ISBN(softcover): 978-0-87849-278-7 ISBN(eBook): 978-3-03813-410-7

Table of Contents

Sponsors and Committees

Preface

CHAPTER 1: Digital Design

Improvement of the Iterative Algorithm for Numerical Simulation of Springback in Sheet Metal Forming
J. Han, F.Z. Shi and L.K. Shao 1

Optimization of Molding Process Parameters for the CPU Fan Based on Orthogonal Experiment
C.D. Lu, Y.L. Zhang, S.F. Jiang and G.Z. Chai 7

Analysis of the Workpiece Elastic Deformation Holding in Fixture with High Definition Metrology
Z.L. Jiang and X.X. Meng 12

Finite Element Analysis for the Crankshaft of the Piston Compressor
B. Zhao 17

Research of Variant Design Method for Product-Level
Z.Y. Wang, S.F. Wu and L.L. Pang 22

Research and Implementation of 3D Surface Finite Element Mesh Generation Based on STEP
H. Jia, Y.H. Wang and Y.L. Lu 27

Applying Collaborative Filtering Techniques for Individual Fashion Recommendation
J.L. Lei, J. Wang, G.D. Lu and S.M. Fei 31

Electromechanical Coupling Study on the Pull-in Parameters of Electrostatic Cantilever Microbeam
Y. Tao and S. Wen 36

Technology Analysis and Optimization for High Pressure Casting of the Gearbox Shell of a Drill
L.S. Che, B.S. Pan, T.H. Peng and S.H. Zhang 41

Research of the Image-Based Fast Design for 3D Toys and Cartoons
J. Wang, G.Y. Zhu, G.D. Lu, G. Chen and D.L. Zhang 45

TRIZ in 3D Garment CAD
W.L. Li, J. Wang and G.D. Lu 50

The Architecture Design of Integrated Reverse Engineering System and Preliminary Exploration of its Key Technologies
X.F. Yu, S.J. Yi, C.X. Li and J. Lin 55

Reconstruction of Turbocharger Design Exploration
L.J. Qiu 60

Study on Application of Rapid Prototyping in Precise Oral and Maxillofacial Surgery
Y.F. Liu, X.T. Dong, H.Y. Zhu and W. Peng 64

A Study on Al-6061-T6 Tube Drawing Limit Based on Critical Damage Value
G.Z. Quan, Y.X. Wang, J. Zhou and B. Chen 69

Process Optimization for Suction Plastic Forming of In-Mold Decoration Plastic Sheet with CAE
B. Gao, X.R. Nan and B.Z. Wu 74

A Means of Drawing for Perspective Ellipse and its Applications
X.F. Yu, S.J. Yi, Y. Zhu and S. Yang 79

Kinematic Analysis of Detection of Steel Ball Surface Defect Based on ADAMS
Y.W. Wang, K. Ding, D.K. Jia, X.L. Liu, C.X. Yue and Z.Y. Zhao 83

Numerical Analysis on Porous Shunt Used in Magnesium Alloy Furnace
C. Xiang and F.Q. Ying 88

TRIZ-Based Industrial Design Methodology
Z.Y. Wang and M.J. Chen 93

Research on Air Nailer Comfort Evaluation Method and CAE Analysis System Development
J.Y. Li and X.F. Jiang 98

High-Pressure Gas Cylinder Plug Material Substitution Simulation
Z.Q. Guo, F. Xie, Z.B. Qin and Q.J. Lv 103

Research on the Digital Industrial Design System Integrated with Product Data Management System
X.F. Jiang and J.Y. Li 106

Regions Segmentation Algorithm of Triangle Meshes Based on Normal Vector
J. Chen, C.H. Gao and B.W. He 111

Extraction Profile Feature Points of Complex Parts Based on Genetic Algorithms
Q.J. Lv, S.P. Fang, Y.J. Wang and Z. Zhang 116

Virtual Assembly of Ball Valve Based on Computer Supported Cooperative Design
F. Xie, Y.J. Wang, Q.J. Lv and Z.B. Qin 121

Thermal Analysis and Optimization of Plant-Fiber and Starch Dishware Mould Based on ANSYS
X.M. Zuo and Z.M. Xu 125

Rapid Design Technology for Building Door & Window Products Based on Generalized Modularization
C.P. Yan, Q.H. Zhou, C.K. Mu and F. Liu 130

Customer-Oriented Product Customization Model and its Mathematic Evaluation
G. Xiao, L.B. Zhang, F. Gao and Z.B. Chen 135

Geometric Imperfection Sensitivity and Effect of Constraint Conditions of H-Section Columns under Compression
Y.P. Wang, Y. Zang and D.P. Wu 140

Three Dimensional Reconstruction System Based on Laser Radar
C.J. Tian, Z.Y. An, L.J. Li and B.G. He 145

Seismic Response Analysis of an Adsorption Tower Based on ANSYS
X.P. Hu and X.P. Ye 150

Web-Based Collaborative Design of Auto Steering Hydraulic Rotating Valve
L.S. Zhao, Y.N. Rui, Q.D. Chen and C.Y. Zhang 155

Ergonomics Optimization of Human-Product Contact Surface Design Based on Stochastic Finite Element
J.F. Wu, H.N. Wang, X.D. He, F. Wang and X.J. Liu 160

Muscle Force and Joint Torque Prediction Model for Intelligent Human-Assisted Product Design
J.F. Wu, H.Y. Li, X.D. He, N.T. Yang and F.Q. Shi 165

Design of the Intelligent Lightning Protection System
Y.J. Wang, K. Tong, L.A. Hou, H.C. Zhuang and F. Xie 170

Research on Rapid Manufacturing of Functionally Graded Mold by Electroforming and Arc Spray
C.S. Liu, H.P. Zeng, H.Q. Du and W. Fan 175

Three-Dimensional Modeling and Finite Element Analysis of Ladle Turret
X.C. Zhang and Z.W. Yuan 179

Optimum Design of a High Power Density Magnetic-Gel Brake Base Using Neural Network Model and Genetic Algorithm
H.Z. Lv and X.C. Liang 184

Data Collection and Model Construction Methods for Reverse Engineering
L.Y. Jiang and Z.B. Wang 189

Some Important Applications of Support-Function in Theory of Mechanisms
Y.P. Li and Y. Chang 194

Digital Manufacturing of Topology Optimization Designed Structure Based on Lever Set Function
Y.Y. Chang, S. Liang, P. Mi and X. Li 199

Structural Reliability Analysis of Loading Platform Cantilever under Multiple Failure Modes
R.J. Zhang, M. Li, M.Q. Zhang and X.W. Wang 204

Study on Product Design and Process Simulation of Hydroformed Automobile Framework
L. Zhou and X.M. Cheng 210

Kinematics Analysis of Mechanisms Based on Dynamics Multibody Systems in Virtual Assembly Environment
Z.X. Zhang, J.H. Liu and R.X. Ning 214

Characteristics Analysis of TBM Disc Cutter Ring
H. Wang, Y.H. Wu, H. Sun, T.Y. Wang and K.J. Zhao 219

Analysis on the Stress and Failures of Disc Cutter of Full Face Rock Tunnel Boring Machine
T.Y. Wang, K. Zhang, H. Sun, Y.H. Wu and K.J. Zhao 223

Study on the Optimization Straightening Regulation of Heavy Rail Compound Roll Straightening
H. Song, P.L. Wang, L.H. Fu, M. Chen and Z.Q. Wang 227

Optimization for Stamping Process Parameters of Front Fender Based on Numerical Simulation Technology
Z.F. Liu, Q. Zhang, W.T. Yang, J.H. Wang and Y.S. Zhao 232

Comprehensive Assessment of Assembling-Possibility of Products Based on Extensive Theory
Q.D. Chen, Y.N. Rui, Q.Z. Chen, Z.X. Hua and L.S. Zhao 237

Studies on the Springback Mechanism of Incremental Sheet Forming Based on FEM Simulation
F. Han, J.H. Mo, X.H. Cui and Z.L. Wang 242

A New Method for Calculation the Ball Grading of a Ball Mill
Y. Sun, W.T. Wang, M.F. Dong and Y.L. Mao 247

A Rapid Parametric CAD System for Fine-Blanking Progressive Dies
Y.L. Wang and H.C. Long 252

New Characteristics of Inverse Analysis Method and its Application in Sheet Metal Formability Prediction
X.Y. Lu, B.T. Tang and X.L. Lu 257

Rapid Design Platform for Mechanical Products Based on CBR
S.F. Wu, Z.Y. Wang and L.L. Pang 262

The Auxiliary Angle Method for Deriving the Pressure-Angle Expressions of Cam Mechanisms
Y. Chang and Y.P. Li 267

Modal Analysis of Precision Lapping Machine
Z.Y. Mou, W.F. Wang, P.F. Gao and D.H. Wen 272

The Estimate of Confidence Level for Part Dimension and Fits Test
X.M. Wu 277

Design on Same Axis Double Index of Motorcycle Based on MCU
S.B. Li 283

Research on Knowledge Management Oriented Product Features Knowledge Reconfiguration in Discrete Enterprise
H.B. Lv, P. Chen and Q.F. Wang 288

Development of the Picking Manipulator Simulation Platform Based on Multi-Domain System
Y.L. Chen, X.J. Zou, H.X. Zou, Q. Sun, J. Li, H.J. Wang and T.H. Liu 292

Numerical Study of a Panel with Big Grooves Subjected to In-Plane Tension
N. Huang, M.H. Huang and L.H. Zhan 297

Intelligent Algorithm of Machine Robust Design Orthogonal Optimization Based on Analysis of Variance Ratio
Y.X. Li, B. Wang and G.P. Peng 301

Experimental Research on Self-Alignment Design Principle of a Large-Scale Precise Machine Bed
Z.H. Yan, Y. Cao and J.Y. Yu 306

Statics Analysis of a Novel 5-DOF Parallel Manipulator
Y.B. Li, S.M. Ji, Z.F. Wang, L. Zhang and Y.Y. Wang 311

Design of Automatic Measuring Instrument of Irregular Objects' Centroid
N. Sun, Y. Zhang and J. Wang 316

Numerical Simulation of Three-Dimensional Cathode Flow Field of ECM for Inner-Wall Rectangle Weight-Reduction Blind Groove
J.M. Wu 321

Bubble Journey: Multimodal Input Tools Design to Augment Sense Experience in Computer Game
F.T. Ying, P.C. Zhu, M.L. Ye, J.C. Chen, Z. He and Y. Pan 326

A Study of Product Design at the Early Stage Based on SET Mode
J. Wu and Z.C. Lu 331

Discussion on Colour Design of Medical Product Based on Visual Negative Afterimage Theory
X.F. Xiong and C. Xiong 335

Dynamic Analysis of CNC Gantry Surface Grinder by Finite Element Method
Z.Y. Weng, S.H. Hu, N.N. Zhang, H.G. Ding and H.W. You 339

Personas Building and Digital Contents Design for Chinese Farmers
F.T. Ying, M.L. Ye, L.N. Yao and P.C. Zhu 344

A Digital Manufacture Technology for Skull Prosthesis Using Incremental Sheet Forming Method
F. Han, J.H. Mo, P. Wang and Y.Z. Deng 348

NURBS Curves Interpolation Based on Dynamic Characteristics of Machine Tools
J.H. Dong and H.Q. Cao 353

Innovative Design and Optimization of Molded Honeycomb Mold
S.C. Ma, B. Yan, P. Liu and R.H. Tan 358

Kinematics Analysis and Control System Design of 6-DOF Parallel Kinematic Machine with Matlab and EMC2
B.C. Li, D. Yang and R.Z. Lu 363

The Research of Conical Bore Diameter Measuring Method and Tool Based on Incomplete Iron Hinges
X.Q. Chen, Z.K. Wang, J.X. Su and X.H. Kong 368

An Effective Algorithm for Tool-Path Airtime Optimization during Leather Cutting
W.B. Yang, Y.W. Zhao, J. Jie and W.L. Wang 373

Research on Static Characteristics of Static Pressure Supporting Cylinder Pair
W.Q. Xu, Y.D. Sun and B.Q. Zhou 378

CHAPTER 2: Measurement and Control

Implementation of OMRON Servo Positioning Controllers in Automatic Terminal Crimping Machine
S.X. Su 383

Temperature Tag Based on Active RFID
Y. Tao, S.F. Geng and H.W. Lian 387

Error Compensation in Turning Operation of Slender Shaft Using a Fuzzy PID Controller
J.L. Guo and L.Q. Chen 392

Modeling and Error Analysis of Monocular Stereo Vision System for Large-Scale Workpiece On-Machine Measurement
Z.R. Wang, Y.H. Wu and Y.M. Quan 397

Design and Analysis for a Nano-Positioning Micro-Motion Platform Driven by Piezoelectric Ceramic Linear Motors
H.B. Lin and G.Z. Yang 402

Numerical Simulation and Experimental Research on MAG Surfacing Deposited with Electro-Magnetic Stirring Controlling
G.J. Zhao, Q. Luo, X.J. Wang and J. Luo 407

A Study on the Application Scheme for RFID-Tech Based Process Management in the Sewing Workshop of Clothing Companies
D.J. Zhou and Z.X. Wang 412

Research on Realization and Application of Uniformly Accelerated Motion in NC Systems
D.Q. Yang and Y.L. Yu 417

Improved Freeman-Newell Functional Reasoning Model for Conceptual Design of Manufacturing Process Control Strategies
G.Q. Liu 422

The Design and Implementation of Motion Control Card Based on DSP
X.J. Shi 427

CHAPTER 3: Mould & Die

Research on Rule-Based Reasoning Intelligent Selection System of Injection Mold Standard Parts
B.Z. Wu, B. Gao and R. Song 432

Layered Manufacturing by Reverse Engineering-Principle and Application
C.H. Li, Z. Fang, Y. Cui and Y.C. Ding 436

A New Optimal Control of a Tandem Cold Metal Rolling Process
Y.R. Nan and Y.F. Li 441

Machinability Comparison of Electrical Discharge Machining of YG15 Hard Metals, 45 Carbon Steel and ZL108 Cast Aluminum Alloy
Y. Wang and F. Gao 446

Droplet Transfer and Microstructure of Q235 Steel Thick Plate Using CO_2 Welding with Additional Longitudinal Magnetic Field Controlling
Q. Luo, D.M. Lu and J. Luo 451

The Flexible Iterative Algorithm for Calculations of Static Form Errors in Peripheral Milling Thin-Walled Components
Y.G. Kang and Z.Q. Wang 455

Influence of Sub-Temperature Quenching Temperature on Microstructure and Property of 65Mn Steel
A.M. Li, M.J. Hu and X.J. Wang 460

Effects of Geometric Characteristics on Flow Ratio of the Melt and Modifying the Checking Formula
D.H. Wang, B.Y. Jiang, C.P. Chu and Y.S. Deng 465

Effect of Different Strength Ratio on Formability of TWBs for Square Cup Panels
S. Xue and J. Zhou 470

CNC Machining Technology for the Sliding Block Parts with Special Shape in the Automobile Mold
X.X. Gong, Y.N. Rui, G.F. Qian and X.R. Duan 474

A STEP-Compliant Approach to NC Programming of Freeform Surfaces
R.L. Liu, Y.R. Wang, C.R. Zhang and Y.F. Xu 479

Temperature Influences on Springback of AZ31 Sheet
J. Gao, Z.M. Yue and L.Q. Ruan 484

CHAPTER 4: Manufacturing Technologies

Research on Liquid-Solid Two Phase Abrasive Flow Based on the Unified Second-Moment
S.M. Ji, B. Gong, D.P. Tan and Q.L. Yuan 489

Study on the Fluid Magnetic Abrasive Polishing Technology
C.D. Lu, X.J. Gong, H. Jia and G.Z. Chai 495

Anisotropic Lapping of Single Crystal Sapphire
P. Zhou, P.F. Gao, W.F. Wang and D.H. Wen 502

Modeling and Experimental Analysis the Effect of Minimum Chip Thickness on Cutting Temperature in Micro-End-Milling Process
Y.C. Liang, K. Yang, Q.S. Bai and W.Q. Chen 506

Structure Analysis on Gantry Machining Center and Characteristic Analysis of Rolling Guide Interface
Z.W. Zhang, C.Y. Jin and J.R. Zhang 511

Constitutive Relationship of TA15 Alloy and its Application in the Hammer Forging Process Simulation
G.Z. Quan, Y. Tong, Y.W. Zhang and J. Zhou 516

Effects of Ultrasonic Vibration on Machining Accuracy in Drilling
C.M. Zhang, D.Y. Zhang and X.J. Ma 521

Experimental Study on Wear Mechanism of Cutting Tool and Cutting Temperature in High Speed Machining Superalloy
C. Liu, X. Ai and Z.Q. Liu 525

Research on the Application of USM in the Ultra Precision Stage
H.B. Lin and G.Z. Yang 529

Research on the Error Model of a Nanometer Precision Stage
G.Z. Yang, H.B. Lin and F. Liu 534

NC Reconstruction of High Accuracy Spheres Grinding
Y.L. Yu, Z.Y. Miao and H. Yu 539

Tool Path Generation Method of Equal Approximation Error for Free-Form Surface in High Speed Machining
C.J. Zhou and H.C. Chen 544

Overview of Rapid Prototyping for Fabrication of Bone Tissue Engineering Scaffold
Y.F. Liu, X.T. Dong and F.D. Zhu 550

Uniformity of Kinematic Trajectory with Wafer Driving Initiatively in Plane Lapping Process
P.F. Gao, W.F. Wang and D.H. Wen 555

The Characterization and Experiment Research of Ultrasonic Rolling Machining for Column Surface
J.F. Ding, S.J. E, K.H. Zhang and F.J. Yu 559

Applying TRIZ for Optimization Formulation of Sapphire Precision Lapping
X. Wang, C.D. Lu and T. Hong 564

Path Generation and Posture Angle Control of Tool for Robotic Polishing System
S.S. Ying, S.M. Ji, M.S. Jin and L. Zhang 568

The Numerical Simulation of the Single Abrasive Motion Law in the Environment of Structural Surface
S.M. Ji, B.L. Ma, D.P. Tan and Q.L. Yuan 573

The Manufacturing of Rapid Tooling by Stereo Lithography
Y.L. Hou, T.T. Zhao, C.H. Li and Y.C. Ding 578

Research and Application of Metal Cold Extrusion Forming Utilising Floating Die and Divided Flow
G.J. Hu and F. Feng 583

Statistical Analysis on Lapping Parameters for Sapphire Wafer
H. Wu, P.F. Gao, W.F. Wang and D.H. Wen 587

Study on the Effect of Ultrasonic Surface Rolling Processing Parameters on the Surface Roughness of Q345 Hydraulic Prop
G.Y. Mei, K.H. Zhang and J.F. Ding 591

Research on Hole Expanding with Spiral-Fluted Electrode in ECM
Y. Yin and G.F. Yin 595

Tool Wear Image Segmentation Based on Markov Random Field Model
S.C. Xiong, L.P. Dong and D.H. Wen 600

Layer Face Milling Cutter Parametric Modeling and Modal Analysis
S.Y. Ji, X.L. Liu, F.G. Yan, C.X. Yue and X.F. Zhao 605

The Real-Time Prediction of Surface Roughness Based on Genetic Wavelet Network
J. Chi and L.Q. Chen 610

Study on the Cutting Deforming Force of Single Abrasive Grit for Ultrasonic Vibration Assisted Grinding along Normal Direction
H.L. Zhang and J.H. Zhang 615

Crossbeam Analysis and Structure Optimization of Special-Shaped Stone Combined Machining Center
K. Zhang, J.P. Ren, H. Guo, Y.H. Wu and K.J. Zhao 620

Theoretical Analysis and Uniformity of Trajectories in Lapping Process
W.F. Wang, P.F. Gao and D.H. Wen 625

Research on Temperature Field about Cutting Area in Plunge Milling Ti Alloy Based on Finite Element
X.D. Qin, W.C. Liu, H. Jia and X.L. Ji 630

Modeling and Experimental Study of Magnetorheological Flexible Gasbag Polishing
S.M. Ji, G.D. Chen, M.S. Jin and L. Zhang 634

Research on Graphitization of Accelerant Polishing Technique for CVD Diamond Film
S.M. Ji, Z.H. Xu, L. Zhang, Q.L. Yuan and D.H. Wen 639

Study on a Robust NURBS Interpolator
M.H. Zhang and Z.Q. Liu 644

Overview of Development and Application of Ultra-Smooth Surface Abrasive Flow Polishing Techniques
K.H. Zhang and G.F. Wang 649

Study on the Cutting Properties about Magnesium Alloy when Dry Turning with Kentanium Cutting Tools
X.H. Guo, L.J. Teng, W. Wang and T.T. Chen 653

Study on Characteristic of Abrasives in Chemical Mechanical Polishing of Silicon Wafer
J.X. Su, X.Q. Chen, J.X. Du, X.Y. Wan and X. Ning 658

Development of CNC Milling System for NURBS Interpolation Based on IGES
T.G. Li, C.L. Fu, P. Guan, T.B. Yu and W.S. Wang 663

Numerical and Experimental Research of the Slurry Film in Chemical Mechanical Polishing (CMP)
F.Y. Lou, Q.F. Deng and J.L. Yuan 669

Numerical Prediction of Manufacturing Error in Sliding Panel Structure
Z.X. Li, S.M. Ji, X. Lv, S.C. Xiong, S.S. Ying and Y.Y. Wang 675

Application of a Hybrid Algorithm Based on Genetic Algorithm and Hill-Climbing Algorithm to Tool Path Optimization in CNC Machining
H.Q. Du and J.B. Qi 681

Study on a Three-Dimension Nanometer Precision Machining
H.B. Lin 686

Application of Magnetic Abrasive in Gasbag Polishing
S.M. Ji, G.D. Chen, M.S. Jin, L. Zhang, Q.L. Yuan and X. Zhang 690

Hydration Polishing of Sapphire
J.L. Wu, W.F. Wang, P.F. Gao and D.H. Wen 695

Structural Levels Model of Performance Behavior and Collaborative Design of High Speed Milling Cutter
B. Jiang, M.L. Zheng, C.X. Qi and J. He 700

Study on the Multiple Objective Parameter Optimization Method for NC Turning
Z.Q. Liu and M.H. Zhang 705

Research on Laminated Object Manufacturing Technology for Metal Part Based on CNC Machine Tool and Large Thickness Slice
J.T. Zhang, P.Y. Guo and C.Y. Lu 710

Research on Precision Accelerant Lapping Technology of GHz SAW CVD Diamond Films
L. Zhang, D.H. Wen, F.Q. Xiao, Z.H. Xu, Q.L. Yuan and S.M. Ji 714

Thermomechanical Simulation of Single Splat Solidification and Cooling in Plasma Spray Forming
L.R. Zhu, H.P. Zeng, W.J. Xu and H.Y. Li 719

Study on the Surface Characteristics of Polishing Pad Used in Chemical Mechanical Polishing
H. Gao and J.X. Su 724

Drilling Force in High Speed Drilling Carbon Fibre Reinforced Plastics (CFRP) Using Half Core Drill
D. Liu, H.H. Xu, C.Y. Zhang and H.J. Yan 729

Influence of Grinding Parameters on the Depth and Uniformity of Cylindrical Grinding-Hardened Layer
J.D. Liu, J.Z. Zhuang, X.L. Zhang and Z.L. Xu 733

Micro-Quality Control on Ultra-Precision Machining of Sapphire Substrates
H. Zhou, L.G. Bai and D.P. Wang 738

Ceramic Sample Preparation by Polishing Process for Nano-Indentation
J.S. Sheng, D.H. Wen and S.M. Ji 742

Research on Material Removal Modeling and Processing Parameters of Magnetorheological Finishing
Y.M. Li, X.Q. Shen and A.L. Wang 746

The Research in Algorithm for MRF Forming Dwell Time of Optical Components
Z.M. Yang, H.P. Hu and Y.B. Gao 750

Virtual Simulation and Optimization for 5-Axis Milling Process
L.Q. Zhang 754

Study on Surface Roughness of High-Speed Cutting of Ni-Base Superalloy under Different Cutting Media
H.Y. Cao, L.H. Guo and C. Chen 758

Present Situation and Development Trend of Precise Wire Cutting Technology of Silicon Wafers
H.W. Du and Y.Z. Yu 762

NC Milling of Profiled Screw
Z.Y. Miao, D.Q. Yang and H. Yu 767

CHAPTER 5: Manufacturing Technologies

Construction of Typical Shell Ring Cutting Database System
X.L. Liu, M. Liu, H.Y. Han, W.T. Li and J.L. Zhang 771

Design of Holonic Manufacturing Execution System with Control Mechanism Based Stigmergy
X.L. Li, J.S. Lu, G.Z. Chai and H.T. Tang 776

Rapidly Planning Approach Based on CBR for AO of Mechanical Product
K.F. Zhang, Z.Q. Wang, P. Liu and Y. Li 781

Industry Relocation and Manufacturing Clusters Upgrading
H.P. Sun 786

Single Item Lot Sizing Models with Bounded Inventory and Remanufacturing
N.M. Wang, Z.W. He, Q.S. Zhang and L.Y. Sun 791

Technical Study on Neural Network Intelligent Setting for GAIM Processing Parameters
B.Q. Wang and Z.W. Zhang 796

Study on Conversion of Customer Needs in Product Development
F.H. Zeng and L.H. Zhou 801

Open Vehicle Routing Problem Using Quantum Evolutionary Algorithm
Y.W. Zhao, J.L. Zhang and D.J. Peng 807

Research of Manufacturing Information Recommendation Model Based on Pattern Mining
D.S. Liu, C.H. Ju and H. Tian 813

Job Assignment Support System Integrating Environmentally-Conscious Information of Manufacturing System
Y. He, F. Liu and Q.F. Wang 817

Time Window Constraint Conflict Resolution Algorithm for Collaborative Design Process Scheduling
Y.D. Yang, W.Q. Guo and X.X. Hu 822

Research on the Construction of Emergency Shelter Public Facility
F. Zhao, H.Z. Yang, T. Wang and X.X. Liu 827

A Fuzzy Dempster Shafer Method and its Application in Plant Location Selection
Y. Deng, X.Y. Su and W. Jiang 831

A Bi-Objective Order Allocation Optimization Model for Horizontal Manufacturing Collaborative Alliance
F.Q. Cheng 836

Multi-View Modeling Scheme and Total Solution for Enterprise Digitalization
X.B. He, F. Liu, Y. He and C.P. Yan 841

Intelligence Selection System for Honing Parameter Based on Genetics and Artificial Neural Networks
W.Y. Pu, Y.N. Rui, L.S. Zhao and C.Y. Zhang 846

A Preliminary Study of JDF-Based ERP System in the Printing Enterprises
Y.F. Zhong, X.Q. Peng, X.Y. Xiao, Q.L. Zhang and Q.K. Cheng 851

Automatic Modeling for Workflow Simulation with GPSS
Y. Xie 856

Study on NC Machining Technology for Integral Impeller of Pelton Turbine
B. Wang, X.L. Liu, C.X. Yue, J.C. Du, L. Xu and X.Q. Chen 861

Research and Design on Green Reconfigurable NC Machine Tool
Y.J. Wang, F.J. Wu, F. Xie, K. Yao and Z.M. Hou 866

Current Status and Countermeasures on Informatization of Medium and Small-Sized Logistics Enterprises in China
J.Q. Wang, C.L. Zhang, S.F. Zhang and J. Chen 870

A Method for Modeling Wrinkles of 3D Face Based on Photo
L. Li, F. Liu, J. Li and Y.Y. Wang 875

Engineering-Oriented User Interface Design Patterns
S.H. Feng 880

Customer Requirements Capture for Product Development: Framework and Method
F. Gao, G. Xiao and Y.M. Zhang 885

A Computer-Aided Ergonomics Evaluation System for Customized Furniture Design
Q. Wu, S.Q. Sun and Z.X. Dong 890

Modeling Research of Ridge-Till and No-Till Seeder Based on the Virtual Manufacturing Technology
H.Q. Luo, X.H. Tang, X.H. Shen, X.J. Nie and X. Liu 895

Applied Study on the Mine Production & Management Decision Support System Based on Data Warehouse
X.F. Li and S.Y. Zhong 900

Evaluation on Product Form Image Using Linguistic Variables Based Fuzzy Analytic Hierarchy Process
F.Q. Shi, J.F. Wu, X.D. He, H.N. Wang and S.Q. Sun 905

Problems and Countermeasures of the Quality-Tracing Based on Lot Numbers in Manufacture
Q. Lei, L.W. Pan, S.Q. Yi and Y.C. Song 910

A Theoretical Architecture for Regional Manufacturing System
X.B. He, F. Liu, Y. He and H.C. Yin 915

Study on the Bounded Inventory Model with Returning Items and Disposals
N.M. Wang, Z.W. He and L.Y. Sun 920

Knowledge-Based Web Service Environment for 3D Visualization
J.N. Yu, H.M. Cai and L.H. Jiang 926

NC Tool Selection System Based on Process Features of Part
Z.R. Liu and K. Meng 931

Communication Systems for Factory Automation: A Design Approach Based on MMS and WSs Technologies
B.H. Zhou and K.L. Xu 936

Research and Realize on Rental Service System for ASP Software Based on the IPS^2
Y.W. Zhao, L.N. Zhu and W.L. Wang 941

Manufacturing Resources Optimal Selection and Rough Production Capability Estimation for Market-Driven Rapid Response Manufacturing
Y. Cao, Z.B. Qin and S. Cao 946