

# Table of Contents

## Preface and Organizing Committee

## Chapter 1: Advances in Manufacturing Engineering Techniques and Materials Science

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

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

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

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

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

## **Chapter 2: Optical, Electronic Materials and Industrial Application**

<b>Powder Particle Size Measurement with Digital Image Processing Using Matlab</b> L.C. Wu and C. Yu	589
<b>Effect of Cycles and Ion-Exchange on the Purification of Lithium Carbonate</b> J. Wu, Y.C. Yao, Y.N. Dai and B. Yang	594
<b>Formation and Control of Cutting Direction Burr in Machining</b> G.C. Wang, Q.F. Li, H.J. Pei, H.J. Qu and Y.M. Zhu	601
<b>Study on the Performance of Braze Cemented Carbide Cutting Tool</b> C.Y. Zhang, H.J. Pei, Q.F. Li, C.Y. Zhang and G.C. Wang	607
<b>Research on Gear Shift Drive Mechanism of Automatic Mechanical Transmission Based on Brushless DC Motor</b> Z.P. He and J.Q. Xi	612
<b>Effects of Initial Axial Stress on the Vibration of Double-Walled Carbon Nanotubes under Temperature Field</b> Y. Yan, W.Q. Wang and L.X. Zhang	617
<b>Dynamic Models of Stability Lobes of Milling Thin-Walled Plates</b> H.L. Ma, A.J. Tang and Q.K. Chen	622
<b>New Method of Dynamical Reanalysis for Large Modification of Structural Topology Based on Reduced Model</b> J.J. He and J.S. Jiang	628
<b>Low Temperature Performance of Fiberglass Geogrid</b> Y.L. Xu, B.Z.M. Zhang, L. Tao and Z.Z. Xing	632
<b>Application and Characterization of 12-Phase AC Arc for Glass in-Flight Melting</b> Y.C. Yao, T. Watanabe and K. Yatsuda	637
<b>A Bargaining Theory-Based Conflict Resolution Method in Design for Remanufacturing</b> T. Liu, S.X. Song, H.H. Huang and G.F. Liu	643
<b>Calculation of Radial Active Magnetic Bearing Electromagnetic Force under Eccentric Rotor</b> X.J. Liu and Y.F. Hu	649
<b>Effect of the Y<sub>2</sub>O<sub>3</sub> Addition Content on the Structural Properties of ZrO<sub>2</sub> Thin Films and Coating Material</b> S.G. Wu, H.Y. Zhang, J.D. Shao and Z.X. Fan	655
<b>Effect of Ultrasonic Treatment on the Functional Properties of Whey Protein Isolates</b> Z.D. Liu, B.H. Guo, M.Y. Su and Y.Y. Wang	660

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

<b>Modelling and Analysis on Detecting System for Bogie Wheelset Alignment Parameters in Horizontal Plane</b>	
L.L. Su, Y.M. Liu, J. Su, G. Xu, T. Peng and M. Jia	802
<b>Finite Element Analysis on Fracture Problem of Rubber - Metal Ring</b>	
J.G. Han, X.Y. Wu and P.H. Zhang	809
<b>Application of Optimized GM (1,1) in the Machine Tool Thermal Error Modeling</b>	
B. Yu	813
<b>Equivalent Profile of High-Speed Mill Considering Gyroscopic Effect</b>	
H.L. Zhou, W.X. Tang and Q.H. Song	818
<b>Analytical Modeling of the Spindle Shaft of Heavy Load Deflection Angle Milling Head Dynamics Using Timoshenko Beam Model</b>	
S.M. Ma, L.G. Cai, Y.S. Zhao, Z. Liu, T.N. Guo and Q. Cheng	823
<b>Synthesis of 5-Benzoylacenaphthene in the Presence of [Bmim] Cl/AlCl<sub>3</sub> Ionic Liquid</b>	
S.Y. Zhu, D.L. Jiang, Y. Fang, J.M. Xie and M. Chen	830
<b>Experimental Investigation of Vibration and Noise Control of Reciprocating Compressors</b>	
J.Q. Long, S.J. Zhou and P. Yu	837
<b>Cam Grinding Interpolation Research Based on Cubic Non-Uniform Rational B-Splines</b>	
B.Y. Peng and Q.S. Han	843
<b>Mg(OH)<sub>2</sub> Partially Substituted Alkaline Peroxide Mechanical Pulping of Poplar</b>	
F.G. Kong, C.F. Li, W. Zhang, S.J. Wang and L. Wei	850
<b>Application Research of APDL on Contrarotating Propeller Parametric Modeling</b>	
J. Gao and N. Li	855
<b>Carbothermic Reduction and Chlorination of Alumina with Coal in Vacuum</b>	
Q.C. Yu, P.Y. Wang, B. Yang, C.L. Cui, H. Zhang and C. Wang	862
<b>The Research on the Electrical Properties Change in Extrusion Molding of Resin Matrix Multi-Walled Carbon Nano Tubes Composites</b>	
L. Sun, M.S. Chen and X.S. Zheng	866
<b>Online Weld Quality Benchmarking and Assurance during the Mass-Production Resistance Spot Welding Process</b>	
L. Gong, C.L. Liu, Y.M. Li and B.C. Li	872
<b>Applying Life Cycle Six Sigma in Tolerance Design Methodology</b>	
J.J. Wu and Y.Z. Wang	881
<b>Design of Small and Medium Power Smart Frequency Conversion Electric Actuator</b>	
Y. Yang, J.Y. Bian, C.L. Zhu and R.F. Yang	888
<b>Study on Effects of High-Altitude Electromagnetic Pulse to Engine Electronic Control System</b>	
S.H. Yang, Y.F. Tang, X.K. Liu and J.H. Liu	894
<b>Study on Superposed Magnetic Field ECM of Square Hole</b>	
J.L. Jia	899
<b>Features and Industrial Applications of Combined Directed Valve Tray</b>	
J.X. Zhang and C.F. Zhang	905
<b>Research on Blockage Damage Effect of Fragment Warhead to Target on Ground</b>	
G.Y. Huang, S.S. Feng, P.Q. Liu and C.M. Liu	911
<b>Synthesis of 1-Acetylpyrene via Friedel-Crafts Reaction Using Chloroaluminate Ionic Liquids as Dual Catalyst and Solvent</b>	
Y. Luo, A.X. Pan, M. Xing, M. Chen and J.M. Xie	917
<b>Computer-Aided Material Classification Coding Model and Software System for Mechanical Product</b>	
Z.K. Li, T. Bai and L.M. Qiu	923
<b>Machine Performance Degradation Recognition Using Locality Preserving Projections and Clustering Approach</b>	
J.B. Yu, J.P. Liu, M.F. Liu, J.T. Yin and Y.G. Wang	929
<b>Design of Bionic Flapping-Wing Propulsion Device</b>	
R. Xing, B.W. Song, Z.Y. Mao and H. Ding	935
<b>Robust Control of Double-Machine Wind Turbines with DFIG Using Hamiltonian Energy Method</b>	
B. Wang, X.L. Yuan and J. Zhu	941

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