## **Table of Contents**

## **Preface and Organizing Committees**

## **Chapter 1: Material Science Technology**

Effect of Rotating Electromagnetic Field on Corrosion Behavior of CuNi <sub>10</sub> Fe <sub>1</sub> Mn Alloy Tube Billet	
G.B. Li and Y.H. Huang	3
Effects of Sintering Route and Flux on the Luminescence and Morphology of YAG: Ce Phosphors for White Emitting-Light Diodes (LEDs) T. Han, S.X. Cao, M.X. Ma, D.C. Zhu, C. Zhao, M.J. Tu, J. Zhang and S.Y. Zheng	9
Finite Element Modeling Method of 3D Braided Composites Based on ICT Technique S.Y. Wang, J. Fu and Q.L. Wang	16
Synthesis and Performance of a Modified Polyether-Type Superplastizer by Hydroxypropylmethyl Cellulose	21
X.J. Fu, W.H. Wang, Z.Y. Zhang, H.Y. Zhao, H.Y. Zhu and K.Z. Zhu  Vacuum Brazing of Inconel 718 to Waspaloy Superalloy Using BNi <sub>2</sub> Brazing Filler  Z.S. Yu, R.F. Li and K. Shi	21 26
Effects of Nano-Particles on Properties of Electronic Solders C.H. Du, M. Tang, G.S. Gan, T. Wang, W.C. Huang, M.M. Cao and C.T. Li	31
<b>Experimental Investigation on Fatigue Property of Asphalt Concrete Modified by Diatomite-Glass Fibers</b>	
Y.C. Cheng, H.L. Ma, Q.L. Guo, C. Xu and P. Zhang	38
Numerical Analysis of Ferrofluid Based Leaning Sensor H.R. Cui	43
Stress Distribution in Reverse-Bent Bonded Joint Y. Tang, X.C. He, J.C. Zheng, K. Zeng, Y.F. Ding and Y.B. Hu	48
Complex Analysis of Plane Problem of Two-Dimensional Quasicrystals L. Yang, Q. He, S.Y. Zhou and W. Li	52
Bioinformatics Analysis and Characteristics of UL19 Protein of Duck Plague Virus B.H. Dai, A.C. Cheng and M.S. Wang	55
<b>Position and Speed Detection of Synchronous Motor Rotor</b> R.M. Tao, X. Tao and C.R. Xiong	61
The Study of Retroreflective Material Based on Mesopic Vision Theory C.Z. Zhu, Y. Yang and L. Wang	67
SiO <sub>2</sub> Content Retrieving Based on ASTER and its Application in Metallogenic Prediction in Abra, Australian G.X. Peng, M.Y. Wang, S.Y. He and S.L. Shu	72
Research of the Interference of Surface Plasmon in an Enhanced Two-Slit Structure Y.D. Gao, S. Gang and Y. Li	72
Comparison of Multivariate Calibrations for the Determination of Soluble Solids Content of Tea Beverage Using UV-VIS-NIR Spectroscopy	76
W.Q. Luo, H.Q. Yang and W.C. Dai	83
Nondestructive Discrimination of Grape Seed Varieties Using UV-VIS-NIR Spectroscopy and Chemometrics H.Q. Yang, W.Q. Luo and W.J. Wang	89
Corrosion Characteristics of 2205 Duplex Stainless Steel in High Temperature and High Pressure Environment Containing $H_2S/CO_2$ S.Q. Zheng, C.F. Chen and L.Q. Chen	95
Preparation and Dimming Performance Study of PNIPAm Thermal Hydrogel H. Gao, L.N. Sun and Y.P. Wu	99
Simple Synthesis of Layered Zinc Phosphate and its Evaluation of the Corrosive Effectiveness	
S.M. Ma, D.P. Wei, S.F. Wu, Z.W. Huang, A.P. Liao and A.Q. Yuan	105

Microstructures and Properties of Y <sub>2</sub> O <sub>3</sub> /La <sub>2</sub> O <sub>3</sub> /Cu Composite by Internal Oxidation S. Wang and M. Xie	109
Microstructures and Properties of W-26Re Alloy by SPS S. Wang and M. Xie	113
A Novel Nanogap Fabrication Technique Using Taguchi Method and Modified Particle Swarm Optimization T.S. Li and L.H. Chen	118
Tribological Study of Xanthate-Containing Acetic Ester as Additives in Hydrogenated Oil C.L. Li, L.P. Xiong, H. Liu, L.T. Xiong and W. Wang	123
Researches Regarding the Nature of the Embeddings in the Cast Pieces Made of Aluminium Alloys	120
P. Cristian, V. Eugeniu, P.A. Mihaela, S.M. Gabriela and B.A. Constantin  Poly Gate Proximity Effect Modeling for 40nm CMOS  X. Li, Z. Ren, M.J. Wang, H. Zhou, L.J. Sun, S.J. Hu and Y.L. Shi	128 134
The Pretreatment of Ramie Fiber Material with Supercritical CO <sub>2</sub> Fluid G.H. Zheng, Z.R. Zhang, X. Zhao and T. Hori	139
PSP Statistical Modeling for 40nm MOSFET H. Zhou, X. Li, Z. Ren, M.D. Zhang, L.J. Sun, S.J. Hu and Y.L. Shi	144
<b>Low-Alkali Cement Composition Using the Green Tea and Industrial-by Products</b> S.J. Yoon, J.H. Jung and Y.M. Kim	149
Numerical Simulation of Failure Mode and Crack Propagation of Marble with Pre-Existing Fissure W. Song	153
The Improvement of Pcb'S Electroplating Uniformity Z. Jia, S.T. Zhang, D. Liu, W. He and D. Zhang	158
<b>Applied Research of Smelting High Nitrogen Steels by Bottom-Blowing Nitrogen</b> S.H. Wang, D.G. Zhao, X.J. Cui and Q.J. Li	163
Chapter 2: Manufacturing and Control Systems, Industry Application	
Discrete Harmony Search Algorithm for the Disassembly Scheduling Remanufacturing Engineering	1.60
K.Z. Gao, P.N. Suganthan and T.J. Chua Structural-Acoustic Analysis of Automobile Passenger Compartment	169
S.W. Zhou and S.Q. Zhang  Design and Implementation for the Information Integration of Mechanical Manufacturing	175
Enterprises Z.D. Jiang	180
Application of Distributed Control System in Papermaking Process Based on CIPS Technology X.P. Liu and Z.J. Xiao	186
Parameters Evaluation for Aero-Engine Prognostic Health Management	
F. Bai and W.L. Jin  Study on the Simulation Model of the Production Capacity Decision in Hydrogen Fuel Cell  Vehicles Industry	192
T. Ma, M.Q. Chen, J. Wang and P. Ma	197
<b>Study on Application of Process Analysis in Mechanical Processing Industry</b> Z.X. Huang, B.P. Li and C.G. Li	203
Lightweight Design of the Truck Side Framework J. Li and Y.X. Teng	209
The Mill Pacing Research Based on the Optimized Plate Model Q.X. Zhang, Z.P. Fan, S.W. Zhang and H.Y. Yu	213
<b>Identification and Elimination of Gross Error in Petrochemical Enterprise</b> Q.X. Zhang, S.W. Zhang, C.Y. Zhu and Y. Tao	219
Study of Impact of Gas Cooler Cooling Circuit on Heat Transfer Performance B.Q. He and C.L. Liao	224
Design and Simulation of Passive Controller for Guided Rockets	

Estimate of Flying Projectile Attitude Based on MEMS Gyroscope Measurements C.F. Niu, S.P. Liu and Z.Y. Wang	236
<b>Temperature and Humidity Detection System Based on Power Line Communication</b> J.Q. Zhang, D.Y. Chen, H. Huang and Y. Lu	242
Study on Control Strategy of Shape Set up System for HSM Z.F. Guo, J.H. Hu and X.Y. Sun	247
Cross-Directional Basis Weight Measure and Control System Based on CARMA Model Predictive Function Control Algorithm  Z.J. Xiao, X.P. Liu and B.X. Hou	251
The Importance of the Plane Digital Assembly Site Supply Chain Manufacturing Process Management and Control L. Mei and X.L. Wang	256
The Analysis of Intra-Industry Trade in Auto Parts Industry in Jiin Province D. Wang	261
The Research of Permanent Magnetic Field Treatment on the Iron & Steel Industry Circulating Water Impacts of Stability Index D.K. Li, L.L. Jiang, H.B. Zuo and Z.L. Tan	265
Dynamic Anti-Windup Design for Missile Overload Control System X.J. Shi, H.C. Zhao and K.W. Xu	273
Using TRIZ-Based Conflicts-Solving Approaches for Product Life Management (PLM) of Innovative 3C Consuming Product C.H. Yeh, F.C. Wu and M.J. Wang	278
<b>Design of a Data Collection System in Manufacturing Informationization</b> H.H. Jian, C.R. Xiong and G.B. Huang	283
<b>Method and Application of Intelligent Reconfigurable Control</b> Z.Q. Li and J.Z. Zhao	289
A New Method to Control and Monitor a 6 D.O.F. Robot Arm Y.M. Pei, K. Li and Y.H. Liu	297
Inverse Design of Air-to-Air Missile System Based on Improved Genetic Algorithm H.C. Zhao, Y. Nan and L.X. Gu	302
Research on the Algorithm of Aviation Emergency Rescue under Major Disasters Z.H. Xia and W.J. Pan	315
Research on Pricing Strategy of the Closed-Loop Supply Chain in Heterogeneous Market H.W. Jiang	321
Mining Method for Weighted Concise Association Rules Based on Closed Itemsets under Weighted Support Framework Z.C. Qu, M. Ye and B. Jiang	326
<b>Design of Profibus-DP Slave Station Based on DPRAM</b> Z.P. Chen and X.J. Lu	334
Network Design and Implementation of Intelligent Warehouse Based on EPC/RFID and WSN	
H.S. Li, G.R. Bian and N.H. He A Performance Modeling Language for Automotive Embedded Control Systems Based on	338
UML X.F. Yin, J.X. Tan, X.T. Wu and Z.J. Gong	344
Ontology Modeling of Aircraft Fault Knowledge Y. Zhou, Z.Y. Zeng, B. Tian, Z.Y. Jia and X. Guo	350
Max-Max Based Internal Model Control Method for Multivariable System with Time Delay L. Quan and H.L. Zhang	356
Analysis to the Influence of Rendering Intents on Image Reproduction L.L. Chen, G.X. Chen, Q.F. Chen and R.X. Xu	360
Research on Air Target Attitude Testing Technology Z.J. Liang and T.H. Ma	366
Based on the PS/T Method Control Design of Flexible Systems F.W. Meng, Z. He, Z.Y. Yu and L.H. Wang	370
Trajectory Tracking Control of Hypersonic Reentry Vehicle Based on Adaptive Fuzzy System B. Yang and Y.C. Wang	378

A New Control Method for Fermenter Temperature G.H. Zeng and Y. Gan	385
A Zebra-Crossing Detection Algorithm for Intelligent Vehicles H. Li, M.Y. Feng and X. Wang	390
Research on Manufacturing Process Planning Based Double Main Spindles of Chuck for Mill-Turn Machine Z. Yao, D. Yu, J.F. Tian, Y. Hu and Q. Li	396
Based on the Topography Image Segmentation Level Set Method M.R. Zhao and X.W. Zhang	404
Application of Adaptive Enhancement Means in Head and Neck CR Image M.H. Zhang and Y.Y. Zhang	409
A Method to Predict Disc Cutter Specific Energy for TBM Based on CSM Model G. Li, L.D. Zhu, J.Y. Yang and W.S. Wang	414
Research of Kinematics Simulation of TBM Segment Erector Based on Virtual Prototype G. Li, L.D. Zhu, J.Y. Yang and W.S. Wang	418
Contact Analysis of HSK Toolholder-Spindle Interface X.M. Liu, J.W. Luo and A.P. Li	422
Polishing Optical Glass by Mechanochemical Machining K.L. Wu, H.M. Lee and K.Y. Jheng	428
Influence of Welding Sequence on the Welding Residual Distortion for Laser Welded Sandwich Structures Used in Shipbuilding Industry S.L. Chen and S.L. Yang	434
Study on the Hot Stamping Process of DP Steel Engine Dumping Plank Based on FEM H.W. Liu, R.H. Dong, X.X. Li and S.B. Ping	439
Resistance to Impact Load Analysis of a Novel Magnetorheological Damper L. Huang and X.G. Huang	443
<b>Two DOF Parallel Robot Design and Dynamics Simulation for Quick Picking</b> D.X. Bi, C.Z. Guo and X.M. Zhang	448
Algorithm of Identifying Pencil-Cutting Regions for Free-Form Surface W.J. Li	454
Effect on Gray Balance Caused by Slight Chromaticity Deviation of Paper in Image Reproduction H.M. Wang, G.X. Chen and X.M. Cui	459
The Lightweight Design of CNC Lathe Spindle Box Based on Topology Optimization G.T. Zhang and Z.H. Yin	464
3D Reconstruction of Weld Pool Surface by a Biprism Stereo System Y.D. Zhang, Z.M. Liang, D.L. Wang and J. Wang	469
Fault Diagnosis Mechanism Based on FTA and Bayesian for Large-Scale CNC Equipments J.F. Liu, M. Chen and Y.L. Li	474
Data Storage Model for Laser CDs Y. Wei	480
The Design of TIG-AWP Based on Inverter and DSP C.T. Li, Y. Luo, C.H. Du and G.S. Gan	484
<b>Intelligent Temperature Controlling System Based on Single Chip Microcomputer</b> F. Xie, F. Zhong, S.T. Ding and X.Z. Wang	488
Automatic Data Statistics of Materials Failure Case Utilizing Ontology P. Shi, J.H. Li and L.H. Ding	493
Adaptive Regulation of Tracking Servo for Next Generation Optical Data Storage Systems F. Peng, Z.Z. Wu and L. Wang	497
Effect of Instrument Precision on Area Quality Measurement Used in Digital Printing Quality Assessment X.M. Cui, G.X. Chen, Q.F. Chen, B.L. Tang and J.L. Tai	503
On Sonar Image Processing Techniques for Detection and Localization of Underwater	505
Objects L.Y. Weng, M. Li and Z.B. Gong	509
A Novel Design of Experiments for Global Optimization of Light-Gauge Steel Wall Sound Isolation Systems C.T. Lee, H.C. Kuo and P.R. Lee	515

Research of Image Acquisition and Processing System of the Flow Meter Verification Equipment Based on Embedded Linux System L.Y. Sun, C.K. Lin and K. Chen	521
Research on Remote Virtual Assembly Technology of Plug Valve Based on VRML P.G. Jiao	526
Influence of Surface Pretreatment on Carbon Coating of Cutting Tools Using PVD D.N.A. Shri, J. Ramli, N.A. Alang and M.M. Mahat	530
<b>Test and Finite Element Simulation of Steady-State Temperature Field of Rolling Tire</b> X.L. Duan, S.G. Zuo, Y. Li, C.F. Jiang and X.L. Guo	536
<b>Design of the Human-Machine Interactive System of Double Twister Based on WinCE</b> S. Yuan, J.Y. Zhang and Y.H. Yuan	543
The Data Fusion of Chess-Playing Robot Based on SERCOS J.L. He and D. Li	550
A Survey of Technologies for Climbing Robots R.G. Yue and S.P. Wang	556
The Theory and Methods of Mineral Resources Quantitative Forecast and Evaluation J. Xin and G.H. Xu	563
Voltage and Frequency Droop Control in an Autonomous Microgrid X. Ying, H.W. Lin, Z.Y. Yan, J.X. Li and M. Su	568
Numerical Simulation of Projectile Accelerating Process in Aftereffect Period Y. Zhong and L.M. Wang	576
The Design and Implementation of Power Management Module for Satellite Service System Based on Self-Awareness Technology K. Li, Y. Lei, L. Wang and Y.J. Luo	581
<b>Design of Double Twister's New Control System Based on Multi-Electromotor Driving</b> M.L. Lv, Y.H. Yuan and J.Y. Zhang	588
A Novel Harmonic Control Circuit Based on Composite Right/Left Handed Transmission Lines	
J.J. Gao and G.Z. Lu  Visual Thinking in Data Visualization	593
N.N. Zhu and S.Q. Sun	597
Image Surface Defects Extraction Technology Based on Watershed Segmentation and Texture Analysis	
Z.T. Zhu, G. Yang and B. Zhang	603
Chapter 3: Civil and Building Constructions Engineering	
Static Finite Element Model Updating for Special-Shaped Bridge Based on Response Surface Method	
H.B. Liu, Y.J. Song and Y.F. Gong	611
<b>Damage Identification of Simply Supported Beam Bridge Based on Time Series Analysis</b> H.B. Liu, Y.J. Song, G.J. Tan and Y.Y. Sun	617
PFC/FLAC Coupled Numerical Simulation of Excavation Damage Zone in Deep Schist Tunnel	(22
W. Song and R. Hong Weighting-Grey Relative Degree Assessment Model of Concrete Structure Durability and	622
its Application P.F. Xue and D.L. Mao	627
Numerical Simulation of Inner Support for Excavation Based on FEM Software ABAQUS Y. Sun, Y.N. Chen and Z.Y. Wang	632
Seismic Capacity of Reinforced Concrete Frame Strengthened with In-Filled Wall Using Embedded Form S.J. Yoon, S.Y. Seo and C.S. Kim	636
Structural Damage Identification Based on Acceleration Response Vibration	
Transmissibility Y.S. Diao, O.L. Zhang and D.M. Meng	640

A Study on Objects Information Compatibility between BIM Softwares for Building Thermal Load Analysis	
S.T. No, S.H. Hong and J.Y. Kim	646
Geometrically Non-Linear Formulation of Planar Flexible Multi-Beam Systems: Stiffness under Second Order Theory B.C. Chu, Z.Y. Chu and J. Cui	652
Theory and Methods on Tactics Generation of Extension Architectural Programming Facing to Artificial Intelligence F. Lian and G.T. Zou	659
Pedestrian System of Singapore and its Enlightenment L.C. Zhang and C.Y. Li	666
Independent Technology of CBTC System and Management Innovation in Urban Rail Transit	
S.K. Ding	671
Research on Urban Rail Transit Testing Simulation Platform Based on Minimum System S.K. Ding	677
Multivariate Poisson-Lognormal Regression for Crash Prediction of Different Types on Freeways Diverge Areas	
L. Bai and J.J. Fan	683
Development and Evaluation for Improvement of a Beam-Form Support in Korean Building Constructions J.Y. Kim and J.W. Choi	689
Tensile Capacity of Mechanical Bar Connection Corresponding to Detail of Screw on Bar	00)
Surface for Construction S.Y. Seo, S.J. Yoon and S.K. Kim	693
Design and Implementation of Langfang Earthquake Disaster Prediction System Based on	
GIS M. Huang and J.L. Feng	697
Chapter 4: Pharmaceutical, Chemical and Energy Engineering	
1	
Significance of Delayed Geochemical Hazard of Cd in Dawu River Domain in the Dexing Copper Mine, Jiangxi Province	
Significance of Delayed Geochemical Hazard of Cd in Dawu River Domain in the Dexing Copper Mine, Jiangxi Province Y.Q. Yang, X.L. Wang, Y.Y. Zhao, L. Huang, Y.X. Zhang and Y.F. Zhang	705
Significance of Delayed Geochemical Hazard of Cd in Dawu River Domain in the Dexing Copper Mine, Jiangxi Province Y.Q. Yang, X.L. Wang, Y.Y. Zhao, L. Huang, Y.X. Zhang and Y.F. Zhang Recovery of Lead from Lead Oxide Ore from Kazakhstan by Gravity Separation Combined with Flotation	
Significance of Delayed Geochemical Hazard of Cd in Dawu River Domain in the Dexing Copper Mine, Jiangxi Province Y.Q. Yang, X.L. Wang, Y.Y. Zhao, L. Huang, Y.X. Zhang and Y.F. Zhang Recovery of Lead from Lead Oxide Ore from Kazakhstan by Gravity Separation Combined with Flotation W.J. Zhao, D.W. Liu, X.L. Zhang, Q.C. Feng, K.W. Song, Y. Wen and Y.B. Mao Comparative Optimization on the Focusing Methods of Solar-Electric Dish Stirling System	709
Significance of Delayed Geochemical Hazard of Cd in Dawu River Domain in the Dexing Copper Mine, Jiangxi Province Y.Q. Yang, X.L. Wang, Y.Y. Zhao, L. Huang, Y.X. Zhang and Y.F. Zhang Recovery of Lead from Lead Oxide Ore from Kazakhstan by Gravity Separation Combined with Flotation W.J. Zhao, D.W. Liu, X.L. Zhang, Q.C. Feng, K.W. Song, Y. Wen and Y.B. Mao Comparative Optimization on the Focusing Methods of Solar-Electric Dish Stirling System W. Lan, B. Wang and Y.M. Feng The Study on Acceptable Capacity of Wind Power for Gansu Power Grid Based on Power	
Significance of Delayed Geochemical Hazard of Cd in Dawu River Domain in the Dexing Copper Mine, Jiangxi Province Y.Q. Yang, X.L. Wang, Y.Y. Zhao, L. Huang, Y.X. Zhang and Y.F. Zhang Recovery of Lead from Lead Oxide Ore from Kazakhstan by Gravity Separation Combined with Flotation W.J. Zhao, D.W. Liu, X.L. Zhang, Q.C. Feng, K.W. Song, Y. Wen and Y.B. Mao Comparative Optimization on the Focusing Methods of Solar-Electric Dish Stirling System W. Lan, B. Wang and Y.M. Feng The Study on Acceptable Capacity of Wind Power for Gansu Power Grid Based on Power Balance X.M. Cao, X.D. Xu, F.J. Wang, T.Q. Liu, Z.H. Chen and H.M. Lin	709
Significance of Delayed Geochemical Hazard of Cd in Dawu River Domain in the Dexing Copper Mine, Jiangxi Province Y.Q. Yang, X.L. Wang, Y.Y. Zhao, L. Huang, Y.X. Zhang and Y.F. Zhang Recovery of Lead from Lead Oxide Ore from Kazakhstan by Gravity Separation Combined with Flotation W.J. Zhao, D.W. Liu, X.L. Zhang, Q.C. Feng, K.W. Song, Y. Wen and Y.B. Mao Comparative Optimization on the Focusing Methods of Solar-Electric Dish Stirling System W. Lan, B. Wang and Y.M. Feng The Study on Acceptable Capacity of Wind Power for Gansu Power Grid Based on Power Balance	709 714
Significance of Delayed Geochemical Hazard of Cd in Dawu River Domain in the Dexing Copper Mine, Jiangxi Province Y.Q. Yang, X.L. Wang, Y.Y. Zhao, L. Huang, Y.X. Zhang and Y.F. Zhang Recovery of Lead from Lead Oxide Ore from Kazakhstan by Gravity Separation Combined with Flotation W.J. Zhao, D.W. Liu, X.L. Zhang, Q.C. Feng, K.W. Song, Y. Wen and Y.B. Mao Comparative Optimization on the Focusing Methods of Solar-Electric Dish Stirling System W. Lan, B. Wang and Y.M. Feng The Study on Acceptable Capacity of Wind Power for Gansu Power Grid Based on Power Balance X.M. Cao, X.D. Xu, F.J. Wang, T.Q. Liu, Z.H. Chen and H.M. Lin Research on the Effect of Governor System to Low-Frequency Oscillation of Power System	709 714 720
Significance of Delayed Geochemical Hazard of Cd in Dawu River Domain in the Dexing Copper Mine, Jiangxi Province Y.Q. Yang, X.L. Wang, Y.Y. Zhao, L. Huang, Y.X. Zhang and Y.F. Zhang Recovery of Lead from Lead Oxide Ore from Kazakhstan by Gravity Separation Combined with Flotation W.J. Zhao, D.W. Liu, X.L. Zhang, Q.C. Feng, K.W. Song, Y. Wen and Y.B. Mao Comparative Optimization on the Focusing Methods of Solar-Electric Dish Stirling System W. Lan, B. Wang and Y.M. Feng The Study on Acceptable Capacity of Wind Power for Gansu Power Grid Based on Power Balance X.M. Cao, X.D. Xu, F.J. Wang, T.Q. Liu, Z.H. Chen and H.M. Lin Research on the Effect of Governor System to Low-Frequency Oscillation of Power System Z.J. Liu, S.M. Zhou and R. Huang Syntheses and Properties of Pyrrole Derivative as a Cathode Material for Li-Ion Batteries	709 714 720 725
Significance of Delayed Geochemical Hazard of Cd in Dawu River Domain in the Dexing Copper Mine, Jiangxi Province Y.Q. Yang, X.L. Wang, Y.Y. Zhao, L. Huang, Y.X. Zhang and Y.F. Zhang Recovery of Lead from Lead Oxide Ore from Kazakhstan by Gravity Separation Combined with Flotation W.J. Zhao, D.W. Liu, X.L. Zhang, Q.C. Feng, K.W. Song, Y. Wen and Y.B. Mao Comparative Optimization on the Focusing Methods of Solar-Electric Dish Stirling System W. Lan, B. Wang and Y.M. Feng The Study on Acceptable Capacity of Wind Power for Gansu Power Grid Based on Power Balance X.M. Cao, X.D. Xu, F.J. Wang, T.Q. Liu, Z.H. Chen and H.M. Lin Research on the Effect of Governor System to Low-Frequency Oscillation of Power System Z.J. Liu, S.M. Zhou and R. Huang Syntheses and Properties of Pyrrole Derivative as a Cathode Material for Li-Ion Batteries C. Su, L.M. Wang, L.H. Xu, J.L. Liu, F. Yang and C. Zhang Simple and Rapid Synthesis of LiFePO <sub>4</sub> /C Composite for Lithium Rechargeable Batteries by Microwave-Solvothermal Method Assisted with Short Time Post-Treatment Process	709 714 720 725 731
Significance of Delayed Geochemical Hazard of Cd in Dawu River Domain in the Dexing Copper Mine, Jiangxi Province Y.Q. Yang, X.L. Wang, Y.Y. Zhao, L. Huang, Y.X. Zhang and Y.F. Zhang Recovery of Lead from Lead Oxide Ore from Kazakhstan by Gravity Separation Combined with Flotation W.J. Zhao, D.W. Liu, X.L. Zhang, Q.C. Feng, K.W. Song, Y. Wen and Y.B. Mao Comparative Optimization on the Focusing Methods of Solar-Electric Dish Stirling System W. Lan, B. Wang and Y.M. Feng The Study on Acceptable Capacity of Wind Power for Gansu Power Grid Based on Power Balance X.M. Cao, X.D. Xu, F.J. Wang, T.Q. Liu, Z.H. Chen and H.M. Lin Research on the Effect of Governor System to Low-Frequency Oscillation of Power System Z.J. Liu, S.M. Zhou and R. Huang Syntheses and Properties of Pyrrole Derivative as a Cathode Material for Li-Ion Batteries C. Su, L.M. Wang, L.H. Xu, J.L. Liu, F. Yang and C. Zhang Simple and Rapid Synthesis of LiFePO <sub>4</sub> /C Composite for Lithium Rechargeable Batteries by Microwave-Solvothermal Method Assisted with Short Time Post-Treatment Process C. Su, J.L. Liu, L.H. Xu, L.M. Wang, Q.F. Huang and C. Zhang Study on Wind Speed Prediction Based on Rbf Neural Network F. Wang, Z.Z. Tan, D.Y. Liu and X.D. Qian Application and Research on Reducing Reaction of Boron Slag in the Steelmaking Engineering	709 714 720 725 731 736 741
Significance of Delayed Geochemical Hazard of Cd in Dawu River Domain in the Dexing Copper Mine, Jiangxi Province Y.Q. Yang, X.L. Wang, Y.Y. Zhao, L. Huang, Y.X. Zhang and Y.F. Zhang Recovery of Lead from Lead Oxide Ore from Kazakhstan by Gravity Separation Combined with Flotation W.J. Zhao, D.W. Liu, X.L. Zhang, Q.C. Feng, K.W. Song, Y. Wen and Y.B. Mao Comparative Optimization on the Focusing Methods of Solar-Electric Dish Stirling System W. Lan, B. Wang and Y.M. Feng The Study on Acceptable Capacity of Wind Power for Gansu Power Grid Based on Power Balance X.M. Cao, X.D. Xu, F.J. Wang, T.Q. Liu, Z.H. Chen and H.M. Lin Research on the Effect of Governor System to Low-Frequency Oscillation of Power System Z.J. Liu, S.M. Zhou and R. Huang Syntheses and Properties of Pyrrole Derivative as a Cathode Material for Li-Ion Batteries C. Su, L.M. Wang, L.H. Xu, J.L. Liu, F. Yang and C. Zhang Simple and Rapid Synthesis of LiFePO <sub>4</sub> /C Composite for Lithium Rechargeable Batteries by Microwave-Solvothermal Method Assisted with Short Time Post-Treatment Process C. Su, J.L. Liu, L.H. Xu, L.M. Wang, Q.F. Huang and C. Zhang Study on Wind Speed Prediction Based on Rbf Neural Network F. Wang, Z.Z. Tan, D.Y. Liu and X.D. Qian Application and Research on Reducing Reaction of Boron Slag in the Steelmaking Engineering D.G. Zhao, S.H. Wang, X.J. Cui and H.J. Zhang Research on Model of Solid-Solid Reaction and Experiment	709 714 720 725 731 736 741
Significance of Delayed Geochemical Hazard of Cd in Dawu River Domain in the Dexing Copper Mine, Jiangxi Province Y.Q. Yang, X.L. Wang, Y.Y. Zhao, L. Huang, Y.X. Zhang and Y.F. Zhang Recovery of Lead from Lead Oxide Ore from Kazakhstan by Gravity Separation Combined with Flotation W.J. Zhao, D.W. Liu, X.L. Zhang, Q.C. Feng, K.W. Song, Y. Wen and Y.B. Mao Comparative Optimization on the Focusing Methods of Solar-Electric Dish Stirling System W. Lan, B. Wang and Y.M. Feng The Study on Acceptable Capacity of Wind Power for Gansu Power Grid Based on Power Balance X.M. Cao, X.D. Xu, F.J. Wang, T.Q. Liu, Z.H. Chen and H.M. Lin Research on the Effect of Governor System to Low-Frequency Oscillation of Power System Z.J. Liu, S.M. Zhou and R. Huang Syntheses and Properties of Pyrrole Derivative as a Cathode Material for Li-Ion Batteries C. Su, L.M. Wang, L.H. Xu, J.L. Liu, F. Yang and C. Zhang Simple and Rapid Synthesis of LiFePO <sub>4</sub> /C Composite for Lithium Rechargeable Batteries by Microwave-Solvothermal Method Assisted with Short Time Post-Treatment Process C. Su, J.L. Liu, L.H. Xu, L.M. Wang, Q.F. Huang and C. Zhang Study on Wind Speed Prediction Based on Rbf Neural Network F. Wang, Z.Z. Tan, D.Y. Liu and X.D. Qian Application and Research on Reducing Reaction of Boron Slag in the Steelmaking Engineering D.G. Zhao, S.H. Wang, X.J. Cui and H.J. Zhang	709 714 720 725 731 736 741

Electric Power Tower Inclination Angle Detection Method Based on SIFT Feature	
Matching P. Yu, B.G. Dong and Y.J. Xue	759
A SiGe RF Power Amplifier for TD-SCDMA Application W.Y. Li and S. Zheng	765
Study on the UV Photosensitive of Hexaarylbiimidazole Photoinitiator System W.H. Wang and J. Hu	771
A New Federation Approach in Analysis of Pharmaceuticals Z. Wang, B. Nie, J.F. Xu, R. Hu and H. Rao	775
An Approach for Data Analysis of Multi-Group Metabonomics Base on Hierarchical-PCA L.X. Huang, Y. Li, Q.Y. Zhang, B.T. Li, G.B. Shang, Y. Zhao, G.L. Xu and B. Nie	779
Comparing Level Set Method and Canny Algorithm for Edge Detection to Tongue Diagnosis in Traditional Chinese Medicine	702
Y.S. Chen, C.H. Chen, Y.M. Chang and C.C. Chang <b>Biological Effects of Color Lighting for Different Ages</b> J.Q. Ju, L. He, Z.B. Li, Z.H. Wu, Z.J. He and R.Q. Liang	783 787
Shallow Groundwater Environment Quality Evaluation Based on the Method of Factor Analysis	787
Z. Fei and T. Bin	792
A New Slope SOI-LDMOS High-Voltage Power Device X.M. Yang, Y. Cai and T.Q. Li	797
Hydrogen Bonding Interaction between a Series of Bolaform Schiff Bases with Barbituric Acid by Spectra and HPLC	001
T.F. Jiao, Q. Tong and J. Liu  Research on Interfacial Assembly and Coordination of Two Bolaform Schiff Base	801
Compounds with Aromatic Spacer T.F. Jiao and J.X. Zhou	806
Chiral Interfacial Assembly of a Trigonal Schiff Base Compound with TPPS in Organized Molecular Films T.F. Jiao and J.X. Zhou	810
Investigation of Coordination Interaction of Trigonal Schiff Base Compound with Zn(II) Ions in Organized Molecular Films	010
T.F. Jiao and J.X. Zhou	815
Medical Auto-Injector Design J. Hou, J.J. Tang, J. Zuo, W.H. Fan and S.W. Chen	819
Chapter 5: Electronic Communication Engineering and Electrical Automation Engineering	
The Design and Implementation of LCD Electronic Clock Based on Renesas MCU M.M. Zhu and G.F. Niu	827
The Design and Optimization of Optic Fiber Isolation Amplifiers for EAST Quench	
<b>Detection System</b> L.G. Zheng, Y.L. Hu, H.Y. Lv, J.H. Lu, C. Pan and Y.Z. Xiao	834
Micro Line Quality Measurement Based on Normally Scanned Digital Image X.M. Cui, G.X. Chen, H.M. Wang and L.L. Chen	839
$\begin{array}{l} \textbf{Embedded Monitoring System of Progressing Cavity Pump Operating Conditions} \\ J.~Xu,~R.~Gong,~X.~He~and~X.L.~Li \end{array}$	844
<b>Design of Electronic Sphygmomanometer Based on Oscillography</b> X. Li, J. Xu, J.H. Duan and L. Han	850
Design of ECG Signal Acquisition and Processing Circult J. Ma, J. Xu, H.B. Xu, Y. Wang and S.X. Yin	856
Effects of Architecture Design on Safety Level of Airborne Electronic Systems F. Yan	862
Research on Customer Churn Model with Least Square Support Vector Machine T.W. Xia	869
Face Recognition Using Local Variation J.J. Liu, W.G. Shen, Q.X. Gao and X.J. Hao	875

Physical Insights into the Fields upon the Superstrate-Loaded Cylindrically Conformal Microstrip Antenna	
Z. Tao	881
<b>Design of Antenna for UHF Near-Field RFID Reader</b> Z. Tao and Y.Z. Zhu	889
The Application of EMD in Dynamic Water Level Measurement H. Guo and G.H. Lou	892
Pattern Synthesis of Circular Array Antenna by Improved Genetic Algorithm G.W. Ren and C.H. Zhou	896
A PSO-Based UWB Pulse Waveform Design Method Z.B. Jia, B. Li and B. Xia	901
<b>Design and Implementation of MIPS Simulator Oriented Memory Hierarchy Research</b> Y.B. Yao, X.B. Zeng and G.P. Zhao	907
Integrated Temperature Sensor AD 590 and its' Application Y.L. Yang	913
A Dynamic Threshold Optimization Algorithm for Spectrum Sensing with Energy Detection in Cognitive Radio	017
W.R. Wang, S.B. Wang and X.Y. Zhao  Design of Evolutions and Angle Measurement System Resed on EET and Monhit Reseiver	917
Design of Frequence and Angle Measurement System Based on FFT and Monbit Receiver X.Q. Zhang, G.C. An and X.J. Wang	923
Related Technology Research on Navigation Electronic Map L. Liu and W.W. Li  The Sign Annual Adopting Discontinuous Receiving Schome for Review Society in College.	929
Traffic-Aware Adaptive Discontinuous Receiving Scheme for Power Saving in Cellular Networks	
L. Xiao and T.K. Zhang	934
Interrelated Characteristics and Simulation of the MIMO Channel X.Z. Zhang, X. Chen and Y.C. Guo	941
Unmanned Aerial Vehicle Maritime Surveillance System of River Reservoir Area B.W. Li, Z.Y. Lu, X.K. Peng, Y.Q. Peng and J.W. Yi	948
Digital Relaying Algorithm on Substation System Protection Y. Hong	954
A 40Gb/s Transimpedance Amplifier Using Modified Regulated Cascode for Optical Fiber Communication	0.50
Y.M. Chen, T. Wang, J.F. Wang, J.W. Gong and L. Zhu  Design and Optimization on Train Crownd Wireless Communication of Passanger	958
Design and Optimization on Train-Ground Wireless Communication of Passenger Information System of Urban Rail Transit X. Yu	964
<b>Design of a Novel Tag Antenna Mountable on the Side of Cigarette Carton</b> Q. Cao, J.X. Li and L.H. Mao	970
<b>Design of a Robust Model Reference Adaptive Control System</b> X.C. Zhao, G.K. Xu, T. Zhang and P.S. Ge	976
Theoretical Analysis of Wavelength Conversion in Fiber Bragg Grating External Cavity	
Lasers L.L. Wang and X.Y. Qiu	981
SD-NFC Mobile Payment Research and Programming for SWP/HCI T.T. Wei, L.J. Wu, X.J. Yang, X.M. Zhang and Y.Z. Wang	984
Research on Fast Capsule Image Segmentation Algorithm Z.T. Zhu, B. Zhang and G. Yang	989
A High Isolation Rate Race Circuit Compose the Carrier Leakage Canceler for RFID Z.H. Ma and J.H. Yang	994
MMW Radiometric Image Feature Extraction for Security Inspection Q. Wang and G.F. Zhang	999
<b>Development of High-Speed Memory Interface Application Based on FPGA</b> X.B. Zhou, R.J. Li and Q. Zhao	1004
The Weighted Localization Algorithm Based on RSSI Calibration N.H. He, H.S. Li and G.R. Bian	1010

Research of Image Processing Based on High Frame-Rate Beacon for Free Space Optical Communication	
Y. Cao and M.F. Zhao	1015
<b>An Improved MAC Protocol for Wireless Sensor Networks in Medical Application</b> W. Zhao and S. Gang	1020
Wireless Access and Mobility Support for Automated Storage/Retrieval System and Logistics on Aluminum Profile	1026
Y.H. Zhang, Z.X. Lin, L.W. Chen and Q. Liang  Comparison and Simulation of Subpixel Imaging Modes for Linear CCD  Y.P. Li, B. He and T.Y. Liu	1020
Joint Scheduling and Power Allocation in OFDMA Network with Decode-and-Forward Relaying	1032
L.S. Lv and Q. Zhu	1038
Efficient and Instant Transmission for Wireless Broadcast J. Lu and J.F. Wang	1044
A Combined Global Coarsening Method for 3D Multigrid Applications Z.Z. Li, Z.H. Wang, L. Yao and W. Cao	1049
<b>Energy-Efficient Node Scheduling for Dense Wireless Sensor Networks Using Voronoi Diagram</b>	
H.F. Lin, A. Jiang, D. Bai and Y.F. Liu	1054
A Gain-Schedule Adaptive LQG Control for Networked Systems with Time Delay and Packet Dropout L.Z. Wu and X.H. Hao	1067
A Novel CBCD Method Based on 3-Dimensional SIFT Descriptors in Dynamic Tunnels J. Hou and B.L. Guo	1007
A Multi-Objective Optimization Approach to Product Configuration Design with the Consideration of Uncertain Information M. Zhang, G.X. Li, Y.H. Yan and B.Z. Wu	1078
A Clustering Routing Algorithm Based Ant Colony Optimization for Wireless Sensor Network	1076
X.Y. Chen, Z.G. Jin and X. Yang	1085
A Sub-Pixel Extraction Method for the Center of the Circular Structure from Spot Array Calibration Target	1090
Y.C. Liu, X. Gao, C. Xu, W.W. Fu, Y. Teng, H.C. Yang and T. Zhang Identifying the Attractive Attributes of the Massively Multiplayer Online Role-Playing	1090
Game Designs C.C. Chen and H.Y. Lin	1095
A Maximum-Minimum Filtering Algorithm Base on Threshold H.S. Dang, L.N. Tian and F. Zhang	1101
The Application of 3-Colour Theorem and 4-Colour Theorem in the Problem of Repeaters' Site Selection	1106
L.Z. Pei, X.Z. Lu, J.X. Meng and F. Xu  Noisy Iris Segmentation with Reflections Removal Using Probable Boundary Edge Detector	1106
M. Wang, N. Wang and X.G. Yao  Research on the Optimization of Transportation Routing Problem of Warehouse Material	1116
Based on Self-Adaptive Ant Colony Algorithm G.R. Bian, H.S. Li and G.L. Dai	1122
JointDesign of RS Coding and Byte Interleaving in CMMB System Z.L. Lin, P. Zhang and L. Liu	1128
An Improved Algorithm of Spectrum Access in OSA S.L. Li, X. Wang and S.Z. Guo	1133
Enhanced Provably Secure NTRU Encryption Based on Hard Learning over Rings W.Y. Fang, Z. Huang, W.L. Cheng and W.Q. Yan	1139
An Edge Extraction Algorithm Based on Morphology Q. Zhao, G.W. Kang, Y.B. Hou and S. Zhao	1145
Design of Weather Modification Assessment System for Evaluating Artificial Test Effect J.L. Du, J.L. Shang, W.Y. Chi and R. Liu	1152
SVM Based Land/Sea Clutter Classification Algorithm Z.L. Jin, Q. Pan, C.H. Zhao and W.T. Zhou	1156

A Novel Priority Based Packet Scheduling Scheme for Video Streaming over WiMAX Networks	
L.S. Chen, G.Z. Liu, J.F. Wang, Q.L. Wang and H.D. Wang	1163
Research of Image Matching Based on Evolutionary Algorithm Q.H. Wu, F. Xie, Y.X. Sun, J. Zhang and X.S. Yan	1168
Face Detection Based on Gabor Wavelet Transform and Statistical Cluster Model W.W. Yu	1172
A Color Based Image Retrieval Method Z.J. Hu and Y.Q. Jiang	1178
Improved Embedded Micro-PSO for High-Dimensional Optimization Problems W.H. Han and C.D. Zhu	1184
CCPSO Based on PCA for Large-Scale Optimization Problem W.H. Han, X. Chen and J. Xu	1190
A New Simple Micro-PSO for High Dimensional Optimization Problem W.H. Han	1195
The Parametric Simulation Design Method of Conjugate Cams of Automatic Pin Insertion Machine Based on Creo Parametric Software	1201
Q.L. Liu, L. Shen, A. Tsai, S.F. Yao and E. Wang  The Development of ECG and PPG Measurement Device	1201
M. Hong	1205
Research of Fiber Bragg Grating Sensor Demodulating Technology with Lab VIEW Z. Wang, Z.H. Yin and M.X. Zhang	1211
The Principle and Structure of Novel High-Precision Linear Time Grating Displacement Sensors	
D.L. Peng, J.S. Yang, X.H. Chen and Z.R. Chen	1216
A Novel Fuzzy Logic PID Algorithm for Submarine Hydraulic Rudder Control R. Sun, S. Liu and L.Y. Zhang	1222
Design of an Ultra-Low Power Timer System Based on C8051F410 X.J. Peng and C.R. Xiong	1227
A Method for Vibration-Cylinder Air-Pressure Sensor Temperature Compensation Based on Radial Basis Function (RBF) Neural Network Y. Ren, D. Xu and F.L. Qin	1232
A Joint Transmitter-Receiver Adaptive STAP Algorithm of Clutter Suppression for Airborne MIMO Radar G. He, P. Bai, W.D. Peng, H.Y. Zhao, X. Su, J.F. Lin and M.F. Wang	1238
A Research Concerning a Distributed Automation Scheme for 10kV Aerial Wire with	
Grounding Protection X.L. Shi, J. Ye, J. Lei, M.Y. Guo, Z.L. Zhang and W. He	1243
Chapter 6: Electrotechnics, Mechanical Engineering and Applications	
Estimation for Bearing Preload of Machine Tool Spindle Based on Vibration Signal T. Xu, G.H. Xu, Q. Zhang, C. Hua and Q.Q. He	1251
<b>Shafts Parameter Optimization Design for Lunar Rover Wheel-Leg Planetary Mechanism</b> Y.M. Wang, C.H. Bao and T.H. Fan	1258
<b>Study on Automatic Planning of Truck-Mounted Concrete Boom Pump System</b> S.Q. Zhang, S.W. Zhou and J. Sun	1265
The Relationship between Temperature and Levitation Stiffness of YBCO Bulk for Maglev Vehicle	1050
H. Jing, M. Jiang and S.Y. Wang  Personal on the Arrangement of Main Shaft Pearing in the Late Model High Stiffness CNC	1270
Research on the Arrangement of Main Shaft Bearing in the Late-Model High-Stiffness CNC Lathe with AHP C.Y. He and Z.H. Yin	1275
Five-Phase Half-Controlled Bridge Commutation and Stabilizing Voltage Nd-Fe-B Permanent-Magnet Generator for Light Vehicle	
J.L. Hu, X.Y. Zhang and W.F. Zhang	1280

Numerical Simulation and Study on Three-Dimensional Flow Field of Wind Turbine Impeller	
F. Wang, D.Y. Liu, L. Zhou and X.D. Qian	1286
<b>Two-Objective Optimization of Drawing Mechanism Based on Genetic Algorithm</b> X.L. Wang and B. Wang	1292
<b>Application of Virtual Substance in Launch Dynamics Simulation for Self-Propelled Guns</b> S.Y. Chen, L.M. Wang and W. Shi	1296
Research of Self-Study Arithmetic on Energy Recovery Brake Pedal in Hybrid Cars J.H. Li, M.C. Wang, L. Yuan and L.Y. Zhang	1302
Research on a Novel Electrical Gear-Type Grating Sensor F.Y. Zheng, Z.H. Gao and Z.R. Chen	1307
<b>Design of the Gear Database Based on UG Secondary Development</b> M.H. Yuan, Y. Ding and A.M. Ji	1312
A New Design Method of Dexterous Hand Based on Power Second Distribution D.X. Bi, H.F. Long and Z.C. Sun	1316
Research on Automatic Judgement of Wheelset Press-Fit Curve J. Xiao, J.B. Han, X. Cheng and R. Fang	1321
Research on Improvement the Second Harmonic Signal to Noise Ratio Using Pulse-	
Inversion Technique B.S. Yan and S.X. Zhang	1327
<b>Dynamics Grey Forecasting Model of Time Grating Numerical Control Rotary Table</b> Z.R. Chen, F.Y. Zheng, X.H. Chen and T.H. Zhang	1333
<b>Digital Design and Performance Evaluation of the Rocket Engine</b> B.W. Hu and B. Wang	1339
Control Method Research of Electrical Vehicle Used IPM Synchronous Motor D.Y. Chen, J.Q. Zhang, H. Huang and Y. Lu	1344
Design of Power Control System on Medium Frequency Induction Furnace Using	
Microcontroller X.X. Zhu, J.F. Hu and C.R. Xiong	1349
A Fitting Method for Establishing an Aeroengine's State Variable Model Based on Process	
Identification X.X. Kong and X. Wang	1356
Modified Strong Tracking Filter for the SOC Estimation of Lithium Battery in Electric Vehicle	
Z. Cheng, Y.H. Zhang and Y.L. Liu	1362
The Experiments of Cantilever Piezoelectric Vibrator Power Generation S.X. Qian, H.S. Hu, L.X. Ge and J.Y. Song	1368
Harmonic Frequency Cascade Static Synchronous Compensator J.H. Zhu, W. Chang, W.X. Pan, J.P. Gu, X. Wu, F. Chen and A.B. Qiu	1373
A Novel Dual-Mode Microstrip Bandpass Filter with a Pair of Equal Crossed Slots S.P. Li, C.G. Chang and W. Wu	1383