

Table of Contents

Guest Editorial

Chapter 1: Machining Technologies and Materials Engineering

The Experiment Research on the Fluid Magnetic Abrasives W.D. Li and M. Lv	3
Study on Regulated Pressure Vacuum Casting Method for Larger & Thin-Wall Castings Z.Y. Zhang, H.G. Zhang, N.N. Xu, T. Lv, Y.Y. Liu and Q.X. Hu	8
Abrasive Wear Performance of Hot-Dipping Al-Mn Alloy Coatings on Q235 X.F. Dong and X.M. Li	13
Research on Electrical Discharge Machining for Injection Mold of Automotive Connector W.M. Pan, K.K. Shi and X.Q. Lei	17
Preparation Technology and Surface Finishing Characteristics Research of New Magnetic Abrasive Tools X.H. Li, W.H. Li and S.Q. Yang	21
Research on Temperature Field of Nano-Composite Ceramics by Multi-Ultrasonic Grinding J.X. Xue and B. Zhao	26
Research on the Relationship between End Processing Technology and Processing Quality of Spiral Bevel Gear P. Zhu, A. Xieeryazidan and H.X. Zhang	31
Study on the Cathodic Surface Micro-Profile Effects on the Current Filed Distribution in Processing of Electrochemical Finishing M. Abulihazi and A. Xieeryazidan	36
On Technologies of Electrochemical Finishing with Pulsed Current A. Xieeryazidan, M. Wumerhali and G.B. Pang	41
Analysis and Study on Surface Quality of Workpiece of Short Electric Arc Machining Process J.P. Zhou, Y. Xu, J.Z. Zhang and B. Ma	47
Research and Simulation of LTE Technology in Manufacturing Metal Part H. Fan and Y.H. Huang	52
Experimental Study on Pre-Stress Hard Cutting of Aero-Screw and its Machined Surface Residual Stress State J.P. Liu, B.Y. Ye, M.Y. Qin, A.D. He and Y.P. Shi	58
Finite Element Simulation Study of Cutting Process for Large Thin-Wall Part of Aluminum Alloy G.H. Li, H.J. Qi and B. Yan	62
Numerical Simulation of Transmission Laser-Welding Melting Depth on Thermoplastic Z. Wang, Y.S. Wang and J.B. Lei	68
Oxidation Corrosion Behavior of Composite Cladding of Intermetallic Compound Ni3Si Y.N. Sun, X.D. Zhang, W.L. Sun and Q. Yu	72
Safety Recession Characteristics of High Speed Milling Cutter B. Jiang, P.Y. Zhao, D.H. Xia, J.G. Song and S.T. Wang	76
Vibration-Wear Characteristics of Cutter in High Speed Ball-End Milling Hardened Steel B. Jiang, P.Y. Zhao, J.G. Song, B. Chen and J.X. Bai	81
Quality and Control of Grinding-Hardening in Workpieces J.D. Liu, W. Yuan, J.K. Xiong and S.W. Huang	87
The Research on a New Feeding Device of Low-Temperature Deposition for Fabricating Tissue Engineering Scaffolds Y. Liu, S.H. Fang, Z.Z. Han, D.L. Liu, Y.Y. Liu and Q.X. Hu	92
Study on Low-Temperature Deposition Manufacturing Process Parameters of Three-Dimensional Chitosan Scaffold Y.Y. Liu, S.H. Fang, Z.Z. Han, Y. Liu, D.L. Liu and Q.X. Hu	97

Multi-Criteria Decision-Making and its Analysis for Machining Process of Mine Fans Impellers	103
A.J. Liu, D.S. Liu and W.H. Yue	
Study on the Veritable Parameters Filling Method of Plasma Arc Welding Based Rapid Prototyping	110
W. Aiyiti, L. Xiang, L.Z. Zhang and R.M. Chen	
Fabrication of 3D Hierarchical Scaffolds by a Hybrid Process Combining Low-Temperature Deposition and Electrospinning	117
Y.Z. Yu, Z.Z. Han, Y. Liu, S.H. Fang, Y.Y. Liu and Q.X. Hu	
Effect of Ti Addition on Microstructural Evolution of Ni3Si	123
Q. Yu, Y.N. Sun and W.L. Sun	
Research and Development of the Stone Contour Automatic Processing	127
S.W. Zhang, J.Q. Liu, Z.F. Lv and Y. Xu	
Application of Motion Controller on the Fine Milling Machine Tool for the Large Double-Sided of Aluminum Ingot	132
M.Z. Zhang, B. Guo and Y. Dai	
A Comparative Study on Modeling of High Temperature Rheological Behavior of AZ80 Magnesium Alloy Using Artificial Neural Network and Inverse Method	136
Y. Lou and L.X. Li	
The Influence of Crystal Plane on Graphitization of Diamond by Structure Analysis	142
Y.C. Liang, Z.G. Wang, M.J. Chen and J.X. Chen	
Ultrasonic Vibration Characteristics of Nano-Composite Ceramic in the Ultrasonic Polishing Process	147
M. Zhang and F. Jiao	
Characterization of Pure Titanium and Ti6Al4V Alloy Modified by Plasma Electrolytic Carbonitriding Process	152
X.M. Li, X.F. Dong, T.E. Si Dike, K.J. Li and D. Yu	
Hybrid Intelligence Process Parameters Setting and Optimization on Differential Pressure Vacuum Casting	156
T. Lv, H.G. Zhang, Y.Y. Liu and Q.X. Hu	
Grinding Performance of Titanium Alloy Ti-6Al-4V with Monolayer Brazed CBN Slotted Wheels	162
W.F. Ding, Z.W. Liu, J. He, H.Y. Zhao, Y. Wang and Y.M. Liang	
Research on Finite Element Simulation and Experiment of Temperature Field for Surface Cutting of Nanostructured WC/12Co Coatings	167
Z.H. Deng, Q.P. Wu, L.L. Wan, Z. Pan and G.F. Zhang	
Study on Residual Stress of GCr15 Bearing Steel under Ultrasonic Vibration Turning	173
J.L. Tong, B. Zhao and F. Jiao	
Numerical Simulation of Temperature Field for Laser Clad Composite Coatings	178
C.G. Zhu, Y.N. Sun, W.L. Sun and X.D. Zhang	
Microstructures and Properties of Ti Matrix Composite Coatings with Ex/In Situ TiC Reinforced	183
Q. Yu, Y.N. Sun, W.L. Sun and X.D. Zhang	
Study on the Multi-Axis Machining Technology of Helical Gear	187
J.X. Du and H. Shen	
Research on FDM Technique for the First Die of Matrix PDC Bit	192
X.Q. Mei, G.F. Yin and Y. Luo	
Adhesion of Silicon to the Tool during Diamond Cutting Silicon by Molecular Dynamics	197
Z.G. Wang, Y.C. Liang and J.X. Chen	
FEM Analysis of Temperature in High Speed Cutting of TiAl6V4 Alloys	201
Y.X. Lin, C.M. Yan and Z.Y. Lin	
Car's Internal Shield CNC Machining Technology and Analysis of Machine Tool Rack Mechanical	206
C.M. Yang, J. Li, Y. Ma and J. Ma	
Physical Simulation of Cutting Process and Optimization of Cutting Parameters	210
T.B. Yu, X.W. Zhang, J.Y. Pei and W.S. Wang	
The Effect of Boron-Sulphurizing Rare Earth on Microstructure and Properties of Boronized Layer	217
T.E. Si Dike, A. Xieeryazidan and X.M. Li	

The Optimization of Vacuum Casting Filling Velocity Based on Numerical Simulation N.N. Xu, Z.Y. Zhang, H.G. Zhang, T. Lv, Y.Y. Liu and Q.X. Hu	221
The Effect of Y on Microstructure and Properties of Al-5wt.%Cu Based Alloy M. Li, L.R. Cai and P.X. Liu	227
Cutting Performance of Cemented Carbide Tool in High-Efficiency Turning Ti6Al4V Y.H. Fan, M.L. Zheng, Z. Li, S.T. Wang and Y.B. Li	231
Experimental Investigation of Grinding Force in Microgrinding of Ceramic Materials Using Small Grinding Tool Y.Z. Sun, H.T. Liu and Q.Z. Zheng	236
The Research of the Near-Dry BTA Deep Hole Processing Technology H. Peng and W.B. Jiang	240
Finite Element Simulation and Experimental Research on Micro-Milling Process of Titanium Alloy H.T. Liu, Y.Z. Sun, D.B. Shan and Y.Q. Geng	245

Chapter 2: Mechanical Engineering and Engineering Design

Realization of Longitudinal-Torsional Complex Vibration by Conical Compound Horn under Single Acoustic Excitation J.X. Zheng	251
Dynamic Design of Six-Station Automatic Hydraulic Stretching Machine X.D. Zhang and J.J. Zhang	256
Analysis of Affecting Factors on Allowable Contact Stress of Four-Point-Contact Slewing Rings with Single Row M. Qiu, J.F. Yan, B.H. Zhao and P.F. Shi	260
Equipment Development of Crankshaft Barrel Finishing on Integrated Design Theory W.H. Li, S.Q. Yang and X.H. Li	264
Influence of Roller on Tooth Height of Internal Spline Formed by Spin-Forming L.Y. Sun, Q.X. Xia, X.Q. Cheng and B.Y. Ye	268
Researching a Online Method of Measuring Three-Dimensional Deformation for Large Overhead Crossbeam W. Han, L.M. Wu, Y.H. Deng and H.Y. Zhang	272
Analysis of Static and Dynamic Stiffness for Coupled Double-Rotor Spindle System of High Speed Grinder Y.L. Hou and W.P. Mao	278
Development of a New Pressing Machine for Assembling Armature Components of Electro-Hydraulic Servo Valve D.X. Shao, B. Li, G.L. Wang, H.F. Wang and Z.L. Zhang	283
A New-Structured Tower Crane J.Y. Wang, T.H. Jin and L.B. Cheng	288
Structural Dynamic Analysis for the Natural Frequency of the Horn and Workpiece Combination X.L. Cheng, Y.H. Si and X.S. Li	293
Moving Load Simulation Method of the Evolute Cylinder Gears Y.F. Li, X.D. Pan and G.L. Wang	297
Study on Line-of-Sight Stabilizing Method for Stabilized Sighting System Y.L. Bi, S. Cong and Z.X. Wang	302
Characteristics Analysis of Load Simulation System Based on Permanent Magnet Synchronous Motor X.D. Pan, G.L. Wang, L. Sun, Y.L. Mu and H.B. Xie	307
A Method for Knowledge Reasoning of Mechanical Product Intelligent Design Using Information Entropy J. Li, X.J. Zou, H.J. Wang and Y. Chen	313
Research on Collaborative Design and Manufacturing for Civil Aircraft C. Wang, H.X. Cai, K. Ding and T. Yu	319
1.5MW Wind Turbine Structural Dynamic Analysis J.K. Gong, W.L. Sun and A. Wu	323

Research of Motion Law of Cotton Picker's Picking Roller Z. Liang, W.L. Sun and J.K. Gong	327
Transverse Oscillation of Precise Cable Drive System Y.F. Lu, M. Hei, Z.Y. Zhang and D.P. Fan	332
Research on the Primary Parameter of Track Circuit Test X. Zou, X.L. Zhu, Y. Yu and C.J. Huang	337
The Dynamics Calculations and Research of Electronically Controlled Water Distribution Device D.F. Xu, P. Dong, J. Fan and S.J. Guo	342
The Error Analysis about Gauge Visual Detection System between High Signals and Contact Net X.L. Zhu, Y. Yu, Q. Wei, X. Zou and C.J. Huang	347
The Image Positioning and Segmentation Techniques about Gauge Visual Detection System between High Signals and Contact Net Based on Target Feature X.M. Li, X.L. Zhu, Y. Yu, X. Zou and C.J. Huang	351
Machining Trajectory Generation and Simulation of Miniature Integral Impeller X. Zhang, X.D. Pan and G.L. Wang	355
Research on Geometric Error Model for Multi-Axis CNC Machines Based on Differential Transform J.X. Chen and S.W. Lin	359
The Study on Blade Pitch Control of Wind Power with Gain Scheduling J.Z. Hai, W.L. Sun, G.Y. Hu and A. Wu	364
Defibrillator Hydrostatic Bearing Test Bench Structural Analysis X.B. Jiang and D.Q. Li	369
Development of the Control Section for a New Armature Components Assembly Machine and its Application Test B. Li, D.X. Shao, G.L. Wang and H.F. Wang	373
Study and Development of Reconfigurable and Multi-Station Auto Shaft Pressing and Assembling Machine for Small Gears Z.Q. Zhang, S.G. Hu, S.B. Chen, R.D. Li, Z.D. Zheng, Z.F. Deng, Y. Li and S.Y. Xie	378
Analysis of Unbalanced Response for Coupled Double-Rotor Spindle System of High Speed Grinder C.H. Li, S. Wang and Y.C. Ding	383
Locating Error Analysis of Dimension and Symmetry of the Keyseat on Shaft and Jig Design with Precision K.F. Yuan	388
Simulation Study on Dynamic Characteristics of Electrical Control Type Water Distributor Based on ADAMS S.J. Guo, J. Fan, P. Dong and D.F. Xu	396
Finite Element Analysis to Stringer of a Semi-Trailer G. Tohti, D. Mahemuti and M. Tursun	400
A Study of Wind Generator Set Transmission Dynamics Analysis J.J. Zhang and W.L. Sun	406
A Study of Wind Generator Set Blades Dynamic Analysis J.J. Zhang and W.L. Sun	413
Study on Crushing Machinerys Rapid Design System Based on Generalized Modular S.Q. Cao and C.Y. Hu	417
The Dynamics Analysis of Comb Cotton Picker Transmission System C.Y. Wang, C.M. Xu, F. Chen, Y. Liu, J.P. Chi and F. Cai	423
The Dynamic Strength Analysis of a Conduit Connector H.F. Wang, G.L. Wang, D.X. Shao, H.T. Liu and Z.S. Lu	428
Structural Optimization of a Spacecraft Catheter Connector H.F. Wang, G.L. Wang, D.X. Shao, H.T. Liu and Z.S. Lu	432
Two-Phase Flow Field Characteristics Analysis on Seal Cavity for Bellows Mechanical Seal under Variable Operating Conditions L.C. Ren, M. Ahmat, Q. Gao and J. Luo	436
Analysis of the Pressure and Carrying Capacity of the Friction Pair Fluid-Film for the High Parameter Bellows Mechanical Seal Q. Gao, M. Ahmat, L.C. Ren and J. Luo	441

The Parametric Modeling and Contact Strength Analysis for the Wind Power Increasing Gear	
J. Luo, M. Ahmat, Q. Gao and L.C. Ren	447
The Influence of Global Warming on the Optimal Lectotype of Wind Turbine	
T. Gao, W.J. Qi and M.L. Zhao	453
Effect of Extreme Temperature on the Performance of Wind Turbine Blade	
J. Yang and W.J. Qi	457
Precision-Location of Gang Blade and Segment of Hard Grit Based on Double Stochastic Numbers and Systematic Design	
L.Z. Gu and Z.Z. Zhou	462
Research on RecurDyn Based Simulation Method for the Brake Shoe Eccentric Wear in Railway Freight Cars	
B.H. Lu, Y. Zhang, B.Z. Qu, J.S. Huang and Y. Liu	467
Finite Element Analysis on the Rigidity of the Blade Carrier in a Guillotine Sheet-Metal Shear	
Q. Li, G. He, D.L. Zhu, J.R. Wang and Z.B. Leng	472
Simulation and Optimization of Six-Bar Mechanism of Shaper Based on ADAMS	
K. Lv, Y. Yuan, D. Guo and L. Wang	476
Optimal Design of Automobile Connecting Rod Basic on Finite Element	
Z.B. Yang and P.F. Luo	481
Column Jib Crane Based on ANSYS Analysis of Static Stiffness and Improving Measures	
X. Ma and H. Wang	485
Research on Light Pen Measuring System	
F.S. Zhang, J.L. Jin and X.K. Li	490
Dynamic Characteristics Analysis of Two-Phase Flow Diaphragm Pump Based on MATLAB and ADAMS	
T.B. Yu, J.S. Shi, X.P. Zheng, H.B. Liu and W.S. Wang	495
Blade Reverse Design of Large Wind Turbine	
W.L. Sun, G.Y. Hu and H. Jiang	503
Design for a Novel Electric Sightseeing Car Body	
H.P. Luo, F.C. Qiu, J.B. Cao, Q.H. Sun, S.J. E, Z.X. Cao and M.Q. Mao	507
Design for a Novel Mobile Portable Wardrobe	
J.W. Tang, J.B. Cao, X.L. Li, J. Wu and X. Jin	511
Optimization Design for Automotive Interior Trimmings Based on Moldflow	
Z.Y. Lin and W.L. Hou	515
Simulation Analysis of Linear Electric Motor of the Moving Coil Type	
L.T. Yuan, M.L. Sun, L.D. Tang and G.M. Cheng	520
Modal Analysis of the Gantry Crane Based on System	
Y.H. Si, X.L. Cheng and L.C. An	524
Reliability Analysis and Engineering Application on Chemical Process Equipment System	
Y.X. Zhang, H.L. Pan and T. Yang	529
The Simulation about the Reliability and Fatigue Analysis of Tower at Connecting Region of Cylinder and Skirt	
Y.X. Zhang, Q. Gao, Y.C. Ma, X.J. Zhang and T. Zhao	535
Research of New Servo-Hydraulic Press Based on the AC Servo Motor Control	
L. Xia, Y. Xiao, G.S. Li, H. Zhai and J. Han	542
Fault Diagnosis Method for Automotive Panel Processing Equipment Hydraulic System Based on Rough Sets - Neural Networks	
J. Han, H.J. Huang, L. Xia and H. Zhai	546
Structure Design of a Manual Moving and Lifting Worktable	
X.B. Ouyang, K.T. Li, X.D. Chen, Y.L. Wen and P.J. Lin	552
Development of a New Type of Hydraulic Drilling Car Used in Coal Mine	
M.Z. Zhang, Y. Dai and B. Guo	556
Design and Experimental Analysis of an Animal Traumatic Brain Injury Test Platform	
B. Wang, M. Tursun, J. Long, S.M. Liu and F.R. Ding	560
Research on the Buffer Material Used as Hip Protector for the Elderly against Falling down	
Y.L. Song, T. Zhang and S.M. Gao	566

Center Distance Change of Silent Chain Drive Effect on Sprocket Tooth Profile Modification	
W. Sun, X.L. Liu, J.J. Liu and W. Zhang	574
Reliability Analysis and Goodness-of-Fit Test of Pen Cylinder	
D. Jiang, C.L. Wang and P. Yang	578
The Modal Analysis of Capstan Wheel of the JKM Type Multi Rope Friction Elevator	
F.L. Luo and G.Y. Li	582
Design and Analysis of a Novel Micro-Angular Vibration Testbed Driven by Voice Coil Actuator	
Z.Y. Zhang and Q.K. Zhou	587
Vibration Model Construction of the CNC Embroidery Machine Based on the Timoshenko Beam Theory and its Experimental Research	
P. Li and L.Z. Gu	593
Study on Noise in New Roller Chain Drives	
W. Sun, X.L. Liu, W.C. Wang, L.Y. He and J.J. Liu	598
Structural Properties Analysis of Composite Wind Turbine Blade	
L. Xu, W.L. Sun and A. Wu	602
Kinetic Analysis on the Level Spindle-Type Cotton Pickers Abstract Drive Spindle Seat	
X.F. Si and W.L. Sun	606

Chapter 3: Industrial Robot Technology

Experimental Study on Critical Vibration for the Load of Motion Platform of Linear Servo Motor	
G.H. Li, Z.Y. Wang, G.P. Liao and G.Y. Tan	613
Tracking Control of Mobile Robots Based on the BP Neural Network	
Y. Xiong, S.D. Xiao, S.J. Lei and F. Zha	618
The Tool Space Trajectory and Stress Simulation of Manipulator Based on the Optimization Design	
C.Y. Luo, X.J. Zou, M. Ye and J. Li	623
Automatic Inspection System of Small Plastic Gears Based on Machine Vision	
J.Z. Chen, G.T. Wang, J.Q. Chen and X.L. Yin	628
The On-Line Calibration Research of the Picking Robot Binocular Vision System	
K.Y. Chen, X.J. Zou and L.J. Chen	634
Motion Path Control of Multi-DOF Handling Manipulator in Industrial Field Based on Vision and C-Space Obstacle Avoidance	
D.J. Chen and X.D. Zhang	638
Study on Method for External Characteristics Extraction and Classification of Tomatoes Used for Grading Robot	
C.Y. Li and Q.X. Cao	643
Application of the Two-Dimensional Movement and One-Dimensional Rotation 3 DOF Robot on Riveting System	
X.L. Wang, X.S. Wang, A.X. Wei and K.T. Li	649
Design of Remote Monitoring System of Robot Based on FPGA	
C.G. Zhang and Y. Wang	654
Positive Analysis of a New Type of Planar 3-DOF Parallel Mechanisms	
Z.X. Meng, X.G. Lei and C.M. Zhang	659
Structural Optimization of a Machining Center Column Based on Response Surface Method	
M.N. Sun, G.F. Yin and T. Hu	663
Study on the Design and Analysis of Spindle System of NC Machine Tools Based on Digital Design	
H.J. Sun, G.F. Yin, L. Mi and Y. Yin	668
Study on Fuzzy Cluster in the Model for Rapid Identification of NC Processing	
X. Li and D.F. Feng	673
A Dichotomy Searching Algorithm for Planar Straightness Error	
X.Q. Lei, J. Zhou, X.P. Tu, Y.J. Xue and W. Ma	677

Distributed Control System Based on PIC Microcomputers X. Zhang, X.D. Pan and G.L. Wang	682
Moment Resisting Performance Analysis and Structure Optimization for Electric Actuator G.C. Wu, Y.H. Liu, D.L. Yang and J.H. Deng	686
Test Verification and Design of Zero Position Deviations Parameter in Electric Actuator System G.C. Wu, Y.H. Liu, H.F. Liu, D.L. Yang and J.H. Deng	691
Research on the Impact Control Performance of the Space Manipulator under the Noncontact Impedance Control Z.G. Chen, C.R. Wu and G.Y. Zhang	696
Static Stiffness Analysis of a Novel Parallel Manipulator Y.F. Li, C.F. Li, D.S. Qu and L. Zou	703

Chapter 4: Computer Integrated Manufacturing System and Contemporary Integrated Manufacturing System

Urban Road Traffic Sign Recognition Algorithm Based on Monocular Vision X.C. Yu and D.R. Chen	711
Topping Height Automatic Control System of Cotton Top Cutter Y. Xu, J.P. Zhou and J.C. Wu	715
Research of Target Recognition Based on Active Shape Model H.X. Peng, X.J. Zou, J.T. Xiong, A.X. Guo, L.J. Chen and D.Z. Wu	720
The Optimization System Design and Experimental Study of Process Parameters Based on LabVIEW W.H. Yue, X.H. Chen, X.J. Wang, J.X. Weng and Z.Q. Han	726
Based on the Sensor Network and Virtual Instrument Circuit Board Reliability Test System S.Y. Chen, G.T. Wang and Y.G. Li	731
Design and Simulation of Tobacco Harvesting System Based on Virtual Manufacturing Technology J. Liu and W.K. Ma	736
The Development of Web-Based Parts Library for Typical Mechanical and Electric Industries L. He, W.L. Sun, H.W. Wang and P.C. Li	740
Research on Visualization System of Virtual Workshop Based on Virtual Reality Technology X.J. Wan, W.L. Sun and Q.W. Cui	745
Research on Virtual Reality Technology Based the Application System of the Pumping Unit Q.W. Cui, W.L. Sun, X.J. Wan and C.X. Wang	749
The Development of Parametric Part Library Based on WEB H.W. Wang, W.L. Sun, L. He and P.C. Li	753
The Design of Injection Mold Assembly System Based on the Virtual Reality Technology J. Zhang, W.L. Sun, X.L. Wang, C.X. Wang and S.J. Guo	757
3D Scene of Virtual Reality System Design and Research C.X. Wang, Q. Zhao, W.L. Sun, X.J. Wan and Q.W. Cui	761
The Study of Collaborative Design System Based on Android D.D. Pan, W.L. Sun, Y. Peng and Q. Zhao	766
Research and Application on Manufacturing Scientific Data Sharing Service Customization Y. Zheng, Y.R. Ni and D.Z. Ma	770
A New Fat-Model for Large-Scale Product Assembly J.S. Bao, D.L. Wu and J. Ye	776
Research of Cloud Business Platform in the Steel Industry Chain F. Xiong, Q.Q. Cao, Y.F. Huang and Z.H. Xiong	783
On-Line Control for the Pore Size of Bone Scaffold Based on LDM Y.Y. Liu, Z.Z. Han, S.H. Fang, D.L. Liu, Y. Liu and Q.X. Hu	788
A Principal Component Analysis Based Fault Detection Method in Etch Process of Semiconductor Manufacturing J.G. Yang, J. Zhang, J.X. Yang and Y. Huang	793

The Research of Resource Scheduling Based on Genetic Algorithm Z.L. Yuan, Y.P. Yuan and M. Yang	799
Network Characteristics Analysis of the Xinjiang Regional Logistic Based on Complex Networks R.Y. Liu, Y.P. Yuan, S.G. Tian and X.J. Li	804
Development of Pharmaceutical Production Management System Based on RFID N.F. Ren, X.J. Wang and Y. Li	810
The Application of Second Development Technology for SolidEdge in Web-Based Parts Library L. He, W.L. Sun and H.W. Wang	814
Virtual Assembly and Kinematic Simulation of Gear Form Grinding Machine Based on Pro/E X.Z. Ren and F.K. Xie	819
The Intelligent Design of the Gear Reducer J.J. Fang and W.J. Qi	823
Study on Key Technologies of Web Parts Library System Development P.C. Li, W.L. Sun, L. He and H.W. Wang	828
A Decision Tree Method Based on Support Vector Machine to Identify Egg Embryo T.C. Xie, H.X. Mao, Y.W. Xu, X. Nang and X.J. Hu	833
Research on Loads Control of Wind Turbine Based on Disturbance Accommodating Control G.Y. Hu, W.L. Sun, J.Z. Hai and Y. Xu	838
Assessment of Implementation Capability for Design-Manufacturing Integration Based on Support Vector Machine S. Chen, Y.Z. Tian, Y. Yang and L. Yan	842
Application of Ug Re-Development Technology in 3-D Parameterized Modeling of Injection Mould Parts L. Xiang, W.L. Sun, L.Y. He, J. Zhang and S.J. Guo	847

Chapter 5: Other Related Topics

Research on RFID-Based Production Data Aggregation Technology R.S. Hu, L.L. Liu and T. Yu	853
Research on Analysis of Agricultural Engineering Information System H.J. Li, G.J. Tong and Y. Cao	859
The Application of Cellular Particle Swarm Optimization Algorithm on the Model of Cooperation Degree and Professional Degree L. Zhang and J.Z. Hai	863
The Implementation of IEEE 1588-2008 Precision Time Protocol on the STM32F107 G.Y. Yang, Y. Zheng, Z.Y. Ma and X.Y. Hu	868
Cleft Lip Surgery Program Scheduled Based on Finite Element Analysis W.J. Qi, T.M. Zhao and L. Hu	874
The Study on Comparison of the Virtual Prototype Modeling Methods Based on Adams/View L.Z. Zhang, X.Q. Shen and S.Q. Cao	880
3D Surface Reconstruction from Single 2D Image F.H. Wu, J.F. Wang, J. Wang and Y.B. Ren	886
Simulation of Generator with Moving Mesh L. Yang, M.L. Sun, L.D. Tang and G.M. Cheng	891
Stabilization Accuracy Measurement and Controller On-Line Debugging of Optical-Electro Stabilization System M. Hei, Q.K. Zhou, Y.F. Lu and D.P. Fan	895
Well-Posedness of the Gnedenko System with Multiple Vacations B. Yunus and A. Haji	902
Research on Material Mechanical Performance of Femurs Cured by Uyghur Sand Therapy J. Maitirouzi, D. Mahemuti, C.Y. Kong, R.C. Fu, R. Tiypu and W. Li	910
An Oil Transportation Network Planning Method Based on Evolution G.R. Chen and X.B. Chen	915

Evaluation Method and Application of Assembly Yield in Two-Dimension Multi-Station Assembly Processes Based on Number-Theoretical Net Z.J. Wen, Z.Q. Zhu, Y.M. Zhao and F. Zhang	921
Experimental Research on Dielectric Elastomer Power Generation H.P. Luo, F.C. Qiu, Q.H. Sun, J.B. Cao, S.J. E and J.J. Chen	927
Enhanced UV Stability of PBO Fibers by Using Benzotriazole UV Absorber B. Song, L.H. Meng and Y.D. Huang	931