### **Table of Contents**

#### **Preface and Conference Organization**

# **Chapter 1: Kinematic, Dynamic and Static Analysis in Machine Building and Construction**

Y.J. Zhao, F.S. Huang and Z.L. Zhao	3
Dynamic Characteristics Investigation on Hydraulic System of Array Nail Machine Based on Simulink	
X.J. Qi, Z.Y. Qin and Y.J. Zhao	7
Dynamic Mechanical System Analysis-Empirical Research of Wooden Window Enterprise J. Zhao, X. Xu and Y.L. Ding	11
<b>Dynamic Modeling of Robot Systems with Cylindrical Joint Based on Vector Bond Graph</b> Z.S. Wang, Y.Y. Tao and X.M. Xie	17
<b>Dynamics of ADAMS Simulation for Continuous Zoom Infrared Lens and Analysis</b> L. Yang, Y. Zhang, M.Z. Li and X.H. You	22
Hydrodynamic Responses Analysis for Tension Leg J.M. Chen, X.Y. Kong and Y. Sun	27
Kinematics and Dynamics Simulation of Feed Mechanism of Sewing Machine Based on SimMechanics X.Z. Dang, L.S. Zhou and B.C. Ding	31
Research on Damping Properties of Seperated and Manually Adjustable Shock Absorber	<i>J</i> 1
Oriented to Damping Matching D.F. Song, G.K. Yang and C.X. Du	36
Research on the Application of Body Force in Calculations for Submarine Powering Performance	41
X.J. Lv, Q.D. Zhou and Z.Y. Xie Structural Design and Dynamic Analysis of Anti-Reversion Mechanism of Feed Mechanism	41
L. Yang, Z.L. Sun, Y.N. Wang and Q.L. Zhao	45
Study of Aerodynamic Drag Reduction on a Compact Electric Vehicle J. Wang, H. Zhu and Z.G. Yang	51
The Research on Numerical Simulation of the Centrifugal Pump and Configuration	
Perfected Y.J. Ma, J.T. Zhao and Y.M. Yang	56
Vibration Parameter Analysis of Non-Harmonic Vibration Conveyor Z.Y. Qin and Y. Liu	61
A Rigidity and Flexibility Coupling Dynamic Analysis Method Applied in the 6-6 Stewart	
Parallel Mechanism X. Han, C. Li and X.G. Ma	65
Analysis on Critical Speeds of the Rail Vehicle Based on SIMPACK L.H. Wang, A.N. Huang and G.W. Liu	69
<b>Design of Brake Pedal Stroke Simulator for Hybrid Electric Car</b> C. Wang, H.W. Liu, L. Yao, Y.B. Wang, L. Chu and Y.S. Zhang	73
<b>Drop Dynamic Simulation for Landing Gear via SimMechanics</b> Y.L. Fu, P. Zhang, S.J. Li and Z.F. Li	77
<b>Dynamic Analysis of Silent Chain Drive System for Hybrid Car</b> Z.M. Feng, J.L. Li and G.W. Liu	84
Failure Effects of Anti-Hunting Damper on High-Speed Train J.M. Zhang and L.W. Man	90
Fatigue Life Analysis for Motor Base of Vehicle Glass Lifter Based on ANSYS Workbench J.G. Liu, Y.L. Liu and X. Li	95
Kinematics Simulation for the Baler's Locking Device Based on ADAMS P. Xu. M. Cheng, I. Liu and X.P. Xie	100

Model and Dynamics Analysis of a New Oscillator under Gravity L. Liang, T. Guo, S.Q. Su and B. Bai	105
Parameter Optimization Design and Stress Analysis of ANSYS in Inclined Gear Transmission System of Wind-Turbine	100
Z.B. Yang, Y.F. Zhu and D.L. Chen	109
Rigid-Flexible Coupling-Based CNC Machine Tool Feed Drive System Co-Simulation D.X. Zhao, Y. Yang, W. Xu, G.L. Ding and L. Peng	115
Structure Transient Response Analysis of Coal Mine Life-Saving Capsule under Blast Shock Condition	120
X.H. Mao	120
<b>Design and Research on the Clutch Mechanism in Modern Offset Printing Machine</b> F. Wang and H. Chen	128
A Finite Element Analysis for Grasping Sand Force of Grab-JDPA8D S.Q. Xin, J.G. Jiang, L. Luo, F.C. Zhao and J. Li	133
Optimization Design of Sugarcane Planter's Frame Based on ANSYS Workbench and UG J. Li, M.H. Pu, Y.H. Lu, Z.L. Li, L. Xu and M. Li	137
Optimization of the Hinge Point Position of Luffing Mechanism in Reach Stacker for Container	1.40
M.H. Tian and S.C. Hu	142
Optimze the Structure of Impeller for Stirred Bioreactor L.K. Zhu, B.Y. Song, Z.L. Wang and Y.K. Wang	148
Study on Motion Parameters of Tamping Operation T.Y. Zhou, B. Hu, B. Yan and Y.X. Peng	154
Study on Motion Simulation of HOV F. Liu and D.F. Han	158
The Tensile Test Study of the Flange Repaired Reinforcement Laminates N. Zheng, Y. Wang and X.X. Chen	163
Adaptable Dynamic Design Platform Based on CAX/PDM System Y. Li, T.Y. Wang and Y.M. Ge	168
<b>Bending Analysis of Cantilever Micro-Beams Based on Strain Gradient Elasticity Theory</b> S.L. Kong	172
<b>Dynamic Modeling and Analysis of Tank Vehicle under Braking Situation</b> Y. Wan, L. Mai and Z.G. Nie	176
Experimental Study of Dynamic Properties of Mechanical Joint Surfaces Y.Z. Sun, Y.H. Li, H.T. Liu and Z.S. Liu	181
Finite Element Analysis of Dynamic Property of Agricultural Vehicle Frame S.L. Kong	186
Finite Element Dynamic Analysis of the Shafting of Transmission-Laser-Scanning-Emitter J. Cheng, Y. Wang and C.J. Cui	190
Finite-Element Analysis of 10kN Deadweight Force Standard Machine Reverse Frame L.J. Yu, C.J. Xu and X.C. Zhang	194
Grinding Machine Column Structure Dynamic Optimization Y.M. Ge, Q. Li, Y. Li and X. Wang	198
Identification of the Former and after Transformation of a Steel Headframe H. Wu and J.F. Jiao	203
Optimization Analysis of Box-Behnken Experiment Design Based on Husker Capacity Y. Wu, J.L. Ruan and W.W. Wu	207
Optimization Design of Bolted Connections Based on Contact Stress Z.X. Cui, Y.P. Guo, Z.J. Zhang, Y.Z. Gong and S.H. Qian	211
Research on Crushing Performance of Sandwich Panel with V-Type Corrugated Core under Shock Load L. Chen, X.Z. Xie, Z. Li and Y.Q. Jin	216
Size Effect on Natural Frequency of Cantilever Micro-Beams Based on a Modified Couple Stress Theory	
S.L. Kong	221
The Theoretical Analysis of Chain Drive System for Heavy Duty Apron Feeder J.Z. Huo, S.Q. Yu, T. Li and J. Yang	225

N. Surashev, M. Dudkin, D. Yelemes and A. Kalieva	229
A Study on Co-Simulation for Rotating Mechanism of Bogie Separation Device Based on ADAMS/MATLAB C.L. Liu and G.S. Ren	233
Comparison of Two Six-Bar Mechanisms Based on Simulation for Optimization K. Lv, Y. Yuan, W. Huang and D. Guo	237
Dynamical Analysis of Automobile Based on Principle of Optimal-Power Shift J.W. Li	242
Feasibility Design of Derrick Anchor Pile Piling Position Based on ANSYS Optimization J. Zhu, L.Q. Zou and H.L. Fu	246
The Dynamic Simulation Research of Multi-Joint Robot Based on ADAMS L. Qi, X.J. Wang, B. Hua and Y.F. Ding	251
Study on Tooth Profile of Silent Chain Based on Friction Reducing Y.N. Xue and X.H. Shen	255
Dynamic Analysis in Grinding Head of Roller Grinding Machine J.L. Cao and Y. Luo	259
Influence of the Fins on the Static Stability of Autonomous Underwater Vehicle M.L. Huang, Y.H. Liu, H.W. Zhang and B.S. Duan	263
Dynamic Response Analysis of FPSO Based on SESAM J.M. Chen, Y. Sun and P. Zhang	267
<b>Load Spectrum Compilation Based on Nonparametric Statistical Extrapolation</b> Z.Q. Xu, H.J. Wang and M.Y. Yao	271
Determination Method of a Proper Small-Load-Omitting Criterion Based on the Extreme Load	
Z.Q. Xu Static Analysis and Optimization of the Slide's Structure of Slider-Crank Type Cluster well	278
Pumping Unit(SCTCWPU) W. Sun, S.M. Wang, T. Ren and W.T. Qu	284
The Poincar´e Bifurcation of the Non-Hamiltonian Quadratic Integrable System with One Center and One Unbounded Homoclinic Loop Formed by Cubics Y. Song	288
Chapter 2: Vibration, Noise Analysis and Control	
Chapter 2. Vibration, Noise Anarysis and Control	
Balance and Vibration Analysis on an in-Line Five Cylinders Engine S.Y. Li, Z.C. Yuan, J.Y. Ma, M. Liu and Y.X. Yu	297
Balance and Vibration Analysis on an in-Line Five Cylinders Engine	297 302
Balance and Vibration Analysis on an in-Line Five Cylinders Engine S.Y. Li, Z.C. Yuan, J.Y. Ma, M. Liu and Y.X. Yu Brief Analysis of Torsional Vibration of Vehicle Engine L.R. Zhang CFD Simulation and Computation of Pressure Loss of Resistance Muffler	
Balance and Vibration Analysis on an in-Line Five Cylinders Engine S.Y. Li, Z.C. Yuan, J.Y. Ma, M. Liu and Y.X. Yu Brief Analysis of Torsional Vibration of Vehicle Engine L.R. Zhang	302
Balance and Vibration Analysis on an in-Line Five Cylinders Engine S.Y. Li, Z.C. Yuan, J.Y. Ma, M. Liu and Y.X. Yu  Brief Analysis of Torsional Vibration of Vehicle Engine L.R. Zhang  CFD Simulation and Computation of Pressure Loss of Resistance Muffler J.W. Ren, Q.Y. Jiang and Z. Wang  Estimation for Variation of the Damping Force Induced by the Expansive Movement of Shock Absorber  G.M. Kim, S.H. Yun and S.D. Choi	302
Balance and Vibration Analysis on an in-Line Five Cylinders Engine S.Y. Li, Z.C. Yuan, J.Y. Ma, M. Liu and Y.X. Yu  Brief Analysis of Torsional Vibration of Vehicle Engine L.R. Zhang  CFD Simulation and Computation of Pressure Loss of Resistance Muffler J.W. Ren, Q.Y. Jiang and Z. Wang  Estimation for Variation of the Damping Force Induced by the Expansive Movement of Shock Absorber	302 307
Balance and Vibration Analysis on an in-Line Five Cylinders Engine S.Y. Li, Z.C. Yuan, J.Y. Ma, M. Liu and Y.X. Yu  Brief Analysis of Torsional Vibration of Vehicle Engine L.R. Zhang  CFD Simulation and Computation of Pressure Loss of Resistance Muffler J.W. Ren, Q.Y. Jiang and Z. Wang  Estimation for Variation of the Damping Force Induced by the Expansive Movement of Shock Absorber  G.M. Kim, S.H. Yun and S.D. Choi  Research on Vibration Isolation Parameters of Double-Deck Isolation System of Heat Water Pump	302 307 312
Balance and Vibration Analysis on an in-Line Five Cylinders Engine S.Y. Li, Z.C. Yuan, J.Y. Ma, M. Liu and Y.X. Yu  Brief Analysis of Torsional Vibration of Vehicle Engine L.R. Zhang  CFD Simulation and Computation of Pressure Loss of Resistance Muffler J.W. Ren, Q.Y. Jiang and Z. Wang  Estimation for Variation of the Damping Force Induced by the Expansive Movement of Shock Absorber G.M. Kim, S.H. Yun and S.D. Choi  Research on Vibration Isolation Parameters of Double-Deck Isolation System of Heat Water Pump  X.J. Kong, E.M. Song and C.Z. Chen  Shaking Table Test of Muti-Story Subway Station Considering Soil-Structure Interaction S.W. Wang, Y.M. Zhou and S.Y. Mi  Study on Rational Use of the Sucker Rod String Vibration Energy Mechanism S.L. Wang, N.Y. Bai, M.X. Feng and H.Y. Zhang	302 307 312 316
Balance and Vibration Analysis on an in-Line Five Cylinders Engine S.Y. Li, Z.C. Yuan, J.Y. Ma, M. Liu and Y.X. Yu Brief Analysis of Torsional Vibration of Vehicle Engine L.R. Zhang CFD Simulation and Computation of Pressure Loss of Resistance Muffler J.W. Ren, Q.Y. Jiang and Z. Wang Estimation for Variation of the Damping Force Induced by the Expansive Movement of Shock Absorber G.M. Kim, S.H. Yun and S.D. Choi Research on Vibration Isolation Parameters of Double-Deck Isolation System of Heat Water Pump X.J. Kong, E.M. Song and C.Z. Chen Shaking Table Test of Muti-Story Subway Station Considering Soil-Structure Interaction S.W. Wang, Y.M. Zhou and S.Y. Mi Study on Rational Use of the Sucker Rod String Vibration Energy Mechanism S.L. Wang, N.Y. Bai, M.X. Feng and H.Y. Zhang Study on the Optimization of the Double-Layer Hybrid Vibration Isolation System Based on the LQR Algorithm	302 307 312 316 321 325
Balance and Vibration Analysis on an in-Line Five Cylinders Engine S.Y. Li, Z.C. Yuan, J.Y. Ma, M. Liu and Y.X. Yu Brief Analysis of Torsional Vibration of Vehicle Engine L.R. Zhang CFD Simulation and Computation of Pressure Loss of Resistance Muffler J.W. Ren, Q.Y. Jiang and Z. Wang Estimation for Variation of the Damping Force Induced by the Expansive Movement of Shock Absorber G.M. Kim, S.H. Yun and S.D. Choi Research on Vibration Isolation Parameters of Double-Deck Isolation System of Heat Water Pump X.J. Kong, E.M. Song and C.Z. Chen Shaking Table Test of Muti-Story Subway Station Considering Soil-Structure Interaction S.W. Wang, Y.M. Zhou and S.Y. Mi Study on Rational Use of the Sucker Rod String Vibration Energy Mechanism S.L. Wang, N.Y. Bai, M.X. Feng and H.Y. Zhang Study on the Optimization of the Double-Layer Hybrid Vibration Isolation System Based on the LQR Algorithm G.F. Liu, S.L. Zhang, Q. Xie and J. Wu The FEA Research of Noise Interference Suppression by Magnetic Flux Leakage	302 307 312 316 321 325 329
Balance and Vibration Analysis on an in-Line Five Cylinders Engine S.Y. Li, Z.C. Yuan, J.Y. Ma, M. Liu and Y.X. Yu Brief Analysis of Torsional Vibration of Vehicle Engine L.R. Zhang CFD Simulation and Computation of Pressure Loss of Resistance Muffler J.W. Ren, Q.Y. Jiang and Z. Wang Estimation for Variation of the Damping Force Induced by the Expansive Movement of Shock Absorber G.M. Kim, S.H. Yun and S.D. Choi Research on Vibration Isolation Parameters of Double-Deck Isolation System of Heat Water Pump X.J. Kong, E.M. Song and C.Z. Chen Shaking Table Test of Muti-Story Subway Station Considering Soil-Structure Interaction S.W. Wang, Y.M. Zhou and S.Y. Mi Study on Rational Use of the Sucker Rod String Vibration Energy Mechanism S.L. Wang, N.Y. Bai, M.X. Feng and H.Y. Zhang Study on the Optimization of the Double-Layer Hybrid Vibration Isolation System Based on the LQR Algorithm G.F. Liu, S.L. Zhang, Q. Xie and J. Wu	302 307 312 316 321 325

The Simplified Calculation Methods on Parallel Story Isolation Seismic System with Rubber and Sliding Supports	
S.W. Duan, M. Fei, X. Tan and W. Huang	344
The TLCD U-Tube Liquid Sloshing Finite Element Modal Analysis J. Sun, G.Y. Li, L. Liu and Q.B. Liu	350
Vibration Reduction of Pipe Systems Using Phononic Crystals S.Q. Zhao, B.X. Liu, Y.Q. Wang and H.L. Chen	354
An Experiment Investigation to the Radial Tire Noise G. Tong, Q. Wang, K. Yang and X.C. Wang	361
Analysis of Car Interior Noise Induced by Refrigeration System in Air Conditioners M.H. Ji, P. Hu, J. Li and Y.P. Cai	366
Application of Experimental Modal Analysis Method in Researching of Mechanical Structure Dynamic Characteristics Z. Yu and W.Z. Cai	370
Comparative Test Analysis for Determining Dynamic Deflection by Using GNSS/RTK, Trigonometric Leveling and Elevation of Sight Z.P. Liao, Z.J. Wang and W.Y. Zhao	374
Discussion on Calculation Methods of Damping Ratio of the Tower Equipment Z.Y. Duan and R. Li	379
Free Vibration Model and Characteristics of Planetary Gear Sets H.J. Yue, Y.F. Liu, G. Shi and X.Y. Xu	383
Gearcase's Modal Analysis Y.P. Cai, J. Li, M.H. Ji and X.H. Lin	389
Matching Analysis on Main Parameter for the Shock Absorber Development Process G. Liu, S.Z. Chen and H.B. Ren	393
Measurement and Research on Stage Machinery Noise in Theatre J.J. Zhang, Y.J. Jiang, Z.B. Su and H. Ren	399
Research Development of the Anti-Micro Vibration of Precision Equipment X.H. Dong, Z.M. Hao, B. Jia and M.Y. Hou	403
Simulation on Hydraulic-Mechanical Coupling Vibration of Cold Strip Rolling Mill Vertical System H.S. Liu, J. Zhang, K.F. Mi and J.X. Gao	407
Study on Vibration Reduction Design of Steel-Composite Material Hybrid Mounting for Ship Based on Material Selection Optimization W. Wang, L.Y. Chen and Y.F. Zhang	415
The Bending Vibration Simulation of Fixed Arm Crane Luffing H. Wang, Y. Wei and H. Li	425
The Motional Stability Analysis and Optimal Design of Built-In Chatter Suppression Boring Bar	
L.Y. Zhang, J.H. Li and J.T. Hu  The Vibration Response of Large Underground Powerhouse under the Action of	430
Endogenous Power Station J. Wang, L.X. Zhang and T. Guo	436
Recognition of Noise Source on Tandem Vibratory Roller L.M. Li, Z.X. Feng and L.P. Zhao	439
Dynamic Simulation and Vibration Testing Analysis of Large-Scale Wind Turbine G.Y. Hu, W.L. Sun and Q. Yu	444
Research on State Monitoring Method of Coal Shearer Vibration D.J. Zhang, D. Liu, X.Y. Zhao, G.H. Xue and M. Wu  Sixty Elements of the Coal Shearer Vibration D.J. Zhang, D. Liu, X.Y. Zhao, G.H. Xue and M. Wu	449
Finite Element Modal Analysis of Large-Scale Composite Wind Turbine Blade Y.Q. Zheng, R.Z. Zhao and H. Liu	453
Research on Performance Parameters of the Piezoelectric Vibrator in Ultrasonic EDM System H.B. Wang, Z.R. Li and C.H. Sun	458
Research on Vibration Characteristic of Tamping Device Based on SIMULINK B. Hua, Y.L. Chi, X.J. Wang and Y.F. Ding	462

Ground Resonance Analysis of Bearingless Rotor Dynamic Stability Based on Simplified Model	
L.J. Wei, S. Li and X.C. Li	466
Natural Frequency Sensitivities of Lap Joint on Clamped-Clamped Beam S.H. Yun, S.D. Choi and G.M. Kim	473
The Influence of the Cable Parameters on Vibration Characteristics of a Long-Span Suspension Bridge	176
H.Q. Zhu and X.D. Zhang  Spatial Vibration Characteristics of Four-High Rolling Mills	476
Y.J. Zheng, G.X. Shen, Y.G. Li, M. Li and H.M. Liu	481
<b>Chapter 3: Mechanical Transmission. Theory and Applications</b>	
The Test Research of High Precision FA45-29 Type Prototype T.M. Guan, L. Xuan, L. Lei and C.X. Lv	487
Concept Designs of Headstock Gear for Large-Span Gate X. Peng, C.L. Wu and C.S. Kim	492
<b>Design and Analysis of a Novel Structure Form of Electro-Mechanical Transmission</b> J.T. Gai, S.D. Huang, G.M. Zhou and Y. Yuan	497
Mathematical Model and 3D Modeling of Involute Spiral Bevel Gears for Nutation Drive Z. Lin and L.G. Yao	503
The Design and Strength Calculation of Combination Synchronous Pulley Based on the Overload Protection	
S.Q. Huang and Z.F. Li	507
<b>Tooth Surface Equations of Offset Orthogonal Face Gear and Simulation</b> X.Y. Peng and Q. Li	512
Chapter 4: Fluid Machinery	
<b>Application and Evaluation of Non-Metallic Pipeline in Lamadian Oilfield</b> Y.X. Zhou, B. Chen and J.Y. Li	521
Experimental Study on the Eligibility Percentage of Fuel WTD Valve Flow Test of X Engine Y.G. Xu and Q. Wang	526
Frequency Conversion Constant Pressure Water Supply System Controlled by a Fuzzy Controller	522
S. Liu and H.Y. Li  Influence of Groove Molded Lines on the Lubrication Performance of Water-Lubricated Spiral Groove Throat Pagings	532
Spiral Groove Thrust Bearings X.Y. Liu and J.S. Wang	538
Micro Thermal Elastohydrodynamic Lubrication Analysis of Power Law Water-Based Ferrofluid Journal Bearing	543
X.J. Shi and Y.Q. Wang  Numerical Research of Pressure Drop in Kenics Static Mixer  G.H. Chen and Z.L. Liu	543 547
Numerical Simulation for Transient Flow of Field of Water Jet Based on Euler Method F. Dong, S.C. Xing and C.H. Guo	551
1. Bong, s.e. ring and e.m. odd	551
Numerical Simulation of the Influence of Outer Chamber Height on Flow Field in Circumfluent Cyclone Separator	
Circumfluent Cyclone Separator J.H. Duan and X.X. Guan	555
Circumfluent Cyclone Separator	555 560
Circumfluent Cyclone Separator J.H. Duan and X.X. Guan  Research on Hydraulic Servo Wobble Board Wave Machine Y. Li, Y.J. Liu and J.B. Liu  Research on Resistance Characteristics of Hydraulic Oil through T-Type Equal Diameter Duct	560
Circumfluent Cyclone Separator J.H. Duan and X.X. Guan  Research on Hydraulic Servo Wobble Board Wave Machine Y. Li, Y.J. Liu and J.B. Liu  Research on Resistance Characteristics of Hydraulic Oil through T-Type Equal Diameter	

The Hydrodynamic Analysis of Hybrid-Driven Underwater Glider G. Xiong, J. Jiang, Y.T. Wu and J. Chen	577
The Performance Simulation of One-Way Inlet Valve of Reflux Scavenging Free Piston Engine	
Z.X. Li, Z.C. Yuan, J.Y. Ma and S.Y. Li	582
"Reversible" Machine with Applications in the Field of Fluids A. Detzortzis, N. Băran and S. Carnaru	588
<b>An Energy-Based Similarity Subgrid-Scale Model in Two-Dimensional Planar Shear Flow</b> Y.X. Zhang and S.P. Wu	594
Analysis and Elimination of Common Faults of Hydraulic System H.Y. Wang, L. Ma and X.F. Liu	601
Calculation of the Coefficients of Ships Resistant Force in MMG Model Based on CFD L.J. Yang and Y.H. Tao	605
Mechanical and Hydraulic Joint Modeling and Simulation about Elec-Pump Y.L. Fu, Z.F. Li, P. Zhang and H.M. Chen	614
Motion Simulation of Desulfurized Fly Ash in Dense Flow Absorber Based on Computational Fluid Dynamics	(21
Q. Jia, C.Y. Song, Z.S. Tong, D.H. Zhang, K.H. Chen, X.N. Lu and Y. Zhang  Numerical Evaluation of Two-Phase Flow in Orthogonal Pipe under High Gravity	621
Y.T. Liu, B.Y. Song and Q.P. Yao	626
Numerical Predictions and Experimental Verifications for Hydrodynamic Performance of Tidal Stream Turbine  P. Guo, D. Z. Wong and L.W. Zhou	630
B. Guo, D.Z. Wang and J.W. Zhou  Numerical Predictions and Experimental Verifications for the Hydrodynamic Performance	030
of Horizontal Axis Marine Current Turbine R.J. Fan, H.C. Gao and J.R. Chaplin	635
Numerical Simulation of Combined Mixing and Separating Flow in Cannel Filled with Porous Media	
R.B. Khokhar, Y.K. Chen, Y. Xu and R.K. Calay	639
Research of the Refrigeration System of Atmospheric Bridge Type Water Steam Jet Vacuum and Engineering Application Y.F. Feng, J.H. Wei and H. Wei	648
Research on Design of High-Efficiency Fire Turbopump Supplying Water from Low-Level Water Resources	
L.J. Wang, Y. Yuan and L. Xue  Shallow Water Procking Ways Loads on Vertical Cylinders	652
Shallow Water Breaking Wave Loads on Vertical Cylinders L. Xu, S. Gao, D.Z. Wang and N. Barltrop	659
Similarity Laws and Model Test Approaches to Determine Hydrodynamic Performance of a Marine Turbine	((5
W.C. Shi, D.Z. Wang, M. Atlar and D. Wang The Hydrodynamic Analysis of Propeller Based on ANSYS-CFX	665
D.Z. Wang, D. Wang, L. Mei and W.C. Shi	673
Modeling and Its Error Analysis for Load-Sensing Steering System H.F. Wang, X.G. Ren and Y. Rong	678
Optimization and Flow Analysis of Ducted Tidal Stream Turbine J.W. Zhou, D.Z. Wang and Y.N. Li	683
Numerical Investigation on Water Flow in Engine Cooling-Water Jacket Z.X. He, L. Zhang, Z.C. Jiang and Z. Shao	689
Chapter 5: Thermal Engineering Theory and Applications	
A Temperature Field Model of Complicated Thermal Analysis System Based on Thermal	
Network Method Z.J. Lin, J.H. Yuan, Y. Li, X.J. Yan, S.M. Zhou and R.J. Chen	695
Blow-up of Solutions for a Semi-Linear Heat Equation with Variable Exponents J.B. Zhang and Y.Z. Gao	699

Calculation of Heat Transfer Coefficient of Wavy Fin-and-Tube Heat Exchanger of Air Source-Heat Pump	
Y. Wang, J.R. Li and X.P. Kong	703
Evaporation-Air-Cooled Heat Exchanger Heat Pipe Research X.T. Zhao	707
Experimental Study on Adsorption Water Tube from Atmosphere Using Solar Energy H.B. Liang and H.Z. Zhao	712
Finite Element Anylasis and Calculate on the Temperature Field of the Thermal Vibration Screen's Boxes	
X.Y. Liu	716
Impact Analysis of Three Types of Insulation Materials Cold Heat Transfer in the Pipeline S.W. Wang, L. Lin and G.Z. Wu	720
Influence of the Structure and Material Parameters on the Temperature Field in a Vacuum Near-Infrared Hot-Pressing Furnace T.Y. Shi, L.G. Shen, M.J. Li, J. Zhou, Y. Hu and Y.L. Ji	724
Multi-Objective Optimization Methods of Plate Solid Oxide Fuel Cell's Temperature System	
X. Liu, X.H. Hao, X.H. Yang, A.M. An and H.C. Zhang	728
Real Thermodynamic Energy and Enthalpy on High Pressure Pneumatic System Based on Improved Virial Equation F.B. Yang, D.W. Ma and G.G. Le	734
<b>Temperature Field Research of Intelligent Van Tobacco Baking Room</b> J.Y. Wei, D.B. Zhang, J.Q. Luo, F. Wu, J.L. Zhang, X.D. Hu and F. Wang	739
Twice Fuel Injections Affect to Combustion and Performance of Diesel Engine M.Y. Di and Y. Yao	744
Analysis on Thermal Mechanical Coupling of Buried Thermal Pipeline Based on ADINA M. Yang, X. Liu and Y.H. Chen	751
Numerical Simulation of Heat Flow in a Vehicle Cabin Using the Personal Air Conditioning	
System Y. Zeng, M. Katsuta and T. Anamizu	755
Thermal Characteristics Analysis and Engineering Application of Machining Center Ram Based on ABAQUS P. Luo, Z.P. Hua, S.S. Chen and C. Dai	762
Thermal Error Modeling of Precision Positioning Stage J.S. Wang and M.C. Feng	767
The Analysis of the Heat Transfer into Reactor Walls in the Thermal System and the Verification	
S. Honus, O. Němček and D. Juchelková	771
Optimization of the Cold-End System of the 1000MW Ultra-Supercritical Units by VB L.K. Zheng, C. Chen, D.M. Xie and H.L. Zhang	778
Chapter 6: Power Engineering	
The Analysis and Discussion of the Actual Case about the Differential Protection Malfunction Caused by the Transient Exciting Current of Large-Scale High-Voltage Main Transformer at the Time of Switching	
Y. Gao and G.Y. Liang	785
Analysis on De-Icing Methods for 4-Bundle 500kV Transmission Lines S.X. Liu and Y.H. Guo	790
Simulation and Experimental Studies on Magnetic Valve Controlled Reactor G. Liu, G.Y. Li and W. Li	795
Index of Wind Power Grid System Based on Multi-Index Weighted Stability Method J.Y. Xu, W.F. Qi and Y. Teng	799
Application of Corrected Clarke's Transformation to the Solution of the Modal Analysis of Un-Transposed Transmission Lines Q.C. Zhang, P. Jia, X.H. Jia and C. Wei	803

Optimization of Distribution Network Voltage Deviation Control Measures Based on LCC	
<b>Theory</b> Y.T. Fan, K.P. Liu, X.Q. Chen, X.N. Tong and J. Le	807
Research on Electric Field Characteristics and Insulation Performance of the High-Voltage GIS Isolation Switch	
X.H. You, Y. Zhang, W.L. Li and Z.W. Wang	817
Study on a New Low-Voltage Residual Current Protective System X.H. Zhang and X.D. Han	822
The New Type of Reactive Power Compensation Device under Direct Current Control and Indirect Current Control Y. Han, X. Zhang and P.P. Yang	826
UPFC Device Application on Power System Oscillations to Improve the Damping Performance	
A.N. Hussain, F. Malek, M.A. Rashid, L. Mohamed and I. Daut	830
Wind and Solar Micro-Grid Including Energy Storare System L.X. Lv and Y.X. Jin	838
Analysis and Research of Short-Circuit Fault for SRD Based on Maxwell and Simplorer L. Xiao, H.X. Sun, W.P. Liu and P.P. Zhang	842
Study of Influence on Power System Voltage Stability of Wind Farm Power Output Fluctuation	
J.Y. Xu, W.F. Qi and Y. Teng	846
Chapter 7: Reliability of Machines and Mechanisms	
Fatigue Strength and Life Estimation Methods Using Critical Distance Stress Theory M.A.B.A. Wahab, N. Jie, T. Hattori and M. Yamashita	853
<b>Mechanics Properties Influence on Ball Mill Rotator through Sliding Shoes Position Change</b> Q.Y. Men and G.W. Cheng	864
Performance Measure Approach Based Multidisciplinary Design Optimization of Gear Transmission J. Zhang and B. Zhang	868
Prognostics and Health Management of Mechanical Systems J. Chang and F. Wei	872
Reliability Analysis on Gearbox Transmission System of Agricultural Machinery Chassis Based on FTA	976
L.X. Zhang, S.R. Liu, W.L. Li and X.J. Meng  Research on the Formula of the Height of Bearing Push-Extend under-Reamed of the Push-  Extend Multi-under-Reamed Pile	876
Y.M. Qian, X.L. Liu and R.Z. Wang	883
Study on Fault Diagnosis Tree Generation Technology Based on Correlation Matrix W.W. Wang	887
The New Approximate Calculation Method for the First Order Reliability G.L. Hao, W.Z. Wang, X.L. Liang and H.B. Wang	891
Analysis of Engine Camshaft Bearing Loosening Fault Based-on Model Simulation and Vibration Signal	006
C.Y. Du and F.F. Yu  Assessing the Reliability of Power Transformer by Quantitative Fault Tree Analysis	896
J.F. Sihite and T. Kohda  Components Importance Analysis Fault Tree of Power Transformer of Gi Simangkuk	901
Switchyard in Indonesia J.F. Sihite and T. Kohda	907
A Collaborative Approach for Multidisciplinary Systems Reliability Design and Optimization J. Zhang and B. Zhang	911
Fuzzy Synthetic Evaluation on Operation Conditions of Power Equipment Based on	- · <del>-</del>
Optimized Weights Q.C. Zhang, C. Wei, X.T. Zhang and X.H. Jia	915

Bayesian Credible Limits of Failure Rate and its Applications in Reliability Engineering M. Han	919
Chapter 8: Sensor Technology	
A Study of Tracking System Using Multiple Emitter Towers Y. Sun, T. Ma, C.Y. Han, J. Ross and W. Wee	927
Broken Rice Detection Based on Transmission Power Measurement Using a Microstrip Wide-Ring Sensor H.K. Mun, K.Y. You and M.N. Dimon	936
Cooperative Positioning Based on Hybrid Information X.H. Zeng, H.T. Hou, Q. Chang, Q. Li and W.P. Wang	940
<b>Cure-Induced Strain Development in an RTM Epoxy Resin as Monitored by Fiber Bragg Grating Sensors</b>	
X.Q. Li, Z.L. Zhang and X.S. Yi	947
Chapter 8: Sensor Technology	
Fast and High Precision Thermoelectric Potential – Temperature Conversion Method for Aerodynamic Heating Control Systems D.F. Wu, S. Wu, Y.W. Wang, Z.T. Gao and J.L. Yang	955
Forest Fire Detection System Based on Zigbee Wireless Sensor Network Y.L. Zhu and L.Q. Xie	961
Simulation of Gold Nanoparticles Aggravating MEMS Cantilever Optical Static Detection Biochip Y.T. Ge and X.T. Yin	966
System Design of a Fifth-Order Close-Loop $\Sigma\Delta$ Accelerometer W. Lang and P.Y. Wan	971
The Research of Straight Pipe Viscometer E.P. Zhang, B.S. Liu, X.M. Liu, M.J. Huang and H.W. Ren	976
A Torque Measuring Method for Robot Joints with Harmonic Drives X.N. Pan, H.G. Wang and Y. Jiang	981
An Overview of Optical Voltage Sensor Based on Pockels Effect L.J. Li, W.H. Zhang, H. Li and R. Pan	987
Design of Remote Test System for Fiber Bragg Grating Based on LabVIEW C.T. Liu, Y. Zhang, Z.X. He and H.C. Li	992
Fiber Grating Sensor for Hydrogen Detection Using Neural Networks J. Xiao and W.M. Qi Influence of Einzel Lens Structure on the Performance of a Microcolumn Fabricated	997
through MEMS Technology O.K. Suwal, A. Sharma, Y.B. Lee, T.S. Oh, D.W. Kim and H.S. Kim	1001
Millimeter Wave Radar for Automotive Blind Spot Detection System S.X. Li, Y.X. Cao and X. Bi	1008
Mobile Sensor Navigation in Wireless Hybrid Sensor Networks C.Y. Lee, F.T. Lin and C.S. Yang	1013
MSAHRS Online Calibration Method Aided by Star Sensors Z.Y. Zheng, Y.B. Gao and K.P. He	1017
Research on the Performance of P-i- n Type GaN Ultraviolet Photoelectric Detector Y.Y. Sun, S.B. Liu, J.Y. Ren, Y.B. Zhong and Q.R. Jia	1021
Sensor Noise Compensation for a Remote Controlled Sprayer Using EKF J.Y. An, I.N. Lee, K.H. Kim and K.H. You  Sheel: Reliability of Comb Accelerameter.	1025
Shock Reliability of Comb Accelerometer Y.B. Jia, S.T. Wang, Q.W. Huang and Y.L. Hao Study on Fast and Precise Measurement of Three-Dimensional Displacement Using Hall	1030
Sensors Y.T. Sun, J.C. Hu, Y. Zhu and L.M. Chen	1034

The Analysis on the Tracking Characteristics of Electromagnetic Sensor C.G. Suo, S. Su and W.B. Zhang	1039
The Application of Wireless Sensor Network in Coal Mine Monitoring Y.L. Zhu and L.Q. Xie	1043
The Establishment of the Fingerprint of Bangduling Oral Liquid by the High Performance Liquid Chromatography-Diode Array Detector H.J. Wang, T.Z. Zhou, H. Jiang, D. Yao, T.L. Wang, H. Zhang and Y.J. Hou	1047
The Key Technology of Seeking North's by GAT Magle Gyro Stationits and Application in Underground Engineering	
Z. Shi and Z.Q. Yang  A Localization Method for WSN Based on Variable Transmission Power G.X. Huang and Z.L. Shan	1051 1055
Node Location Model and Simulations in Matlab for Wireless Sensor Networks F.W. Liu and Z.L. Shan	1060
<b>Design of the Wireless Monitoring Unit for Underground Rail Vehicles</b> G.L. Xu, J.H. Rao, K. Yang and T. Wang	1064
<b>Ground Calibration System Design of High-Precision Star Sensor</b> J. Duan, Z.Y. An and X.Y. Sun	1068
Intelligent Turbine Flowmeter for Viscous Oil Flow Measurement L. Xue, L.J. Sun and S.N. Guo	1074
The Course Angle Indicator Based on Magnetic Resistance Sensor H. Sun, P. Cheng, Y. Wang and H.J. Li	1078
The Finite-Element Simulation of the Intra-Body Communication Used in Wireless Body Area Networks  LS. Wy. K. Zhang and R. Ma	1083
J.S. Wu, K. Zhang, S.Y. Zhang and R. Ma  Interrogation Signal Generation for SAW Temperature Sensor T.W. Lee and W.Y. Chung	1083
IP Core Based on the Kalman Filter Algorithm in the FPGA Implementation Z. Xue, L. Quan and X.F. Wang	1093
The Research of Piezoelectric Impedance Technology Applying to the Dynamic Signal Excitation Beam	
J. Zhang, X.W. Zhao, H.M. Tang, X.H. Li, Q.Y. Cai, M.M. Niu, C.R. Tang and Q. Gao	1098
Chapter 9: Measurements, Detection and Fault Diagnosis	
Application of Monitoring the Melt Flow Balance of Injection Molding Process by Using Cavity Pressure Monitoring Technology J.W. Chen and X.F. Peng	1105
By Using SOM Network Visualization Methods for Diesel Engine Fault Diagnosis G.H. Wang and Q.P. Ren	1110
Design of Fiber Distributed Busway Temperature Monitoring System Y. Qin	1114
Research of Underwater Oil Leak and Storage Detection Technique Based on Optical Fiber C.T. Zhang and W.Y. Zhang	1118
Android ECG Detection System Based on the HL7 Standard Y. Sun, J. Song and Y. Ye	1123
Characterization of Body Movement for the Real Time Fall Detection Using Wireless Sensor Module S.H. Kim and D.W. Kim	1128
Design of Wind Turbine Vibration Monitoring System S.B. Wang and W. Gong	1135
Failure Diagnosis of Large Cooling Tower Fan Based on FFT and EMD Analysis Method J.P. Chen, L.X. Huo and H.J. Li	1139
Study on early Warning System of Coal and Gas Outburst X.L. Liu, X.S. Zhao and G.G. Dong	1146
Gear Fault Diagnosis Method Using EEMD Sample Entropy and Grey Incidence W.B. Zhang, Y.S. Pu, J.X. Zhu and Y.P. Su	1151

Intelligent Gear Fault Identification Method Based on Harmonic Wavelet Package Energy Distribution and Grey Incidence	
W.B. Zhang, Y.P. Su, Y.J. Zhou and Y.S. Pu	1155
Roller Bearing Fault Diagnosis Based on IMF Kurtosis and SVM K.H. Zhu, X.G. Song and D.X. Xue	1160
The Corrosion Acoustic Emission Source Location Technique and its New Trend H.S. Bi, Z.L. Li, Y.P. Cheng, I. Isaac and J. Wang	1167
Study of Double-Sided Welding Defect Detection Technique Based on the Method of Magnetic Flux Leakage	
G.G. Dai, W. Cui and X.Z. Wang	1173
The 3D Magnetic Field Analysis of Excitation Unit of Drill Pipe MFL Testing Based on ANSYS Y.L. Ma, L. Lin, K.W. Jiang and X.L. Zhao	1179
Measurement of Thermal Conductivity of Liquid Based on Transient Double-Hot Wire	11/9
Technique	
Z. Shao, Z.X. He, Z.P. Wang and L. Zhang	1183
<b>Development of an </b> <i>In Situ</i> <b> Analyzer for Iron in Deep Sea Environment</b> B. Jin, Z.W. Chen and S.Q. Zhu	1187
A Study on Detection of Biased Gait by Using Acceleration Signal H.J. So, H.Y. Oh, S.H. Kim and D.W. Kim	1192
<b>Defect Identification and Classification for Plasma Display Panels</b> D.H. Cho and S.L. Lee	1197
<b>Design of Test System for X Aero-Engine Synthesis Adjuster</b> Y.L. Zhou, T.H. Zhang and B. Gong	1202
<b>Interharmonic Analysis Algorithm Based on TLS-ESPRIT and Prony's Method</b> R. Chen and Y. Yao	1207
Automatic Monitoring System for Forest Fire Based on Wireless Sensor Network B.H. Zhu and D.Q. Zhu	1211
The Design and Realization of CNC System Test Board Based on STM32 X. Wang, Z. Wang, T.Y. Wang, F.X. Lin and Y.M. Ge	1215
<b>Fault Diagnosability of Momentum Wheel Based on Bayesian Network</b> S.Y. Xie and X.F. Peng	1219
<b>Measurement of Diesel Nozzle Geometry with X-Ray Phase Contrast Imaging Technique</b> Y. Yan, Z.X. He, W.J. Zhong, Z.C. Jiang and Y.N. Fu	1224
Research and Development of Sucrose Supersaturation Soft Measurement System Based on Least Square Support Vector Machine	
Y.M. Meng, G.C. Lu, Q. Zhou, C.W. Qin, H.F. Pang and K.Y. Zheng	1229
Research on Ferroresonance Detection in Small Current Neutral Grounding System Q.C. Zhang, X.H. Jia, P. Jia and C. Wei	1233
Optimal Comprehensive Control of Prevention and Emergency Based on DSR and Probabilistic Insecurity Measurement	
H.D. Liu, W. Feng, A. Chang, W.S. Liu, Q. Li and X.R. Wang	1237
Design and Implementation of the Environment Monitoring System Indoor Based on RFD5800	
C.T. Wang, F.L. Kan and L.G. Zhao	1241
Fault Diagnosis of Steam Turbine Unit for Performance Monitoring Based on Versatile Logical Form W.M. Kan, N.S. Hu, M. Li and W. Yang	1246
Photogrammetry Technology of Three Dimensional Coordinate in the Construction of	1240
Curved Surface J.M. Chen, P.M. Gao, X.D. Hao and C.Y. Lu	1251
Research on Three-Position and Parallel System of Inspecting the Automotive Piston Rings N. Zhao, Z. Wang and T.J. Lan	1255
Online Compositional Analysis of Molten Steel by Laser-Induced Breakdown Spectroscopy L.X. Sun, Y. Xin, Z.B. Cong, Y. Li and L.F. Qi	1260
Manufacture of Online Analyzer of Water in Oil H.J. Liu	1267

Study on Dependability and Repeatability of Measurement Method of Mean Linear Thermal Expansion Coefficients of Glasses	
Y.L. Tian, Z. Cui, C.M. Yuan, X.H. Liang, S.B. Sun and J.Y. Fan	1271
Driving Techniques for Micro Gear Measuring Instrument Y.L. Zhang, Z.M. Zhou, P.S. Jiang and Y. Gao	1276
Precision Analysis of Free-Station Positioning in Total Station H. Sun	1281
Design and Implementation of Linkage Control Module in the Automatic Fire Alarm System	
X.L. Chen	1286
Cylinder Micro Leakage Testing System J.Y. Dai, K.L. Xing and B.H. Xu	1291
<b>Design of Monitoring System for Electric Vehicle Battery Controller</b> D.Z. Wang, P. Yi and Y.P. Li	1296
Fault Diagnosis Method for Marine Engine System Combined with Multiple Clusters Using Label Propagation	
A.P. Zhang, Ğ. Ren, B.Z. Jia, Y.J. Lin and J.D. Zhang	1301
GSM Modem and Industrial Camera Aided Unattended Automatic Fatigue Testing Technology LL Liv. 7.C. Syn. W.M. Zhang, O. Changand LM. Yu.	1206
J.J. Liu, Z.G. Sun, W.M. Zhang, Q. Chen and J.M. Xu  A Nonlinear Heuristic-Optimized Neural Network Modeling Approach for the Prediction of	1306
Natural Disasters Y.Q. Wan and J.Y. Liang	1310
Radar Emitter Signal Feature Extraction Based on Time-Frequency Atom Decomposition J.G. Li, Z.Y. Chen and J. Yang	1317
<b>Design of Combustible Gas Detection System Using Wireless Transmission Technology</b> L.P. Zhen and H.Y. Cao	1321
Prediction of Nonlinear Distortion due to Acousto-Optic Interaction J.L. Wu, H.L. Yu and Z.H. Huang	1325
Monitoring and Diagnostics Systems Application at 35-110 kV Substations A.I. Khalyasmaa, S.A. Dmitriev and S.E. Kokin	1329
Safe Test System for the Turning Vehicles ESP Control Performances on the Lateral Restricted Vehicle System	
J.Z. Zhao, L. Zhang, G.Y. Wang, Y. Chen and Z.F. Zhang	1334
The Vehicle Stability Test System Based on Active Brake Control for Overturning Prevention	
J.Z. Zhao, L. Zhang, Z.F. Zhang, G.Y. Wang and Y. Chen	1340
Particle Swarm Neural Network in Application of Soft Fault Diagnosis of Analog Circuit B.R. Han, S.X. Liu and L.S. Cai	1349
Study on the Application of FPGA in Magnetic Flux Leakage Acquisition System M.G. Chai, X. Hai and X.W. Gong	1354
<b>Design of Multi-Channel Lithium-Ion Battery Test System</b> Y. Cai, J.W. Deng and T.H. Wang	1358
Modeling Dynamic Laser Speckle Patterns of Plant Leaves X. Zhong, X.Z. Wang, P. Farrell, N. Cooley and B. Moran	1363
Study on Oil Pipeline Leakage Detection Based on Stress Wave Detection Technique and	
Wavelet Analysis J. Zhang, X.D. Guan, Y. Sun and X.J. Wei	1368
An Analytical Method of Time Character of Electron Beam Current Density on Transmission Electron Microscope Imaging	1050
X.Y. Zhang and Q.L. Dong  Research of Rolling Bearing Fault Feature Extraction Based on EMD and Choi-Williams	1372
X.C. Wei, Y.L. Tang and T. Chen	1377
<b>Design and Research on the Cigarette Paper Smoldering Rate of PRS-2 Tester</b> W.D. Huang and Y.M. Yu	1382
Engine Knock Detection Based on Time-Frequency Images and Support Vector Machine N. Li and R. Zhou	1387

<b>Research on the Construction Tower Cranes Group State Real-Time Monitoring System</b> F.L. Kan, C.T. Wang and L.G. Zhao	1391
Chapter 10: Electronics/Microelectronics Technology	
40-GHz Pulse Generation Based on Two Cascaded Electro-Absorption Modulators Driven by 20GHz-Sine-Wave Signal C. Hu, Q. Zheng and X.Y. Xiong	1399
A Novel Genetic-Algorithm-Based AMC Structure S.Q. Jiang and Q. Gao	1403
An Efficient Detail-Preserving Random-Valued Impulse Noise Filter J.B. Hu	1407
Analysis of Symbolic Time Series of DC-DC Converter Based on Topological Conjugacy H.M. Xu, Y.G. Jin and L.J. Zhang	1413
Comparatively Study of Coaxial Waveguide and Open Coaxial Cavity Y.C. Xie, J.Y. Shi and X.Y. Ding The Design and Construction of Planar Array Modulation Collimator	1417
The Design and Construction of Planar Array Modulation Collimator L. Lin and H.L. Zhang Application Boundary Element Approach to Compute the Electric Field Intensity of the	1421
Oblique Four-Needle Electrodes M.C. Zang, A.L. Wang and F.P. Liu	1425
Research on Self-Drive of Critical Conduction Mode Power Factor Correction Converters Based on Charge Pump Y.R. Geng and D.R. Gao	1430
Simulation of SPWM in Three-Phase Inverter Based on LabVIEW and Multisim S. Su and W.B. Zhang	1435
The Run-Time Configuration of Operating Parameters for Improved Performances of a Laser Annealing System D. Li, L.R. Yan, W. Zhou, W. Zhang and Q. Wang	1439
The Application and Stimulation Research of PIC Single Chip in Waveform Signal Generator G. Yi	1446
<b>Parameters Optimization of Er</b> <sup>3+</sup> <b>Doped Fiber Amplifier by Numerical Simulation</b> L.Y. Liu, Y. Ma and J.R. Yang	1450
<b>Source-End Layout Influences on MOSFET ESD Protection Devices in a 0.35um 5V Process</b> S.L. Chen, M.H. Lee and T.S. Wu	1454
A Control Path Design of Communications Processor G. Wang and Y.S. Gao	1459
A Experiment Study of De-Noising to Reduce the Effect of Artificial Light Interferences for Visible Light Communications Using White-LEDs R. Cheng and X.M. Yan	1465
Research on Practical Control Circuit of SVG in Single-Phase Low Voltage Field C.M. Zha and Y. Dong	1469
Chapter 11: Electromechanics and Mechatronics	
Design of Intelligent Hanger Based on AT89C52 Single-Chip Microcomputer X.J. Jia	1475
Dynamic Characteristics and System Loss Research of the Variable Frequency Hydraulic Decoupling Control System P. Lei, L.C. Gu and P.J. Liu	1479
HILS Test Bench Based on Open and close Loop Test for Air ABS System H.Y. Zheng, C.F. Zong, W.Q. Zhao and L. Chen	1484
Study on a Kind of Electric Eddy Current Retarder Using in Working Condition Tailpipe Emission Monitoring J. Kang, J.H. Di and J.P. Kang	1488

Study on Application of Motion Control Technology H.L. Wei and W. Jiang	1492
The Research of Closed Loop Control of AC Motor Based on J-M Transformation Control J.M. Shen and G.Y. Zhu	1496
The Stereoscopic Parking System Equipment of Electric Vehicles and its Application Mode Research Q.Y. Ye	1502
A Novel Flux-Weakening Structure of High-Speed Permanent Magnet Motor Based on the Soft Ferrite	
X.H. Wang, X.Y. Lin, M.H. Li, Y. Chen and C.H. Zhang	1508
Control of Permanent Magnetic Spherical Motor Based on Torque-Sharing Strategy G.D. Li, J.C. Cao, B. Li and H.F. Li	1512
Feed-Forward Integrated with Fuzzy-PID Feed-Back Control of Electronic Throttle Valve J. Wu, S.F. Geng, J.J. Han and Y. Cheng	1519
Non-Sinusoidal SVPWM for Five-Phase Inverter Based on MMF Equivalence B. Li, L.B. Li and G.D. Li	1524
Research Based on the Simulink Excavator Hydraulic System Dynamic Simulation Q.L. Du, X.H. Chen and W.Z. Chen	1532
The Calculation of Winding Inductance in Slotless Permanent Magnet Brushless DC Motor X.H. Wang, M.H. Li, X.Y. Zhang, Y. Chen and C.H. Zhang	1537
VMAS Tailpipe Emission Monitoring Stations of Mobile Gasoline-Powered Cars J. Kang, J.H. Di, G.Y. Fan, X.L. Jia, N.F. Chen, Z.J. Du and D.M. Li	1541
Hysteresis Compensation Control Strategy for Pneumatic ABS System of Commercial Vehicle and HIL Test Validation	1545
J.C. Han, C.F. Zong and H.Y. Zheng  Feasibility Study on the Boiler Induced Draft Fan Energy Saving Frequency Conversion	1545
Retrofit C.Z. Zhao and Z.H. Yan	1549
Design and Simulation of a MEMS Torsional Micromirror	
Y.B. Song and Z.G. Yan	1553
A Survey on Experimental Characterization of Hysteresis in Piezoceramic Actuators W. Chen, H.C. Qin and Z.P. Yin	1558
<b>Design of New MEA Structure for Mciro Direct Methanol Fuel Cell</b> W.B. Zhang and D.D. Wang	1565
Design of Small Power Servo Brushless DC Motor Driver J.Y. Wang	1569
Rapid Prototyping for the Vehicle Control Unit of a Full Drive-by-Wire Electric Vehicle P. Song, C.F. Zong, H.Y. Zheng and L. He	1573
Design and Simulation of Attitude Determination and Control Subsystem of CubeSat Using Extended Kalman Filtering and Linear Quadratic Gain Controller	1500
X. Han, X.J. Yang and N.N. Abbas  A New Power Train for Electric Hybrid Vehicle	1582
Z.L. Yang, R.G. Wang, L.T. Zhang, C. Yu and G.K. Shi	1587
A Test Bench for Power Train of Electric Hybrid Vehicle Z.L. Yang, R.G. Wang, C. Yu, L.T. Zhang and G.K. Shi	1591
Numerical Analysis of Vortex Shedding Behavior of Piezoelectric Microgenerator from Dynamic Airflow-Induced Vibration F. Li and H.J. Chen	1595
The Design of Regenerative Braking System with a Pedal Emulator S.T. Zhang, L. Chu, L. Yao, Y. Yang and H. Zhang	1602
<b>Determination of TDC Using Digital Correlation Method for Linear Compressor</b> G.H. Peng, M.S. Tang, H.M. Zou, C.Q. Tian and X. Chen	1608
Chapter 12: Industrial Robotics	
Accuracy Analysis of 3-UPU Translational Parallel Robot Mechanism S.H. Sun	1617

Design of Intelligent Auto-Tracing Robot Based on MCU Control J.W. Tang	1621
Extension Adaptive Control of a High-Speed and High-Precision Three-Axis Parallel Robot D.M. Wu, M. Shen, M.Z. Ma and Y. Yang	1625
Manipulator Joints Servo Motor Control Strategy L. Yang, Y.Y. He, S. Guo and S. Bao	1629
Structural Model and Gait of Quadruped Robotic Horse J.H. Shen and W.J. Tao	1634
Structure and Hydrodynamics Optimizations of Landing Autonomous Underwater Vehicle H.W. Zhang and L. Hao	1641
Study on the Design of Particle Removal System for Autonomous Robotic Vehicle B.B. Putra, H. Xu and L.Z. Jie	1646
The Design and Simulation for Two-Link Manipulators PD Robust Controller under Uncertain Upper Bound Disturbance J.Y. Wang	1652
A Collision-Free Trajectory Planning Method for Redundant Manipulator Spraying for Inner Surface of Pipe	
D.J. Miao, L. Wu, K. Chen and G.L. Wang	1656
A Multi-DOF Robotic Arm Manipulator Simulation and Visualization Platform Y.Z. Zhang, X. Meng and Z.S. Pan	1662
Study on the Wheeled Robot Collision Avoidance Based on Fuzzy Control S.Y. Zhang, S.J. Xu, Y. Du and J.F. Zhu	1667
Study on Interference between Wires and Mobile Platform in a Wire-Driven Parallel Manipulator Based on ADAMS	
S.L. Yue, Q. Lin, Y.X. Chen and Z. Wang	1671
Rigidity-Flexibility Coupling Motion Simulation of the Open Arc Welding Robot in ADAMS C. Li, X.G. Ma and G.B. Zhao	1675
Research on PID Linear Motion Control Strategy of Self-Balanced Two-Wheeled Vehicle	1073
Y. Li, D.Z. Wang, X.H. Zhang and P.B. Bian	1679
Design on the Real-Time Online Automatic Measurement System for Body-in-White Based on Industrial Robots H. Zhou, X.C. Jiang and Y.Q. Sun	1684
Master-Slave Teleoperation Method of Redundant Manipulator Y. Chen and P. Chen	1690
<b>Modeling Method for Mechanism Configuration of the Articulated Industrial Robot</b> P. Liu and J.Q. Fu	1696
The Kinematic Analysis of the Walking Mechanism Based on the Leg-Wheel Mobile Robot $P.H.\ Li$ and $R.Y.\ Li$	1700
Research on Suspended Fire Fighting Robot Prototype L. Li, Q. Shi and H. Jiang	1705
<b>Development of a New High-Rise Building Fire Fighting Robot</b> H. Jiang, M.Z. Luo and L. Li	1711
Role of D-Robots in Designing Y.M. Hou and L.H. Ji	1717
The Kinematic Parameters Optimization for a New Type 3-DOF Parallel Manipulator J.J. Zhang, X.H. Wang, W.M. Li, S.X. Zhang and S.C. Fan	1722
Mechanism Design and Kinematics for Parallel Manipulators with a UPU Limb X.H. Wang, J.J. Zhang, K.C. Qi and W.M. Li	1729
Modular Design Concept of a Humanoid Robot Platform K.C. Qi, P. Shang, W. Liu, J.J. Zhang and F. Gao	1736
Application of Generalized Function Set in the Lying States Classification of a Humanoid	
Robot K.C. Qi, W. Liu, P. Shang, J.J. Zhang, F. Gao and J.L. Yang	1742
Transplanting Path Planning and Motion Functions Research of the High-Speed Tray	
Seedling Transplanting Robot J. Ma, J.P. Hu, X.Y. Yan, C.H. Qi and J. Guan	1747

Mechanism Design and Analysis of a Foot Massage Robot S.Y. Xiao, H.G. Wang, D.H. Ma, Y. Jiang, Y. Chang and P.T. Cong	1753
Overall Design of an Articulated Stop-Motion Shooting Robot J. Li, X.C. Chen, Z.J. Peng, S. Li, H.L. Li and H.X. Li	1759
Kinematic Simulation of Hydraulic Excavator's Working Attachment Based on Matlab/Robot	1565
H.X. Cui, H.L. Li, K. Feng and Y.M. Gao	1765
A Feasible and Applicable Motion Control Method for AUV L. Zhang, Z. Wang, J.X. Zhao and Y. Liu	1771
The Both Eyes Stereo-Identity System in the Bomb-Disposed Robot W. Fu and Z.G. Ou Yang	1779
A Novel Redundancy Resolution Method via Optimization with Additional Tasks X.F. Zhou	1787
Chapter 13: Advanced NC Techniques and Equipment	
<b>Application of Reliability Prediction in the Design of CNC Machine Tools</b> J. Yu, S. Yu, Y.M. Song, T.T. Wang, Q.C. Li, L.D. Sun and Z.G. Li	1795
<b>Development of Flexible Positioning System for Assembly Line of Body-in-White</b> C. Wang, D.H. Liu and S. Lin	1799
Geometric Error Identification of a Three-Axis Machining Center G.Q. Liang, J.X. Zhang and F.F. Zhao	1803
Introduction of a CNC Multi-Tip Turning Tool Structure with Option of Automatic Follower Rest	
S.H. Wang and W.B. Chen	1808
Research of Reliability Growth Evaluation of CNC Machine Tools Based on Weibull Distribution	
J. Yu, S. Yu, Y.M. Song, T.T. Wang, Q.C. Li, L.D. Sun and Z.G. Li	1812
The CNC Development of the Sapphire Dig Rods Machine Based on the Z3050 Rocker Drill X. Tian, H. Li and X.Y. Feng	1817
Volumetric Errors Prediction of CNC Machine Tool Based on the Laser Interferometer H.F. Lin, Z.P. Guo, Z.Y. Song, D.W. Liu and Y.Z. Qiao	1822
Accelerating Axle Gear-Shift Hole Processing Technique Improvement of CNC Equipment	
Headstock B. Liu, X.Y. Huang and Z.W. Bao	1829
Application of Go-Flow Methodology to the Reliability Evaluation in CNC Machine Tools	102)
J. Yu, S. Yu, Y.M. Song, T.T. Wang, Q.C. Li, L.D. Sun and Z.G. Li	1833
Design of NC Table for Processing the Spatial Curved Surface B.Q. Yu	1838
Geometric Error Modeling of a Vertical Machining Center G.Q. Liang, J.X. Zhang and F.F. Zhao	1842
Research on a Rapid S-Shaped Acceleration and Deceleration Method for Computerized	10.2
Numerical Control System T. Wu and L.B. Zhang	1846
Research on the Positioning Servo Control Strategy for CNC System L.B. Zhang and T. Wu	1851
The Closed-Loop Identification of Dynamic Parameters Based on Rigid Model for the Feeding System of Commercial Numerical Control Machine G.S. Chen and H.L. Li	1855
Stability Design of Cutting Current Based on Fuzzy Control Theory F.X. Lin, T.Y. Wang, K.F. Wu, R.Y. Liang and X. Wang	1860
The Simulation Research of High-Speed Motorized Spindle Vector Control System with a	1000
Fuzzy Speed Controller K. Zhang, Z.X. Liu, L.X. Zhang, H. Wang and Y.H. Wu	1864
Information Processing of Precision Positioning Stage J.S. Wang and M.C. Feng	1869
Research on RFID Technology in Tool Changing of the NC System	- 507
F.Y. Li, Q. Wang, X.J. Wang and Y.X. Peng	1873

### **Chapter 14: Machine Vision**

The Escape Wheel Detection System Algorithm Design Based on the Parameters Comparation with the Digital Template	
J. Chen and Z. Wang	1879
Study on Measurement with Monocular Vision for Posture of Moving Objects Suspended Y.F. Chen, Z.J. Bai, C.P. Yin and Q. Lin	1884
Chapter 14: Machine Vision	
Skin Colour Detection Using the Statistical Decision Theory G. Fang, N.M. Kwok and G. Dissanayake	1891
Self-Calibration of a Binocular Stereo Rig with Varying Intrinsic and Extrinsic Parameters H. Zheng, Z.Q. Liu and K. Zhang	1896
Research and Development of Micro-Hole Quality Detecting System Based on Machine Vision H.T. Cai, Q.J. Xiong and Y. Liu	1902
Face Gabor Feature Selection Based on Adaboost G. Sun, C.G. Suo and W.B. Zhang	1906
Engineering Application of Capturing Screen Technology F. He, F. Chen, W. Tian and Q.Y. Yin	1910
A Research of an Improved Method for Lane Detection in a High Light Condition J.G. Liu, J. Luo and X. Li	1914
A Fast Convergent Adaptive-K Mixture-Of-Gaussian Model for Video Object Segmentation H. Zhou, Y. Gao, G.W. Yuan and X.J. Zhang	1919
The Location of Quadruped Robot with Hand-Fused-Foot Based on Binocular Vision X.J. Wang, Z.L. Yang and J. Liu	1925
Stereo Vision Based Localization Method for Intelligent Vehicle F.P. Cao, R.B. Wang and L.X. Zhang  Real Time Objects Potentian Using Layered Codeback Model	1931
Real-Time Objects Detection Using Layered Codebook Model D. Yan, Q. Yu and M.H. Wang  Algorithm Research of Two-Dimensional Size Measurement on Parts Based on Machine	1937
Vision C.H. Li, J.B. Zhang, X.P. Hu and G.F. Zhao	1945
<b>Abnormal Behavior Recognition Based on Features Fusion</b> Y. Tao and Y.C. Wei	1949
A Novel Architecture of Smart Camera X.Y. Xiu and G.H. Zhou	1953
Study for Workpiece Identity Based on the BP Neural Network and the Zernike Moment X. Wei, J.D. Zhang and X.M. Qi	1958
Number and Colors Recognition for the Beaded Pad Z.J. Liu, L.G. Yao, J.Y. Yan and D.L. Lin	1964
Research Status on Road Information Extraction from High Resolution Imagery H. Chen, L. Ma and T. Liang Maying Objects Detection Resed on Three Frames Differencing and CMM	1970
Moving Objects Detection Based on Three Frames Differencing and GMM Z.X. Ke, H.H. Jiang and C.L. Zhang Research of Glass Fiber Textile Monitor Image Recognition Based on Neural Network	1974
S.Q. Chen and Y.L. Fu  Video Noise Estimation Based on Block Neighborhood Relevance	1978
H.W. Di, S.M. Zheng and H. Gao  Multi-View Vehicle Recognition Based on WRT-SVM	1983
X.G. Wu and C. Guo Improved Genetic Algorithm to Calibration of the Pulse Coupled Neural Network	1987
Parameter R.C. Feng, H.Y. Li, Z.Y. Rui, R.S. Chen and B.C. Zhou	1993

Research of Face Recognition Based on Wavelet Transform and EHMM X.W. Li and G.L. Chen	1998
The Development of Wavelet Transform and its Application in Image Denoise M.H. Dai	2003
<b>3D Temperature Field Reconstruction of Flame from Images</b> J. Su and X.G. Wang	2009
An Image Encryption Algorithm Based on Oversampled Chaotic Map S.C. Liu, Y.X. Song and J.S. Yang	2016
Background Subtraction Based on Gaussian Mixture Model D.F. Liu, M. Deng and D.M. Wang	2021
Development of Image Processing Algorithm for Cytological Diagnosis of Uterine Cervical Cancer Tissue Examination	2025
H.Y. Oh, H.J. So, S.H. Kim, D.W. Kim and H.C. Kim	2027
Chapter 15: Automation and Control	
A Research on Simulation for Semi-Active Suspension Control Based on Immune Algorithm	
G.X. Tan, W.G. Jian, S. Li and X.P. Ye	2035
Research on the Test Technology of Fire Control System of Tank W.Y. Chen, Q. Xie and Y. Luo	2040
SBW Control Strategy with Ideal Transmission and Feedback of Energy Phase-Plane Z.H. Wang, J. Li, Z. Cao and S.S. Zhuo	2044
Design and Research on the Control System of Magnetic Plate-Type Seeding Production Line	
X.Y. Yan, J.P. Hu, C.T. Lu and X. Wang	2051
Design of Digital Wire Feed Control System Based on LPC2132 J.S. Shi	2057
Study on Control Strategy of Steer-by-Wire Vehicle with Joystick C. Liu, H.Y. Zheng and C.F. Zong	2061
Study on Simulation of Multi-Loop Networked Control System F. He and J.J. Pang	2065
Intelligent Battery Charging Equipment of Gas Outburst Prediction Instrument G.H. Liao and J. Liu	2069
Research on Analysis and Control Strategy of High Frequency Phenomenon in an Isolated Power Grid S.J. Ma, H. Wang, J.S. Tian and L. Meng	2073
Objective Evaluation of ESP System Based on Hardware-in-Loop Test Bench S.Y. Xuan, C.X. Song and G.W. Meng	2080
Sliding Mode Control of Switched Reluctance Motor with High Torque in Low Speed Y. Zhao, S.H. Wu, H.H. Liu and N.C. Du	2085
Optimal Fuzzy Control of Automated Mechanical Transmission Clutch Engagement during Start-Up Process H.Y. Jin, X.S. Cheng and Y.D. Song	2089
The H∞-Based Control Strategy to Restrain the Interference to Battery C.B. Gao and X.M. Yu	2094
A Brake Pad Wear Control Algorithm for Electronic Brake System W. Li, H.Y. Zheng and C.F. Zong	2099
A Novel Control Algorithm of Electronic Braking System for Trucks L. Mai, L.Y. Wang, P.W. Mi and S.N. Yang	2106
Hinf Control of Uncertain Takagi-Sugeno Fuzzy Descriptor Systems B.P. Ma and M. Chen	2110
<b>Design, Fabrication and Analysis of Magnetic Belt Type Feeder</b> A. Nahata, A. Agarwal and P. Khanna	2116
Open Style Network Control System of Multi-Sucker Wall-Climbing Mechanism G.H. Liao and J. Liu	2121

Research on Grinding Control System Design Method Based on Multi-Agent System Model H.W. Zhao, Y.M. Qi, Y.Q. Liu and S.H. Pei	2125
Chaos Control of the Fractional Order Stochastic Chen System J. Zheng, S.J. Ma and D. Dong	2130
<b>Design and Application of Self-Adaptive Controller Based on Q Series PLC</b> Y. Hao, H. Yuan and F. Dong	2134
<b>Design of Combustion Scheduling Simulating Control System on Marine Auxiliary Boiler</b> J.G. Jin and Z.T. Wang	2139
Improved Control Strategy of Grid Side Rectifier for the Double-Fed Wind Power System G. Xiao	2143
Intelligent Vehicle Control System Based on LED J.P. Zhang, S.G. Cui, L.Y. Chen, Z.L. Chen, L.G. Tian and Y.L. Wang	2149
Near-Optimality in Stochastic Control of Predator-Pray System with Markov Switching X.N. Li and D.M. Wei	2153
Nonlinear System Control Strategies C. Li and X.M. Liu	2157
Research of Thermal Insulation Control for Underwater Storage of High Pour Point Crude Oil	
C.T. Zhang and Y.L. Wang  Synchronization between Two Different Fractional Order Hyperchaotic Systems	2162
W.W. Zhang and D.Y. Chen	2168
The Development of DSP-Based FFU Motor Digital Variable Frequency Control System Y.W. Wang	2172
The Research of the Remote Control System Based on DTMF Transmission and its Implementation	
Z.M. Zou and C.H. Liang	2176
Application of Blow-Off Wind Tunnel Control Based on Genetic Algorithm Optimized BP- Neural Network PID Neural Network L. Ji, Y. Ji and X.F. Lian	2181
Application Research on $H^{\infty}$ Optimization Control of Permanent Magnet Linear Servo System Based on Adaptive Fuzzy Control Strategy X.P. Zhu, X.P. Wang, C.Y. Qu and J.Y. Zhao	2185
Design of Automatic Control Operation Mode in Safety Monitor and Control System of Electric Locomotive Servicing Work B. Chen, J.H. Cheng and C. Jin	2190
Fuzzy Predictive Control for a Tubular Heat Exchanger System	
Q.L. Ji, C. He, W.M. Qi and J.K. Zhu  Passayah on Control Strategy of Photographical Pottory, Hybrid Congression System	2195
Research on Control Strategy of Photovoltaic/Battery Hybrid Generation System R. Guo, X.P. Wang, C.Y. Qu and D. Bai	2200
Simulation and Research for Generalized Predictive Control X.L. Yu	2205
Study on Maximum Power Tracing Controller Based on Self-Adaptive Strategy for Variable Speed Constant Frequency Brushless Doubly-Fed Generator X.P. Wang, C.Y. Qu, R. Guo and J.Y. Zhao	2211
Fuzzy PID Control in the Casting of Hydraulic AGC System Application	2211
X.H. Chen, X.G. Yu, Y. Yao and S.J. Xie	2215
PLC Control and Study of Line Output Roller Bar Cooling Bed Hydraulic Station G.M. Huang, W.D. Chen, A.L. Xu, X.H. Chen, Y.N. Fan, X.G. Yu and Y. Yao	2219
Research for the Control Software of Six-Freedom Simulation Platform Based on RTX Y.Q. Li, K. Xue and H.F. Wang	2223
<b>Power Balance Control for Two Motors Driving Shearer Base on ANFIS</b> Y.H. Zhou and H.W. Ma	2228
DC Speed Control System by Single Chip H.Y. Shen	2233

Copyright Protector for Digital Library with GMFR J. Zhou, F.L. Li, L.Y. Su and R.H. Liu	2241
Engineering Design Based on GPON+WLAN W.F. Sun and J.Z. Li	2247
Image Processing System Architecture Design Based on UML H.C. Liu and P. Tong	2251
Iron Mine Exploitation Application of Man a Machine Positioning System of Underground Coal Mines Based on the ZigBee Technology in Loufan Ludi Mining Company D. Zhang and L.G. Yan	2257
<b>P2P VoD Content Distribution Strategy Based on Gradient Model</b> X.Y. Dai, Q. Wang and Y.F. Tang	2265
Research on Network Coding Based on Convolutional Codes H.P. Liu and S.B. Su	2270
Research on Theory of Set Knowledge Granularity Logic Based on the Decision Logic L. Feng, S.J. Yuan, J. Wang and L.N. Shi	2274
Research the Ceramic Design System Based on Sketch B.S. Li and J.F. Hu	2278
Research the Computer Forensics Based on Network J.F. Hu and B.S. Li	2282
The Discussion on Mechanism and Research Framework of Green Information Technology and Information Systems Adoption D.Q. Zheng	2286
The Shortest Path Algorithm Dynamic Visualization Realization X.B. Yang and B.Z. Chen	2291
Artificial Intelligence Study: A Two-Sided Being - Teachings from Book of Changes Q. Zhao	2295
Datamining Tool: Multiple Regression and Logistic Regression in a Web Platform of a Datawarehouse F. Faye and M. Sene	2299
Design and Implementation of Data Center Network Security W. Du	2308
<b>Design of Audio-Video Player System Based on Android Platform</b> X.J. Li, Q.Z. Ma and X.F. Zhang	2313
Hiding Sensitive Association Rules by Sanitizing H. Wang	2317
Improved Methods for Departments' Intention for RFID Use Y.C. Lee, Y.C. Hsiao, P.Y. Hsieh and Y.T. Ma	2322
Internal Communication System Based on Human Resource Database J.F. Liu	2327
On Situated Cognition-Based Approaches to Flash Educational Gaming Design J. Wu	2331
Online Biological Literature MRI Image Classification Study Y.F. Yang and F.X. Tang	2336
Performance Evaluation Based on Information Theory for Multi-Target Tracking Algorithm	
S.R. Tian, X.S. Sun and D. Liu  Research and Design of the Keyboard Filter Driver	2341
M. Wang, Y.T. Zhu, H. Jin and J.G. Liu  Research and Implementation of Check-In System Based on Android Smart Phone for	2345
Meeting Y.B. Chen and F. Jiang	2350
Research on Dynamic Awareness of Network Service State and Active Updating Method of Visualization	
W.X. He, C.T. Mao and Z.S. Xiao  Research on Simulation of Array Directivity Based on MATLAB	2354
H.J. Xiong, B.C. Yuan, H.K. Zhan, Y.B. Luo and L.L. Fan	2360
Spherical Image for 3D Mesh Model: Generation and Acceleration J.M. Huang, X. Qi and J.Y. Huang	2364

Study on the Correctness of Web Service Composition Evolution Y.S. Cheng and Z.J. Wang	2370
The Application of Distributed Computing Based on Cloud Computing in Statistical Work W. Li	2374
The Application of Quantum-Behaved Particle Swarm Algorithm in Intelligent Test Paper Generation X.R. Li	2378
The Operation of Cool Edit Pro in Corpus-Based Spoken Language J. Chen and J. Chen	2383
Two New Electronic Cash Schemes Based on Elliptic Curve M.N. Zhang, C.B. Fu and W. Fu	2388
Visualization Analysis on Key Technologies of Technical Evolution - In the Field of 3G Mobile Communication X.X. Li and J. Shen	2394
Design and Application of a Whole Machine Test Service Platform of Construction Machinery K. Zhou and X.D. Li	2400
Design and Application of Comprehensive Evaluation System of Manufacturing Resource Deployment in Construction Machinery K. Zhou and X.D. Li	2404
Function Model of Management System of Workshop Resources S.H. Cui and G.C. Feng	2408
Research on the Model and Simulation of Complicated Curve Saw in Virtual Environment L.F. Luo and Y. Chen	2414
The Design and Simulation Analysis of Virtual Prototype Model for One Kind of Breech Mechanism S.M. Yang, X.J. Shao, G. Tian and Y.X. Han	2418
Portal Crane Virtual Assembly System Based on Virtools M.A. Ni and Y.Y. Tan	2413
An Approach for Automatic Generation of Multi-Mode 3D Exploded View J.G. Zhu	2428
The Key Technology Research of Heterogeneous Product Data Exchange and Sharing in Collaborative Design and Manufacturing System S.F. Liu and W.M. Li	2432
Virtual Function Block Mechanism in the Cloud Manufacturing Environment X.V. Wang and X.W. Xu	2438
A Three-Dimensional Virtual Manufacturing System with High Confidence for Turning Q.F. Gao, G.W. Yu and Y.W. Song	2442
Vehicle Design and Realization of Virtual Maintenance Training System J.T. Zhou, H.G. Wang, G.Q. Ren and F.L. Cao	2449
The Application and Research of the Distributed Electronic Authentication Based Software J. Qu	2454
A Quasi-Real-Time MapReduce Schedule Algorithm C.Y. Fu, H. Zhou, M.S. Ge, X. Qu and Y.L. Wang	2458
A Resource Allocation Algorithm in RFID System H.Y. Lan, H.T. Song, Y.L. Zhao and G.Y. Zhang Information Security Ontology Model for Internet of Thing	2462
W.W. Ren, L. Hu, K. Zhao and B. Jia  Manufacturing Industry in China Informatization Development Analysis Based on the	2466
Internet of Things M.Y. Jia and Q.H. Gao	2471
<b>Intelligent Decision Support System in Damage Control of Damaged Ship</b> A. Li and J.Y. Pu	2476
Research on Intrusion Detection Technique of Mobile Ad Hoc Network Security H.F. Sun	2483
The Study of Testing Technologies on Energy Consumption of Mass Storage System Q.L. He, Z.H. Li, L. Yang, H. Wang and J. Sun	2489

Understanding the Effect of Channel Interference and RSSI in IEEE 802.11 PCF Z.Q. Qin, X. Li and J.N. Zhang	2495
A Design of Supervisory Control System of Vehicles Based on Java NIO Q.W. Liu, X.M. Deng, D.S. Yan, Y.F. Zhang and Z.Q. Wang	2500
Application of LabVIEW-Based Word Report Toolkit in Testing Engineering G.X. Cai	2504
Seamless Integration Being Set up by Using Web Services P.J. Ye, Y.W. Hu and L.H. Zhu	2509
A Method of Web Information Extraction Based on Building Different Sub Trees Y.L. Wang, H. Jiang, Z.H. Bing and L. Zhang	2513
A Novel BCI Classifier Based on Autoregressive Model and Support Vector Machine L. Huang, J. Gu, R. Li, X.J. Li and H. Yu	2522
An Improved EEG Feature Extraction Method Based on Quantum Particle Swarm Optimizer Algorithm L. Huang, H. Yu, R. Li, X.J. Li and J. Gu	2526
Chance Information Analysis of a Residential Building Development Case X.H. Xie and Y. Li	2530
High Speed Federated Filter Design and Implementation K.B. Zhang, J.M. Gao and P.L. Jiang	2535
Study and Simulation of CPU Priority Scheduling Algorithm on Multi-Core Processor Platform	
Z.G. Fan, R.L. Wang and P.H. Yang	2540
Application of Fitting Estimation Method in GPS Height Fitting Q.W. Cheng, L.B. Zhang and H.H. Chen	2545
Improved Algorithm for Joint DOD and DOA Estimation in Bistatic MIMO Radar Based on Fourth Order Cumulants	2550
D.J. Xu, M.X. Li and X.P. Wang  A Research about Call Simulation Based on SIP VOIP Terminal	2330
F. Huang and G.Y. Wang	2557
Analysis of Capacity Bound on Two-User Transmitter Preprocessing Weak Interference MIMO Channels M. Liao, M.X. Wang and L.X. Jin	2564
Analysis of Minimum Decoding Complexity Quasi-Orthogonal Space-Time Block Code for 6 Transmit Antennas	
M. Liao, M.X. Wang and L.X. Jin	2568
<b>Design of an Information Integration Control Network for Hybrid Electric Trucks</b> J. Xu, G.Y. Li and F. Yang	2572
Research on IEC 61850 Gateway Based on MMS Mapping S.Z. Hou, F.Y. Kong and W. Liu	2576
Study on Knowledge Integration Contents and Process in Organization Based Knowledge	20,0
Innovation Y.F. Liu, M. Du and Y.J. Yuan	2581
Modeling and Analysis of the Threats to GNSS W.X. Zhang, H.T. Hou, P. Peng and W.P. Wang	2587
Chapter 17: Embedded System	
Embedded Analyzer of Crude Oil Design and Implementation Based on Nuclear Electronics X.D. Guan and W.L. Liang	2595
Implementation of Embedded Mobile Device Elliptic Curve Algorithm Fast Generating Algorithm	2500
L.H. Zhang and S.Q. Chen  Research and Implementation of Embedded CNC System Based on Linux	2599
W. Xu and Z.M. Liu	2604
The Application of CAN Bus Microcontroller MC9S08DZ60 in Automotive Electronic Control Unit Y. Wang and L.R. He	2608

The Embedded System Research for Multi-Definition Terminology Y.P. Zhang and L.M. Liu	2612
The RF Amplifier Remote Monitoring System Based on Gigabit Ethernet J.L. Bao and P. An	2616
VOD Client Software Realization of Digital TV STB Y.R. Wang, Z.P. Lan and P. Li	2620
A Design of Automatic Bus Station Reporter Based on the Interrupt System of ATmega128 X.M. Deng, D.S. Yan and Z.Q. Wang	2626
Bubble Image Processing Based on ARM in Gas-Liquid Two-Phase Flow T. Xue, Q.F. Wang and X.W. Liu	2630
Design of Mobile Video Acquisition and Communication System Based on Embedded Technology	2624
F. Liu, X.K. Zhang, C. Yu and J.X. Gao  Empirical Design for an Advanced Embedded Remote Monitoring System Based on	2634
Computer Network Technology Y. Liu, L. Zhang, J. Du, P. Zhang, X.L. Song and Z.W. Li	2638
Multiple Faults Detection with SoC Dynamic Reconfiguration System Based on FPGA	2036
C. Wang, Y.L. Liu, P.L. Jiang, Q.Z. Zhang, F. Tao and L. Zhang	2642
Study on Debugging Method Based on Embedded System Development Platform P.H. Yang, R.L. Wang and Z.G. Fan	2646
The Design and Verification of Online-Programming IP Based on SOC	
Y.L. Hu, C. Jiang, A.J. Zhu and C. Yu  The Implementation and Validation of Multidimensional Kalman Filter in SoC System	2651
Q.Z. Zhang, P.L. Jiang, Z. Liu, C. Wang and F. Tao	2656
The Development of Soft PLC Running and Simulation System Based on RTX Q. Liang, D.H. Su, J. Wang and Y.M. Wang	2660
Research and Design on the New Type Wheel Loader Electronic Scale C.J. Ouyang, H.X. Xu, H.J. Zhang and B. Huang	2667
Research of Multi-Function Digital Compass Based on LSM303DLH H. Le and G.M. Li	2671
Research on Data Display for New Electric Vehicle Q.C. Bai, C.X. Jin, D.L. Yang and M.H. Wang	2675
Vehicle Control Unit Integrated with GPRS/GPS Development for Electric Vehicle Y. Liu and Y. Cheng	2680
PLC-Based Tower Crane Torque Protection System H. Wang	2685
Chapter 18: Advanced Methods and Algorithms in Research and Engineering	
A New Hybrid Ant Colony Optimization Algorithm for Permutation Flow-Shop Scheduling X.X. Zhang, S.Q. Liu and Y.Y. Ma	2691
Improvement of PSO Algorithm Based on Brown Motion and its Applications to Adaptive Filter	
X.S. Shen and J. Zhang	2695
Multi-Objective Optimal Sizing Hybrid Power System in a Solar Electric Vehicle Using Particle Swarm Optimization Algorithm S.Q. Zhou, G.F. Guo and Y.Y. Xiang	2699
Multi-Objective Optimization Study of Energy Management Strategy for Extended-Range	_0,,
Electric Vehicle J.G. Niu, F.L. Pei, S. Zhou and T. Zhang	2704
Pattern Recognition for Partial Discharge in Power Transformer Based on Probabilistic Neural Networks	2701
H.K. Shang, J.S. Yuan, Y. Wang and S. Jin	2710
Prediction of Short-Term Transportation Flow Based on Optimizing Wavelet Neural Network by Genetic Algorithm	2715
S.L. Yang, J.J. Ma, C.H. Wang and S.M. Zhang	2715

The Application of Improved Genetic Algorithm in Gate Location Optimization of Plastic Injection Molding	2721
X. Chen and X.C. Wang  The Topological Optimization Design of Cross Beams Structure of Shaped Stone Turning-	2721
Milling CNC (HTM50200)  X. Mu, K. Zhang, D.H. Zhao and Y.H. Wu	2725
Application of QFD in the Design of Fire Main Fight Vehicles W.B. Zhu	2729
Design Optimization for Fir-Tree Root of Turbine Blade Considering Manufacturing Variations Q. Zhou, M.H. Zhang, H.Y. Chen and Y.H. Xie	2733
Emergency Obstacle Avoidance Control Method Based on Driver Steering Intention Recognition for Steer-by-Wire Vehicle L. He, H.O. Xiang, D.X. Chen and C.F. Zong	2738
Multi-Location Inventory Model Considering Bidirectional and Unidirectional Transshipments Simultaneously J.H. Zhong and Y. Zhou	2742
On Optimization of Multi-Class Logistic Regression Classifier X.B. Jin, J.W. Yu, G.C. Wang and P.F. Zhu	2746
Orthogonal Design and Analysis of Variance Based Performance Analysis of Differential Evolution Algorithm D.L. Qin and Z.F. Li	2751
Quantum-Behaved Particle Swarm Optimization Dynamic Clustering Algorithm C.Y. Zhang and W. Chen	2757
Research on Alert Degree Based on ERP X.M. Zhang, X.W. Chen and Z.D. Mu	2761
Research on Intelligent Reactive Power Optimization Method for Distribution Network with DFIG Wind Farm L.Y. Wang, Y.S. Zheng and M.W. Yang	2765
Research on Ship Part Nesting System Based on Energy Principle and Intelligent Optimization X.Q. Zhong, L.D. Liang and Y.H. Yang	2771
Scheme Selection of Camouflage Screen Design Based on Hierarchical Grey Relational	2//1
Analysis Q. Jia, X.L. Lü, Z.Y. Zeng, W.D. Xu and J.H. Hu	2775
Simulation and Experiment of Wire Tensions for Wire-Driven Parallel Manipulator Y.X. Chen, S.L. Yue, Q. Lin and Z. Wang	2779
<b>Truss Structural Optimization Based on Globally Convergent Version of MMA</b> L.H. Guo and W.C. Tang	2783
The Genetic Algorithm with Two Heuristic Rules for TSP Y. Wang	2787
Combination Clustering Evaluation Research on Different Data Distribution Patterns Y.C. Song, X.L. Jia and H.D. Meng	2794
Periodic Solutions for Higher Order Delay Differential Equation X. Liang, F.Z. Cong, M.J. Ma and Y. Zhang	2801
Conjugate Duality for Set-Valued Optimization of Benson Efficiency G.Q. Xing, S.H. Hong and X.L. Xing	2805
Chapter 18: Advanced Methods and Algorithms in Research and Engineering	
A New Threshold Scheme Based on Hierarchical and Sequential Share Z.D. Gao	2813
Design and Realization about Virtual Experiment to Mensurate Airfoil Pressure Distribution L. Ming, S.O. Wong, Y. L. iv, S. Li and D. Jin	2010
L. Ming, S.Q. Wang, X.J. Liu, S. Li and D. Jin  Engineering Surface Analysis by Bidimensional Empirical Mode Decomposition	2818
Z.K. Zhang, L.C. Gu and Y.S. Zhu	2823

Schemes Selection of Yarn Tension Detection and Control Based on Fuzzy Multiple Attribute Group Decision Making	
Y. Li, H.M. Li and Y. Li	2829
A New Fast Combination Method of Conflict Evidences Based on Model Modification J. Zhu, C.J. Zhang, L.F. Hu and Y.C. Zheng	2835
An Adaptive Algorithm for Forest Fire Spread Based on Genetic Algorithm C.Y. Chang	2842
<b>Application of Elman Neural Networks to Predict Truck's Operating Speed</b> S.B. Xie and L. Wei	2846
Modified Non-Dominated Sorting Genetic Algorithm (MNSGA-II) Applied in Multi- Objective Optimization of a Coal-Fired Boiler Combustion T.F. Yu, X. Wang and C.H. Peng	2850
Variable Precision Rough Set Model Based on Covering Relation and Uncertainty Measure M.Y. Wang, C. Wang and D.Z. Tian	2856
The Application of Fuzzy Clustering Analysis in Ore Classification C.X. Wang	2860
Walsh Transform in Transient Echo Recognition P. Li, Y.R. Wang, H.L. Lv and N.Y. Zou	2865
4PSK Signal Based on FPGA D.M. Lei, P. Li and N.Y. Zou	2870
A Carleman Type Inequality for Sugeno Integrals Y.X. Ma and T.F. Guo	2874
A Compression Algorithm for SAR Data after Range Focusing S.C. Zeng, X.L. Deng, Y.X. Chen, Y.X. Xie and Z.D. Zhu	2877
An Application and Research of Gray-Relation for Color Classification in Dyeing Textile H.Y. Wang and J.X. Zhang	2881
Application Study of Fractal Figures Based on Iterated Function System Algorithm H.R. Xiao	2886
Homotopy Analysis Method for a Class of Holling II's Model X.R. Chen	2891
Multi-Objective Fleet Assignment Problem Based on Self-Adaptive Genetic Algorithm X. Yang and B. Jiang	2895
Research on Traveling Salesman Problem Algorithm X.Y. Yun	2901
Review on Application of Rough Set Theory H. Yan	2905
Solutions for a Class of Singular Elliptic Equation Z.H. Xiu	2910
The Limitation Theorem of g-Supersolution for BSDEs B.Y. Han	2914
A Two-Grid Method of Nonconforming Element Based on the Shifted-Inverse Power Method for the Steklov Eigenvalue Problem	
H. Bi Wavelet Deconvolution to Improving Log Vertical Resolution	2918
P.J. Li, Y.F. Gu and H.H. Liu  L <sup>2</sup> (R <sup>d</sup> )	2922
L. Li	2926
Chapter 19: Other Engineering Solutions	
Research on a Photovoltaic Generating System Based on High Step-Up Ratio Boost Converter	
J.Y. Shi and Z.M. Wang  The Research on Optimization of Electrostatic Field for High Voltage Electrostatic	2933
Spinning Machine C.J. Liu, J. Zhang and Y. Dai	2938

An Alternative to Paver in Living Areas of Social Interest Housing (SIH) P.S.P. Fontanini, R.C.C. Lintz, L.A. Gachet-Barbosa, A.E.P.G.A. Jacintho and L.L. Pimentel	2942
Design and Study on Structural Shape of Screen Aperture Based on Reducing Misplaced	
Material W.C. Wu and C.S. Wang	2949
Experimental Research on a Dual-Coil Ignition System of CNG Engine H.G. Jing, L.P. Yang, X.Z. Ma and E.Z. Song	2954
<b>Quality Evaluation of Belt Conveyor Based on Extenics Theory</b> C. Liu and X.M. Wang	2960
Research on the Nonlinear Hysteretic Response Characteristics of Intelligent Vibratory Roller under Horizontal Excitation Mode S.H. Zheng and S.W. Lin	2964
The Design and Experiment Analysis of Mechanical Borehole Seismic Source G. Liu, C.G. Yu, B.S. He and Z.X. Dong	2972
<b>Tower Equipment Lifting Crane and Tools Selection and Optimization</b> A.P. Sun, H.W. Jia and Y.P. Ma	2978
<b>Design and Research of YGD450 Cut Tobacco Filling Value Tester</b> W.D. Huang and Y.M. Yu	2983
A Directional Rapid Search Method in PDSR Based on the Fitting Method H.D. Liu, A. Chang, Q. Li, Z.X. Li, W. Feng and N.Q. Han	2989
A Rapid Method to Calculate the Hyper-Plane of DSR Based on EEAC H.D. Liu, Q. Li, W. Feng, X.H. Gao, A. Chang and T. Li	2993
Research on Sparking and Simulation Technique L. Yan, Q.X. Zou and C.Q. Wang	2997
Research of Gait Analysis Method Based on Motion Capture and LifeMOD J.T. Niu, Z.X. Xiang, Z.J. Luo and R.X. Wang	3001
An Integrated Study on Engineering of Replacing Gas-Discharge Source with Solid Electric Light Source Based on the Design Standard of Architectural Lighting	
L. Jun, Y. Zhang and L. Fu	3006
LED Street Lamp Module Configuration Design Y.P. Zhang, L. Liu, Y.C. Zhang, G.Y. Wang, D.S. Li, Y. Yang, F. Cao and N.Y. Zou	3012
<b>Optimization and Application for Direct Air-Cooled Condenser Automatic Cleaning Device</b> Q. Zhao, F. Liu and Z. Sun	3016
Theoretical Analysis and FEM Simulation of Piezoelectric Vibrator Used in Ultrasonic EDM System	
H.B. Wang, Z.R. Li and C.H. Sun	3020
<b>Design Method of Prefabricated Hole Flange-Forming of Hemispherical Shell Parts</b> Z.L. Wang, Z.D. Li, G. Cheng and Y. Li	3025
Research on Reconfigurable Pin Fixture Design: A Review Z.J. Wang and Y. Wang	3029
Simulation and Experiment for the Position of Standing Wave Levitation J.J. Liu, X.Y. Jiao, H.X. Chen, Q. Liu and Z.G. Yang	3036
<b>Key Techniques of Integral Lifting of Steel Tube Arch for Zhuzhou Bridge in Baise</b> Y.F. Luo	3040
Debugging of the Dobby Shedding Mechanism of ASGT221 S.B. Ma	3045
The Design for Equipments Combat Resilience Based on Full-System Theory D.X. Zhang, J. Yan, L.M. Hu, T. Wang and W.Z. Zhang	3049
Design of Bionic Subsoiling Shovel and its Finite Element Analysis W.F. Ji, Q.M. Wu, H.L. Jia and T. Liu	3053
Design of the Leveling Mechanism of the Faceplate of Low Frequency Mechanical Spectrum Apparatus Q. Mao, J. Du, S.Y. Gu and Z.C. Zhou	3058
Study on Plantar Pressure of Male Adults during Walking with Single-Shoulder Weight G.Q. Li, H. Chen and J.G. Zhang	3063
Effective Thermal Efficiency Characteristics of the Integrated Piston-Plunger Pump Z.Q. Dai, T.Z. Zhang and M.L. Wan	3067

Research on Cutting Teeth Form's Influence on Coal Shearer Vibration Characteristics D. Liu, H. Jiang, X.D. Ji and M. Wu	3072
AC/DC Permanent Magnet Synchronous Generator Design and Research Y.P. Sun and K. Kang	3076
Chapter 20: Innovative Design Methodology	
A Optimization Design of the Tire Gravity-Type AS/RS Y.B. Cui, M.D. Shen and Y.X. Zhao	3083
An Algorithm of Inter Satellite Links Based on Ranging and Access P. Peng, Y.F. Zhu, H.T. Hou and W.X. Zhang	3088
An Innovative Design and Structural Mechanics Analysis of Artificial Hip Joint Z.H. Qian, J.J. Wang, L. Ren, L.Q. Ren and T. Xu	3094
<b>Design of Belt Conveyor Based on Dual Mode Modeling Approach of CAXA</b> B. Hua, Y.L. Chi, X.J. Wang and F.Y. Li	3101
<b>Design of Pure Mechanical Automatic Teapot Based on Pro-E</b> X.J. Jia	3105
<b>Evaluation by Information Integration Method for Improvement Designs</b> H. Izumi and M. Sawaguchi	3109
<b>Novel Doubly Salient Permanent Magnet Machine for Wind Power Generation</b> Y.P. Sun, T.B. Li and G.Y. Li	3114
Research on Simulation Training System Prototype for Helicopter Fire Controlling Operations	
J.P. Bai, C.Y. Zhang, F.B. Pei, M.Q. Luo and H. Liu Research on Virtual Reality Based Civil Aircraft Cabin Customization System	3118
N. Ma, H. Liu, Y.L. Tian, J.P. Bai and Z. Wu Study on Balance Criterion of Pumping Unit	3122
H.B. Liang, Q. Liu, Y.D. Sun and J.X. Wang Study on Knowledge-Based Cutter Head Design Theory of Shield Tunneling	3126
X. Song, L. Wang and W. Guo The Design and Research on Spreading Soil Device of Rice Factory Seedlings	3131
L.X. Ma, Y.Q. Li, Y.Y. Ge and Y.Y. Han  Using Axiomatic Design and TRIZ in (re)Designing of Product Architecture Toward	3136
Upgradable Products N. Janthong	3141
Work Principle and Application of Linear Motion Unit Y.X. Zhao, M.D. Shen and Y.B. Cui	3151
An FEM-Based Auxiliary Slot Design for an 8-Pole/12-Slot SPM Servo Motor Considering Saturation of Stator Tooth Coronas H. Zhang, G.Y. Li and C.F. Li	3155
Assembly Design Defects Identification for Mechanical Products Based on Constraint Verification Tree	
G. Lv and S.W. Fan  Calculation of Bridge Transverse Load Distribution Coefficient Based on Generalized Rigid	3159
Cross-Beam Method H.B. Liu, B.Y. Wang, X.Q. Wang and Y.B. Jiao	3164
Development of the Two-Dimensional General Mechanical CAD System Y.J. Feng	3168
Improved Design on Guardrail Used for Frequent Accident Occurring Highway Section J. Liu and K.P. Li	3172
Innovation for and by the People with Disabilities: A Case Study in Improvement of the Manual Wheelchair	21==
S. Islam, S. Kao-Walter, X. Chen and H.Y. Deng Inverse Design of Airfoils Using Target Pressure Optimization	3177
Y.F. Liu and D.L. Ma  Multivariate Index Evaluation Model for Product Form by Integration with Manufacturer	3183
Performance and its Application in Car Interior L. Chen and W.F. Hu	3189

Research on Bridge Transverse Load Distribution Coefficient of Beam System Theory Based on Finite Difference Method	2105
H.B. Liu, B.Y. Wang, P. Zhang and Y.B. Jiao Study on the Future Development of Green Design Technology in Product Design	3195
H. Rui and W. Xuan	3199
The Research on Modular Adaptable Design Platform Based on SolidWorks B. Cheng, T.Y. Wang, Y. Feng and X.H. Xiao	3204
Green Materials - New Favorite of Fashion Innovation X.C. Yang	3209
Chapter 21: Green/Sustainable Design and Manufacturing	
Analysis on the Structure Mechanism of Natural Top Ventilating and Soundproof Bay Windows	2215
Y.B. Lei  Application of Auspicious Patterns in Modern Fashion Design	3215
S.C. Chen	3220
Based on the Sustainable Development of the Fiber Art Design Method Study - Taking Patchwork as Example	
P. Li and C.M. Wu	3224
Design and Application of the Solar-Mobile-Spray-Machine M.B. Li, H.Y. Li, W.C. Xu and L.B. Yang	3228
Research on Sustainable Design Strategies of Campus Building S. Song, J.H. Xu and C.H. Zhang	3235
Study on Eco-Clothing with Multiple Style Transformation in the Background of Cyclic Economy	
W.Z. Wang, S.L. Yu, Q.Z. Wang, Y.B. Luan, J.Z. Wang, L.H. Wang and C.J. Guo	3239
Study on Ecological Design of Traditional Rural Dwellings in Southern Hunan, China J.H. Xu and J.M. He	3243
Study on the Influence of Green Design Idea to Modern Mechanical Product Design X.X. Liu and M. Chen	3248
The Square Morphology Research for Main Pavilion of the 8th China (Chongqing) International Garden Exposition G. Chen and F.J. Liu	3252
A Logistics and Manufacturing Management Framework of the Automobile Manufacturer	3232
from the Viewpoint of Energy Conservation and Emission Reduction Y.Q. Du, X.F. Lu, Y.H. Li and Y. Xu	3256
Applications about the Internal Circulation Anaerobic Reactor in Wastewater Treatment	
Industry G.Y. Zhang, C.B. Deng, J. Zhang and H.X. Zhu	3264
Brief Analysis on Green Design and Manufacture of Furniture Products F. Liu	3269
<b>Implementation of a Coreless Axial-Flux PM Generator for Vertical-Axial Wind Turbine</b> Z.L. Gaing, G.J. Wnag and J.A. Chiang	3273
Research of Green Design Technology Based on Recycle-Oriented W. Xu and Z.M. Liu	3279
The Influencing Factor Analyses of Narrow Beam LED Luminaire Performance Test L. Liu, Y.C. Zhang and J. Xiao	3283
Researches on Current Status and Future Path of the Development of Industrial Design	
Industry of Ningbo C.X. Liu, Q.N. Zhu and Q.Z. Yang	3287
Experimental Space Imagery Design S.S. Xu, W.L. Lv and Z.K. Cao	3292

## **Chapter 22: Technologies in Transportation**

Application and Research of BM Model in the Elevation Fitting of the Express Way L.P. Tan and Y. Li	3301
Analysis on Public Bicycle Traffic Characteristic T.J. Feng	3306
Evaluation on Public Bicycle Traffic System T.J. Feng, C.Y. Liang and L.X. Wu	3310
Mode Selection of Railway Passenger Dedicated Line Transportation Organization Based on Analytic Hierarchy Process M. Fu	3314
Research and Evaluation on the Effect of Wuhan Xingang Resource Integration Based on System Dynamic Model Y.L. Tian and L. Wang	3321
Research on Yichang Road Transportation Evaluation Based on the Total Factor	3321
Productivity X.R. Gong and B. Zhan	3325
Study and Application of the IOT Technology in Railway X. Liu, X.F. Wang and X. Feng	3329
The Analysis of Feasibility between Waterway Transportation and Economy of Hubei Province Based on DEA Model	
Q. Li, B. Zhan and Q.B. Zhang  The Design of Railway Information System Integration Based on IOT	3333
L. Li, X.F. Wang and X. Lei	3336
The Trust Evaluation of Information Service System in SAAS Mode S.X. Li and J.J. Yan	3340
<b>Design of Railway Information Platform Based on the Internet of Things</b> L. Shi and X.F. Wang	3345
Research on Railway Information Technology System Based on IOT L. Li, X.F. Wang and X. Feng	3349
Railway Information Integration and Sharing Mode Researching Based on Internet of Things	2252
X. Lei, X.F. Wang and L. Li  Application of Internet of Things in Rail Cars Management	3353
X. Lei, X.F. Wang and L. Li	3357
A Heuristic Algorithm to Study the Influence of Road Preference on Network Capacity W.D. Yang, D.T. Fan and H. Bai	3361
Probability Model of Upstream Passenger who Select Escalator in High-Speed Rail Hub Y.L. Pei, K. Zhou and T. Peng	3366
A Novel Particle Swarm Neural Network Model to Optimize Aircraft Fuel Consumption Y.J. Zhang and J.X. Xu	3370
Study on Modeling and Simulation of Vehicle Safety Distance in Low Speed for Rear-end Collision Avoidance	
D.X. Chen, L. He, C.F. Zong, H.Y. Zheng and Z.T. Shi	3375
<b>Study on Business Model of Motorway Service Area Based on TOPSIS-Entropy Method</b> F. Peng and B. Zhan	3381
Research on Navigation Safety for Ships into and Out of Cecal Channel J.X. Qi and W.Z. Ai	3385
Chapter 23: Organization and Management of Modern Manufacturing	
A Genetic Algorithm for the Mixed-Model U-Line Balancing Problem H. Dong, J.H. Cao and W.L. Zhao	3391
Analysis and Evaluation on Influence Factors of Production Planning System in Manufacturing Enterprise S.Q. Chen, K.C. Yu, X.L. He and Z.J. Zhang	3395
Design for Enterprise Asset Management Evaluation System of Power Generation Enterprises Based on KPI K.W. Zhang	3401

Optimum Charge Plan of Steelmaking Continuous Casting Based on the Modified Multi- Objective Evolutionary Algorithm	
H.X. Song, J.X. Zhang, K. Gao, W. Meng and L. Cheng	3406
Research on Collaborative Management Strategy of Spare Parts Based on E-Marketplaces J. Liu and T. Jiang	3412
Research on Dual Markets Competition and Capacity Optimization Based on a Weakest Traditional Retailer: From a Brand Promotion Effect Perspective P.Q. Li	3419
Research on Evaluation of Safety Input Efficiency of Construction Enterprise - On the Basis of DEA-Tobit Model B.K. Qi, H. Wang and K.B. Li	3423
Retailer's Optimal Ordering Policy under Conditions of Allowable Shortage and Two-Level Trade Credit Derived without Derivatives F. Hu	3428
A Study of the Material Re-Issued Models for an Insufficient Output of the LED Chip Manufacturing Plant H.H. Wu, M.F. Li and C.H. Yeh	3434
An Integrated Purchase and Production Model for Solar Manufacturing R.K. Li, C.F. Hsu, H.Y. Kang and A.H.I. Lee	3441
An Order Fulfillment Model for the LED Chip Manufacturing Plant H.H. Wu, M.F. Li and T.F. Hsu	3446
<b>Model to Evaluate Production Performance of Twin-Fab under Capacity Support</b> Y.M. Tu, C.W. Lu and S.H. Chang	3453
<b>Model to Plan and Control the Generational Transition of DRAM Industry</b> Y.M. Tu and T.H. Hsu	3458
<b>Research on Emergency Supplies Scheduling Problem with Robust Optimization Approach</b> D.Q. Jiang and Q.X. Zhu	3462
Research on Supply Chain Profit Coordination Mechanism Based on JIT Lot-Splitting $Q.\ Lv$	3466
Selecting Candidate Suppliers Using a Multiple Criteria Decision Making Model A.H.I. Lee, H.Y. Kang, C.Y. Lin and H.W. Wu	3472
Study on Pricing Method for New Technology Products of Infrastructure Engineering Field J.J. Zhang	3476
The Causal Tracing Method of Fast Moving Consumer Goods Logistics Quality Based on Extended Spanning Tree S.W. Ji, Z.R. Su and Z.H. Zhang	3480
The Double-Closed-Loop Quality Model of Fast Moving Consumer Goods Supply Chain Based on Quality House S.W. Ji, Z.Z. Yu, Z.H. Zhang and Y.H. Gao	3484
The Implication of Taiwan's Ore Tramp Carrier Cargo on the Blast Furnace Plant M.T. Chou and C.C. Chou	3488
The Research on Classified Construction Mode of Manufacturing Enterprise Logistics Informatization	
J. Liu, Y. Qian and Y.W. An Vicissitude of Japanese Manufacturing Industry and Way of Chinese Manufacturing	3492
Industry M. Sawaguchi, X.L. He and K. Makino	3498
Study on the Product Quality Control in Small Batch Trial Process L.Y. Tao, M. Zhang and Z.D. Li	3507
Forecasting and Analysis the Demand of Agricultural Mechanization for Economic Development J.Y. Ju, R.X. Zhu and L. Geng	3512
Optimization Design for Size of Footwear Outer Packaging Boxes Y. Liu, Z. Wang and G.Q. Cheng	3512
SNA Based Expert Knowledge Map Design for Ship-Block Scheduling Decision-Making Y.W. Huang, Z.H. Jiang and L.J. Liu	3522
Application of Multi-Objective Culture Particle Swarm Optimization in Complex Product Assembly Line Balancing	
C.Y. Liu and H.J. Wen	3526

Study on Cluster Model of Appliance Industry in Qingdao J.Q. Zhao	3531
The Dynamic Adjustment of China's Manufacturing Listed EnterprisesDebt Ratio - A Study Based on System GMM Estimation	
L. Zhang, B.Y. Wu and L. Wang  A Quantitative Model for Safety Evaluation of Food Supply Chain Based on CAS	3535
J. Mu and W.X. Jia	3540
Analysis of Development of Supply Chain in New Materials Industry H. Ye and G.P. Cheng	3545
A Study on Competitiveness Evaluation of Cloud Outsourcing Vendor L. Liu, J.Y. Tao and X.H. Shan	3549
Optimization Model Based on the Fractal Theory in Supply Chain Management S.W. Liu, H. Dong and W.L. Zhao	3554
Dynamic Truckload Pick-Up and Delivery Problem with Time Windows C.F. Zhou	3558
Research on Inventory and Transportation Integrated Optimization for Railway Fuel Supply	
S.W. Ji, Y. Tao, J.J. Chen and G. Ying	3562
The Construction of Intelligent Supply Chain G.R. Lv and Q. Yu	3567
The Important Role of Green Supply Chain Management in the Context of Land-Sea Overall Strategy	
M.J. Kang and W.X. Luan  The Evaluation Methods of Node Importance in Complex Supply Chain Network	3571
The Evaluation Methods of Node Importance in Complex Supply Chain Network W. Ge and X.H. Qin  Parformance Evaluation and Passage on Automobile Manufacturing Enterprise Passage on	3575
Performance Evaluation and Research on Automobile Manufacturing Enterprise Based on Analytic Hierarchy Process F. Wu	3579
<b>Study of the Advance Payment Financing Model Based on E-Commerce Platform</b> G.P. Cheng and J.P. Tu	3584
<b>B2</b> C E-Commerce Enterprises Decision Making on Logistic Suppliers J.J. Chen, Q. Feng and X.Q. Cai	3588
Risk Decision-Making System in Manufacture Enterprise Management Y.L. Chen	3592
Study on Regional Logistics Information Platform Pricing Strategy Based on Bilateral Market Theory  LL Chan S. R. Zhang, S. W. Ji, V. F. Guo and Z. P. Su	3596
J.J. Chen, S.B. Zhang, S.W. Ji, Y.F. Guo and Z.R. Su  Digital Products Pricing in Network Expansion - Based on Network Economic Theory	3390
Q.Y. Zhang and F.J. Zhang	3600
Emergency Logistics System Based on Bilevel Optimization Model B. Liu, B. Li and Y. Li	3605
Research on the FMCG Supply Chain Quality Control Tower System and Operation	
Mechanism S.W. Ji, Y. Tian, Z.H. Zhang and H.L. Lu	3610
Study on the Functional Zones Layout of Fresh Food Distribution Center Based on the SLP Method	
C. Wu, T.J. Hu, X.F. Wang and C. Zheng	3614
A Fuzzy DEA/AR Method for Manufacturing Mode Selection Y.F. Wang and H.S. Yan	3618
Research on the Development Potential of China's Strategic Marine Industries Marine Engineering Equipment Manufacturing Industry L.N. Du, W.X. Luan and Y.P. Jiang	3626
An Improved Genetic Algorithm for Digital Facility Layout Optimization Oriented Multi-	3020
Species and Variable-Batch Production Mode D.G. Li and Z.X. Chen	3632
<b>Exploring Intelligent Information Communication Services: A Case of Corporate Social Responsibility</b>	
H.Y. Tsai and W.C. Chen	3636

Technology Spillover and Enterprise Innovation Cooperation in Complementary Products of Different Industrie X. Lu, Y.X. Liu and H.M. Pang	3642
On Matching the Outlook on Development of Modern Science and Technology with the	3042
Establishment of a Harmonious Society F.Y. Li, T.W. Li and M. Li	3648
Chapter 24: Engineering Education	
ESP Teaching in Technological Institutes Y. Yu	3655
<b>Evaluation on International Student Teaching Quality Guarantee System</b> Y.H. Ruan, Y. Liu and M. Dou	3659
<b>Higher Education Sustainable Development in Sichuan Province: Problems and Solutions</b> J. Hu and Q. Huang	3663
The Evaluation of International Education College Students' Comprehensive Quality Y.H. Ruan, M. Dou and Y. Liu	3667
The Value of use Modern Means of Information Technology in Rural Adult Education and Training C.L. Wang	3671
Exploration and Practice about Bilingual Teachers and the Network Resources Construction for Data Structure	30/1
Y. Xiang, J. Peng, Q. Xiong, L. Lei and M.Y. You	3675
Exploring Non-Traditional Machining Training J.W. Liu, D.Q. Wei and R.J. Lv	3680
Innovative Methods of Welding Teaching, Training and Research in Higher Education L.H. Hu, D.L. Ren, C.L. Xu, P. Zhang and Y.F. Sun	3684
Preliminary Discuss on Training Mode of Excellence Engineer in Application Oriented	
University Q. Wang, R. Pan, Z.J. Zhang and G. Chen	3688
Research and Application of Project-Based Teaching in the Multi-Media Technology B. Li, X.Q. Wu and J. Du	3692
Study of Production, Teaching and Research Integration in Training of Material	
Engineering Talents X.F. Guo, D.L. Yin, B. Xu and Y. Wang	3696
Study on Multimedia Education System of Technological College Y. Hu	3700
<b>Study on Construction and Application of Self-Adaptive Network Virtual Laboratory</b> L.X. Zhang and G.R. Liu	3704