

Table of Contents

Preface and Organizing Committee

Chapter 1: Advances in Manufacturing Engineering Techniques and Materials Science

The Research on Applying High Precision Ultrasonic Ranging in the Auto-Levelling System of Paver J. Xiao and Z.Y. Yu	3
Modeling Hot Rolling Based on RBF Neural Networks and Thermo-Mechanical Coupling FEM Z.Q. Xiong, Y.R. Li, H. Zhang, H.M. Li and C.M. Liu	9
Prediction of Settlement of Soft Clay Foundation in Highway Using Artificial Neural Networks X.Y. Li and F.J. Bu	15
Influence of Cutter Geometric Parameters on the Stability of Milling Process of Thin-Walled Blades W.W. Liu, X.J. Gao, C.W. Shan and W.J. Tian	21
Identification of Natural Frequency of Bearing Rotor Based on GA-SVM T.R. Ma, F.H. Qin, R.X. Liu and F.J. Zhang	27
Concrete Compressive Strength Prediction Using Rebound Method with Artificial Neural Network J.M. Liu, H.J. Li and C.J. He	34
Fiber Grating Sensor Temperature Prediction Based on Relevance Vector Machine F. Liu, L. Yu and Y. Li	40
Influence of Inner Rubber Bushing Stiffness of the Lateral Rod on Rear Multi-Link Suspension Performance P.Q. Li and X.T. Liu	45
Approach to Detect Air Tightness of Engine Cylinder by Vibration Analysis X.Y. Qiao, X.Y. Xie, J.M. Liu and X.M. Zhang	50
Studies on Solar Drying of Oily Sludge L.L. Mi, N.R. Liu and M. Meng	54
Design and Modeling of Cutting Paper Tape Machine for Sole Coating C.Z. Sun and C.H. Hao	60
GA-BP Neural Network Based Tire Noise Prediction Y. Che, W.X. Xiao, L.J. Chen and Z.C. Huang	65
FLI Co-Simulation Applied and Realized in Rail Profile Automatic Detection System L. Chen, X.Y. Tian and J. Pang	71
Micro-Image with Photo-Acid Generator Polymer Nano Sheet T.S. Li, G.J. Li, W.J. Xu, Y.M. Sun, Y.J. Wu and T. Miyashita	77
Dynamic Prediction Model for Rolling Bearing Friction Torque Using Grey Bootstrap Fusion Method and Chaos Theory X.T. Xia and T.M. Lv	87
Evaluation of Tapered Roller Bearing Vibration Velocity as Data Series Using Grey System Theory X.T. Xia and W.W. Man	97
The Research on the Flexible Integrated Research Platform of the Solar Energy Photovoltaic System Q.S. Liu and X.L. Xu	105
The New Rural Residential Building Materials of Low Carbon Mode of Thinking Y. Luo	110
Resonance Frequency Detection System of Piezoelectric Micro-Cantilever C.D. Hu, M.R. Zhao, X.B. Deng and S. Zhu	115

Design and Implementation of Integrated Case Packer Based on High Speed Pick-and-Place Robot	121
J.P. Mei, D.X. Yu and X.Q. Cheng	
The Influence of Cutting Parameters on Machined Surface Microhardness during High Speed Milling of Titanium Alloy TC17	127
W.J. Tian, Y. Li, Z.C. Yang, C.F. Yao and J.X. Ren	
The Effect of Cutting Parameters on Machined Surface Microstructure during High Speed Milling of Titanium Alloy TC17	133
Y. Li, W.J. Tian, Z.C. Yang, C.F. Yao and J.X. Ren	
Numerical Analysis of Submerged Pipelines for Deep Water S-Lay	138
X.F. Zhang, W.S. Zhang, Q.J. Yue, Z.G. Li and D.Y. Zhao	
MEMS Gyro Aided Calibration of Electronic Compass	144
X.S. Li, Y.X. Liu, X.Y. Shu and R.Q. Kang	
High Accuracy AMR Magnetometer and its Application to Vehicle Detection	150
X.S. Li, R.Q. Kang, Y.X. Liu, Z.H. Wang and X.Y. Shu	
The Application of Linear Variable Filter to Improve the Resolution of Micro Spectrometer Systems	156
L.Y. Chen, J.H. Zheng, D.Z. Zhu, R.F. Hou, D.Y. Pan and C. Wang	
The Study of Residual Stresses in High-Speed Milling of Titanium Alloy TC11	160
C.F. Yao, Z.C. Yang, X.C. Huang, J.X. Ren and D.H. Zhang	
Application of Constant Modulus Algorithm on the Civil Aviation VHF Radio Interference Suppression	166
Y.H. Yang and Y.P. Ji	
Research on the Mathematics Model of a Permanent Magnet Linear Oscillatory Actuator with Moving Iron and Non-Salient Pole	169
H.P. Pan, Y. Wang, Y.M. Xia and W. Zhang	
Flapping Wing Micro Aerial Vehicle Attitude Control with Fuzzy Sliding Mode Controller Based on RBF Neural Network	177
S.B. Hu, W.H. Lu and M.X. Lu	
Supply and Demand Forecasting of Blast Furnace Gas Based on Artificial Neural Network in Iron and Steel Works	183
Q. Zhang, Y.L. Gu, W. Ti and J.J. Cai	
The Research on Energy-Stored Application of Na/S Battery	189
J.Y. Lu, Q.S. Jiang and L. Qin	
Selection of Mixed Refrigerant for CBM Liquefaction System and its Optimization Analysis	193
Q.H. Fan, H.Y. Li, L.X. Jia, Q.H. Fan, Y.M. Shao and X.H. Zhan	
A Novel Miniature Printed UWB Monopole Patch Antenna	198
Y.Q. Xia and J. Luo	
Research on Path Optimization Technology for Free-Form Surface Five-Axis NC Machining	202
S.K. Cao, L. Song, K. Dong, K.F. Song and Z.M. Sui	
Research on Fuzzy PID Adaptive Control for Steam Generator Water Level	209
W. Peng and D.F. Zhang	
Physical Design of Hydraulic Synchronizer about Lifter	213
Z. Guo	
Reconfigurable Testing System for Automobile Parts and Equipment	217
Z.Z. Liu, T.Y. Wang, Q.J. Liu and Z.F. Qiao	
The Robot Handling System for Coal-Fired Power Station Furnace Coke and Slag	221
J. Wu, H.Y. Sun, J.X. Ren, W.G. Pan, F.Q. Li, B.X. Liu, W.L. Bao and Z. Sun	
Research on Filament Composite Winding CNC/TCS Integration System Based on Open-Architecture	225
S.H. Wang and J. Gao	
Fault Diagnosis of Aircraft Power Supply Based on Priority Dynamic Fault Tree	229
Z.T. Huang, Z.S. Wang and Z.B. Liu	
Doppler Frequency Shift Tolerance Extension in Burst Spread Spectrum Communication System	237
Q. Dang and X.L. Lei	

Development of the Natural Vegetable Gum Drilling and Completion Fluids System for Industrial Intelligent Application F.X. Li, G.C. Jiang, Z.K. Wang, M.R. Cui and W.H. Li	241
Dynamic Simulation and Control Research for Special Shipborne Crane Based on ADAMS P. Li, F. Zhu and X.F. An	246
Method Study on Digital-Model Conversion of Magnetic Worm from CAD Software to ANSYS Software Z.M. Wang, Y.C. Wang and D.M. Tang	252
Decoupling Robust Control of Three-Link Direct Drive Robot Arm C. Zhang, G. Zhao, Y. Xiao and X. Yang	258
Analysis on the Mechanical Behavior of Pipe Roof and Rock Bolt of Shallow and Unsymmetrical Tunnel in Soft Rock X.D. Cheng and P.J. Qin	267
Research of Electronic Energy Saving Control Technology in Construction Machinery H.X. Han, M.F. Liu and X.L. Cao	272
Primary Study on Crop Wet Biomass Measuring with Dielectric Spectroscopy H. Zhang, B.Y. Wu, R.F. Hou, D.Z. Zhu, D.Y. Pan, K. Bi and C. Wang	277
A New Anti-Surge Control System for Underwater Vehicle Q.B. He, Z.J. Tang and J. Luo	282
Delivering Way of Horizon Disturbance to Vertical Vibration in Temper Rolling Mill Z.Q. Xiong, C. Zeng, Y.R. Li, Z.G. Wang and Z.B. Xiong	289
Partial Postponement Strategy: Application in Automobile Manufacturers X. Wang, Z.M. Xie and X.J. Guan	296
Nonlinear Calibration of Thermocouple Sensor Using Least Squares Support Vector Regression Y.J. Yu	302
Study on Piezoelectric Effect of Ceramic Capacitors in Daya Bay Neutrino Experiment W.Q. Jiang and Z. Wang	309
Implement of Electro-Hydraulic Servo Control of Aero Variable Stroke Plunger Pump H.L. Pan and J. Yan	313
Non-Math-Modelling Data Analytical Methods Base on Artificial Neural Networks (ANNs) Applied to Optimize Preparation of Norcantharidin-Loaded Chitosan Nanoparticles Y. Liu, W. Zhang and X.N. Zhang	319
Study on Non Energy Saving Status Detection of Groundwater Heat Pump System Using Artificial Neural Network Method Z.W. Wang, Y. Peng, Z.H. Zhang, W. Cao and P. Li	325
Study on the Optimization of Multi-Factor Influencing Ice Thermal Storage Air Conditioning System Economy Z.W. Wang, Q.L. Yang, L.M. Zhang, L.P. Han and J. Sun	333
Techniques for PAPR Reduction in OFDM Systems L. Chen and X.L. Hu	340
Abnormality Detection Methods for Airborne Equipment's Working Performance Based on χ^2 Distribution Model Y.L. Lü	347
Design of Image System Based on Textile Application H.H. Zhang	355
Ka Band Transition between Rectangular Waveguide and Substrate Integrated Waveguide Y.Z. Dong, S.W. Dong, Z.B. Zhu and Y. Wang	362
Study on Fluorimetric Method Determination of Glucose Molecule in Microchannels Z. Huang and Z.C. Bai	366
Resource Optimization Scheme Based on ROI Distortion-Minimized for Mobile Image Transmission Z.H. Tang, T.F. Qin and X.C. Li	371
An Implementation of CANopen at Water Electrolysis Hydrogen Generation Station F.H. Kuang and B.G. Xu	377
Investigation on the Bending Deformation of the Stainless Steel Fibers during Knitting Action by Using Image Processing Method S. Liu and K. Yang	383

The Research of Mica Pulp Concentration Detecting which Is Based on Laser with 650nm Wavelength Y. Zhang and Y.B. Zhu	389
Electrostatic Precipitator Monitoring System Based on CAN Bus Z.S. Zhang, Q. Hao, C. Cui, Y.F. Lian, Z.L. Xiao, Z.Q. Liu and Q. Li	395
Superheater Steam Temperature Control Based on the Expanded-Structure Neural Network Inverse Models L.Y. Ma, Z.X. Shi and K.Y. Lee	401
Structural Optimization of Woven Fabric with Curved Surface Y.F. Wang and X.F. Guo	408
Fractal Prediction of Porosity in Clastic Rock Based on GIS B. Li, T.S. Zhang, G.M. Ding, W.Y. Wang and Y. Xiang	412
A Liquid Level Measuring Device for a Tank Based on Image Sensor C.H. Yu, C. Zhang, Y. Bai and C. Huang	418
Pollutant Transport Model and Numerical Simulation in Landfill Site Y. Zhao, Q. Xue, L. Liu and B. Liang	424
Prediction of Pilot Pollution in High-Rise Buildings Covered by Outdoor Base Station M. Niu, C.B. Yu, X.H. Zhang and W.Y. Ke	430
Study on Bilinear Interpolation Preisach Model of Piezoelectric Actuator H.W. Ji and Y.Q. Wen	437
Application of Adaptive Weighted Fusion in Robot Multi-Sensor Ranging System D.Q. Jiao, L.L. Pang and Y.J. Teng	442
Infrared Object Tracking Algorithm Based on Online AdaBoost J.S. Li, F.Z. Zhao, Y.H. Zhu and W. Yang	447
Non-Fragile Robust Controller Design for Nonlinear Stochastic System with Time-Delay Y.J. Li, F.Q. Deng and Y.J. Peng	452
Computer Simulation of Pitting Machine Shaft of Litchi Fresh Fruit X.D. Wang and X. Ling	459
Interface between LabVIEW and FANUC Robot H.M. Zhang and X.C. Yang	464
Study on 3D Modeling for History Building and Precision Analyzing H.F. Zhang, X.J. Cheng and Y.T. Shi	471
The Application of Circle Fitting in Detection of Machining Quality of Punched Sheets Based on Machine Vision F.C. You and Y.J. Chen	477
Technology for EDFA Gain Flattening Based on Long Period Fiber Grating K.X. Liu	484
Research on the Multi-Spectrum Imaging System Based on Vision Technology X.H. Jin, Z.Y. Zhou and R. Xu	488
Model Simulation of Electronic Unit Pump Diesel Engine Oriented to Control J. Wang, S. Han and Y.T. Zhang	495
Lapel Shaper Parametric Design for Automatic Liquid Packaging Machine Base on Visual Lisp Y.D. Fang, W.K. Xue and B. Sun	501
Analysis on Dynamic Lubrication Characteristics of Gas Film in Hard Disk System H.P. Yao, H. Ping and Y.Z. Chen	507
DNA Computing Model Based on Self-Assembled Nanoparticle Probes for SAT Problem F. Li, J. Xu and Z. Li	513
A Transmission Control System's Research for a Nursing Bed with Four Transmissions Driven by a Single Motor Z.X. Li and J. Zheng	518
The Developing of Double-Wave-Bands Phototherapy Z.X. Li and J.F. Yang	523
A New Wave-Wheel Dishwasher Control System Z.X. Li, J.F. Yang, Q. He and H.W. Li	528
Automatic Coal Mine Anti-Dusty Water Sprayer Controller Design J.T. Wang and H. Xiao	533

Knee Bone Surface Registration Using the Lipschitz Optimization Algorithm X.P. Wang, Y.Z. Cheng, M.M. Zhao, X.H. Ding and J. Bai	537
A New Wavelet Transform Modulus Maximum Denoising Algorithm for UWB System C.Q. Bai, Y.Y. Peng and Q.Y. Zhang	542
Application of Double Closed-Loop Control to the Steady-State Regulation and Control of Underwater Vehicle L. Liu, Y.Y. Zhai, W.J. Lu, H.X. Luo and Y. Li	548
General Modularized Design (GMD) for the Agile Design of Crane Drum X.Y. Cao, X.X. Liu and Z.Y. Pan	553
Wavelength Adaptive Assignment Scheme for Optical Transport Network in Intelligent Highway System L.X. Hou and M. Wei	558
Study on Online System for Strength Detection of Laminated Veneer Lumber Based on Vertical Vibration S.F. Zhao, C. Sa and N. Yang	563
Development of Omni-Directional Mobile Manipulator J. Zhao, L. Ma, J.H. Yan and Y.S. Gao	569
Research on Simulation Model and Application for Flexible Manufacturing System of Hot Stamping K.W. Song and Y.S. Zhang	576
Compressive Plasticity of Zr-Based Bulk Metallic Glass at Low Temperature Y.J. Sun, R.G. Wu and H.J. Wang	583

Chapter 2: Optical, Electronic Materials and Industrial Application

Powder Particle Size Measurement with Digital Image Processing Using Matlab L.C. Wu and C. Yu	589
Effect of Cycles and Ion-Exchange on the Purification of Lithium Carbonate J. Wu, Y.C. Yao, Y.N. Dai and B. Yang	594
Formation and Control of Cutting Direction Burr in Machining G.C. Wang, Q.F. Li, H.J. Pei, H.J. Qu and Y.M. Zhu	601
Study on the Performance of Braze Cemented Carbide Cutting Tool C.Y. Zhang, H.J. Pei, Q.F. Li, C.Y. Zhang and G.C. Wang	607
Research on Gear Shift Drive Mechanism of Automatic Mechanical Transmission Based on Brushless DC Motor Z.P. He and J.Q. Xi	612
Effects of Initial Axial Stress on the Vibration of Double-Walled Carbon Nanotubes under Temperature Field Y. Yan, W.Q. Wang and L.X. Zhang	617
Dynamic Models of Stability Lobes of Milling Thin-Walled Plates H.L. Ma, A.J. Tang and Q.K. Chen	622
New Method of Dynamical Reanalysis for Large Modification of Structural Topology Based on Reduced Model J.J. He and J.S. Jiang	628
Low Temperature Performance of Fiberglass Geogrid Y.L. Xu, B.Z.M. Zhang, L. Tao and Z.Z. Xing	632
Application and Characterization of 12-Phase AC Arc for Glass in-Flight Melting Y.C. Yao, T. Watanabe and K. Yatsuda	637
A Bargaining Theory-Based Conflict Resolution Method in Design for Remanufacturing T. Liu, S.X. Song, H.H. Huang and G.F. Liu	643
Calculation of Radial Active Magnetic Bearing Electromagnetic Force under Eccentric Rotor X.J. Liu and Y.F. Hu	649
Effect of the Y₂O₃ Addition Content on the Structural Properties of ZrO₂ Thin Films and Coating Material S.G. Wu, H.Y. Zhang, J.D. Shao and Z.X. Fan	655
Effect of Ultrasonic Treatment on the Functional Properties of Whey Protein Isolates Z.D. Liu, B.H. Guo, M.Y. Su and Y.Y. Wang	660

Development of Whole Life Cycle Management System on Cutting Tool J.Y. Xu, G.C. Wang and G. Liu	666
Optimization of Inlet Temperature of Methanol Synthesis Reactor of LURGI Type L. Chen, Q.Z. Jiang, Z.Z. Song and L. Chen	671
Strength of Screw Thread in Vibration Tapping W.L. Huang and G.C. Wang	678
Numerical Simulation of Sheet to Cylindrical Tube Single-Sided Spot Welding H.G. Yang	684
The Analysis of the Application of Copper Plated Steel Material in Substation Grounding Project H.P. Yang, Y.X. Zhong and W.L. Wu	688
Dynamic Analysis of Nonlinear Anti-Resonance Vibration Machine Based on General Finite Element Method C.W. Jiao, J. Liu and Q.Q. Wang	694
Effect of UF/Epoxy Microcapsules on Cement Composite Z. Ni, X.X. Du, S. Wang, F. Xing and Z. Huang	700
Virtual Prototype Design of Remote-Control and Mobile Tea Table L.A. Pan and X.C. Cheng	705
Wind Turbine Generator Pitch Simulator's Design J. Chen, Z.H. Wang, J. Zhou, H.H. Song, Z.H. Hu and Y. Li	709
Structure Optimization of Ship Unloader for Weight Reduction by FEA S.R. Yu and Q.F. Zhang	713
Longitudinal Aerodynamics of a Canard Guided Spin Stabilized Projectile X.L. Ji, H.P. Wang, S.M. Zeng and C.Y. Jia	719
Rescheduling of Parallel Machines under Machine Failures C.X. ShangGuan, J.T. Li and R.F. Shi	724
Study of the Fouling Characteristics of Arc Pipe Based on Principal Component Analysis and Partial Least Squares L. Jing and X.Q. Wen	731
Static Interval Optimization for Structures with Interval Parameters and Interval Loading S.G. Zhang and S.H. Chen	738
Analysis on Dynamic Characteristics of CNC Machine Tool and Experiment with Influence of Rolling Guide Joint Considered X.P. Li and H.F. Nie	745
Mechanical Analysis of Porous Concrete Base in Asphalt Pavement L.J. Suo and X.G. Hu	751
Mechanical Analysis for Asphalt Surface in Transverse Contraction Joint of Porous Concrete Base L.J. Suo and X.G. Hu	757
Aerodynamic and Heat Transfer Simulation of Cooling Turbine Blade with Different Tips K.H. Yu, X. Yang, Z.X. Wen and Z.F. Yue	763
Analysis on Stress Characteristics of Rolling Body of Rolling Dryer Z.H. Ren and Y. Hao	768
Automatic Control of Liquid Discharging after Hydraulic Fracture of Oil Well Y.J. Feng and K.C. Fu	774
The Resistance of Micro-Fabricated Hollow Wire at Giga-Hertz Range Y.J. Feng, Z.L. Huang and L.F. Yi	779
Research on Dull Materials Control of Manufacturing Enterprises Y.L. Yuan and T.M. Guan	784
Study on Concrete's Temperature Control Measures for Inverted-Siphons in Wenxian-Boai I Section Y. He, X.M. Dong and C.H. Zheng	788
Study on Concrete's Temperature Control Measures for Inverted-Siphons during Construction Period X.M. Dong, Y. He and J.C. Sun	792
Simulation Studies on Structure-Force Dynamic Coupling of Electrorheological Fluids in a Poiseuille Flow Field S.S. Zhu, B. Tang, L.J. Qu, W. Yuan and Q.F. Zhang	796

Modelling and Analysis on Detecting System for Bogie Wheelset Alignment Parameters in Horizontal Plane	
L.L. Su, Y.M. Liu, J. Su, G. Xu, T. Peng and M. Jia	802
Finite Element Analysis on Fracture Problem of Rubber - Metal Ring	
J.G. Han, X.Y. Wu and P.H. Zhang	809
Application of Optimized GM (1,1) in the Machine Tool Thermal Error Modeling	
B. Yu	813
Equivalent Profile of High-Speed Mill Considering Gyroscopic Effect	
H.L. Zhou, W.X. Tang and Q.H. Song	818
Analytical Modeling of the Spindle Shaft of Heavy Load Deflection Angle Milling Head Dynamics Using Timoshenko Beam Model	
S.M. Ma, L.G. Cai, Y.S. Zhao, Z. Liu, T.N. Guo and Q. Cheng	823
Synthesis of 5-Benzoylacenaphthene in the Presence of [Bmim] Cl/AlCl₃ Ionic Liquid	
S.Y. Zhu, D.L. Jiang, Y. Fang, J.M. Xie and M. Chen	830
Experimental Investigation of Vibration and Noise Control of Reciprocating Compressors	
J.Q. Long, S.J. Zhou and P. Yu	837
Cam Grinding Interpolation Research Based on Cubic Non-Uniform Rational B-Splines	
B.Y. Peng and Q.S. Han	843
Mg(OH)₂ Partially Substituted Alkaline Peroxide Mechanical Pulping of Poplar	
F.G. Kong, C.F. Li, W. Zhang, S.J. Wang and L. Wei	850
Application Research of APDL on Contrarotating Propeller Parametric Modeling	
J. Gao and N. Li	855
Carbothermic Reduction and Chlorination of Alumina with Coal in Vacuum	
Q.C. Yu, P.Y. Wang, B. Yang, C.L. Cui, H. Zhang and C. Wang	862
The Research on the Electrical Properties Change in Extrusion Molding of Resin Matrix Multi-Walled Carbon Nano Tubes Composites	
L. Sun, M.S. Chen and X.S. Zheng	866
Online Weld Quality Benchmarking and Assurance during the Mass-Production Resistance Spot Welding Process	
L. Gong, C.L. Liu, Y.M. Li and B.C. Li	872
Applying Life Cycle Six Sigma in Tolerance Design Methodology	
J.J. Wu and Y.Z. Wang	881
Design of Small and Medium Power Smart Frequency Conversion Electric Actuator	
Y. Yang, J.Y. Bian, C.L. Zhu and R.F. Yang	888
Study on Effects of High-Altitude Electromagnetic Pulse to Engine Electronic Control System	
S.H. Yang, Y.F. Tang, X.K. Liu and J.H. Liu	894
Study on Superposed Magnetic Field ECM of Square Hole	
J.L. Jia	899
Features and Industrial Applications of Combined Directed Valve Tray	
J.X. Zhang and C.F. Zhang	905
Research on Blockage Damage Effect of Fragment Warhead to Target on Ground	
G.Y. Huang, S.S. Feng, P.Q. Liu and C.M. Liu	911
Synthesis of 1-Acetylpyrene via Friedel-Crafts Reaction Using Chloroaluminate Ionic Liquids as Dual Catalyst and Solvent	
Y. Luo, A.X. Pan, M. Xing, M. Chen and J.M. Xie	917
Computer-Aided Material Classification Coding Model and Software System for Mechanical Product	
Z.K. Li, T. Bai and L.M. Qiu	923
Machine Performance Degradation Recognition Using Locality Preserving Projections and Clustering Approach	
J.B. Yu, J.P. Liu, M.F. Liu, J.T. Yin and Y.G. Wang	929
Design of Bionic Flapping-Wing Propulsion Device	
R. Xing, B.W. Song, Z.Y. Mao and H. Ding	935
Robust Control of Double-Machine Wind Turbines with DFIG Using Hamiltonian Energy Method	
B. Wang, X.L. Yuan and J. Zhu	941

Research on the Proper Use of Chassis Centralized Stuffing Lubrication System G.R. Zhang	948
Additional Mechanical Torque Coefficients of Hydro Turbine and Governor System Y. Zeng, L.X. Zhang, J. Qian, Y.K. Guo and T.M. Xu	954
Limit Analysis of Supporting Pressure for Failure Surface of Deep-Buried Tunnel with Nonlinear Failure Criterion K. Huang, B.C. Liu, J.G. Peng and F. Huang	962
Research on Analysis and Repairing for Metal Structure Cracks of Portal Crane X.P. Wang and H.B. Xiao	970
The Design of Automatic Control System for Large-Scale Aluminum Ring Rolling Mill Z.H. Zhang and H.Q. Zhang	974
Study on Dynamic Characteristic of Bipolar Decoupling Micro-Machined Gyroscope J.T. Shi, S.Q. Gao and Y.L. Zheng	980
Laser Diagnostic Investigation on the Spray and Combustion with Butanol-Biodiesel-Diesel Fuel Blends Y. Liu, J. Li, Y. Gao and X.M. Yuan	986
Analysis of Micro-Explosion Phenomenon in a Constant Volume Chamber by Butanol-Biodiesel-Diesel Blend Fuel Y. Liu, J. Li, Y. Gao and X.M. Yuan	996
The Performance Simulation and Optimization Research on Intake Port of Locomotive Diesel Engine H.J. Cui, M.H. Li and Y. Guan	1007
The Thermo-Test and Mathematics Model Study on Automobile Tube-Core-Fin Radiator H.J. Cui, M.H. Li and Y. Guan	1014
The Mutual Impedance Analysis of a Broadband Dense Plane Array W.S. Liu, Y.A. Li, L. Cui and M.H. Wang	1019
Effect of Different Ignition Methods on Combustion Characteristics of a Turbocharging Lean Burn LPG Engine D.W. Qu, J. Li, Y. Gao, D.Q. Zhou, L.Y. Fan and Y. Tian	1026
Research on LPG Dual-Spark Ignition Engine Combustion by CFD D.Q. Zhou, J. Li, Y. Gao, D.W. Qu and Q.J. Liu	1032
The Trend Estimate of the Wind Turbine Based on the Wavelet Neural Network Z.J. Wang, S.M. Liu, L.L. Luan and H.Q. Xiao	1039
Study on the Influence of the Temperature Rise and Frictional Coefficient of Brake Shoe on Braking of Wind Turbine Z.J. Wang, S.M. Liu, L.L. Luan and H.Q. Xiao	1045
Magnetic Bearing and its New Applications X.L. Qi, Z. Fu, G.X. Wang, K. Zhang and Y.C. Dong	1050
Technology of Magnetic Flywheel Energy Storage X.L. Qi, K. Zhang, G.X. Wang, Z. Fu and Y.C. Dong	1055
Research on Reliability of Offshore Wind Turbine T.Y. Liu	1060
Study on the Influence of Skewed Pole on Cogging Torque of PMSM B.Y. Zhang, J. Wang, G. Cui, G.H. Feng and M. Zhao	1066
Optimization Study on Open Shaped Ribs Arrangement and Diaphragm Cutout for Steel Orthotropic Box Girder Z.W. Wu, K.F. Zheng, Y.J. Cui and Y.B. Shui	1072
The Mechanical Improve Design and Simulation Analysis of Loom's Let-Off System J.C. Yang, X.R. Li, Y.L. Zhao, G.Z. Wang and Z.X. Zhou	1078
Catalytic Pyrolysis of Shenhua Coal to Prepare Fuel Gases Using Metallic Oxide Supported Catalysts Z.Y. Guo, R. Ran, X.Q. Shu, Y.Y. Yuan, Y. Zhang, L.X. Zhang, L. Dong and X.G. Wang	1084
Study on Traditional Textile Machinery in Southeast of Shanxi Province L. Wei	1091
Simulation Analysis on Sucking Process Outflow Phenomenon in Piezoelectric Pump Y. Liu, Z.G. Yang and Y. Wu	1096