Manufacturing Automation Technology

Description:
Selected, peer reviewed papers from the 13th Conference of China University Society on Manufacturing Automation, July 22-24, 2008, Harbin, China

The present volume comprises a collection of peer-reviewed papers covering innovations and practical experience regarding manufacturing automation education; current and developing manufacturing automation; advanced manufacturing technology including flexible manufacturing, virtual manufacturing, Green manufacturing and re-manufacturing, and web-based manufacturing; computer-integrated manufacturing systems; CAD/CAE/CAPP/CAM; product life-cycle management (PLM); computerized numerical control systems and flexible manufacturing systems; industrial robotics; process monitoring and quality control of manufacturing systems; group technology (GT); PDM, ERP, logistics and supply chains.

This work will be invaluable to production and research engineers, and also to research students and academics interested in the field.

Contents:
Preface v

The Prediction Model of Cutting Forces Based on Johnson-Cook's Flow Stress Model
H.T. Liu, Y.Z. Sun, Z.S. Lu and L.L. Han

Adaptive Compensation of Spatial Contour Error Based on Neural Networks in Three-Axis Machining
F.Y. Peng, K.S. Sun, Y. Zhou and B. Li

Operation Model for Green Manufacturing in the Electronic Industry
C.B. Li, F. Liu, C.Z. Li and Q.L. Wang

Study on the Property and Driver Mode of High-Speed Dot-Matrix Pulse Jet Generator
C.G. Deng, Z.Q. Xiang, F.Z. Lu and X.Y. Jiang

Dynamic Numerical Computation and Optimum Analysis of Robot Chassis Using Finite Element Method
Y.X. Wang, X.D. Zhang and X.Z. Wu

Application of Partial Least Squares Neural Network in Thermal Error Modeling for CNC Machine Tool
J.H. Shen and J.G. Yang

Design and Implement of Automatic Plastic Gasoline Tank Water-Cooling Equipment and its Control System
G.Q. Li, T.Y. Wang, S. Sun, L.H. Chen, H. Yang, P.P. Guo and Y. Zhang

The Analysis and Research about Temperature and Thermal Error Measurement Technology of CNC Machine Tool
C. Xie, W. Roddeck, C.S. Liu and W.M. Zhang

Material Removal Model and Numerical Analysis of Fluid Magnetic Abrasives Finishing
H.W. Sun and S.C. Yang

Development of a CNC System for Multi-Axis EDM and its Realization
H.P. Huang, Z.L. Wang and J.M. Zheng

Study on Minipore Drilling to Stainless Steel 1Cr18Ni9Ti

Study on Swept-Modeling with 3D Solid Based on ObjectARX
J.F. Zhang and Y. Wang

Simulation of Cutting Force in Turning Machining Process on CK7815 NC Lathe
Y.H. Dong, H.T. Xu and H. Lin

Application of Wavelet Analysis in the Virtual Measurement of Roundness/Cylindricalness for Shaft-Like Components
L.Z. Gu and C.J. Xiang

Study on Automatic Assembly Design of Product Based on UG
Q.X. Hu, Y.Z. Xu and Q. Lu

Research of Film Precise Potentiometer Linearity Automatically Measuring and Amending System
G.L. Wang, Z.H. Liu and X.D. Pan

NC Lathe Redesign and Green Estimation
J.M. Ding

Finite Element Modelling and Analysis of Cutting-Direction Burr Formation
X. Wang, H. Yan, C. Liang, B. Wu, H.X. Liu and L. Cai

Measurement and Simulation of Automotive Eddy Current Retarder Based on Virtual Reality

Sensorless Detection and Diagnosis Method for Induction Motor and its Driven Equipment
X.J. Shi, C.X. Zhang and J.P. Shao

Research of Hydraulic Jack Leakage Diagnosis Emulation Base on Wavelet /AMEsim
B.D. Jing, S. Lu, L.Z. Yang and H. Wu

A Mechanics Analysis of Formation and Expansion of Fatigue Crack in Laser Cladding on Repeated Impact Load
G.Y. Fu and S.H. Shi

A Hydraulic Analogue Model and Analysis of a Micropump Considering the Diaphragm Stiffness
D. Jiang, S.J. Li and G. Bao

Application of LabVIEW in Flame Cutter NC System
H.Y. Wang, G.F. Guo, Y.X. Li and X.L. Zhu

Study for Laser Cladding of Ni60A on Copper Substrate by Laser
F.J. Tian, W.J. Liu, X.F. Shang and G. Yang

Study on Simulation System of Cut-In Disrepair for the Milling Insert with 3D Complex Groove
Z.G. Wang, P. Zhao, Z.J. Li and D.H. Zhu

Transformation of Force-Linear Displacement and Moment-Angular Displacement on Different Measurement of Spring-Tubes Stiffness
H.F. Wang, G.L. Wang and Z.S. Lu

Study on Measurement of Melting Process of Molten Pool Formed by Laser Scanning Mirror
Y.S. Wang, J.J. Wang, J.B. Lei and X.C. Yang

Experimental Study on the Big Nano-Ceramic Plates under Two-Dimensional Ultrasonic Polishing
M. Zhang, C.X. Liu, B. Zhao, G.F. Gao and Y. Li

Motion Analysis and Simulation of Complex Curved Surface WEDM System
T. Wang, K. Jiang, S.Q. Xie and S.S. Hao

Research on Dynamic Performance of Milling System for Parallel Indexing Cam Contour Milling

CAD Application on Manufacture of Forming Shoulder for Packaging Machines
Y.J. Zhou and Q.J. Zhang
Y. Zhang, Z.L. Wang, Z.Y. Li and W.S. Zhao

Study on Preparation and Properties of Environment-Friendly Cutting Fluid
C. Wu and X.M. Jia

Research on Ontology-Based Knowledge Acquisition and Reuse for Fixture Design
L. Wang, G.F. Yin and L. Xu

Simulation Research on Effect of Diametral Clearance of Spool Valve to Valve Orifice Discharge Characteristic
X.D. Pan, G.L. Wang, Z.S. Lu and Z.H. Liu

Fundamental Experiment of Laminated Templates Electro-Deposition in Manufacturing Metal Part

Study on the Key Techniques of Remote Monitoring System for Large-Scale Equipments
Q.J. Zhang and F. Wang

Research on Manipulator Positioning Based on Stereo Vision in Virtual Environment

Design of Automatic Continuity Processes of Burnishing and Electrochemical Finishing on Cylinder Surface
P.S. Pa

An Intelligent Optimization Approach of Feedrate Scheduling Based on Hybrid Simulation Models
L.Q. Zhang, Y.H. Wang and M. Chen

A Comprehensive Evaluation Method of Manufacturing Process Resources and Environmental Attributes and its Application
W. Yan, H. Zhang, Z.G. Jiang and X. Luo

Dynamic Modeling and Optimized Energy Distribution of a Novel Amphibian Legged Robot
M.N. Wang and C. Chen

Experiment and Analysis on Near-Dry Cutting System in Titanium Alloy Deep-Hole Drilling
H. Peng, J.P. Wang and Z.F. Bao

Research of Automated Process Planning Based on 3D Feature Component Model
H.B. Qin, S.F. Wu, Z.L. Hou and Z.Y. Wang

Study on Automatic Measurement of Valve Orifice Characteristic Based on Pneumatic Flow Method
J. Liu, G.L. Wang and N. Xu

Theoretical Simulation of Temperature Field of Coaxial Powder Stream in Laser Cladding
Z. Dong and X.C. Yang

A Hybrid Genetic Algorithm for Hybrid Flow Shop Scheduling with Load Balancing
Y. Zhan, C.H. Qiu and K. Xue

Three-D Modeling and Feature Collection of Box-Like Components Based on CSG Fundamental Geometric Element Set and Topological Relationship Tree
L.Z. Gu and Y.L. Li

On Three Axes Ganged NC Grinding Machine with Ganged Revolving Spindle
Z.Q. Zhang, S.B. Chen and Z.D. Zheng

Research on the Relationship between Indenter Tip Radius and Hardness with a Self-Designed Nanohardness Test Device
Q. Liu, Y.X. Yao and L. Zhou

Tool Posture Optimization Subjected to the Rigidity of Multi-Axis Machine Tool
R. Yan, F.Y. Peng, J.Z. Yang and B. Lin
Telerobot Control System with Petri Net-Based Multi-Control Modes Transfer in Due Time
B. You, D.J. Li and J.Y. Qiu

The Study on the Key Technology of Turbine Blade CNC Belt Grinding Machine
L.T. Wang, F. Zhang, W.M. Qian, Y.Y. Ji and Y. Li

Construction of Exterior Features for Tissue Engineering Scaffold with Defect Bone
C.X. Dai, M.L. Fang and Q.X. Hu

Heating Current Control in Electric Hot Machining Based on Conservation Law of Optimum Cutting Temperature
B.Y. Ye, J.P. Liu, L.Y. Xu, R.T. Peng and X.Z. Zhao

Numerical Simulation of Driven and Pressure Flow in Compound Shaped Part of Co-Extrusion Process of Polymer with Metal Insert
S.X. Qin, G.Q. Zhao, Y. Mu and X.M. Xu

Study on Dynamic Characteristics and Simulation of Plane Grinding System under Two-Dimensional Ultrasonic Vibration
B.Y. Du and B. Zhao

Research on Open CNC System Based on Quantum Framework
J. Han, W.M. Dai, L. Xia and B. Tang

Development of a NC Servo System Based on Fuzzy Adaptive Control
J. Cao, Z.W. Li and Z.X. Meng

Imageware and Pro/E Based Reverse Engineering Techniques for Drawbar in Heavy-Duty Railway Freight Cars
B.H. Lu and H.P. Zheng

Development of Automatic Measurement Platform for Servo Valve Nozzle Volume
D.X. Shao, T.Z. Cui, G.L. Wang, X.D. Pan and L.F. Xing

A Formal Verification for Web Service Composition Based on CCS
B.S. Yun, J.W. Yan and M. Liu

Wheel Velocity Analysis of a Rover with Six Wheels Independently Driven on Uneven Terrain
Y.H. Dong, Z.Q. Deng and H.B. Gao

Analysis of Wavelet Algorithm of Redundancy Denoising for Hydraulic System Signal
C.F. Gao, X.L. Zhu and Q.Y. Hu

Research about Automatic Ultrasonic Testing Technology for the Ring Welding Line of Middling and Small Modulus Gear
J.T. Zhang and C.L. Ning

Microcosmic Observing and Analysing of the Chips Formation from Precision Hard Cutting GCr15 Bearing Steel
G.J. Chen, X.L. Liu and Y. Wang

NURBS Interpolator Based on Dynamic Property of the Machine Tool
H.Y. Shen, J.Z. Fu and Z.C. Chen

Study on Interpolating Algorithm of Hybrid Machine Tool
H. Shi, W. Xu and F.X. Huang

FE Simulation of Vacuum Hot Bulge Forming Process of BT20 Ti-Alloy Cylindrical Workpiece
M.W. Wang and L.W. Zhang

A New Position-Finding Method for Machining Huge Workpiece
J.F. Wu, D. Gao and Y.X. Yao
3-D Outline Tracking Intelligence Control Technique and Application-Automobile Outline Parameter Measurement Machine
W.Y. Shi and Y.S. Chen

Green and Intelligent: Electromechanical-Hydraulic Integrated Clamping Device Based on Thermal Sensitive Material
D.N. Su, K.M. Zhong and X.L. Dai

Research into the New Process and Machine for Auto-Bending of Mine-Used Tri-Ring Chains
Y.H. Xiao, B. Liu and Q.H. Liu

Design of Key Parameters on Differential Velocity Vane Pump of Eccentric-Noncircular Gears
M. Hu and M. Chen

Model of Distributed Collaborative Design System for Supporting PLM

Theoretical Research on Polishing Free-Form Surface with Magnetic Abrasive Finishing
M.D. Zhang, M. Lv and H.L. Chen

Study on Forming Quality Control of Bending Tube in Power Station Boiler
Y.N. Lai, S.L. Ren, G.Y. Zhang and G.F. Liu

Real Time Defects of Beer Bottle Detection System Based on DSP
B. Ren, T.C. Xie and X. Nan

Process Quality Collaborative Tracing-Back and Close Loop in CIMS
L.P. Zhao and Y.Y. Yao

Development on CAD Software about Slewing Bearing
X.L. Yu, C.S. Meng, L.P. Liu and G.L. Cao

Study on Demonstration City Constraction of MIE and Informatization of Medium and Small Enterprises
S.C. Zhang and J. Zhang

Effect of Focusing Status on Dimension Measurement Accuracy in Micro Measurement System Based on CCD
H. Guo, L. Bai, J. Liu and Y. Shi

Research on Key Technology of Hydrostatic Motorized Spindle and its Designing
Z.S. Lu and B.H. Ma

Numerical Simulation and Experimental Measurement of Velocity Field of Powder Fluid in Laser Manufacturing
X.C. Yang, N. Yang and Z. Dong

Simultaneous Measurement of Torsion and Curvature Using Curvature Fiber Optic Sensor
Y.L. Fu and H.T. Di

Research on the Method of Client Customization Design
Q.X. Hu, X.J. Luo, F. You and Q. Lu

Optimum Design and Fairness of the Surfaces for Mold with Three Revolving Positions
L.Z. Gu, Q.Y. Fan and Y. Gao

The Application Research of Virtual Prototyping Technology in the Design of Oil Field Pumping Units
W.L. Sun, X. Wang and J.Z. Hai
Visual Simulation Study of Pick Loads on Continuous Miner
X.H. Li and X.H. Ma

AX-MV6 Robot Bevel Cuts the Workstation System the Applied
X.B. Kong, Y. Cui and Y. Yao

Research on New Architecture for Open CNC System Based on Linux
Q.X. Huang and S.W. Lin

Research on Simulation of Rotary Burrs NC Grinding
G.W. Zhang, S.C. Zhang and Y.T. Lin

A Method of Auto-Focusing Based on Fuzzy-Control
D.X. Shao, G.L. Wang, T.Z. Cui and H.C. Zhu

Research on Rotary Disc-Type MRF Dampers with Nonhomogeneous Magnetic Fields
Z. Cui and D. Zheng

Residual Stress Prediction by Adaptive Neuro-Fuzzy System in Milling Aluminum Alloy
X.H. Zhang, Q.L. An and M. Chen

Research and Development of Collaborative Design System Based on WEB
Y.D. Gong, Y.C. Zhang, H.Y. Zhao and W.S. Wang

Situation and Solution of Chinese Manufacturing Enterprise Informationization

Flexible Fixture Based on Magneto-Rheological Fluid
C. Zhao, D.D. Liu and C.R. Tang

Realization on Fractal Interpolation of Non-Rule Geometry
B.W. Sun, L.T. Jiang, H. Pan and H. Zhu

Design and Establishment of Platform of Tripedal Industrial Robots
P.S. Pa

Application of Chaos PSO Algorithm in the Decelerator Optimization
Y.X. Liu and X.Y. Jin

Preparations and Properties of Solid Lubricants Coating on High-Speed Steel Tools
S.X. Hou, X.M. Jia and C. Wu

Study on a Knowledge-Reuse-Based Rapid Product Design Process

Influence of the Air-Gap Changes on the Performance of Linear Induction Motor
X.L. Zhu, S.J. E and C.F. Gao

The Design and Simulation of Micro Gas Journal Bearing for Micro Gas Turbine Engine
Y.H. Dong, Z.L. Wang and Y.C. Zhao

High Speed Milling Stability of Cutter with Indexable Inserts

Numerical Simulation of Liquid-Solid Two-Phase Flows on Internal and Outside Flow Field in High Pressure Abrasive Water Jet Cutting Nozzle
H.Y. Ruan, H.X. Liu, S.Y. Ding, K. Yang, X. Wang and L. Cai

Research for Disposable Design Concept and its Method

Stochastic Fractal Modeling and Process Planning for Machining Using Two-Dimensional Iterated Function
System
Y.H. Li, J.C. Feng, Y. Li and Y.H. Wang

Study of Double-Motor Anti-Backlash of Heavy NC Machine Tool C Axis System
J.P. Shao, G.H. Han, W.B. Jiao and J.C. Liu

Performance Analysis on Capacitance Micromechanical Comb-Finger Accelerometer
X.M. Hu and Q.L. Han

Construction of a New Virtual Environment System for Assembly and Training of Complex Products
Y.D. Lang, P.J. Xia, P. Chen and Y.X. Yao

Study on Location Simulation for Picking Manipulator in Virtual Environment Based on Information Fusion of Multi-Sensor
H.J. Wang, X.J. Zou, D.J. Zou, J. Liu and T.H. Liu

Cellular Automata Method for Reconstruction of Complex Groove of Milling Insert
G.Y. Tan, G.J. Liu, G.H. Li, H. Song and Y.M. Rong

Comprehensively Digital Descriptions Based on the Features of CAD and CAPP for the Typical Shaft-Like Component
J.L. Song

The Experimental Investigation of Face Grinding of Al2024/SiCp with Electroplated Diamond Wheel
D.P. Li, Y.X. Yao and Z.J. Yuan

3D Reconstruction from Orthographic Image and Optimization Processing of NC Machining for Reconstructed Part
J.P. Liu, B.Y. Ye and J.X. Peng

Dry WEDM in Improving HS-WEDMed Surface Quality
T. Wang, Y.M. Lu, S.S. Hao, S.Q. Xie, X.C. Xu and Y. Wang

Research on Modeling of Bionic-Bone Tissue Scaffold for RPM
B.Y. Ren and J.W. Zhang

Study on the Web-Service Platform Architecture for Bio-Manufacturing
F. You, Q.X. Hu, Y. Yao and Q. Lu

A Reliability Analysis Method Based on Execution Scenario for Modular NC Software
X.H. Yao, J.Z. Fu and Z.C. Chen

The Monitoring and Analysis on the State of Deep Hole Drilling Based on Multi-Sensor Combined Detection Technology
L. Zhu and D.M. Xiao

Research and Applications of Fuzzy-PID Control on NC Machine
T.C. Xie and X. Nan

Surface Integrity Research on Barrel Finishing of Crankshafts’ Part
W.H. Li, H.L. Chen and S.Q. Yang

Product Rapid Design for Customer Individual Requirements
J.H. Ge, Y.P. Wang, G.A. Gao, Y.T. Huang and Y.L. Xu

An Open Architecture Control System for Parallel Kinematic Machines Based on Multi-DSP Parallel Procession
H. Wang, Y.B. Ni and K. Li

The Fault Tree Analysis of Striking Cylinder of Air Compressor Based on Grey Relation Theory
G.L. Zhou

Ant Colony Optimization for Neural Network
H. Mei and Y. Wang

The Study on the Linking-Up of Free-Form Surface Fiber Placement Track Based on Mesh Creating
Z.X. Shao, H.Y. Fu and D.C. Li

Study on Fluid Process Measurement Technology
X.D. Pan, G.L. Wang, Z.S. Lu and S. Zou

Measurement of Temperature Field in Laser Molten Pool by CCD Based on DSP
Z. Cao and X.C. Yang

Modeling and Simulation of Milling Force in Virtual Numerical Control Milling Process
X.L. Sui, J.T. Zhang, J.H. Ge, Y.P. Wang and H. Yuan

The Reconfigurable Embedded NC System Based on FPGA

Study on the Method for Measuring the Deflection Angle of a New Type Gyroscope Rotor
D.P. Cui, Y.X. Yao and D.L. Qin

Experimental Study on Intelligent Monitoring of Diamond Grinding Wheel Wear
B. Zhao, B.Y. Du and W.D. Liu

Experimental Studies of Cutting Temperature during High-Speed Milling of Aerospace Aluminum
W.J. Bai, Y.L. Ke, H.B. Wu and H.Y. Dong

Parametric Design on 3D Complex Groove of Turning Inserts Using Pro/Engineer
X.M. Feng and G.Y. Tan

Research on Numerical Control Program Based on Fuzzy Neural Network
S.J. E, X.M. Li and X.L. Zhu

Study on Fuzzy-Neural Network for Inverted Plasma Arc Cutting Power Supply
B. You, D.L. Jia and F.J. Zhang

A Fast Algorithm to Compute B-Splines and its Application in Curve Fitting
H.Y. Sun, M. Chai and D.P. Fan

Hole Filling Algorithm in Surface Reconstruction Based on Radial Basis Function Neural Network
X.M. Wu, G.X. Li and W.M. Zhao

Scheduling of Multiple Projects with Resource Constraints Using Genetic Algorithms
L.H. Qiao and C. Wang

Finite Element Analysis of Thrust Bearing Magnetic Field in 22KW Spindle

Research on Optimum Design and Simulation of Gear Reducer in Electric Steering Engine
F.C. Tao, J. Liu, G.L. Wang and Y. Shi

Study on Path Planning for Industrial Robots in Free-Form Surfaces Polishing
J.M. Zhan, X.Q. Zhou and L.Y. Hu

Motion Planning of Wheeled Mobile Robot Driven by Differential Wheels
Z.M. Wang and B. Yan

An Adjustment Algorithm of the GA Representation for Injection Mold Manufacturing Optimized Scheduling
with Operation Constraint
L.Z. Zhao, Y.B. Wang and G.A. Gao

Design and Study on Power Supply for Giant Magnetostrictive Accurate-Motion Actuator
M. Wu and X.L. Zhu
Optimization of High Speed Milling Cutter Based on Critical Cutting Speed
B. Jiang, M.L. Zheng and F. Xu

Research on Optimization and Emulate Planning of Automobile Assembly Process
T.C. Xie, Q. Zhao and X. Nan

Modeling and Simulation of a Micro-Actuator with Long-Travel
W.R. Jiang and Z.S. Lu

Workflow Modeling for Cooperative Production Development Based upon Advanced Petri Net
L.H. Zou, D.M. Gou, C.L. Sun and H. Gao

The Key Technology Research for Vision Inspecting Instrument of Steel Ball Surface Defect
P. Wang, Y.L. Zhao, X.L. Liu and Y.W. Wang

Study on Parameter Optimization about NC Cutting of Marine Ship Diesel Engine and Cutting Database System
X.F. Fang, S.W. Zhang, C.Y. Gong and T.X. Lan

The Design and Analysis of Equilibrium Machine for Brake Dish Based on Virtual Kind Machine Technique
Y. Li, J. Liu and W.J. Qiao

The Development of Automatic Metric Pump Flow Regulation Instrument
J.P. Shao and J.C. Li

The Research on Micro-Drive Device of Reflective Lens Frame with High Precision and Big Caliber
M. Lian and H.Y. Fu

Distortion Prediction of Aerospace Monolithic Components due to Milling Process
Y.B. Bi, H.Y. Dong, Q.L. Cheng and Y.L. Ke

Network Architecture Based on 3-D Digital Design and Manufacture for Scaled Enterprise Ally
L.Z. Gu, Y. Gao and Q. Zhang

Research on Temperature Field under Regular Gradient Heat Source of Milling Insert with Complex Groove Using Cellular Automata Algorithm
G.H. Li, Y.L. Su, G.J. Liu, G.Y. Tan and Y.M. Rong

Research on the Net Transparent Bridge Technology Based Single NC Machine's Network Integration
J.G. Zhang, H.J. Li, X.G. Wu and W. Peng

A Simulation-Based Methodology for Lot-Size Optimization
Y. Kou and J.J. Yang

Research and Development on Individual Virtual Intelligent Vehicles
Y. Lou, H.W. He, Y.M. Lu and C. Huang

Finite Element Analysis of the Effects of Coated Tool on High Speed Orthogonal Machining
H.X. Liu, H. Yan, X. Wang, S.B. Lu, K. Yang and L. Cai

Research on Integrated System of Information and Function Based on Virtual Prototyping Technology
B.B. Yan, F.J. Ren and Y.C. Jiang

Precision Model of Predicting FDM Rapid Prototype Based on BP Neural Network
G.Q. Shang, C.H. Sun, X.F. Chen and J.H. Du

Research on the Service-Oriented Price Quotation Method and System for Rapid Prototyping
Q.X. Hu, C.X. Song, Y. Yao, F. You and Q. Lu

Research for Data Exchange Technology of Heterogeneous Database Based on XML
Y.P. Wang, J.H. Ge, J.P. Shao, S.T. Han and Z.Q. Li

Mechanism Analysis of Ultrasonic Machining Based on Finite Element Method
Y. Liu, S.Y. Wang and G. Ya

CPLD Application in the Development of the Pin Selection Controller in Knitting Machine
J.G. Zhang, X.G. Wu, C. Zhang and C.J. Zhang

Research on Examination and Approval Flow in Concurrent Process Planning System
M.Z. Wang and J. Zhang

Thermal Imaging Experimental Research on Temperature Field for Milling Insert
Y.H. Zhang, G.Y. Tan and G.J. Liu

Finite Element Simulation of Orthogonal Cutting of Nodular Cast Iron

Discussion on Image Contour Extracting Method of Homogeneous Objects
Q.G. Zeng, S.J. Song, C.F. Qiao and J.F. Zhang

Research of Detector for Surface Defects of Steel Ball Based on Improved PID Control

Real-Time Monitoring System of Cutting Process Based on Cutting Temperature
Y.M. Quan, J. Zhao and Y.S. Le

Study on Integration of CAX/PDM Based on Web Services
Y.B. Liu, J. Chen and X.W. Tong

Design and Development of Integrated System on CAD/CAE/CAPP for Tube-Bending in Power Plants Boiler
Y.N. Lai, S.L. Ren and Y.T. Yu

A Data Hub Model for Simulation-Based Ship Design
J.S. Bao, X.F. Hu, Y. Jin and W. Wang

Cracking Mechanism and Retrofit Design of Governing Stage Blades for a Steam Turbine
Z.L. Xu, S.N. He and Shangguang, B.

Study on the Dynamics Control of Industrial Robot Modeling Based on Spatial Operator Algebra Theory
X.F. Fang, S.W. Zhang, H.T. Wu and Y.P. Lu

Elastic-Plastic Finite Element Analysis of the Effect of the Compressive Loading on Fatigue Crack Tip Parameters
Y. Sha, H. Tang and J.Z. Zhang

Adaptive Ant Colony Algorithm Used in WSNs Routing for Information Acquisition of Manufacturing Process
G.T. Wang, J. Ning and L.M. Wu

Study on the Orthogonal Cutting Process of Al7050T7451 with Uncoated and Coated Tools
H.Y. Dong, P.J. Huang and Y.B. Bi

Optimization Design of Planar Five-Bar Parallel Robot’s Bar Length
N.J. Wang, C. Liang and P. Shi

Designing of Mechanical Structure and Translocating Clamp in Flexible Joint Stiffness Measuring System
H.F. Wang, G.L. Wang, C.D. Tao and Z.S. Lu

CAD/CAPP Research and Practice of Special Welding Shell Parts
X.G. Wu, X. Li and X.Y. Zuo

Design on the System of Brain-Computer Interface Driving Neural Prosthesis Hand
W.H. Dai and X.D. Zhang

Key Techniques and Advances of Grinding/Milling Spiral Flutes on NC Machines with Multi-Axis Linkage
C.J. Xiang and L.Z. Gu
Study on Torque Sensor System Used in Torque Rheometer Based on Virtual Prototyping Simulation
S.H. Cui, Y. Li and S.L. Ren

Vision-Based Hand Tracking and Gesture Recognition for Augmented Assembly System
Y.M. Wu, H.W. He, J. Sun, T. Ru and D.T. Zheng

Digital Image Processing of CCD Measuring Temperature Field in Coaxial Powder Stream of Laser Cladding
L. Li and X.C. Yang

Finite Element Simulation on Face Milling of Austenitic Stainless Steel with Chamfered Tools
Q.L. An, J.L. Li, W.W. Ming and M. Chen

A Platform Establishment Method for Auto Driving Simulation Based on EON Studio
K. Xue and F. Yang

Author Index
Keyword Index

Ordering:
Order Online - http://www.researchandmarkets.com/reports/706097/
Order by Fax - using the form below
Order by Post - print the order form below and send to

Research and Markets,
Guinness Centre,
Taylors Lane,
Dublin 8,
Ireland.
Fax Order Form
To place an order via fax simply print this form, fill in the information below and fax the completed form to 646-607-1907 (from USA) or +353-1-481-1716 (from Rest of World). If you have any questions please visit http://www.researchandmarkets.com/contact/

Order Information
Please verify that the product information is correct.

Product Name: Manufacturing Automation Technology
Web Address: http://www.researchandmarkets.com/reports/706097/
Office Code: SCAY6PU6

Product Format
Please select the product format and quantity you require:

<table>
<thead>
<tr>
<th>Quantity</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Hard Copy</td>
<td>USD 335 + USD 28 Shipping/Handling</td>
</tr>
</tbody>
</table>

* Shipping/Handling is only charged once per order.

Contact Information
Please enter all the information below in BLOCK CAPITALS

<table>
<thead>
<tr>
<th>Information</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Title:</td>
<td>Mr [ ] Mrs [ ] Dr [ ] Miss [ ] Ms [ ] Prof [ ]</td>
</tr>
<tr>
<td>First Name:</td>
<td></td>
</tr>
<tr>
<td>Last Name:</td>
<td></td>
</tr>
<tr>
<td>Email Address: *</td>
<td></td>
</tr>
<tr>
<td>Job Title:</td>
<td></td>
</tr>
<tr>
<td>Organisation:</td>
<td></td>
</tr>
<tr>
<td>Address:</td>
<td></td>
</tr>
<tr>
<td>City:</td>
<td></td>
</tr>
<tr>
<td>Postal / Zip Code:</td>
<td></td>
</tr>
<tr>
<td>Country:</td>
<td></td>
</tr>
<tr>
<td>Phone Number:</td>
<td></td>
</tr>
<tr>
<td>Fax Number:</td>
<td></td>
</tr>
</tbody>
</table>

* Please refrain from using free email accounts when ordering (e.g. Yahoo, Hotmail, AOL)
Payment Information

Please indicate the payment method you would like to use by selecting the appropriate box.

☐ Pay by credit card: You will receive an email with a link to a secure webpage to enter your credit card details.

☐ Pay by check: Please post the check, accompanied by this form, to:
Research and Markets,
Guinness Center,
Taylors Lane,
Dublin 8,
Ireland.

☐ Pay by wire transfer: Please transfer funds to:
Account number 833 130 83
Sort code 98-53-30
Swift code ULSBIE2D
IBAN number IE78ULSB98533083313083
Bank Address Ulster Bank,
27-35 Main Street,
Blackrock,
Co. Dublin,
Ireland.

If you have a Marketing Code please enter it below:

Marketing Code:  

Please note that by ordering from Research and Markets you are agreeing to our Terms and Conditions at http://www.researchandmarkets.com/info/terms.asp

Please fax this form to:
(646) 607-1907 or (646) 964-6609 - From USA
+353-1-481-1716 or +353-1-653-1571 - From Rest of World