

Table of Contents

Preface and Organizing Committees

Chapter 1: Frontiers of Manufacturing Science

Wavelet Packet and Support Vector Machine for Engine Fault Diagnosis L. Li, J. Li and B.J. Chen	1
Research of Furnace Temperature Optimization Control Method in Hot Rolling Process J.Y. Xu and J.R. Bu	7
Piezoelectric and Electrical Properties of Lead-Free $(\text{Na}_{0.5}\text{K}_{0.5})\text{NbO}_3\text{-Bi}_{0.5}(\text{Na}_{0.80}\text{K}_{0.20})_{0.5}\text{TiO}_3$ Ceramics C.H. Wang	12
A Structure Safety Assessment Method for Overhead Traveling Crane Based on Accident Tree Analysis G.N. Xu, Y.P. Xin and F.Y. Lu	16
Method to Analyze Chemo-Mechanical Behavior of Shape Memory Polymer in Response to Solvent H.B. Lu, J.Y. Yin and J.S. Jia	21
A Smoke Simulation Technique Based on Particle System Y.S. Zhan and W.Z. Liu	26
Experimental Study on Reinforcing the Prestressed Concrete Hollow Slab with CFRP Y. Wang, X. Zhao, N. Luo and L. Wang	31
Modeling and Optimization of Integrated Scheduling of Automated Warehouse System S.N. Liu	35
Timeslot Allocation Scheme for Cognitive Satellite Networks L.N. Wang	40
The Comprehensive Evaluation of Regional Economic Development in Inner Mongolia P. Li and Z.X. Ma	44
Methods to Reduce Thermal Conductivity Further of Plasma Sprayed Thermal Barrier Coatings H.S. Zhang, S.R. Liao, Y. Wei and S.K. Guan	49
Flatness Measurement of Steel Strips Based on one-Step Phase Shift Method K. Xu, P. Zhou and H.Y. Zhang	54
Factors Influencing the Preparation of Porous TiO_2 Film Using PEG1000 as Template W.J. Zhang, J.L. Chen and W.B. Liu	59
Measurement and Test Facility for Solar Heat Gain of Building-Integrated Photovoltaics (BIPV) Modules Z.Q. Liu	64
The Efficiency of Data Hiding by Manipulating the DPCM Macroblocks in Compressed Video T. Idbeaa, K. Jumari, S. Abd. Samad, A. Abdulgader and N. Eshah	69
Finite Element Simulation of Damage Detection of Stiffened Plate under Temperature Variation W.Z. Qu and L. Xiao	75
Organic Polymer Integrated Optics: Recently Design and Simulation of an Electro-Optic 2x3 Switch S.A.R. Mohammad, M.S. Khaled and M. Rahmah	80
Study on Corrosion Mechanism of Arc Sprayed Zn-Al-Mg Coatings by XRD and EIS Z.X. Zhu, A.J. Li and B.S. Xu	85
Measurement Method of Yarn Tension Based on CCD Technology Q. Xu, S.Q. Mei and Z.M. Zhang	89
Degradation Behaviour and Kinetics of UV Cured Epoxidised Soybean Oil Derivatives M. Rahmah, S.A.R. Mohammad, M.S. Khaled, N. Norwimie and F.M. Ahmad	94
Boundary Separation Approaching Rapid Casting F. Zeng, S. Yao, Z.F. Jiao, S.M. Zhao and T. Yang	99

Mechanical and Vulcanization Behaviors of SBR/N330 and SBR/N330/PBMCN Nanocomposites	103
H.T. Liu, J.F. Zhang, Y.G. Tian, X.J. Weng and S.E. Lin	
Research on Trapping Oil Property and Operating Characteristic of Arch Gear Pump	107
A.P. Song, W.J. Gao and S. Gao	
A Self-Adaptive Algorithm for 3D Dimension Based on Normal Adjustment	113
H. An, G.R. Yan and Y. Lei	
Development and Slope-Mowing Application of LD-1300 Crawler Mower	117
Q.G. Li, Y.K. Zhao and W.J. Qian	
Path Selection Methods with Multiple Impairment Constraints Based on Flooding Approach in Transparent Optical Networks	122
L.R. Wang	
Porous TiO₂ Film Electrode Used for Photoelectrocatalytic Degradation of Methyl Orange in NaHCO₃ Solution	126
W.J. Zhang and K.X. Li	
Preparation Conditions on Adsorption and Photocatalytic Activity of TiO₂ Particles Prepared by Sol-Gel Method	131
W.J. Zhang and Y. Yu	
Design and Research of Human-Machine Interaction System of Embedded Precision CNC Internal Grinder	136
O. Xie, H. Li and Z. Yin	
Research on Experiments about Inverted Arch CFRP Reinforced RC Beam	140
Y. Wang, Y. Liang, F.C. Liu and L. Wang	
The Application of CBR in Stone Equipment Variant Design	144
J.K. Wang, J.J. Li, J.S. Zhang and X. Ai	
Research on Active Suspension System Based on BP and RBF Network Algorithm	149
C.Y. Tang, G.Y. Zhao, Y.M. Zhang and X.Y. E	
Microstructure Characterization of Hot Deformed Fe-32%Ni Alloy	154
B.J. Han	
Study on Low-Alloy Coupled Steel Technological Applications	159
B. Gao, B. Wang and J.Q. Zou	
Study and Design of Chromium Ore Smelting Reduction Process for Producing Stainless Steel in a Converter	164
Y. Liu, M.F. Jiang and D.Y. Wang	
Design and Application of Multi-Well Automatic Metering and Remote Monitoring System	168
G. Zheng, N. Wu, S.W. Sun, S.Q. Hu and X.H. Wang	
Influence of Manufacturing Errors on Performance of Optical Power Splitter	173
S.A.R. Mohammad, F.S. Ater and R. Mohammad	
Study on Quick Testing Instrument for Automobile Fuel Consumption	178
B.X. Fu and S.H. Hu	
A New Type Auto-Reclaim Facility of Boiler Exhaust Steam Heat Energy	183
P. Jiang, G.J. He and G.L. Yang	
Fuzzy Control-Based Air-Compressor Constant Pressure Gas Intelligent Control	187
G.F. Li, S.Q. Xu, J.H. Wang, J.T. Yang, J.Y. Kong, G.Z. Jiang and L.X. Xie	
Application of ANN and SVM for Uncertainty Quantification and Propagation	192
Q.S. He, S.F. Xiao and X.E. Liu	
Numerical Analysis Method and Bifurcation of Gas-Lubricated Journal Bearing-Rotor System with Gyroscopic Effect	197
Y.F. Zhang, X.L. Shi, Y.J. Lu and L. Yu	
Microstructure Evolution of Hypereutectic Cu₉₈Cr₂ Alloys	202
Z.M. Zhou, L.W. Tang, W.J. Huang, J. Luo, X.P. Li, T. Zhou, C. Liu and H. Xia	
The Development and Innovation of Yunnan Clay Handicraft Base on the FreeForm System	206
J.Y. Li, R.P. Xu, K.Q. Wang and R.B. Hu	
Analysis on Active Behavior of Bagasse by Py-GC-MS	212
Q.Z. Ma, C.F. Zeng, W.X. Peng and X. Zhang	
The Research and Preparation Method of the Wire Rod, Strip Galvanization Brightener	217
L. Shi, F. Zhang, J.J. Chen and S.L. Wang	

An Experimental Study on Processing Performance of Rotary Ultrasonic Drilling of K9 Glass	
C.L. Zhang, P.F. Feng, Z.J. Wu and D.W. Yu	221
The Research and Preparation of one Kind of Sylvite Galvanization and Sulfate Galvanization General Brightener	
L. Shi, J.J. Chen, F. Zhang and G.X. Shang	226
Analysis of Cooperation Game to Reverse Logistics System for Regional Economy	
J.J. Fan	230
A Study of Automobile Four-Wheel Location Technology Based on Machine Vision	
C.D. Zhou and L. Lai	235
Parameter Design of Vibration Screener	
W.S. Hao	241
Microstructure of Cu₇₅Cr₂₅ Alloys under Different Conditions	
Z.M. Zhou, W.J. Huang, L.W. Tang, X.P. Li, J. Luo, T. Zhou, J. Zhan and C.Y. Peng	247
The Responses of Jointed Rock Mass under Dynamic Loads	
Z.M. Zhu	251
Development of a Freeze-Drying Process for Wet Gelcast Bodies	
H.H. Wu, X. Du and Q.H. Tian	256
HMM-Based Speaker Emotional Recognition Technology for Speech Signal	
Y.Q. Qin and X.Y. Zhang	261
Data Fusion Based Quality Monitoring and Control of Strip Thickness	
K.X. Peng and D.H. Zhou	266
A Design in the Optimal Precision Forging Process about Half Axle Gears	
Y. Tong	274
The Effect of Defects on Rock Fracturing under Dynamic Loads	
Z.M. Zhu	278
Lifetime Maximization Routing Based on Genetic Algorithm for Wireless Sensor Networks	
Y.R. Chen, T.J. Ren, Z.Q. Wang and Y.F. Ping	283
Experimental Study of Nanoparticle as Oil Additives	
Y. Zhang, X.J. Zhao, Q. He, Y. Jun and Q.P. Niu	288
Bill of Manufacturing Resource Oriented to Capacity Allocation in Steel Enterprises	
H.G. Bo, W.Q. Huang and X.B. Liu	293
Analysis on Pyrolytic Behavior of Bagasse Multifunctional Materials by Py-GC-MS	
J.Z. Qiao, Y.Q. Wu, C.F. Zeng and W.X. Peng	298
Measurement on Pyrolytic Active Materials of Bagasse Biomass by Py-GC-MS	
Z.F. Zhang, C.F. Zeng, W.X. Peng and X. Zhang	301
Synthesis and Characterization of Nanoflakes β-Ni(OH)₂ Microspheres for Supercapacitors	
Z.J. Yu, Y. Dai and W. Chen	306
A Macro-Micro Coupled Simulation of Positive and Negative Extrusion for Cardan	
Y. Tong	310
Research on the Forging Penetration Efficiency of 40Cr Axial Forging by the Simulation of Dynamic Recrystallization	
Y. Tong	315
A Study on Intelligent Tubing Flow Measuring System Based on CAN Bus and LabVIEW	
J. Wang	320
The Reconfigurable Design of Stone Grinding Equipment	
J.K. Wang, J.F. Shan, J.J. Li and J.S. Zhang	324
Evaluation of the Axial End Flatness Error Based on Genetic Algorithm	
X.M. Yang, H. Liu, P. Guan and L. Zhang	329
The Study on Fuzzy Control of Automotive Clutch	
L. Zhang, X.M. Zhang, X.M. Yang and Y. Liu	334
Varying Parameters of the Object Model on Fuzzy Neural Network Controller for Activated Sludge Method of the Sewage Treatment System	
Z.H. Shi and C.Z. Wang	339
New Approach of Encrypting Embedded Data in H.264 Compressed Video	
T. Idbeaa, K. Jumari, S. Abd. Samad, A. Abdulgader and N. Eshah	346
Analysis on Temperature Field of Work-Piece during Cross Wedge Rolling	
W.K. Liu, K.S. Zhang and Z.H. Hu	352

A Study on the Principle of Interface Color Scheme for Visually Impaired People S.Y. Ma, C.S. Wang and X.Q. He	357
Structural Dynamic Reliability on Supercavity Vehicle M. Liu and W.G. An	362
Experimental Study on Size Effect of Plate Load Test in Roadbed Compaction Quality Detection X.Y. Li, K. Xu and S.Y. Wang	367
Design of a Torsional Dynamic Absorber Using Magnetorheological Elastomers for Powertrain Vibration Control N. Hoang and D. Cao	372
A Novel Particle Swarm Algorithm to Optimize QoS Unicast Routing A.X. Ye and J.B. Wu	377
The Numerical Simulation of GH4169 Alloy during Cross Wedge Rolling N. Zhang, B.Y. Wang and Z.H. Hu	384
The Effect and Experiment Research of Forming Angle on Internal Defect of Valve Roughcast Formed by Single Cross Wedge Rolling X.F. Wang, K.S. Zhang, J.P. Liu and Z.H. Hu	389
The Electric Retrofit Design of Forestry Tending Vehicle's Drive System C. Wei and J.H. Liu	395
Influence of Aggregate Volume Ratio of Mortar on the Migration of Cations Using the Accelerated Lithium Migration Technique W.C. Wang, C.C. Liu and C. Lee	400
The Effect and Application of Different Turbulence Models on the Design of Inertial Stage Z.Y. Wang, J. Han, T. Sun and Y.L. Yu	405
Simulation of Loss of Coolant Accident in an Integral Pressurized Water Reactor (IPWR) S.U.D. Khan, M.J. Peng and M. Zubair	410
The Research on the Effects of the Multilayer Gauze Stage with Different Layers Z.Y. Wang, J. Han, T. Sun and N. Ye	415
Microstructural Characterization of Silicon-Alloyed Pyrolytic Carbon for Mechanical Heart Valves J.H. Zhang, H.B. Sun, G.M. Wang and P.H. Guo	420
Role of Risk Manager for Online Risk Monitoring M. Zubair, Z.J. Zhang and S.U.D. Khan	424
Pulse Electrodeposition of α-Nickel Hydroxide with Flower-Like Nanostructure for Supercapacitors Z. You, X.F. Wang, K. Shen and X.H. Kong	429
Analysis and Solution of Pin Connector Stresses G.Y. Lin, Y.Q. Zeng and B. Xiao	435
Research and Practice of Measurement Technology on Roundness Error Q.H. Li, W.S. Tang and Y.Q. Hou	440
Application of Accuracy Engraving Technique in the Motorcycle New Product Development X. Liu, H.Q. Du and W.D. Wang	444
Improvement of Stamping Forming Process and Design of Fully Automatic Die for Lipstick Casing Pipe C.G. Zhang	448
Creation Design of Cam Mechanism Based on Reverse Engineering W.D. Wang	453
Molten Salt Combustion Synthesis of LiMn_2O_4 at 600°C: the Effect of Calcination Time G.Y. Liu, J.M. Guo, B.S. Wang and Y. He	457
Research of System Aging Fuzzy Reliability Based on Discrete-Time Condition H. Yang, G.N. Xu and R.R. Zuo	461
 Chapter 2: Manufacturing and Measuring Technology	
Extracting Technology of Dynamic Images of Shower Nozzle Spray Field Based on a New Algorithm of Automatic Threshold P. Lu, H.Q. Yu and R. Li	466

Simulation and Analysis of Feedforward Automatic Gauge Control for a Hot Strip Finishing Mill	
C.C. Cheng, L.Y. Hsu, Y.L. Hsu and P.T. Chen	471
Numerical Analysis and Simulation of Vibration Characteristics of the Rotation Shaft with Mechanical Seal System	
W. Zhao and G. Yu	476
Expansion Dynamic Game Analysis on Education Quality Control for Distance Education System	
X. Ma	481
Study on Ordering Policy of Home Electronics Retailers under the Uncertain Quality Case in the Supply Chain	
X. Ma	486
Design on the Hospital Information System Growth Model Based on Ecology Theory	
L. Shi	491
Stability of Evolutionary Equilibrium of Incentives for Teachers under Incomplete Information	
L. Shi	496
Service-Oriented Sharing Architecture for Mining Area Spatial Information and Key Techniques	
Z.G. Li, H. Liu and W.N. Yang	501
The Solid Modeling and Simulation for Non-Circular Gear Based on Pro/E	
C.B. Hu, Y.Z. Wang, D.Y. Kong and Y.P. Liu	506
Mobile Phone Input Method Interface Evaluation Based on GOMS Prediction Model	
W. Liu, S. Li, T. Wen and X.G. Qin	512
Influence of Side-Insulation Film on Hybrid Process of Micro EDM and ECM for 3D Micro Structures	
M.H. Hu, Y. Li, X.G. Zhu and H. Tong	517
Milling Characteristic of Plastic Profiles Manufacturing	
N. Fan, X.B. Ze and X.L. Fu	522
An Environmental Friendly Based Research on the Safety of Food Packing Materials	
Z.Y. Gao and Z.G. Huang	526
Lengthwise Detection of High Linearity Micromachined Gyroscope	
F.L. Yao, S.Q. Gao and X.J. Liang	529
Analysis and Structural Topology Optimization for Cross Section of Beam	
M. Cong, Q. Zhao, T. Han and D. Liu	534
Dynamic Mechanical Analysis of Automotive Gearbox Casing	
G.Y. Zhao, P. Fu, S.W. Zhou and S.G. Tong	539
Research on Vibration Grinding Deburring and Finishing Process	
P. Zhang, X.Y. Guo, Z.G. Guan and S.F. Shan	544
Stability Control on Tractor Semi-Trailer during Split-Mu Braking	
S.W. Zhou, S.Q. Zhang and G.Y. Zhao	549
The Finite Element Analysis of Rolling Cone Enveloping Hourglass Worm Gearing Based on PRO/ENGINEER	
C.X. Liu, P. Li and X.M. Guo	554
Single-Phase-to-Earth Fault Detection for High Voltage Transmission Line Based on Wavelet Analysis	
Z. Yang and A.H. Dong	559
The Ultrasonic Signal De-Noising Method Based on an Improved Wavelet Threshold Function	
Q.X. Wang and A.H. Dong	564
Study on over-Constrained Locating and some Improving Measures in Die Casting Mould Design	
H.F. Zhang and D.Q. Xue	569
Noncontact Magnetic Suspension of an Iron Ball Using Flux Path Control Mechanism	
F. Sun, J.J. Jin and K. Oka	573
Transient Dynamics Simulation of Helical Gear Pair Based on ANSYS	
X.Y. Li, S.S. Li and C.C. Li	578
Numerical Study on Flow Characteristics in Stepped Labyrinth Seal	
T. Sun, Y. Zhang, Z.Y. Wang and H.O. Sun	582

Research on Miniaturized and Portable Impedance-Measuring Device for Structural Health Monitoring Y.X. Zhang, D.D. Wen, H.C. Li and F.H. Xu	587
Technical Research on Quality Control of Fly Ash Concrete H. Niu	592
Numerical Simulation of Creep Crack Propagation for Austenitic Stainless Steel 0Cr18Ni9 at 550°C L.J. Chen, Z.Q. Gong and Q. Zhao	596
Research on Quality Control of Electronics Products Based on Signal Game Model in the Supply Chain under Asymmetric Information X. Ma	600
Optimization of Non-Uniform Sensing Coverage for Wireless Sensor Networks N. Zaeri and S. Habib	605
Research for Control System in Ingredient Industry F.S. Yu, H. He and H.W. Zhang	610
Research on Monitoring of Machine Tools Based on Wireless Sensor Network Z.Q. Sheng, L. Dong and C.P. Tang	616
Study on Effect of Rolling Crashworthiness of the Main SUV Vehicle Components G.Y. Zhao, P. Fu, C.Y. Tang and D. Zhang	620
Combination with Machine Learning Algorithms for the Classification in E-Business L. Shi, X.M. Ma and X.H. Hu	625
Study of Purification Effect to PM2.5 from Secondhand Tobacco Smoke in an Automobile S.S. Liu and S.Z. Li	629
CNC Manufacturing Applications of the Heat Resistant Super Alloys A. But	634
Nanotribology Properties and Microscopic Interfacial Frictional Behavior Studied by Atomic Force Microscopy H.C. Hsu and L.M. Chu	639
Experimental Investigation of Rotary Ultrasonic Face Milling of K9 Glass C.L. Zhang, P.F. Feng, S.Y. Zheng, Z.J. Wu and D.W. Yu	644
Modeling of Complex Surfaces Based on Unigraphics and its Error Analysis Y.P. Chen, X.D. Nie, Y.H. Chen and S.D. Li	649
The Research of Automobile Design Evaluation Method Based on the Eye Tracking System Technology Z.Y. Wang, H.S. Liu, H.H. Shi and H. Liu	654
Effect of Constraints in Cooling Process on the Residual Stress in the Adhesively Bonded Single Lap Steel Joint M. You, C.J. Chen, J.C. Zhang, J.R. Hu and L. Wu	659
Discussion on the Application of Emotional Interaction to Furniture Design J. Li, Q. Sha, L. Liu and Q.F. Zhuang	664
Mechanism of the Effect of Interface Structure on the Abrasion Performance of Polycrystalline Diamond Compact W.J. Fan, F. Liu and H.Z. Guo	669
Study of Knowledge Processing Method in Automobile Development Process S.H. Ding	674
Analysis on Velocity Vibration Characteristics of Stator of Radial Piston Pump T.Y. Zhou	679
Variation Analysis of Starting Friction Torque of Blade Bearing for Wind Turbine X.T. Xia, J. Liu and L. Chen	685
Analysis of Numerical Simulation and Experimental of the Flange in the Deep Drawing of Box-Shaped Parts K. Chen, C.Y. Peng and B.B. Li	690
Research and Implementation of WebGIS in Custom-Built Travel Information System D.Q. Yang, Q. Guo, L. La and Q.M. Cao	694
Properties of TiN Coating Prepared on 3Cr2W8V by Electron Beam Surface Alloying Process Y.F. Chen, X.D. Peng, K. Chen, J.J. Hu, H.B. Xu and C. Han	698

Investigation of the Friction Properties of Halogenated Modification on the Surface of Nitrile Rubber	
H. Han, S.J. Wang and X.R. Lv	704
Field Measurement of Cable Tension Using Energy Method	
Q.L. Zhang, D.L. Li and R.J. Ma	708
Internet Video Based Cloud Multisensor Fusion for Remote Services	
H.C. Fu, H.T. Pao and C.L. Tseng	713
Research on Effect of High Energy Implant to Resist Thickness	
H. Mamat, N.A. Rahim, M.Z.A. Wahab and A. Jalar	718
A Camera Calibration Method Based on Plane Grid Points	
B.F. Zhang, X.Z. Tian and X.L. Zhang	723
Forward Displacement Analysis of the 4SPS-2CCS Generalized Stewart Parallel Robot Mechanism Based on Hyper-Chaotic Sequences	
Y.X. Luo, X.Y. Che and B. Zeng	728
Displacement Analysis of the 4SPS-2CCS Mechanism Based on Hyper-Chaotic Newton-Downhill Method	
Y.X. Luo, X.Y. Che and B. Zeng	733
Forward Displacement Analysis of the 4SPS-2CCS Generalized Stewart Parallel Robot Mechanism Based on Hyper-Chaotic Damp Least Square Method	
Y.X. Luo, B. Zeng and X.Y. Che	738
Forward Displacement Analysis of Nine-Link Barranov Truss Based on Chaos Improved Newton Iterative Method	
Y.X. Luo and B. Zeng	743
Forward Displacement Analysis of Nine-Link Barranov Truss Based on Anti-Control of Chaos Newton Downhill Method	
Y.X. Luo and Y. Yang	749
Forward Displacement Analysis of a Kind of 2-Coupled-degree Nine-Link Barranov Truss Based on Hyper-Chaotic Least Square Method	
Y.X. Luo, Q.Y. Liu and X.Y. Che	754
Forward Displacement Analysis of the 6-SPS Stewart Mechanism Based on Quaternion and Hyper-Chaotic Damp Least Square Method	
Y.X. Luo, Q.Y. Liu, X.Y. Che and B. Zeng	759
Two-Dimensional Hyper-Chaotic Mapping Interval Newton Iterative Method to Mechanism Synthesis	
Y.X. Luo and B. Zeng	764
A New Scheme for Refuse Incineration End Point Detection Based on Computer Vision	
F.Y. Cui	769
Effect of Surface Modifier on their Tribological Properties of LaF₃ Nanoparticles in Base Oil	
G.X. Yu, M. Jin, K. Wan and P. Lu	774
Simulation and Test of Bistable Inductive Micro-Switch	
W.C. Tian, Y.F. Hao and H.F. Ruan	779
CFD and Neural Network-Based Predicting for Oil Delivery Performance of Oil Pump in Engines	
B.H. Tong, J. Yin and Y. Liu	784
Influence of Cr₂O₃ Addition on the Properties of TiAl Composites	
J.F. Zhu, W.W. Yang and F.N. Du	789
Online Learning for Linear Programming with Time-Dependent Cost	
W. Li and C.Y. Deng	793
The Study on Three-Dimensional Terrain for 3D Game Design	
Z. Wang, M. Yang and S.L. Xiao	798
DWF Format Pattern Based on Collaborative Design Technology	
W.L. Ren and N. Li	804
An Investigation on Green Machining: Cutting Process Characteristics of Organic Metalworking Fluid	
T.S. Lee and H.B. Choong	809
Design of Simulation Model for Production Scheduling in Flexible Manufacturing Systems	
B. Zeng, R. Wang and H.Y. Chen	814

Research on Product Open Innovation Design Based on Knowledge J.W. Chen, J.S. Zhang, Z. Wang and J.K. Wang	819
Finite Element Analysis for Rocker Arms of Vertical Roller Mill on the ANSYS Workbench K. Cheng	824
Investigation on Machined Surface Roughness in Ultrasonic Vibration Assisted Grinding (I) H.L. Zhang, S.F. Shan and J.H. Zhang	829
The Ways of Recycling of Solid Inorganic Construction Waste X.J. Zhang	834
Determination of Bioactive Components of Acetone Extractives of <i>Cinnamomum camphora</i> Root Wood by Py-GC/MS under 350°C D.Q. Zhang, H.Y. Zhang, L.L. Guo and K. Peng	837
Identification of Chemical Components of Waste Leaves from <i>Cinnamomum camphora</i> by Py-GC/MS Q.M. Liu, D.Q. Zhang, W.X. Peng and K. Peng	842
Pyrolysis-GC/MS of Bioactive Components of Acetone Extractives of Oil-Tea Cake under 300°C Y.L. Zeng, D.Q. Zhang and W.X. Peng	847
Determination of Bioactive Components of 60°C Volatiles from <i>Cinnamomum camphora</i> Branches by TD-GC/MS Q. Li, D.Q. Zhang, Q.M. Liu and K. Peng	852
Analysis of Top Value-Add Components of Moso Bamboo Root by 300°C Pyrolysis-GC/MS D.Q. Zhang, Q.M. Liu, L.L. Guo and H.Y. Zhang	857
Deep Determination of Top Value-Added Constituents of Phoenix Tree Leaves by GC/MS Q.M. Liu, D.Q. Zhang and W.X. Peng	862
Experimental Investigation on Vibration-Reduced Characteristics of Non-Obstructive Particle Damping for Free Beam Structure W. Wang and Y.Y. Li	867
Vertical Vibration Conveyor Vibration Testing H.Y. Hao and Q.S. Ji	872
A Composite Approach of Sensorless Rotor Position Sensing for Brushless DC Motor Q.S. Ji and H.Y. Hao	877
Determination of Trace Bismuth in Urine and Tap Water Samples by Atomic Absorption Spectrometry after Solid-Phase Extraction D. Zhang	884
Adsorption of Hg (II) in Biological and Environmental Samples onto Dithizone-Anchored Organobentonite D. Zhang and Y.L. Zhang	888
Solid-Phase Extraction Method for Preconcentration/Separation of Zinc Ion in Tap Water and Human Urine Using Organo-Bentonite Modified by Dithizone D. Zhang and Y.L. Zhang	892
Solid-Phase Extraction of Hg (II) by a Porous Nano-Barium-Strontium Titanate Microspheres from Blood and Urine Samples D. Zhang and Y.L. Zhang	896
Research on Methods of Tire Sensory Measurement Based on Image Processing R.B. Chen, J. Tao, W.T. Fan and J.J. Zhang	900
Comparison of Indoor Air Quality Measurement by Using Direct Detection Apparatus and Standard Methods P.Y. Kung, Y.T. Wang, J.C. Chiu, Y.C. Hsu, T.N. Wu, Y.H. Shen and S.B. Wen	905
Modeling and Optimization of Inserting Order Schedule of Agile Supply Chain X.F. Huang, B. Wu and J.H. Wang	910
Dynamic Optimization Design of High-Speed Under-Table Swing-Arm Gripper System in Sheet-Fed Offset Press C.X. Cheng	916
Non-Probabilistic Structural Reliability Model Based on Ellipsoidal-Bound Model with Restricted Expansion K.F. Li, Z.C. Yang and G.F. Liu	920
Study on Fault Diagnosis Platform in Wind Energy Conversion Systems Based on JESS W.S. Hao, F.Q. Li, J. Han, X.M. Dong and H. Chen	925

Determination of Bioactive Components of Waste Leaves from Chinese Hackberry by GC/MS	
G.X. He, D.Q. Zhang, Q.M. Liu and K. Peng	930
Determination of Biomedical Constituents of 350°C Pyrolyzate from Benzene/Ethanol Extractives of Old Bark from <i>Cinnamomum Camphora</i> Trunk	
W. He, D.Q. Zhang, Q.M. Liu and K. Peng	935
Ultra-Lightweight Design and Analysis of a 1.25m SiC Segmented Mirror	
C.M. Zeng, J.C. Yu and P.J. Guo	940
Study of Bond Strength for Laser Direct Metal Deposition of Tool Steel on Copper Alloy Substrate	
M.K. Imran, S.H. Masood, W.Q. Song and M. Brandt	945
A Study of Laser Cladding with 420 Stainless Steel Powder on the Integrity of the Substrate Metal	
M. Soodi, S.H. Masood and M. Brandt	949
 Chapter 3: Manufacturing Automation	
Applications of Neural Networks in Modeling and Forecasting Volatility of Crude Oil Markets: Evidences from US and China	
P.H. Ou and H.S. Wang	953
An Experimental Study of Atomization Characteristics of the Ultrasonic Spray Nozzle	
D.G. Qu, D. Xiang, L.M. He, G.H. Duan and P. Mou	958
Simulation and Analysis of Hybrid Electric Vehicle Powertrain	
F.C. Jiang, L. Li and M.L. Wang	964
A Matching Algorithm and Error Analysis on the Basis of Triangle Mesh	
L.M. Zhu, C.G. Liu, S.H. Wang and M.Z. Li	968
Ant Colony Optimization Algorithm for the 0-1 Knapsack Problem Based on Genetic Operators	
Z.J. Hu and R. Li	973
Assembly Sequence Generation and Optimization for Compliant Assemblies Based on Genetic Algorithm	
Y.F. Xing, Y.S. Wang and X.Y. Zhao	978
Joining Phenomena of Resistance Spot Welded Joint between Titanium and Aluminum Alloy	
R.F. Qiu, X. Zhang, H.X. Shi, H. Yu and K.K. Zhang	982
Study on Physics Properties of ESPCP Stator Rubber with Oil Erosion	
Z.F. Guo, S.J. Wang, L. Wang, Y. Zhang and Z.W. Ren	987
Preparation of Rare Earth Doped ZnO Nano Particles and Investigation on their Optical Properties	
B.C. Xia, R.F. Zhang, H. An, Y.H. Zhao and X.J. Wang	992
Designation and Test of Steel Wire Absorber Vibration Isolation Box on Vehicle	
G.J. Wang, M.H. Jiang, H.M. Li and X. Chen	996
Load Spectrum Analyses of Special Vehicular Upper Equipment Influenced by Mass on Suspension	
G.J. Wang, S.S. Zhu, Y. Zhu, X. Wu and X.F. Meng	1000
Research on Aging Mechanism of Modified Asphalt by Gel Permeation Chromatography and Grey Relevant Methods	
Y. Zhou, K. Zhang and S.F. Chen	1005
The Experiment Study of Water Jet Incremental Sheet Metal Forming	
X.M. Cheng, L. Zhou, L. Wang and G. Zhou	1010
Optimization Analysis of Injection Mold for Sleeve	
Z.Y. Zhao, L.X. Huang, Y.S. Xiao and B. Liu	1014
New Technology and Applications on Microwave Sensor for Moisture Content Measurement	
Y.C. Leng and W. Liu	1019
A Business Process-Based Risk Evaluation Framework	
Z.W. Yu	1024
A Study on Elliptical Vibration Cutting by Finite Element Analysis	
X.Q. Zhou, S.X. Zhao, Z.W. Zhu, J.Q. Lin and D. Luo	1029

The Application Research of Coating Thickness Detection Using the Tree Classifier J.T. Zhang and X.G. Shen	1034
Study on the Technics Principle for Stalk and Stubble Chopper Based on No-Tillage Planter S.H. Wu and J. Gao	1039
Synchronization of the Modified Financial Chaotic System via a Single Controller J. Li and C.R. Xie	1045
A Lossy acoustic Logging While Drill Compression Scheme based on Differential Prediction and FFT Y.J. Liu, Y.K. Zhou and H.B. Xiao	1049
The Median Filtering Algorithm's Fast Implementation in FPGA D.D. Zhang, Y.R. Pan, X.Y. Hu, G.Y. Yang and C. Xu	1054
Fatigue Life of Main Shaft Bearing of Direct Drive Wind Turbine Y.F. Li and X.T. Xia	1058
Study on the Adsorption Behavior of Co(II) on Modified Sodium Trititanate Whisker G.J. Yang, R.Q. Liu and F. Xia	1063
Key Technology of Contact Problem of Deep Groove Ball Bearing Based on ANSYS B.J. Yin and X.T. Xia	1067
The Development and Study of Calculating Compass Error Software H.X. Li	1072
Effects of Load and Rotate Speed on the Friction of NBR by 45[#] Steel in Crude Oil Medium Y. Zhang, S.J. Wang, Z.F. Guo and Z.W. Ren	1079
Properties of Light Metal Joint Welded by Thermal Compensation Resistance Spot Welding Y.M. Tu, R.F. Qiu, H.X. Shi, H. Yu and K.K. Zhang	1084
Influences of Long-Period Hydrogen Storage on Structural Performance of Steel Vessel S.R. Yu, Y.H. Yin, X. Bing and J. Mei	1089
Investigations on Ni-Mo Alloy Microstructure with Mo Atom Content N. Li, C.H. Gao and G.M. Cheng	1093
Dynamics Analysis and Experimental Research on Turbocharger Rotor with Fore and after Lighting Optimization J.S. Zhao, C.C. Ma and L.P. Hu	1099
Study on Decreasing Vibration of High-Speed Train Semi-Active Suspension System Z.P. Fan, H. Zeng, J.W. Yang and J. Li	1104
Utilization of a Novel Extracellular Biopolymer Produced from <i>Bacillus cereus</i> B-11 for the Biosorption of Cd(II) from Aqueous Phase Y.L. Mao, X.Y. Ding, H.L. Zhu and F. Xia	1110
Monitoring Research on the Central Sail of China Navigation Museum L. Chen and Q.L. Zhang	1114
Production of a Novel Biopolymer by Culture of <i>Bacillus cereus</i> B-11 Using Molasses Wastewater and its Use for Dye Removal Y.L. Mao, C.X. Tian, J.W. Zhu, T.Z. Zhang and L.B. Tong	1119
Computational Investigation on Centrifugal Compressor Performance at Various Altitudes Y. Wang and Z. Luo	1123
Sr(II) Removal from Aqueous Solution by <i>Bacillus cereus</i> Biomass, Equilibrium and Kinetic Studies Y.L. He, T.H. Wang and J.C. Shi	1129
The Design and Implementation of Fuzzy Neural Network Control Algorithms in Urban Sewage Treatment Control System Z.H. Shi	1133
Grid Performance Standard Evaluation and Corresponding Architecture X.J. Gu	1141
Reinforced Traversing Method for Table Tennis Information Concept Category in Semantic Web P. Ji	1146
A Porous Carbon Prepared by a Template Method Using a Clay Mineral as a Template G.Y. Liu, J.M. Guo, B.S. Wang and Y. He	1151
Temperature Development Model for Disk Brake R.G. Wang, B. Wang and H.W. Sun	1155

Mini-Nano-Displacement Measurement with Double Diffraction Grating M.L. Jiang, F.P. Li and X.D. Wang	1159
The Analysis of Tool Key Technology in High Speed Machining C.J. Zhou and J.Q. Zou	1164
Adsorption of Cobalt onto <i>Bacillus cereus</i>: Application of Isotherm and Kinetic Models Y.H. Wang, H.L. Zhu and F. Xia	1169
Excellent Rate Capability in H₂SO₄ of a Porous Carbon Prepared by Template Method Using a Mazzite Mineral as Template G.Y. Liu, Y.N. Li, J.M. Guo and B.S. Wang	1173
Study on the Adsorption Behavior of Cd(II) on Modified Sodium Trititanate Whisker and its Application H.B. Zhou, P. Liu and Z.W. Wang	1177
Influence of Media Loss on Semi-Passive Piezoelectric Sound Insulation W.Q. Zhang, X.Y. Wu and W. Cao	1181
Thermoelastic Damping in Microbeam Resonators with a Proof Mass R.F. Hu, Y.N. Deng and P. Li	1185
Measurement of Electrochemical Machining Initial Gap Based on Machine Vision M. Kang, H.S. Li and X.Q. Fu	1190
Design of an Innovative Aviation Integrated Electronic Equipment Rack X.Y. Chen, N. Zhao, S.H. Sun and X.L. Wang	1195
The Development of Metal Injection Moulding for ZK60 Magnesium Alloy Using Palm Stearin Based Binder System M.R. Harun, N. Muhamad, A.B. Sulong, N. Mohamad and K.R. Jamaludin	1199
A Study on Data Acquisition from Sections of Virtual Coat Profile J.H. Xu, X.L. Dai and S.P. Gao	1204
The Effect of Roller Profile Modification on Roller Bearing Performance L.Q. Wang, Z.H. Ye and L. Gu	1210
Study on Pulse Effect of Electrochemical Machining of Conductive Material X. Yu, Y. Yan, L.B. Wei, S.P. Li and X. Li	1216
Simulation of High-Speed Cutting Process Based on ABAQUS X. Yu, X.Y. Sun and D.K. Wei	1221
Monthly Load Forecasting Based on Optimum Grey Model T. Wang and X.M. Jia	1226
Hydroscopic and Mechanical Properties Performance Analysis of Rice Husk Powder/PLA Composites J. Hua, Z.M. Zhao, W. Yu and B.Z. Wei	1231
An Cold Experimental Analysis of Draught System with Chain-Grate Stoker Z.Y. Zhang and J.H. Lu	1236
Research on Control Strategy of Traction Control for Four Wheel Drive Vehicle J.J. Hu, Z.B. He, P. Ge and D.T. Qin	1242
Multi-Discipline Knowledge Acquiring Model in Collaborative Design of Complicated Products Based on Polychromatic Sets G.H. Zhang	1250
Mathematical Model for Multi-Component Forces and Torque Determination in Friction Stir Welding T.K. Jauhari, I.P. Almanar and H. Zuhailawati	1255
The Study on the Optimal Design of the Toroidal Worm-Gearing H. Xu, Q.M. Wen, L.Y. Zhou and G.A. Zhong	1260
Carbon Fiber Mechanical Properties Analysis of Wood Composite Board Based on Finite Element Analysis L.K. Zhu, G.W. Shi and L.P. Sun	1264
Experimental Investigation on Reciprocating Air Compressor Performance H.X. Li, W. Jiang, Z.J. Sun and Z.W. Zhu	1269
Reaction Synthesis of (Ti,V)₂AlC/Al₂O₃ Composite J.F. Zhu and N. Han	1274
The Self-Catalytic Role of Zirconium N-Propoxide in Sol-Gel Syntheses of ZrO₂/Y₂O₃-CeO₂ Compound Powders Z.Z. Yi, B. Wang, F.R. Zhai and Z.P. Xie	1278

Innovative Design of Wrench Movement Scheme Based on Craft Movement Process X.P. Chen, J. Rong and R.F. Hu	1282
Linear Quadratic Gaussian Optimal Controlled Two-Stage Inverter for a High-Frequency AC Distribution Power System W. Liu, Z.G. Huang and Z.N. Guo	1287
A Study of Operable 3-D Virtual Laboratory S.M. Dai and R.Q. Jia	1293
Research on the Alkali Corrosion Resistance Mechanism of Ni-Cr-Cu Alloy Cast Iron J.P. Yao and S. Zhong	1298
The Method of Attribute Reduction Based on Decision Tree F.C. Li, H.Z. Yin and F. Guan	1303
Style Design of Men's Pants and Programming Realization B.F. Gu, H.Y. Kong, J.Q. Su and G.L. Liu	1308
A Material Model with Softening Effect Considered M.J. Fu, H.T. Zhou and B.J. Duan	1313
A Study on the Inquiry-Based Instruction Model for Art Design Course of Higher Vocational Schools Q. Li	1317
Sustainable Teaching and Innovation for Zero Waste S. Zhu and D. Kralj	1322
Review on Statistical Based Methods of Measuring the Water Pipes Reliability A.M. Bibtiena, A.H. El Shafei and O. Jafaar	1327
Green Manufacturing is the only Way to the Sustainable Development B.J. Zhi	1332
Study of Crash Acceleration Curves on the Side-Impact Test T.L. Teng, C.C. Liang, C.J. Shih and D.A. Fung	1335
Research on Multi-Core Collaborative Computing for FWP Image Processing Algorithm by FPGA Y.H. Deng, G.X. Liu, W. Han, Z.W. Fang, L.M. Wu and Q.F. Liao	1340
Effect of Restraint Condition on the Thermal Stress in the Bonded Single Lap Joint C.J. Chen, M. You, H.Z. Yu, J.L. Li and C.Z. Mei	1345
Effect of Adhesive Thickness on the Impact Toughness of Butt-Joints M. You, J.R. Hu, X.L. Zheng, A.P. He and C.J. Chen	1350
Solving Large-Scale Asymmetric Sparse Linear Equations Based on SuperLU Algorithm P. Wang, X.S. Yang, Z.Y. Wang, L.G. Li, J.C. He and Q.J. Wang	1355
Experimental Verification of Stick-slip Motion between Two Rolling Contact Surfaces N. Zhang, J. Zhang and Y. Wang	1362
Analysis on Impacts of Construction Technology on Bearing Capacity of Grouting Piles C.L. Nie and H.L. Fu	1367
Rainfall-Induced Slope Instability Rock Mixture Fluid - Structure Interaction Numerical Simulation X.N. She, H.L. Fu and Z. Zhou	1371
Study on Application of Time Domain Reflectometry to Highway Slope Monitoring W.B. Lu, H.L. Fu and H.H. Tan	1375
A Fast Algorithm to Choose Delay Time for Strange Attractors P. Yao, G.R. Chen and S.H. Xu	1379
The Multiple Implied Overlay Tree P2P Progressive Transmission Method of Mixed Subdivision Mesh Z. Shi and K. Yu	1384
Reduction Kinetics of Bayan Obo Associated Iron Niobium Ore F.S. Zhang, Z.W. Zhao, F. Zhang and N.X. Feng	1389
Studying on the Magnetorheological Fluids and its Rheometer B.S. Chen, J.B. Jiang and F.J. Zhang	1396
Research on the Temperature Control System Based on the Pan-Boolean Algebra PID Controller W. Jiang, J.L. Li and J. Zhang	1402
Improvement of the 1880 Slab Sizing Press Pinch Rolls C. Liu and J.H. Li	1407