

Table of Contents

Preface

Parameter Optimization of Milling Ti6Al4V Using GA Approach F. Xu, J.J. Zhu, X. Wu, X.J. Zang and D.W. Zuo	1
Improvement of Deposition Uniformity in Laminated Templates Electro-Deposition H. Fan	5
Effective Dumbbell-Tool in Nanotechnology System from Optical Device of Computer Display P.S. Pa	9
A Parametric Modeling Method for Thin-Walled Frame Parts H.B. Wu and Y.W. Liu	13
Study on Milling Process Simulation for Monolithic Components Web H. Guo, D.W. Zuo and G.X. Tang	17
Simulation on the Melting Rate of the Iced Fixed-Abrasive Polishing Plate J. Kang, D.W. Zuo, Y.L. Sun, W.Z. Lu and Y.F. Zhao	21
Parameters Optimization of Laser Processing CVD Diamond Film Based on FEM Simulation X.J. Wu, F. Xu, D.W. Zuo, W.Z. Lu and M. Wang	26
Boron-Doped Nanocrystalline Diamond Films Deposited By Using DC Arc Plasma Jet CVD B.K. Xiang, D.W. Zuo, X.F. Li, F. Xu and M. Wang	30
Intelligent Choice of Characteristic Parameters of Oilstone in Honing of Titanium Alloy Cylinder Based on Artificial Neural Network Y.F. Wen, Y.N. Rui and J.D. Cao	35
Experimental Research on Cutting Forces of 5-Axis Milling of Al-Alloy Blade J.H. Liu, G.B. Bu, C. Zhao, D.W. Zuo and M. Wang	40
Topology Optimization of One Special Carriage's Square Cabin M.L. Song, Y.P. Wang and J.K. Yang	45
Investigation into the Grindability and Surface Integrity of the Nickel Base Superalloy Using Liquid Nitrogen Jet Grinding C.H. Li, Y.L. Hou and Y.C. Ding	49
The Application of Measurement System Analysis in the Experimental Platform of Large Electronic Current H.Z. Wu, X.J. Wei and W.H. Li	55
Parametric Sensitivity Analysis of Fuzzy Reliability Based on the Cut-Set of Fuzzy Mathematics X.J. Cheng	60
On the Dynamics of Bull-Nose Plane Six-Rod Mechanism Considering some Practical Factor C.M. Li	65
Study on the Kinematics of the Lips of the Twist Drill on the Axial Vibration Part 1: Axial Locus and Vibration Pattern L.Z. Gu, Z.J. Zhang and C.J. Xiang	70
Green Laser Drilling Assisted with Jet Electrochemical Machining of Nickel-Based Superalloy H. Zhang, J.W. Xu and J.M. Wang	75
Effect of Heat Load on the Residual Stress of Seal Edge in Vacuum Plate Glazing R.H. Zhang, H. Miao and D.W. Zuo	81
Relationship between the Fine Discharge Parameters and Craters EDMed of the NAK80 Steel H.J. Wang, D.W. Zuo, X.M. Wu and M. Wang	85
Study on Mathematical Model of Temperature Field in the Laser Welding Process H.F. Wang, D.W. Zuo, M.M. Huang and H. Miao	89
Influence of Basalt Fiber on Performance of Cement Mortar C.H. Jiang, T.J. McCarthy, D. Chen and Q.Q. Dong	93
Simulation and Fuzzy Control Study on the CVT Metal V Belt Axial Misalignment of Car F.Y. Zang	97

Study on Dynamic Equation of Cut-In Contact for the Waved-Edge Milling Insert with 3D Complex Groove Z.G. Wang, P. Zhao and Z.J. Li	102
Simulation of Yarn Tension Control System Based on Simulink D.G. Chang, Z.J. Xiao, Y.H. Liu and H. Li	106
Effects of Laser Shock Processing on Corrosion Properties of 304 Stainless Steel D.J. Kong, H. Miao and A.P. Hu	109
Research on Three-Dimensional Modeling of Multi-Thread Single Screw Pump Rotor and Stator Based on UG X.W. Sun, Q.Y. Wang, K. Wang and L. Wang	114
Study the Adsorption of Phenol on Attapulgite-Zeolite Nano-Structure Adsorbent from Aqueous Solution Z. Wang, L.S. Zhang and Z.Q. Jing	118
Torque Analysis and Shape Optimization of Electromagnetic Clutch C.H. Piao, Z.Y. Huang, J. Wang and C.D. Cho	122
Study on the Quality Evaluating Methods of Laser Forming Based on Thermal Stress Y.J. Zhou, Y.K. Zhang, W.M. You and Y.G. Huang	127
The Linear Programming Approach to Clamping Forces Determination with the Frictional Consideration G.H. Qin, D. Lu, S.P. Sun and Y.M. Rong	132
Mesh Model Repair with C^{k-1} Continuity T.R. Yuan, W.H. Liao, N. Dai and X.S. Cheng	137
Vacuum Micro-Electroforming Technique for the Production of Void-Free Microcomponent P.M. Ming, D. Zhu, F. Zhou and Y.Y. Hu	142
Prohibition Effects on the Crack Propagation of Al_2O_3-ZrO_2 Nano-Composite Ceramics under Ultrasonic Vibration H. Ma and B. Zhao	147
Numerical Simulation on Temperature Field in Single-Layer Laser Cladding Using Coaxial Inside-Beam Powder Feeding M.D. Wang, S.H. Shi and D.W. Zuo	151
Cathode and its Feeding Path Design in the NC-ECM Process of the Rimed Integral Impeller J.S. Zhao, J.W. Xu and N.Z. Yun	156
Outer Space Target Recognition Based on Image Sequence W.G. Song, P.H. Zhou, G.L. Lu and X.Y. Li	161
Anti-Vibration Performance Analysis of Honeycomb Paper W.Q. Xu, Y.D. Sun and Y.J. Lv	166
Design of Flow Stability System Based on Information Fusion Y.H. Du, X.M. Jiang, G.Y. Yang and Z.H. Zhao	170
Basic Equation of the Axial Flow Pump with Linear Distribution of Discharge Velocity and Simulate Z.H. Zhao, X.M. Jiang, Y.H. Du and M.Q. Ren	176
A Brief Evaluation of Jiangxi Hengfeng Eco-Industrial Parks Based on Green Manufacturing Y.Q. Tang and M.L. Zhang	182
Study on Turning of Ti-6Al-4V with Water Steam as Coolant and Lubricant in Green Machining Y. Zhang, R.D. Han, Y.L. Tang and Y. Wang	186
Intelligence Monitor and Diagnosis to High Speed Brushes Aeration Mechanics Based on Turbulent Flow Displacement Sensing Theory H.I. Liu, X.P. Li, Y.N. Rui and Y.P. He	191
Combined Method of Objective and Subjective Measurement of Ocular Aberrations A.C. Xu, J.B. Chen, P.M. Zhang and S.L. Zhuang	197
A New Tracking Control Algorithm for Mobile Robots Y.H. Zhao and R.F. Chen	202
Research on Look-Ahead Adaptive Interpolation of NURBS Based on de Boor Algorithm Y.Q. Fan, J.Z. Fu and W.F. Gan	206

Machining Mechanism of Abrasive Water Jet on Ceramics F.L. Zhang	212
Study on ANFIS Application in Coal Mining Stray Current Security Prediction C.Y. Ma, D.L. Zhang, Z. Wang, G.X. Li and J.J. Tang	216
Adaptive Fuzzy Neural Network Control System in Cylindrical Grinding Process X.M. Li and N. Ding	220
Experimental Investigation of Turning with Magnetized Cutting Emulsion J. Zhou and R.D. Han	225
Inverse Design of Cam Contour by NURBS Spline A.F. Yuan	230
Research and Implement of Automated Eliminating Bubbles Method Oriented to Vacuum Casting H.G. Zhang, Q.X. Hu, Y.Y. Liu, J.W. Wang, Z.F. Chi and H.J. Huang	235
Micro/Nano Functional Manufacturing: From Microthruster to Nano Energetic Material to Micro/Nano Initiator K.L. Zhang, S.S. Ang and S.K. Chou	240
Effect of Input Power on the Deposition of Optical Grade Thick Diamond Film in a DCPJ CVD Jet System R.F. Chen, Z.X. Shen, L.G. Dai, X.L. Zhang, R. Zhu and D.W. Zuo	245
Information Sharing in Construction Supply Chain J. Zhao and S.Z. Ding	249
Research on Remote Intelligent Fault Diagnosis of CNC Machine Tools and Realization of its Software Y.C. Li, J.Z. Fu and X.H. Yao	254
Bubble Image Processing Algorithm and Application in Vacuum Casting Equipment Y.Y. Liu, Z.F. Chi, J.W. Wang, H.G. Zhang and Q.X. Hu	260
The Deep Etching Process Based on Parallel Laser Direct Writing System J. Hu, D.L. Pu and L.S. Chen	265
Research on Concurrent Design and GM-Oriented System for Typical Mechanical Products C. Su and Z.R. Zhang	270
Microstructural Evolution of 7A04 Alloy Prepared by FE-ECAE in Semi-Solid State W.T. Tian, H. Yang and X. Cao	274
Experimental Investigation on Green Cutting GH4169 with Ionized Air Cooling and Lubricating H. Wang, R.D. Han, Y.L. Tang and Y. Wang	279
Deformation Analysis of Thin-Walled Workpiece under Multi-Stress Coupled Effect D. Lu, G.H. Qin, Y.M. Rong and C.M. Peng	284
Development of Case Database of Fixtures Based on SolidWorks J. Lin, G.Y. Tan, B.C. Liu and Y.M. Rong	289
Plastic Behavior of Laser Cladding Sample under Repeated-Impact Load S.H. Shi and G.Y. Fu	294
Research on the Performance Simulation of the Transmission System of Loader with Secondary Regulating Technique F.Y. Zang	299
Research on the Disassembly Design of the Used Cars Y. Liu	303
Strength Analysis of 2000L-B Vertical Mixer's Blades with FEM B. Liu, X.J. Liu, Z.Y. Zhao and L. Liao	308
Connotation and Design Principles for Quality Evaluation Indicator System of Cooperative Education G.F. Du and Y. Zhao	312
The Research of Industry-University Collaboration in Market Economy Y. Zhao, W. Zeng and Z.C. Wan	316
Study on the Kinematics of the Lips of the Twist Drill on the Axial Vibration Part 2: Theoretical Chip Length and Dynamic Angles of the Drill L.Z. Gu, Q. Hong and C.J. Xiang	320
Applications of Pro/Program in Parametrical Modeling of Mechanical Components J.L. Song	325

Study on Synthesis of Hinged Four-Bar Linkage Straight-Line Mechanism Using Three Symmetric Points A.P. Hu, D.J. Kong and W. Zhu	330
The Existence and Uniqueness of the Solution for the Newtonian Equation Y.Q. Feng and Z.H. Shen	334
Strategy Study on Enterprises to Implement Effective Pay Management Y.J. Miao	339
A Goal-Oriented Active Service Model and its COE Algorithm for Migrating Workflow System R. Wang	343
The Vibration Monitoring Standards of Desulphurization Fans and the Monitoring and Intelligent System of Identifying Failure S.S. Chen, G.Y. Li and L.B. He	348
The Dynamic Optimization and a New Structure of the Nursing Bed Robot S.J. Xin and H.H. Zhang	352
Studying on the Fiber Diameter of Polypropylene (PP) Spunbonding Fabric by Means of Artificial Neural Network Model and Physical Model B. Zhao	356
A Research on E-Business Applied to the Innovativeness of the Tourism Enterprises' Management M. Wei	361
A Study on Ontology-Based Representation System of Product Design Knowledge H.B. Wu and Y.W. Liu	366
Study on Desktop Virtual Assembly System for Interactive Assembly Process Planning D. Zhang, G.M. Jiao, D.W. Zuo, J. Xie, J.P. Li and H.L. Zhou	371
Computer Simulation on the Motion Tracks of Ice Fixed Abrasives Polishing Y.L. Sun, D.W. Zuo, J. Li, W.Z. Lu and Z.Z. Yu	376
Bose-Einstein Condensation and its Achieving Technique Z.G. Wang	381
Analysis of the Management of Hospitality Customers Complaint and its Countermeasures Y.L. Li and M. Wei	385
Analysis of the Type of China's Cooperative Education Model C.M. Liu and W.M. Hu	391
Study the Cooperative Education Model under the Value Sight X.M. Xiong	395
Electroplating of Compound Ni-SiC Coatings and Improvement of Wear Resistance H. Fan	399
Study on the Bond and Anti-Abrasion Performance of Repair Materials for Hydraulic Concrete C.H. Jiang, T.J. McCarthy, D. Chen and Q.Q. Dong	403
A Simultaneous Smooth Processes Using Burnishing and Electrofinishing on the Plane Surface P.S. Pa	409
Green Clamping Devices Based on Two-Step Orthogonal Toggle Force Amplifier Driven by Pneumatic Muscle G.J. Si, M.D. Wang and K.M. Zhong	413
Speed Control System Design of Winding Mechanism for Composite Films Y.H. Du, X.M. Jiang and G.Y. Yang	417
Research on the Thermal Property of Machine Tool Slides Based on Cellular Structures Y. He, J.Z. Fu and Z.C. Chen	422
Study on Improved Neural Network PID Control for Coal Mining Power Grid Arc Suppression Coil Compensating System C.Y. Ma, C.L. Wang, J.H. Liu, X.B. Li and R. Liang	427
Selecting the Parameters for Brazing 08 Steel with Pure Copper Solder Paste D.G. Chang, J. Zhang and M.L. Lv	432
Study of Intelligent Controller Based on FWN Oriented to Indirect Nonmetal Rapid Tooling H.G. Zhang, Q.X. Hu, Y.Y. Liu, J.W. Wang, Z.F. Chi and H.J. Huang	436

Volumetric Error Modeling and Analysis for CNC Machine Tool Based on Multi-Body System	
Z.Y. He, J.Z. Fu and X.H. Yao	441
On Diversified Development of Scholarship in Local Colleges and Universities	
W.J. Liu and J.L. Pan	447
Modal Analysis of Wire Suspension	
L.Y. Wu and J. Deng	451
Study on the Distribution of Residual Stresses for Nondestructive Marking by Laser Shock Wave	
J.Z. Lu, K.Y. Luo, P.P. Yuan, S.M. Yin and Y.K. Zhang	454
Malfunction Analysis of the NC Machine Tool and its Vibration Model	
Y.S. Luo, X.G. Fu and X.J. Wang	458
Reducing the Malfunction Signal Noise from NC Machine Tool Bearing Based on the Kalman Filtration	
X.J. Wang, X.G. Fu and Y.S. Luo	463
Research on the Technique of Tool Wear Monitoring in Plunge Milling	
X.D. Qin, X.L. Ji, X. Yu, S. Hua, W.C. Liu, W.Y. Ni and Y.X. Liu	468
Analysis and Research of Honeycomb Sandwich Structure for MicroSatellite Based on Equivalent Theory	
K. Zheng, W.H. Liao and Y.T. Qin	472
Development of PCD Combined Tool for Machining Cylinder Block	
Y.G. Wang, G. Liu, J.S. Zhang, J.B. Yu and M. Li	477
A Study on the Intergenerational Succession of Family-Owned Businesses	
J. Chen and H. Li	481
An Empirical Analysis on Regional Manufacturing Integration of the Yangtze River Delta Area	
T. Li	485
Design of Virtual Enterprises' Organization Based on Supply Chain Management	
K.F. Ying	490
A Network Forensics System Bypassing Web Local Encryption Businesses	
P. Li, R.Z. Wang, Y.Z. Zhang and D.W. Chen	494
Research on the Mechanism of Sludge Dewatering Treatment by High-Voltage	
Z.Y. Wu, H.J. Chen and Y.N. Rui	499
The Data Exchange of the IGES Cured Surface in Reverse Engineering	
S.B. Xiao, X.D. Xie and X.Q. Che	503
Methods to Control Financing Risks in Colleges and Universities	
S.H. Zhang	507
A Study on Quality Management System Based on Customer Value	
J.J. Li	511
Tool Wear Pattern and Mechanics in High Speed Cutting Microwave Printed Circuit Board	
X. Zhao and Y. Li	515
HSM Strategies of CAD/CAM Systems — Part I Tool Path Generation	
S.L. Ding, J. Mo and D. Yang	520
A Study on Application of the Honeycomb Structure in the Large-Scaled Parts	
F.H. Yin and H. Guo	525
The Design of Micromanipulator Based on Piezo Actuator	
T.J. Liu and Q.Y. Liu	529
Simulation of Temperature Field during Double-Sided Multi-Layer TIG Welding and Determination of its Thermal Efficiency	
M.M. Huang, D.W. Zuo, H.F. Wang, X.F. Li and M. Wang	532
Effect of Optimization of Shot Peening Parameters on Surface Integrity of NAK80	
H. Miao, D.W. Zuo, H.F. Wang and X.W. Sha	537
A Study on the Sensors and Actuators Test-Bed of Electronic-Control Engine	
J.G. Dai and L.Y. Liao	540
Study on Influence of Machine Tool Thermal Deformation During ELID Super-Precision Grinding	
W.D. Jin and G.X. Tang	545

Research of Cutter Track Elimination Algorithm for CNC Cam Grinding Based on Cubic Spline Curve Fitting and Spline Interpolation W.S. Huang, G.Y. Mao and J.S. Zhang	550
The Establishment of an Optimized Parameters Database Management System for MPCB Milling C.C. Pang, F. Xu, D.W. Zuo and X.J. Wu	555
HSM Strategies of CAD/CAM Systems — Part II Industrial Application S.L. Ding, J. Mo and D. Yang	559
Stress in Freestanding CVD Diamond Thick Film W.Z. Lu, J.J. Yuan, D.W. Zuo, F. Xu and Y.L. Sun	564
Analysis and Modifying of Injection-Mold for Notebook Computer Housing by CAE B. Liu, X.J. Liu, L. Liao and Y.B. Du	568
Five-Axis HSM Tool-Path Planning of Integral Impeller C. Zhao, Y.Y. Guo and G.B. Bu	572
Fast Implementation of Image Processing Algorithm Based on DSP Y. Zhou	577
Effect of RE on Performance of Semi-Solid AlSi7 Alloy R.X. Yi, S. Xie, X.Q. Zheng and Y.P. Ai	581
A Study on Intelligence Recognition Algorithm Based on Mechanical Seal Fault Feature X.R. Zhao and S.X. Yu	585
Fixed Abrasive Lapping and Polishing of Hard Brittle Materials J. Li, Y.W. Zhu, D.W. Zuo, K. Lin and M. Li	589
The Application of Extension Algorithms in Induction Motor Mechanical Fault Diagnosis K.H. Chao	593
Analysis on Formation Causes for Defects of Powder Metallurgy Flyweights X.P. Shen, X.Y. Wang, D.M. Liu, M. Chen, C.T. You and Y.B. Yan	599
Tribological Properties of the DLC/SEBS/A187/Si Elastomeric Nanocomposite Multilayer Film G.G. Cheng, J.N. Ding, Z.Y. Ling and Z. Fan	603
Modeling of Spiral Surfaces with Variable Pitch and Variable Diameter and CAPP of the Screw Head J.L. Song	607
Construction of the Error Signal Source Library and Virtual Real-Time Presentation of Machining Errors L.Z. Gu, Z.J. Zhang and C.J. Xiang	612
Design of Ethernet-Based Constant Pressure Water Supply and Remote Monitoring System G.X. Liu, H.T. Ma and D.H. Yuan	617
Glass-Forming Ability of $\text{Fe}_{60}\text{Co}_8\text{Zr}_{10}\text{Mo}_5\text{W}_2\text{B}_{15}$ Alloy with Industrial-Pure Raw Materials H.X. Xiao	621
Thermal Modeling and Analysis for Grinding Operation Y.D. Qin, Y.L. Tian and D.W. Zhang	624
Glass Forming Ability and Magnetic Properties of $(\text{Fe}_{68}\text{B}_{25}\text{Nd}_7)_{96}\text{Nb}_4$ Bulk Metallic Glass Y. Cao, G. Chen and Y. Li	629
Thermal Field Analysis of Single Pulse EDM in Gas T. Wang, S.Q. Xie and X.C. Xu	633
Parameter Calibration of Hartmann-Shack Wavefront Sensor Based on Mode-Construction Algorithm C. Liang, W.H. Liao and J.X. Sheng	638
Study on Safety and Stability of High Speed Milling Cutter Based on Grey System Theory B. Jiang, W.C. Xu, W. Zhang and M.L. Zheng	643
CAPP Based on Automatic Fuzzy Comprehensive Evaluation W. Tang and L.Z. Gu	648
The Research on Wear Mechanism of Micro-Automobile Clutch Friction Material J.C. Lv, Y.M. Mo and L. Pan	653
Experimental Study on Numerical Controlled Electrochemical Turning M. Kang, X.Q. Fu and Y. Yang	658
A Career Decision-Making Study Based on Value Engineering T.S. Wang, K.R. He and J.F. Hu	664

Numerical Simulation of Hydrodynamic Fluid Pressure in Grinding Zone with Resin-Bonded Diamond Grinding Wheel Y.L. Hou and C.H. Li	668
Study of the Thermal Error Robust Modeling of 2-Axes Machine Tools Based on the Grey System Theory X.S. Wang, L. Yan, L. Wang and D.J. Kong	674
Study on Numerical Simulation and Pressure Control for Vacuum Casting Quality Y.Y. Liu, D.L. Liu, J.W. Wang, J. Huang, Z.F. Chi and Q.X. Hu	678
Application of UG/Open GRIP Technology in 3D Design of Splicing Chamber D.G. Chang, Z. Yang and L.S. Xin	683
A Model for Evaluating the Service Quality of Transshipment Logistics C.C. Chou	687
Applying Artificial Neural Network Model on Investigating the Fiber Diameter of Polybutylene Terephthalate (PBT) Spunbonding Nonwovens: Comparison with Mathematical Statistical Method B. Zhao	692
An Ontology-Based Design Knowledge Model G.X. Tang, H. Guo and W.D. Jin	697
Finite Element Simulation of Ti-6Al-4V Three-Dimensional Milling Y. Zhao, F. Xu, D.W. Zuo and J. Kang	701
Influencing Factors Analysis of the Crack on Laser Cladding of Valve Sealing Surface G.Y. Fu and S.H. Shi	705
An Artificial Neural Network Approach to Predict the Relationship between the Processing Parameters and Properties of TC21 Titanium Alloy M.H. Chen, J.H. Li and Z.S. Zhu	709