### **Table of Contents**

#### **Sponsors, Committees and Preface**

### 1. CAD/CAM/CAE

Hot-Stamping Process Simulation and Optimize Research for Collision Beam of Automobile Door	
C. Wang, B. Zhu, Y.S. Zhang, J. Shi and H. Dong	3
The Interpolation Algorithm of Feed Rate Control Based on Trigonometric Acceleration- Deceleration and Machine Dynamics Conditions L. Jiang, G.F. Ding, B.B. Xie and J.M. Wang	9
An Approach to Multi-Constrained 3D Modeling for Curtain Wall System Based on Spatial Point-Line Model Z.Z. Hu, F.Q. Yu, G.X. Li and Z.L. Wang	15
A Novel Symbolic OBDD Algorithm for Generating Mechanical Assembly Sequences Using Decomposition Approach Z.B. Xu, T.L. Gu, L. Chang and F.Y. Li	24
The Analysis of the Temperature Field and Deformation of Cylinder Liner Base on Finite Element Method and Experiment K. Li, T.X. Su, X.J. Li and S.X. Xing	30
Problems in the Application of Commercial CAD/CAE Software and Improvement	30
Methods C. Wang, X.W. Yang and B.K. Yang	36
A Method of Machining Region Planning for Tyre Tread Mold Machining J.S. Liu, H.N. Tu, F.C. Xia and J.X. Xiong	40
Finite Element Analysis of Laminating Press Frame X.Z. Zhang, S.B. Wang, K. Wu and Y. Sun	44
Lightweight Design of Electric Scooter Frame by Finite Element Optimization H.B. Dong and W. Zhang	49
A Feature-Based CAD-CAE Integrated Approach of Machine Tool and its Implementation W.T. Niu, P.F. Wang, Y. Shen, W.G. Gao and L.N. Wang	54
Using Software Engineering to Guide Commercial CAD Software Secondary Development C. Wang, B.K. Yang, X.W. Yang and G.R. Yan	59
Research on 3D Non-Destructive Measurement System Based on Homogeneous Entity Y. Gan, J.R. Zhong and D.F. Gan	63
<b>Study on the Parallel Rendering Technology Used in Virtual Prototype System</b> M.Q. Yin and S.Q. Li	69
Models and Simulations of the UV Lithography Process Based on Thick Photoresists Z.F. Zhou, Q.G. Huang and W.H. Li	75
Research on Computer-Aided Conceptual Design of Palletizing Robot Z.M. Li and W. Liu	80
Study on the Computer Numerical Control Process of Variable Pitch, Groove Depth and Groove Width Screw M. Han, S. Li and L.T. Deng	85
Numerical Simulation on Aerodynamics of Ramjet Projectiles J.X. Zhang, Y.N. Wang and R.M. Liu	89
A Parametric Die-Base in SolidWorks X.Q. Zhang	93
A Study on the Digital Simulation for Sheet Metal CNC Incremental Forming Based on Z-Map	
H. Żhu, Z.J. Liu and J. Kang	99
The Research and Realization of Efficient DDA Interpolation Algorithm for Multi-Axis Linear Linkage X.L. Yan, J.Y. Zhang and W.L. Wang	103
11.2. 1 mi, v. 1. 2 ming and 11.2. 11 ming	103

Finite Element Analysis on Structural Stress of 8×8 InSb Infrared Focal Plane Array with Underfill	
Q.D. Meng, L.G. Sun and J.X. Pu	108
Research on 3D Reconstruction of the Facial Surface Reverse Engineering J. Yang and L. Zhao	113
A Digital Near Net Shape Manufacturing Propeller with Complex Surface Z.F. Jiao, S. Yao, S.M. Zhao, F. Zeng and D. Wu	117
Finite Element Analysis for Analog Modes of SCS Series Truck Scale with Different Loads W.T. Shi, J. Li and J. He	121
Finite Element Analysis of Blanking Process by Superimposing Ultrasonic Vibrations W.C. Yeh, T.S. Chu, S.S. Wang, K.H. Fuh and K.H. Chen	126
Special Purpose Five-Axis Machine Tool for Manufacturing a Precision Cam C.H. She, K.S. Li and Z.H. Zheng	133
Accurate Prediction of Die Face Coloring Rate for Short-Period Manufacturing of Automotive Drawing Dies Q. Yu, D.H. Miao, Y.J. Cai and C.F. Men	138
Automation of Design and Analysis in Simulation System for Rough Rolling Process of H-Beam	
C.Y. Li, Q.H. Zhang, R.P. Ma and B.T. Dong	143
A Fuzzy C-Means Clustering Method Based for 3D Mechanical Models Retrieval H. Jing, C. Li, B. Kuang, M.F. Huang and F.Y. Liu	147
Tolerance Synthesis Modeling Based on Degree of Freedom of Geometric Variations of Features B.S. Xu, C. Wang and M.F. Huang	151
Development of CAD/CAE Software System for Raw-Soil Structure Z.H. Zhou, J. Hu and Q.L. Zhang	157
The HSM Intelligent Database System Based on Neural Networks L.J. Liu, M. Lv and W.G. Wu	162
Study on Meshing Characteristic and CAM Technology of Limacon Type Gears J.L. Zhao and P.F. Meng	167
Theoretical Model of Wall Heat Transfer in Turbulent Flow W.Z. Zhang, X. Liu and C.H. Xiang	171
Local Gouge Detection Algorithm for 5-Axis Sculptured Surface Machining Using the	
Toroidal Cutter W.G. Fan, J.Y. Li, Y.L. Cai and Z.H. Huang	176
Virtual Processing Research on Auto Control Valve Cylinder Mold P. Xu, K.P. Ma and S.F. Wang	180
<b>Boom System Kinematic Simulation of Truck-Mounted Concrete Pump</b> X.X. Zhou, N.N. Ren, S.J. Guo, Y.L. Tang and R.L. Tian	185
Research on Assembly Variant Design Based on Complex Network K. Xu, F.Y. Liu and G. Li	189
Line Segment Nearest Neighbor Query of Spatial Database Based on R*S-Tree D.Z. Sun, Y.W. Sun, X.C. Kang and Y.R. Li	194
Study on the Optimum Choice of Cutting-Tools in NC Machining Based on the Polychromatic Sets Theory	
E.F. Liu, X.Y. Liu, Y.X. Fang and Z.B. Li	198
Analysis and Simulation of the Shear Deformation for Woven Cloth L. Chen, S.G. Zhao, L.J. Zhang, L.Q. Zhang and W.B. Zhang  Malding CAE Technology and its Application Property.	203
Molding CAE Technology and its Application Research Y.F. Wang	209
Research and Development of UG-Based CAD/ CAM System for Turbine Blade F.J. Ren, S.Q. Zhou, J. Li, Z.Q. Wan, Y. Zhao and Y. Liu	215
Kinematics Analysis and Simulation of a New Type of Mechanical Excavator with Controllable Mechanism	
G.W. Cai, Z. Zhang, Y.C. Pan, D.C. Wu and X.Y. Xu	220
3D Laser Inner Engraving Path Generation and Simulation for Crystal Glass H. Zhu, N. Li and Z.J. Liu	225

Visualized Equivalent Variational Modeling in Tolerance Analysis of 3D Mechanical Assemblies	
D.Y. Yang and J. Gong	229
Computer Simulation of Uniform Corrosion Process for Carbon Steel A.Q. Wu, H.Y. Yu and D.B. Sun	234
The Analysis in the Difficulty of Carrying on the Innovation Based on the TRIZ Theory K.S. Wang, H.L. Liu and Y.X. Xu	241
A Nonlinear Tolerance Analysis Method Using Worst-Case and Matlab M.Q. Yu, Y. Yan, J. Hao and G.X. Wang	247
Theoretical and Finite Element Analysis of Crosshead of Quintuple Cylinders Fracturing Pump	
Z.P. Lv, S.Z. Zhou and X.H. Ma	253
A Lamp Coating Temperature Field Calculation Method K. Lin	257
Numerical Simulation of the Two-Phase Flow in a New Type Cyclone N.N. Xing and W.L. Zhao	263
Holonic Engineering Data Management Framework for Allied Concurrent Engineering C.C. Wen	267
Simulation Analysis to Shock Strength of Electromechanical Products Using MSC.PATRAN and MSC.DYTRAN B.C. Ma and X.K. Tian	272
Design of Vehicle's Controlling System Used a 4WS Control Method Based on BP Neural Network	
Y.P. Liu, Y. Tang and J.B. Bi	276
Parameter Transfer Method of Mixed-Language Programming Y.H. Sun, R.S. Lai, J. Zhang and B. Kuang	281
<b>Design and Simulation of the Cleaning Parts of Comb-Type Cotton Picker</b> Y.P. Yuan, W.L. Sun, S. Huang and Y.Y. Ni	286
Research on the Installed Position of the Cutting Device of a Small-Scale Sugarcane Harvester Using Virtual Prototype Technology J.H. Zhou, S.P. Li and X. Lai	290
Research on Network-Based Intelligent EDM CAPP System J.Z. Zhao and Y.T. Liu	298
Thermal Stress Analysis of a Tubesheet with a Welding Clad H.F. Li, C.F. Qian and X.D. Yu	302
Application of Experimental Design and MPI Technology in Injection Molding Parameters Optimization	200
Y. Hu and W.L. Xie  A Study on Durability Enhancement of Band Brake for Mooring Winch	308
D.S. Han, G.J. Han and D.H. Choi	314
An Integrated Approach of CAD/CAM for Spatial Cam with Oscillating Cylindrical Rollers J.N. Lee, Y.C. Tsai, H.S. Chen and H.K. Kung	318
FEM Analysis of Plug Packer Based on the Model of Mooney-Rivlin C. Zhang, S.M. Zhang, D. Geng, J.M. Zheng and W.B. Fan	326
Simulation of End Milling for Weak-Rigidity Structural Parts of Aluminium Alloy in Aviation C.L. Fu, C.K. Wang, T.G. Li and W.S. Wang	332
Thermal-Mechanical Couple Analysis for a Piston of Oil Engine Based on ANSYS H. Li	337
Manufacture of Custom Contoured Seat Cushions Using Computer-Aided Design Computer-Aided Manufacturing (CAD/CAM) Technique	JJ1
S. Sekou	342
Anti-Crashing Energy-Absorbing Simulation and Optimization of Thin-Walled Components	2.45
B.Z. Chen, Z.D. Lv, S.M. Xie and W.Z. Zhao  Miyod Loop Schome and it's Industry Application	347
Mixed Loop Scheme and it's Industry Application Z. Shi	356

The Numerical Study of Oil Drop Jet from Oil-Air Lubrication Nozzle J.L. Wang, L.Q. Li and L. Cai	361
2. Energy Storage and Energy Development	
The Optimum Solution to Diameter of the Down Wind Turbine L. Zhang	367
Analysis on the Key Technologies of CBM Surface Well Development in Mining Active Areas of China J.H. Chen	372
Profit-Oriented Decision-Making Model of Manufacturing Systems M.Q. Li and D.Y. Li	378
Practical Optimization of Industrial Gravel Size in Gravel Packed Well J.G. Deng, Y. Chen, L.H. Wang, W.L. Zhao and P. Li	383
Service-Oriented Manufacturing: the Development Trend of Chinese Manufacturing Industry J.L. Lin, R. Miao, Z.B. Jiang and L.Y. Wang	388
A Prediction of Water Breakthrough Time of Horizontal Wells in Gas Reservoirs with Bottom Water	300
W.Y. Zhu, X.H. Huang, H.Q. Song, J. Deng and X. Liu  Formation Pressure Analysis of Water-Bearing Tight Gas Reservoirs with Unsteady Low-	393
Velocity Non-Darcy Flow H.Q. Song, M. Yue, W.Y. Zhu, D.B. He and H.J. Yi	399
Behaviour Characteristics of Pressure Bump of Deep Mining in Kailuan Coal Mine and Micro Seismic Monitoring Technology Y. Zhang, L.F. Gao, S.Z. Zhang, J. Sun and P. Zhang	404
Geological Features of Kailuan Coal Mine and the Laws of Pressure Bump for Deep Mining L.F. Gao, Y. Zhang, Y.H. Niu, Y.C. Wang, J. Sun and P. Zhang	408
Mechanism of Frequency Conversion Vibration Stimulating Exploiting Technology with Marine Gas Hydrate and its Numerical Simulation Z.G. Zhang, L.F. Gao, Y. Zhang, Y. Wang, G.Y. Shi and C.S. Liu	413
<b>Key Technology of Safety and Effective Mining in Thick Coal Seams with Dirt Band</b> W.D. Pan, H.B. Zhao and S.L. Yang	417
Spheroidization Modification of Artificial Graphite Applied as Anode Materials for High Rate Lithium Ion Batteries	421
Y.S. Wu, T.S. Yeh, Y.H. Lee and Y.C. Lee  Intelligence Mining with Electro-Hydraulic Control Technology M.X. Lu, M.F. Lv, J.G. Wang, M. Li, J. Zhao, Y.Y. Liu, Y. Zhao and J. Wang	421 425
Design of the Speed Regulating PIG with Butterfly Bypass-Valve G.B. Tan, S.M. Zhang and X.X. Zhu	429
Key Technologies of Sucker Rod Pump Card Diagnosis Based on BP Neural Network X.D. Wu, R.D. Zhao, Z. Hao, T. Zhen and S. Lei	433
Review of Sour Gas Field on Corrosion Factors and Development Progress Y. Han, X.H. Zhao, Z.Q. Bai and B. Wei	438
The Principle and Calculation of Hydraulic Driven Downhole Twin-Screw Pump Z.H. Zhao, Z.L. Li and S.N. Lu	448
<b>Design and Matching Calculation of Hydraulic Helical Axial Multiphase Pump</b> Z.L. Li, S.N. Lu and Z.H. Zhao	454
The Study of the Heat Device in Wind-Magnetic Water Heater X.H. Liu, C.C. Chen, H.D. Yu, G.D. Wei and Z.D. Tian	460
3. Mining Machinery Manufacturing	
Resistance Analysis of Belt Conveyor during Horizontal Turning Section X.W. Cheng and H.B. Du	467
SDS Effect on $CH_4/N_2/O_2$ Hydrate Formation Rate for CMM Separation and Storage Q. Wu, X. Gao and B.Y. Zhang	471

Numerical Simulation of Unsteady Pressure Field for Mammoth Electric Diving Pump C.C. Gao, X.Y. Liu and L.J. Feng	476
Structural Improvement of the Braking System of Electric Locomotive Based on FEM Analysis	
L.B. Cao, P.G. Yan, Z.G. Ou Yang and C.C. Hu	482
Research on Design and Magnet Assembly Process of Multivariate and Multi-Roll Permanent Magnetic Separator H.G. Jiao, C.L. Shi and R.X. Tian	486
Compensation Experiment Analysis of Adaptive Optical System in Space Laser	
Communication X.H. Zhai and H.T. Zhang	491
Compensation Effects Analysis of Adaptive Optical System Based on Space Laser Communications	
H.T. Zhang and X.H. Zhai	495
Simulation Analysis of the Tilted-Jaw Crusher Based on ADAMS P.P. Huang, Q. Lei and K. Wang	499
Design and Research on the New Combining Vibrating Screen N.Q. Guo, H.M. Lou and W.P. Huang	504
Study on XML-Based Apriori Algorithm Applying to Remote Diagnosis System for Hoist J.L. Li and Z.J. Yang	510
<b>Improvement to the Gear Reducer for a 45T Mining Car</b> L.B. Cao, Z.W. Deng and T.G. Xiong	514
Finite Element Analysis of Heavy-Duty Dump Truck Subframe Based on ANSYS H.G. Li, J.P. Si, L. Han and B.W. Zhang	518
Design and Application of Flexible Auxiliary Haulage System for Material Supply in Underground Coal Mine	
J.C. Chang and Q.H. Chen	524
Study on Optimal Real-Time Feedback Scheduling of Networked Collaborative Design Project under Uncertainty D.T. Liu and D.J. Zhou	529
Study on Topology Optimum Design of Middle Pan	32)
Y.H. Qie, B. Liu, X.H. Wang and X.L. Li	534
Coordination and Optimization of Energy Using the Multiple Linear Regression Analysis in a Green Power System	
X.N. Niu, Y. Sun, C.H. Zhao and S.H. Yu	539
Optimization on Motion Errors of Ultra-Precision Machine Tools Based on Multi-Body System and Monte Carlo Simulation T.J. Li, S.J. Chen and K. Cheng	543
Scroll Profiles Geometric Parameters Optimization Based on CPSO	545
G.F. Xiao and G.P. Liu	550
4. New Energy Equipment and Manufacturing	
<b>Design of Non-Contact Balance Head for Grinding Wheel</b> J. Su and B. Gao	557
<b>Design of 4-Axis Reconfigurable CNC Machine Tool for Relief Grinding Sphere Gear Hob</b> Z.Q. Hu and Y.K. Li	561
Multifunction Evaluation System for Coal-Bed Gas Adsorption Isothermal and Pollution of Drilling Fluids	
W.C. Yu, Q. Hu, X.Q. Lai, X.S. Xiao and W.Q. Liu	565
<b>Study on Degree of Engineering Changes Based on Product Family</b> F.H. Zeng, L.H. Zhou and Z.R. Li	572
Research on the Serialized Design Criterion and Engineering Application Z.H. Lu, Y. Bo and W. Zhang	577
Study of Parameters Optimization of Organic Rankine Cycle (ORC) for Engine Waste Heat Recovery	
H.G. Zhang, E.H. Wang, M.G. Ouyang and B.Y. Fan	585

Hydraulic Variable Pitch Control and Aerodynamic Load Analysis for Wind Turbine Blades	
Y.G. Kong, H. Gu, J. Wang and Z.X. Wang	590
The Application and the Driver Design of Double Axis Step-Drive Electromotor in the Motorcycle Meter S.B. Li	594
Research of Two Stage Single Screw Expander Organic Rankine Cycle System Scheme Based on the Waste Heat Recovery of Diesel Engine's Exhaust Gas H.G. Zhang, H. Liang, X. Liu, B. Liu, Y. Chen, Y.T. Wu, W. Wang and K. Yang	600
Design of Adjustment Devices of the Weaving Density for Computerized Knitting Machines	
G.J. Hu, H. Qi and W.Q. Zhao	606
Test Study and Development of High Energy Direct Ignition System for Electronic Control CNG Engine Q.P. Chen, H.Y. Shu and C.H. Shi	610
Exploration of Optimizing Processing Technic Based on HS-WEDM	010
J.W. Liu and X.Y. Liu	614
CFD Analysis of Evaporator Condition on Ejector Performance in a Solar Energy Air Conditioner	
J.F. Wang, J. Xie, L.R. Tao, Y.H. Wang and X.Y. Yang	618
<b>Study on Mixture Formation of Liquid LPG for a Center Injection DISI Engine</b> B.Y. Xu, D.Z. Sun, Y.L. Qi, Y.W. Zheng, H.Y. Tian and S.L. Cai	622
Simulation of Failure Detection Based on Neural Network for No-Ball Mill K.S. Li, X.H. Wang and W.M. Wang	627
Study on Characteristics of the Linear Air-Conditioner Compressor at Varied Operating	
Conditions J.F. Xie, X.H. Li and H. Zhang	632
<b>Develop Course of Chinese Laser Fusion</b> Z.J. Xie, Q. Liu, X. Xu, L.D. Zhou and H.Y. Chu	637
A System of Selective Non Catalytic Reduction of NOx for Diesel Engine B.Y. Xu, H.Y. Tian, J. Yang, D.Z. Sun and S.L. Cai	643
Research and Modeling for Bi-Directional DC/DC Converter Based on Formation Technology for Lithium Battery	645
H.L. Liu and Y.Z. Wang  Fabrication of High Concentration Reflected Photovoltaic Module	647
C.Y. Hsu, Y.D. Chiang and Y.L. Lin	652
The Design and Application of the Localization Sensor Based on the CCD Image J.L. Liu, A.C. Zhang and Y.Y. Yan	656
Finite Element Analysis of the Stress on Cylinder of the Fluidized Bed Reactor for Fast	
Pyrolysis Q.R. Xie, Y. Sun, L.W. Zheng, H.Q. Wang and Z.F. Tong	660
5. Cloud Manufacturing and Extreme Manufacturing	
Separate Mapping and Application in Data Share for Network Manufacturing J.L. Song	667
Cloud Manufacturing F. Tao, Y. Cheng, L. Zhang, Y.L. Luo and L. Ren	672
Study on Fault Tolerance for Virtualization-Based Computer Simulation Systems L. Ren, Y.L. Luo and Y.B. Zhang	677
Research of Resource Virtualization Technology Based on Cloud Manufacturing C.Q. Li, C.Y. Hu and Y.W. Wang	681
Study on Multi-View Model for Cloud Manufacturing Y.L. Luo, L. Zhang, D.J. He, L. Ren and F. Tao	685

# 6. Bio-Manufacturing

Rapid Preparation of Pure Antibodies against Classical Swine Fever Virus from Pig Serum by Immunoaffinity Chromatography	<i>(</i> 01
G.Z. Wang, L. Feng, Y. Li and R.Q. Li	691
Surface Roughness Prediction of High Speed Milling Based on Back Propagation Artificial Neural Network J.P. Hu, Y. Li and J.C. Zhang	696
Investigation of Liquid Sensor Using a Dual-Mode Thin Film Bulk Acoustic Resonator (FBAR) Combined with Au/Cr Layers	
W.T. Chang, Y.C. Chen, R.C. Lin, K.S. Kao, J.M. Jiang, C.H. Yang and C.C. Cheng	700
Study on the SMT Chip Resistor Solder Joint Two-Dimensional Quality of Information Extraction Based on VC++ Y.F. Sun, D.J. Zhou, Q. Zhao and S.H. Zhu	704
Research on CFD of Fluidization of Biomass Waste Fast Pyrolysis Reactor R. Li, L.J. Jing and M.M. He	708
Aviation Equipment Maintenance Job Card Generation Method Based on Lightweight Model	<b>-1.</b>
J.H. Geng, X.T. Tian and X.L. Jia	714
Shear Mode ZnO Thin Film Applied in FBAR Sensor C.C. Cheng, R.C. Lin, W.T. Chang, Y.C. Chen, K.S. Kao and S.L. Ou  C. Cheng, R. C. Lin, W. T. Chang, Y. C. Chen, K. S. Kao and S.L. Ou	718
Production of Bacterial Cellulose Using Different Carbon Sources by Two-Stage Cultivation Strategy	
J.H. Lin, Y.J. Lin, J.C. Kuo, T.Y. Chen and W.P. Sung	722
<b>Studying on Auxiliary Gradient Rings for the Collecting Area of Electrospinning</b> D.L. Liu, X.Y. Zhao, H.G. Zhang, Y.Y. Liu and Q.X. Hu	726
7. Enterprise Informationization	
Solving the TSP by Simulated Annealing Genetic Algorithm Based on Google Maps JavaScript API	
X.B. He and Y.W. Mo	733
<b>Dynamic Evaluation Model of Enterprise Informatization Level and its Application</b> W.Y. Qian, Y.G. Dang and C.Y. Lin	738
A Product Structure Management Method Based on Ajax N.Y. Lu, F.Y. Liu and T. Shay	744
<b>Decision Support Technology of Enterprise Production Management Based on Data Mart</b> J.T. Chang, Y.Y. Qiu and S. Li	750
Product Design for PRO/E-Based Master Part F. Feng, G.J. Hu and H. Pan	755
Strategy of the Information Construction in Modern Tourism Enterprise Y.R. Zhang	759
Process-Oriented Software Development Based on HPN Business Process Model G.X. Yun and J. Zhang	763
Parametric Design of Foamed Sheet Die Z.L. Chen, G.J. Si, C.Y. Wang and D.L. Wu	768
Model of Collaborative Knowledge Innovation with Distributor Participation in Supply Chain X.M. Zhang, N.L. Shen and X.P. Mao	773
Research on Knowledge Navigation Supporting Rapid Design of Complex Product Y.J. Ji, K. Long and G.N. Qi	779
PRO/E Based Parametric Design of Spur Gears F. Feng, H. Pan and G.J. Hu	790
The Study of Job Shop Scheduling Based on Genetic Algorithm J.X. Xiong, J.P. Zhao and H.N. Tu	795
Research on Generating Interference-Free Tool Path Based on Triangular Bézier Surface X.C. Kang, D.Z. Sun, Y. Shi and Y.W. Sun	799
VD Vacuum Furnace Shell's Buckling Numerical Analysis Based on Ansys Z. Gao, X.D. Liu and Q.M. Huang	805

Development of Intelligent CAD Design System for Straw Crusher L.Q. Chen, L. Lu, J.Q. Zhang and J.X. Wang	810
Reverse Engineering in the Design of a Plastic Part	010
C.H. Sun, Z. Wei and L.L. Yang	814
Influence of Radial Position of Medium Size High Voltage Asynchronous Motor Stator Ventilation Channel Peri-Axle Terminal on Fluid Flow Pattern J.B. Wen and H.Y. Yan	818
Study on Trustworthy Interaction-Chain of Human-Information System in Distributed Cooperative Manufacturing Environment L. Zhang, S.P. Yi and R. Zhao	824
Study on Crankshaft Design Based on CAD/CAE C.G. Xia, J.K. Su and M.H. Pan	830
Using Logic Synthesis and Circuit Reasoning for Equivalence Checking Q.R. Fan, F. Pan and X.D. Duan	836
<b>Design of a CAM System for End Mills Based on Solid Modeling</b> Z.H. You, F. Tang, S.Z. Li, X.F. Yue and X.H. Wang	841
Registration and Integration of Automobile-Bodies Scattered Point Cloud Based on K-D Tree	
Y. Zhou, W.B. Zhang and F.R. Du	846
Design of Data Acquisition System in MES Based on RFID X.J. Li, P. Wang and X. Huang	852
$ \begin{array}{c} \textbf{Complex Products Remote Collaborative Design and Implementation of its Flexible Flow} \\ X.X.\ Wu\ and\ Q.F.\ Gao \end{array} $	857
Building of Mechanical Components Ontology in the Networked and Collaborative Environment	
Q.L. Zeng, L. Qin and C.L. Wang	863
Information Collaboration Model for Modular Product Based on SM L.W. Song, Y.J. Ji and G.N. Qi	867
$\label{eq:controller} \textbf{Resource Modeling of Manufacturing Process Optimization under Dynamic Environment} \\ M.\ Lv,\ X.D.\ Sun,\ G.\ Wang\ and\ Y.\ Che$	878
8. Integrated Manufacturing System	
Research on the In-Process Model Based on CIMS C.X. Fan and W.Z. Wu	885
Study of Process Planning Based on Machining Feature J.P. Tian, C.H. Fu, A.H. Tang and C.F. Mi	889
A Novel Extremity Balance System-Design and Manufacturing	905
J.W. Chen, H.S. Hsieh, Y.H. Chen, S.J. Wu and L.A. Chiu  Study on the Structured Process Operation Language Based-On Predicate Logic	895
S.C. Zeng, R. Wei, X.P. Liao and F.H. Zhou	904
Study of the Knowledge-Based Integrated Equipment Management System for Process Enterprise	
Y. Yu, X. Ji, D. Wang, F. Zhao and J.H. Tang  Domain Based Trust Evaluation Strategy for Manufacturing Crid	912
<b>Domain-Based Trust Evaluation Strategy for Manufacturing Grid</b> Z.H. Ge, T.S. Li and L. Li	920
A System for 3D Digital Assembly Process Planning and Simulation in Airplane Manufacturing Enterprises	
Y. Li, L. Dong, J.F. Yu and K.F. Zhang	926
Generation, Analysis of Switched Mode Dc to Dc Converters by the Use of Converters Cells H.L. Liu, R.B. Zhang and P. Yang	931
Research on Integration of Rapid Manufacturing Grid J.S. Shan and R.L. Hu	936
Design and Implementation of Machine Vision Automatic Laser Scanning System H.F. Yan, J. Shao and J.M. Chen	940
Research on SVG-Based Web-To-VDP S.W. Yang, Z. Liu and Z.J. Mao	944

# 9. Quality and Safety of Products

Interface Stress Analysis of the Bending Cylinder Containing Inclusion X.Y. Tang	951
Fault Diagnosis System for Large-Scale Equipments Based on Hybrid Reasoning M. Chen, R. Zhang and Y.L. Li	956
An Assessment Method of Structure Safety for General Overhead Traveling Crane Based on Bayesian Network G.N. Xu and W.X. Guo	962
Research of the Calculation Method Structure System Fuzzy Reliability Based on the Fault	702
Tree N. Li and B.W. Song	968
The Application of Inertial Measurement Unit in Inertia Parameter Identification B. Wang, Z.X. Hou, X.Z. Gao and S.Q. Shan	974
Material Selection of Casing in Gas Well Containing CO <sub>2</sub> and H <sub>2</sub> S X.Z. Yan, B. Shao, X.J. Yang and T.T. Wang	982
Statistical Process Control Based on Kalman Filter in Manufacturing Process P. Wang, D.H. Zhang, S. Li, M.W. Wang and B. Chen	986
Coal Mine Safety Monitoring Based on Improved_ID3 Algorithm Y.Q. Zhao, Z.C. Wang, C.Z. Jiang, W.L. Hao and G.Q. Wang	990
The Evaluation in Weapon Operational Effectiveness Base on Fuzzy Analytic Hierarchy	
Process Y.P. Zhao and N. Li	995
10. Products Processing and Storage	
Task Scheduling of Product Development Process Based on Complex Features of Web X.J. Li and Y.P. Yuan	1003
The Effect of Ultra-High Pressure on the Functional Property and Conformation of Whey Protein Isolated H.P. Liu, Y.H. Wei and Y.W. Xu	1008
The Hydraulic Jack-Up System Design on the Ocean Petroleum Platform 161 - the First Self-Installing Product Platforms in China D.T. Li, H.Q. Tian, Y.P. Wang and Y.Y. Huang	1015
The Oil Absorption of Soy Protein Isolate in High Temperature and Humidity Storage B.Y. Sun and Y.G. Shi	1013
Effect of Ampicillin as Bacteriostats on the Performance of Phosphate Solubilizing  Rhizobium. Meliloti Inoculants	1019
J.F. Li, S.Q. Zhang, S.L. Shi, P.H. Huo and L.Y. Chen	1023
Technical Economic Analysis of Remanufacturing of Large-Scale Food Processing Equipments	
D.Y. Li and W. Li	1033
11. Production and Operation Management	
Cost Optimization of Scheduling Based on Simulation J. Li and P.A. Du	1039
Optimization Design of Biscuit Formula Based on the Grey System W. Li and D.Y. Li	1044
Study on Operation Management of Producing Service Company for Manufacturing Enterprise	40==
L. Han and R. Du Single-Machine Scheduling to Minimize Absolute Value in Maximum Lateness with	1050
Deteriorating Jobs J.B. Wang, D.L. Yang and C.J. Hsu	1054

Risks and Risk Management in Chinese Iron and Steel Enterprises J.L. Zhang	1061
A Production Planning Model for Make-To-Order Companies with Capacity Constraint H.L. Gao, B. Dan and Y.G. Jing	1066
Using a Hybrid Genetic Algorithm to Minimize the Number of Tardy Jobs in the Flow Shop J.J. Wu	1070
Optimize the Transit Vehicle Routing for the Emergency Evacuation D.A. Chen, W.T. Xu and W. Zhang	1075
Molding and Optimization of Workflow Based on Stochastic Timed Petri Nets in Customized Supply Chain Management W.J. Xu and J. Yao	1082
An Systematic Modeling and Simulation Study on WIP Optimization in Semiconductor Assembly and Test Factory Y.T. Ni, J.M. Li, W. He and J. Yao	1086
<b>Based on Adjacent Cross-Coupling of Multi-Motor Synchronous Drive</b> P. Zhang, J.H. Zhang, D.S. He and B. Zhang	1093
Supply Chain Revenue Coordination Mechanism Based on Game and Lead Time Compression with 3PL Intervention Q. Lv, J.Z. Huo and J.J. Gao	1098
Simulation-Based Genetic Algorithm for Cross-Docking Center Operation Optimization under Supply Disruptions Y.F. Wu	1103
Game Analysis of Selecting Manufacturing Service Modes for Manufacturers X.M. Zhang, J. Tong, M. Zhao and J.R. Guo	1103
Research on Path Optimization of Automated Warehouse Based on Ant Colony Algorithm H.P. Li, Z.F. Fang and Y. Wang	1112
The Empirical Study on Relationship between Design-Manufacturing Integration and Manufacturing Performance of Chinese Manufacturing Enterprises S. Chen and Y.Z. Tian	1116
Research on Resource Optimization of Block Erection Procedure Based on PSO Y.G. Zhong, L.J. Hang and W.M. Shi	1121
<b>Development Simulator for Operation of Kanban System</b> B.S. Oh and J. Park	1127
Balance Analysis and Improvement of Flywheel Production Line Q.H. Jia, Y. Xiao, Y.J. Gong and K.Q. Zhou	1131
Online Due Date Strategy on Mass Customization R.Y. Pang, D.C. Liu and Q. Li	1135
12. Industrial Design	
Holistic Design Concept in the Application of Wine Packaging H. Zhao, X.M. Yu and S.F. Bao	1143
A Form Generation System Based on Design Thinking Patterns T.W. Chang and S.W.W. Tseng	1147
Component Variant Design Method Integrating Dimension and Tolerance B. Kuang, L.Z. Xiao, F.Y. Liu and Y.H. Sun	1151
Study on Application of Grey System Theory in Fatigue Span Design of Machine Tool Axles J. Xu and C.X. Wang	1156
Misoperation Study on Samsung VP101 Digital Video Camcorder B. Cheng	1161
Tensegrity Form-Finding Using Finite Particle Method X. Xu, Y. Yu, Y.Z. Luo and Y.B. Shen	1166
Research on Evaluation and Decision-Making Model of Product Design Scheme Based on TFN-AHP-GRA	
X.A. Yang, Q. Deng, G.L. Sun and B.B. Wang  Form Generation Model of Two Thinking Paths	1170
S.W.W. Tseng, T.W. Chang and J.H. Lin	1177

Fault-Tolerant Permanent Magnet Synchronous Linear Motor P. Liao, S.Y. Ma, J.F. Mao, G.Q. Wu and A.D. Jiang	1181
The Design of Automatic Conveying System for Hot Rolling Bearing-Steel-Ball Blanks Y.D. Zhou, Q. Wang and S.Y. Ma	1188
<b>Taking the Pulse of Subsea Trees Design towards Deepwater Application</b> K. Ding, H.W. Zhu, J.Y. Zhang, X.L. Kong and C. Wang	1192
Torque Ripple Suppression of Brushless DC Motors with Non-Ideal Back EMF for EPS Applications	
X.F. Zhang, X.W. Ji and F. Gao	1198
13. Engineering Optimization	
Uncertainty Quantification of a Flapping Airfoil with a Stochastic Velocity Deviation Based on a Surrogate Model L.Y. Zhao and X.Q. Zhang	1209
The Optimal Design of Work Location for a RRR 3-DoF Manipulator	
S.X. Tian and S.Z. Wang  Optimum Design of Wheeled Loader's Steering Rubber Buffer Seat Based on ANSYS	1213
H.Q. Wang, X. Xiao and X.R. Luo	1217
<b>Energy-Based Optimum Pattern Development for Garment Industry</b> J.J. Fang and Y. Ding	1223
Group Decision Making of Naval Ship Principal Dimensions Based on PSO Algorithm Y.H. Hou, S. Huang, Y.L. Hu, X.Y. Meng, W.Q. Wang and C. Wang	1233
The Application of Fuzzy Modeling and PSO in Spaces Allocation of Naval Ship Y.L. Hu, S. Huang, Y.H. Hou, X.Y. Meng, W.Q. Wang and C. Wang	1238
Study on Measurement Method of Spark Energy for Automotive Engine X.H. Liu, D.J. Wang and F.S. Liu	1243
The Elementary Exploration on Teaching Reform of Training Center of Engineering Y.P. Ma, G.F. Yuan and Y.S. Yao	1248
Equipment Selection Optimization System of Draglines and it's Applications in Opencast Coalmine in China X.R. Mei	1253
Multi-Objective Optimization Method Based on WSLS Evolutionary Game Model and its Application in Mechanism Design R. Li, N.G. Xie and R. Meng	1258
Study on the Match of Ignition Coil with Hydrogen Internal Combustion Engine X.H. Liu, Z.Q. Fan and F.J. Lu	1263
The Coal Plough Equipment Gray Connection Decision Model Base on Entropy Value Law Q. Zhang and Q.S. Song	1268
A Closed-Form Approach for Optimum Tolerance Allocation of Assemblies with General Tolerance-Cost Function	
K.M. Cheng and J.C. Tsai	1272
Frequency Optimal Design Method and Application S.Y. Bi and X.P. Liang	1279
The Aerodynamic Characteristics of a Microbus X.N. Qi, J. Meng and Y.Q. Liu	1284
Improved Genetic Algorithms Based Optimal Design of The Shuangji River Aqueduct X.L. Bai, W. Yu, D.F. Wang and Y.Y. Fan	1288
On Optimal Inventory Model for Obsolescence Perishable Products under Unpermitted- Stockout	
X.L. Xie	1292
Aerodynamic Analysis of Pickup Truck X.N. Qi, J. Meng and Y.Q. Liu	1296
Influence of Non-Technical Factors on the Construction of Tunnels J.Q. Ma	1300
<b>Study on Lightweight of the Engine Piston Based on Topology Optimization</b> F.R. Du and Z. Tao	1308

Reliability-Based Robust Optimization Design for Lattice Tower Structure X. Jiang, H.J. Li, B.F. Gao and X. Liang	1312
The Gradual Optimization Automatic Mathematic in the Job-Shop Environment J.S. Li, A.M. Wang and C.T. Tang	1317
Study on Reinforcement Scheme of Foundation Underpinning Technology for Accident Buildings in Loess Region Y.D. Hu and Y. Wang	1321
14. Product Design and Development	
Investigation into the Cutting Technology of the Ineterior Helical Surface of Metallic Screw Pump Stator	
Q.X. Ding, H.Q. Cui, X.Z. Lou, X.Z. Dong, Z. Liu and K.L. Hui	1327
The Research on the Cutting Property and Structural Optimization on Tooth of Oil and Gas Pipeline Tapping Cutter Q.X. Ding, X.M. Liu, X.Z. Lou, Z.M. Han, S.M. Zhang, Y.C. Tian and K.L. Hui	1335
A Hybrid Approach for Part Geometry Optimization through Engineering Simulation L.H. Qiao, A. Zia and N. Cai	1342
Development of Micro-Cutting Force Sensor Based on Principle of Resistance Strain Y.F. Yang, B.S. Kou, H.W. Ma and H. Chen	1348
Structure Analysis of Electron Gun Deflection Coil Based on ProE and ANSYS H.L. Liu, R.B. Zhang and Y.P. Huang	1352
Modular Code, Combination and Database Management of NC Spiral Bevel Gear Machine Tools	1256
Q. Li, D.P. Li, T.Y. Wang, M. Hu, X.H. Xiao and B. Geng  Study on Work Form and Architecture of Collaborative Product Development System	1356
R.S. Liu, X.S. Wang and Y.X. Qin  Design and Implementation of a Linear IC Based Low Cost Digital Tachometer for	1363
Laboratory and Industrial Application S.M. Ferdous, M. Rokonuzzaman, E.G. Ovy and M.A. Hoque	1368
Design and Development of New Auto-Detecting Platformfor Hoists of Suspended Access Platform  J. Sun, Y.H. Wu and K. Zhang	1373
Modeling and Solving Product Configuration Problems Using Petri Net D. Yang	1379
Formulation of Dextromethorphan Oral Disintegrating Tablet Using Ion Exchange Resin W. Samprasit, P. Opanasopit, P. Akkaramongkolporn, T. Ngawhirunpat, K. Wongsermsin and S. Panomsuk	1384
The Design of Jumping Robot K.S. Wang, J. Mi, W. Zhang, Y.X. Xu and D. Wang	1388
Re-Creation Process Model of Conceptual Design H.B. Miao	1392
Construction of 7YGS-45 Type Orchard Transport Automatic Control Test Platform S.J. Li, J.J. Xing, Y.L. Zhang, X.J. Li and Q.Z. Fan	1396
The System Model of the Bulldozer Machine Based on the Theory of Design Space Integration and its Experimental Verification  A.L. Wang, B.N. Yue, H. Liu, P.J. Zhou and B.F. Gong	1402
Hydraulic Support Development Based on Virtual Prototype Collaborative Development	1402
Platform C.L. Wang, Q.L. Zeng, Z.H. Liu and X.W. Wu	1408
A Study on Data Flow Model of Web to Print Z. Liu, C.X. Liu and S.W. Yang	1412
Structure Design of Multi-Purpose Elevation Mechanism K.S. Wang and D. Wang	1416
Research on the Development of High-Quality Hemp Fiber Y.C. Ji and F.Q. Jiang	1420
Analysis Method for Commonality of Module and Part in Modular Product Family S.F. Wang, L. Hou, H.L. Wang and W.G. Lin	1425

<b>Development of Reciprocating Air-Cool Oilless Compressors Series Product</b> Y.F. Zhu	1429
The Design of Movable Landslide Physical Model Testing Frame D.P. Zhao, S.M. Wang, Y.Z. Tan and X.L. Liu	1433
Factors Affecting the Design of Product Innovation T. Wang, F. Zhao and H. Deng	1439
Analysis of Energy Factor Effectiveness in Air-Conditioning Refrigeration System Y. Wang, G.F. Liu, S.X. Song and P. He	1443
Innovative Evolution Process Model of Product Platform Based on Evolutionary Design Q.L. Wang, L. Hou and H.L. Wang	1447
Study on the Intelligent Creel of Advanced Carpet Loom J.Z. Guo, J.W. Sun, F.H. Zhang and X.J. Yang	1451
Fuzzy Comprehensive Evaluation on Battery Electric Vehicle Dynamics and Energy Consumption Economy M. Chen and L.X. Guo	1456
Variant Design Method of Assembly Consisting of Different Types of Parts X.S. Xu, D. Li and M.L. Sun	1460
Pneumatic Press Based on Toggle-Lever Force Amplifier J.E. Wang, Z.L. Cui and K.M. Zhong	1464
The Designing and Manufacture of Rear Mounted Fluid Coupling Transmissions for Deceleration (YOC $_{\rm HJ}$ 1000/1500/700) W.Z. Shao, M.Y. Zhang and L. Zhang	1469
Modern Machinery Products Adaptability Vague Comprehensive Evaluation Z.J. Xin and H. Guo	1475
Research and Design of Transmission Rate Adaptive Control in Public Video Monitoring	14/3
System L.H. Mei and W.B. Jin	1481
Equipment Design of the Ship Sewage Treatment X.C. Zhang and J.P. Xu	1486
Study on Grinding Methods of Different Shape Turning Tool Rake Face H.L. Hou and N. He	1492
Intelligent Mapping of Semi-Structured Customer Needs for Web-Based Product Customization	
Y.G. Jing, B. Dan, S. Peng and L.F. Guo	1496
Investigation on Slider Structure Deformation and Crowning System of Large-Scale Press Brake H. Li, Q.K. Liu, L.Y. Qian and Y. Han	1500
A Multi-Objective Leverage Planning Method for Flexible Platform Using Quantitative	1300
Indices Z.K. Li, X.H. Jiang and Q. Jiao	1504
Study on Technology of Noncircular NC Turning Based on Active Disturbance Rejection	
Control H. Cao, S.Y. Li and X.P. Yao	1508
Research on New Hybrid Active Power Filter J.J. Peng, X.P. Fan and G. Li	1512
A New Roller Conveyor Driven by Linear Motor H.S. Zhao and Y.Z. Wu	1517
Research and Application of Intelligent CAD Technology in R and D and Management of the Electric Equipment	
H.G. Zhou, W.C. Tang, X.W. Jing and S. Han	1521
15. Quality Monitoring and Control of Manufacturing Process	
Application of Six Sigma Method in Quality Improvement of Hard Alloy Gear Circular Saw Blades	
H.Z. Zhao, L.L. Meng and C.G. Lu	1529

The Design Technology of PDC Bit in The High Hardness and Abrasiveness Formation of Xishanyao	
Z.L. Wei, H.P. Lin, J.J. Du and Y.Y. Pan	1535
The Features of the Integrated Multilayer-Wrapped High Pressure Vessel and its Fabrication Quality being Inspected by Hydrostatic Test P.Y. Song, Y. Yong, W. Zhong, W. Yu, M.F. Hu and X.Q. Zhu	1539
Constant-Universal Joint of Double Cross-Cross Ring Based on Spatial Linkage X. Zhang, Z.L. Chen and H. Gao	1544
A Diehole Arranging Optimization Strategy in Multi-Hole Die Design for Profile Product Extrusion J.B. Zhang, J.W. Wang and Z.Y. Duan	1548
Application of Quality Early Warning System Base on Web Form Design L.B. Sun, S.S. Guo, Y.B. Li, J. Guo and S.Q. Wu	1553
The Research and Application of Drilling Fluids Technology in Zhoushen Well X1 Z.L. Wei and L. Ge	1558
Research on Real Tooth Surface Deviation Correction of Spiral Bevel Gear Based on Truncated Singular Value Decomposition S.H. Chen, H.Z. Yan and S.H. He	1562
Three Dimensional Parametric Design of the Die Channel for Plastic Extrusion Based on SolidWorks	
H. Gao, Z.L. Chen and X. Zhang	1569
Research on PCB Electroplating Current Monitoring System Based on a Wireless Sensor Network X.F. Li and H.X. Xian	1573
Theoretical Calculation of Negative Skin Friction for Pile Foundation in Layered Soil S.P. Chen, W.J. Yao and S.Q. Zhu	1577
On-Machine Illumination Technique in Industry Machine Vision Z.R. Wang and Y.H. Wu	1582
Design of the Proportional Feeding System of Raw Mill B.Y. Luo, F. Du and Y.M. Mo	1586
Study on Polarization Distribution of Polarization Encoder in Oblique Incidence M.Z. Zhou, Y.R. Chen, Q. Zhao and Y. Xin	1590
Nonlinear Method for Load Transfer Model of Super-Long Pile in Layered Soil S.P. Chen, W.J. Yao and S.Q. Zhu	1596
Nonlinear Finite Element Analysis of Super-Long Pile and Soil Interaction in Soft Soil S.P. Chen, W.J. Yao and S.Q. Zhu	1601
Adaptive Fuzzy Control for Ink Key of Offset Printing Machine J.S. Kang, H.Y. Chu and L.G. Cai	1606
Morphology and Formation Mechanism of Martensite in Steels with Different Carbon Content	
Y.P. Ji, Z.C. Liu and H.P. Ren	1612
Automated Visual Inspection of Surface Defects on Hot-Rolled Plate Q. Song	1619
3D Finite Element Analysis for Magnetic Flux Leakage Testing Q. Song	1623
Quality Prediction Model Based on PCA-BP Neural Network for Tobacco Leaves Redrying Process J.K. Yin, C.H. Chen, J.M. Li, F. Zhang and J. Yao	1627
Operational and Control Decision Making in Aluminium Smelters Y.S. Gao, M.P. Taylor, J.J.J. Chen and M.J. Hautus	1632
A Calculation Method for Compliance Uncertainty of GPS Standard-Chain J.X. Wang, X.Q. Jiang and P. Wang	1642
Effect of Tidal Fences on the Stress and Deformation of Bridge Structure Z.D. Zhang, Z.X. Cheng, Z.J. Sun and Z.B. Tang	1649
Thermal Deformation Errors Compensation System of Machine Tools S. Li, X.H. Yao and J.Z. Fu	1657
Simulation and Analysis of Natural Ventilation of Residential Building's Arrangement F. Tao and J. Li	1662

Process Parameter Experiments on Vacuum Casting Using a Silicone Rubber Mold for ABS Plastic Parts	
D.Y. Chang and C.S. Deng	1668
<b>Multi-Dimensional Vibrating Screen Design and Motion Analysis</b> C.J. Wang, L.Z. Ma and Y.M. Li	1672
<b>3D Model Retrieval Based on Fuzzy Weighted Shape Distributions</b> Z.Q. Chen, K.S. Zou, W.H. Ip and C.Y. Chan	1678
<b>DEWMA Control Chart for the Coefficient of Variation</b> E.P. Hong, H.W. Kang and C.W. Kang	1682
16 Metallurgy Engineering	
Recovery of Niobium from Baogang Tailings by Carbochlorination T. Zhao, H.T. Lin, B.W. Li and D.Q. Cang	1691
Griffith-II Type Crack Generation and Chip Formation Simulation in Vibration Turning Based on Prandtl-Reuss Flow Principle L.Z. Gu, Q. Hong and B. Cheng	1699
Theoretical Analysis and Experiment on Slag Detection System Based on Eddy Current Effect in Continuous Casting	
S.F. Huo, S.S. Cheng and X.P. Song	1704
Kinematics Characteristic Analysis and Structural Parameter Optimization of Twist Beam Rear Suspension A.H. Tang, J.P. Tian and X.X. Liu	1710
Kinetics of Reduction Roasting of Hematite to Magnetite in Crude Niobium Concentrate	
under Microwave Irradiation J. Li, L. Wang, B.W. Li and B.W. Zhang	1714
Feedstock Characterization for Micro Powder Injection Molding (µPIM) H.P. Li and N. Muhamad	1721
Leaching Behaviour of Metals from a Sphalerite Concentrate in Sulfuric Acid-Oxygen System	
C.X. Li, C. Wei, H.S. Xu, J.Q. Liao, Z.G. Deng and G. Fan	1725
Study on the Continuous Casting Production of 823 Steel C.W. Du, L.Y. Li, D. Wu, H.B. Wang and Q.H. Liang	1732
Study on Preparation Process of Zinc Ferrite S.J. Ma, G.F. Wang, J.L. Yang, S.J. Que, L.Q. Tang and J.P. Feng	1736
A NeuroEndocrine-Inspired Manufacturing System Using the Potential Field Concept K. Zheng, D.B. Tang and W.B. Gu	1741
Optimal Control for Quality Indices of Heat Furnace Y.W. Chen and T.Y. Chai	1748
Study on the Leaching of LiCoO <sub>2</sub> in Low H <sub>2</sub> SO <sub>4</sub> Concentration Solutions Y.Q. Yang, C.Y. Wang, D.F. Li, F. Yin, Y.Q. Chen and X.W. Jie	1752
Effects of Sintering Temperature on the Properties of Cu-Co-Based Alloys Matrix Y. Lu, H.F. Dong and W.S. Li	1757
Experimental Research of New Technology on the Precise Reduction of Micron-Sized Iron Oxide	
S.Q. Li, J.T. Gao, P.Y. Chen, P. Shen, Y.T. Zhang, R.Z. Liu and Y.G. Wang  Study on Indium Leaching from Indium-Poor Zinc Residue Enhanced by Ultrasonic	1763
Treatment J.H. Yao and X.H. Li	1770
Innovative Process of Leaching of Nickel Supported Activated Carbon in Ammonium Sulfate	1774
Z.B. Zhang, W.K. Wang and J.H. Peng Research on High-Temperature Properties of Typical Iron Ores Used in China and its	1774
Blending Optimization	1700
S.L. Wu, O. Dauter, Y.M. Dai, J. Xu and H. Chen  Densification of Vanadium Nitride by Microwave-Assisted Carbothermal Nitridation	1780
H.J. Pan, Z.B. Zhang, J.H. Peng, L.B. Zhang and W. Li	1787

Research and Application on Burden Movement Model for Bell-Less Top of BF C.L. Fu, S.L. Wu, J. Xu, C.S. Liu and M.Y. Kou	1793
Circumferential Distribution Characteristics of Airflow in Blast Furnace Hot Blast Systems C.S. Liu, S.L. Wu, J. Xu, C.L. Fu and M.Y. Kou	1798
Research on Influence Law of Fuel Structure for Low-FeO Sintering M.L. Bian, S.L. Wu and Q.F. Wang	1802
New Evaluation Index of Blast Furnace Raceway Activity X.Q. Liu, S.L. Wu, C.S. Liu, J. Xu, C.L. Fu and M.Y. Kou	1806
Effect of Mechanical Activation on Extracting Indium from Neutral Leach Residue of Zinc Calcine	
Y.J. Zhang, X.H. Li, L.P. Pan and Y.S. Wei	1810
Study on Process of Microwave Magnetizing Roast for Low-Grade Hematite J. Li, B.W. Li, B.W. Zhang and L. Wang	1816
Study on the Sorption of Rhenium by Anion Exchange Resin H.Z. Ma, X.Z. Lan and Y.N. Wang	1821
Pattern Search Method and Artificial Neural Network Prediction of Double Ellipsoid Heat Source of Submerged Arc Welding P.L. Li and H. Lu	1825
	1020
17. Industrial Robotics and Automation	
Analysis and Experiments on Pulse Vibrating Suction Method for Wall Climbing Robot X.Y. Zhao, R. Liu, K. Wang and J.H. He	1837
Flocking Task Research for Multiple Mobile Robots Based on Evolutionary Game Model Y. Ye, N.G. Xie, Y.W. Cen and Q.Y. Liu	1845
Orientation Workspace Analysis of a Novel 3SPS+1PS Symmetrical Parallel Manipulator Based on Unit Quaternion J.L. Yu, G. Cheng, S. Zhang and D.K. Zhang	1849
Consensus Algorithm for Swarm Robotics Cooperative Control B. Lei and L.C. Zeng	1854
<b>Design and Research of a New Portable Barrel-Scrubbing Robot</b> W.J. Tao, K. Liao and H.T. Feng	1858
Analysis, Design and Simulation of the Biomimetically Facial Material on the Humanoid Robot C.K. Wang	1863
Pose Accuracy Analysis of Robot Manipulators Based on Kinematics J.Y. Zhang, C. Zhao and D.W. Zhang	1867
Trajectory Planning of Robotic Orthodontic Wires Bending Based on Finite Point Extension Method Y.D. Zhang and J.X. Jiang	1873
Analysis and Implementation of Coulomb's Frictional Material on the Wheeled Platform of Moving Robots	1075
C.K. Wang	1878
The Optimize Design of the Intelligent Electric Mini-Car Y.Z. Zhang and Q.M. Zhao	1882
Research and Design of Range Positioning System Based on Ultrasonic Sensor for Intelligent Mobile Robot J. Han and R.L. Chang	1886
<b>Developing and Research on Motor Driving System of Wheeled Mobile Robot</b> R.L. Chang and J. Han	1891
Force Control of a Distributed-Parameter Flexible Arm via Parallel Compensation L.Y. Liu and H.C. Lin	1898
Analysis and Design of Lower-Mobility Parallel Mechanism of Non-Symmetrical Based on Variable Topology Theory	
R.J. Cui, Z.H. Guo, Z.X. Yin and S.S. Zhu	1907
Condition of Intelligentize Realization of Robots Y.Y. Liu, X.Y. Zhang and H.Y. Zhang	1913

Design of Automatic Buildup Welding Machine and its Application in Train Hook Repair H.X. Shi, J.H. Zhu, L.M. Song, X.P. Zou and J. Han	1919
Research on Welding Robot Path Planning Using Ant Colony Optimization J.H. Wang, R.H. Xiao and Y.L. Ma	1926
<b>Trajectory Tracking of Omni-Directional Wheeled Opera Robot Based on Wavelet</b> P.Y. Liu, Y.Y. He, J. Li, Q.Y. Meng and S. Guo	1930
<b>Design of the System in Asynchronous Multiplexing at Low Rate</b> Y.Z. Zhang and X.Q. Zhang	1935
Modeling and Analysis of the Steering Resistance Moment in Small Tracked Robot Y. Ou, S.J. Huang, H.T. Feng and W.J. Tao	1939
Research on Control Method of a Novel Type of Excavator Based on Multi Degree-Of-Freedom Controllable Mechanism G.W. Cai, D.C. Wu, Y.C. Pan, X.Y. Xu and Z. Zhang	1949
<b>Based on Least Square Method for Spray Partition of Complex Curved Surface</b> Y. Zeng, J. Gong and T. Sun	1955
A Microcontroller Based Controller Circuit for the Motion Control of an Articulated Robot with Three Degrees of Freedom E.G. Ovy, M. Rokonuzzaman, S.M. Ferdous and M.N.A. Chowdhury	1960
Smooth Track-Keeping and Real Time Obstacle Detection Algorithm and its PID Controller Implementation for an Automated Wheeled Line Following Robot M. Rokonuzzaman, S.M. Ferdous, E.G. Ovy and M.A. Hoque	1966
<b>Design and Implementation of an Articulated Robotic Arm for Precise Positioning</b> E.G. Ovy, S.M. Ferdous, M. Rokonuzzaman and M.N.A. Chowdhury	1972
Dynamic Cooperative Manipulating Pattern Generation for Mobile Humanoid Robot Using Waist Moment Compensation T.J. Zhao	1978
18. Measure Control Technologies and Intelligent Systems	
16. Measure Control rechnologies and Intelligent Systems	
The Experimental Study on Wireless Short Distance System for Downhole Data Transmission	
The Experimental Study on Wireless Short Distance System for Downhole Data Transmission H.X. Wang, H. Lou, L. Li, N.H. Hou, J. Zhang and Y.X. Liu	1985
The Experimental Study on Wireless Short Distance System for Downhole Data Transmission H.X. Wang, H. Lou, L. Li, N.H. Hou, J. Zhang and Y.X. Liu Research and Implementation of an Expert System for Fault Diagnosis of Fan Based on Knowledge Rule	
The Experimental Study on Wireless Short Distance System for Downhole Data Transmission H.X. Wang, H. Lou, L. Li, N.H. Hou, J. Zhang and Y.X. Liu  Research and Implementation of an Expert System for Fault Diagnosis of Fan Based on Knowledge Rule L. Wang, T.Z. Sui, Y. Song, H.X. Zhao and B.R. Zhuang  The Remote Monitoring System for Fault Diagnosis Using ActiveX Control Technique	1989
The Experimental Study on Wireless Short Distance System for Downhole Data Transmission H.X. Wang, H. Lou, L. Li, N.H. Hou, J. Zhang and Y.X. Liu  Research and Implementation of an Expert System for Fault Diagnosis of Fan Based on Knowledge Rule L. Wang, T.Z. Sui, Y. Song, H.X. Zhao and B.R. Zhuang  The Remote Monitoring System for Fault Diagnosis Using ActiveX Control Technique H.L. Shi, Y.M. Song, J.W. Xiang, W.W. Yue and C. Liao	
The Experimental Study on Wireless Short Distance System for Downhole Data Transmission H.X. Wang, H. Lou, L. Li, N.H. Hou, J. Zhang and Y.X. Liu  Research and Implementation of an Expert System for Fault Diagnosis of Fan Based on Knowledge Rule L. Wang, T.Z. Sui, Y. Song, H.X. Zhao and B.R. Zhuang  The Remote Monitoring System for Fault Diagnosis Using ActiveX Control Technique	1989
The Experimental Study on Wireless Short Distance System for Downhole Data Transmission H.X. Wang, H. Lou, L. Li, N.H. Hou, J. Zhang and Y.X. Liu  Research and Implementation of an Expert System for Fault Diagnosis of Fan Based on Knowledge Rule L. Wang, T.Z. Sui, Y. Song, H.X. Zhao and B.R. Zhuang  The Remote Monitoring System for Fault Diagnosis Using ActiveX Control Technique H.L. Shi, Y.M. Song, J.W. Xiang, W.W. Yue and C. Liao  The Research of Speckle Technique in Deformation Measurement Fields Z.X. Chen, J. Liang and C. Guo  Smith Predictor Based on Predicting Induced-Delay S.D. Li, Y. Chen and C.X. Liu	1989 1993
The Experimental Study on Wireless Short Distance System for Downhole Data Transmission H.X. Wang, H. Lou, L. Li, N.H. Hou, J. Zhang and Y.X. Liu  Research and Implementation of an Expert System for Fault Diagnosis of Fan Based on Knowledge Rule L. Wang, T.Z. Sui, Y. Song, H.X. Zhao and B.R. Zhuang  The Remote Monitoring System for Fault Diagnosis Using ActiveX Control Technique H.L. Shi, Y.M. Song, J.W. Xiang, W.W. Yue and C. Liao  The Research of Speckle Technique in Deformation Measurement Fields Z.X. Chen, J. Liang and C. Guo  Smith Predictor Based on Predicting Induced-Delay S.D. Li, Y. Chen and C.X. Liu  Design of an Intelligent Vehicle System for Storehouse Management Based on Image Processing and RFID Technologies	1989 1993 1998 2003
The Experimental Study on Wireless Short Distance System for Downhole Data Transmission H.X. Wang, H. Lou, L. Li, N.H. Hou, J. Zhang and Y.X. Liu  Research and Implementation of an Expert System for Fault Diagnosis of Fan Based on Knowledge Rule L. Wang, T.Z. Sui, Y. Song, H.X. Zhao and B.R. Zhuang  The Remote Monitoring System for Fault Diagnosis Using ActiveX Control Technique H.L. Shi, Y.M. Song, J.W. Xiang, W.W. Yue and C. Liao  The Research of Speckle Technique in Deformation Measurement Fields Z.X. Chen, J. Liang and C. Guo  Smith Predictor Based on Predicting Induced-Delay S.D. Li, Y. Chen and C.X. Liu  Design of an Intelligent Vehicle System for Storehouse Management Based on Image Processing and RFID Technologies W.D. Li, G.W. Chen, J. Chen and X.J. Zhang	1989 1993 1998
The Experimental Study on Wireless Short Distance System for Downhole Data Transmission H.X. Wang, H. Lou, L. Li, N.H. Hou, J. Zhang and Y.X. Liu  Research and Implementation of an Expert System for Fault Diagnosis of Fan Based on Knowledge Rule L. Wang, T.Z. Sui, Y. Song, H.X. Zhao and B.R. Zhuang  The Remote Monitoring System for Fault Diagnosis Using ActiveX Control Technique H.L. Shi, Y.M. Song, J.W. Xiang, W.W. Yue and C. Liao  The Research of Speckle Technique in Deformation Measurement Fields Z.X. Chen, J. Liang and C. Guo  Smith Predictor Based on Predicting Induced-Delay S.D. Li, Y. Chen and C.X. Liu  Design of an Intelligent Vehicle System for Storehouse Management Based on Image Processing and RFID Technologies	1989 1993 1998 2003
The Experimental Study on Wireless Short Distance System for Downhole Data Transmission H.X. Wang, H. Lou, L. Li, N.H. Hou, J. Zhang and Y.X. Liu  Research and Implementation of an Expert System for Fault Diagnosis of Fan Based on Knowledge Rule L. Wang, T.Z. Sui, Y. Song, H.X. Zhao and B.R. Zhuang  The Remote Monitoring System for Fault Diagnosis Using ActiveX Control Technique H.L. Shi, Y.M. Song, J.W. Xiang, W.W. Yue and C. Liao  The Research of Speckle Technique in Deformation Measurement Fields Z.X. Chen, J. Liang and C. Guo  Smith Predictor Based on Predicting Induced-Delay S.D. Li, Y. Chen and C.X. Liu  Design of an Intelligent Vehicle System for Storehouse Management Based on Image Processing and RFID Technologies W.D. Li, G.W. Chen, J. Chen and X.J. Zhang  A Novel Approach for PC-Based Test and Measurement Applications Development with Autonomous Sensors	1989 1993 1998 2003 2007
The Experimental Study on Wireless Short Distance System for Downhole Data Transmission H.X. Wang, H. Lou, L. Li, N.H. Hou, J. Zhang and Y.X. Liu  Research and Implementation of an Expert System for Fault Diagnosis of Fan Based on Knowledge Rule L. Wang, T.Z. Sui, Y. Song, H.X. Zhao and B.R. Zhuang  The Remote Monitoring System for Fault Diagnosis Using ActiveX Control Technique H.L. Shi, Y.M. Song, J.W. Xiang, W.W. Yue and C. Liao  The Research of Speckle Technique in Deformation Measurement Fields Z.X. Chen, J. Liang and C. Guo  Smith Predictor Based on Predicting Induced-Delay S.D. Li, Y. Chen and C.X. Liu  Design of an Intelligent Vehicle System for Storehouse Management Based on Image Processing and RFID Technologies W.D. Li, G.W. Chen, J. Chen and X.J. Zhang  A Novel Approach for PC-Based Test and Measurement Applications Development with Autonomous Sensors J.B. Zhao, T.L. Shi, X.P. Yan and C.Q. Yuan  Research of the SMT Product Character Segmentation Based on Contour Feature	1989 1993 1998 2003 2007 2014
The Experimental Study on Wireless Short Distance System for Downhole Data Transmission H.X. Wang, H. Lou, L. Li, N.H. Hou, J. Zhang and Y.X. Liu  Research and Implementation of an Expert System for Fault Diagnosis of Fan Based on Knowledge Rule L. Wang, T.Z. Sui, Y. Song, H.X. Zhao and B.R. Zhuang The Remote Monitoring System for Fault Diagnosis Using ActiveX Control Technique H.L. Shi, Y.M. Song, J.W. Xiang, W.W. Yue and C. Liao The Research of Speckle Technique in Deformation Measurement Fields Z.X. Chen, J. Liang and C. Guo Smith Predictor Based on Predicting Induced-Delay S.D. Li, Y. Chen and C.X. Liu Design of an Intelligent Vehicle System for Storehouse Management Based on Image Processing and RFID Technologies W.D. Li, G.W. Chen, J. Chen and X.J. Zhang A Novel Approach for PC-Based Test and Measurement Applications Development with Autonomous Sensors J.B. Zhao, T.L. Shi, X.P. Yan and C.Q. Yuan Research of the SMT Product Character Segmentation Based on Contour Feature H.H. Zhao, D.J. Zhou and Y.M. Xu Design of Measure Control System for Thermal Defects Based on ZigBee	1989 1993 1998 2003 2007 2014 2019
The Experimental Study on Wireless Short Distance System for Downhole Data Transmission H.X. Wang, H. Lou, L. Li, N.H. Hou, J. Zhang and Y.X. Liu  Research and Implementation of an Expert System for Fault Diagnosis of Fan Based on Knowledge Rule L. Wang, T.Z. Sui, Y. Song, H.X. Zhao and B.R. Zhuang The Remote Monitoring System for Fault Diagnosis Using ActiveX Control Technique H.L. Shi, Y.M. Song, J.W. Xiang, W.W. Yue and C. Liao The Research of Speckle Technique in Deformation Measurement Fields Z.X. Chen, J. Liang and C. Guo Smith Predictor Based on Predicting Induced-Delay S.D. Li, Y. Chen and C.X. Liu Design of an Intelligent Vehicle System for Storehouse Management Based on Image Processing and RFID Technologies W.D. Li, G.W. Chen, J. Chen and X.J. Zhang A Novel Approach for PC-Based Test and Measurement Applications Development with Autonomous Sensors J.B. Zhao, T.L. Shi, X.P. Yan and C.Q. Yuan Research of the SMT Product Character Segmentation Based on Contour Feature H.H. Zhao, D.J. Zhou and Y.M. Xu Design of Measure Control System for Thermal Defects Based on ZigBee J.H. Xiong, S.Q. Xu and C. Yun Researching on Fuzzy Control System of Jigging Discharge Based on PLC	1989 1993 1998 2003 2007 2014 2019 2023

The Appraisal of Velcro's Surface Quality Based on Machine Vision Systems D.X. Zhao and Q. Lin	2045
A Layer-Driven Trouble Hunting in Satellite-Networks of Cyberspace J. Yin, Q.M. Li and J. Hou	2049
Underwater Intrusion Surveillance System Based on Underwater Sensor Networks: Architecture, System Design and Research Challenge J.J. Zheng, Z.H. Liu, L. Yin, S. Ye and Y. Wang	2053
Research on the Spatial Error Distribution Model of Flexible Coordinate Measuring Machines Based on Support Vector Regression D.T. Zheng, Y.T. Fei, Y.G. Hu and R.C. Yang	2058
Hardware-in-the-Loop Simulation System in the Development of Temperature Controller	2030
of Plastic Extruder  J.L. Xu, G.K. Zuo and J.H. Chen	2063
Infinite AdaBoost and its Application on Fault Diagnosis for Analog Circuits H.X. Wang, C. Liu and Y.Q. Sun	2070
Performance Analysis of W Phase Detector in Galileo Signal Receiver M. Li	2075
The Research on the Model of a Precision Magnetic Stage System Y. Zhang, H.Z. Sun and H. Zhou	2079
A Fuzzy Control Method in ACC of the Constant Interval Mode L.G. Zhao and D.J. Chen	2083
Study of Predictive Control in Industrial Networked Control System F. He, X. Li and Q. Wang	2087
Construction and Realization of Networked Virtual Test System Based on LabVIEW G.X. Cai	2091
The Application of FPGA and DSP Techniques in Intelligent Wattmeter H.R. Li, L.J. Pang, X.F. Zhang, G. Deng and Y.W. Tong	2096
Analysis and Modeling of the Harmonic Compensation Errors Based on PWM Converters X.D. Wang and B.C. Gao	2101
Optimal Design of the Thickness of the Multi-Layer Homogeneous Absorption Plates Based on the Max Absorption Coefficient of the Automotive Body C.Y. Zhu	2108
Ziegler-Nichols Based Intelligent Fuzzy PID Controller Design of a SPM System with Parameters Variation J.M. Lin and P.K. Chang	2113
Dirty-Face Game Analysis on Mixed Traffic Flow at Unsignalized Intersection L. Wang, N.G. Xie and R. Meng	2119
Research of Channel Dismatch Errors in Parallel AD Acquisition System Based on FPGA X.L. Shao, W. Yang, Z.Y. Wang and W.D. Zhang	2126
Application of Non-Negative Tensor Factorization in Intelligent Fault Diagnosis of Gearboxes	
S. Peng, F.Y. Xu, M.P. Jia and J.Z. Hu	2132
Energy Saving Control System for Central Air-Conditioning Based on Terminal Temperature Measuring and Frequency Conversion Control Technology H.Y. Zhou, X.J. Chen, Z.H. Chen and M.W. Tong	2144
Research Based on Barycenter Identification about Array Haptic System Pressure and Temperature Information	2111
Y. Bai, Y.H. Hou, Z.W. Chen and Y.J. Song	2154
Research on the Absorption Characteristic of Three-Layer Microperforate Plate of the Automotive Body C.Y. Zhu	2160
19. Transmission and Control of Fluid	
Research on Automatic Booster Valve of Powered Props of Powered Supports C.Q. Jia, W. Li and L. Yu	2169
Modeling and Simulation of Pneumatic Impactor for Tubing Plugging W. Sun, G.X. Meng, Q. Ye and W.H. Xie	2174

Investigation of the Unsteady Flow for the Supersonic Jet Element Y. Xu, G.Q. Zhang and F. Wang	2178
Intelligent Design of Mechanism Kinematic Chains by Advanced Optimal Methods M. Zhang, N.B. Liao, C. Zhou and X. Tao	2182
New Method of Improving Intake Port Flow Characteristics in a Four-Valve Engine S.Q. Zhang, Z.Q. Li, X.L. Wei and H.G. Wang	2186
The Optimal Design on Connection Order of Network in Hydraulic Manifold Block J.J. Zhang, J.S. Wang, J.Y. Wang, G. Liu and J. Wang	2190
Speed Control of Fluid Coupling Based on Fuzzy Control Theory W.Z. Shao, Y.H. Li, Y. Wu and L. Wang	2195
Study on the Spring-Piston External Mesh Gear Pump with Low Flow Fluctuation J.Z. Zhang, K.K. Li, M. Gao and T.Z. Zhu	2200
Analysis on the Shifting Performance of the Hydraulic System of a Transmission for Construction Machinery Y.M. Li, Z.H. Liu, D. Wang and Y. Zhang	2206
Fluent Based Numerical Analysis of Eliminating Ultra-Limit Gas in Upper Corner by Using Rotary Jet Fan J.Y. Chen, X.Q. Fan and Z. Liu	2212
Symmetrical Beauty: Pneumatic Press Based on Quadratic Orthogonal Force Amplifier Driven by Double-Face Rack-Gear Mechanism K.M. Zhong, X. Li and W.F. Zhang	2216
Two-Point Floating Clamping Device Based on Fixed Cylinder with Double-Piston and Toggle-Lever Force Amplifier G.J. Si, K.M. Zhong and J.P. Jia	2220
The NC Mechanism of Reciprocating Rectilinear Movement at High Frequency Based on Two Symmetrical Cranks M.D. Wang, K.M. Zhong and Z. Chen	2224
Research on Control Strategy for Energy-Saving Optimization Algorithm of the Hydraulic Hybrid Vehicle	222.
Y.L. Chen, S.N. Liu, T. Shang, J.L. Liu, Y.K. Zhang and D.T. Xie	2229
Research on a New Type of Device of Laminar Water Draining with No External Force Q. Li, F.B. Li and X.Y. Su	2238
Flow Distribution Prediction of Gas-Solid Two-Phase Flow in Y-Shaped Branch Pipeline G.B. Duan, Z.M. Liu and W.X. Wu	2242
Pressure Drop of Y-Shaped Branch Pipe in Gas-Solids Flow Z.M. Liu, G.B. Duan and G.L. Chen	2246
Symmetric Beauty: Double-Position Numerical Control Press Based on Lever-Toggle Force Amplifying Mechanism Driven by Linear Servo Motor F. Wu, M.D. Wang and K.M. Zhong	2250
Green Manufacturing: a Pumpless Mechanical-Hydraulic Clamping Device Based on Wormgear and Crank-Slider Mechanism	
Y.Z. Bai, G.J. Si, X. Li and K.M. Zhong	2254
Study on Process Control Characteristics of 22MN Fast Forging Hydraulic Press J. Yao and X.D. Kong	2258
Research on the Flows of Backspin Movement in Table Tennis Y.F. Chen, T.H. Fang, C.C. Huang, C.H. Liu and W.H. Hsieh	2263
Numerical DPM Model for Two-Phase Flow in Aero-Engine Bearing Chamber R.S. Xu, J.J. Wang, W. Xu and L.B. Liu	2267
20. Mechanical Control and Information Processing Technology	
Control System of Bellows Welding Equipment Based on Motion Controller Z.W. Ren, Z.Y. Duan, W.H. Zhao and Y. Zhang	2273
A New Time Series Regression Method Based on Support Vector Machine Plus and Genetic Algorithm  W. Sup. G.Y. Mong, O. Vo. I.Z. Zhong and I. W. Zhong.	2277
W. Sun, G.X. Meng, Q. Ye, J.Z. Zhang and L.W. Zhang Research on Pneumatic Controlling Mechanism of Flying Splicer of Web-Fed Offset Presses	2277
C.W. Chai, J.F. Cai and S.Q. Wu	2281

Research and Analysis on the Multi-Point Piezoelectric Vibratory Feeder of Driving Mode W.F. Wu, L.H. Zhang, H.M. Yin, F. Han, G. Wang, S.P. Shi and Y.Q. Zhang	2286
Mechatronic Cooperative Design and Simulation of a Multi-Axis Bar Tacking Machine X.H. Xie, Q. Sun, C.C. Zhao, C. Ma and R. Du	2291
A Depth-Setting TUV Control System Based on RS-485 Network G.H. Xu, K. Yu and X. Shen	2295
A Fault Detecting System of Intelligent Detection and Diagnosis R.P. Shao, Y.L. Li and W.T. Hu	2300
Research on the Monitoring Technique of Non-Contact Running Status of Cooling Tower Fan Blades J.P. Chen and W. Dong	2307
Design and Implementation of a Novel Communication Interface for Eddy Current Displacement Sensor H.Y. Tsai, J.S. Chen and Y.Y. Hsu	2312
Study and Design of CAN Bus Node Based on MC912D60A Microcontroller in Automobile J.F. Chen and L.Q. Zhao	2317
Remote Monitoring Technology on Oil of Large Equipment X.S. Zhang and J.H. Cui	2322
SINUMERIK 802D Applied in the Transformation of Profiling Machine P.M. Dong, W.B. Liu, T.Q. Wang and X.L. Dang	2326
Wavelet-Contourlet Retrieval Using Energy and Kurtosis Features X.W. Chen, Z.Q. Ma and L.W. Liu	2330
The Confined Chord Error Algorithm for High Precision Machining Parametric Surface Z.Q. Zhang, W.J. Wang, Z. Jian and T.Y. Wang	2334
Electrical Control System Designing Based on Logic Relation Chart G.Z. Cheng and Y.B. Cheng	2338
<b>Design of DC Motor Control System Based on Clonal Selection Algorithm</b> P.B. Zhao and Y.Y. Shi	2343
The Design of Wireless Communication System in Oil Log Spot P.M. Dong, X.L. Dang, T.Q. Wang, G.Z. Li, J.L. Zhang, D.H. Xu and Z.G. Yao	2349
Design and Realization of Remote Monitoring System for Automatic Forced Fitting Production Line J.H. Cui, X.S. Zhang and J.H. Zhu	2354
Slider Position Servo Control of the Double Toggle Mechanical Press Directly Driven by Transverse Flux Machine J. Xie, S.D. Zhao, Z.H. Sha and J.T. Liang	2360
Concise Robust Control for Ship Roll Motion Using Active Fins W. Guan and X.K. Zhang	2366
<b>Design of GA-Based Control for Electrical Servo Drive</b> K.H. Su and F.H. Hsiao	2375
Research on Heavy Rail Pre-Bending Vehicle Control Technology Based on Fuzzy Neural Network	
Z.J. Xu and G.F. Yin Self-Sencing Control Research on a Linear Compressor	2379
L.Q. Zhang, G.H. Peng, H.M. Zou and C.Q. Tian	2385
21. Embedded System	
Research on the Control and Key Technology for Parallel Operation System of Mobile Generator	
L.B. Mao, W.J. Wang and J. Yang	2393
Embedded Control Design for Insulin Pump W.G. Ali and G. Nagib	2399
Fuzzy ADRC Controller Design for PMSM Speed Regulation System G. Su	2405
Research of CNC System for Ultrasonic Vibration Internal Grinding Based on Embedded Technology B.F. Wang, Z. Yin and O. Xie	2409

<b>Design of the Control Circuit Based on FPGA for the Underwater Trash Detection System</b> G.K. Zhao and Q. Zhang	2414
Strain Transfer From the Host Structure to Optical Fiber Sensor S.C. Her and C.Y. Tsai	2419
Linear Interpolation Control of Numerical Control Machine Tools and its Realization Based on Multi-Axis Motion Control Card X.M. Shi, Y. Dai and W. Liu	2423
Distributed Battery Management System in Battery Electric Vehicle Y. Liao, J.H. Huang and Q. Zeng	2427
A Study on the Method of Rust Prevention of High-Strength Bolts for the Bridge Parrel L.C. Wang, J. Chen, S.L. Li and X.D. Wang	2431
The Design of Embedded Control System in Knee-Joint Rehabilitation Trainer Based on S3C2440	
X. Li, Z.B. Zhang and X. Hong	2435
22. Other Related Topics	
An Empirical Study on the Coordinated Development of Chinese Manufacturing and Logistics Industry	
S.W. Ji, H.L. Xia, J.M. Meng and X.Y. Han	2443
Performance Test and Analysis of Clothing Materials Y. Yu and X.M. Qian	2447
Study on the Mixer Used for the Thermal Flow-Reversal Reactor Y.Q. Liu, X.C. Chen, R.X. Liu, Z.Q. Gao and J.T. Wang	2451
Based on Balance Scorecard to Make Teacher Performance Appraisal in College L.L. Zhao and Z.P. Wu	2456
Analysis on Thermal-Mechanics Coupling of Milling Insert Based on Principle of Cellular Automation B.J. Sun and G.Y. Tan	2460
Building Energy Consumption Prediction of Housing Industry in China Based on Hybrid Models Y. Xie	2466
Fuzzy Synthetic Evaluation of Power Quality Based on Combination Weighting Method Y.S. Huang and L.M. Yuan	2470
Thermal Fatigue and Fracture Mechanics Analysis of Aluminium Alloy W.X. Zhang, G.D. Gao and G.Y. Mu	2476
Short-Term Load Combination Forecast Based on Rough Set and Support Vector Machine Y.S. Huang and L.M. Yuan	2481
The Digital Ink-Jet Printing Properties of Cashmere Treated by Low-Temperature Plasma J.Y. Tian and R.D. Pang	2488
Research on the Ink Penetration Depth into Offset Paper Y.G. Yang and Q.Z. Gao	2492
Application of Neural Network and Particle Swarm Optimization Algorithm in Slope Runoff and Sediment Yield Calculation	2407
J. Huang, P.T. Wu, X.N. Zhao and J. Wang  Research on the Rice Leaf Morphological Formation and its Visualization  H.W. Liu, Y.Y. Liang and H. Zhang	2496 2504
Inventory Control Policy of Service Parts under the Background of Service-Embedded	2304
Manufacturing P.P. Wang, X.G. Ming, D. Zhang, D. Li and Z.Y. Wu	2509
Optimization of Fermentation Process of Pear Vinegar by Response Surface Methodology H. Gao, G.F. Xu, Y.Y. Fan, H.J. Nan and S.F. Fu	2513
A Low Dimensional Embedding Method for Combining Clusterings S. Xu, T. Zhou and H.L. Yu	2517
Study on Expanded Food Quality Improving Based on Six Sigma G.Y. Mu, L. Li, W.X. Zhang and G.D. Gao	2521
Optical Fiber Temperature Sensor Based on Fluorescence Mechanism S.T. Wang, Y.Y. Cui and L. Huang	2526

Digital Simulation of Bridge Wind Fields Based on Wavelet Method T.H. Jiang and J.R. Peng	2532
Some Improvements of Genetic Programming in Data Fitting H. Jie, J.Q. Feng and D.L. Chen	2536
<b>Study on Heavy Metal Adsorption in Coastal Sediment of the Yellow River Estuary</b> Q.Q. Wu and J.G. Ren	2540
Structure Design of a New Kind of Rotary Refrigeration Compressor J. Li, X.P. Ou Yang and L.J. Zhang	2544
Microwave Synthesis of Schiff-Base Complexes and Organic Tin C.Y. Deng, Z.Y. Lin, M.L. Yang and B.J. Xu	2550
Study on Bore Cores Evaluation Systems of Asphalt Pavement Y. Zhao and H. Ma	2554
Research on Oil-Water Interfacial Properties Effect of Polymer / Surfactant Binary Flooding System W.X. Wu and Z.Q. Yu	2558
<b>Study on Physical Simulation Experiments of Different Chemical Displacement Systems</b> W.X. Wu, D.H. Mu and Q.D. Liu	2562
Finite Element Analysis Technique and its Application in Numerical Simulation of Knitted Fabric	
C.Y. Li and R. Wang  Characteristics of Supersonic Projectile Shock Wave	2567
Y.C. Wu, H. Chang and T.T. Tsung	2571
Trend Analysis of the Slow-Speed and Heavy-Load Equipment with Acoustic Emission M. Li, J.H. Yang and J.W. Xu	2578
Ultrasound-Assisted Acceleration of Soybean Oil Epoxidation and the Interfacial Tension Study	
L.J. Han, L. Li and G.Q. Liu	2583
Study on Soil Consolidation Coefficient on CPTU Model Test Y.C. Tang, G.T. Meng and Q.F. Mao	2587
Geometrical-Optics Approximation for the Simulation of Light Scattering by Single-Nuclear Cell M. Bu and Y.W. Wang	2593
Experimental Research on Superlong Deep-Hole Drilling Processing Technology for Steel of 4145H Drill Collar Z.F. Liu and R.L. Li	2597
The Effect of Coefficient of Thermal Conductivity of Fabric-Layer on Human Body Temperature Fields J. Li	2601
Study on Industrial Waste Sites Monitoring Based on Remote Sensing Technology W.H. Zhao and S. Liu	2607
Corrosion Performance of Hot Dip Galvanized Steel J. Zhang and Z.H. Yu	2611
Effect of Different Packaging Films on Senescence of Pleurotus Nebrodensis Auto MAP X.H. Li, T. Xue, Y.Y. Li and L. Chen	2615
Optimum Conditions of Pretreatment in Producing Bioethanol from Wheat Straw L. Cui, Z. Liu and L.F. Hui	2619
Preparation and Performance of MoB/CoCr Coatings by LPPS on 20G Boiler Steel X. Chen, R.Y. Zhang and F. Li	2623
Preparation and Second Harmonic Generation of CdS Doped Lead Silicate Glasses H. Liu, X.T. Wang, B.G. Zhang, Z.F. Wang and X.J. Zhao	2630
Study on Application and Issues of Bag Dedusters in Coal-Fired Power Plants H.C. Wang, D.H. Jiang and Q. Wang	2634
The Optimum Design of Large-Scale Inner-Tower Truss-Supporting Structure Based on Finite Element Analysis	
X.J. Wang, D.H. Li and Z.H. Gao	2645
The Regenerative Experiment of Activated Alumina Granules D.J. Wu, D. Li, L.R. Weng, W.J. Zheng and X.Y. Qu	2649

Study on Lateral Pressure of Bulk Materials in Silos C.B. Chen	2653
The Flow Field Analysis and Optimization of Diagonal Flow Fan Based on CFD X.J. Wang, R. Chen and Y. Zhou	2657
Parameter Optimization and System Design of the Welding Power Supply for Resistance-Butt Welding of Nuclear Fuel Rod F.Q. Chen, Z.W. Lin and G.W. Liang	2661
Research and Analysis of the Effects of Building Height on Wind Vibration Sensation in High-Rise Steel Structure H. Zhang, S.G. Chu and Y.H. Liu	2667
Study and Application of Bridge Structure Finite Element Model Updating Based on Static-Load Testing M.Y. Deng and F. Li	2672
Fractal Characteristics of Soil Particle-Size Distributions under Different Landform and Land-Use Types X.Y. Song and H.Y. Li	2679
Daily Load Forecasting Based on Combination Forecasting Techniques C. Gao, H.J. Ma and P.N. Gao	2685
<b>Design and Implementation of Single-Stage Boost Converter in Wind Power System</b> Y.Y. Hsu and C.W. Lai	2690
Synthesis and Properties of Novel Carboxylate Gemini Surfactant J. Li, Q.M. Chen, R.M. Zhang and W. Tong	2695
Experimental Study of Hematite Melting Reduction under High Temperature Y.M. Nie, F.S. Niu and S.X. Liu	2700
Analysis of an Energy-Efficiency Supervision and Diagnostic System for Large Public Buildings in Ji Nan D. Li, Z. Li and Y.M. Cao	2704
Research on Stability of a 2 DOF Articulated Vehicle W. Wei, X.H. Liu and Y.L. Chen	2709
Numerical Simulation of Die Casting for Semi-Solid Aluminium Alloy and its Mould Research	
Y. Huang, Y. Huang, Q. Wu, X.M. Du and C.Z. Wang  Numeberical Simulation of a New Enhanced Heat Transfer Burener	2717
X.F. Lu, D. Liu and Y.Q. Li  Cooling Process after HTST Orange Juice Sterilization Optimization Based on CFD	2721
J.F. Wang, J. Xie, L.R. Tao, Y.H. Wang and X.Y. Yang <b>Biofilms and Safety Design Criteria for Food Equipments</b> Y.J. Li, B. Du, N.W. Li, J. Liang and G.M. Yang	2727 2731
Optimization of Turbine Blade's Cathodes Feeding Routes in Three-Electrode Feeding Electrochemical Machining	2/31
L. Wang Cold-Model Study on Fluidized-Bed Photo-Oxidation Reactor for Shenfu Coal	2737
Y.T. Zhang, G.H. Wang, W. Zhao and A.N. Zhou	2741
Symmetric Beauty: Multi-Point Press Based on Parallel and Synchronous Toggle Mechanism Driven by Pneumatic Muscle P.L. Qin, M.D. Wang and K.M. Zhong	2745
<b>Process Mineralogy and Concentrating of Hematite-Limonite Ore in Southern China</b> S.X. Liu, L.L. Shen and J.X. Zhang	2749
Study on Monitoring Damage about Material of Blade in Wind Turbine Based on Acoustic Emission	2752
X.G. Zhao, C.Z. Chen, B. Zhou and X.H. Liu  Application of Materials on Foil Thrust Bearings for Micro Turbines	2753
Q. Zhou, Y. Hou and R.G. Chen Wind Tunnel Test Investigation on Sectional Models of Chaotianmen Yangtze River Bridge	2759
C.Q. Wang, Z.L. Li and Z.T. Yan  Study on the Properties of Boron-Containing Ores/Epoxy Composites for Slow Neutron	2763
Shielding Z.F. Li, X.X. Xue, T. Jiang, H. Yang and M. Zhou	2767

Physical and Electrical Properties of Lead-Free (Na <sub>0.5</sub> K <sub>0.5</sub> )NbO <sub>3</sub> -(Bi <sub>0.5</sub> Na <sub>0.5</sub> )TiO <sub>3</sub> Ceramics C.H. Wang	2772
Study on Order-Flexibility Method H.Y. Song, Z.M. Liu and L.F. Liang	2776
Numerical Analysis of Cavitation Flow during Vertical Water Exit of Underwater Vehicles J.Z. Zhang, T.Q. You, Q.K. He, Y.J. Wei and C. Wang	2780
Research on Flow Mechanism of Materials and Micro-State of Distortion Area in Closed Extruding Fine Blanking Process L. Lv, G.S. Ning and M.M. Chen	2785
The Preliminary Investigation of Low Grade Zinc Oxide Ore J.L. Yang, S.J. Ma, G.F. Wang, J.P. Feng, W. Mo and X.J. Su	2789
Research on TFP of Enterprises in China's Manufacturing Industry Based on Malmquist Index Approach S.C. Li, S. Gai and D. Yuan	2793
Study on Livestock and Poultry Farming Wastewater Treatment Using a Hybrid Baffled Reactor	_,,,
L.J. Shi, L.T. Ban, H.F. Liu, J.C. Hao and W.Y. Zhang	2797
Driving Force Testing of Lift Mechanism for Green Energy Furniture T.L. Chen, T.T. Tsung, L.Y. Yang and H. Chang	2803
Simulation of Wind Effects Embracing a Complex Shape Super High-Rise Steel TV Tower Using CFD	
Y.Y. Tan and C.X. Li	2807
Catalytic Hydrothermal Depolymerization Technology and Kinetics of DGEBA/EDA Epoxy Resin J.Q. Zhang, W.Y. Deng, J.H. Zu, H.B. Ding and P. Cai	2814
Ultrasound-Enhanced Coagulation Pilot Plant for Micro-Polluted Water of Huaihe River D.J. Wu, C.W. Luo, W.J. Zheng, X.D. Zhai and J.F. Liu	2820
Preparation and Properties of Graft Copolymer of Phenols and Starch with HRP Catalysis S.H. Lv, G. Rui, J.P. Duan, Y.F. Ma and R.J. Gao	2825
Preparation and Properties of Modified Starch Tannage S.H. Lv, X.L. Yan, R.J. Gao and J.P. Duan	2829
Research on Direction of Wet-Chemical Model of Loess Y. Wang and Y.D. Hu	2833
Contract Model of Knowledge Trading between Tourism Enterprises Y.R. Zhang	2837
Two-Position and Highly-Efficient Clamping Device Based on Lever-Toggle Force Amplifier Driven by Pneumatic Muscle L. Lu, M.D. Wang and K.M. Zhong	2841
Novel and Saving Energy Lifting Permanent Magnet Design N. Ding, D.T. Zhang and Y.Z. Pei	2846
Neutral Deinking Process Optimization and Comparison with Alkaline Deinking of Old	
Newsprint S.J. Wang, F.G. Kong, J.C. Chen and G.H. Yang	2850
Electrochemical Delignification Mediated with Violuric Acid and Subsequent Bleaching of Poplar Kraft Pulp F.G. Kong, C.F. Li, S.J. Wang and S.Y. Fu	2854
Carboxylation Modification of Fiber Reclaimed from Old Newspapers and its Effects on Properties of the Reinforced Polylactic Acids Composites Y.Q. Wu, X.G. Li, H. Li and F. Cheng	2858
<b>Texture Profile of Gelatin and Tea Polyphenol Mixed Gels</b> A.N. Wang, L.G. Wu, Y.D. Sun, Y.Y. Zhang, X.Y. Xu, X.L. Li, J. Wang, C. Wang, Q.Q. Fu and L.L. Jia	2862
Study on the Blend Film Prepared by Chitosan and Gelatin A.N. Wang, L.G. Wu, X.L. Li, Y.D. Sun, J. Wang, S.W. Wang, A.X. Jia, C. Wang, Y.Y. Zhang, Q.Q. Fu and X.Y. Xu	2866
Enhancement of Gas Physical Absorption in Gas-Liquid-Liquid System W.X. Li, G.R. Xu, Z.G. Zhang and Z.L. Ji	2870

The Influence of Oolong Tea Polyphenol and Black Tea Polyphenol on Gelatin Gels Texture A.N. Wang, L.G. Wu, X.L. Li, Y.D. Sun, S.W. Wang, A.X. Jia, X.Y. Xu, Y.Y. Zhang, J. Wang,	2075
C. Wang and Q.Q. Fu	2875
Study on the Blend Film Prepared by Alginate and Gelatin A.N. Wang, L.G. Wu, Y.D. Sun, X.L. Li, X.Y. Xu, C. Wang, J. Wang, Q.Q. Fu and Y.Y. Zhang	2879
Impermeability of Wet-Sieving Fine Aggregate Concrete Made from Ordinary Concrete X.K. Li, S. Zhao, L. Sun and S.B. Zhao	2883
Experiment of Carbonization for Wet-Sieving Fine Aggregate Concrete Made from Ordinary Concrete	
S.B. Zhao, N. Liang, X.L. Ma and S. Yang	2887
Research on Pipe-Soil Displacement Transfer Coefficient for Buried Pipeline X.Z. Zhang, A.H. Han and Z.L. Wu	2891
Fluid-Structural Coupling Analysis of Composite Material Blades for the Offshore Wind	
Power Generator G.C. Tsai, W.S. Li, Y.Y. Chang and J.T. Tseng	2896
Compression Test on Cold-Formed Steel Built-Up Back-to-Back Channels Stub Columns C.H.T. Ting and H.H. Lau	2900
Effect of Electromagnetic Field on the Solidification Structure of HMn084 Brass B.M. Li, H.T. Zhang and J.Z. Cui	2904
Numerical Study on Influence of Joint Characters on Rock Mechanical Parameters Y.F. Feng, T.H. Yang, H. Wei, H.G. Gao and J.H. Wei	2909
Measurement and Evaluation of Angularity Error Based on Coordinate Rotation Y.H. Sun, J. Zhang, J.D. Bao, R.S. Lai and M.F. Huang	2913
Comprehensive Evaluation for Undergraduate Teaching Management Level in Institutions of Higher Education	
W. Sun and Y. Li	2917
Tolerance Modeling and Optimization of XY-Table for LED Die Bonder Based on Multi- Body Systems	
M.F. Huang, J.T. Huang, X. Cheng, J. Zhang and H. Jing	2922
A Study on Universal Design Product Development Combined with Value Engineering Approach	
S. Park and J.I. Park	2927
Research on Fracture of FRP Reinforced Concrete Beams Y.F. Feng, T.H. Yang, H. Wei, Y.F. Gu and H.J. Wang	2931
Study on Steam Extraction Technology Assisted by Microwave of Anise Star Oil from the Fruit of <i>Illicium verum</i> Hook. f. G.E. Yang, G.W. Wang, Z.P. Wu and X.Z. Li	2935
Study of Methods for Minimizing Construction Delays: Evidences from a Developing	4933
Country	
T. Pourrostam and A. Ismail	2939