time Synchronism of Dynamic Password Status Authentication W.J. Huang and L.F. Guo	156
Preparation of Nitrogen-Containing Stainless Steels by Vibration Milling and Cold-Press Sintering D.W. Cui	162
An Advanced Self-Adaptive Iterative Decoding Scheme Based on Stopping Criterion S.Y. Liu, J.P. Li and C.S. Cai	167
Natural Attenuation of Diesel Pollution in Sand Layer of Vadose Zone B. Wang, Y.S. Zhao and Z.H. Qu	174
Research on Multidisciplinary Modeling and Robust Control for Electric Power Steering System G.J. Chen, H.P. Chen and L.P. Chen	179
Static Strength and Fatigue Analysis of the Automobile Sub-Frame by FEA Simulation Method and Fatigue Test M.T. Zhu, Z. Wang and W.W. Zhang	186
Nitrogen and Lanthanum Co-Doped TiO₂ with Enhanced Photocatalytic Activity Y. Cong, P. Qin, X.K. Li, Z.J. Dong and G.M. Yuan	192
The Characteristic of Petroleum Contaminant Adsorption Materials and the Estimation of Adsorption Attenuation Y.B. Xia, Y.S. Yang and X.Q. Du	197
A Scalable Routing Architecture for Resource Discovery in Cloud Computing G.D. Zheng and M. Chen	203
Study on Static Assembly Interference Pressure between a Thin-Wall Flexible Cup and a Hollow Flexible Shaft G.P. Wang, H.L. Chen, S.M. Qi, J.H. Wu and L. Yu	212
Real-Time Model Building of CNC System and its Schedulable Analysis J. Li, R.F. Guo and Z.X. Shao	220
A Method of the Image Emotion Notation Based Fuzzy Reasoning H.F. Li, X.Y. Qiao and L.H. Men	226
Algorithm Researching of RBF Neural Network Based on Improved PSO H. Chen, Y.R. Fan and S.G. Deng	233
The Heat Charge and Discharge Characteristics Simulation of Phase Change Thermal Storage Device H.C. Tian, F. Xu, G.L. Yang and T.F. Wu	239
A No-Reference Quality Assessment System for Video Streaming over RTP F.Z. Yang, J.R. Song and S.A. Wan	243
Interfacial Synthesis of SiO₂ Doped by Polyaniline and its Electrorheological Behavior Q.M. Jia, S.Y. Shan, L.H. Jiang and Y.M. Wang	249
Microstructure and Properties of Fe-Based Composite Coating by Plasma Jet Surface Metallurgy H. Chen, J.G. Yang and M.S. Chen	253
Design and Realization of Double-Buses Modularized Structure Image Processing System B. Zhang and Y.H. Wang	257
A Novel Smart Household Control System by Computer Vision X.M. Wang, T. Deng, L.Y. Liang and Z.L. Wang	264
Preparation and Retarding Characteristics of Coal/Mg,Al-Hydrotalcite Composites X.B. Ren, A.N. Zhou, B. Liu and L. Lei	270

Effects of Anodic Oxidation Process on Transmittance of Porous Alumina on Glass Substrate	
P.T. Guo, Z.L. Xia, Y.Y. Xue, L.X. Zhao and R. Wu	274
Control Method of Preventing Splashing in the Process of BOF Refining Steel Based on Soft-Measuring Technology	
W. You, H.T. Ma and N.N. Zhang	279
Drying Characteristics of Birch Tree Disk Impregnated with NaCl	
L.Q. Yang, Y.X. Liu, Y.C. Cai and Q.F. Sun	285
Study on the Order Analysis of the Vehicle Transmission Torsional Vibration	
B. Zhou, Z.F. Jiang and R. Zeng	289
Study on Phases and Thermoelectric Properties of Bulk $\text{Fe}_x\text{Co}_{4-x}\text{Sb}_{12}$ Sintered by MM-SPS	
K.G. Liu and S. Lei	294
Thermal Performance Analysis for High-Speed Spindle of Horizontal Machining Center	
Z. Liu, Z.H. Chu, Q. Cheng and G.B. Liu	298
Optimization of Processing Parameters in Injection Molding Based on Adaptive Ant Colony Algorithm	
F.L. Huang, S.S. Chen and J.M. Gu	304
An Investigation of Reverberation Chamber High-Frequency Vibration-Acoustic Problem for an Aircraft Cabin Title	
M.X. Xie, H.L. Chen, J.H. Wu and X.L. Zhao	311
Self-Aligned Growth and Optimization of Carbon Nanotube	
Y. Wu, Z.Y. Zhou, L.J. Sun, J. Zhang and X.Y. Zhang	316
A Remote Robot Control System Based on RIA and Flex Platform	
B.H. Tan and Q.B. Zhu	320
Study on Shape Recovery Behaviors of Epoxy-Based Shape Memory Polymer	
B. Zhou, X.L. Wu, Y.J. Liu and J.S. Leng	325
Mechanical Behaviors of Shape Memory Polymer with Linear Monomer	
B. Zhou, X.L. Wu, Y.J. Liu and J.S. Leng	329
Effects of Plating Bath Composition and Operating Condition on Properties of Electroless Coating for High Strength Aluminum Alloy	
S.M. Qu, X.T. Huang and G.Y. Cai	334
Anti-Sticking Effects of Cr-N and Zr-DLC Films on Microinjection Molding for LGP Applications	
Y.S. Yang, W. Huang, M.S. Huang and C.F. Huang	339
Simulation on Optoelectronic Properties of Carbon Nanotube Based Device	
Y. Wu, J.J. Bai, Y. Xiang, Y.H. Ou and C.S. Zhou	345
Review on Calculation Methods of Structural System Reliability	
Y.C. Li, F.M. Cheng and S.J. Zhou	350
Effects of Thermomechanical Treatment Process on the Microstructure and Properties of AZ80 Magnesium Alloy	
G.Y. Cai, X.T. Huang and P.H. Deng	354
Design and Implementation of Hybrid Electric Vehicle Control System CAN Communication	
J. Lian, Y.F. Zhou, X.H. Sun, B.Y. Tian and C.J. Lin	359
Review of Genetic Algorithm	
Y.C. Li, L.N. Zhao and S.J. Zhou	365
Similarities between Wordsworth and Emerson in Romantic Literature	
J.J. Suo and Y.C. Li	368
Regulatory Effects of High Glucose on the Expression of Toll-Like Receptor Gene and Cytokine Production in Human Peripheral-Blood Mononuclear Cells	
J.S. Lan, Y.K. Dong and X.M. Cai	374
Critical Problems when Analyzing the Flight Force of Insect by its Wing Distortion	
X.Y. Jin	380
Finite Element Analysis of Pixel Structure of Uncooled Microbolometer for Food Operation Environment	
F. Zhao, P. Wang, Y.J. Gong, L. Zhang and C.L. Meng	386
Thermal Analysis and Simulation of MEMS Thermal Actuator for Food Industry	
Y.J. Gong, F. Zhao, H.Y. Xiang and L. Zhang	392

Force Analysis on High-Rise Building with a Transfer Story Stress under Seismic Action Y.L. Liu, T.L. Yan, J.F. Li and Z. Jiang	398
Longitudinal Dynamic Model of AMT Vehicle for Following Condition W. Zhang, H.O. Liu and H.Y. Chen	403
Fuzzy Scatter Matrix Based Class Separability Criterion S.Q. Cao and Y.F. Bu	409
USB2.0-Based Data Acquisition System H. He, X.L. Zhang, D.J. Zhang and M.F. Hou	415
Error Test Analysis of a Taxi Meter H. He, S.P. Zhang, D.J. Zhang and M.F. Hou	421
The Simulation of Burg Algorithm for AR Model Power Spectrum Estimation H. He, X. Huang, F. Liu, D.J. Zhang and M.F. Hou	426
Daqing Spirit and the Enterprise Culture Construction L. Yang	431
USB Interfaces are Based on the Metal which Measurement H. He, J.L. Peng, D.J. Zhang and M.F. Hou	437
The Performance Analysis of Electro-Rheological Damper Y.G. Chen and H. Yan	443
The Effect of Lightning Strikes on Bismaleimide Composites by Dynamic Mechanical Analysis D.B. Geng, H.J. Guo and S.Q. Zhang	449
Investigation on Mechanical Behaviors of Shape Memory Alloy Torsion Rod B. Zhou, Z.Q. Wang, Y.J. Liu and J.S. Leng	455
Optical Differentiation Method of Materials Based on the Modeling of Scattering Characteristics S.X. Xu, L.F. Xu and Y.R. Chen	459
Probability Analysis and Risk Assessment about Vessel-Bridge Collision of Xihoumen Bridge Z.H. Yin, Y.F. Li and Y. Li	464
Image Encryption Algorithm Based on Even Scrambling J. Zhang, H.E. Ren and Y. Chen	470
Performance Evaluation of Construction Materials Management in Expressway Project Y. Chen and J.J. Li	475
An Improved Channel Estimation Algorithm Based on Superimposed Training Sequence J. Yang, H.M. Zhang and W. Xie	482
Calculation on Interaction between Ozone and Carrier to Form Ozonic Compound X.M. Min and H.F. Liu	490
Study on Impact of Technology Spillover on Technology Transfer and Technology Innovation in Host-Country Firms W. He	496
A Study on Effect of Friction Coefficient on Failure Process of Film J.H. Zheng	501
Effect of Borax Content on Composition and Microstructure of Boride Layer by Electrodeposition H.L. Yang, N. He, G.Z. Tang, Y.G. Li and Y.Z. Zhang	508
Molecular Dynamics Simulation of Irradiation Damage in bcc Iron J.W. Wang, X.C. Shang and G.C. Lv	513
Adsorption Properties of Self-Assembly Synthesized Microporous Silica Material from Acidic Aqueous Media Y.Y. Ji, B. Zhang and X.C. Wang	519
Study on Dynamic Characteristics of the Engine Mounts System Based on the Virtual Prototype L. Hu, Y. Sheng and H. Xin	523
I²C-Bus Design Based on FPGA D. Cao, S.X. Wu and L.J. Su	528
Development & Application for a Visual Casting Process CAD System of Copper Alloy H. Li, X.H. Ge and D.M. Liao	534

Windows-Based Analysis for HFS+ File System L.J. Su, S.X. Wu and D. Cao	538
Diagnosis Technique Based on BP and D-S Theory Q.Y. Mo, J. Cao and F. Gao	544
A Study on Heart Load Affected by Industrial Noise Q.Y. Mo and F. Gao	549
An Extraction Algorithm for Image Edge Based on Multifractal Analysis D.H. Li and M. Diao	554
Research on Density Control of Wind Jig Dry Coal Preparation System W.S. Liu	558
Strength Reliability Analyses for Bus Body Frames Based on Monte Carlo Method D.Q. Zhang, T.X. Zhang, W.T. Zhao and W.P. Zhang	563
Industrial Test on Outer Frozen Shaft Wall of High Strength and High Performance Concrete Z.W. Yue, H. Zhang and B.Y. Dou	569
The Analysis of a Botnet Based on HTTP Protocol X.X. Feng, Y. Peng and Y.L. Zhao	575
Web Service and Multi-Agent Based Fault Diagnosis System for MSW Incinerators H.R. Wang, Y. Li and Y. Jiang	580
Study on the System Architecture and Multi-View Implementation Mode for Service-Oriented Manufacturing Execution System Q.F. Wang and Z.J. Wu	586
Reduced Recoil Loop Area in Zr Doped α-Fe/Nd₂Fe₁₄B Nanocomposite Alloys P.Y. Zhang, H.L. Ge, M.X. Pan, Z.W. Jiao, J. Gong, Q. Wu, R. Fu and T.T. Liu	590
Modification of Printing Aluminum Powders by Wet Covering Method with Composite Surfactants B. Du, S.S. Zhou and N. Wang	596
Study of Intelligent Diagnosis System for Photoelectric Tracking Devices Based on Multiple Knowledge Representation M.L. Hou, Y.R. Liu, S.B. Xing and L.Y. Su	602
A Refined Method for the Extraction of Scutellaria Baicalensis Extracts and its Relationship with Antibacterial Effects J.L. Zhang	608
Selection and Fusion of Indicators for Network Security Situational Awareness Y.M. Fu, P. Chen, M. Zhong and W. Chen	613
Natural Attenuation of Diesel Fuels Contaminated Medium Sand with Different Water Content in Vadose Zone Z.H. Qu, Y.S. Zhao, L.N. Jiao, B. Wand, H.Z. Jiang, B.W. Ma and M. Sun	619
Structure Reverse Design and Abrasion-Resistant Performance of Submersible Mixer's Impeller Based on 3D Solid Model W.X. Xu and J.P. Yuan	625
Research on Environmental Optimization Mechanism of the Northeast Old Industrial Base X.Y. Xi	630
Model and Control on Hysteresis of Piezoelectric Actuator H.W. Ji and Y.Q. Wen	635
The Research of Rigid Lapping Technique on Diamond Grating Ruling Tool Jirigalantu, Bayanheshig and X.D. Qi	641
Structured Scheme of Data Mining Based on SQL Server 2005 X.H. Han, L. Wang and P.J. Zhang	646
Study on 2D Simulation Algorithm and Implementation for Loop Pile Tufted Carpet G.F. Chen, Q.Q. Li, H.C. Sun and W.B. Wang	651
Experimental Study on Seismic Performance of CFRP Concrete Beams J.T. Dong, J. Zhao and K. Shi	657
The Combined Effect of Grain Size and Strain Rate on the Mechanical Behavior in Ultra-High Purity Aluminum Y.G. Wang, C.L. Wang and H.W. Liu	662

Primary Industrial Verification of the Polymer Air Drawing Model for the Melt Blowing Nonwoven Process L.L. Wu and T. Chen	668
The Effect of Cooling Rate to the Extraction Ratio of Boron-Containing Slag H.R. Zhan, Z.G. Fan, X.F. Jiang and S.L. Liu	672
Integrated Study of Condition Monitoring and Fault Diagnosis System for Flexible Manufacturing System X.Q. Wen, Z.M. Zhao and Z.Y. Xie	678
Graph Based Learning for Hybrid Algorithm to Image Annotation X.H. Hu, X.L. Wang and X.R. Wei	685
The Influences of Constitutive Models on the Collapses of OFHC Copper Cylindrical Shells under Impact Compression S.X. Wu, D.N. Chen, D.F. Ma, D. Zhang, H.R. Wang and Y.H. Jin	691
Methods on Mechanism Research Based on Differential Geometry J.G. Luo and J.Y. Han	697
Study on Mechanism of Propagation of Consolidated Jointed Rock Mass Z.C. Wang	703
Position Detection Methods of Position Sensor-Less Brushless DC Motor H. Ji, Z.Y. Han and H.L. Liu	707
The Current Study Situation and Prospect Development of Direct Torque Control in PMSM Drive System H. Ji, Z.Y. Han and H.L. Liu	713
Feasibility Analysis of Small Hydropower Projects ABS Financing J.R. Zhong	717
Hydrogen Storage of Carbon Nanotubes: Theoretical Studies Y.J. Wang, L.Y. Wang, S.B. Wang, L. Wu and Q.Z. Jiao	722
Cluster-to-Cluster Relay Schemes in Wireless Sensor Network X.F. Zhang and F.Z. Li	728
Study on Visual Assembly Process Planning System Based on 3DVIA Composer L. Chen, M.R. Deng and Z.F. Jiang	734
A Spectral Moment Estimation Method for Wind Profile Radar J.X. Hui, L. Wu, Y.C. Gao and J. Zhou	740
Evaluation and Selection of the Strategic Alliance Partner of Port Logistics Based on the Unascertained Set W.J. Huang, H. Zhao, L. Huang and W. Du	746
Study on Coercivity Mechanism of the Sintered NdFeB Magnets by Zr Addition P.Y. Zhang, H.L. Ge, M.X. Pan, Q. Wu, H.F. Yang, Z.W. Jiao, J. Gong and X.L. Peng	751
Laser Cladding of Zr₅₅Al₁₀Ni₅Cu₃₀/SiC Amorphous Composite Coatings on AZ91D Magnesium Alloy for Improvement of Corrosion Resistance K.J. Huang, H.G. Liu and C.R. Zhou	757
Analysis and Design of Automatic Steering Sliding Mode Control X.J. Zhao, W. Zhang, H.O. Liu and H.Y. Chen	762
Oil Pollution and Study Progress on Removal Technology J.H. Zhou, W.X. Xia and J.C. Li	768

Chapter 2: Materials Science and Engineering Application

A Study on Interface Strength of a-Si:H-DLC Film J.H. Zheng and Y. Chen	775
Effects of Co-Substrates and Inorganic Ions on Biodegradation of Oil-Degrading Strains J.Y. Feng and X.D. Zhou	781
Dynamic Modal Analysis of CNC Precision Rotary Worktable Q. Cheng, D.S. Xuan and Z.F. Liu	787
A New Structure of a Force Sensor Based on the Analysis of Electromechanical Impedance J.F. Li and Z.J. Long	793
Optimal Design of Pre-Forging for Gear Blank Using BP Neural Network and Genetic Algorithm M.Y. Zhang, X.Y. Wang and J.C. Xia	801

Binderless Particleboard from Steam Exploded Wheat Straw P. Luo and C.M. Yang	807
Development of a Starch Adhesive for Corrugated Board under Room Temperature P. Luo, Y.H. Liu, X.Q. Zhao, P.P. Song, N.S. Tan and M.Y. Sun	812
The Dynamic Ant Colony Optimization Based on Permutation and its Application X.W. Luo	818
Application of COM/DCOM Based Multi-Layer Software Architecture in Measurement & Control Program X.M. Wei	824
Research of MP3 Audio Digital Watermark Algorithm Based on Hash Values X.M. Wei	830
Positive Exchange Bias in Tb/Cr Bilayers with T_C T_N Z.W. Jiao, W.D. Jiang, M.G. Chen and S.J. Yu	836
Research on Rotary Power Head of Rock Driller with Higher-Order Elliptic Profile Movable Tooth Transmission Y.X. Luo, H.S. Li and H.J. Wen	841
Research on Rotary Power Head of Drill with Higher-Order Elliptic Profile End Surface Movable Tooth Transmission Y.X. Luo, H.S. Li and H.J. Wen	846
Research of Rotary Power Head of Drill with Roulette Curve Profile Movable Tooth Transmission Y.X. Luo, H.S. Li and H.J. Wen	851
The Problems and Countermeasures of China Energy-Saving Building X.D. Li and X.D. Zhang	855
Soft-Sensing Technology in the Combustion Optimization for Power Plant B.L. Liu and Z. Xuan	859
Environmental Risk Study on CH_3NO_2 J.H. Zhou and W.X. Chen	865
Technical Characters and Influencing Factors for Precision of Rapid Prototyping D.M. Yu, J.P. Liu and C.P. Shang	869
Process Analysis and Application for Rapid Prototyping Based on Fused Deposition Modeling D.M. Yu, C.J. Zhu, J. Su and D. Wang	875
Robust Watermarking Algorithm Based on Time-Frequency CHIRPLET M.H. Deng, Q.S. Zeng and Y. Song	881
Detection of Relevance between Long-Term Different Professional Training and Brain Development Using EEG L.L. Fan and W. Wang	886
Characteristic Structures on Film Induced by Femtosecond Laser Pulse Irradiation D.Q. Yuan and J.T. Xu	891
Research of Advancing Mechanism with Three Circular Arc Equidistant Profile Connection of Drill Y.X. Luo, H.S. Li, H.J. Wen and Y. Zhou	895
The Realization of the IP QoS Based on Network Processor H.Q. Jiao and D.J. Qiao	899
Analysis of Hot Leveling Deformation Rate on the Residual Stress of Steel Plate J.P. Chen, J.Q. Qian and S.Z. Li	904
A New Buffer Management Mechanism for QoS-Aware IP Router D.J. Qiao, H.Q. Jiao and J.R. Ma	909
Study on the Image Process of Wheels Based on Machine Vision S.F. Wang, C.C. Li, J. Yu and T.H. Zhang	914
A Hybrid Nested Partitions Algorithm Combing with Genetic Algorithm for Job Shop Flexible Resource Scheduling W.N. Ding, H.Q. Jiao and Z.Y. Chen	920
Study on the Application of Virtual Reality in Transportation Traffic Problem Y.Y. Xu, W.L. Li and Z.G. Sun	925
The Application of Fuzzy Neural Network in Data Mining W.L. Tian	930

Stress Distribution in the Cantilevered Single-Lap Adhesive Joint X.C. He	936
Research on the Text Classification Method with Self-Organization Network Model J. Chen, W.R. Jiang and J.H. Yan	940
Growth of ZnGeP₂ Single Crystal by Three-Temperature-Zone Furnace X. Zhao, S.F. Zhu and Y.Q. Sun	945
A RFID-Based Monitoring System for Abnormal Logistics Events in Internal Material Supply Chain X.H. Cao and J. Wan	949
Mechanical Behavior of Reinforced Concrete Beams Externally Strengthened with Carbon Fiber Sheets X.Y. Li and Z.G. Zhang	955
Research of the Chamfer Millers for the Gears H.R. Liu	960
The Precision Conjugate Theory for the Roller Hourglass Worm Transmission H.R. Liu	967
The Application of Data Warehouse in Enterprise Resource Planning P. Yang and Z.J. Zeng	973
Experimental Study on Engineering Performance of Portland Cement Stabilization of Soil-Bentonite X.Y. Li and Z.G. Zhang	978
Mutative Scale Chaos Optimization Algorithm and its Application in PID Controller Design of Mobile Robot Systems W.B. Chen, R. Gu, J.A. Li and Y.M. Lu	983
Cascade Compensation Algorithm for Strapdown Inertial Navigation System F. Zha, J.N. Xu and B.Q. Hu	989
KNN Algorithm Based on Weighted Entropy of Attribute Value X.J. Xiao, W.Q. Wang, H.F. Ding and L. Cao	1000
Network Security Situation Analysis Aimed at Distributed Attack Y.M. Fu, W. Chen, L. Li and Y.X. Pan	1005
An Image Information Extraction Algorithm for Salt and Pepper Noise on Fractional Differentials M.L. Hou, Y.R. Liu and Q. Wang	1011
Damage Severity Assessment Using Modified BP Neural Network X.M. Dong and Z.H. Wang	1016
Integrated Shift Strategies of Automatic Mechanical Transmission W.G. Liu, R. He and B. Jiang	1021
Nonlinear Vibration Characteristics of Flexible Suspension Bridge under Moving Load R.L. Tian and X.W. Yang	1025
Research of Process on Making Bamboo Particle Board by Laccase-Treated Calcium Lignosulfonate C.D. Jin, S. Li, L. Liu, J.W. Ye and C.G. Du	1031
Research on Time-Efficiency Oriented Mechanism of After-Sale Service Logistics Operation - China's Automobile Maintenance Industry as Example H. Hao	1037
Study on the Application of Low Density SMC for Automotive M. Yang, Y.J. Nie and X.F. Zhu	1042
Semi-Cylindrical Hyperlens Made of Al/MgO for 20nm Lithography Node L. Cheng, P.F. Cao, Q.Q. Meng and X.P. Zhang	1047
A DCT-Based Blind Watermarking Algorithm for Vector Digital Maps X. Wang, D.J. Huang and Z.Y. Zhang	1053
Study on the Synthesis of Vinyl Ester and its Using as Thickener for SMC M. Yang, Y.S. Zhao, Y. Qin and Y.J. Nie	1059
Research on Application and Development of Competitive Sports Simulation Based on Virtual Reality Technology C.J. Liu	1063
A General Quad Search Tree on Two-Dimension Data Y. Zhang, H.F. Ding, W.Q. Wang, X.J. Xiao and J. Xu	1069

Numerical Simulation of Infrared Nondestructive Testing to Metal Sample with Subsurface Defects Q.J. Tang	1075
The Markov Risk Model under Stochastic Discount Interest Force Y.J. Huang and C.M. Zhang	1080
On a Risk Model with Dependence between Interclaim Arrivals and Claim Sizes with Multiple Thresholds under Stochastic Interest Y.J. Huang and A.Q. Li	1086
Prepare of Novel Zirconium Complex and Catalytic Performance for Ethylene Polymerization Z.Z. Cheng, Y.J. Nie, X.C. Yan, R. Lei and S.S. Lin	1091
Study on Mid-Span Deflection of Beam Bridge under Moving Loads by the Recently Proposed Oscillator with Time-Dependent Stiffness R.L. Tian, X.W. Yang and L.F. Ren	1096
Research on the New Personals Application Based on 3G Mobile and Bluetooth Piconet H.Y. Meng and Q.M. Tian	1102
Preparation, Characterization and Biocompatibility of Regenerated Cellulose/PVA Blend Membranes in 1-Allyl-3-Methylimidazolium Chloride Y. Lu, Y.X. Liu, H.P. Yu and Q.F. Sun	1108
Design and Realization of IC Card Heat Energy Meter with Supervisory and Control Function G.Z. Li, Z.H. Li, L.B. Xin and Y.Q. Wu	1112
Numerical Simulation of Thermal Stress Fields of Steel Casting D.M. Liao, L.L. Chen, J.X. Zhou and R.X. Liu	1118
Refined Cotton Centrifugal Dewatering Process and Key Technology W.H. Wang, G.Z. Hu and M. Zhou	1124
Analysis on Measurement and Comparison of Various Vegetation Canopy LAI in Seacoast Wetland, South China W.H. Yan and J.J. Ouyang	1130
The Analysis on Economy Development and Equalization Degree of Six Metropolitan Areas in Middle of China T. Chen, J.T. Yu and Y.L. Hu	1136
Based on NERGA a Novel Decentralized PID for Non-Square System L. Quan, Q.B. Jin and X.W. Wang	1143
Wear Characteristics of Impregnated Diamond Bit in Drilling Armor Ceramic C. Gao, J.T. Yuan, H. Jin and Z.Q. Song	1150
An Adaptive Network Fuzzy Inference System Controller for Car Following Behavior Z.J. Long and J.F. Li	1156
Linear Programming Solving the Optimization Question of Production Plan J. Wu	1162
Research on Robot Working Space Based on Control Theory and Electronic Technology J.G. Luo and J.Y. Han	1167
Controlled Grown TiO₂ on Cellulose Surface via a Hydrothermal Route Y. Lu, Y.X. Liu, H.P. Yu and Q.F. Sun	1173
Conceptual Model and Operational Framework of Service-Oriented Manufacturing X.Q. Wu, M.S. Yang, X.Q. Gao and L. Ba	1177
Quantitative Analysis of Metal Film by Laser-Induced Breakdown Spectroscopy (LIBS) D.Q. Yuan and J.T. Xu	1183
Quadratic TC-Bézier Curves with Shape Parameter W.X. Xu, L.Q. Wang and X.M. Liu	1187
Study on one Dimensional Numerical Simulation in Filling Stage of Water-Assisted Injection Molding T.Q. Kuang	1193
A Method Suitable for Total Protein Extraction from Wood Forming Tissue of <i>Pinus koraiensis</i> J.T. Shi and J. Li	1199
Polymerization of Methyl Methacrylate with a Novel Titanium Complex Z.Z. Cheng, Y.J. Nie, X.C. Yan, R. Lei and S.S. Lin	1203

Fast Visualization Programming of Ocean Remote Sensing Information Based on IDL R.H. Tao, D. Wan, B. Chen and J. Chen	1208
The Construction and Property Analysis of Bogie Wheel with Damping Structure Z.X. Jia, D.G. Sun and Q.Y. Gan	1211
Fatigue Life Prediction of Driving Axle Housing Assemble Based on FEA X.Z. Yu, G. Jie, P.H. Huang and S.C. Tang	1217
Research on Intelligent Control Strategy of Inverted Plasma Cutting Power D.L. Jia, J.S. He, J.C. Ning and C.S. Wang	1223
Simulation Research of Inverted Plasma Cutting Power Supply Based on Fuzzy Control D.L. Jia, R.J. Wang and C.S. Wang	1229
The Study of the Sports System Simulation Theory and Application L.J. Zhu	1235
Fault Detection Method Applied to a Redundant Strapdown Inertial Navigation System Y.R. Lin, S.Y. Guo and G.Y. Zhang	1242
The Conception and Mechanism of Ship Frequency Scattering due to Maneuvering Motions in Regular Waves J.F. Chen and J. Zhu	1248
Direct Orthogonal Neighborhood Preserving Discriminant Analysis Y.R. Lin and Q. Wang	1254
An Improved Weighted Mixed Bayes Classification Model W.X. Xu, L.Y. Sun and X.M. Liu	1260
Multi-Agent Based Design for Distributed Fault Diagnosis Systems Y. Li, H.R. Wang and L. Wu	1266
Water Resources and Water Environment Influencing Factors of Biomass Energy Plant (Generating by Straw) in Frigid Zone C.L. Dai, S.M. Sun, H.J. Han and Z.J. Li	1272
Sheet Metal Multipoint Forming Technology Based on Hydro-Forming L.X. Wang, Q.H. Yang and S.Q. He	1278
A Novel Approach to Video Detection for Background Updating and Target Tracking H.Z. Zhuang and H. Li	1282
The Static Properties of Prestressed Arch Support Single / Double-Layer Reticulated Shells H. Zhang, J.T. Dong and J. Zhao	1288
Study on the Mechanism of the NaCl Influenced on the Movement of Water Molecular in the Wood L.Q. Yang, Y.X. Liu, Y.C. Cai, Q.F. Sun and J.T. Shi	1292
Compilation of Norm about the Scale of Self-Concept on Junior Middle School Students in the Northwest China Region X.J. Zhao, M. Ji, X.Q. You, C.X. Shi, Y.S. Xia and H.J. Zhu	1296
Slot/Pole Ratio Design of Tubular Permanent Magnet Linear Synchronous Motor G.H. Wang	1303
Pure Ni and Pd-Ni Alloy Membranes Prepared by Electroless Plating for Hydrogen Separation X.L. Zhang, X.F. Xie and Y. Huang	1309
An Optical Fiber Sensing System for On-Line Measurement of Soil Properties H.Q. Yang and G. Lv	1314
Application of Grid Map Method in Woven Fabric with Curved Surface L.B. Xia and J. Li	1318
Visional Attentional Allocation of Top-down and Bottom-up Cues in Three-Dimensional Space R.T. Xia	1322
PHEV Torque Control of the Pre-Shift Process Based on ANFIS X.Y. Dong, J.Q. Xi and H.Y. Chen	1327
A Danger Theory Inspired Security Evaluation Paradigm for Computer Network F.X. Sun	1333
Toughening Study on High Chromium Cast Iron Liner Plates of HZS Series Commercial Concrete Mixing Plant J. Liu and J. Fu	1338

Wave Arrival Direction Estimation Adaptive Antenna Array with Music Algorithms P.C. Zhang, L.M. Hou and B.Y. Li	1342
Designing of Detecting and Measurement System for Car Security Based on Supersonic Principle W.B. Li and X.N. Wang	1346
Design and Memory Optimization of Motion Estimation Module for H.264/AVC Encoder D.L. Zhang, C.J. Wang, Y.K. Song, G.M. Du and X.W. Cheng	1350
Reliability Evaluation for Pressure Vessel Enterprises Manufacturing Execution System Z.H. Huang, S.L. Kan, L.W. Yan, J. Li and Q.H. Chen	1356
Fast Measurement of Fruit Tree Nitrogen Status Based on Multi-Color LEDs and BP-ANN H.Q. Yang and G. Lv	1364
Study on a Flexure Hinge-Based Micro-Displacement Platform H.W. Ji and Y.Q. Wen	1368
Static Var Compensator Technology and its Progress Z.Q. Guan and J. Peng	1374
Response Analysis of Asphalt Pavement on Vehicle Dynamic Load Based on Numerical Method L.C. Yang, L.W. Ning, J.X. Hu and Y.P. Luo	1380
Applied Research on ER Algorithm of Gray Modeling Y. Li, L.P. Tan and B.R. Xu	1384
Applying Ant Colony System to Solve Construction Time-Cost Tradeoff Problem	1390
Studies on Adsorption of Tyrosine on Multi-Wall Carbon Nanotubes Z.B. Feng, R.J. Han and J.L. Wang	1396
Voltage Control Principle Analysis of Permanent Magnet Generator L.L. Ba, H. Chen and C. Sun	1402
Video Vehicle Tracking Based on Improved Mean-Shift Algorithm W.B. Chen, X. Zhang and S.Q. Luo	1408
Efficient Multi-Target Tracking Method Based on Fusion Morphology Filtering in Traffic Video Detection W.B. Chen, Z.Y. Gu and X. Zhang	1412
Mode I and Mode II Stress Intensity Factors Based on Crack Opening and Sliding Displacements Y.L. Ma	1417
Function S-Rough Sets and Image <i>F</i>-Exterior Packet R. Song, X.W. Rong and S.L. Huang	1423
Research on Negative-Sequence Electric Current Examination Method K. Wang and W.J. Dai	1429
Analysis for TCSC Steady-State Characteristics Y. Chen and X.J. Chen	1435
An Extraction Algorithm for Voice Signal Feature Based on Multifractal Analysis D.H. Li and M. Diao	1441
Primary Study on the Anatomical Construction and Physical-Mechanical-Properties of Introduced <i>Dalbergia sissoo</i> L. Shi, Q.F. Sun and J. Deng	1446
Analysis of the Stress Intensity of Rotor Blade in Hydraulic Retarder J. Yan	1453