ISBN(softcover): 978-3-03785-282-8 ISBN(eBook): 978-3-03813-715-3

Table of Contents

Preface and Organizing Committee

Chapter 1: Materials Science and Engineering

A Study on Processing Map and Flow Stress Model of AZ80 Magnesium Alloy Forming at Elevated Temperature
Y. Xue, Z.M. Zhang and Y.J. Wu 3

A Study on Vacuum Diffusion Bonding of as-Extruded AZ31 Magnesium Alloy
F. Lin, T.P. Li, L.L. Sun and Q.S. Meng 10

Effect of Surface Energy on the Size-Dependent Yield Criterion of Nanoporous Materials under Complex Stress States
L.J. Zhu, W.Z. Cai and S.T. Tu 15

An Analytic Solution of Length-Limited Thin-Walled Cylindrical Shells under Non-Axisymmetric Uniform Line Load and Concentrated Load
J.B. Zhao, X.Z. Bai and X.Y. Si 20

Analysis of Traction Behavior of the High-Speed Lubricating Grease 7007 by the Correctional T-J Model
B.Y. Yang, G.Q. Liu and B. Su 27

Analysis on the Detection Capacitance of Comb Micro-Machined Gyroscope
H.P. Liu, S.Q. Gao and L. Jin 33

Bond Strength Analysis among Layers of Grinding Wheel
W. Peng, C.Y. Yao and X.F. Xu 38

Buckling Behavior of Clamped Laminated Composite Cylindrical Shells under External Pressure Using Finite Element Method
B. Abdi, H. Mozafari, A. Amran and R. Kohandel 43

Buckling Behavior of Optimal Laminated Composite Cylindrical Shells Subjected to Axial Compression and External Pressure
B. Abdi, H. Mozafari, A. Amran, R. Kohandel and A. Alibeigloo 48

An Ontology-Based Data Mining Framework in Traffic Domain
R.G. Wang, W.D. Dai and J.R. Cheng 55

Characterization of Cr-α-Al_2O_3 Composite Coatings Electrodeposited from Cr() Plating Bath
X. Sun, X.Z. He, Y.X. Wang and Z.H. Fu 60

Co-Deposition of Al–Ni Alloy in $NiCl_2$-$AlCl_3$-1-ethyl-3-methylimidazolium Bromide ([EMIM]Br) Ionic Liquid
L.P. Zhang, X.J. Yu, Z.W. Ge, Y.H. Dong and D.G. Li 65

Coloration of Stainless Steel Utilizing Fiber Laser Oxidation
C.L. Chang, J.W. Wu and C.Y. Lee 70

Correlation between Zirconium Addition and Compressive Properties of AZ31 Mg Alloy Foams
B.Y. Hur and R. Zhao 75

Effect of Catalytic Time Variation on Silica Antireflective Coatings
R.M. Jin, Z.D. Cai, L.M. Cang, T. Yan and X.J. Han 80

Design of Test Parameters during Assessment of Material Safety Fitness for Purpose in High Temperature High Pressure Sour Gas Field
Z. Zhi, T.h. Shi and J.H. Fu 85

Singular Value Decomposition Control of Electro-Hydraulically Driven Parallel Robot
C.F. Yang, Q.T. Huang and J.W. Han 90

Effect of Bi_2O_3 Addition on the Physical and Electrical Properties of Lead-Free $(Na_{0.5}K_{0.5})NbO_3$-$(Na_{0.5}Bi_{0.5})$ TiO_3 Ceramics
C.H. Wang 95

Effect of Black Plate on Growth Action and Corrosion Resistance of Sn-Fe Alloy Film
J.Z. Li, Y.W. Tian, Y. Li and Y.C. Wang 100

Effect of Powder Size and Volume Fraction of WC on the Microstructure of Laser Cladding WC-NiCrBSi Composite Coatings
Y.Y. Wang, Y.F. Gong, T.F. Sun, P.F. Ni, Z. Liu, G.H. Gao and C.J. Li 105

The Motion-Overlap Scheme for Reducing the Time between Continuous Scans of Wafer Stage for Step-and-Scan Lithography
H.H. Pan, L. Chen and Y.F. Zhou 110

Effective Thermal Expansion Coefficient of Eutectic Composite Ceramic Containing Lamellae
X.Q. Liu, Y.W. Fu, T. Sun and B.F. Li 116

Effects of Deformation Temperature on Dynamic Recrystallization of 7A04-T6 Alloy
J.M. Yu, Z.M. Zhang, Q. Wang and B.H. Zhang 121

Effects of Nano-$CaCO_3$ on the Compressive Strength and Microstructure of High Strength Concrete in Different Curing Temperature
Q.L. Xu, T. Meng and M.Z. Huang 126

Effects of Rare Earth on Porous Metal Bonded Diamond Composites with Different Porosity
C.J. Liao, H. Xu and Z.P. Hai 132

Evolution of Micro-Orientations on Non-Oriented Silicon Steels during the Annealing Process Based on the CSP
Z.L. Jin, W. Li and L.Z. Guo 137

Experimental Investigation on the Heat Transfer Properties of Micro-Channel Flat Plate Heat Pipe
D.Y. Liu and X.H. Ding 142

Experimental Investigation on the Scribing of Sapphire Using UV Laser
M.L. Wang, Y. Wang, L. Qin and J. Guan 147

Experimental Study of the Skewed-Roller Slipping Clutch under Grease Lubrication
M. Feng, J.W. Lian and Y. Li 152

Experimental Study on a Micro-Scale Shaft Grinding Tool
J. Cheng, Y.D. Gong, Y.M. Liu and J.Y. Yang 157

Experimental Study on Clear Water Scour around Bridge Piers
Y.M. Hong, M.L. Chang, H.C. Lin, Y.C. Kan and C.C. Lin 162

Experimental Study on Gas Quenching Steel Slag by Fractal Theory
H.W. Xing, L.M. Jiang, G.L. Li, Y.Z. Zhang, J. Li and Y. Long 167

Synthesis and Standard Molar Formation Enthalpy of Plate Shape $NaZnPO_4 \cdot H_2O$
S.M. Ma, S.F. Wu, Z.W. Huang, A.P. Liao and A.Q. Yuan 175

Glass Fibers as Engineering Materials
Z. Chen, Z.F. Chen, T.Z. Xu, J.L. Qiu and J.M. Zhou 181

High Aluminium Cast Iron AL22D – Advanced Multifunctional Material
E.B. Ten and A.S. Drokin 186

Hysteretic Nonlinear Model of Magnetic Shape Memory Alloy
Z.W. Zhu, L. Gao and J. Xu 191

Application of *In Situ* Chemical Oxidation for the Remediation of TPH-Contaminated Soils
B.M. Yang, C.M. Kao, C.W. Chen, W.P. Sung and R.Y. Surampalli 196

Lamb Wave Ultrasonic Tomography for Edge Detecting of Material Loss in Isotropic Media
H.H. Xu, C.G. Xu and L.J. Wang 201

Load Analysis of 2.5MW Offshore Wind Turbine Tower
C.Y. Ji, L.B. Zhu and Z.S. Zhu 206

Analysis of Nonlinear Model of Rock
Z.J. Wen, G.P. Qin, L.Y. Pan and L.J. Chen 213

Mechanical Properties of Molded Pulp Pallet
H.T. Wang, Y.F. Guo and G.L. Luo 216

Effects of Annealing Condition on Texture and Deep Drawing Properties of Cold-Rolling Low Carbon Sheet Steel Based on CSP
Z.L. Jin, H.P. Ren, L.Z. Guo and S.M. Ma 221

Molecular Dynamics Simulation of the Adsorption Behavior of Amino Acid Corrosion Inhibitor on Cu (001) Surface
W. Dai and Y.Y. Zhang 226

Morphology, Nature and Formation Mechanism of Packet Plate Martensite in Medium and High Carbon Steels
Y.X. Ma, Y.J. Liu, L. Wang, D.C. Zeng and Y.H. Tan 231

Multifactor Stress Life Model of Polyimide Film Used in Inverter-Fed Traction Motors
Y. Cui, G.N. Wu, Y. Luo and K.J. Cao 239

Multi-Mode Extension Control of Pump-Control Electro-Hydraulic Servo System Based on PLC
H.B. Zheng, Y.S. Sun, M. Li and C.B. Xian 244

Numerical Simulation of Cold Press Forging Forming for Stepped Hole of Thin Sheet Metal
K.S. Wang, J.L. Liu and X.W. Chen 249

Numerical Simulation of Mold Filling and Solidification Process of a Disc Aluminum Alloy in Pressure Die Casting
B.Y. Lou, F.L. Liu and K.C. Luo 254

Fatigue Life Analysis of the Bolt
Z.C. Chen and J.M. Zhang 259

Optimization for the Specification of a New Type of Optical Disk Concerning about its Tracking Signal
X.M. Cheng, D.X. Wang, Q. Hao, X.N. Hou and J.S. Ma 263

Application Research of Kalman Filter and SVM Applied to Condition Monitoring and Fault Diagnosis
K. Li, Y.L. Zhang and Z.X. Li 268

Study on the Construction of Practice Teaching Base for Petroleum Engineering
X.A. Wang, W.H. Li, Z.K. Wang and J.C. Liu 273

Optimization of Ultrasonic Plastic Welding Horns on Amplitude Uniformity
J.C. Hung, Y.P. Tsai and C.H. Hung 278

Orthogonal Cutting of Biological Soft Tissue with Single Cutting Edge
L.Y. Gao, Q.H. Zhang and M. Liu 283

Oxidation Kinetics of Self-Lubricating Ti-48%Al-2%Nb-2%Cr-x%CaF_2 Composites
L.Y. Yang, S.R. Wang, Y.Z. Wang, R. Ma and Y. Wang 288

Preparation and Performance of Bio-Adhesive Based on Acorn Starch Graft Glycidyl Methacrylate
S.F. Zhang, L.L. Zhou, Q. Gao, X.X. Guo, L.O. Chen, C.R. Han and J.Z. Li 293

Present Situations and Development Trends of Main Technologies of Lubricant Additives
C. Wu, S.L. Yang, H.W. Yang, T. Li and Z.R. Bi 297

Principle and Applications of Grinding Wheel Regenerator
Q.Z. Sun, J. Jing, P.Q. Zhang, Z.K. Zhao and J. Wang 301

Propagation of Lamb Waves in one Dimensional Nesting Fibonacci Superlattices Thin Plates
J. Gao, X.F. Wu and X.G. Zhang 306

Quantitative Control of C_2S Crystal Transformation
M. Zhao 311

Quasi-Static Failure Analysis of Composite Sandwich Panels
I.Y. Hsu 316

Reaction Mechanism of Dye with Atomic Hydrogen on Au Cathode Plated Nanostructured Pd Film
L.H. Huang, G.P. Sun, H.Y. Ma and T. Yang 320

Foundry Technique Designing of the Large Scale Thin-Section Casting
B.F. He 325

Principle of Error Analysis for Rapid Prototyping Technology
A.H. Peng 330

Research on Preparation and Properties of Al-Mn Alloy Coating in NaCl-KCl-$AlCl_3$-$NdCl_3$ Molten Salts
X.J. Yu, L.P. Zhang, Z.W. Ge, Y.H. Dong, D.G. Li and H.B. Liang 335

Thermal Effect on Buckling of General Dome Ends Using Finite Element Method
B. Abdi, H. Mozafari, A. Amran and R. Kohandel 340

Research on Sealing Equipment for Ceramic Metal Halide Arc Tubes
R.K. He, H.O. Wang, G. Chen and J. Zhang 346

Research on Tensile Strength of Wood Single Lap Gluing Joint
W. Lu, Y.C. Hu, J. Shen, J. Yao and J. Li 351

Research on Tribological Property of Micro-Arc Oxidation Film on AZ91D Magnesium Alloy
B.Y. Lou, J. Zhao, Z.H. Zheng and P. Liu 355

Research on Vibration Properties of Honeycomb Paperboard with Double Cross-Core
B.Z. Wang, Z.D. Sun and L.J. Cao 359

Simulation Study on Influence of Forming Process Parameters on Backward Extrusion Height of 6061 Aluminum-Alloy Wheel
L. Li and F. Wang 363

Solute Redistribution Resulting in Growth of Primary Silicon in Cast Hypoeutectic Al-Si Alloys
S.R. Wang, Y.Z. Wang, L.Y. Yang, R. Ma and Y. Wang 367

Spraying Research on the Resistive Film of Angular Displacement Sensor Made from Conductive Plastic
Z.G. Yu and B.Q. Zhou 372

Stability and Online Monitoring of Cutting Chatter: A Review
Y.L. Zhang and Z.Y. Li 377

Studies of Synchronous Rotor Gear Monitoring Technique Based on Ant Colony Neural Network
Y.J. Chen and Q.H. Zhao 382

Studies on the Relationship between Morphology and Water Flux of PVDF/PU Blend Membranes
G.L. Huan, J.L. Liu, Q.Y. Du and X.Y. Hu 387

Study for Dynamic Property of the Inking System of Offset Press Based on Matlab
Q.M. Wu, J.M. Wu and R. Wang 392

Study of Dynamic Impact Behaviors and Ballistic Properties of Ceramic/UHMWPE Composite Armor
Y.N. Guo, Q. Sun and L. Wu 397

Study of Flexible Blank-Drawer Forming for Sheet Metal
Y.T. Li, Q.G. Han, M.Z. Li and P.X. Feng 401

Study of Material's Creep Relaxation Capability
H.J. Chen and Y.H. Wu 406

Study on Elements Distribution of Al-Base Alloy's Weld by Laser Welding with Filler Material
A.G. Huang, S.H. Hu, Z.Y. Li and Y.Y. Wang 411

Study on Optimization Proportioning Experiment and its Hydration Mechanism of Composite Cementing Material
J.X. Liu, Z.D. Yin and W.B. Sun 418

Study on Paraffin Precipitation for Dalaoba Condensate Gas Reservoir
X.A. Wang, F. Mao, Q.M. Zhang and J.L. He 423

Study on Mechanics Model and Stress Evolution Law of Filling Stope
J.X. Liu, W.J. Guo, W.B. Sun and X.G. Zhang 428

Study on Rapid Casting for Complex Parts
F. Zeng, S. Yao, Z.F. Jiao, S.M. Zhao and T. Yang 433

Study on SBO in the Real-Time Data Acquisition of Iron and Steel Enterprise
S.P. Yu, K.B. Zhang and R. Luo 438

Study on Separation and Purification of the Transglutaminase
Y.G. Shi, L. Qian, N. Zhang, C.R. Han, Y. Liu, Y.F. Zhang and Y.Q. Ma 443

Study on the Band Gap and its Influencing Factors for one Dimensional Phononic Crystal
Y.Y. He and X.X. Jin 448

Synthesis and Photocatalytic Property of TiO_2 Particles Preparated in the Solvothermal Method
L.Q. Wang, X.L. Zhao, X.N. Yang, Y. Han, R.J. Zhang and Y.L. Yang 453

Texture Evolution during the Cold Rolled Low Carbon Steel Sheet under CSP Technology
Z.L. Jin, H.P. Ren and R. Wang 458

Texturing of Multi-Crystalline Silicon Wafer by Ultrasonic Standing Wave
Y. Chao and L.Q. Wu 463

The Antivibration of Deeper Solt Milling System Experiment Research
Z.J. Gou 468

The Damage Finite Element Analysis of Eutectic Composite Ceramic Containing Lamellae
S.Q. Zhang, X.H. Ni, X.Q. Liu and Y.C. Ma 473

The Discussion on Systematic Design of Modern Ceramic Products
M. Wang 478

The Dynamic Response of Q345 Steel at High Strain Rates and High Temperature
P.F. Hao, X.B. Hou, J.Z. Gao, Y. Liu and X.F. Shu 483

The Effect of Discrete Grippers on Sheet Metal Flexible-Gripper Stretch Forming
X. Chen, M.Z. Li, H.H. Zhang and H.L. Peng 488

Effect of Palm Kernel Meal as Melamine Urea Formaldehyde Adhesive Extender for Plywood Application: Using a Fourier Transform Infrared Spectroscopy (FTIR) Study
H.R. Ong, R. Prasad, M.M. Rahman Khan and M.N.K. Chowdhury 493

Analysis of the Thermal-Structure Coupling of the Band Brake
F.C. Hu, H.L. Li and B.S. Xie 499

The Process DNA Model of Significant Model Project
B. Huai, H.C. Yang and N. Wan 504

The Quality Evaluation of *Monascus* Pigments and Red Yeast Rice of China
C.L. Wang, J. Wang, M.H. Chen, Y.R. Wang and F.J. Li 509

The Research on the Improved CMG Tool for Al_2O_3 Ceramic
H.Z. Dai, Z.J. Jin, S. Gao, Z.C. Tao and F.W. Huo 514

The Study on Heat Transfer and Solidification of Uniform Droplet Formed from Jet Breakup
S.D. Gao, Y. Wang, H.B. Wang and Y. Wu 519

The Ultimate Stress of Small Grain Shellproof Ceramic Composite
Q.X. Liu and J.F. Yang 524

Thermal Error Modeling of Machine Tools Based on M-RAN
J. Han, L.P. Wang, N.B. Cheng and X. Wang 529

Three-Body Abrasive Wear Behavior of Basalt and Glass Fabric Reinforced Epoxy Composites
C.A. Chairman and S.P. Kumaresh Babu 534

Three-Dimensional Effective Elastic Moduli for Multi-Directional Hybrid Filament-Wound Cylindrical Shell with Lining
W.J. Ruan, Q.P. Yang, G.L. Xu and H. Wang 539

Topology Optimization for Nonlinear Kirchhoff Plate Using RKPM
J.P. Zhang, Y.K. Jiang, S.G. Gong and X. Liu 545

Transverse Stress for the Elastic-Plastic Plane Strain Problems
C.L. Tian and S.L. Wang 550

Using Enhanced Landfarming System to Remediate Diesel Oil-Contaminated Soils
Y.C. Kuo, S.Y. Wang, C.M. Kao, C.W. Chen and W.P. Sung 554

Research of Fatigue Fracture on Fillet Welded Joints Made of FV520B
J.L. Fan, X.L. Guo, Y.G. Zhao, C.W. Wu and D.W. Deng 559

Wire Electro Discharge Machining of Al/SiC Metal Matrix Composite
B.J. Ma, Y.Q. Zhu and X.L. Jin 564

Characterization and Corrosion Behavior of Biodegradable Mg-Ca and Mg-Ca-Zn Implant Alloys
H.R. Bakhsheshi Rad, M.H. Idris, M.R.A. Kadir, S. Farahany, A. Fereidouni and M.Y. Yahya 568

Research on the Oxidation Degumming of Ramie with Alkaline Pectinase and Sodium Percarbonate
G.L. Liu, Q.L. Cui, R.Y. Ding, Z.F. Li, X.M. Zhong and C.W. Yu 573

Application of Computational Fluid Dynamic for Hydraulic Design
L.Y. Wang and D.H. Wei 578

Research on Microstructure of Long Term Marine Immerged Concrete
S.R. Feng, Z.H. Li and C. Su 583

Synthesis and Recycle of ZnO Particles for Degradation of Methyl Orange Aqueous Solution
L.Q. Wang, X.N. Yang, X.L. Zhao, Y. Han, R.J. Zhang and Y.L. Yang 587

Forming and Transforming of by-Product Phases in Reactive Flame Sprayed Al_2O_3-Based Coatings
H.W. Liu, J.J. Wang, X.F. Sun and J. Qiu 592

The Energy Saving Effect of Natural Ventilation for Residential Building in Guangzhou
C.C. Qin and L.H. Zhao 597

The Investigation of People Using Air Movement Actively in Summer in Hot-Humid Area of China
Q.N. Liu, Y.F. Zhang and Q.L. Meng 602

Chapter 2: Advanced Design Science

3D Face Recognition Based on Local Curvature Feature Matching
D.Q. Sheng, G.Y. Chen, K. Saruta and Y. Terata 609

A Design of Face Detection and Facial Expression Recognition Techniques Based on Boosting Schema
C.Y. Kao and C.S. Fahn 617

A Design Principle of Toothbrush Handle Based on Ergonomic Theory
Y.F. Zhu 622

A Method to Solving a Kind of Nonlinear Cyber-Security Equations
W. Zhou, Q.M. Li and H. Zhang 627

A Modular Design Method Based on Control-Model
H. Qiao, H.C. Yang, R. Mo and D.L. Zhang 632

A More Effective Technique of Design Synthesis for MEMS with Expected Performance
S.X. Chen 637

A New Type of Resonator Designed for Plasma Chemical Vapor Deposition
Z.Y. Li and H.S. Li 642

A Novel Intelligent Modeling Method for Wood Drying Process
D.Y. Zhang, C.Y. Zhang, L.K. Zhu and Z.D. Diao 647

A Novel Low Temperature Method to Make a Wireless Accelerometer
J.M. Lin, P.K. Chang, C.H. Lin and Q.K. Zhang 652

A Programming Method of Vehicle Dispatch for Service Centre
H.S. Jia and F. Cheng 662

A Simple Frost Model for Calculation of the Frost Thickness over Ground Aircraft Surfaces
L.W. Wang and D.D. Xu 667

A Skin Detection Algorithm Based on Bayes Decision in the YCbCr Color Space
X.Y. Cao and H.F. Liu 672

A Study on the Key Technology of a Remote Water Quality Monitoring System Based on ZigBee
J. Wang 677

An Analysis of Collinear Periodic Crack-Tip Stress Field of an Infinite Plate Subjected to Concentrated Force
X.X. Zhang, C. Li, X.C. Cui and W.B. Zhao 682

An Exploration on Modeling Design Method of Sprinklers Based on Rhinoceros Platform
Y.F. Zhu 687

New Progress Concerning Research of Product Design Theory and Methods
B.C. Wen, X.P. Li and Z.Y. Wang 692

An Image Matching Algorithm Based on SIFT and Invariability of Feature Points Set
X.T. Wang, Y. Xu, F. Gao and J.Y. Bai 701

An Improved BP Algorithm Based on Steepness Factor and Adaptive Learning Rate Adjustment Factor
X.H. Zhang, F.J. Ren and Y.C. Jiang 705

An Improved Fractional Differential Algorithm and Noise Immunity Analysis
Y.R. Liu and M.L. Hou 710

Passive Energy-Saving Design in Hot and Humidity Area: A Case Study of Multi-Functional Stadium of Guangdong College of Pharmacy
L. Zhang, Q.L. Meng and J. Li 715

Anomaly Detection in Hyperspectral Imagery Based on Spectral Gradient and LLE
L.L. Wang, Z.Y. Li and J.X. Sun 720

Research on Wind Environment around Residential Buildings with Different Planning and Design Factors
Q. Li, Q.L. Meng and L.H. Zhao 725

Application Study of Conceptual Design in the Product Design
R.B. Hu, J.Y. Li, L.Y. Chen, R.P. Xu, K.Q. Wang and X.R. Mao 730

Characterization Model for IC Reference Material
T. Zhang and J. Shi 735

Construction and Practice for Practical Teaching Base on Campus for Petroleum Engineering
W.H. Li, X.A. Wang, Z.K. Wang and J.C. Liu 740

Control Simulation in Building Energy Management Systems by Linear Matrix Inequality
Y.B. Yang, M.D. Wu and Y.C. Chang 745

Covariance Intersection Fusion Kalman Estimators
Y. Gao and Z.L. Deng 750

Design and CMOS Implementation of a Low Power System-on-Chip Integrated Circuit
H.L. Gu, W.W. Shan, Y.F. Yu and Y.C. Lu 755

Design and Develop a CSCL Tool Based on Silverlight
J.F. Ren and L.N. Guo 760

Design and Implementation of a Detection Device for Flight Control System in Unmanned Aerial Vehicle
H.J. Zhang, L.W. Jun and L.B. Tong 764

Design and Implementation of the Working Order for a PLC Controlled Terminal Cutting Machine
S.M. Feng 768

Design and Research of Air-Compressor Control System Based on Fuzzy PID Control
G.F. Li, S.Q. Xu, G.Z. Jiang, P. Gao, J.Y. Kong and L.X. Xie 773

Design and Research of Sand Scraping Mechanism of a New Railway Sand Removal Vehicle
Z.X. Cui, S.J. Guo, J.G. Qin, T. Yang and S.Q. Hou 778

Design of Automobile Airbag Multi-Point Ignition System Based on Piezoelectric Converter
H.B. Xiao, K.K. Yen, C.Y. Bai and S.X. Xing 784

Design of NCAP Based on IEEE1451 Standard
X.Y. Chen and T. Pang 789

Design of on-Line Detection System for Vehicle Rear Axle Based on Vibration Theory
Y.F. Zhou, J. Lian, X.H. Sun and L.H. Li 795

Influence of Working Lining Parameters on Stress Field of Ladle Composite Construction Body
G.F. Li, S.Q. Xu, G.Z. Jiang, Z.H. Wu, J.Y. Kong and L.X. Xie 800

Design of Thin Films Removal on Solar-Cells Silicon-Wafers Surface
P.S. Pa 805

Design of Three Joints Underactuated Manipulator with Nonholonomic Constraint
Y.G. Tan and L. Li 810

EEMD-Based Speaker Emotional Analysis for Speech Signal
Y.Q. Qin and X.Y. Zhang 815

Enhance ASM Based on DCT-SVM for Facial Feature Points Localization
Y.J. Fu, J.W. Li and R.X. Xiang 820

Enterprise Resources Planning Sand Table Training for Engineering Students
X.T. Han and L. Niu 825

Experimental Study on Laser Assisted Milling of Sintered Silicon Nitride Ceramics
X.W. Wang, H.Z. Zhang, X.F. Wu, Y. Wang and L.J. Yan 830

FBS-Based Domain Knowledge Base and its Application
H. Zhang, W.Q. Li and Y. Li 835

Finite Element Analysis on Fatigue Failure Prediction of a Rear Axle Housing of Vehicle Based on Cosmos
S.K. Lu, J.H. Su, S.D. Liao, J.Q. Su, B. Wang, L. Yu, Y.L. Jiang and S.H. Wen 843

Flow Predictable Optimal Scheduling Control of Sewage Discharge System
L.L. Chen, Y.Y. Xia and X.H. Wang 848

From Seeing to Painting - An Analysis on the Characteristics of Pen Drawing Education at Chinese Architectural Universities
N. Song 853

GPU Based Rendering of Natural Atmospheric Phenomena
Z. Gong, L. Diago and I. Hagiwara 857

Ground Motion of Two Scalene Triangle Hills and a Semi-Cylindrical Canyon under Incident SH-Waves
Z.L. Yang and H.N. Xu 862

Hamming Distance Model Based Power Analysis for Cryptographic Algorithms
J. Li, W.W. Shan and C.X. Tian 867

Heart Sound Signal Generator Based on LabVIEW
Y.W. Tao, X.F. Cheng, S.Y. He, Y.P. Ge and Y.H. Huang 872

High-Resolution Correction of Arbitrary Wavefront Aberration Using Liquid Crystal Spatial Light Modulator
H.X. Zhang and X.X. Xu 877

Research of Virtual Model Making System for Computer Aided Industrial Design
B. Qi, B. Zhao, X. Sun and X.M. Sun 882

Image Defogging Based on Fog Veil Subtraction
B. Xie, F. Guo and Z.X. Cai 887

Inelastic Displacement Spectra for Displacement-Based Seismic Design of High-Speed Railway Bridge Pier
L.K. Chen and L.Z. Jiang 892

New Type of Fireproof Structure Experimental Research
W.S. Liu, Z.Q. Yang, C.H. Zhong and H.F. Mo 897

Innovative Design of Home Appliances Based on Function Integration
M. Yang, X. Zhang, Z.Y. Song and N. Ding 902

Innovative Methods on Product Appealing Design
N. Qi and X. Zhang 907

Instructional System Design in Employee Training in the Industrial Area: Take Research on the"Blue-Collar Talent" Project in Xiasha Economic and Technological Development Zone of Hangzhou as the Example
X.Y. Yan 912

Interfacial Assembly and Morphological Investigation of Polythiophene Derivative with Conjugated Side Chain at Air/Water Interface
T.F. Jiao and J.X. Zhou 918

IPv4 and IPv6 Coexist in Unified Threat Management
K.H. Huang, C.F. Wang and C.C. Wang 923

Key Technologies of Development of Intelligent Overall Layout Design System for Bus Body
J.X. Chen, J.X. Chen and J. Zhang 928

Logistics Professional Training under Mass Customization
G.X. Wei and Y.H. Qin 933

MCMC Sampling Statistical Method to Solve the Optimization
T.Z. Rong and Z. Xiao 937

Mechanics Analysis and Experiments of the Elastic Linkage for a Novel Asymmetrical Pitch System
J. Luo, S.R. Xie and H.Y. Li 942

Mechanism Design for a Dual Cycloid Reducer
S.E. An, S.H. Park, H.D. Yang, J.H. Shin and S.M. Kwon 949

Methods to Set Threshold Based on MATLAB
X. Wang 954

Model Creation and Parameter Identification of Gun-Shoulder System
J.D. Bao and C.M. Wang 960

Multi-Objective Design of Process Parameter Based on Game Theory
Y. Li, H.P. Wang and F.Y. Wang 964

Multi-Objective Optimal Design of Frame Structures with Group Search Optimizer
F. Liu, L.J. Li and B. Yuan 968

Multi-Texture Mapping on Terrain by the Constraints Based on Random Noise
Z.J. Yu, X. Pan and W. Tian 976

My Viewpoints on the Construction of China's Petroleum Enterprise Culture
Y. Ma and Y.M. Fan 981

Necessity and Conditions of Logistics Experimental Training
Y.H. Qin and G.X. Wei 985

New Scheme for Vibration Test Applying 3-Axis Acceleration Sensors Array
W. Wang, J.C. Jiao, L.W. Tang and T.Q. Yang 989

Research on Dust Cast Using Vibration Screen Technology
X.W. Wang, L. Qin, Y. Wang and L.J. Yang 994

Node Design of Alarming System for Coal Gas Based on AT89C55WD and CAN Bus
Y.J. Han and Z.Y. Chen 999

Optical Design of LED Street Lights
Y.C. Xu, W.Z. Zhu, H.Y. Lin and F.B. Xiong 1004

Optical Property and Photoisomerization of Some Functional Azobenzene Derivatives with Aromatic Substituted Groups
T.F. Jiao, X.H. Li, Q.R. Li and J.X. Zhou 1009

Optimal Design of the Curvilinear Tapered Coat-Hanger Die
K. Meng and Z.L. Zhao 1014

Optimization Design for Petroleum High Pressure Wellhead Gate Valve Stem Based on MATLAB
S.Z. Zhou and C. Li 1019

Optimization Design on Headstock of Shape High-Speed Vertical Machining Center
C. Zhang and Z.Y. Li 1023

Optimum Design of Laser Encoding and Decoding on Laser Beam-Riding Guidance
Y.X. Qian, F.R. Hu, X.W. Cheng and L.B. Yang 1028

Panoramic Vision Mine Safety Monitoring System Based on WLAN
L.Y. Feng, R. Tu, X. Gao, F.J. Yan and Y.P. Tang 1033

Performance Analysis of Hydrodynamic Finger Seal with Herringbone-Grooved Structure
S. Hua and X.C. Wang 1039

Preparation and Characterization of Flowerlike Nickel Oxide
C.Y. Li, S.X. Liu and L.L. Liu 1044

Preparation of C/Cu Composite Powders by High-Energy Ball Milling
X.Y. Guo, G.J. Ma, S. Xie and R.X. Yi 1049

Rapid Design System Based on Re-Development of Rhino
B. Qi, X. Sun, Y.R. Liu, X.M. Sun and M. Wang 1053

Research on a New Model of MBD-Based Machining Process Design
N. Wan and Y. Yang 1058

Research on Mass Customization Kitchen Cabinet Products Design
S.L. Yu and Z.H. Wu 1063

Research on Risk Assessment of Farmers' Microcredit Based on BP Neural Network
W. Ji and X.F. Zhang 1068

Research on the Method of the Calibration of 3D Linear Scanning Probe System
P. Wan, J.J. Guo, P.L. Wu and Z.G. Fei 1073

Secondary Development Research of Historytree
L. Ge and L. Cai 1080

Statistics Analysis of PCA-Based Sensor Fault Detection
T. Qiu and X. Zhu 1085

Study on the Memory Properties of Fractional Order Differential to Signals
Y.R. Liu and M.L. Hou 1090

Study on Design Method of Magneto-Rheological Fluid Shock Absorber Employing Shear Rate Profiles and Experimental Tests
C.R. Liao, J.H. Hao, D.X. Zhao and K.L. Wang 1095

Strategies for Overseas Capital Operations of Chinese Enterprises
G.J. Yan 1100

Study on the Method of Pavement Quality Test and Device Design
J.S. Si, H. Shi and X.J. Shi 1105

Systematic Functional Design for Sustainable Innovation
C.Y. Zhang, R.H. Tan and G.Z. Cao 1110

The Angle Inspection and Control System Based on PLC and Photoelectric Encoder
X.J. Shi, H. Sun, W. Si and J.Z. Han 1115

The Design and Implementation of Teaching Management System Used in Experiment and Training Base
Y. Shang, H.S. Ding, C.Y. Wang, L.J. Su and Y.C. Zhao 1120

The Experimental Research on 2×2 Game with Unique Mixed Strategy Nash Equilibrium
H. Cheng, M.P. Huang, Y.S. Su and X.Y. Wang 1125

The Simulation Analysis on Side Collision Safety of Electric Buses
Z.P. Wang, S.J. Shi, Y. Wang and X.H. Sun 1130

The Integration and Extension of Digital Medium Design and Traditional Medium Design
F.B. Yu 1138

The Research of Teaching Reform on Innovation Experiment Mode of Civil "Whole Process"
Y.C. Guo, L.J. Li, Z.H. Xie, J. Zhu and J.H. Xie 1143

The Research of the Super High Pressure Cylinder on Design of Wall Size
Y.X. Zhang, L.F. Wang and F. Yao 1147

The Research on Image Segmentation Based on the Minimum Error Probability Bayesian Decision Theory
Z.Y. Chen, G. Luo and Z.G. Fei 1151

The Research on Macro Charged Jet Phenomenon and its Orderly Collection
Y.Y. Liu, Q.W. Li, Q.X. Hu, C.J. Jing and Q.G. Wang 1156

The Visual Sense Creation Strategy of Natatorium Arena which Consideration to Leisure
W.L. Zhang, X.H. Liu and D.M. Liu 1160

Top-Layer Design and Systematic Design of Products
B.C. Wen, X.P. Li, G.Q. Song and Z.Y. Wang 1164

Security Analysis of Concast and Anycast Digital Signature
C.L. Liu and Y.N. Guo 1177

Visual Psychology and View Methods in Modern Calligraphy Education
D.Y. Li and J.Z. Li 1183

An Intelligent Lane Markers Recognition and Localization System Using Improved Hough Transform
K.H.B. Ghazali, R. Xiao and J. Ma 1186

RETRACTED: A Deadlock Prevention Using Adjacency Matrix on Dining Philosophers Problem
J.S. Zhan, Y.N. Guo and C.L. Liu 1191

The Research on Modeling of Design of Product
Y.X. Zhang, X.S. Men and F. Yao 1196

An Explore about Low-Price Pressure Sensor
Z.Q. Wu 1200

Hydraulic Analysis and Optimization in Impeller of Magnetically Levitated Centrifugal Blood Pump
H.M. Zhang and Q. Zhu 1204

Production Improvement of the Bacterial Cellulose by Taguchi Method
J.H. Lin, Y.Y. Lin and Y.H. Chen 1209

Effects of Different Angulation Placement of Mini-Implant in Orthodontic
A. Omar, M.I. Ishak, M.N. Harun, E. Sulaiman and N.H.A. Kasim 1214

Chinese Ecovillage Practice with Cradle to Cradle Design
G.G. Wang, Q.L. Huang and J.Y. Yuan 1220

Chapter 3: Advanced Manufacturing Technology

Based on PLC in the Coin Cell Production Line Fault Diagnosis
W.J. Wang, H.L. Sun and S.Z. Lin 1229

Preparation and Application of High Molecular Weight Coagulant Made from Ilmenite Residues
Q.Q. Guo, X.F. Wang, L. Li, D.G. Li and W.X. Zhu 1234

Adhesive Bond Discrepancies Identification with Hybrid Dynamic Parameter Method
X. Zhao, X.M. Lai, Y.S. Zhang, G.L. Chen and P.C. Wang 1239

Finding Appropriate Lexical Diversity Measurements for Small-Size Corpus
W.H. Choi 1244

Rational Production Proration of Gas Wells in Unconsolidated Sandstone Gas Reservoir
G.Y. Wu and J. Li 1249

Study on Contact Characteristic of Globoidal Continuous Cam with Ball
X.Y. Feng, H. Li, M.J. Yue and Y.Y. Su 1254

Design of Building PV Power Station Data Transmission and Monitoring System Based on ZigBee
Z.M. Yao, X.G. Liu and Y.Z. Wang 1259

Studies on Digital Shearography for Testing of Aircraft Composite Structures and Honeycomb-Based Specimen
H.J. Feng, J. Zhang and X.K. Liu 1264

Fault Location of Transmission Line Based on Discrete Wavelet Transforms
W.X. Tang, M. Zhang, Y. Liu, X.F. Lang and L.K. Zhu 1269

Double-Crossed Step-Stress Accelerated Life Testing for Pneumatic Cylinder
J. Chen, D.Y. Wang, Y.L. Fu and X.Y. Qi 1274

A Robust High Density 7T Subthreshold SRAM Bitcell with Partial Dynamic Threshold Voltage Connection Scheme
J. Yang, M.Q. Qiu, K. Huang and N. Bai 1279

The Research on Autofocus System of Miniature Five-Coordinate Image Measuring Machine
G. Luo, Z.Y. Chen and Z.G. Fei 1286

Research of Reliability on the Switch Phase-Sensitive Circuit of the Equipment
W. Jiang, Y. Liu, P.F. Xu, N. Li and S.Y. Zhao 1291

An Improved Ant Colony Algorithm for the Shortest Path in City's Road Network
J. Bi, J. Zhang and W.L. Xu 1296

Numerical Simulation of the Influence of Deposits on Heat Transfer Process in a Heat Recovery Steam Generator
L. Mu and H.C. Yin 1301

The Product-Mix Optimization with outside Processing Based on Theory of Constraints Oriented Cloud Manufacturing
B. Zheng, Y.C. Gao and Y. Wang 1306

Design Optimization of Cutting Parameters when Drilling Metal Matrix Composites
K. Sriprateep, S. Inthidech, S. Singto and P. Patumchat 1311

Study on Three-Dimension Computer Aided Process Planning System
L. Chen and M.R. Deng 1316

Design on Support Training System of High-Speed Wheel Engineering Equipment Based on Virtual Reality
Y.M. Jiao, Q. Wang and F.T. Su 1321

Finite Element Analysis on Seal Quality of the Tank Engine's Common Rail System
H. Yang, X.B. Wang, W.H. Zhou, Y. Ding and Z.P. Fang 1326

A High Robust SRAM Bitcell under Optimum-Energy Supply Voltage
N. Bai, R.X. Li, Z.L. Gong and S.B. Tan 1332

Multi-Functional Loader Moving Hydraulic System Model Construction and Simulation Based on Power Bond Graphs
X.J. Bian and Y.P. Gong 1338

Using an Intelligent Approach to Recognize a Wafer Bin Map Pattern
S.F. Liu, F.L. Chen and A.S. Chung 1344

Manufacturer-Retailer Collaboration for Production and Marketing Planning
L.T. Chen and T.P. Wu 1347

Analysis of Quality Crisis and Recovery Model of Regional Brand Market
G.J. Tong and W. Wang 1352

Research on Painting Robot Manipulator for Irregular Components in Reproducing Cartridge
Q.Q. Chen, X.T. Wei, J.H. Lin and G. Li 1358

Model Updating of a Steel Truss Based on Artificial Neural Networks
S.L. Zhang, S.F. Chen, H.D. Wang and W. Wang 1363

Numerical Modeling on Sand Casting Process of a Wind Turbine Part
Q.M. Chang, Y.K. Yang, X. Chen, C.J. Chen and S.Q. Bao 1367

The Double-Station Fixture Based on Air-Liquid and Air-Liquid-Mechanical Composite Transmission Technology and its Application in Press
K.M. Zhong, Y.H. Xiao and M.D. Wang 1372

Modification of Jig Design to Improve the Ergonomic Rating in Manufacturing Process
T.G. Xu 1377

Research on the Technology of Testing and Evaluation of the Existing Building Foundations
Z.S. Zhang, Y. Deng and S.F. Fu 1382

Stability Analysis for Generalized Neutral-Type Neural Networks
G.Q. Liu and S.X. Yang 1387

Study and Improving on Adaptive Filter
H.X. Pan and Y.Y. Zhang 1392

Study on the Dynamics Performance of the Drive Train of Flying Shear Machine
Y.Q. Wang, L. Li, Y.X. Luo and X.C. Yan 1397

New Similar Material Simulation Test of Overburden Rock's Separation
W.P. Huang, S.Z. Lu, L. Wang and S. Huang 1402

The Solution on the Gnaw Rail Problem of the Bridge Crane
H. Xu, G.A. Zhong, Q.M. Wen and Z.P. Hai 1407

Design of Shield Hydraulic Support with Variable Parameters
X.J. Zhao, J.M. Lu and R. Luo 1411

Experimental Research and Application of Mining with Paste Material Stowing
G.P. Qin, Z.J. Wen, A.M. Li, Z.W. Zhu and P.P. Sun 1416

An Improved Adaptive Kalman Filter for Gravity Anomaly Distortion Correction
L.Y. Zhao and H.S. Li 1421

The Control System's Design of the Upper Air Crawling Robot
G.Z. Liu, T. Liu, Y. Liu and B.C. Wen 1426

Investigation of the Milling Performance about 7050-T7451 Aluminum Alloy Based on Orthogonal Experiment
K.Y. Tang, L.H. Zhou and L. Song 1431

Error Compensation on a NC-Machine Tool Based on Integrated Intelligent Computation
H.L. Zeng, Y. Sun, X.H. Ren and L.X. Liu 1436

DrawLight: Learning Colors by Creating Physically Interactive and Immersive Lighting
F.T. Ying, Y. Shi and L.N. Yao 1443

Research of Theoretical Analysis and Structural Design of Active Wheel
X. Zhang, L.W. Li, W.W. Cui, J.J. Cui, Y. Cao, H.R. Zhao, G.Q. Hao, Z.B. Feng, S.Y. Li and D.F. He 1446

Seismic Response Spectrum Analysis of the Single Vertical Centrifugal Pump
H. Li, S.B. Fu, Q.R. Zhao and B.C. Wen 1450

Research of Spindle Runout Testing Methods
Y. Gao, G.H. Cao, H.J. Xu and Z.L. Yu 1455

Empirical Analysis of R&D Investment Effect to Chinese Rural Infrastructure on Economic Growth of Agriculture
G.J. Tong and D.H. Zhao 1460

Dynamic Test Experimental Studies on Printing Pressure Based on Two-Dimensional Holospectum
Y.J. Chen, Q.H. Zhao and J.Y. Bai 1465

Bilingual Teaching Design and Teaching Case of "Advanced Manufacturing Technology"
F. Xiao, W. Peng, J.H. Yao and H. Ni 1470

Study on Manufacturing Resource Data Management Model for Steel and Iron Enterprise
H.G. Bo, S.W. Chen, D.F. Xu and X.B. Liu 1473

Optimization for Turning Metal Matrix Composites with Multiple Performance Characteristics
K. Sriprateep 1479

Research on Gait Analysis and Planning of Quadruped Search-Rescue Robot
P. Wang, X. Li, W.H. Jiang, S.C. Kang and J.L. Xin 1484

Research on the Flow Field of the Exhaust Valve for High Temperature Booster Pump
B. Wu, J.Y. Li, J.C. Li and J.P. Shao 1489

Experimental Optimization of Deep Drawing Using Response Surface Methodology
T.H. Chu, K.H. Fuh and W.C. Yeh 1495

Synthesis and Characterization of PVP/$Eu_{4/3}$L(phen)•$2H_2O$ Luminescent Complex
H.J. Ren, H. Yang, D.H. Sun, Z.F. Cui and G.Y. Hong 1500

The Analysis of the Bolted Roadway Stability with Discrete Element Method
R.C. Wang, C.Q. Wang and L. Zhang 1504

Wavelet-Based ARMA Model Application in Power Network
W. Wei and H. Ma 1509

Hopf Bifurcation and Stability Analysis on the Mill Drive System
Z.Y. Gao, Y. Zang and T. Han 1514

Three-Dimensional Modeling and Analysis for Runner Blades of Turbine
J. Xiong and L.F. Sun 1521

Study on Phases and Thermoelectric Properties of Bulk Fe_4Sb_{12} and Fe_3CoSb_{12} Prepared by Milling and Sintering
K.G. Liu and J. Li 1526

On-Line Inspection of Adhesive Bond Discrepancies with Dynamic Electrode Displacement Method
X. Zhao, P.C. Wang, Y.S. Zhang, G.L. Chen and X.M. Lai 1530

Recycling Technology for Grinding Swarf: Application to Iron Powder for Disposable Body Warmer
H. Takagi, T. Miyazaki and J. Tamatani 1535

Study on Urban-Rural Industrial Distribution Based on Classification of Factor-Intensive Industries
G.J. Tong and C.G. Li 1540

Virtual Design and Inverse Dynamics Analysis of Aircraft Taxi-Mover Lifting Unit
X.D. Shi, S.W. Shi and J.L. Li 1545

A Study on the Cellphone Cover-Forming Process of Titanium Alloys Using the Finite Element Method
D.C. Chen, M.R. Chen and F.L. Nian 1550

Effects on the Clearance of Automotive Hub-Bearing Assemblies
Y.X. Luo, Y.Q. Wang, X.C. Yan and J. Liu 1555

The Performance of the Nodular Cast Iron Treated by Troostite Heat Treatment
K.G. Liu, Z.H. Jiang and J. Li 1560

The Finite Element Analysis on High Duty Bolted Joints of Slewing Bearing
X. Wang, X.X. Liu, X.Y. Cao, F. Zhou, Y. Zhou and D. Wu 1564

Reform of Bilingual Teaching in Advanced Manufacturing Technology
H. Ni and F. Xiao 1570

Using Auto-ID Technologies to Implement Real-Time Manufacturing Resources Tracking and Tracing
H.N. Li, S.D. Sun and Y.F. Zhang 1574

A New Criterion for Attribute Reduction Based on Variable Precision Rough Set Model
H.Z. Tan 1579

The Effect of Oxide Fixed Charge on the Breakdown Characteristics of SiC Lateral Super Junction Devices
H.J. Jia, G.D. Zhou, Y.T. Yang and B.X. Duan 1585

Singularity Analysis of a Plane-Symmetry 3-RPS Parallel Robot Based on Translational/Rotational Jacobian Matrices
Y. Shi, H.X. Yue, Y. Lu and L.H. Guo 1590

Manufacturing of Fixed-Abrasive Polyethylene Wire Saw
C.Y. Yao, J.S. Wang, Z.H. Xu, Q.F. Zhang, M.H. Wang and W. Peng 1595

The Development and Research of Welding Power Source Testing Devices Based on ARM Controller
X.J. Lin, Z. Liu and J. Liu 1600

Quasi-Robust Blind Deblurring with Multiple Color Images
R.H. Liu, F. Li and L.Y. Su 1605

Finite Element Analysis of Accurate Tooth Profile Diesel Engine Gear
D.S. Wang and H.M. Li 1610

Development of Processing Machine for Convex Curved Rake Face of Pinion Cutter
X.G. Li, S.R. Zhang, G.Q. Shi and L.S. Song 1614

Design Element Concept of Die Casting Process
R. Ahmad, N. Sa'ude and A.M. Amin 1620

Dressing Electric Spark Parameters of Cast Iron Agglutinant Abrasion Wheel
H.B. Wang, Y.L. Guo, F.H. Zhang and S.B. Luo 1625

Scheduling Research of AGV with Double Buffers Based Genetic Algorithm in Flexible Manufacturing System
N.F. Ren, Y. Zhao and J. Zhang 1630

The Kinematics Analysis and Study on Triangular Elbow Servo Press
Y. Qiu, W.M. Li and Z. Wei 1636

Structural Optimization Design and Analysis of Impeller Based on Comprehensive Performance
X.M. You, L. Meng, X.J. Wang, J.S. Dai and B.C. Wen 1641

Research of Magnetorheological Digital Flow Control Valve
Q.H. Wang, Z.Y. Wu, J.T. Wang, Z.H. Duan, X. Wu and C.Z. Wen 1646

Influence of Convalescence on Soil Temperature Field around a Vertically Buried Single-U-Tube Ground Heat Exchanger
Z.Y. Du and Y.X. Zhang 1651

Performance Analysis and Optimization of Flange Bolt Joint under the Influence of Inhomogeneous Temperature Field
Q. Wang, X.J. Zhou, Z.L. Liu and H.J. Bi 1656

Analysis of the Variable Electromagnetic Damping Using in the Second-Order Oscillating System
T. Li, W.F. Li and J.Y. Bai 1663

Sealing Structure Analysis of a Non-API Tubing Connection during Load Envelope Test
P. Wang, M.J. Hu, Z.X. Shen, L. Li and C. Feng 1669

Theoretical Research on Hydro-Viscous Transmission to Power Equilibrium in Multi-Motored Starting of Belt Conveyor
N.N. Hao, Y. Yu and H.W. Liu 1677

Study on VPI Manufacture Technology of Stator Bar for 200MW Air-Cooled Turbo-Generator
C.X. Hu, Y.G. Man and X.H. Zhang 1682

Nonlinear Analysis of Porous Squeeze Film Damper-Mounted a Rotor with Non-Linear Suspension and Roughness Effect
C.W. Changjian, H.C. Hsu, J.L. Chen and G.I. Wu 1687

The Design and Implementation of Multiple Square Wave Pulse Sequence Recorder
X.Q. Jiao, Y.X. Yao and Q. Meng 1692

Comparison on Three Computational and Experimental Schemes on Vibration Modal Frequency
X.F. Huang, N. Ding, D. Luo, G.Q. Wang, Y. Liu, J.R. Xu and Z.M. Chen 1697

Finite Element Analysis of Mechanical Characteristics on the Composite Rubber Suspension of Heavy Vehicle
H. Pang, H.Y. Li, Z.D. Fang and X.Y. Zhu 1702

Weld Quality Improvement with Hybrid FSW Technology Assisted by Preheating for Copper T2/Aluminium 5A06 Dissimilar Materials
X. Zhao, F.B. Dong, G.Y. Su and L.J. Guo 1707

Speed-up and Speed-down Controller of Step Motor Based on SCM
X.Y. Su, Q. Li and F.B. Li 1712

The Relationship of Symmetric Modification Parameters and Contact Line of Worm Gear
X.L. Wang, X.R. Hao and X.S. Zhang 1717

Influencing on the Wall Thickness of Deep Cavity Injection Molding Shell
L.Y. Yang and J.M. Zhang 1722

Research on Component Retrieval Method Based on Faceted Classification Described
Y.P. Liu, J.P. Wang and J. Chen 1727

PID Control for Magnetorheological Elastomer Absorber with Impact Load
J. Fu, M. Yu and Z.W. Xing 1734

Research on Interception Order Modeling of Air Targets
Z.S. Zhou and H.B. Fang 1739

Research on the Reliability of Box for Gear Test Bed
X.Y. Jin, T.F. Zhang, L.L. Zhao, H.T. Wang and X.Y. Guan 1744

Research of Multi-Attribute Group Decision Making for Aviation Manufacturing Enterprise Material Supplier
D.D. Xiong, H.C. Yang and Y. Yang 1749

Stress and Modal Analysis of Flat Spiral Spring in Elastic Energy Storage Equipment
W. Duan and H.C. Feng 1754

An Application of Conformal Mapping to Fracture Analysis of Composite Plate with Curved Crack
J.L. Li and H.X. Cheng 1759

Study on Preparation and Property of Drug Loading of AZM-PCL Nanoparticels
L.L. Ruan, D.X. Wang, Y.W. Zhang, J.X. Zhao, M.W. Wang, X.F. Zhang and N.L. Chen 1764

A New Framework for Evaluation Index System of Regional Science and Technology
W.M. Yang and W.J. An 1769

Confirm Method for the Output Precision of Machine Tool Based on Machining Precision of Workpiece
Q. Huang and Q.F. Li 1774

Vibration Mode of Gearbox in Test Bed of Gear with Intersecting Axis
X.Y. Jin, T.F. Zhang, L.L. Zhao, L. Zhang and Y.J. Wang 1779

A Study on the Impact of Deflection Angle and Revolving Speed of Stirring Blades on Reactor Flow Field
Y.L. Wu, T.W. Sun, W.L. Liu and W.Y. Chuang 1784

Research on Extraction of Product Form Gene Based on Style Constraints
M. Wang, S.H. Yu, B. Qi, W.R. Han and J.J. Chu 1789

Underwater Image Segmentation Combining Dual-Band Enhancing and Edge-Grouping
K. Zhao, Y.P. Xu, F.Y. Peng, G.L. Yang and X.W. Wang 1794

ARMA Model and Wavelet-Based ARMA Model Application
W. Wei and H. Ma 1799

Design and Implementation of Hemodialysis Intelligent Management System
Z.M. Yao, L.J. Bai and F.S. Guo 1804

Thermal Diffusion in Jammed Aluminum Nanopowders
C.Y. Ho, C. Ma and F.M. Sui 1809

Preparation and Characterization of ZnO Nanostructures with Different Precursors via Solochemical Technique
M. Gusatti, C.E. Maduro de Campos, G.S. Barroso, D.A. Ribeiro de Souza, H.G. Riella and N.C. Kuhnen 1813

Correlation of Mechanical and Microstructure Development of Early-Age Concrete by Electrical Resistivity Measurement
J. Chen, X.Y. Jin, Y. Tian and N.G. Jin 1818

The Local Architectural Design Method of the Shuttle-Shaped Column in the Chaoshan Area
Z.Y. Li 1823

The Influence of Rhombus Cross Track Laser Remelting on Tribological Properties of Lubricating Wear-Resisting Coating Prepared Plasma Spraying
Y.C. Zhao, G.J. Hao, X.M. Liu, C.M. Deng and W.Y. Ma 1830

Chapter 4: Mechatronics and Information

A Case Study of Contact Analysis of Toy Car Shell Structure with Compound Surface Model
M.C. Hsieh, C.H. Lai, K.T. Lai and A.C. Lin 1839

A Computer Aided Conceptual Evaluation of Excavator Cab Based on Ergonomics
F.Y. Li and Y.F. Li 1844

A Method to Calculate Resistance of Ship Taking the Effect of Dynamic Sinkage and Trim and Viscosity of Fluid
C.B. Yao and W.C. Dong 1849

A Multi-Channel Audio Signal Processing Platform Based on DSP
J. Gao, L. Wang and J.M. Ma 1858

A Novel Approach of Eye Detection Based on Haar-Like Feature and SVM
Y.H. Guo and J. Liu 1863

A Novel Recurrence Method for the Fast Computation of Zernike Moments
H.F. Qin, L. Qin and J. Liu 1868

A Robust Digital Watermarking Algorithm of Identification for Image Authenticity
H.P. Chen, X.J. Shen and Y.D. Lv 1873

Advances in Simulation of Grinding Process
P. Guan, J.Q. Li, S. Zhu, T.B. Yu and W.S. Wang 1879

An Image Recognition Method Based on Ant Colony Optimization Neural Network Using in Imaging Fuze
K.Y. Wang and S.K. Xing 1886

An Integrated Model for Software Security Testing Requirements
Z.W. Hui, S. Huang, X.M. Liu and L.P. Rao 1891

Analysis and Control of Noise of Cavitation Generator by SEA Simulation
L.F. Yang, Y.P. Fu and W.L. Chen 1896

Analysis and Design an Electro-Hydraulic Type Belt Capture Device for Belt Conveyor
X.H. Zhang, H.W. Ma, D.W. Zhang, Q.H. Mao and W.L. Chen 1901

Equipment Development of Stopping Tank from Leaking for Organic Solvent at Emergency Case
G.L. Liu, X. Xia and H.K. Yu 1906

An Ontology Learning Method Based on Document Clustering
X.M. Wei 1911

Analysis of QoS to Guarantee Application SLAs for Trusted Industrial Control Network
J. Zhong and S.X. Zhou 1916

Analyst the Inherent Characteristic of the General Support Pipeline with DQ Method Based on Matlab Programming
J. Qin, X.M. Yuan, Y.Z. Huang and H.L. Xiang 1922

Application of the Block Correction Interpolation Technology in the Ultrasonic Temperature Measurement
F.Q. Xie, H.Y. Zhang, L.J. Xiao and H.C. Ding 1927

Application Research Color Management in the Transfer Printing Based on the Linear Regression Algorithm
L.H. Guo, M.Y. Zhang, X.H. Guo and G.D. Liu 1932

Applying of Information Technology in Mathematics Teaching
J.H. Wen, M. Zhang and X. Yu 1937

Comparison of in-Process Cutting State Detection in CNC Turning Using Different Neural Network Systems
S. Tangjitsitcharoen and A. Senjuntichai 1942

Automatic Construction of Entity Semantic Representation Model Based on Dependency Analysis
X.M. Liu, J. Liu and F.F. Li 1947

Automatic Red Blood Cell Classification for MICAD Based on PSO-CSVM
R.H. Wang 1952

Construction of E-Government Performance Management in the Angle of Service Government
X.L. Hu 1957

Detecting Integer Bugs without Oracle Based on Metamorphic Testing Technique
S. Huang, M.Y. Ji, Z.W. Hui and Y.T. Duanmu 1961

Comparison of Effects of Dimensional Manufacturing Tolerances and Journal Out-of-Roundness on Stability of Hydrodynamic Journal Bearing System
W.B. Xu, D.J. Zhou, P. Ogrodnik and M. Goodwin 1966

Current Problems Analysis and Solving Approaches for Chinese Undergraduate Practice Innovative Talents Training
J.L. Dong, W.B. Hu and M.L. Hou 1972

Design and Realization of One Circuit Board General Test System Based on USB
L. Lei, J.J. Zhuo, H. Chen, X.F. Luo and W. Peng 1977

Design of Output Filtering and Repetitive Controller of Photovoltaic Inverter
P. Wang, L.Y. Chen and C.Q. Wang 1982

Design of the Test Rig for Whole Hydraulic Support
X. Zhang, M. Zang, L.M. Cao and N. Ding 1987

Determination of Singularity-Free Zones in the Workspace of Planar Parallel Mechanisms with Revolute Actuators
S.J. Li and C. Gosselin 1992

Discussion on Product Perceptual Design in Information Age
M. Wang 1997

Research on Automatic Test System of Radar Board Based on Virtual Instrument Technology
W.M. Du and C.B. Liu 2002

Dynamic Parameters Identification for Tong & Tong-Carrier of a Forging Manipulator
N.B. Cheng, L.W. Guan, L.P. Wang and J. Han 2006

Electricity Generating from Small Scale Solar Updraft Tower for Remote Area
Y. Keawsuntia, C. Limsiri, T. Prempridi and S. Patamatamkul 2011

Error Analysis and Measurement of 6PUS-UPS Parallel Machine Tool
L.H. Guo, S. Wang, S.P. Liang, Y. Shi and Y.S. Zhao 2016

Expert System Aided Multi-Agent Intelligent Ant Colony Optimization System
J.H. Zhao and J. Lin 2021

Fault Diagnosis of Low Speed, High-Loaded Bearing in Incomplete Rotating State
J.H. Cao, H.Q. Zheng, J.Z. Zhi and L.J. Cao 2026

Fixture Optimization for Robotic Belt Grinding System
D. Zhang, C. Yun and L. Zhang 2030

Fuzzy Neural Network Market Clearing Power Price Forecasting Based on K-Means Clustering
X.M. Wei 2035

Hybrid Force/Position Control Investigation of Parallel Machine Tool with Redundant Actuation
H.T. Tang, J.T. Yao, L. Cheng and Y.S. Zhao 2040

Improved Intrinsic Time-Scale Decomposition Method and its Simulation
J.S. Lin 2045

Industrial Design and Analysis of Numerical Control Machine on Ergonomic
X.L. Wu, H.J. Chen and Y.Y. Yao 2049

Information Query System of Cultivated Land Quality Based on ArcGIS Server
X. Song, L.P. Du and J. Chen 2054

Intelligent Monitoring and Prediction of Surface Roughness in Ball-End Milling Process
S. Tangjitsitcharoen and A. Senjuntichai 2059

Inventory Management with Uncertain Demands Based on Probability Methods
N.W. Liang 2064

Kinematic Modeling and Simulation of Two Robots Coordinated Manipulation
L. Shi, C.Q. Shi and Y.C. Jiang 2067

Kinematics Simulation Analysis of Shots in Shot Blasting Machine Based on EDEM
L. Hou, L.Y. Yang, Y.Z. Wang and S.R. Wang 2071

LabVIEW-Based Wireless Monitoring System of CNC Machine Tools
Z.Q. Sheng, Z.Z. Liang, C.B. Zhang and L. Dong 2075

Making Decision for Sustainable Product Lifecycle: A Markov Decision Process Based Method
J.F. Wang, N. Wang and J.F. Rao 2080

Modal Analysis of Automotive Steering System Based on Finite Element Method
S.M. Chen, D.F. Wang, G.P. Tan and J.M. Zan 2085

Modeling and Simulation of Electric Power Steering System Based on Multi-Body Dynamics
J.J. Hu, Z.B. He, P. Ge and G.Y. Li 2091

Modeling and Simulation of Milling Forces for Ball-End Cutter with Considering Comprehensive Factors
X.L. Sui and P. Zhang 2098

Modeling and Simulation Research on Pavement Transducer Device Based on AMESim
G.H. Fang, J.F. Liu, X.C. Wang and C. Chen 2105

NC Machining and Simulation for Large Channel Head
T. Chen, Z.H. Yu, D.S. Liu and J. Wang 2110

Noise Characteristics Based on Genetic Algorithm Optimizations of Image Reconstruction
H. Yan and X.F. Wang 2116

Nonlinear Model and Simulation Experiment Research of Vibratory Rollers
Y. Hao, Z.H. Ren and F. Wen 2121

Numerical Investigation of Flexible Holding Technology for Stretch Forming Process
H.L. Peng, M.Z. Li, Q.G. Han, P.X. Feng and X. Chen 2126

Numerical Simulation of Lobed Exhaust Ejector
Z.Y. Wang, S.G. Chu, Y.L. Yu and T. Sun 2131

On the ESD EMP Effect and Strengthening Technology of SCMs
S.L. Yang, W.K. Wang, X.H. Zhang, Y. Liu and Y. Wei 2136

One Extended OTSU Flame Image Recognition Method Using RGBL and Stripe Segmentation
W.G. Yan, C.J. Wang and J. Guo 2141

Optimal Parameters Analysis of Dynamical Vibration Absorption Lathe Tool with Large Length to Diameter Ratio
B. Qin, B. Zhang, X.D. Yu, Y.Q. Zhang, G.H. Han, J.Y. Li, Q.F. Wang and Y.J. Ji 2146

Optimization for Pipeline System of Air-Conditioner Based on Finite Element Simulation
S.Y. Li, J. Guo, X.W. Zhang and W.Y. Tang 2151

Prothesis Movements Pattern Recognition Based on Auto-Regressive Model and Wavelet Neural Network
C. Gao, J.Y. Huang and W. Guo 2156

Research and Development of Ground Source Heat Pump Unit Remote Real-Time Monitoring System
Y.M. Meng, H.F. Pang, Y.N. Hu, Q. Zhou, D.Y. Li, X. Yu and B.H. Ou 2162

Research for NC Milling Error Analysis and Compensation
X.L. Sui, P. Zhao and Y.P. Wang 2167

Research of Simulation Software Architecture Optimization Used with Components Based on Reach-Ability Matrix
S.H. Nan, X.J. Liao and N. Jiang 2174

Research on Quick Detection for Benzene and Absorption Performance for its Absorber at Specific Circumstance
G.L. Liu, X. Xia and Y.F. Ye 2179

Research on Entity Modeling Method in Agent-Based CGF Simulation
G.J. Song, X.D. Mu and R.H. Chang 2185

Research on Image Feature Information of Resisting JPEG Compression
C.K. Wu and L.Y. Huang 2190

Research on Improving the Sample Size of the Routine Monitoring Test for the Ammunition
W. Jiang, M. Zhang, P.F. Xu, Y. Liu and J.B. Liu 2195

Research on Numerical Control Machining Simulation Based on Power Mill and VERICUT
C. Wang, L.N. Han, Y. Yao, Q.S. Zhao and Q.X. Hu 2200

Degradation Path Modeling Method Based on Time Series Analysis
C. Gao, M. Jiang, J.Y. Huang and X.F. Wang 2205

Research on Stress Intensity Factor of Gear Crack and its Variation with Changes of Gear Parameters
F.F. Dong, R.P. Shao and J. Ma 2211

Research on the Internet Banking Security Based on USB Key
Y.Z. Xiong 2218

Research on the Multi-Objective Optimization Model of System-Level BIT Testability Index Determination
C.S. Zhu, Q. Zhang, F.T. Su and H.L. Ran 2223

Research on the Operational Availability for the Smallest Mission Unit and its Simulation Method
J.J. Liu, Y.L. Yu, W. Zhang and A.M. Zhu 2228

Research on the Precise Equipment Support
X.L. Liu, L. Chen, J.N. Liu and H.M. Yu 2233

Simulation Research on Post-Injection of Electronically Controlled Heavy-Duty Diesel Engine
M.H. Li, F. Jiang, B. Liu and M.G. Ouyang 2238

SIMULINK Simulation of ADRC Based on S Function
Y.G. Ma, N. Ran and N.B. Jia 2243

Social-Security-System-Based Two-Way Referral Management Information System
Y. Li, X.J. Yi and Y.D. Geng 2248

Structure Design and Kinematics Analysis of MRI-Guided Intervention Robot
Y.D. Zhang, H.Y. Du, L.W. Geng, Y.Q. Li, H.X. Zhang and Y.H. Zhang 2253

Studies on Process Information Expression Techniques of 3D CAPP
J.Y. Wang and R. Mo 2258

Study and Experimental Analysis of Oval Bevel Gear Transmission
C. Lin, Y.J. Hou, Q.L. Zeng, H. Gong, L. Nie and H. Qiu 2263

Study of Airport Crash Fire Vehicle Dynamics Simulation Model
L.W. Wang, D.M. Yuan and H. Wang 2268

Study of Classification and Modeling of Virtual Resources in Cloud Manufacturing
C.S. Hu, C.D. Xu, X.B. Cao and J.C. Fu 2274

Study on Agricultural Products Logistics Operational Pattern Based on Information Share
G.Y. Xu, J.H. Qu, R.J. Wu and W.F. Qin 2281

Study on Capacity Expansion Model and Arithmetic of Transportation Network with Distribution Centers
P. Dong and Z.H. Luo 2288

Study on Hi-Power Precision Driving Power of Giant Magnetostrictive Actuator Based on Power Amplifiers
Y. Li, C.R. Zhang, X.Z. Ding, P. Zhai and J. Wu 2293

Study on Support Vector Machine Based on Nonlinear Correction of Double Parallel Beam Weighing Transducer
L.H. Zhao, K.Q. Wang and Y.H. Xie 2299

Simulation on Laser Shock Strengthening of the Crankshaft
T.J. Wu and H.J. Wang 2304

The Double Role Piston Pump Based on the Symmetrical Gears and Crank-Link-Slider Mechanism Driven by Servo Motor
M.D. Wang, Q. Song and K.M. Zhong 2308

The Effect of Pressure on Burnthrough Susceptibility during in-Service Welding
W. Liu, H. Tao, C.W. Li, G.F. Guo and G.L. Gu 2313

The Exploration of Innovation of Mould Lesson in Vocational College
X. Sun and L.J. Xu 2318

The Influence of Target Mesh on the Simulation Results of High Velocity Projectile Penetration
C. Chen, W.B. Li, X.M. Wang and W.B. Li 2323

The Internal Operation Mechanism and the Efficiency of Macro-Economic Assessment in Weifang City
J.H. Ma and X.L. Meng 2328

The Method of Recognizing Navigation Lights in the Runway Debris Visual Automatic Detection System
Z.J. Yu, F.Z. Lang and X.J. Guo 2333

The Modeling and Prediction Study of BLP Device Solder Joint Three-Dimensional Shape
Z.H. Wu 2338

The Optimization of State-Owned Enterprise Group Development Model Based on the Method of DEA
J.H. Ma, Q. Zhang and C.Y. Ma 2343

The Principle of the Electro-Optic System in Passive Synthetic Aperture Lmging
Y.F. Yan, M. Bai, C.G. Xie and J.G. Miao 2348

The Research on Tax Risk Monitoring and early Warning System in Xi'an Local Taxation Bureau
X.B. Ma, J.E. Guo, X.T. Ma and Z.H. Wang 2353

The Simulation Analysis and Modeling of the Coupling Vibration Absorber System for the Wheel Loader
Z. Wang 2358

The Ground Motion of Isosceles Triangular Hill in Right-Angle Plane Impacted by SH-Wave
H. Qi, J. Guo and J. Yang 2363

The Simulation of CPV Model on Net-Work Products at the Successive Time
W. Zheng and H. Hu 2367

The Spectrum Segmentation Algorithm of Multimode Vibration Signal Based on Spectral Clustering
D.D. Wang, Y. Zhou, Q.W. Ye and X.D. Wang 2372

The Study of Mapping Mechanism from Product Structure to R&D Project Tasks
P. Jia, Q. Gao, S.H. Zhang and G. Liu 2377

The Study on Motor-Function Evaluation of Upper-Limb Rehabilitation Robot Based on AHP
X. Li, J.H. Wang, Y. Zheng and S.S. Gu 2382

The Test Cases Generation from the UML Activity Diagram
T.T. Xie, J. Li, Y.H. Fang and H.L. Xiong 2387

Thermo-Mechanical Simulation of Hot Stamping Tools Design
Y.J. Cai, F.S. Halim, G.H. Li and Y.G. Wang 2390

Thinking the Hedge Strategies during the Financial Tsunami by Data Mining: A Case Study of Taiwan Stock Exchange
S.C. Chen, S.C. Liu, H.H. Chen and J.R. Tzeng 2395

Trust-Aware Information Dissemination in Social Network
B. Zhang and Y. Xiang 2400

UML-Based Two-Way Referral MIS Requirement Analysis
H.B. Shang, Y. Li, Y.K. Cao and X.J. Tian 2405

Multi-Angle Face Detection Using Back Propagation Neural Network
K.H.B. Ghazali, J. Ma and R. Xiao 2411

Autonomous Mobile Robots and Development of Vision Based Automotive Assistance Systems
Y.F. Mao, H. Wiedmann and M. Chen 2416

Cloud Manufacturing Resource Access System Based on Internet of Things
F. Xiang and Y.F. Hu 2421

Analysis of Hydraulic Conditions in Urban Natural Gas Transmission and Distribution Network
Y. You, L. Li and L.Z. Gao 2426

A Measuring Water Content Method Based on K-RBF Neural Network in the Coal on Transportation Belt
M.X. Pang, X.Z. Cheng, X.C. Qian and M.Y. Cao 2431

Evaluation on the Compressive Strength of Concrete Incorporating High Volume Blast-Furnace Slag Subjected to Initial Frost Damage
K.T. Koh, G.S. Ryu, K.H. Ahn, C.J. Park and J.H. Lee 2440

Analysis of Drying Shrinkage of the Concrete Using Calcium Sulfa Aluminate(CSA) Based Expansive Additive
C.J. Park, K.T. Koh, M.C. Han and C.G. Han 2445

Chapter 5: Materials in Energy and Environment

Experimental and Simulating Analyses of the Insulating Efficiency of Green Roofs
Y.K. Zhao, C.C. Lien, L. Wei and W.P. Sung 2453

A New Coal Sampling System for Measurement of Gas Content in Soft Coal Seams
S. Xue, X.S. Li and J. Xie 2459

A Numerical Study of Flow Field and Oil Water Separation in Vertical Deadlegs
K. Ding, H.W. Zhu, J.Y. Zhang, C. Wang and J.S. Hao 2465

A Simulation Approach to Improve Forming Limitation of Truss Core Panel
Z.Z. Xia, X.L. Zhao and I. Hagiwara 2471

A Study on Model Transformation Mechanism Using Graph Comparison Algorithm, Abstract Factory Pattern and Bridge Pattern
J.W. Ko and Y.J. Song 2476

Abnormal Behavior Recognition Based on Multi-Information Decision in Power Generation
Z.H. Wei, X.S. Li, S.B. Song and L. Zhang 2482

Alumina-Zirconia-Silica Ceramics Synthesis by Selective Laser Sintering/Melting
W. Wang, Y.X. Liu, J.Y.H. Fuh and P.J. Wang 2487

An Integrated Analysis Methodology Based on Incidence Matrix of Maintainability and Maintenance Tasks
D. Zhou, L. Kang, Z.Q. Guo and M.H. Wang 2492

An Integrated Technology of Green Planning for Workshop Layout and Machining Operations
G. Zhao, H. Zhang, Z.G. Jiang, W. Yan and M. Xiao 2497

Characteristic and Equilibrium Studies of Fungi *Penicillium* sp. QQ Biosorption Bacteria *Exiguobacterium* sp. TL
B. Yan, J.T. Zhou, W.C. Liao, D.L. Li and S. Xu 2502

An Optical Fiber Sensor for Measuring Light Absorption in Suspension Solutions
F.B. Xiong, N. Djeu and W.Z. Zhu 2509

Analysis and Optimization of Hot Air Drying Device of a Gravure Printing Machine Based on Fluid Analysis
L.L. Liu, J. Liu, X.Y. Zhang and S.S. Zheng 2517

A Research on the Fuzzy Control Strategy for Parallel Hybrid Electric Vehicle
L. Cai and L. Ge 2522

Electrocatalysis Oxidation of Ammonia at PtPdRh Ternary Catalysts in an Acid Medium and Applied Fuel Cell Studies
C.M. Hung 2527

Analysis on Spindle of 2MW Wind Generator
J.H. Zheng and M. Li 2532

Anti-Pulls Out Strength Research on Concretes Component of Low-Alloy Coupled Steels and Cold Rolling Belt Rib Steel Bars
B. Gao, B. Wang and J.Q. Zou 2537

Application of a Measuring System for Visual Judgment Ability of Drivers in Real Three-Dimension Space
R.T. Xia and S.I. Doi 2541

Persulfate Oxidation Activated by Peroxide with and without Iron for Remediation of Soil Contaminated by Heavy Fuel Oil: Laboratory and Pilot-Scale Demonstrations
S.C. Fang and S.L. Lo 2546

Application of Systematical Engineering Theory in Study Style Construction
H. Sun and Y.J. Zhao 2557

Assessment of Urban River Eco-Security: An Integrated Index and Forecast Modeling System
C.I. Wu, C.C. Liu and Y.Y. Wu 2561

Band Gaps of 2D Phononic Crystal with Graded Interphase
B. Cai and P.J. Wei 2567

Coal Mining Workers' Unsafe Behaviors Consequences Analysis and Occurrence Mechanism Research
X.B. Meng and Q.G. Yao 2572

Research on All Fiber-Optical Fluorescence System Measuring Mineral Oil in Water
Y.T. Wang, X. Gao, H.X. Wang, X. Li and R.R. Yuan 2577

Control and Behavior Prediction of Personnel Evacuation in Underground Ventilation Equipment Room on Fire
C. Guo, M.N. Wang and L. Yu 2582

Corrosion Damage Residual Strength Research of Shot Peening Aluminum Alloy
S.L. Lv, Y. Cui, W. Zhang and X.Y. Tong 2587

Cr_2O_3 Flux Assisted TIG Welding of Type 316L Stainless Steel Plates
K.H. Tseng, Y.C. Chen and K.L. Chen 2592

Cultivating Succeeding Crops in Transgenic Soybean Overexpressing *TaDREB3* Planted Field Had No Impact on Crop Yield and Quality
B.B. Zhang, T. Zhang, X.X. Wu, W. Ding and W.B. Li 2597

Current Situation and Developing Trends of Glass-Online Stacking System
X.Q. Wang, Q.D. Cui and F.K. Cui 2602

Deformation Analysis for Coal and Gas Outburst Cavity
Q.T. Hu, W.B. Wu and G.Q. Cheng 2607

Description and Verification of Supply Chain Business Process Based on Pi-Calculus
Y.T. Huang, G. Wang, B.Y. Ren and H.Y. Zhang 2614

Design and Dynamic Analysis of Horn for Ultrasonic Polishing
M. Zhao, Y. Li and H.T. Kao 2619

Design and Implementation of Agricultral Greenhouse Environmental Monitoring System Based on Internet of Things
S.L. Li, Y. Han, G. Li, M. Zhang, L. Zhang and Q. Ma 2624

Design and Implementation on a Novel of Solar Double-Direction Tracking-Device
M.B. Li, D.W. Yin and S. Mu 2630

Design of a Cassegrain Optical System Transferring Intensified Sunlight to an Indoor GaAs Solar Cell
C.Y. Chen, C.S. Huang, J.P. Syu and Y.S. Chang 2636

Design of Early-Warning System Model for Gas Explosion
D.M. Huang, X.K. Chang, Y.J. Liu and Y.M. Wang 2643

Designing a Negative Air Ions Distribution Pattern for Human Health in a House Garden by Using Geostatistical Approach and a Negative Air Ion Generates Experiment
C.F. Wu and W.H. Lin 2648

Designs of Intelligent Environ-Control System Based on Energy Saving and IEH- Study on S House
N.T. Chen, C.M. Chiang, K.S. Liu, S.Y. Chen and Y.C. Chiang 2653

DOE Analysis of the Influence of Sand Size and Pouring Temperature on Porosity in LFC
S. Izman, A. Shayganpour, M.H. Idris and H. Jafari 2661

Dynamic Modeling and Evaluating of Moving Object Tracking with Correlated Measuring Noises
H. Zhu, G.X. Guan and M.H. Wu 2666

Dynamic Response and Dynamic Load of Wind Turbine Planetary Gear Transmission System Under Changing Excitation
J. Yang and L.P. Zhang 2671

Effect of Input Shaping on Response of Inertia Plants
M.X. Dong, R.C. Li and Q.Z. Xu 2676

Micro Plasma Arc Welding of AM 350 Precipitation Hardening Alloys
K.H. Tseng, Y.C. Chen and Y.C. Chen 2681

Effect of Silica Fume on Durability of Wood Fiber Reinforced External Wall Board
D.J. Tan, Y. Wang, P.Q. Wang and J.P. Zhao 2686

Effects of Calcined Diatomite on Resistance to Permeability and Freeze-Thaw of Recycled Aggregate Concrete (RAC)
Y.Q. Wei, Y.F. Meng and Q.H. Sun 2690

Effects of Condensed Silica Fume and Superfine Cement on Flowability of Cement Paste
A.K.H. Kwan, J.J. Chen and L.G. Li 2695

The Computation of Grinding Parameters for the Modified Shaper Cutter
C. Huang and G.L. Li 2701

2-D Magnetic Field Analysis of Air Cylinder with MR Sensor
D. Jiang, P. Yang and K. Jiang 2706

Match and Optimization of Series Hybrid Bus Powertrain Parameters
L. Cai and X. Zhang 2710

Equipment Maintainability Lifecycle Modeling Oriented on Concurrent Engineering
W.J. Liang, J.N. Jia, A.Q. Liu and J.P. Hao 2715

Equivalent Brightness Fitting Calculation Method about White LEDs
Y. Yang, L. Wang and C.Z. Zhu 2721

Evaluation of Concrete Fatigue Measurement Using Standard and Non-Linear Regression Model
S. Seitl, H. Šimonová, Z. Keršner and A.F. Canteli 2726

Intelligent Evaluation Model for Cementing Quality Based on GA-SVM and Application
J.C. Liu, S.P. Zeng and Z.G. Yuan 2730

Experiment Study on Tribological Properties of the Coating with Different Surface Textures
Y.C. Zhao, F.P. Hu, X.M. Liu, C.M. Deng and W.Y. Ma 2735

Experimental Study of Energy Saving Effect of Building Envelope in Winter
H.H. Wang, T. Zhang and Q.L. Xiao 2741

Experimental Study on Strength Characteristics of Cement-Soil under CD/CU Condition
X.J. Song, J. Li and C.F. Qian 2748

Experimental Study on the Unconfined Compression Strength of Cemented Soil Contaminated by Municipal Sewage
X.Q. Dong, X.E. Huang, X.H. Bai and Y.K. Lv 2754

Exploring the Application of Problem-Based Learning in Logistics Teaching Module
Y. Zhan, W. Peng, F. Xiao and L.F. Zhang 2759

Feasible Tertiary Sewage Water Treatment Technologies
H.Z. Zhang, D.D. Fan, Y. Mi and L. Li 2764

Fuzzy Theory and AHP Applied to Port Urban Logistics Competitiveness Evaluation
X.L. Liu 2769

High-Accuracy Shape Construction of Porcelain and Exhibiting on Web
H.B. Wu, L.Q. Wang, J.Y. Cui, Y. Jiao and X.Y. Yu 2774

Imposing Essential Boundary Conditions in Isogeometric Analysis with Nitsche's Method
T. Chen, R. Mo and Z.W. Gong 2779

Influential Factors of SHS-Densification Methods of Solidified Nuclear Waste in $SrTiO_3$ Synroc
R.Z. Zhang, Q.C. Li, J.M. Wu and L.K. Li 2784

Integrated Management Methodology for Sustainability and Land Use of a River Basin
C.H. Chen, W.L. Liu, I.J. Chiou and S.L. Liaw 2789

Integration of Hybrid Energy System in Vehicle
J.Y. Chang, Y.D. Kuan, J.Y. Wang, S.S. Liou, C.T. Liu and S.C. Chan 2794

Integrity Analysis of Gas Field Water Reinjection Well Wellbore
C.B. Xu, J.C. Liu, L. Xu, X.M. Kuang and J.H. Wang 2799

Investigation on the Mechanism of Energy Saving and Efficiency Enhancement for Fluid Ejector
G.J. Xing, Z.H. Li, H.L. Zheng, J. Wang and F.S. Jiang 2804

Fault Diagnosis of PT Fuel System Based on Particle Swarm Optimization-Support Vector Machine
D. Wang, X.Q. Wang, X.L. Wang, S. Liang and Y. Zhao 2809

Numerical Simulation of Ship Oil Spill under Ocean Environment
J.N. Zhang, X. Liang and W. Li 2814

Numerical Simulation of ZnO Nanorod Assisted Light Extraction of Organic Light-Emitting Diode (OLED)
J. Song and Y. Yu 2819

Paraffin Deposition Test and Phase State Simulation for Dalaoba Condensate Gas Reservoir
M. Yang, J. Li, Q.M. Zhang and J.L. He 2824

Performance Evaluation of a 2-DOF Planar Parallel Manipulator
X.R. Zhu and H.P. Shen 2829

Preparation and Properties of Environmental Friendly Wood Adhesives Based on Wild Acorn Starch
L.L. Zhou, C.R. Han, S.F. Zhang, Q. Gao, H.Y. Li and J.Z. Li 2834

Remote Sensing Based Analysis of the Mine Geological Environment Evaluation
X.W. Wu, G.D. Bao, W.W. Jia, C. Zhai and X. Li 2839

Research and Design of the Travel Information Service System Based on SOA
Y.S. Ge, X. Jian and Y. Liu 2845

Energy Saving and Payback Period for Retrofitting Air Conditioning Systems in Taiwan
C.Y. Chang, H.T. Lin, C.T. Tzeng, K.H. Yang, Y.K. Chuah and M.C. Ho 2850

Research on Environmental Durability Testing System for Automobile Engine ECU
M. Yu, L. Shuai, J.W. Guo and J. Fu 2855

Assessing the Effect of Microclimate on Building Energy Performance by Co-Simulation
X.S. Yang, L.H. Zhao, M. Bruse and Q.L. Meng 2860

Research on Super Critical Water Oxidation Based on Papermaking Black Liquor Treatment
K.S. Zhang, Z.J. Li and X. Zhang 2868

Research on the Air-Fuel Ratio Intelligent Control Method for Coke Oven Combustion Energy Saving
G.F. Li, Y. He, G.Z. Jiang, J.Y. Kong and L.X. Xie 2873

Research on Walling-up with Concrete Block Technology of Gob-Side Entry Retaining Based on Fully Mechanized Face in Medium-Thickness Coal Seam
H.L. Lin and Y.K. Shi 2878

Simulation of Inking System Based on Elastohydrodynamic Lubrication
L.L. Liu, F. Lu and J.Y. Bai 2883

Simulation Study on the Influence Factors of Generated Output of Proton Exchange Membrane Fuel Cell
L.P. Fan 2887

Study and Practice on the Technology of Filling Mining in Xin Wen Mining Area
M.T. Gao, M. Zhang and M. Zhou 2892

Study of Seasonal Storage in Ground-Source Heat Pump with Solar Collector
F. Wang, L.J. Niu, Z.L. Liu and M.Y. Zheng 2897

Study on Anti-Scale Measures of Shaft in Shunan Gas Mine
Z.Y. Qiu, K. Qiu and Z.Q. Wang 2902

Study on Circulation Application and Energy-Conservation Management Based on Exhibition Project
X.Y. Wang, X. Wu, Y.N. Wang and J.C. Han 2906

Study on Mountainous Shallow-Buried Coal Seam Mining Working Face Strata Behaviors and Overlying Strata Movement Features
G.L. Liu, K.G. Fan and T.Q. Xiao 2911

Study on Preparation and Properties of Recycled Plastic-Poplar Plywood
F. Zhao, K.L. Song, W. Gao and S.B. Zhang 2917

Study on Relationship between Partial Load and Rib Effect Coefficient of Refrigeration Heat Exchanger Used in Air Conditioning
H.H. Wang and H.S. Wang 2922

Study on the Micro-Structure of High Temperature Oxide Scales Applied Loads on 12CrMoV Alloy
S.Q. Chen 2931

Surface Image Local Contrast Enhancement Based on Texture Discrimination via Grey Relational Analysis
G. Li, X.P. Xiao and Y.L. Tong 2937

Study on Waste Concrete as Reclaimed Fine Aggregate
S.J. Huang, L. Zhou, J.L. Zhou and Z.C. Ge 2942

Survey of Punishment on Violation of Discipline by Students of College of Petroleum and Natural Gass Engineering and Countermeasure Study
J.C. Liu, W.H. Li and Z.K. Wang 2946

The Application of Phase-Inversion Symmetric Method in the Frequency, Time and Space Domain
Y.Z. Xiao, F.C. Ma, B.J. Xiao and X.F. Han 2951

Technology Research on Relief Annealing of 65Mn Metal Rubber
K. Luo, C. Zhao and X. Li 2956

Study on Quality Control of the Low-Sugar Preserved Kiwifruit
K.S. Zhang and J. She 2960

The Impact of Seawater Corrosion on Friction Torque of Bearing Deputy Campaign
C. Zhao, K. Luo and C.Y. Gao 2965

The Composition and Meaning of the Housing Additions in Taiwan
H.C. Song 2969

The Efficiency of Thermoelectric Chip by Different Heatsink
W.D. Jheng, S.H. Chen and Z.Y. Lin 2974

A Study on Energy Saving and Light Pollution of LED Advertising Signs
C.Y. Ho, H.T. Lin and K.Y. Huang 2979

The Improvement about Performance Assessment of Local Taxation Bureau of a Area in Chengdu
W.J. Ren 2985

The Photoelectric Conversion Efficiency Research at Color Solar Cell
W.D. Jheng, S.H. Chen and Z.H. Lin 2989

The Pneumatic Feeding System of Electrospinning Based on Numerical Simulation and System Identification
Q.G. Wang, D.L. Liu, L.N. Han, Y.Y. Liu and Q.X. Hu 2994

The Research and Design of Distributed Automated Test Framework which is Oriented to Embedded Devices
W.H. Hu and H.Y. Yang 2998

The Research of Heart Sound Signal Energy Detection System
Z. Wei and X.W. Li 3003

The Research of Starting Engine In-Motion for HEV
M.H. Hu, S.Z. Xu, D.T. Qin and G.Y. Li 3008

The Solid Barrier Explosion Device of the Gas Recoil Type of the Extracting Coal Face of the Coal Mine
C.R. Wei, M.Q. Xu, J.H. Sun and X.W. Zhang 3015

The Study of Stress Corrosion Crack in Heterogenic Welding Joints under Wet H_2S
S. Xu 3020

Theoretical Study on Axial Capacity of CFRP Reinforced Self-Stressing Concrete Filled Steel Tubes
H. Li, J. Deng and J.H. Lin 3025

The Expression of Local Culture in the Design of Jinan Urban Traffic Environment
M. Liang, L. Li and Y. Li 3030

Thoughts on Unconventional Oil and Gas Development in China
X.X. Guan, Y.X. Fan and Q. Cao 3034

Urea PeroxideNew Degumming Agent Impact on the Effect of Oxidation Degumming of Ramie
G.L. Liu, Z.F. Li, R.Y. Ding, X.M. Zhong and C.W. Yu 3039

SiO_2 Coatings Prepared by Sol-Gel Process Protecting Silver from Atomic Oxygen Erosion
S.W. Duo, M.M. Song, T.Z. Liu and M.S. Li 3044

Evaluation of Equivalent Circulating Density in Deep Water Dynamic Kill Drilling
X.L. Jiang, Z.M. Lei and Q.B. Meng 3048

Tensile Test of Heterogenic Welding Joint in Ambient Temperature or High Temperature
S. Xu 3053

Energy-Saving Techniques of Full-Scale Green Building Analysis Research - Taiwan's First Zero-Carbon Green Building
Y.C. Wang and H.T. Lin 3058

Recommendation Research in E-Learning
B. Wu, W.X. Xu and J. Ge 3067

Using Multi-Function Constructed Wetland for Urban Stream Restoration
C.Y. Wu, Y.T. Fu, Z.H. Yang, C.M. Kao and Y.T. Tu 3072

Analysis on Regional Adaptability of Interior Thermal Insulation System in South China
P. Ren, Q. Li, Q.L. Meng, G.N. Wu and W.J. Lian 3077

Chapter 6: Frontiers of Mechanical Engineering

2D Simulation of the Aerodynamic Micro Air Journal Bearing for Micro Gas Turbine Engine
Z.Q. Zeng, Y.K. Wang and Z.L. Wang 3087

Study on the Starting Process Driven by Accumulator of a Hydraulic Free Piston Engine
B.Z. Xia, G. Su, H.B. Xie and H.Y. Yang 3092

A New Crawl Exercise Machine Based on Ergonomics
Z.H. Yu, Z.Y. Wang, B.F. Qian, B. Shao and L.S. Fan 3097

Analysis on Energy-Flow of a Bipropellant-Powered Hydraulic Free Piston Engine
B.Z. Xia, G. Su, H.B. Xie and H.Y. Yang 3102

A Seam Measurement Method Based on Micro Depth of Field for Laser Welding
P.J. Wang, Y.T. Huang, F.Y. Peng, J.F. Qi and B. Li 3107

A Study on the Equivalent Static Wind Loadings on the Arched Roof Frames of Low-Rise Buildings in Atmospheric Boundary Layers
J.H. Chen 3113

An Application of Multi-Sensor Data Fusion in SLS Rapid Prototype Manufacturing
W. Zhang 3118

Analysis and Design of Z-Axis Supporting Plate of High-Speed High-Precision PCB CNC Driller
L. He, M.L. Tang, H.Y. Wu, Y.L. Lei and Z.G. Wang 3122

Analysis for Formation Mechanism of Local Cluster of Enterprises Based on Self-Organization
T. Liang 3127

Analysis of Elastohydrodynamic Lubrication of Ball Screw with Rotating Nut
S.G. Mu and X.Y. Feng 3132

Analysis of Fluid Flow in Screw Pump Based on ANSYS
D.J. Wang and X.Z. Yan 3140

Analysis on Shear Lag Effect of Single Box and Double Cell Box Girders for Wei River Grand Bridge
L. Sun, X.W. Hao and K. Lei 3145

Analysis and Design of MIS on Graduates Feedback
X.H. Yang and Y. Wu 3150

Anti-Seismic Behavior on Damaged RC Frame Strengthened with CFRP Sheet and Steel Plate
Y.G. Liang, Y. Deng and S.F. Fu 3155

Application of CAD/CAM Technology on the Modeling of Freeform Surface Parts
J. Xiong and L.N. Han 3160

Application of Workpiece Image Enlarge and Shape Control with Quintic Spline Interpolation
J.B. Qu 3165

Artificial Neural Network Based Intrusion Detection Method Combined with Manifold Learning Algorithm
J.G. Chen and Z.X. Li 3170

Automaton Fault Diagnosis Based on Motion Morphology and Information Entropy
M.Z. Pan, H.X. Pan and R.P. Zhao 3175

Comparative Study of Comprehensive Performance on Typical Die Structures in Knuckle Hot Forging
L. Li and F. Wang 3180

Applying QFD to Improve the Project Management for Cloud Systems
J.R. Tzeng, S.H. Li and C.H. Chen 3185

Compensation Approach to Error of Perpendicularity and Mismatch Error of Position Loop Gains in CNC Machine
G.Y. Zhao, S.J. Wang and W.T. Sui 3190

Configuration Pump Performance Test System Design Based on Kingview
L.F. Yang, J. Yuan, W.N. Liu, X.M. Nie and X.L. Pei 3195

Contact Pressure Research of Drill Pipe and Packer of Rotating Blowout Preventer
B. Li and S.M. Zhang 3200

Continuous Rotary Motor Electro-Hydraulic Servo System Based on the Zero Phase Error Tracking Controller
X.J. Wang, J.Y. Li, B. Wu and J.P. Shao 3205

Design and Application Analysis of Hybrid Coupling System Based on CVT
Y. Yang, X.F. Zhao, D.T. Qin and H. Gong 3210

Design Parameters for Spatial Helix Gearing Mechanism
Y.Z. Chen, Z. Chen and X.Y. Fu 3215

Development and Application of ZY6400/25/53 Two-Leg High Cutting Hydraulic Shield Supports
L.Q. Ma, D.S. Zhang, J.L. Jia and Y.S. Li 3220

Development and Research of the Mixing Fuel-Hydrogen Engine Control Unit
X. Zhang and L. Cai 3225

Deviation Analysis of Automobile Panels Welding Assembly Based on ANSYS
L. Li and Z.M. Feng 3230

Dimension Optimization and Theoretical Calculation of Flywheel Rotor for Vehicle Energy Storage System
X. Zhang, W.W. Cui, L.W. Li, J.J. Cui, Y. Cao, H.R. Zhao, S.Y. Li, G.Q. Hao, Z.B. Feng and D.F. He 3234

Driving Control of Planetary Rover Based on Slip Ratio Estimation
L.H. Li, Y.B. Zhao, J. Lian and S.M. Wu 3238

Dynamic Analysis of Hydraulic Roll Bending System for Asymmetric Loading
X.C. Yan, Z.F. Liu, Y.Q. Wang and Y.X. Luo 3243

Dynamic Modeling and Analysis of Guideway Joint of Engraving Machine
X.L. Jin, B.J. Ma and T. Feng 3248

Dynamic Stress Concentration Analysis of Multiple Circular Cavities near Multiple Semi-Cylindrical Alluvial Valleys
H.W. Wang, Z.L. Yang and H.N. Xu 3253

Effect Review of the Strengthening Technique by Use of the External Prestressing
L.S. Bao, D. Yang and L. Yu 3258

Effects of High Dielectric Constant Abrasives on ECMP
W.S. Li, D.M. Guo, Z.J. Jin, Z. Wang and Z.W. Yuan 3263

Research on Knowledge Fusion Based Parametric Design Technology of the Sliding Screw Mechanism
D.M. Wang 3268

Error Model and Calibration Analysis of the Flexible Coordinate Measuring Machine
F. Li, S.G. Liu and L. Zhao 3273

Evaluation of Equivalent Circuit Parameters for Permanent Magnet Linear Synchronous Motor with Low-Speed
Z.P. Cheng, L.C. Jiao and Y. Chen 3278

Experimental Modal Analysis of Compressor Vibration Isolating System Based on LMS Test.Lab
L. Zhang, H. Chen, Y.J. Gong and J. Wang 3283

Fabrication and Mechanical Testing of the Aluminum Foam Produced by Sintering and Dissolution Process
H. Gilani, S. Jafari, R. Gholami, A. Habibolahzadeh and M.M. Taheri 3289

Finite Element Analysis and Lightweight Research on the Bed of a Large Machine Tool Based on HyperWorks
M. Jiao, X.H. Guo and D.D. Wan 3294

Flexure Hinge Guided Motion Gripper with Force Sensor
L. Ma, C.X. Xu, S.S. Zhou, W.B. Rong and L.N. Sun 3299

Fostering Creativity in Mechanical Engineering Education Based on Cooperation with Enterprises
L. Kang and J. Liu 3304

FPGA Auto Configuration Based on ATE
Q. Liu and D. Wu 3310

FEM Analysis of Engine Crankshaft Static and Dynamic Behaviour Using ANSYS
Z.M. Fu 3315

Gas Turbine Cylinder Nc Milling Tilt Hole Parametric Programming
S.T. Yang, W.Y. Zhang, D.W. Cui and W. Shen 3320

Gear Stepping Motor Driven Reconfigurable Manipulator
L.L. Liu, K.M. Zhong and X.Y. Tang 3325

Generic Technology of Home Service Robot
Z.H. Yu 3330

Impact of Climate Conditions on Field Reliability of Vehicles
R. Jiang, Y.X. Liao and C.L. Fei 3335

Industrial Trial Production of X70 Pipeline Steel under Ultra Fast Cooling Conditions
Y. Tian, S. Tang, G.D. Wang and P. Wang 3340

Heat Source Model of Lap Laser Welding of Stainless Steel Vehicle
H.X. Wang, C.S. Wang, C.Y. Shi and Z.Y. Huang 3347

Low Analysis of Steady Flow Field in Mechanical Seal Based on ANSYS
Y.F. Zhu and D.L. Chen 3352

Motor Control and Simulation of Coal Mine Detection Robots Based on Fuzzy-PID
Z.G. Niu and X. Wang 3356

Dynamic Destruction of High Pressure Water to the Mining Floor Deformation
W.B. Sun, W.J. Guo and J.X. Liu 3361

Nonlinear Dynamic Response and Safety Analysis of Suspended Submarine Pipeline
B. Shao, X.Z. Yan and X.J. Yang 3366

The Reverse Engineering and Rapid Prototyping Manufacturing Technology of Parts with Complex Surface
Z.M. Fu 3371

Observer Based Speed Control of PMSM Servo Systems
R.N. Huang, C. Song and Y.J. Lou 3376

Operation Parameter Recorder for Construction Machinery Based on Embedded Technology
K. Feng, X.M. Meng, H.L. Li and X.L. Wang 3381

Optimization Design on Ribbed Slab for Crossbeam of Heavy NC Gantry Moving Boring & Milling Machine
G.H. Han, B.W. Gao, Y.F. Wang, G.T. Sun, D. Wu and J.P. Shao 3386

Point-Line Meshing Gear Drive
H. Huang, H.X. Li and Q.H. Luo 3391

Prediction and Analysis for Chinese Machinery Manufacturing System Based on the ARMA
L. Hu 3396

Preparation of Lithium Niobate Powders by Mechanochemical Process
J.H. Luo 3401

Pressure Coordinated Control System of Regenerative Braking Based on Hardware of ABS for HEV
Y. Yang, Y. Yang, D.T. Qin and J. Li 3406

Reliability-Based Sensitivity Design of Gear Pairs with Non-Gaussian Random Parameters
Z. Yang, Y.M. Zhang, X.F. Zhang and X.Z. Huang 3411

Reseach on Back-Pressure Problems of the Twin-Scroll Compressors
Y.N. Meng and W.P. Gao 3419

The Strategy Research and Application of Product Function Innovation
F. Yin, W.Q. Li and Y. Li 3426

Theoretical Analysis and Engineering Improvement Test Verification of the Crack Problem in the Back Van of the Vehicle
G.Q. Yang, Y.Q. Zhao and J.Y. Li 3431

Research on Adhesion and Non-Adhesion Braking Characteristics for High-Speed Train
H.J. Wang, J. Zeng, G.B. Luo and Z.H. Liu 3437

Research on Assembly Sequence Planning Based on Improved Slope One Algorithm
Y. Jin, W.J. Hou and F.X. Yang 3444

Research on Divinable Characters of Rock Burst and Movement of Strata and Ground
W.J. Guo and B.Y. An 3450

Research on Hybrid Hydraulic Excavator Test Bench
D.X. Zhao, M. Xu, P. Liu, C.B. Xu, M.Z. Lin and Q.L. Dai 3456

Research and Application of NURBS Surface Modeling Technique in Computer Aided Industrial Design
B. Zhao and P. Ai 3461

Research on Processing of Large-Size Spiral Bevel Gear CNC Machine Tools
L. Yang, P. Zhang and Y.T. Wang 3466

Research on Steel Tube Confined Concrete Supports Support Technology for Soft Rock Roadway in Coal Bed Washout
X.B. Li, Z.X. Ma, G.L. Liu, M.C. Chen and Q.M. Zhu 3471

Research on Temperature Field of Hydrostatic Thrust Bearing with Annular Cavity Multi-Pad
X.D. Yu, X.L. Meng, B. Wu, C.L. Gao, Z.X. Qiu, Y.Q. Zhang, H. Jiang, X.Z. Lou and Z.M. Shi 3477

Remanufacture of Die Casting Dies
C.R. Chen, Y. Wang, H.A. Ou and N. Gindy 3482

Review and Prospect of the Research of Vibration and Friction Mechanism of Machine Joint Surfaces
X.P. Li, H.F. Nie, Z.J. Zhao and G.Q. Song 3487

Stacking Fault Substructure of Martensite in Steel
Y.P. Ji, Z.C. Liu and H.P. Ren 3493

Static and Dynamic Finite Element Analysis on the Steering System of Automobiles
L.X. Guo, G.H. Ji, L.P. Zhao and J.L. Li 3498

Study and Implement on the Control System of Traction Locomotive Based on Torque Current Closed-Loop
J. Zong, Y. Ruan, M.H. Chen and L.B. Xu 3502

Study of Transient Elastohydrodynamic Lubrication of Spur Gears under Impact Load
Y.Q. Wang, Z.C. He and W. Su 3506

Study on 42CrNiMo Gear Contact Fatigue Strength Experiment
T. Wang, R.L. Zhang, Z.F. Wu and H.M. Li 3510

Numerical Verification of Constitutive Relationship for Mechanic Behavior of Shape Memory Polymer
B.L. Zheng, X.M. Huang, C.C. Han and Q. Yang 3514

Study on Nonlinear Dynamics Collision of Drill String and Rock Based on ANSYS/LS-DYNA
S.Y. Yang, X.J. Yang and X.Z. Yan 3520

Study on Safe Distance between Cross-Cut and Lower Belt Tunnel
X.L. Wen, C.L. Li, F. Yu and L.H. Gao 3525

Study on the Application of Modularity Design in Milltary Products
T. Zeng and Z.H. Zhang 3530

Study on the Optimized Cutting Parameters for the Nuclear Channel Head
Z.H. Yu, T. Chen, D.S. Liu and J. Wang 3534

Study on Torque Control Strategy of Dual Clutch Transmission during Shifting
T. Deng, F.B. Hu and D.Y. Sun 3541

Research on Equipment Virtual Maintenance Technology
X.D. Cheng, L. Lei, J.H. Zhang, W. Peng and X.Y. Cui 3546

Study on Ware Resistance of Laser Hardening Rolling Mill Liner
X.W. Qiu, Y.P. Zhang and C.G. Liu 3551

Study on Wear Performance of Whisker-Toughening Ceramic Cutting Tools Synthesized by the Carbothermal Reduction Process
X.W. Chong, C.Z. Huang, L. Xu, G.L. Zhao, B. Zou and H.L. Liu 3555

TCA Principe and Application of the Double Circular Arc Tooth Spiral Bevel Gear
R.L. Zhang, T. Wang and Z.F. Wu 3559

The Application of GPS Principle in the Accuracy Detection of NC Machine
J.D. Wang, J.J. Guo, B.A. Guo and H.J. Wang 3562

The Application of Knowledge Representation on the Design of Loading Device of Garbage Truck
B. Wang, J. Tao and H.P. Wu 3568

The Design and Analysis of the System about Wind Sorting Fruit from Leaves Based on the Blueberry Picking Machine
Y.D. Bao, Y.L. Guo and P.Z. He 3573

The Detection of Avalanche Propagation in Engineering Change
R. Mo, Z.W. Gong, H.C. Yang and X. Zhang 3578

The Experimental Research of the Influence of Accumulator before Servo Valve to Mill Control Precision
C.M. Chen, Y.Q. Wang and Y. Yang 3583

The Friction and Wear Behavior of a Spherical Plain Bearing with the Copper Grid Composite Liner under Swivel and Tilt Swinging Conditions
M. Qiu, G.F. Wang, Y.X. Bai, L. Chen and Y.C. Li 3589

The Influence of Metal Layer on the Differential Transformer Displacement Sensor
C.W. Jin, L.X. Xu, Q.P. Fan and Y.L. Zhu 3594

Numerical Simulation of Springback in Air-Bending Forming of Sheet Metal
Z.M. Fu 3602

The Mechanical-Stress-Field of Matrix in Eutectic Ceramic Composite
Z.G. Cheng, X.H. Ni and X.Q. Liu 3607

The Research and Development of Mechanical Product Turning Processing Cost Estimation System
W.Q. Huang, K.S. Li and H.J. Liu 3612

The Research of Anti-Seismic Control Experiments of Spatial Reticulated Shell Structures
S.L. Wang, Z. Chen, Y.J. Fan and Q.Y. Ma 3617

The Research of Canal Fuzzy Self-Adapting P+PR Controller of Long Distance Water Diversion Project and Applications
Y.C. Han 3622

The Research of Gear Reducer Fault Diagnosis in Coal Mine
J. Zhang, G.H. Xue and M. Wu 3627

Tie Rod Preload Analysis of a 100MN Hydraulic Press
P.H. Zhu, L.H. Zhang, B. Yu and Q.Z. Xie 3632

Time Delay Model of Fractional Fourier Transform and the Application in Signal Filtering
Y.G. Wang, H.L. Yu and X.Y. Liang 3637

An Association-Analysis Based Web Mining Preprocessing Algorithm
D.L. Ma and W.J. Gao 3642

Virtual Design and Kinematic Simulation for Picking System of Blueberry Picking Machine
P.Z. He, H. Zhu, Z.P. Li and H.B. Wang 3647

Wavelet Package for the In-Process Monitoring of Gas Metal Arc Welding Mild Steel
Y.Y. Ting, K.C. Hung and Y.F. Tzeng 3652

The Characteristics Research of Tube Vortex Based on Large Eddy Simulation
D. Zhang, Y. Zheng, Y. Zhao and J.J. Huang 3657

Research on Nonlinear Error Analysis and Overproof Processing Method in Five-Axis NC Machining with Dual Turntable
Y.Q. Li, Y.X. Chen and Q. Chen 3662

Research of a Kind of Wind-Solar Hybrid Power Experiment System
Y. Xie and B. Jiao 3667

Fracture Mechanics Study on Subsurface Median Crack in Layered Structure Subjected to Mechanical Contact
Y.M. Bao, J. Lv, Y.J. Zhang, M.F. Xu and G.Z. Chai 3672

AHP Method for Supplier Evaluation Index System Modeling and Evaluation Research
L. Hu 3677

Analysis on a Novel Coaxial Magnetic Gear
Y.K. Man, Y.S. Zhang and Y.S. Zhao 3682

Antenna Placement Analysis for Coherent MIMO Radar with Phased Synchronization Errors
P. Ma, Q.S. Zhou and J.Y. Zhang 3689

A Study on Die Roll Height of Special Automobile Seat Recliner Gear According to Die Chamfer Shape in Fine Blanking Tool
J.D. Kim, H.K. Kim, Y.M. Heo and S.H. Chang 3694

Chapter 7: Computer Application in Design and Manufacturing

A Construction Method of Surface Modeling Based on CAID Software
Y.F. Zhu 3703

A Dual-Population GA Based Visual Identification with Model Matching
Y. Li, F. Gao, Y.M. Huang and X.G. Yang 3708

Research on BLDCM Speed Control System Based on MFNN-PID Control Method
X. Wang 3714

A Multi-Hop Grouping Scheme for Assisting Handoff Procedure in Vehicular Networks
Y. Jin, K.W. Rim, K.C. Kim and M. Wei 3719

A Multi-Target Synthetic Assessment Approach for Information Systems Security Risk
N. Feng, J. Xie and Y.X. Wu 3726

A New Cost Allocation Approach on One Machine Sequencing Games
Y.P. Zhou and X.S. Gu 3731

A Novel Approach of Detector Generation for Real-Valued Negative Selection Algorithm
R.H. Hu, P.H. Lou and P. Zhao 3736

A Novel Improved Web Structure Mining Algorithm
L.D. Zhao, S.H. Liu and Q. Chai 3741

A Novel Method Based on Clustering Algorithm and SVM for Anomaly Intrusion Detection of Wireless Sensor Networks
Z.H. Xiao, Z.G. Chen and X.H. Deng 3745

A SMS-Based Real-Time Device Monitoring and Abnormality Recovery System for Computer Rooms
C.C. Hu, S.H. Li and T.W. Tsai 3750

A Fast GPU Algorithm for the Inverse of a Circulant Matrix
Z.Y. Zheng and R.X. Zhang 3755

A Study on Optimization of Automotive Suspension Base on PSO-BP Network Algorithm
C.S. Jiang, Y.D. Li and Z.D. Wang 3760

Analytical and FEM Modeling of Electormagnetic Radial Force for Switched Reluctance Motor
J.J. Zhang, R. Long, H.J. Zhang and X.Q. Ma 3765

Dynamic Analysis and Simulation of Virtual Engine
C.C. Wu, Y.W. Hwang and S.H. Lin 3770

Corrosion Resistance of TiN Coating on 304 Steel
S.C. Her and C.L. Wu 3779

An Error Correction Code for Use in Space Vehicle Computers
R.N. Huang, B. Gong and Y.J. Lou 3784

An Image Retrieval Method Based on Local Features of Interest Points
X. Fu, J.T. Wang and J.X. Zeng 3789

An Improved LS-SVR Ensemble Learning in Internet Traffic Prediction
K.L. Li, Y.H. Ma, Y.M. Tian and J. Xie 3794

An Intrusion Detection Scheme for Home Wireless Sensor Networks
M. Wei, K.W. Rim and K.C. Kim 3799

Analysis and Experimentation of the Robotic System for Archwire Bending
Y.D. Zhang and J.X. Jiang 3805

Analysis of Cloud Computing and Information Security
K.N. Wang and S. Qian 3810

Application of BP Neural Network in the Reliability Prediction
W. Jiang, M. Zhang, Z.L. Chen, Y. Liu and N. Li 3814

Application of GX Simulator Software in PLC Program Development
X.M. Zhao 3819

Bilingual Teaching in University Should Act as a Final Ring in the Foreign Language Education Chain in China
W. Peng, F. Xiao, L.F. Zhang and Y. Zhan 3824

Blow Molding Process Optimization of Amorphous Alloy Tube Blank Based on POLYFLOW Software
Y.Q. Guo, X. Yang, J.J. Han and W. Chen 3827

CAD of Friction Material for Automobile Brake Using Artificial Neural Networks
Y.X. Lin, C.H. Gao and Z.H. Chen 3832

Characterization of Anatase Coatings on NiTi Shape Memory Alloy by Plasma Electrolytic Oxidation Method
L.H. Lu, J.W. Zhang and D.J. Shen 3837

Combing the Servo Velocity Sensors and the Wireless Sensor Networks: Feasibility Study
Y.C. Kan, H.C. Lin, Y.M. Hong, M.L. Chang and C.C. Lin 3842

Comment on Xu et al.'s Key Agreement and Password Authentication Protocol
Y.N. Guo and C.L. Liu 3847

Error Compensation Method of Harmonic Analysis for Time Grating Sensor
Z.R. Chen, D.L. Peng, Y. Zheng, F.Y. Zheng and T.H. Zhang 3850

Controller Design for Petri Net with Uncontrollable and Unobservable Transitions
Z. Tao and X.X. Liu 3855

Correlogram-Based Perceptual Similarity in Vehicle Probabilistic Tracking
Y.F. Mao and M. Chen 3860

Design and Implementation of ETL in Police Intelligence Data Warehouse System
L.Z. Shen, S.H. Liu and S.K. Chen 3865

A New Method of Product Configuration for Customization System into Supply Chain
X.Y. Sun, X.Y. Jiang, S.J. Wang and X.M. Zhang 3870

Design of MOD-CAN Interface Card Based on OPC Technology
H.P. Xu and X.F. Yao 3875

Design of Test Software for the CAN/LIN Hybrid Network Automobile Body Control System
C. Zheng, W. Sun and B.M. Meng 3880

Design of Rapid Positioning Multi-Axis and Multi-Blade Saw Machine
Z.H. Zhang 3885

Development of Software System of Crawler Crane Platform Fatigue Life Reliability Analysis
J. Li, F.W. Lu, F. Zhao and X.Q. Zhang 3890

Development on Digital Circuit Network Virtual Lab System Based on LabVIEW
B.C. Ran, S.F. Lin, Z. Li and J.Y. Bai 3895

Development of RFID-Enabled Tool Management System
N.F. Ren, J. Zhang and Y. Zhao 3899

Edge Detection Based on Wavelet Transform and Fusion
T. Tian, Z. Zheng, H.X. Wang and M. Luo 3904

Establishment of Aircraft Ammunition Fault Diagnosis Expert System Knowledge Base Based on FTA
X.H. Zhang, S.L. Yang, W.K. Wang, Y. Liu and Y. Wei 3909

A Trustable Approach Based on Fuzzy Inference for P2P Systems
H. Sun and L. Li 3914

Experimental Investigation on Cavitation Noise of Water Jet and its Chaotic Behaviour
F.H. Zhang, H.F. Liu, J.C. Xu and C.L. Tang 3919

Fault Prediction and Health Management for Mechanical Equipment Groups Based on the Internet of Things
X.L. Xu, T. Chen, Y.B. Zuo and S.H. Wang 3925

Effects of Temperature and Humidity on the Optical Property of Aluminum Film
S.C. Her and Y.H. Wang 3930

Freeze Drying Technology Forming Drug Release Bionic Scaffolds with Gradient Structure
L.L. Lin, L.P. Zhou, Z.K. Wang, Q.X. Hu and M.L. Fang 3935

GE PAC and Image Processing Based on the Corn Automatically Grading System Design
J.G. Gao, H. Wang, S. Zhang, S.G. Wang and L. Yu 3940

Using the Simplified 3D DIC Method to Measure the Deformation of 3D Surface
S.H. Tung, J.C. Kuo, M.H. Shih and W.P. Sung 3945

Global Optimization Method Based on Incremental Radial Basis Functions
X. Wei, Y.Z. Wu and L.P. Chen 3950

Grey Forecasting Model for Patching Blinking in Video-Oculography
X.J. Chen, Y.M. Yang, W. He, J.G. Wang and Y.X. Mao 3955

Ice Detection Based on Near Infrared Image Analysis
J.C. Zhuge, Z.J. Yu and J.S. Gao 3960

Image Encryption Based on Digital Watermarking Technology
S. Zhang, Y.P. Qin and X.J. Wang 3965

Image-Based Inspection System for Detection of Glass Substrate's Edge Defects
Q.C. Hsu and C.M. Lin 3970

Improving Transmission Availability for Wireless Cognitive Networks: SkyChannel Query Processing
L.X. Liu, G. Hu, Z. Huang and Y.X. Peng 3977

Intelligent Correction of Shift Schedule for Dual Clutch Transmissions Based on Different Driving Conditions
Y.G. Liu, D.T. Qin, Z.Z. Lei and R. Ding 3982

Interaction and Mediation Patterns for Service Composition
G.J. Cai and B. Zhao 3988

Intuitionistic Fuzzy Sets with Double Parameters and its Application to Automatic Control System
Z.H. Zhang, J.Y. Yang, Y.P. Ye and M. Wang 3993

Investigation on Local Optical Parameters of Liver Tumors in Laser-Induced Thermotherapy
L.J. Dai, G.R. Hua, A.P. Qian and Z.Y. Qian 3998

IT Performance Key Factors Extraction Based on PCA Selective Ensemble
M.Y. Hu, W. Guo and N. Zhao 4003

K − Bipartite Matching Extendability of Special Graphs
Z.H. Hui, J.W. Yang and B. Zhao 4008

Key Technologies of Network Collaborative Modeling Based on B/S Structure
N. Wan and Y. Yang 4013

Key Technologies Research of an Interactive Realistic Graphics Visualization System Based on Visual C++ and OpenGL
T. Geng and Q.H. Ren 4018

Master-Slave Parallel Genetic Algorithm Based on MapReduce Using Cloud Computing
G.M. Li, W.H. Zeng, J.F. Zhao and M. Liu 4023

Measurement of Hysteresis Loop by Using Pulsed Magnetic Field in LabView Environment
D.Y. Huang, B. Han, T.L. Hu, Z.G. Wang and T. Zhang 4028

Monitor & Diagnosis Support System for Nuclear Power Plants
S.Y. Cheng, X.K. Liu and M.J. Peng 4033

Research and Development of Solid Modeling Technology for Impeller Based on UG/Open
G. Li, X.T. Wei and Q.Q. Chen 4038

Research on Wear Debris Recognition Algorithm Based on IFNN
X. Wang 4043

Position Sensorless Control of PMSG in Wind Energy Conversion System
G.X. Jia, H.C. Zhao and C.X. Wang 4048

Present Situation Analysis and Development Trend Forecast of China's Construction Industry
J.J. Tang, W.Z. Liang, S.H. Hu and T.S. Zhao 4053

Real-Time Information Capturing and Integration Framework of the Internet of Manufacturing Things
Y.F. Zhang, J.Q. Wang and S.D. Sun 4059

Research on Premium-Penalty Ant Colony Algorithm with Fashion Factor
X. Wang 4064

Multi-Body Model Identification of Vehicle Semi-Active Suspension Based on Genetic Neural Network
J.J. Zhang, B.A. Han and R.Z. Gao 4069

Research for SOA Frame Based on WebSphere Platform
Y.J. Lin, B.Y. Liu and H.L. Chen 4074

Research on Design and Development for Intelligent Manufacturing Execution System of Tungsten Powder Processing
J.G. Yu, M.L. Feng, P.P. Huang and Q.Z. Zhang 4080

Research on Function Partitioning and Granulating Control in Product Design
X.G. Ma, X.M. You and B.C. Wen 4085

Research on Fuzzy Evaluation of Ink-Jet Paper Printability
H.S. Chen, Z.C. Qu and B.L. Tang 4090

Research on Linear Array CCD Laser Vertical Displacement Measurement
F.B. Li, Z.K. Li and Q. Li 4095

Research on Motion Characteristic of an Integrated Testing System for High-Speed Train End Relationship Test
Y.B. Wang, S.T. Zheng, Q.T. Huang, H.G. Xu and J.W. Han 4100

Research on Government Investment in Public Project Performance Evaluation Model under Low-Carbon Economy
F. Hu, L. Li and Z.H. Liu 4105

Research on Simulation Techniques of Space Information Confrontation Based on Agent and HLA
W.K. Wang, X.H. Zhang, S.L. Yang and Y. Liu 4112

Research on the Virtual Simulation of Emergency Management for Coal Mining Enterprises
P.Y. Yuan and W.L. Peng 4117

Research on a Novel Two-Phase Hybrid Stepping Motor
Y.K. Man, Y.Y. Ma, Y.S. Zhao, C.C. Xu and W.S. Hao 4122

Research on Wear Debris Recognition System Based on ART and Gray Level Co-Occurrence Matrix
J.L. Kang 4127

Reverse Path Planning for Flexible Needle in 2D Soft Tissue with Obstacles
Y.J. Zhao, Y.D. Zhang and F. Tu 4132

Sealing Methods and Principles Based on Commonly Plastic Packaging Containers
L.J. Cao and B.Z. Wang 4138

Semantic Web Service Composition Based on Topic Maps
H.J. Ma 4142

Short Wall Box Style Mining Method of Strip Coal Pillar under Town
Z.P. Guo, J.Z. Li, C.H. Li and H.B. Ge 4146

Simple Parallel Genetic Algorithm Using Cloud Computing
J.F. Zhao, W.H. Zeng, G.M. Li and M. Liu 4151

The Development and Design of Human Machine Interface of the Monitor & Control System for Nuclear Power Plants
S.Y. Cheng, X.K. Liu and M.J. Peng 4156

Spectral Feature Matching Based on Isometric Projection of Matrix
Z.Y. Zhang, Z. Tian and W.D. Yan 4161

Strain Analysis of Surface Bonded Optical Fiber Sensors
S.C. Her and C.Y. Tsai 4166

Study of Image Analysis Methods Based on Tollennar Equation
L.H. Guo, M.Y. Zhang, X.H. Guo and Y.L. Xie 4171

Path Point Calculation and 3D Coordinate Display for WMR Based on Vision
H.W. Gao, C.Y. Luan and H.Y. Yang 4176

A Business Process Composition Model for Web Component
C.R. Choi and Y.J. Song 4180

The Analysis of Photovoltaic Cell's Mathematical Model and Applied Research of MPPT Control Methods in PV Power Generation System
G.X. Jia and C.Y. Zhang 4185

The Application Research of Matlab in Heat Exchanger Tube and Shell Pressure Drop Test Process
W.N. Liu, X.L. Pei, L.F. Yang, J. Yuan and X.M. Nie 4193

The Component Importance of Complex System Based on Bernoulli State Variables
S.M. Fei, Y. Zhao and L. Huo 4198

The Correlation Analysis of Discrete Variables and Continuous Variables Based on Mutual Information
L. Huo, C. Lv, S.M. Fei and D. Zhou 4203

The Fatigue Life Analysis of the Crosshead Based on ANSYS
X.M. Yuan, S.Z. Zhou and T.C. Huang 4208

The Optimal Transmission Range for Strip-Based Wireless Sensor Networks
Z.J. Wang, X.G. Zhao, X. Qian and X.Z. Cheng 4213

The Requirements Stability of Control and Measure about Software Project
L.G. Song 4218

The Research on Fastener Image Skew Detection
H.R. Xu and W.H. Lu 4224

Photovoltaic Cell Test System Based on Dual-Core Processors
P.C. Zhang, Y.L. Kong and H.S. Zhang 4229

The Study of Anti-Interference Measures of PLC Application System
X.M. Zhao and G.L. Sheng 4234

The TP Chromatic Aberration Estimation by Using Neural Networks
D.J. Huang, Y.J. Chen, H.C. Huang, Y.A. Lin and R.C. Hwang 4239

Research on Torque Production of a New Magnetic Gear
Y.K. Man, C.C. Xu and S.Q. Wang 4244

Triangulation Based on 3D Reconstruction Technique
Z.J. Hou and L.G. Gu 4249

Relativity Analysis between Dynamic and Static Modulus of Elasticity on Different Thickness Wood-Plastic Structural Plates
G.W. Yu, Y.C. Hu and J.Y. Gu 4254

Wavelet-Based Neural Network Adaptive Filter for sEMG Denoising
J.H. Wang, N. Chen, Q. Xiao, J.Y. Xu and S.S. Gu 4259

Web-Based Information System for Cladding Industry
Q. Du, S. Ledbetter and R. Yang 4265

Research and Implementation on the Quality Controlling Method of NURBS Curve
P. Ai and B. Zhao 4269

Establishing Model of Adaptive Control in the Optimal Fishing Strategy Based on Quantum Control Techniques
F.Y. Chen, R.Y. Qi and C. Jiang 4274

Application of Intrusion Prevention in Campus Network Security
W.G. Zhao and G.Z. Pan 4279

Constructing an Architectural Designer-Oriented Computer-Aided Design Tool for Smart Home Device
Y.F. Chang and S.Y. Chen 4284

Image Acquisition of Drivers' Fatigue State Based on Fuzzy Evaluation
X.M. Chen, Z.H. Wei and L. Gao 4290

Appling of New Optical Measurement and Theory in Mechanical Properties of Thin Film
H.M. Yun, L.P. Chao and J.S. Hsu 4295

Development of Online Computer Supported Collaborative Work with Augmented Reality for Machine Assembly Training
Y.C. Liu and M. Cong 4300

Chapter 8: System Modeling and Simulation

A Risk Evaluation Modeling upon Discontinuous Deformation Analysis and Hydraulic Computation for Aged Dam
H.C. Lin, Y.M. Hong, W.P. Sung, Y.C. Chen and Y.C. Kan 4307

A Knowledge Management System Integrating Collaborative Commerce for Product Development in Supply Chain
C.C. Chang 4315

Structural Stress Analysis of 16×16 InSb Infrared Focal Plane Array with Underfill
Q. Yu, L.W. Zhang and Q.D. Meng 4320

A New Intelligent Approach Based on Genetic Algorithm for Finding Optimal Base Stations Configuration in the Dynamic Scenario Used in SON
Q.B. Chen, Y. Wang, Z.J. Liu and C.C. Liang 4325

A New Logic Optimization Algorithm of Multi-Valued Logic Function Based on Two-Valued Logic
J.L. Qiu, F. Li, X. Gu, L. Chen and Y.Y. Chen 4330

A New Method to Recognize Unfertilized Egg in Early Incubation Stage
H.J. Zhang, L.J. Xu, W.L. Zhao, M.D. Liu, W.J. Zhou and C. Yang 4335

A Revised Benign Worm-Anti-Worm Propagation Model
Y.H. Fang, X.F. Zheng and T.T. Xie 4340

A Study of Accuracy Error Compensation for Artificial Joint Arthroplasty
M.C. Hsieh and A.C. Lin 4345

A Survey on the Object-Oriented Petri Net Modeling
Y.P. Liu, J.H. Fu and H.Y. Feng 4350

Aligning Genomic Sequence Applied in Stereo Matching
S.C. Yu, X.Y. Yu, J.Y. Fan and H.B. Wu 4357

A Study of the Influence of New Media on Graphic Design in Computer Age
R.S. Yan 4362

An Improved Algorithm to Near Infrared Multispectral Ice Detection
J.S. Gao, R.Y. Han, Z.J. Yu and W. Qiao 4367

An Improved Random Decrement Algorithm and Applications
Q.W. Ye, Z.M. Feng and H.G. Hu 4372

A New Approach to Sub-Pixel Corner Detection of the Grid in Microscopic Camera Calibration
W. Yuan, C. Bai, Y.G. Wang, M. Yu, F. Shao, Z.J. Peng, S.Y. Fu and F.C. Li 4377

Analysis and Research of AHP-Based Method Base
L. Li, X.G. Li, C.H. Qin and X.T. Zhang 4382

Analysis of Conspiracies between Contractors and Supervisors in Constructions
L. Zhao and S. Zhong 4386

Analysis on Calculating Numerical Integration Methods of Common Social Science Field
J. Hou, K. Liu and Q.M. Li 4391

Application of Visualized Design Method on the Designing of Articulatory Vibrating Screen
J. Jiang, G.C. Liu, C.F. Li, L. Wang, S.Y. Liu and B.C. Wen 4396

Research on the Grid Security Evaluation of Combination Weigh Based on Cloud Centroid Model
W. Sun, H.Y. Hou and J.P. Liu 4405

Artificial Fish Algorithm to Solve Traveling Salesman Problem
J.P. Wang, Y.P. Liu and Y. Huang 4410

Catastrophe-Based Antibody Clone Algorithm
Y. Zhang, L.H. Wu and Z.Q. Luo 4415

Classification and Identification of Young Females' Shoulder Shape Using the Fisher Discriminant Analysis Based on 3D Body Measurement
F.Y. Zou, J.F. Jin, J. Sun and M. Li 4421

Mechanical Behavior between Carbon Fiber and Epoxy Matrix for Thin Adhesive Layers 4426

Disparity Image Inpainting with Improved Method Based on Exemplar
S.C. Yu, X.Y. Yu, J.Y. Fan, H.B. Wu, Y. Wang and Q.H. Feng 4431

Edge Detection Based on a Fuzzy Inference System
S.L. Sun, C.L. Liu and S.S. Chen 4436

Edge Detection for Noise Image by Wavelet Transform and Mathematical Morphology
H.L. Huang and H. Wang 4441

Effect of Rack-Aware Placement in Cloud Storage System
Z. Huang, Y. Yuan and Y.X. Peng 4446

Efficiency Analysis of Manufacturing Enterprises Informatization from Value Chain View - Based on DEA and Tobit Model
W. Guo, M. Huo, H.Y. Shao and L. Wang 4451

Empirical Analysis of Express Service Quality Based on Fuzzy Comprehensive Evaluation
X. Fan and M.Y. Zheng 4456

The Development of Lungmen ABWR TRACE Safety Analysis Model
H.T. Lin, J.R. Wang and C.K. Shih 4461

Establishment of Virtual Orthopaedic Surgery System
M.N. Wang and W.W. Xu 4466

Fault Prediction for Nonlinear Time Series Based on Temporal Pattern Estimation
S.C. Su and X.L. Fan 4471

Gearbox Fault Diagnosis Based on AIS-ICA Algorithm
J.Y. Huang, H.X. Pan, Y.H. Lu and Y. Li 4476

General Fault Monitoring and Diagnosis Expert System Based on Fault Tree and Multi-Sensor Information
A.Y. Zhang, X.G. Zhao and L. Zhang 4481

Girth Calculative Rules Research of Female Lower Body Torso Based on Three Dimensional Cloud Point Data 4486

Grid-Based Task Scheduling PMTS Algorithm
J.L. Qiu, L. Chen, J.P. Chen, X. Gu and Y.Y. Chen 4491

LZW Algorithm Research and Amelioration Based on Pointer Trace
F.Y. Zhang, L.L. Wen, X.L. Jia, Z. Li, M.L. Chen and C. Chen 4498

Matching Optimization of Ship Engine and Propeller Based on PSO-GA Algorithm
L. Ren and W.X. Zhang 4503

Mining Least Privilege Roles by Genetic Algorithm
L.J. Dong, M.C. Wang and X.J. Kang 4508

Near Optimal Learning Rate BP Algorithm and its Application in Traffic Forecast
L.M. Qin and H.T. Zhang 4513

Novel Method of MRI Medical Image Segmentation Combining Watershed Algorithm and WKFCM Algorithm
J.Q. Liu and K. Chen 4518

Numerical Simulation Analysis in Cooling Temperature Field and Bending Deformation after Rolling of 100-Meter Rail
Y.Y. Liu, Y. Wang, L. Chen, G. Li and J.G. Wang 4523

Orthogonal Genetic Algorithm and its Application in Function Optimization
H.M. Liu, G.M. Dai and X.S. Yan 4528

Path Transfer Probability for Vibration Transfer Path Systems with Translational and Rotational Motions in Time Range
W. Zhao and Y.M. Zhang 4532

Pectoral Muscle Segmentation for Digital Mammograms Based on Otsu Thresholding
C.C. Liu, S.S. Yu, C.Y. Tsai and T.S. Tsui 4537

Performance Optimization of Flexure Hinges Using Genetic Algorithm
B. Li and J. Gou 4542

Petri Net and GA Based Method for JSP Optimization with Dual-Objective
L.X. Qi and Z. Tao 4547

Regional Traffic Control System Study Based on Pattern Identification
B.Z. Xia and H.W. He 4552

Reliability Assessment of a Gear Based on Moment Method
X.W. Yin, W.X. Qian and L.Y. Xie 4560

Research of 3D Machining Procedure Model Parameterized Modeling Method
D.L. Zhang, R. Mo, N. Wan and H. Qiao 4565

Research of Electricity Customer Classifications Based on Kernel Clustering Algorithm under the Organic Combined Model
S.X. Yang and H. Ding 4570

Optimization of Temperature-Dependent Functionally Graded Material Based on Colonial Competitive Algorithm
H. Mozafari, B. Abdi and A. Amran 4575

Research of Optimization Methods in Recruitment
F. Fang and S.G. Li 4581

Research on Algorithm of Conflict Detection and Resolution in Three-Dimension Free Flight Based on Genetic Algorithms
H.P. Shu, K. Li and L. Cao 4586

Research on Collimator Tube of some Aerocraft Control Test System
L. Chang, L. Li and J. Yan 4591

Research on Conservative Mechanism Time Management in Maintenance Support Simulation
W. Zhang, C.Z. Qu, J.J. Liu and J.R. Zhang 4596

Research on Coupled Tasks' Sequence Optimization Based on Qualitative and Quantitative Partial Order
Z.L. Wang, Y.X. Wang and Y.Z. Ma 4601

Research on Flow Press Servo-Valve Controlling Electro-Hydraulic Force Control System and Nonlinear Performance Analysis
J.Y. Li, J.P. Shao, X.J. Wang, B. Qin and Y.J. Qiao 4606

Research on FPGA Based Closed-Loop Motion Control System
Z.M. Chen and S.N. Yuan 4613

Research on Game Analysis and Resources Allocation in Multi-Project Management
Q. Zhang and H.B. Chen 4619

Research on Merging Cluster Algorithm for QoS-Oriented Supply and Demand
X.Z. Feng and G.F. Wu 4625

Research on Method of Items Recognition Based on SURF Algorithm
W.Y. Chen, W.Z. Xie, Y.L. Zhao and Z.B. Hao 4630

Research on Mode of after-Sale Reverse Logistics Operation of Auto Maintenance Industry Based on Time Window
H. Hao, X.G. Wu and H.Y. Li 4635

Research on Optimization of Cutting Parameters Based on Genetic Algorithm
S.R. Zhang, X.G. Li, J. Wang and H.W. Wang 4640

Research on Regional Industry Competitiveness of Biomass Energy Based on Entropy Weight and TOPSIS
J. Shang and L.L. Wang 4646

Research on the Application of Parametric Technology on Product Modeling
D.F. Liu, L.Y. Li, J. Tao and B. Wang 4651

Research on the SIFT Algorithm in Image Matching
Y. Cong, X.R. Chen and Y.T. Li 4656

Evaluation Architecture and Method of Quality Survival and Development Index for Product
Z. Kui, K. Zhao and J.X. Yang 4661

Roll Casting of Recycled AA5182
T. Haga, K. Komeda, K. Mtsuoka, S. Kumai and H. Watari 4667

Scene Modeling of Virtual Operation Training System for Tower Cranes
M.X. Dong, R.C. Li, Q.Z. Xu and C.L. Zhu 4671

Semi-Supervised Clustering Algorithm Based on Small Size of Labeled Data
M.W. Leng, X.Y. Chen, J.J. Cheng and L.J. Li 4675

Measurement and Analysis of Summer Outdoor Thermal Environment of Campus Open Space in Guangzhou
G. Chen, L.H. Zhao and Q. Li 4680

Simulation and 3D-Solid Modeling of Skew Bevel Gear
L.P. Zhang, J. Fu and B.Y. Yang 4685

Simulation and Parametric Analysis of Vegetable Seedling Transplanting Mechanism
S. Wang, C.H. Li and W. Gao 4690

Simulation and Research of Aircraft Deicing Fluids Deicing Process
B. Chen and L.W. Wang 4695

Simulation Model of Aggregated Equipment Combat Unit's Mission Maintainability in the Mobile Mission
H.J. Feng, L. Chen and S.W. Zhao 4700

Simulation on Temperature Field of Gap Oil Film in Constant Flow Hydrostatic Center Frame
Y.H. Li, X.L. Meng, X.D. Yu, B. Wu, C.L. Gao, Z.X. Qiu, Y.Q. Zhang, H. Jiang and Z.M. Shi 4706

Simulation Research of the Influence of Random Phase Disturbance on MVDR Beam Former
Y.F. He, G.S. Song, C.M. Wang and J.S. Jiao 4711

Solving Intrinsic Parameters of Camera Calibrated from Controlled Motion Sequences and Homography
D.Y. Ge, X.F. Yao, W.J. Xiang and Y. Liu 4716

The Network Traffic Management Based on Queuing Theory
J.P. Wang, X.M. Li and C.L. Jiao 4721

Some Error Estimates on the Large Jump Asymptotic Method for Parabolic Iterface Problems
C.Y. Nie and H.Y. Yu 4726

Structural Optimization Based on Static Design Criteria of a Long Span Mobile Bridge Using Genetic Algorithm
S.H. Jang, I.W. Hwang, B.C. Kwon, S.T. Kim and Y.H. Choi 4732

Research on Touch Experience Design in Graphic Design
R.S. Yan 4742

Study on Bayesian Method for Life Distribution of Zero-Failure Data
Y.F. Tang, H.J. Feng and S. Wang 4747

Study on Establishment of Helix Flute Mathematic Model of Solid Carbide End Mills
G.C. Li, J. Sun and Y. He 4753

Study on Flute Design for End Mill Based on Oblique Cutting Model
G.C. Wang, J.F. Li, J. Sun and F.Y. Li 4758

Study on Kinematics Sensitivities of Folder Mechanism with Clearance
Y.C. Yuan, Y. Li, Y.M. Wang and Q. Guo 4764

Study on Sensorless Control Model Based on a Model Reference Adaptive System with Parameter Optimization
J.G. Yang, F. Zhou and B.Z. Li 4770

Study on Supply Chain Partner Selection Based on Support Vector Machine
W.B. Li 4779

Study on Traditional Vernacular Dwelling in China's Water Towns
M.Q. Fang 4784

Solving Rate Equations Including Background Losses Applicable to Threshold Pumped Fiber Lasers with Three-Energy-Level Dopants
J.L. Wang, X. Du, J. Lv, R.H. Dou, J.G. Chen, Z.C. Duan and L.P. Zhang 4788

Supplier Classification Based on Artificial Immune System Clustering Algorithm
S.X. Yang, H. Ding and W.H. Liang 4796

Supply Chain Coordination Based on Revenue-Sharing Contracts under Random Demand
R.S. Ma, J.Y. Ren and Y.P. Hao 4801

Taiwan Defense Education Curriculum Teacher's Essential Ability and the Teachers Cultivate Research of the System
M.C. Huang, C.Y. Wu and J.R. Tzeng 4806

Finite Element Analysis and Optimization Research of Mounting Bracket of a Mini Van
S.H. Liao and C.S. Cheng 4811

The Experimental Study on a New Learning Method Based on Feedback Theory
H.M. Tang 4816

The Hysteresis Model of Terfenol-D with Magneto-Stress Coupling
A.H. Meng, H.L. He, M. Kong and M.F. Li 4820

The Design of Intelligent Water-Saving Irrigation System for Greenhouse
F.G. Wang, L.J. Xu, C.L. Du, Y. Yang and Y.S. Li 4826

The Modeling Research on the Cost of 3PL Transportation Based on System Dynamics
T.Z. Chai and M.W. Tong 4832

The Research on Modeling of Stereo Vision Measurement and System Accuracy in Non-Ideal Situation
Z.J. Yu and S.F. Lu 4837

The Research on the Management of Project Group for Flexibility Based on Fuzzy Comprehensive Evaluation
Y.N. Zhang and Y.H. Cai 4842

The Study of Prediction Model Based on Morlet Wavelet Neural Network
H.Z. Yang, W.G. Zhao, W. Chen and X.Q. Chen 4847

The Study of Spacecraft Finite Element Model Updating System
X.T. Liu, Z.B. Chen and S.Y. Huang 4852

Series System Failure Rate Modeling and the Mechanism to Yield Bathtub Curve
L.Y. Xie, W.Q. Lin, M.C. Zhang and S.Z. Yan 4858

Three-Dimensional Extended Analysis and Life Prediction of Gear Crack
J. Ma, R.P. Shao and F.F. Dong 4863

Tracking Error Modeling of the Theodolite Based on GRNN Method
M. Li and H.B. Gao 4870

Tra-DBScan: A Algorithm of Clustering Trajectories
L.X. Liu, J.T. Song, B. Guan, Z.X. Wu and K.J. He 4875

Tunnel Seismic Wave Field Simulation Using Finite Element Method
Z.L. Wang, Z.P. Liu and C. Zhang 4880

UKF Filtering of UAV MEMS Gyro Based on Time-Series Model
J. Xu and Q. Li 4885

Variable Step-Size Wavelet Vector Machine Blind Equalization Algorithm
Y.C. Guo, Z.C. Zhang, F. Xu and S.J. Guo 4892

Verification of Non-Uniform Heat-Conducting Interphase by Using Finite Element Method 4897

Wavelet Analysis of Misalignment Fault of Rotor-Bearing Systems
H.N. Liu 4902

A Quality Model of Lightweight Component for Embedded System
H.Y. Jeong and Y.H. Kim 4907

Based on Embedded System's Vehicles Immunity PID Controller Design
X.W. Yang, J.Y. Huang and H.J. Wang 4912

Influence of Low Frequency Electromagnetic Field on the As-Cast Structure of Cu-10%Sn-2%Zn Alloys
H.T. Zhang, B.M. Li and J.Z. Cui 4917

A Calculation Method of Velocity and Acceleration of Wheel Center Based on Rigid Multi-Body System Dynamics
S.H. Liao and C.H. Yang 4922

Research on Situation Evaluation Based on Artificial Immune for Network Security
R.R. Zhang and X. Xiao 4926

An Efficient Method for Solder Joint Inspection Based on Statistical Learning
Y.C. Kuang, G.F. Ouyang, H.W. Xie and X.M. Zhang 4931