

Table of Contents

Guest Editorial

Chapter 1: Machining Technologies and Materials Engineering

Tool Diffusion Wear Mechanism in High Efficiency Machining Ti6Al4V Y.H. Fan, Z.P. Hao, M.L. Zheng, F.L. Sun and S.L. Niu	3
Establishment of the Prediction Model for Ferrite Surface Roughness in Ultrasonic Vibration Grinding G.J. Dong, J.M. Liu, M. Zhou and Z.Q. Xu	8
Chip Morphology in High Speed Precision Turning Process of Hardened Steel GCr15 G.J. Chen, L.G. Kong, Q. Gao and X.L. Liu	12
Effect of Cutting Fluid on Machinability of Optical Glass SF6 P. Jia	16
Assisted-Grinding in the Laminated Template Electroforming H. Fan	21
Study on Floating Characteristics of an Innovative Liquid Bearing Utilizing Traveling Waves Y.J. Li, M. Zhou and E. Shamoto	25
Study on Device of Electric Heating Drill to Small Hole for Hard-to-Cut Material L.Y. Xu, Q. Wu and Y. Mao	30
The Annealing Effects on the Formability of T2 Copper Foil in Micro Deep Drawing Process by Laser Driven Flyer Y. Hu, H.X. Liu, C.X. Gu, Z.B. Shen and X. Wang	35
Analysis on Charge and Discharge Mechanism of the Modified Lithium Iron Phosphate Positive Material J. He, N. Li, C.F. Gao, Y.W. Luo and X.S. He	41
Ripple Line Fillet Seam Tracking with Visual Sensors in Welding Process Q.L. Bi and Y.M. Quan	46
Ratcheting Properties of Steel 45 and 42CrMo under High Cyclic Stress Y.F. Li, X.D. Pan and G.L. Wang	52
Influence of Workpiece's Size on the Structure and Performance of Grinding-Hardened Layer J.D. Liu, W. Yuan and M. Chen	56
Experimental Study on the Wear of Diamond Tools in Precision Cutting of Titanium Alloy G.J. Dong, Y.L. Zhang, M. Zhou and M.W. Li	61
Investigation of Laser Transmission Joint Strength: Based on the Surface Pitted 304 Stainless Steel and PA66 Z.G. Zhao, H.X. Liu, C. Huang, H. Chen, Z. Yan, P. Li and X. Wang	65
The Prediction of Material Removal and Surface Roughness of Workpiece during Abrasive Flow Machining G.Z. Zheng, K.H. Zhang, J.F. Ding, Z.H. Fang and L.B. He	70
Volumetric Error Model of Large CNC Machine Tool and Verification Based on Particle Swarm Optimization Y.L. Liu, D. Gao and G.W. Cui	76
Research of Missile Radome NC Grinding Based on Iso-Scallop Method L.J. Li, W. Sun and W.T. Bai	80
A Coupled Thermal Structural Finite Element Analysis of a Single Pulse Micro-EDM Process C. Guo, Y.K. Wang, Z.L. Wang and B.C. Xie	86
Multi-Factors Interaction Effects of Process Parameters on the Joint Strength of Laser Transmission Joining between PC and PA66 C. Huang, Y.Y. Gao, H.X. Liu, H. Chen, P. Li and X. Wang	91
Influence of Cutting Compound on Critical Cut Depth of Glass BK7 P. Jia	97

Experimental Research on Ultrasonic Torsional Vibration-Assisted Grinding of Hard and Brittle Materials Y.Z. Sun, J. Zhang, H.T. Liu and H.B. Shi	101
Synthetic Analysis and Simulation of One-Side Processing Profile Error of Globoidal Cam X.G. Chen and Z.H. Hu	105
Study on the Manufacturing Service Trading Platform Based on Processing Behavior J.X. Zheng, Z. Gang and Y. Zhao	113
Research on CNC Grinding Program of Overall End Milling Cutter C.F. Sun, N.J. Wang and J.G. Li	122
Optimization Research on Converter Steelmaking Process Parameters Based on DOE B.H. Lu, Y.K. Li and B.Z. Qu	128
Theoretical Research and Simulation of Grit's Motion for Internal Ultrasonic Vibration Grinding B. Zhao, Y.M. Li and P.Y. Bian	133
Technology on Ni-ZrO₂-CeO₂ Nanocomposites by Pulse Electroforming in an Ultrasonic Field Y.Y. Xu, Y.J. Xue, J.S. Li, Y. Liu and F. Yang	138
Study on the Surface Quality of Silicon Nitride Ceramics in Ultrasonic Vibration Grinding G.J. Dong, M. Zhou and S.N. Huang	144
Modification on TiO₂-a Photosensitive Material M. Sun, Y. Hu and H. Guo	148
Preparation and Experimental Study of the Complex Shape Carbide Diamond Coated Tools Y.Y. Zheng, C.L. Zhang and X.X. Xu	153
Analysis of Characteristics of Movement and Stress in Centerless Superfinishing J.H. Ma and P. Guo	158
Grinding Experiments on PTMCs with Vitrified CBN Wheel Q. Miao, W.F. Ding, B. Zhao, J.H. Xu, Z.W. Liu and J. He	163
Ultra-Precision Fly Cutting Experimental Study of Semiconductor Laser Heat Sink Y.L. Chen, H.T. Liu, Y.Z. Sun, Q. Zhang and Y.C. Liang	167
The Forming Mechanism of Surface Defects on Machined Surface in High-Speed Cutting of SiCp/Al Composites Y.J. Wang, M.Q. Pan, T. Chen and L.G. Chen	171
Research on the Online Test of the Fly Cutting Machine Tool Spindle P.Q. Fu, Y. Zhang, F.H. Zhang and J.H. Wang	177
Study of Carbon/Carbon Composite Material Surface Morphology on Ultrasonic Vibration Assisted Milling Z.D. Li, B. Zhao, J.L. Tong and P. Duan	181
Research on Heat Compensation Control of Giant Magnetostrictive Material in the Micro Feed B.N. Chen, F. Chen and X. Li	186
Simulation-Based Analysis of the Gas Bearing Utilizing Traveling Waves Y.J. Li, M. Zhou and E. Shamoto	192
DEFORM-3D Based on Machining Simulation during Metal Milling Z.L. Wang, Y.J. Hu and D. Zhu	197
Finite Element Simulation on High Speed Cutting of Hardened 45 Steel Based on ABAQUS G.H. Li, H.J. Qi and B. Yan	202

Chapter 2: Mechanical Engineering and Engineering Design

Molecular Dynamics Simulation Study on Diamond Tool Wear in Cutting Aluminum-Based Workpieces G.J. Dong, Y.J. Zhang and M. Zhou	211
Gear Strength Optimization Analysis of Automobile Gearbox Based on the Software of MASTA H. Wang, F.J. Yu, K.L. Huang, Y.X. Li and W.Q. Shen	216
Influence of Fluid-Structure Interaction on Control Accuracy of a High-Flow Control Valve F. Cao and Y. Wang	220

Design and Simulation of a New Type of Device for Dividing Air Flow Equipped on the Agricultural Product Baking House on Solidworks	224
J. Liu, Z.W. Jia, R.X. Guo and Y. Li	
Eccentric and Nonuniform Axial Force Analysis Based on Steel Tube Components of Recycled Resource	228
Y.C. Tang, W.X. Feng and Y. Zhang	
Crashworthiness Design Analysis of Vehicle Door Using Simulation Experiment Design and Multi-Objective Genetic Algorithm	234
X. Wang, W.L. Lou, H.X. Liu and D.L. Liu	
Design and Implementation of the Stone Elliptical Arc Contour Fitting Algorithm	241
D.W. Xu, J.Q. Liu, X.F. Wu and W.Q. Gao	
Automatic Measuring System of Servo Valve Overlap Value Based on Hydraulic Cylinder Switching Oil-Way	248
X.D. Pan, G.L. Wang, X.X. Cheng and H.C. Lv	
The Influence of Micro-Texturing Dimple on the Bearing Capacity of the Elastohydrodynamic Lubrication Based on CFD-FSI Fluid-Solid Coupling	253
J. Liu, H.X. Liu, J. Li, S.L. Feng, T.Y. Wang and X. Wang	
Research of a Small-Sized Magnetic Hydro-Cylinder without Piston Rod	259
Y.L. Song, S.P. Zhang and S.M. Gao	
Gear Modification Analysis to Improve the Vibration and Noise of Automobile Transmission	265
Y.X. Li, W.Q. Shen, Y.J. Zhao and X.Y. Hu	
Evaluation Method of Assembly Yield in Three-Dimension Single-Station Assembly Process Based on Number-Theoretical Net and 3DCS	270
Z.J. Wen, F. Zhang and J. Hu	
Research on Technologies of Augmented Reality for CNC Machining Process Simulation	276
Z.Y. Ma, G.Y. Yang and X.W. Su	
Research on Synthesized Modular Modeling Based on General Mathematic Model of Arbitrary Rotary Helical Surface	283
L.Z. Gu and Z.Z. Zhou	
Design and Implementation of the Circular Saw CNC Machining of the Stone Bridge Cutting Machine	289
X.F. Wu, J.Q. Liu, D.W. Xu and W.Q. Gao	
High Pressure Pneumatic Control Valve Performance Test System	295
X.D. Pan, G.L. Wang, G.Y. Shen and R.Q. Song	
Research on Mathematical Modeling and Kinematic Simulation of Elliptic Family Gears	300
L. Xia, D.Z. Li and J. Han	
Parametric Design of the Coupling of Oilfield Turbodrill	305
S.Z. Zhou and S. Zhang	
Experimental Study on Electrochemical Abrasive Jet Machining	310
Y. Zhang, C.G. Zhang, H. Dai, Y.M. Zhu and Y.C. Ji	
Research and Application of NC Machine Tool Energy Consumption Control Optimization	314
X.L. Xu, H.L. Wang and T.B. Yu	
Product 3D Dynamic Display and Lectotype System	320
J.H. Ye	
Production Pulling and Line Feeding Service for Automotive Assembly	325
Y. Zheng, C.P. He and L. Xue	
Application Analysis of Virtual Simulation Technology in NC Machining	331
X.Y. Hu, Y.X. Li, H. Wang and K.L. Huang	
On Adaptable Design and Application of Mechanical Interface	335
H.H. Xu, Z.Q. Zhang, R.D. Li and Z.F. Deng	
A 3D Engineering Model Retrieval Algorithm Based on Relevance Feedback and Features Combination	340
T. Zhuang, X.T. Zhang and Z.X. Hou	
Topology Optimization for the Base of Parallel Loading Device	345
H.G. Wang, L.P. Wang, N.M. Kang and R.C. Li	
Design for Mechanical Structure of Energy Recovery Damper	349
Z.Y. Wu, J.B. Cao, S.J. E, T.F. Zhao, C.X. Chen, C.H. Yang and H.H. Bao	

Structure Scheme Design of a Large Ultra-Precision Hydrostatic Rotary Table with a High Diameter-Length Ratio	
Y.Z. Sun, J.D. Wu, J.H. Zhang and H.T. Liu	353
Study on the Gear Parametric Modeling and Database Building Based on UG/OPEN Grip	
L.Z. Gu and W.Z. She	357
Kinetic Analysis of Wind Turbine Blades	
J.J. Zhang, W.L. Sun and W.Y. Wan	362
A RecurDyn Based Dynamic Simulation Method for Coupler	
B.Z. Qu, X. Liu and B.H. Lu	368
The Application of a Grating Tiling Device with Parallel Mechanism in an Inertial Confinement Fusion (ICF) System	
Z.X. Shao, W.J. Zhou and H.Y. Fu	373
The Establishment of Agricultural Engineering Information System for Farmer Cultivation	
H.J. Li and G.J. Tong	381
Integrated Product Data Link for Discrete Manufacturing	
D. Wu and G.F. Yin	386
Thread Measurement Algorithm Research and Software Development	
W.B. Wu, D.X. Shao, W.Q. Wang and G.L. Wang	392
Remanufacturing Cleaning Technology and its Application in Concrete Pump Truck	
P.H. Duan, W.H. Yue, Y.X. Zhu and J.X. Weng	398
Reliability Analysis and Optimization of Large Mining Dump Truck Steering Knuckle	
J.L. Liu and X.Z. Hu	405
Finite Element Analysis of the Impeller on the Centrifugal Fan of the Crawler Wind Fire Extinguisher	
C.M. Yang, F.M. Jing, L. Zhan and Q.H. Wu	411
Design for Mechanical Structure of New Nano Electric Boiler	
R.K. Wang, J.B. Cao, H.P. Luo, S.J. E, T.F. Zhao and X.X. Tang	416
The Application of Self-Adaptive Design in Improvement of the Restoring Strand Operation Mechanism	
Z.S. Liu	420
RE of Crucial Parts of Brake Caliper Unit Based on the Integration of Multi-Measurement	
R.Q. Song, G.L. Wang and R.Q. Song	425
Hydraulic System Simulation of 3-UPS Parallel Mechanism Based on ADAMS/Hydraulics	
B.B. Yan, W.B. Ren, B.L. Yin and Y. Li	430
A Experiment Study of Rolling Bearing Fault Diagnosis Based on Sensorless Detection Method	
X.J. Shi, X.F. Gong, H. Guo and J.S. Si	434
Simulation and Optimization of Mining Dump Truck Steering Mechanism	
Y.Q. Wu, Z.J. Wang and X.Z. Hu	439
The Knowledge Innovation Mechanism and Model Simulation in Contemporary Integrated Manufacturing System	
B.W. Zhong, Z.Q. Jin, X.H. Wang and H. Jiang	446
Design of the Undulating Fin Propulsor with Rajiform Swimming Mode	
Y.W. Wang, J.B. Tan, B.T. Gu and D.B. Zhao	451
Research on Direction and Position of Connecting Bolt Looseness of the Tower	
S.J. Song, L.L. Hao and L.B. Cheng	460
Modeling and Performance Simulation for a Picking Manipulator Based on Modelica	
H.J. Wang, G.G. Huang, X.J. Zou and Y. Chen	467
Researchment on Valve Sleeve Bore's Cylindricity Pneumatic Measurement Technology Based on Error Compensation	
Q.W. Zeng and G.L. Wang	476
The Applications of AEI System for Cultivation of Professional Farmer in Agricultural Modernization Process	
H.J. Li and G.J. Tong	482
Development of Stiffness Measurement Instrument for Precise Elastic Elements in Electro-Hydraulic Servo Valve Based on Charge-Coupled Device	
J.X. Yang, D.X. Shao, R. Lin and G.L. Wang	488

Simulation and Experiment Study of Heat Dissipation of Heavy-Duty Vertical Lathe Workbench	
J.P. Shao, X.D. Yang, J. Zhu, X.N. Mu and K.J. Wu	493
The Development of NC Tenoning Machine's Control System Based on HUST Controller	
J.H. Tao, B. Chen, X.J. Fei, H. Liu and Y.W. Bao	498
A Miniature Refiner Plate Design and Manufacturing	
Y. Ma, Q.H. Wu, C.M. Yang and F.M. Jing	503
Additional Damping Conditions Analysis and Calculation for Exciting Force and External Load	
Y.X. Liu and Y.M. Wang	507
Develop the Low Pressure Large Flow Overflow Valve	
X.Z. Zhao, X.G. Wang and Y.M. Wang	512
Finite Element Analysis on Real Contact Area Based on Fractal Characterization	
J.C. Wang, B.Q. Xing and T. Zhao	517
Analysis on the Influence of the Strength and Stiffness under the Contact Conditions for Friction Plate	
X.Z. Zhao, X.G. Wang and Y.M. Wang	523
Dynamic Characteristic Analysis of High-Speed Milling Motorized Spindle Based on ANSYS Workbench	
C. Li and Y.X. Yao	530
Experimental and Numerical Studies of Violin Bridge Vibration Mechanism	
C.Z. Zhang, B.Y. Ye, L.D. Liang, X. Jia and G.M. Zhang	536
Analysis and Optimization of Embedded Flexible Clutch Brake Wheel and Brake Claw Structure	
Y.M. Wang and X.G. Wang	542
Numerical Simulation of Lubricant Liquid Film of the Laser Surface Textured Micro-Pore Face Mechanical Seal	
P.G. Zhang, B.Q. Gu, L. Wei and Q.H. Liu	548
Design of a Kind of Complex Part and the Application of Drawing Methods	
Z. Lin and R.Q. Song	554
Research of Automatic Measurement Technology for Oil Thimble External Thread Parameters	
Y.G. Wei and Z.X. Wang	558
Oil Film Carrying Property Research of Hydrostatic Vertical Guideway of CNC Vertical Lathe	
Y.Q. Zhang, Y.Z. Qu, Z.Y. Shen, W.Q. Wu, F.B. Wu and L.Y. Xu	564
Thermal Characters of the Air-Cooled High Speed Motorized Spindle for Wood-Working Machine	
D.G. Ma and X.B. Jiang	568
Fatigue Life Prediction Methods Evaluation for Remanufacturing Mechanical Parts	
J.X. Weng, W.H. Yue, Y.X. Zhu and P.H. Duan	573
Influence of FTS's Dynamic Character on the Machining Error	
G.A. Hou and T. Sun	580
ABAQUS-Based Numerical Computation and Experiment Research on Silicon Rubber Mould's Deformation during DPVC Process	
Z.Y. Zhang, H.G. Zhang, F.P. Wan, Y.Y. Liu and Q.X. Hu	584
Optimization of Spring-Tube Fixture Based on Elasticity	
W.X. Liu, H.F. Wang and G.L. Wang	590
Research on the Motor Friction Model of Electro-Hydraulic Servo System	
X.J. Wang, W.X. Han, X. Cui, S.Z. Li and C.Z. Du	594
Fast Surface Construction and NC Milling Based on 3D Scanning	
Z.H. Wu, Q.K. Zhou, D.P. Fan, J.N. Zhu and J.M. Wang	598
Wooden Door Slot Cutting System of CNC Machine Finite Element Analysis	
X.B. Jiang, Q.H. Wu, F.M. Jing, C.M. Yang and G. Luo	603

Chapter 3: Industrial Robot Technology

Research on the Automatic Programming System of the Bone Scaffold 3D Printer Manufacturing	609
Y.Y. Liu, F.H. Zhang, W.H. Chen, F.F. Yan, L.L. Zheng and Q.X. Hu	
Research on the Trajectory Control Method for Laser Marking	614
Q.W. Yu, D.Y. Wang, Y. Fang and Y. Zhu	
Redundant Points Removing of SFS Reconstructed Surface	618
F.H. Wu, Q.J. Yin, J.F. Wang and Y.X. Li	
Control Dominant Factors Analysis for Under-Actuated Vehicle Platoon Stability System	626
R.H. Zhang, T. Liu, Y.L. Pei and S.Q. Yang	
3D Electronic Products Surface Measurement System Based on Machine Vision	630
Y.F. Zhu, L. Zhang and K.T. Li	
Research on the Control System of Flexible Polishing Machine Based on the Motion Control Card	637
X.L. Zhu, C.J. Huang and X. Zou	
A 5-DOF Combined Robot Platform for Automatic 3D Measurement	641
J. Qian, H.B. Zhu, S.W. Wang and Y.S. Zeng	
Analysis and Modeling of the Thermal Errors of Carriage System of a Precision Machine Tool Driven by Linear Motor	645
S. Yuan, F.Y. Peng, L. Zhou and P.F. Yao	
The Technology of Fast 3D Reconstruction Based on Stereo Vision	654
K. Zhang and Z. Gao	
The Parallel Mechanism and Variable Acceleration Control Method	659
X.B. Ouyang, K.T. Li, H.J. Xia, S.J. Wang, H.W. Zhou, C.W. Hu and W.D. Peng	
Pose Estimation of Round-Shape Workpieces Based on Genetic Algorithm	665
G.C. Lin, X.J. Zou, M.S. Zhu, K.Y. Chen and Z.X. Ke	
Research on Motion Control System of Clamping Thin-Walled Tube Based on PID Neural Network	670
C.X. Xie, C.F. Gao, X.S. He and Z.C. Dai	
Systematic Odometry Error Modeling and Correction in Wheeled Robots	675
Z.D. Yu, Y.B. Pei and D.X. Shao	
Research on Distributed Multi-Axis Motion Control System Based on CANopen	680
G.Y. Yang, Z.M. Tang and Z.Y. Ma	

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

Research on the Integrated Design Method of the Compliant Mechanism with Electromagnetic Actuators	689
Y.H. Peng, S.X. Fan, L.C. Zhang, H. Liu and D.P. Fan	
Research on Testing and Compensation of Speed Jumping Performance in Actuator	695
J.Y. Xu, Y.F. Li and G.L. Wang	
Research on Modeling and Simulation Analysis of Direct Drive System in Simulink and Simscape Environment	699
H.B. Liao, S.X. Fan, M. Hei and D.P. Fan	
Design and Numerical Analysis of Non-Uniform Electromagnetic Field Based on the Wedge Magnetic Pole	706
P. Huang, C.F. Gao, X.S. He and H.F. Ji	
Information Modeling and Visualization of Assembly Fat Model for Large-Scale Product	711
J.S. Bao, D.L. Wu, Q.H. Cheng and J.H. Pan	
Research on Workshop Equipment Information Transmission Based on Wireless Sensor Network	719
G.Y. Yang, L.P. Chen, Z.Y. Ma and Z. Zhang	
Co-Designing Method for Mechatronic System Based on Matlab and Recurdyn	725
M. Hei, S.X. Fan, H.B. Liao and D.P. Fan	
Energy-Efficient Routing Protocol of Wireless Sensor Network for Industrial Application	732
Z.Y. Ma, G.Y. Yang, J.J. Zhou and X. Gan	

Design of Lifting Electromechanical System for Onboard X-Band Weather Radar Antenna and Data Filtering Analysis	
X.H. Wei, B.H. Yang, W.D. Lu and L.W. Kong	740
Study on Hybrid Vehicle Regenerative Braking Control Parameters Affecting to Vehicle Performance Analysis and Simulation	
Z.W. Zhang	745
Research on Key Technology of the Simulation Visualization System of the Virtual Wind Farm	
X.J. Wan, W.L. Sun and Q. Yu	749
Mathematical Model and Characteristic Analysis of Electric Loading System	
X. Zhang, G.L. Wang, X.D. Pan and H.B. Xie	754
Simulation Research on Fluorescent Lamp Power Factor Based on Multisim	
R.K. Wang, T.F. Zhao, J.B. Cao, H.P. Luo, S.J. E and C. Zhou	761
Research and Implementation of Multi-Threading Technology on Embedded Hobbing CNC	
Y.G. Duan, J. Han, X.Q. Tian and L. Xia	765
The Development of Detection System for Three-Dimensional Alternating Electromagnetic Radiation	
Z.P. Guan, S.B. Chen, Z.Q. Zhang, N.S. Bao, Z.P. Lu, M.Y. Deng and G. Cheng	770
Reach on Micro-Motor Acoustics Fault Diagnosis Based on Loose Wavelet Neural Network	
Y.G. Li, G.T. Wang, Z. Li and X.L. Yin	775
The Design and Simulation of the Magnetic Field Formation Components Based on the Technology of Electro Permanent Magnet	
S.Q. Yang, W.H. Li, H.L. Chen and J.Y. Guo	781
Research and Application of Visualized Real-Time Monitoring System for Complex Product Manufacturing Process	
T.D. Li, W. Qin, J. Zhang, H. Li, Z.G. Xu and H.P. Xiao	787
Development of Field Control System of Automated Guided Vehicle Based on Wireless Local Area Network and CAN Bus	
Y. Wang, Z.D. Yu, C.X. Bao and D.X. Shao	792
Frequency Constant Pressure Control System Based on PLC	
Q. Zhu and Z.W. Feng	798
Design for New Actuator Based on Electroactive Polymer	
Z.Y. Wu, T.F. Zhao, J.B. Cao, S.J. E and C.X. Chen	804
Research and Development of Ultrasonic Testing Computer-Aided Process Planning (UTCAPP) Based on Standard	
J.T. Zhang, H.B. He and C. Tan	808
Study on the Test System of ERF's Performance	
X.S. He, P. Huang, K. Fei, X.Y. Zhang, W.Z. Chen and C.F. Gao	813
Research on Control Algorithm of Electric Loading System	
X. Zhang, G.L. Wang, X.D. Pan and H.B. Xie	818
Study on Small Power BLDCM Drive System	
Z.X. Wang, F. Chai, Y.G. Wei and Y.L. Song	823

Chapter 5: Other Related Topics

Evaluation Study of Subgrade Service Condition Based on Falling Weight Deflectometer	
X. Qiu, Q. Yang, X.H. Luo and B.R. Wang	831
Research on VSP Microcosmic Emission Model and Numerical Simulation for Motor Vehicle	
H.W. Wang, H.Y. Wen, F. You and G.F. Yang	835
Road Engineering Optimization Based on Driving Reaction	
Z. Cao, X. Wu and Q. Yang	841
Study on the Numerical Simulation of Femoral Injury	
R.M. Chen, W. Aiyiti and J. Wang	845
Study on Exhaust Diffusion Control in Urban Trunk Intersection	
Q. Yang and M.M. Huang	851
Laser Transmission Joining of PC and POM Process: A Finite Element Simulation	
H. Chen, Y.Y. Gao, X. Wang, P. Li, C. Huang and H.X. Liu	856

Study on Correction Method of Subgrade Modulus Based on FWD X.H. Luo, Q. Yang and X. Qiu	862
Multi-Constrained Quadrilateral Mesh Generation for Ship Assembly Q. Wang, J.S. Bao, C. Xun, Y.J. Pan and J.J. Tang	866
Prediction Model of Dynamic Resilient Modulus of Cohesive Subgrade Soil Based on Triaxial Test System X. Qiu, Q. Yang, B.R. Wang and X.H. Luo	873
Smoothing of SFS Reconstructed Surface Based on Genetic Algorithm J. Wang, F.H. Wu, X.L. Li and J.C. Wang	877
MATLAB-Based Vehicle-to-Vehicle Intelligent Lane Changing Model and Computer Numerical Emulation X.C. Yu and W. Jiang	885
Organization Optimization of Traffic Engineering in Urban CBD M.M. Huang, Q. Yang and S.L. Xiao	890
Taguchi Robust Design of Exhaust System Based on the Parametrically Process of Parts Location T.F. Li, H.X. Liu and Y.X. Mao	894
Working Mechanism of Brake Unit on Railway Vehicle and its MBD Simulation Experiment B.Z. Qu, Y. Liu, B.H. Lu, Y. Zhang and H.B. Zhang	901
SWCC Based Prediction Model of Equilibrium Moisture of Clay Subgrade with High Groundwater Table B.R. Wang, Y.J. Hu and X. Qiu	906
A Quality Tracing and Management Model of Complex Products Based on SPC and Two-Dimensional Code X.L. Yang, W. Qin, J. Zhang, H. Li, Z.G. Xu and H.P. Xiao	911
Mechanical Analysis and Structural Optimization of the Parabolic Trough Solar Collector J.P. Liu, B.Y. Ye, G. Xun and Y.P. Shi	916