ISBN(softcover): 978-3-03785-238-5 ISBN(eBook): 978-3-03813-642-2

Table of Contents

Preface, Organizing and Committees

PART I

Chapter 1: Manufacturing Technology and Processing

A Note on Two Cooling Methods in Surface Grinding
T. Nguyen and L.C. Zhang 5

Thermodynamic Properties of Water during Phase Transition and Simulation on Freezing Process in Fractured Rock
Y.S. Kang, Q.S. Liu and J. Yan 9

Design of Flexible Multi-Gripper Stretch Forming Machine by FEM
H.L. Peng, M.Z. Li, Q.G. Han, P.X. Feng and H.H. Zhang 13

Fatigue Reliability and Optimal Design Research of TBM Cutter
Z.Q. Wang, T.B. Yu, Y. Zou, C.X. Wang, H.F. Zhao and W.S. Wang 18

Forming Process and Mechanism of Microcapillary Grooves of Miniature Cylindrical Heat Pipe
Z.P. Wan and Y.C. Li 22

Recent Development of Vibration-Assisted Abrasive Machining
G.C. Han and B. Li 27

The MOSFET Model with an Anti-Parallel Diode as a Power Switch
T. Jing, D.T. Chang and C.H. Zhao 32

Design and Magnetic Circuit Analysis on Claw-Pole Permanent Magnet Generator for Vehicle Application
J.W. Ma, W.J. Yin, W.H. Yu and Q.S. Ji 36

Study on Single-Hoist Multi-Objective Optimization Rescheduling Problem
S.L. Wang, H. Zhou, J. Zhou and R. Tang 41

Study on Fiber Laser Welding for DP780 High Strength Steel
T. Huang, L.J. Xin and Z.Y. Wang 48

One Optimizing Method for Moments of Inertia Applied with Improved Adaptive Genetic Algorithm
H.H. Sun, M.Z. Luo, X. Dong and S.H. Zha 54

Numerical Simulation of Temperature Field during the Growth of Nd:GGG Laser Crystal
C.H. Zhang, L. Bi and Z.Z. Gong 58

Design for Deep Groove Ball Bearing Assembly Machine's Cam Drive System Based on Parametric Modeling
Y.X. Liu and R.S. Peng 63

Function Simulation of the TBM Based on VRML
Z.Q. Wang, T.B. Yu, C.X. Wang, Y. Zou, H.F. Zhao and W.S. Wang 67

Study on the Reverse Designing for Water Cavity Model of Engine's Cylinder Head
M. Chen, X.X. Liu and J.P. Tian 71

A Method about Functional Coupling Based on Trimming
W. Wang, P. Jiang, J.Q. Wang and R.H. Tan 75

Research on Structure Analysis of Asphalt Box Based on ANSYS
Y.Y. Zhang and M.M. Zhu 81

Graphic Thinking Process in Innovative Product Design
Y.S. Pi and Y.Y. Yang 85

Multi-Toothed Milling Force Model and Simulation for Form Milling the Gear of the Hypoid Gears
X.J. Jia, X.Z. Deng and X.Z. Ren 90

Theoretical Investigation and Analysis of Solar Thermoelectric Air Conditioning
Z.H. Qi, L.Y. Xu and B.H. Sun 96

The Finite Element Analysis of Different Materials' Anti-Seismic Performance of NC Tool Rods
J.X. Rong, X. Zhang and J. Ji 100

Temperature Fields Characteristics on Removal Rock by High-Energy Lasers
X.Z. Yi, W.G. Ma, Z.L. Cai and S.Z. Jiang 104

Experimental Study on Bionic Screw Pile of Reducing Adhesion and Resistance
D.W. Zhang, Y.X. Wang, Y.Q. Tang and W. Zeng 108

Heat Source and Heat Partition Models in ELID Grinding
B.J. Ma, Y.Q. Zhu and X.L. Jin 115

The Study of Hot Embossing and Bonding Machine for Microfludic Chips Fabrication
F.L. Zhang and J. Zhu 120

Comparison of the Isothermal and Non-Isothermal Kinetics for Predicting the Thermal Hazard of Tert-Butyl Peroxybenzoate
C.P. Lin, Y.M. Chang, J.M. Tseng and M.L. You 124

Max-Min Ant System Approach for Solving Construction Site Layout
X. Ning and W.H. Liu 128

Application of Wavelet Envelope Spectrum Analysis in Air Blower Rotating Stall Failure Diagnosis
Z.Q. Ma, J.C. Gao, Z.Q. Zhang and D.L. Kang 132

A Study on the Large-Diameter Seamless Gas Cylinder Dimensional Accuracy of Rotary Expanding Process with Finite Element Analysis
S.Y. Jin, Z.G. Huang, Z.K. Shao, M.X. Li, H.L. Sun, Y.T. Li and Z.X. Fang 136

Study on Parametrical Modeling about Free-Surface Based on UG Customization
T. Geng and Q.H. Ren 143

Design of Emergency Call System of Forklift Based on the Existing GSM Network
Q. Deng and W.Q. Zhang 147

Design and Simulation of Pastry Slicer Based on SolidWorks and ADAMS
S.Y. Qiu, H.T. Wu and H.B. Liu 151

Research on the Maximum Flow of Air Traffic Network Based on Discrete Time Loss Queuing
Z.Y. Wu, J. Hu and Z.T. Huang 155

Research on Reconstruction 3D CAD Data of Automotive Panel Based on Reverse Engineering
X.H. Zhan, X.D. Li and X.Y. Liu 159

Digital Test Instrument of Radial Direction Displacement Precise for Round Shape Part Based on Labview
M.Q. Tanli, Q. Zhang, X.J. Yang, Y. Jiang and R.S. Peng 163

Research on Electromagnetic Pick-up Type Grip Device
G.F. Zheng, J. Yang, W.L. Zhang and L. Ling 167

Construction Enterprise Supply Chain Design Research
L.F. Chen, G. Wu and Y.B. Zhang 172

Failure Analysis of Welding Joints of CQ Steel
L.J. Xin, T. Huang and Z.Y. Wang 176

An Outline of Methods in Machining Curved Hole
Y.P. Qian, Y. He, J.H. Huang and X.Z. Zhou 181

Study on Tooth Profile of Involute Conjugated Internal Gear for High-Pressure Internal Gear Pumps
W. Song and H. Zhou 186

An Alternative Method of Preoperative Planning for Fibula Free Flap in Mandibular Reconstruction
Y.D. Chen, X.J. Qin, W.Z. Wu, X.Y. Cui, H. Li and W.S. Wang 190

Uncertainty in Project Management Based on Lean Construction Implementation
X. Qiu 194

The Environment Temperature Simulation Research of Gyroscope
S. Yuan and Y.B. Wang 199

Experimental Study on the Tribological Characteristics of Nanometer WS_2 Lubricating Oil Additive Based on Engine Oil
C.B. Chen, D.H. Mao, C. Shi and Y. Liu 203

Design of Micro Electromagnetic Vibration Energy Harvester and Storage System Based on Human Motion
Y.B. Zhang, H.Y. Cao and E.H. Zhang 209

Design and Optimization of FCEV Subframe by Integrated Applications of Hypermesh, UG and ADAMS Multi-Platform
J. Liao 213

Green Design and Manufacturing Technology on Hoisting Device of the Silt Coal Car Loader
P.H. Mao, R.D. Chen and B. Zhai 220

Study on Relief Valve with Permanent Magnetic Spring
G.L. Si, F.Y. Yang, W.J. Wang and Y.H. Liu 224

Design of Portable ECG Tester
X.H. Fu, H.R. Lin, S.L. Ouyang and W.B. Song 228

An Optimal Design Method for Radar Brackets
L.Z. Guo, D. Yang and Z.T. Huang 232

Artificial Neural Network for Predicting Wear Properties of Brake Lining Materials
J.H. Han and Q.S. Wu 237

A Bayesian Network Based Approach to Defect Prediction in New Product Development
W.Y. Song, X.G. Ming, Z.Y. Wu, Z.T. Xu and L.N. He 241

An Experiential Calculation Method to Radial Extrusion Pressure by Floating-Die
X.R. Xin, L.L. Shan and X.C. Liu 246

Research on the Pressure Fluctuation of Ceramic Filter Backwash Based on Accumulator
S.W. Zhang, Z.J. Hu, J. Han and J. Zhao 253

Mechanical Products' Function and Structure Modeling Based on the Knowledge
Z.J. Xin and Y.Y. Zhang 260

A Globalizing Manufacture and Information Sharing System Based on Network Platform
X. Yang and S.T. Ding 264

The Development of Friction Material Tester with Adjustable Speed and Pressure
Z.Y. Wang, T.S. Wang and B. Qu 270

Template-Based Expression and Reuse of Design Knowledge
C.M. Lu, S. Zheng, W. Jin, Y.F. Sheng and Y. Sun 274

Products Information Inheritance Based on Object-Oriented Technology
Y. Wang and Q.S. Ai 279

Design of Paving Equipment for Coiled Waterproof Material on Bridge
W.X. Liu, G.L. Shan and H.B. Chen 283

Construction and Application of the Patent Knowledge System for Supporting Product Innovation
J.W. Gong, W.Q. Li, Y. Li and X. Liu 287

Research of NC Automatic Programming Based on Process Features Recognition
J.H. Tao, X.Q. Yang, X.C. Liu and M.Y. Zhu 291

Study on Thermal Analysis of Main Mirror in Space Solar Telescope
R. Li, H.L. Shi and Z.P. Chen 300

The Dynamic Simulation of Vibration Process of the Top Drive System of the JDD-100 Type Drilling Rig Based on ADAMS
P. Yu, Z.H. Xiao, Y.H. Wang and D.Y. Liu 305

Innovative Design of an Automatic Train Picking Hook Device Based on TRIZ
T.Y. Wu, W.Q. Li and Y. Li 309

Discussion of Design Ideas in Product Development Design Based on Product Extension in Marketing
S.J. Long and S.H. Huang 314

Theoretical Study on the Microwave Assisted Reversal of Magnetic Moment for Graining
S.M. Li 318

Layout Optimization of Support Structure Based on ANSYS
L.Z. Guo, D. Yang, X.R. Chen and Z.T. Huang 322

Numerical Simulation of Three-Dimensional Temperature Distribution in the Supercharged Boiler Furnace
Z.G. Li and G.Y. Zhou 327

The Effect of Normal Curvature of the Free Surface on the Cutting Width
M.H. Wang, X.P. Li, L. Sun and Y. Sun 332

Analysis and Research on Fractal Model of Normal Contact Stiffness of Joint Interfaces
G.S. Lan, X.L. Zhang, H.Q. Ding, S.H. Wen and Z.Y. Zhang 336

Forming Technology of Spiral Micro-Groove in Plane
J.H. Xiang, C.L. Zhang and F. Jiang 346

Development of Structural Health Monitoring Software System of Shanghai Center Tower
Z.H. Zhou, Q.L. Zhang, H.Z. Yang and L. Chen 350

Innovative Design and Simulation for a Novel Vane Pump
S.B. Huang 354

Solid Modeling of Spatial Cam with Oscillation Roller Follower
A.H. Ren, G.X. Sun and C.Q. Sun 360

Effects of Laser Multiple Processing on Properties of Heat-Resistant Steel
L. Ruan, X.D. Ren, Y.Z. Huangfu and Y.K. Zhang 364

Study on Application of Critical Path to Project Time Management
L.X. Dai and Z. Li 368

A New Technique for Preparation of Two-Phase Foam Materials for Controlling Mine Dust and its Application
H.T. Wang, D.M. Wang and W.X. Ren 372

Effects of Laser Shock Processing on Fatigue Lives of Heat-Resistant Steel and Estimation of Fatigue Safe Lives
Y.Z. Huangfu, X.D. Ren, L. Ruan, Y.K. Zhang and D.W. Jiang 376

Mathematical Model for Evaluating Roundness Errors by Minimum Circumscribed Circle Method
P. Liu and H.Y. Miao 380

Invention of Nano-Material Synthesis Process Equipment via Vapor-Phase Technics
M.Z. Zhang and Q. Wang 384

Design and Realization of a Flexible Claw of Rough Wall Climbing Robot
D.L. Chen, Q. Zhang and S.Z. Liu 388

The Research of GPRS-Based Remote Fault Monitoring System for CNC Machine Tools
M.L. Wu, X.B. Wang and S.R. Yu 393

An Algorithm for Best-Fit of a Pattern of Profile Features to the True Profile
S. Liang, M. Li, H. Yang and X.F. Zhao 398

Genetic Algorithm Based on Simulation for Single Machine Scheduling Problem with Setup Times
M.H. Liu, Z.H. Li and J.R. Chen 404

Virtual Prototype Co-Simulation of 4WS Vehicle
W.W. Wang and J.F. Xu 408

Numerical Analysis on Surface Stress of Rectangle Piston Ring with Chromium Coating
Z.B. Ye, S.G. Qu, G.H. Wang and W. Xia 412

Study on Intelligent Manufacturing System Model of Iron and Steel Enterprises in Ubiquitous Information Environment
J.W. Liu, J.Y. Kong, M. Zhou, X.D. Wang, H.G. Xiong and G.F. Li 416

The Green Design for the Moving Device of the Silt Coal Load Machine
P.H. Mao, B. Zhai and R.D. Chen 421

Numerical Simulation of Heat Transfer and Fluid Flow in Glass Tank Furnace after Bubbling
Z.H. Qi, B.H. Sun and L.Y. Xu 426

A Novel Anti-Blockage Indicator in Airport
J. Hu, L. You and S. Jia 431

The Design and Size Optimization of the New FCEV Subframe Based on Hypermesh Platform
J. Liao, L. Shan and Y. Feng 435

SPH Method Based on Bird Impact Numerical Simulation of Aircraft Engine Fan
B.D. Hou, Y. Xu, J.H. Yang and L.C. Peng 441

Modeling and FEM Analysis for Interference between Tool Shank and Shrink Fit Toolholder
F.L. Jiang, Z.Q. Liu and G. Liu 446

Study on Contact Force of Tooth Profile Modification
Y. Ma, Q. Huang, Z.F. Lou and K.H. Li 451

Geometrical Models for Precision Grinding Aspherical Mould
C.S. Han, Q. Zhang, Z. Huang and T. Sun 457

Prediction of Microstructure and Mechanical Properties of Plate in Roller Quenching
C. Wang, J.D. Li, G. Yuan, Z.D. Wang and G.D. Wang 462

Study on Quality Control and Evaluation Methods of Development of Complex Product System
L.E. Yang, L. Zheng and S.T. Ding 466

Experimental Study on Cryogenic Cutting of High-Strength Steel with Liquid Nitrogen Cooling
S.J. Li, Y.K. Hu, X. Jiang and J. Du 470

A Study on the Characteristics of Micro Electropolishing for Stainless Steel
S.H. Kim, S.G. Lee, S.G. Choi, E.S. Lee, S.B. Choi and C.H. Lee 474

Application of CAD/CAM Technology in the Development and Lofting of Complex Sheet Metal Parts
F.S. Li and Z.S. Han 478

Experimental Research on the Dynamic Characteristics of the Milling Vibration in High-Speed Milling of the Thin-Wall Components
L. Li and D.F. Liu 483

Analysis on Fiber Laser Welding of MS1470 Steel
Y.J. Li, L.J. Xin and Z.Y. Wang 487

Parametric Study of Welding Temperature Distribution in T-Joint Fillet Weld Using FEM
K. Asifa, H. Li, L. Li and S. Khurram 492

Based on Ansys Drillwell Hook DG450 Strength Analysis
H.L. Yu, X.Q. Mu and M.L. An 497

Modeling and Experiment of Pulse Electrochemical Deburring on Inclined Exit Surface of Drilling Hole
N. Ma, W.J. Xu, Z.F. Wei and G.B. Pang 502

Formation of Side Electrode on Quartz MEMS-Based Double-Ended Tuning Fork Using Enhanced Lift-Off Process
J.X. Liang, X.F. Li, Y.F. Ni, H.S. Li, L.B. Huang and K.Y. Li 507

Drawing and CNC Software System for Light Gage Steel Structure
Z.G. Chang, H.Z. Yang and Q.L. Zhang 511

Active and Passive Deformation of Large Thin-Walled Workpiece in Heat Treatment Process
Y. Lu, J.W. Kang, G. Nie and T.Y. Huang 515

Direct Rapid Manufacturing Technology with Laser for Metal Parts
Y.P. Jin and M. Hu 520

Hyperparameter Estimation Based on Gaussian Process and its Application in Injection Molding
J.Y. Ma, X.P. Liao, W. Xia and X.L. Yan 524

A Research on the Measurement of Friction Coefficient of Plastic Forming by Floating Die Extrusion
X.R. Xin, C.S. He and L.L. Shan 530

Research on Logistics Management Information System
Q.J. Wang and C.L. Guo 538

A Computer Aided Testing System for an Aero Turbo-Shaft Engine
C.Z. Li and Y. Lei 542

Adsorption Characteristics of Superplasticizer with Waste Plexiglas (WPS) onto Cement Particle Surface
G. Zheng, R.M. Wang, G.Y. Zhao and Z. Yu 547

Design and Research of Slotting Modification Profile for High-Speed and Heavy-Loading Marine Gear
C.G. Chen, L.B. Hu, F.W. Yuan and Y.B. Hu 551

Study on Extension Functional Integration and Benefit of Electric Vehicle
Y.H. Zhou 556

Analysis of Cutting Forces and Machining Error in Ball End Milling of Cylindrical Surfaces
B.S. Ouyang, G.X. Lin and Y.H. Tang 560

Microstructural Characterization of Ni-Al Alloyed Layer under Laser Rapid Solidification Condition
Y. Yang and H. Wu 565

The External Circular Precision Detection of Precision Machining Zirconia Ceramics Spindle
F. Lu, S.C. Chen, Y. Bao, K. Zhang and Y.H. Wu 569

Slotting Profile Modification Technology and Generating Simulation's MATLAB Implementation for Heavy-Loading Mine Gear
L.B. Hu, S. Li, F.W. Yuan, B.W. Li and C.G. Chen 574

Study on Influences of Superplasticizer with Waste Plexiglas (WPS) on Cement Paste and Mortar
G. Zheng, R.M. Wang, G.Y. Zhao and X.J. Yu 579

Research for Tooth Profile Modification Technology and Slotting Process
C.G. Chen, L.B. Hu, Y.B. Hu and S. Li 583

Present Status of Fault Injection Research for Testability Demonstration and Evaluation
J.Y. Zhao, X.M. Li and Y. He 587

The Research Based on the Movement Control CARDS of NC Machining
L.B. Li 591

Study on Small-Diameter Deep–Hole Vibratory Drilling of Difficult-to-Cut Materials
X.S. Xu and Z.Y. Sun 595

Study on Method of Overcoming Adverse Effects of Radar Blind Zone on Large Fleet in the Three Gorges Reservoir
S.P. Xie 600

The Development of Graphic Design Method Based on Pro/Toolkit Spur Gears
Z.K. Shen and X.L. Pan 606

Research on Structure Analysis of a Feeder Based on ANSYS
Y.Y. Zhang and M.M. Zhu 610

Power Batteries Pack Test System Based on GPIB Protocol
L.Y. Lv and Y.J. Min 614

Design and Manufacturing of Complex Surface Impeller Based on RE
Z.Y. Li, M.Y. Huang, H.J. Hu, H.J. Ni, Y. Zhu, Z.S. Jia and P.P. Wen 619

Based on Bearing Centerless Strengthening and Polishing Processing Multiple Collision Finite Element Simulation Analysis
Y.F. Ou, X.C. Liu, C.J. Liu, W.X. Li and H. Wang 624

A Simulation Study on Translational Piston Air Compressor
K.H. Geng, M. Tang, H.D. Yu, A.N. Geng and S.G. Du 628

Trajectory Designing and Realizing for the Variable Structure Motorcycle Helmet
A.N. Geng, X.M. Li and Y.X. Xie 633

Numerical Simulation of Welding Distortion under Different Sequences
Y. Liu, D.P. Wang and H. Zhang 638

Research on the Modeling and Simulation of Vehicle R&D Process Based on Petri Net
H. Wang and S.Y. Lv 642

Rare Earth Superfine Powders Fabrication and Characterization by Novel Non-Ball Miller
K.S. Li and Y.M. Mo 648

Optimal Design Grape Rain Shed Based on CFD and GSCAD
J. Wang and H.B. Yang 654

The Use of Rapid Prototyping to Fabricate Liver Tissue Engineering Scaffold
S. Sekou, S.Y. Zhong and Z.Z. Sun 658

Simulation Model of Traction Systems for CRH2 EMU Based on PSCAD/EMTDC
F.Y. Ma, H.W. Li, B.G. Han and J.Z. Xu 662

The Design of New Water Jet Spray Gun
X.W. Zhao, X.Z. Zhang and X.H. Zhao 667

W722 Lathe of Fault Detection and Diagnosis
B.C. Lou 672

A Fast Scanning Algorithm for Extension Velocities in Level Set Methods
G.F. Ouyang, Y.C. Kuang and X.M. Zhang 677

The Comprehensive Study on Virtual Manufacturing
C.J. Ji 681

Finite Element Analysis and Experimental of Milling Force for Aeronautical Thin-Walled Workpiece
J. Yu, Y.X. Shi and G.W. Yang 685

Finite Element Analysis and Structure Design for Chassis of Aircraft Towbarless Tractor
Z.W. Xing, Y. Lv and J.H. Li 690

Influence of Slide Stroke Curves on Deep Drawing of Box Shaped Part
T. Xu, Q.X. Xia, S.J. Zhang, Z.S. Li and W.P. Ruan 695

Analysis on Dynamic Characteristics of HTC100 NC Lathe Bed
M.W. Lu, G.M. Zhang and W.Q. Zhao 700

The Development and Utilization of Nuclear Power from the Perspective of National Economic Security
Z.H. Min 704

Diffusion Channel of Generic Technology in Equipment Manufacturing Industry
Z.H. Yu 708

Research on JIT Production Logistics Management System
W.G. Su, P.P. Qin, L. Li and X. Huang 717

Causes of Cracks of External Wall Insulation
C.B. Ouyang, Y. Chen and Y. Wang 721

Ergonomically Designed Kneeling Chair Influence on Adolescent Idiopathic Scoliosis
F. Wang and X. Feng 726

Numerical Simulation and Analysis of High-Strength Steel Autobody Panel Stamping
D.X. Zhao, Y.J. Tang and Z.H. Pei 730

The Analysis and Treatment to Lube Oil Separator's Leakage
S.Y. Sun and G.Y. Zhang 734

Research on Realization Mechanism of Case-Based Reasoning System Facing the Industrial Design
W. Zhang 738

Research and Design of Box-Taking Mechanism in Automatic Cartoner
J.J. Cao, L. Li and X.H. Tian 743

Surface Texturing for Crystalline Silicon Solar Cell Using RIE Equipped with Metal-Mesh
D.Y. Kong, C.S. Cho, J.H. Jo, B.H. Kim and J.H. Lee 747

Hazardous Chemicals Transportation Risk Control Based on Goal Programming
L.P. Liu, T.J. Fan and H.Y. Xia 751

Experimental Study on Fretting Wear Behavior of Steel Worm Gear Pair
Z.J. Li, Z.Y. Chen, X.M. Chen and Y. Li 755

Value Optimization of the Existing Public Building Energy-Saving Renovation Based on AHP and Improved VE
H.G. Yu 760

Research on NC Process Information Integration Method Based on Database and Heterogeneous CAM Programming Platforms
M.Y. Zhu, J.H. Tao, X.C. Liu and H. Liu 767

Method for Design of Integral Shaped Milling Cutter Profile
Q.Y. Sun, Z.W. Wang, Y.X. Shan and Y.F. Bai 771

Study on Information System of Rolling Mill Equipments Management Based on Web
Y.H. Tang, H.Y. Zhang and G.X. Lin 775

Design for the Resistance Automatic Adjustment System of Multifunctional Interactive Fitness Bike
D.W. Li, Z.J. Long and X.M. Chen 779

Cooperative Optimal Method for Two Level Models of Micro Device
Z. Liu and H. Chen 783

Design of Injection and Recycling Integrated System Used in the Strengthening and Polishing of Bearing Ring
W.X. Li, X.C. Liu, C.J. Liu, H. Wang and Y.F. Ou 788

Study on Logistics Management Platform Function
Q.J. Wang and S.J. Wang 792

Study of Acoustic Emission of Wheel Passivation for Cermet Based on Super-Speed Grinding
L. Guo, H.B. Du, X.M. Sheng, K.L. Peng, T. Jin and Y. Wu 796

Contact Analysis and Optimization of a New Type of Propeller Shaft-Hub Connection Structure
W.J. Li, H. Sun and R.X. Chen 801

A Simple Closure Device of Isolating Explosion Switch
W.G. Zhang, P. Li and W.H. Ge 806

Research and Development on Miniature Teaching Computer Numerical Control Lathe Machine
H.Y. Zhang, Y.G. Zhao, G.Y. Zhao, Y.R. Li and Z.W. Sima 810

Analysis on Option Value of Supplier Involvement in Collaborative Development
Z.J. Zhang and H. Pan 814

Research on Quality Control Flows and Techniques of Software Project Management
Y.C. Ren, D.Y. Jiang, T. Xing and P. Zhu 820

Design and Numerical Analysis of the Internal Suction Flow Heat Sink
F. Jiang, C.L. Zhang and J.H. Xiang 824

Study on the Rapid Progressive Die Design of Sheet Metal with Free Form Surface
X.D. Li and X.H. Zhan 828

PART II

Chapter 2: Material Science and Technology

Tribological Applications Considering Roughness Effects on Grain Flow
H.J. Tsai, J.H. Horng, H.C. Tsai and P.Y. Huang 837

Determination of Residual Stress of Hard Film/Soft Substrate Specimens via Unloading Results of Nanoindentation Tests
H.H. Nguyen, P.J. Wei and J.F. Lin 843

A Design of Forming Dies for a Manifold of Airbag Inflator
H.S. Lin, S.C. Tsai, Y.C. Hsu, M.C. Hsiao, C.C. Ke and B.Y. Lee 849

Thermal Shock Performance of Al_2O_3/TiO_2 Air Plasma Spray Coatings
S.H. Yao, Y.L. Su and W.X. Kao 853

Processing and Crystal Microstructure of Porous High Pressure Crystallized Nanodiamond/UHMWPE Biomedical Nanocomposite
C.C. Chou, J.H. You and C.L. Wu 857

Influence of Pulsed-DC Power Frequency on Mechanical Properties and High Speed Drilling Application of a-C:H:Zr-x Coatings
W.X. Kao, Y.L. Su, S.H. Yao and S.H. Liu 861

Sensitivity Analysis of Magnetic Abrasive Finishing Process Parameters
F.M. Chang, T.H. Tsai and S.H. Chiang 868

The Physical Characteristics of Bio-Oil from Fast Pyrolysis of Rice Straw
S.Y. Yang, C.Y. Wu and K.H. Chen 881

Topology Structure Design of 12 Flapping-Wing Mechanisms
M.H. Hsu, H.Y. Chen, T.S. Weng and F.C. Liu 887

On the Study of Non-Engineering Students Applied Open Source for Learning Graphic Design Skills of Dynamic 3D Motocross Suspension Mechanism
T.S. Weng and M.H. Hsu 892

Study on Surface Parameters of Asperity Flattening in Sliding Contact for Metallic Thin Film on Die Material during Metal Forming
T.S. Yang, S.Q. Li and S.Y. Chang 896

Optimal Design of Polishing Trace for Link-Type Optical Fiber Polisher
L.C. Hsieh and T.H. Chen 900

The Tungsten Density Distribution and Tribological Performance Analysis of Carburized Medium Carbon Steel with Tungsten Ion Implantation
H.Y. Chu, J.F. Lin, Y.C. Chiu and H.C. Chang 906

Stress-Induced Phase Transformations of Micro-Crystalline Silicon Films Arising at Nanoindentations
C.F. Han and J.F. Lin 910

Kinematics Simulation and Optimization for the Mechanism of 5R-P
W. Li, G.C. Tsai, B.S. Hsu and W.Z. Li 915

Fire Safety Assessment Research for High-Tech Plants
Y.L. Wang, Y.M. Chang, M.L. You, K.Y. Chen, C.P. Lin and C.M. Shu 920

Study of Vibration Fault Diagnosis on TRT
W. Zheng and X.B. Wei 925

Study on the Effect of Slope Stability by Bedrock Softening under the Condition of Strong Rainfall Infiltration
Z.G. Yang, L. Jiang and H.Z. Wu 929

The Development of Embedded Rotating Machine Fault Diagnosis System Based on Qt/Embedded
Z.M. Zhou, C.L. Zhang and Y.H. Xiong 933

The Find-Forming of Transmission Line in ANSYS
W. Kong, M.W. Zhu and Z.L. Sheng 939

Based on Entropy Weight and Fuzzy Comprehensive Evaluation Ecological Benefits of the Project—Analysis on Cold-Formed Thin-Walled Steel Residential Structure
Q. Zhang, B. Wang and F.W. Liao 943

Analysis on Effects of Fuel Cam on High-Pressure Fuel System
M.H. Li, B. Liu and Y.B. Ning 948

Empirical Analysis of Performance of Public Organizations Based on DEA Model
B. Wei, W.D. Niu and Y. Luo 953

Study on Advantage for Exploring Thin Sandwich by CPTU
Y.C. Tang and G.T. Meng 957

Study on Figuring Technique on a Back-Strap Loom of Li Nationality
Q. Li, B. Li and X.M. Yang 961

Studies on Curing Kinetics Parameter of TDI-PPG-MOCA Polyurethane by FTIR
Q.Z. Wen, C. Yu, J.H. Zhu and T.Y. Liu 966

Study on Complex Adaptive Features of Enterprise Network
Y.G. Shi and J.F. Yan 970

Heat Analysis of a Flat Permanent-Magnet Linear Synchronous Motor
X.J. Mou, Y.T. Xu and F.J. Jiang 974

Effect of Si Content of Al-Si Matrix on Roll Cast Wire Inserted Strip
T. Haga, K. Takahashi, S. Kumai and H. Warari 979

Research on Technology Introduction and Innovation of Shanghai Modern Silk Reeling Industry
A.L. Xiao and X.M. Guo 984

Traffic Survey System Based on GPS, GPRS and GIS
Y. Yuan, Z.Y. Liu, H.K. Xiang and Z.F. Ding 989

Study of SARFT and Telecom Operators in IPTV Industry Chain Based on Evolution Game Theory
L. Ma and C.Y. Ma 998

Analysis of the Energy Efficiency Grades Detection for Power Transformers
J. Dai and Z.H. Li 1003

Fire Investigations and Analyses for a Typical Agricultural County in Yunlin, Taiwan
Y.L. Wang, Y.M. Chang, M.L. You, K.Y. Chen, C.P. Lin and C.M. Shu 1008

Inverse Arithmetic of the Equivalent Heat Transfer Coefficient of Mine Goaf
S. Heng, F. Gao and X.G. Liu 1013

The Dynamic Response of the Clamped Beam under Low Velocity Impact
W.G. Long, Z.H. Tan, Y. Liu and F.R. Wang 1017

Study on Efficient Approach on Cost Control in the Stage of Architecture Engineering Design
C.Y. Cui, Y. Liu and N. Yu 1022

Study on Condition Assessment of Highway Bridge, Normal-Speed and High-Speed Railway Bridge
Z.L. Wei, Q.H. Pu and B.L. Wang 1026

Static Studies of a Steel Chain Ropeway Section Using Msc Adams
C.J. Mwape, T.S. Hong and W.B. Wu 1031

The Web Classification Based on ROUGH-GA-BP
L.Z. Duan, Z.X. Zou and G.F. Wang 1037

Efficient Design of a Torque Actuator for Lower Extremity Exoskeleton Based on Muscle Function Analysis
S. Safavi, A. Selk Ghafari and A. Meghdari 1041

The Evaluating and Quantizing of Human Factors at Workplace
P.H. Li, J. Zhou, J.X. Deng and Z.J. Fan 1045

The Framework and Construction Rural Science and Technology Information System
S.R. Wang and J.S. Zhao 1049

A Creative and Practical Study on the Theory of Developing Work Process
C.Z. Zhong and L.F. Jiang 1053

Study on Preparation and Performance of MRF for Torque Transmission
Z.X. Dong, C.W. Guo, Y.F. Hou, Q.R. Meng and F.H. Li 1057

Small Problem, Big Crisis: A Study on the Importance of Fire Separation in Tall Buildings
Y.L. Wang and C.M. Shu 1062

The Remote Fault Intelligent Diagnosis System Based on B/S Structure
J. Liu, C.L. Zhang, J. Li, S. Li and Y.H. Xiong 1067

Amplitude Frequency Response Characteristics of Fe-Based Damping Alloy Simple Beams under Forced Vibrations
S.K. Huang, D.C. Zhou, J.H. Liu, J. Teng and N. Li 1072

Toughness and Internal Friction of Weld Metal Welded by High-Current MAG Welding
A.X. Pan 1077

The Involvement of Coloring Agent, Cu, and its Effects on the Optical Performance for Color Glass
X.H. Bai, X.G. Hao, S.J. Li and L.P. Dai 1082

ABS Fabrics Chemically Plated by Cu/Ni-P as Electromagnetic Shielding Material
C.D. Yu, P. Li, Y.F. Wang and L. Tang 1086

Service Life Prediction for the Neoprene Based on Tearing Strength
C. Yu, Q.Z. Wen, J.H. Zhu and Z. Wei 1090

Effect of Lorentz Force on Non-Axisymmetric Thermo-Mechanical Behavior of Functionally Graded Hollow Cylinder
J. Jafari Fesharaki, S. Golabi and A. Atrian 1094

Relationship between Slip Resistance of Shoe Sole and Materials and Floor Conditions
L.X. Jia and Q.F. Zhang 1098

The Effect of Titanium Addition on Microstructure and Properties of Laves Phase Cr_2Nb Alloy Synthesized by Hot Pressing
X. Xiao, S.Q. Lu, X.J. Dong, M.G. Huang and J.W. Liu 1102

Microwave Absorbing Properties of Radar Absorbing Structure Composites Filling with Carbon Nanotubes
Z.Q. Zhang, L.G. Wang and E.Z. Wang 1109

Finite Element Analysis of X-Cor Sandwich's Shear Modulus
X.D. Dang, S.J. Shi, J.S. Jiang and J. Xiao 1113

A Special Manufacture of Nanowires with High Precision and its Concrete Implement
W. Zhe, Q. Xian and J.R. Fan 1118

The Application of Blast Furnace Slag in Cementitious Self-Leveling Mortar
X.Y. Yang, C. Li and J.H. Wu 1122

Study on Phase Structure and Electrical Properties of La-Doped $(K_{0.5}Na_{0.5})_{0.94}Li_{0.06}NbO_3$ Ceramics
Y. Liu, R.Q. Chu, Z.J. Xu, Q. Chen, L. Shao, K. An and G.R. Li 1127

Study on Dielectric and Ferroelectric Properties of Gd-Doped $Sr_2Bi_4Ti_5O_{18}$ Ceramics
Q. Chen, Z.J. Xu, R.Q. Chu, Y. Liu, M.L. Chen, X.H. Wang, C.J. Ran and G.R. Li 1131

A Rotary Magnetorheological Damper for a Tracked Vehicle
L. Yang, S.Z. Chen, B. Zhang and Z.Z. Feng 1135

Wet-Chemical Synthesis and Enhanced Photocatalytic Performance of ZnO/Ag Micro Hybrid Material
P.Y. Ma, Y. Wu, Z.Y. Fu and W.M. Wang 1139

Creep Properties and Damage Study of Ni-Based Alloy C276 at High Temperature
X.P. Mao, Q. Guo, S.Y. Zhang, S.Y. Hu, D.G. Lu and H. Xu 1143

Effect of Mechanical Stirring on Microstructural Morphology in Semisolid A356 Alloy
Z. Liu, X.M. Liu and W.M. Mao 1149

Defect-Related Photoluminescence from SiO_2 Thin Films by Si-Ge Ions Doped
K. Zhong, Y.D. Xia, J.H. Miao and J. Fu 1153

The Critical Conditions of Ferroelectric Domain Switch with Different Porosity and Pressure
J. Wu and W.F. Li 1157

Study on Coating and Technological Conditions of LLM-105
H.J. Wang and S.S. Liu 1161

Effect of Air Position to the Mechanism of Air-Decked Blasting
L. Wu 1167

Analysis of Temperature Field on Infrared Active Detection of Heavy Pressure Vessels Wall Surface Defect
G.Z. Wu, F.F. Song and D. Li 1172

Research for Damping Behavior and Microstructure of Interpenetrating Polymer Networks Based on Multi-Components
Y.Q. Li, X. Zhu, Z. Luo and W.H. Sun 1177

Fabrication and Application of CVD Diamond-Coated Copper Wire Drawing Die
Q.S. Tang and Y.H. Yang 1182

Numerical Calculation on Flaw Response in Inhomogeneous Media
G.F. Zheng, B. Wu and C.F. He 1188

Optical and Electrical Properties of Sol-Gel TeO_2-SiO_2 Composite Films
P. Gan and X.D. Xian 1194

Solution-Based Doping of Cobalt into ZnO Nanorods Membrane
P.Y. Ma, Y. Wu, Z.Y. Fu and W.M. Wang 1198

Application of Moldflow in Gas-Assisted Injection Molding
K.M. Zi and L.H. Chen 1202

Efficiency Comparison of some Natural Products on Corrosion Inhibition of Al-Mg-Si Alloy
R. Rosliza, W.B. Wan Nik and S. Izman 1206

Stability Analysis of Cracks in the Stress-Release Boot of Solid Rocket Motor Grain with J-Integral
S.Y. Meng, J.L. Han, C.S. Liu and X.H. Yang 1210

Design of Mobile Jumping Robot Based on DSP2407
X.H. Fu and J. Mu 1216

The Deposition Rate of Ti Film by Plasma
S.H. Huang and Q. Lai 1220

Research on Changing Regularity of Green Sand Properties
Q.Z. Sun, J. Jing, P.Q. Zhang, Y.S. Huo, Z.K. Zhao and J. Wang 1224

Experiment of Gray Iron Abrasive Wear for Wheat Grain Powder
K.P. Zhang, J.L. Huang and J.F. Wu 1228

Effect of Nano-Filler Network on the Rheological Behaviours of Poly(vinylidene fluoride) Nanocomposites
X.G. Tang, M. Hou, J. Zou and R. Truss 1232

Exploration of the Defect's Effect on the Mechanical Properties of Different Orientated Nanowires
H.F. Zhan and Y.T. Gu 1239

Two High-Speed and Large-Drive-Current BiCMOS Analog Switches
L. Cheng, J.J. Xi, N. Li and N. Yang 1245

The Key Technology in the Parallel Control of Inverter
J.Y. Qin, Q. Wang and J.H. Zhou 1249

Study on Thermodynamic Principle of Preparation of VC by Carbon-Heat Reducing
Z.R. Li, Z.Q. Cao and M.X. Fang 1253

The Preparation of Mica Composite Insulation Material with Starch Adhesive and its Modified Enhancement
Y.P. Qian, X.W. Zhang and Y.B. Zhu 1259

Preparation and Performance of RTV Coating for Anti-Pollution Flashover with Superhydrophobicity by Filling $CaCO_3$/SiO_2 Composite Particles into Silicone Rubber
J. Hai, J.X. Yang, J. Cheng and Z.R. Yang 1263

Effects of Alloy Powder for WC/Steel Base Surface Composite Structure and Interface
Y.D. Sui, Y.H. Jiang, Z.L. Li, Q. Shan and F. Liu 1268

Experimental Study on CTOD Fracture Toughness of Welded Joints of Low Temperature Steel
Z.T. Fang, B. Sun and C.R. Li 1272

Fabrication and Properties of Al_2O_3 Short Fiber Reinforced Aluminium Matrix Composites
Y.S. Yang, K. Feng and W.X. Zhao 1277

Research on the Stress Fatigue Assessment about the Hot Spot Stress on the Bogie Frame
B.J. Wang, Q. Li and Z.M. Liu 1281

Comprehensive Evaluation on Technical Economic Performance and Scheme Optimization for Asphalt Mixture
Z.D. Chen, L. Xing and W. Wang 1287

Research of Properties and Microstructure on High-Strength Casting of Turbo-Charger
A.X. Pan 1292

Property and Application of Austempered Ductile Cast Iron
G.S. Luo 1297

Research on Polypropylene Fiber and Mineral Admixtures on Fluidity of Cement-Based Materials
X.F. Li and T. Guo 1301

The Formation of Super-Thin Dielectric Film on Porous Substrate and its Stopping – Transmittance Characteristics for Particles
L. Chen, Y. Li, X.L. Qin, K. Wu, D.L. Jiang and J.Q. Tian 1305

Experimental and Numerical Study on Six- Point Bending Test of a Composite Stiffened Panel
Q. Ye, S.S. Xiao and P.H. Chen 1309

A Method of MEMS Package Using Local Laser Bonding
L. Cheng, Y.X. Zhang, J. Xu and M. Yan 1313

Investigation on the Load Capacity and Failure Process of T-Joint by Experiments and Numerical Method
P. Hu, Q. Shao, Q. Nie and W.D. Li 1317

Realization of the Internet Based Telecooperation Robot System
X.H. Fu and S.L. Ouyang 1322

Synthesis and Properties of a Modified Sponge Iron for Removing Dissolved Oxygen
B. Xu, M.C. Jia and J.F. Men 1326

Influence of Crack Depth on Chloride Transport of Cracked Self-Compacting Concrete under Non-Steady State Migration Test
S. Mu, G. de Schutter and B.G. Ma 1331

Preparation and Properties of Halogen-Free Flame Retardant Epoxy Resins with Aryl Phosphinate Dianhydride Hardener
B. Liang, T.Z. Bao, J. Cao and X.D. Hong 1335

The Effect of Preparation Conditions to Crystall of Ti Film
Q. Lai and S.H. Huang 1339

Experimental Study on Synthesis of High Purity Mullite
Z.W. Shi and N.S. Xie 1343

Leaching and Detecting Free Magnesium Chloride for Magnesium Oxychloride Cement
Y. Li and H. Yu 1347

Experimental Study on the Anti-Cracking Property of Basalt Fiber for Cement-Based Materials
J.Y. He, X.Q. Huang and C.Y. Tian 1351

Study on the Preparation of Nano-Cu_2O and its Morphology Control
B. Zhao and D. Ma 1355

Fatigue Analysis of Pure Waterjet Nozzle-A CFD and FEA Approach
Q.C. Li, K. He and R. Du 1359

Preparation and Microstructure of Co-Ferrite Fine Powder
C.S. Zhang, L. Yang and F. Zhou 1365

The Manufacturing of the Bamboo Buffer Packaging Material
Y. Liu and S.H. Wang 1369

The Influence of Loading Rate on the Interfacial Fracture Toughness of Carbon Fiber-Metal Laminates Based on Magnesium Alloy
G.Z. Zhu, C.L. Zheng and X.F. Lu 1373

Research on Impact Factors of Thermal Insulation Material Based on Grey Relational Analysis
X.G. Zhao, Y. Zhou and S.X. Pan 1377

Magnetorheological Fluid and Design of Magnetorhelogical Devices
C. Xiong, J. Zheng, L.Q. Fang and C.T. Ma 1381

The Influence of Friction on Forming Accuracy of Tubular Parts by Hydroforming with Radial Crushing
L.F. Yang, P. Lei and C. Guo 1386

The Influence of Phase Transformation Cycling on Improving of Plasticity and Microstructure of Fe-14Mn-4Si-8Cr-4Ni Alloy
W.L. Xie, S.Y. Zhou, C.X. Guo, Y.Y. Pei and Y.H. Wen 1391

Thickness Optimization of SPF for Titanium Alloy Negative Angle Parts
Z.K. Shao, Z.G. Huang, S.Y. Jin, Q.H. Yuan and Y. Zhou 1395

Deformation Behaviors of Tube Rotary-Draw Bending Filled with Steel Balls
S.C. Shi, L.F. Yang and C. Guo 1403

Physico-Chemical Properties of Edible Gelatin Film from Arrowtooth Flounder (Atheresthes Stomias) Skin
J.W. Li, Q.C. Zhao and B.B. Wang 1408

The Surface Hydrophilicity of Polypropylene Non-Woven Treated by Atmospheric Glow Plasma
Y. Zhang, R.J. Liu, Z.X. Shang, Y.D. Lv and B. Gu 1413

Finite Element Simulation of Temperature Field on Laser Cladding Layers Regulated by Micro-Forging
J. Zhou, C.J. Qiu and X.Y. Cheng 1417

Different Thickness of Honeycomb Paperboard Vibration Frequency of Testing and Simulation
B.Z. Wang and L.J. Cao 1421

Design of the Inversion Power-Supply Control System Based on DSP
Q. Wang, J.Y. Qin and X. Qin 1425

Design of New Metal Detector
X.H. Fu and L.B. Xu 1431

Improved Rotative Mid-Point Mensuration and Newton-Raphson Method in 2-D Flat Rolling Simulation
S.N. Song and J.Y. Liu 1436

Nonlinear Cumulative Fatigue Damage Model
H. Zou, Q. Li and S.G. Sun 1440

The Effect of Cerium Substitution on Electromagnetic Properties of NiZn Ferrites
H. Zhong, J. Yang, H.L. Wang and Y. Shi 1445

Study on Milling Testing of WC-Co Cemented Carbides Diamond Coated PCB Milling Cutters
Y.Y. Zheng, L. Wu and C.L. Zhang 1449

Plastic Micro Features Produced by Microwelding Machine
H. Liu, Y. Xu, K.L. Yung, C.L. Kang and W. Tian 1453

Bond Interface Evaluation by Ultrasonic Testing and SEM for Radial Friction Welding Joints of Copper and Steel
W. Wu, L.Y. Zhu and G.F. Wu 1457

Preparation of Bio-Material Liquid Film and its Function of Reducing Soil Water Evaporation
D. Li, J. Lv and W.Z. Ni 1462

Study on Bearing Dynamic Properties of Nano-Particle Reinforced ZA27 Alloy Composite Material
Z. Qin and K.P. Ma 1467

Microstructure and Property Research of T91 and T23 Heat-Resisting Steel Welding Joint
G.F. Wu, X.B. Zhang and H.B. Xu 1471

The Relationship of NaOH Molarity, Na_2SiO_3/NaOH Ratio, Fly Ash/Alkaline Activator Ratio, and Curing Temperature to the Strength of Fly Ash-Based Geopolymer
M.M.A.B. Abdullah, H. Kamarudin, M. Bnhussain, K.N. Ismail, A.R. Rafiza and Y. Zarina 1475

Prediction Method of the Dent Depth of Composite Laminates Subjected to Quasi-Static Indentation
Q. Ye, P.H. Chen and Z. Shen 1483

Study on Properties and Mechanism of Si-Reinforced Zn-Al Alloys
X.A. Song 1487

Wind Power Micro-Generator Using Dielectric Electric Active Polymer
G.J. Lin, X.B. Zhang and D.C. Song 1491

Bioactivity of L-b-L Self-Assembly TiO_2 Hollow Spheres by UV Irradiation Enhanced
F. Xiao, W. Li, F. Gao and Z.X. Zhang 1495

Optimization of Experimental Parameters to the Formation of Bi2212 Phase via Sol-Gel Method
H.Z. Yang, Y.S. He, Y. Ji, Z.M. Li and H. Zhu 1499

Study on Infrared Transparent Radar Double Band-Pass Filter
H.Y. Jia and X.G. Feng 1503

Synthesis and Photocatalytic Property of FeVO4 Photocatalyst by Sol-Gel Method
M. Wang, L.F. Zhang and H.Y. Luan 1507

Tensile Mechanical Properties of Wood Fiber / PVC Composites
J.L. Duan, E.C. Jiang and Y.H. Lu 1512

Optimization of Process Parameters in Spark Plasma Sintering Al6061 and Al2124 Aluminum Alloys
A. Khalil, A. Hakeem and N. Saheb 1517

Diffusion Behavior of Aluminum Atoms in Hot Dip RE-Aluminizing
W. Zhang, A.P. Liu and W.Z. Jin 1523

Mechanism Study on the Coiled Tubing Deformation under a Combination Loading
L. Li, Z.X. Shen and P. Wang 1528

Synthesis and Characterization of Poly (ε-caprolactone)/ TiO_2 Nanocomposites Obtained by *In Situ* Polymerization
G.S. Wang, Z.Y. Wei, L. Liu, P. Wang and M. Qi 1533

MMT and Short Time Soaking in Hexane to Suppress DOP Migrating from Flexible PVC
L.X. Li, Y. Xiao, B. Wang, X.H. Li and T. Xue 1537

Synthesis of Spherical Zinc Oxide Micro-Flower via an Electric Field-Assisted Homogeneous Precipitation Method
X.J. Liang, X.F. Hu, X.X. Weng, D.W. Hu and H.X. Ji 1541

Microstructural Characterization of Rapidly Solidified Al-High Si Alloys
H.V. Atkinson, F. Alshmri, S.V. Hainsworth and S.D.A. Lawes 1545

Effect of Artificial Aging (T6) on Microstructure of Al-AC8H/Al_2O_3 MMC Produced by Stir Casting Route
A. Zulfia and M.K. Ajiriyanto 1552

Influence of Small-Strain and Large-Strain Methods on Mechanical Behaviors in Shape Memory Alloys
Y.Z. Wu, Y.P. Zhu and G.S. Dui 1556

Synthesis, Characterisation of Al_2O_3-Cu Nano Composite Powder and Water Based Nanofluids
S. Suresh, K.P. Venkitaraj and P. Selvakumar 1560

Microstructures Finite Element Simulation of Laser Cladding Layer Regulated by Micro-Forging
J. Zhou, C.J. Qiu and X.Y. Cheng 1568

Investigation of Phase Composition and Microstructure of the B4C/BN Nanocomposite Powders and the B4C/BN Nanocomposites Sintered Bulks
T. Jiang 1572

Effect of Dopants on Microstructure and Properties of Polyaniline and Polypyrrole
L. Yang and C.S. Zhang 1576

Hydrothermal Synthesis and Photoluminescent Properties of Zinc Tungstate Nano/Microstructures
Q. Wang, M.M. Sun and C.H. Li 1580

The Effect of WC Doping on the Electrochemical Behavior of Nanosilicon/CMC/AB Composite Electrode
Z.S. Wen, D. Lu, J.C. Sun and S.J. Ji 1585

Preparation of Cottonseed Protein-Based Superabsorbent Hydrogel Composite
B.N. Zhang, Y.D. Cui, G.Q. Yin and H.B. Zhou 1589

The Characterization of Different Doses of Electron Beam Irradiation on the Structure and Properties of PAN Precursor Fibers
H.W. Yu, H.W. Yuan, Y.S. Wang and Z. Wei 1594

Numerical Simulation of Hot Forging for the Disc of Superalloy GH4169
Y.S. Zhang and X.F. Liu 1598

Constitutive Modeling for the Prediction of Peak Stress in Hot Deformation Processing of Al Alloy Based Nanocomposite
V. Senthilkumar, A.B. Abhishek and H. Ahamed 1602

Microstructure and Properties of Surface Nanostructured Copper
W.M. Lin, Y.H. Wei and L.F. Hou 1606

Investigation on Properties of a New CB/WPUA Composite Coating
T. Zhang, W.J. Wu, L. Zhang and X.D. Dai 1610

Flow Stress Constitutive Equation of AZ31 Magnesium Alloy for Hot Compression
W.H. Wu and Y. Lou 1614

Effect of Microwave Drying on Dyeing Rate of Cotton Yarn
Z.N. Zhu, Z. Meng, G.C. An and Y.Z. Sun 1619

Research on Inner Cooling Apparatus Sets in the Mold of 700mm×700mm Bloom
M.H. Bai, J.J. Liu, J.L. Ge, Z.Q. Liu and Z.M. Zhang 1623

Study on the Graphite-Based Cementitious Material for the Soil Moisture Detective Probe
L. Yao, X.C. Liu, H.L. Wu and W.X. Li 1627

Preparation and Applications of Compatibilizer in HPVC/EPDM
B. Liang, J.M. Ji, X.D. Hong and J. Cao 1632

Comparative Study on Thermal, Compressive, and Wear Properties of Palm Slag Brake Pad Composite with other Fillers
C.M.R. Ghazali, H. Kamarudin, S.B. Jamaludin and M.M.A.B. Abdullah 1636

Preparation of Flexible Graphite Sheet with Fine Flake Graphite
Q. Lai 1642

The Bending of Symmetrical Laminated Composite Plate Based on Symplectic Method
Y.Z. Yang 1646

Effects of La on the Microstructures and Mechanical Properties of AZ91 Magnesium Alloy and its Mechanism
J.L. Zhang, S.B. Wang, X.Y. Qi and B.S. Xu 1650

Studies on Mechanical Properties and Wear Behaviour of *In Situ* Al-TiC Composites
S. Jerome, A. Kumar, S.P. Kumaresh Babu and B. Ravisankar 1654

PART III

Chapter 3: Mechatronics and Automation

Research on the Development of Large Application Specific Integrated Circuit Based on SOPC
Q.C. Kong, G.C. Zhang and Y.X. Li 1663

Modeling and Simulation of PMSM DTC System Based on the Speed Sensorless
W.G. Gao, M. Jiang and S.S. Qiang 1667

Study on the Relationship between Hydraulic Support on the Working Face with Large Mining Height and Surrounding Rock
Y. Ma and S. Zhong 1671

A Self Motion and Rotation Video Nodes Coverage Algorithm
L. Tang, C.D. Yu, C.W. Zhang and Y.F. Wang 1675

Dynamic Research and Design on SINS Damping System in Vehicle
J. Li, R.P. Tao, J. Liu and W. Chen 1679

Studying on Multiple Services Precoding of MIMO System
L.G. Zhao and W. Fan 1684

Research on B2C Electronic Commerce System Based on X3D/VRML
Y.Q. Ou, L. Zhou and Y.P. Fang 1689

Direct Torque Control of Asynchronous Motor Based on Flux Auto Switching
S.Q. Li, S.A. Hao, X. Ma and Y.M. Cheng 1693

Two Friction's Laws for Lagrange's Equations of Multibody System with Dry Friction
J.F. Wang, Y.J. Liu, S.C. Gao, S. Li and F. Feng 1697

Ant Colony Algorithm's Application of Textile Monitoring Image Recognition
Y.L. Fu, S.Q. Chen and L.H. Zhang 1701

Tire Pressure Monitoring Inflatable Restraint System
T. Li, X. Chen, Q.X. Yin and Y.P. Hou 1705

Research on the Broaching-Load Testing System of Hydraulic Broaching Machine
M. Xu, J. Ni and G.J. Chen 1709

Adaptive Impedance Control for Robot Based on Estimation of Environmental Parameters
Z.M. Li and E.C. Li 1713

Fault Diagnosis of Hoist Gearbox Based on Time-Domain Analysis of EMD and Fuzzy Clustering
Z.G. Li and B.J. Yan 1717

Modeling and Simulation of Hydraulic System of the Tower-Belt Based on Power Bond Graph
J.Z. Wang, J.Z. Zhou, G.J. Cao and X.Y. Zhang 1721

Open Automatic Laser Engraving System
H.F. Yan, J.M. Chen and J. Shao 1725

Surface- Based Computing Model of Maximum Independent Set Problem
Y. Yang and Z.X. Yin 1729

Coupled Flexural-Longitudinal Vibration in a Curved Periodic Pipe Conveying Fluid
H.J. Shen, J.H. Wen, D.L. Yu, L.J. Huang, Y. Xiao and X.S. Wen 1734

Self-Adaptive Scaling Factor Fuzzy Controller and NC Feeding Servo System
Y.H. Zuo 1739

A New 2T-2R Hybrid Parallel Manipulator
W.J. Chen and L.L. Zhao 1743

Digital Frequency Multiplying Method for the Power System Frequency Tracking Based on FPGA
C.Y. Gao, W.J. Li, M. Liu and R. Han 1747

Study of Coplanor Capacitance Prong Teeth Sensors
C.H. Wu, C. Zhang and Z.G. Wang 1751

Multiple Vortex Body Vortex Numerical Simulation
H.X. Liu, Z. Liu, H.L. Li, X.X. Feng and Z.Z. Xing 1755

Study on Intelligent Control of Milling Process Based on MATLAB
X.Y. Lai, C.Y. Yan, B.Y. Ye and W.G. Li 1759

Research of Fabric Weave Pattern's Recognition Using Texture Orientation Features
J.Q. Shen and X. Zou 1763

A Novel Precision Ultrasonic Thermometer
X.H. Zhang, W. Cai, F.Y. Xiang, T.H. Zhang and S.X. Liu 1768

A Kind of Land Form Detector for Loose and Soft Sandy Soil Milling-Planing and Collecting Device Machinery
S. Qiu, H. Hu, J.P. Liu, X.H. Lv, X.L. Wang and W.J. Li 1772

Design of a Hand Exoskeleton Rehabilitation Device
Q. Bi and C.J. Yang 1778

On-Line Test System of Air-Condition in Automobile
F.F. Sun, C.P. Liang and P. Li 1784

Characteristics of Human Operator in Manual Tracking Control System
X.H. Fu, J. Wang, S.L. Ouyang and W.B. Song 1788

Dynamic Characteristics Analysis and Simulations of Transverse Vibration of Axially Moving Electrode Wire in WEDM
S.Y. Fan, Q.J. Zhang and H.W. Chen 1792

Modeling of Networked Control Systems in Electric Multiple Unit with Packet Dropout and Network-Induced Delay
X. Li and H.Y. Dong 1797

Automatic Positioning Control System of Train
J. Zhang, H. Li and R.H. Li 1801

A Temperature Detecting System Based on DS18B20
Y.X. Wu, D. Liu and X.H. Kuang 1806

A Study of Predictive Control of Energy-Saving of Heating Process
X.L. Zhu, S.X. Zhu and S.H. Guo 1810

Defects Classification of Steel Cord Conveyor Belt Based on Rough Set and Multi-Class v-SVM
H.W. Ma, Q.H. Mao, X.H. Zhang, D.W. Zhang and H.Y. Chen 1814

Design of High-Speed and Low-Power Two-Channel Pipeline ADC
L. Cheng, J. Xu, Y.X. Zhang and N. Yang 1820

Design of CMOS Amplifier Using New CCII Topologies
L. Cheng, N. Li, J.J. Xi and N. Yang 1824

The Research of Digital Double Close-Loop DC Speed Regulation System Based on ATMega8
J.H. Wang, L. Zhang and Y. Long 1828

Study on the Shovel and Support Bracket's Compensation for Vertical Pose's Deviation of Roadheader
J. Mu and M. Wu 1832

Application of Intelligent Characteristic Model in Alumina Concentration Control System
T.P. Zhou 1837

Visual Detection System Research of the Button Battery Based on Labview
H.H. Liu, S.Z. Lin and B.Y. Liu 1841

Performance and Benefit Analysis of Mining Accumulator Locomotive AC Speed System Based on DTC
X. Zhang, J. Yang, W.C. Chen and Q.Z. Huang 1846

Shuttle-Type Passive Control System for Pressure Pipeline Conveying
K. Chen, X.W. Zeng and X.P. Qiu 1851

Adaptive Simulated Annealing Genetic Algorithm for Optimizing Injection Production Parameters of Steam Flood Well
T.J. Sun, J.F. Shi and X.H. Yu 1855

Experiment Research on Bionic Structure of Mechanically Coupled Diaphragms for Sound Source Localization
Q.S. Wang, X.H. Liu and N. Li 1860

Design of a Speech Decoding System Based on Cortex
H. Zhang 1864

An Anti-Sway Controller's Design of the Overhead Crane
B. Yang and L. Ma 1868

Control Strategy Study on Drum Water Level of Supercharged Boiler Based on Radiation Energy Signal
G.Y. Zhou, W.S. He and H.C. Zhou 1872

Application of Artificial Neural Network to Flaw Classification in Ultrasonic Testing
Y. Chen and H.W. Ma 1876

Global Path Planning for Full-Area Coverage Robotic Systems by Employing an Active Genetic Algorithm
C. Zeng, Q. Zhang and X.P. Wei 1881

The Analysis on Fire Smoke Exhausting Robot Vibration Based on Wavelet Transform
S. Fang, B. Hu and S.P. Liu 1887

Study on Ultrasonic Characteristics and Sensors in Partial Discharge
G.X. Zhao and Q. Yu 1892

A Study on Improved Eclat Data Mining Algorithm
Z.F. Li, X.F. Liu and X. Cao 1896

Electrical Errors Analysis and Correction for Time Grating Displacement Sensor
T.H. Zhang, D.L. Peng, J.S. Yang and X.Q. Wang 1900

Energy Regulation Based Close-Loop Variable-Speed Valve-Controlled-Motor System
M. Xu and B. Jin 1904

A Study of PID Control System Based on BP Neural Network
W. Liu, J.J. Cai and X.P. Fan 1908

Automatic and Intellectualized Reconstruction of the Surface Roughness Measuring Instrument
F.W. Yuan, Y. Jiang and L.B. Hu 1912

Parameter Identification of Inertia Properties of Space Robot Based on Momentum Conservation
C. Wang, Y.M. Gao and X.P. Du 1916

Design of Test System for Static Parameters of Projectile and Rocket Based on LabVIEW
X.L. Cheng, A.J. Zhang and Y.F. He 1922

Design and Application of Network Borehole-Ground Electrical Measurement System
L. Shao and J. Lin 1926

Design and Study on Intrinsically Safe Circuit of Portable Infrared Methane Alarming Device
X.H. Wang, J.Y. Wang, J.L. Zhang and T. Liang 1930

Development of High Temperature Superconductor Current Limiter
J.Z. Lu, H.X. Zhang, L. Yang, D. Hui, Z. Fang and B. Li 1935

IT-Infrastructure for an Integrated Visual Analysis of Distributed Heterogeneous Simulations
T. Meisen, R. Reinhard, T. Beer, D. Schilberg and S. Jeschke 1940

PS-FB-ZVZCS PWM Converter Modeling and Simulation Based on the PID Neural Network
S.Z. Xiong and H.L. Shu 1947

Application of Serial Communication Control in the Motion Control System
J.Q. Liu, J.R. Wu, D. Xu, X. Li and J. Huang 1953

Research on QoS Services to MPLS Enabled Industrial Control Network
S.X. Zhou, G.G. Ju and P.F. Sheng 1957

Design of Vibration Signal Data Acquisition System for Rolling Bearing Life Testing Machine Based on Virtual Instrument Technology
G.L. Yu and L.H. Dang 1963

The Portable Computer System of Wet Gas Two-Phase Flow Measurement Based on Labview
Y. Xu, R.S. Ma and C.M. Fu 1968

Design of Electric Connector's Automatic Assembly System
D.Z. Ren, Y.G. Guo and L.P. Xu 1973

The Design of Embedded Motion Controller Based on DSP and Development of Driver under Linux
G.J. Tang and T.B. Jiang 1977

Wet Gas Flow Rates Computation System for Unattended Operational Natural Gas Well Based on ARM
Y. Xu, C.M. Fu, R.S. Ma and Q. Zhang 1981

Design of Intelligent Control and Diagnosis System of Aquaculture Based on PROFIBUS
F. Peng and W.H. Zhou 1985

A New Approach for Coverage Area Computing of Radar Network
S.S. Wang, W.F. Che, J.F. Feng and M.Z. Li 1990

Application of Vibration and Noise Analysis in Water-Lubricated Rubber Bearings Fault Diagnosis
E.G. Peng, Z.L. Liu, X.C. Zhou, M.Y. Zhao and F. Lan 1995

Research and Design on the Control System of the Deastringency of Fresh Persimmon
Y.R. Li, H.Y. Zhang, A.M. Wang and Z.W. Sima 2000

Underwater Acoustic Sensor Network Nodes Targeting and Optimization Strategies
H. Zhang and Y.L. Liu 2004

The Research of the Ultrasonic Heat Meter Adopting the Two Reflection Structure
B. Liao 2010

Strategic Study on Metro Train Comfortableness Based Operation
C.M. He, H. Li, G.S. Fei and Q. Wang 2014

Research and Design of a New Control System for Internal Vibration Concrete Shaping Machine
S.L. Zheng and G.H. Li 2019

Research on the Oil-Gas-Water Three-Phase Flow Experimental Apparatus
Y. Xu and T. Li 2023

Denoising Algorithm Based on Correlation of Inter Scales Wavelet Coefficient for Damage Signal of Wire Rope
W.X. Zhan, J.W. Tan and Y. Wen 2027

The Design of Paver Driving Control System on SCM
C.F. Song and M.D. Wang 2032

Study on MCU Based Programmable Frequency Detector
Z.Y. Zhang, L.H. Zhao, M.M. Tan and H.H. Guo 2036

Simulation and Control about Arrival and Aerobraking on Neptune
B.Y. Liu and W.F. Liu 2040

Product Innovation Design Knowledge Acquisition System Based on MAS
J.S. Luo, W.Q. Li and J. Jiang 2044

Research on Feature Extraction Based on Vibration Phase Diagram and its Application in Roller Fault Diagnosis
Y.H. Tang, H.Y. Zhang and G.X. Lin 2050

Design and Simulation for Control System of Tobacco Leaf Roasting Based on Fuzzy-PID Control
S.Q. Li and X.J. Yang 2055

Design and Modal Analysis of Automatic Cleaning Wall Mechanism
D.W. Li, S. Li and X.M. Chen 2059

Blind Source Separation Based on Wavelet and Cross-Wavelet
J.H. Wang and Y.C. Zhao 2064

Design and Implementation of Nonlinear Junction Detection FPGA-Based System
J. Zhang, X.J. Liu and Y. Li 2069

Research and Application of Robotics Remote Sensing
G.P. Zhang and B. Wang 2074

Amplitude Control of Limit Cycle in Chua System
F.L. Xu and S.H. Liu 2079

Research on Visible Measurement of Dispersion Spot at Four Quadrant Photoelectric Detector
L.K. He, Y. Gao and S.C. Ning 2086

Monitoring System of Two Levels Non-Continuous Signal of Automotive Camshaft Sensor
J.M. Tian, F.Y. Guo and C.L. Gong 2092

Double Error Function Decision Feedback Momentum Blind Equalization Algorithm
L.K. Xing, L. Wu and Y.C. Guo 2097

One Kind of High Precision Non-Contact Displacement Sensor and its Application
X. Li, Y.R. Chen and S.H. Wang 2102

A Robust Trajectory Tracking Control Scheme of Two-Link Flexible Manipulator
J.S. Lu, C.M. Du, R. Zhou and N. Li 2108

Mixed Vibration Signal Separation and Moving Object Detection Based on Independent Component Analysis
N. Qiang and F. Xiang 2113

The Robotic Force Tracking Based on Single Input Fuzzy Adaptive Controller
E.C. Li and Z.M. Li 2117

Automatic Positioning Closed-Loop Control Cystem Design of Linear Time Grating Sensor
T.H. Zhang, D.L. Peng, J.S. Yang, X.Q. Wang and C. Dong 2121

Adopting Three-Level Inverter to Solve the Bearing Fault of Roll Forming
F.Y. Li 2125

Experimental Study of the Variable Stiffness Vibration Isolator
Z.J. Shuai, T.J. Yang, Z.L. Zhou and Z.G. Liu 2129

The Identification of Engine Noise Source Based on Simulink Blind Sources Separation
J.W. Gao, Y.M. Quan and Y.M. Lin 2134

Surface Tracking with Robot Force Control in Unknown Environment
E.C. Li and Z.M. Li 2140

Configuration Software-Based Control System for Wine Production
H.D. Zang 2144

Impact of Long Hydraulic Pipeline upon Performance of Hydraulic Control System
Y.N. Zhao, H.W. Du, Y.M. Li, X. Luo and G. Liu 2148

Study on Pilot's Visual Information
W. Liu, C. Yu, D.M. Zhuang and X.G. Yuan 2152

A Research on the Stiction and Detection in the Control Valves
S. Li, C.L. Zhang, J. Li and J. Liu 2156

Path Planning of a 6DOF Humanoid Manipulator
Y.J. Cui 2163

Design of LabView-Based System of Noise Measurement on Gear Box
X.B. Wei, W. Zheng and R. Lin 2167

Investigation of Motor-Generator Integration System for Electric Vehicle Based on Induction Motor and Fuzzy Control
Z.L. Xing, Y. Liu and Y.F. Liu 2172

E-Business Data Integration Scheme Based on XML Technology
Y.P. Hu 2181

Design of Control System of DC Motor Based on Fusion FPGA
D.D. Zhu and H.W. Li 2185

Research on Vibration Isolating with Magneto-Rheological Damper
Z.W. Xia, X.M. Qi and H.B. Wen 2190

Feedforward and Feedback Control of an Inverted Pendulum
Y.F. Wu, Z. Ming and K.C. Fu 2194

Modeling and Simulation for Parachute Inflation Process Based on Finite Element Method
G. Xu, R.B. Geng and N.B. Zhang 2198

Simulation Analysis of Wheeled Vehicle Skid-Steer
Y.F. Wang and X.R. Dong 2203

The Research and Application of the Internal Combustion Engine Power Plant--Rotary UPS Monitoring Systems
X.J. Sun, X.G. Wang and C.N. Wang 2207

A New Strengthening-Polishing Bearings Equipment Based on the Anti-Fatigue Manufacturing Technology
H. Wang, X.C. Liu, C.J. Liu and W.X. Li 2211

Research on High Dynamic Target Electro-Optical Tracking Based Improved Robust Disturbance Observer
X. Yu, Z.H. Liu and Y. Ren 2215

Flexible Dynamic Analysis of Hydraulic Excavator's Boom
D.X. Sun and X.H. Liu 2220

A Wireless Human Pulse Wave Detecting System Based on LabView
X.Y. Cao and Y. Lei 2224

Object Detection Based on the Frame Difference and Cellular Automata
X.L. Feng and X.J. Xu 2229

Optimizing Design of Real-Time Spatial Moving Target Tracking System
D.S. Liang, Z.H. Liu and W. Liu 2234

Memory Depth of Processing Theory in Network Analysis of Design Tab
W. Liu, C. Yu, D.M. Zhuang, X.G. Yuan and D.L. Huang 2238

Dynamic Analysis of a New Type of Hydro-Viscous Drive Winch
Y.F. Hou, D.M. Wang, Q.R. Meng and B. Du 2243

Performance Characteristics Analysis of Supercritical Boiler Water Wall
R. Cao 2248

A Study of the Automatic Formation Line of Li-Ion Power Batteries
L. Han, F. Xiao, X.P. Chu, J.F. Xue, Q.B. Chen, M. Lei and L.X. Zhang 2252

Design of Control Circuit for Needle-Selected Mechanism of Knitting Machines
G.J. Hu, F. Feng and W.Q. Zhao 2257

Investigation on Influence of Launch Depth to the Hydrodynamic Characteristics of the Cylinder out of the Tube
H.J. Liu, X.Z. Peng, C. Wang and B.L. Wang 2261

Secondary Source Modeling Based on Analogue Circuits of Electrical Mechanical and Acoustical Systems
Y.H. Nie and J.S. Cheng 2265

Design of Magnetic Fluid Sealing Device and Computer Simulation in Sintering Machine
M.H. Bai, Q.R. Liu and H.L. Zhou 2270

A Micro Wireless Attitude Determination System Based on the Extended Kalman Filter
S.P. Liu, Z.Y. Zhou, Q. Wang, Q. Guo and Z.G. Ma 2274

Underactuated in-Pipe Robot for Moving inside Underground Oil Pipelines
X.D. Jiang, S.Y. Jiang, Z.Y. Hu and Y.H. Gao 2278

The Motion Analysis of Traditional Belt Type Sintering Machine
M.H. Bai, L.J. Wang, S.B. Ren, L.B. An and J.N. Gao 2284

The Design of Control System for Auto-Packing Pantyhose Machine
P.X. Li, Z.J. Sun, H.L. Zhu and Y.Z. Sun 2288

Study on High Accuracy Constant Tension Controller of Winding Machine
Z.H. Peng and G. Ma 2292

Research on Network Architecture of CSTA Based on P2P
W.K. Wang, Q. Huang and X.H. Zhang 2296

Influence of Vibration on Automotive Interior Decorations Volatile Formaldehyde
J. Yu and F. Jiang 2300

Buffer and Vibration Optimization of Missile Data Recorder Structure
J. Zhang, H.G. Jia, L. Ding and W.H. Dong 2304

Design of Synthetic Diagnostic and Health Management of Launch Vehicle
W.M. Lv, H.Q. Song, J.C. Feng and S.W. Jiang 2308

The Method and Application of Time Series Prediction Based Wavelet Neural Network
Y.M. Pan, Q.Z. Zhang and P.Q. Xue 2312

Design Procedure of Robust QFT-Based Controller for Continuous-Flow Grain Dryer Plant
H. Mansor, S.B. Mohd Noor, R.K. Raja Ahmad and F.S. Taip 2318

The Extracting System Design of Small Dim Targets in Complex Background
D.S. Liang, Z.H. Liu and W. Liu 2324

Based on Rotating Machinery Data Acquisition System Anti-Aliasing Filter Design and Application
H.Y. Sun, C.L. Zhang and S. Li 2328

Study on Integrated Setup System with Computer Vision for Breast Cancer Radiotherapy
L. Tong, C.H. Zhu and Z.Q. He 2333

ONAMA: A Quantum Leap in High Performance Computing
G. Misra, S. Agrawal, N. Kurkure, S. Das, K. Mathur and S. Pawar 2337

Optimization of Comprehensive Assessment Parameters System for Equipment Maintenance Quality Based on Principal Component Analysis
Q.X. Geng, S.F. Wang, H.M. Zhang, J. Zhang and F.Q. Meng 2343

Developing Mechanical-Electrical-Hydraulic Integrated Equipment Based on Application Ability Training
W.M. Zhao and X.X. Zhu 2348

Synthesizing Different Preference Information by Fuzzy Programming Method
J. Yang 2352

Evaluation and Analysis on Benefit of College Resources Input of China
X.H. Zhu 2358

System Evaluation of Construction Operations in View of Ergonomics
Y.W. Dong, B.F. Zhang and W.H. Liu 2362

Simulation of the Main Engine Remote Control System for Marine Education and Training
Z. Chu and M. Sun 2367

An Approach to Reconstructing 3D Solid Model and Generating Orthographic Views from the Two 2D Views Using AutoCAD
H.S. Zhao and Y.X. Wu 2372

Research of SQL Server Automatic Marking Based on Logical Formal
Y.F. Chen 2376

Identifying Variables for Measuring Organizational Performance Relative to QMS Implementation in Chinese Defense Industry
Z. Peng, J. Li and J. Zhang 2380

Study on Pricing Method of Residential Development Project Based on Housing Mass Customization
J. Xu 2386

Discussion of Quality Management of Large Complex Equipment under the Cross State of Development and Production
X.C. Zhang, J.C. Wang, X.N. Sun and Y.J. Wang 2390

A Study on the Phenomenological Constitutive Models of AZ80 and AZ31 Magnesium Alloy Forming at Elevated Temperatures
Y. Xue, Z.M. Zhang, Y.J. Wu and G. Lu 2394

Reason Analysis of Runway Incursions Based on Grey Theory
Z.Q. Ju 2400

The Application of Mashup in PKM
L. Luo and T. Gao 2405

Entropy-ANP-SSD Evaluation Model and Empirical Study about the Low-Carbon Development Level of Lead and Zinc Enterprises
H.B. Bu 2409

Study on Situation Awareness in Aviation Ergonomics
W. Liu, D.M. Mu, D.M. Zhuang and X.G. Yuan 2414

An Application and Analysis for Regulation of Hydraulic System
W. Sun, C.Y. Fan and Z.P. Sun 2419

A Fuzzy Model of Scenario Planning Based on the Credibility Theory and Fuzzy Programming
Z.G. Shi 2423

The Design of a New Network Cabling Experimental Instrument Based on Embedded System
W. Wen, D.H. He, H. Feng and P. Gu 2427

The Study of Forewarning Management Control System on Coal Mine
D.H. Hu 2432

The Applications of Direct Fluorinated HDPE in Oil & Gas Storage and Transportation
H.W. Yang, S.L. Yang, C. Wu, Y.W. Fei and X.Y. Wei 2436

Performance Evaluation of Telecom Equipment Maintenance Outsourcers Based on Statistical Distance with Weight
Y.J. Zhou and N.F. Cui 2440

Research on Problems and Basal Theory of Engineering Equipment's Maintainability Test
M. Zhang, H.J. Su, L. Yuan and J. Tao 2446

Research on Entrepreneur Spirit Cultivation and Construction
D.Y. Xu 2450