## **Table of Contents**

## **Preface**

## **Chapter 1: Electronic Engineering**

Circuits	
Y. Gao, C.L. Yang and S.L. Tian	3
Methods of Handling the Aliasing and Tolerance Problem for a New Unified Fault Modeling Technique in Analog-Circuit Fault Diagnosis Y. Gao, C.L. Yang and S.L. Tian	11
<b>Designing of New Intelligent Music Electro-Acupuncture Apparatus</b> S.Z. Bi, Y. Liu and C.H. Wang	17
Research of Low Power Design Strategy Based on IEEE 1801 Unified Power Format S.P. Cui and C. Xie	21
The Key Technology of Designing the Universal Programmer for Freescale HCS12 Serial MCUs	
J. Zhang and Z.L. Nie	25
A Design of High Performance CMOS Folded Cascode Operational Amplifier Z.F. Wang, Y.J. Cao and J.M. Feng	31
The Research of Programmable Equivalent Capacitor Circuit X. Sheng, Q.H. Shang, Z. Huang and B.S. Wang	36
The Nonlinearities of Memoryless Power Amplifier and Model of Predistorter H. Yang and Y.Z. He	40
Low-Cost and Modularized Test Bench for Focal Plane Array X.Q. Chen and Q. Lv	46
Design of Music Prescription for Music Electroacupuncture Instrument C.H. Wang, J.Q. Du and H.L. Zhang	50
The Analysis of Institutional Factors for Gain of EDFA L.L. Liu, T. Shen, S. Meng, H.Y. Yang, P.Y. Nie and X. Zhang	54
Design and Implementation of a RISC Processor on FPGA H.J. Yang, H. Fan and H.G. Dong	58
The Modeling of OTFT and the Measuring of Small Signal Detection Circuit X.C. Liu, M. Zhu and Z.H. Jing	62
A Bandgap Reference with Temperature Coefficient of 13.2 ppm/°C M.Y. Ren and E.M. Zhao	66
CMOS Low Power Ring VCO Design M.X. Song, S.S. Wang and G.D. Sun	70
The Dual Sine Signal Generator Design Based on the Principle of Difference Frequency Filtering	7.4
C.Z. Zhang, Y. Zhu and J.N. Han	74
Full Scan Structure Application in the Design of 16 Bit MCU H.B. Pan, M.X. Song, X. Jin and J.H. Yin	78
The Design and Verification of VGA Controller B. Yu and Y. Guang	82
Particle Filter Approach for IGBT Remaining Useful Life M. Li, J.J. Zhu and B. Long	86
Design of a High Performance CMOS Bandgap Voltage Reference Y. Guang, B. Yu and H. Hai	90
A Novel Strategy of Area Cost Estimation for Custom Instruction Based on FPGA Architecture H.M. Liu and Q. Wu	94
A Circuit Design for Portable Cooling and Heating System Based on STC89C52RC MCU J. Long, X.D. Wang and Y. Song	99

External Memory Interface Verification Based on VMM R. Xu, Z.P. Jiang, C.C. Dong and X.B. Lu	103
Noise Analysis and Characterization of a CMOS Interface Circuit for Fluxgate Sensor C.C. Dong and Z.P. Jiang	107
<b>Design of a Three-Stage Amplifier with Single Miller Capacitor Feedforward Compensation</b> L.H. Cui, X.B. Lu and Y. Guang	111
The Design of the Sinusoidal Signal Generator G.D. Sun, M.X. Song, S.S. Wang and Y. Zhao	116
A Sigma-Delta Modulator System Design with 2-2 Mash Structure Y. Yang, G.D. Sun, M.X. Song and Z.M. Wang	121
The Nonlinear Analysis of Readout Circuit for Microgyroscope G.S. Wang and X.W. Liu	125
The Research of Noise Figure for EDFA Performance Impact Q.R. Yang, T. Shen, C.L. Tan, Q.Y. Zhao, X. Zhang, L. Zhao and Y. Feng	129
Research on Matlab Simulation Output of Optical Current Transformer T. Shen, C. Hu, Q.R. Yang, M.X. Song and X.L. Wei	133
Numerical Simulation of Rapid Solidification Process for Micrometer Level Solder Ball Used in BGA Packaging	
S. Li, J.W. Huang, F. Wang and W. Liu	137
Flatness Improvement of FRA with Multi-Wavelength Pump Y. Ma, Y.C. Li, C.X. Liu, X.Y. Meng and J.R. Yang	141
Chapter 2: Information Science and Information Technologies	
Chapter 2. Information Science and Information Technologies	
<b>Semantic Feature Modeling Based on the Decomposition of Feature Dependent Graph</b> X.Y. Gao, C.X. Zhang and X.Y. Yu	149
<b>Word Sense Disambiguation for Improving the Quality of Machine Translation</b> C.X. Zhang, L. Deng, X.Y. Gao and L.L. Guo	153
Word Sense Disambiguation Based on Center Window C.X. Zhang, L.L. Guo and X.Y. Gao	157
Nipdroid: An Enhanced Detection Mechanism for Android IPC C. Chen, J.X. Song and W.D. Liu	161
A Novel XML Document Retrieval Method J.X. Chen and L.Y. Wan	167
Selecting Filter Range of Hybrid Brain-Computer Interfaces by Mutual Information L. Wang, X. Zhang, X.F. Zhong and Z.W. Fan	171
A New Quadtree-Based Skyline Query Algorithm R.T. Liu, Y.J. Chen, D.Y. Cao and D.Y. Liu	175
Research on Reusable Software Process Model Based on Petri Net G.Y. Tang, D.J. Yao and L.J. Cui	179
Research on Service Model Combination Method Based on Colored Petri Net G.Y. Tang, D.J. Yao and L.J. Cui	183
Web Pages Mining Based on Terms and Formal Concept Analysis B. Yu, D.J. Yao and G.Y. Tang	187
The Research and Design of the Intelligence Application Platform in Public Security E-Government	
Y. Wang, S.Y. Guan and W.H. Li	192
VEET: 3D Virtual Electrical Experimental Tool Supporting Multi-Modal User Interfaces and Platforms	
B.W. Sun, B. Shen, W.W. Chen, Y.P. Zhang and J.Q. Lin	196
A Kind of Distributed Simulation Runtime Infrastructure Based on Grid Y. Liu, J.W. Hu and P.Z. Cui	200
New Solution for Small File Storage of Hadoop Based on Prefetch Mechanism H.X. Zhou and Q.Y. Wen	205
A Game Theoretic Analysis of Resource Pricing and Sharing in P2P Networks Q.F. Zhang, S. Wang and D. Liao	209

Using Untiy 3D Game Development Platform to Develop Low Cost Online Real Estate Display System	
R. Jiang	213
A Design of IT Enterprise Information Platform in Cloud Environment L. Wei, W.X. Zhang and X.P. Guo	218
Algorithm for Discovering Community in Multi-Relational Social Network Based on Modified Common Neighbors Similarity	
L.Q. Qiu, Y.Q. Liang, J.J. Xu and Z.Y. Chen	222
WIFI Network Analysis and Transplantation on Android Platform Y. Wang, H.G. Dong and G.Q. Wang	227
The Research of Information Monitoring System for Whole Producing Process Model Z. Min, W.Z. Huang and H.X. Li	231
Research of Intelligent Mobile Inspection System Based IT H.X. Li, Y.P. Wang, Z.X. Jin and J. Qian	235
Study on Self-Configuration Model and Environment Awareness Algorithm for Mission- Critical Systems	
J. Wang and G.S. Zhao	240
A Research and Exploration of Established Public Service Network Information Platform of University-Enterprise Cooperation J. Wu	244
The Performance Evaluation of Enterprise Informatization Research Based on Dynamic	211
Balanced Scorecard L. Wei, W.X. Zhang and W.Z. Xu	249
Chapter 3: Computational Mathematics and Data Mining	
On Normal Sequence in Abelian Group $C_nC_n$ H.Y. Zhang and X.S. Yang	255
The Application of Boosting Algorithm in Data Mining J.L. Du and Y. Qian	258
Massive Data Analysis Based MapReduce Structure on Hadoop System Y.Q. Xu	262
<b>Modified Proportional 2-Tuple and its Application in Uncertainty Environment</b> A.P. Zhang and T.J. Zhan	267
<b>Based on Non-Redundant Electronic Scale Engineering Development Theory</b> R. Li and P. Li	275
<b>L</b> <sub>p</sub> -Type of Weighted Fuzzy Number Metrics Induced by Fuzzy Structured Element F. Zhao and S.Z. Guo	279
An Improved Voice Activation Detection Method Based on Energy Acceleration Parameters and Support Vector Machine	
Q. Liu, J.X. Wang, M.J. Wang and P.P. Jiang	287
Chapter 4: Image Processing and Computer Vision	
Athermalization Design of Wide Field Medium Wave Infrared Optical System L. Zhao, Z.H. Luan, Y.L. Xiong and L.J. He	295
General Digital Image Processing Circuit and its Applications Y.J. Fan and H. Chen	299
Study of Fiber Gyroscope Fiber Defects Image Enhancement Based on Bias-Normal and Fuzzy Processing L.J. Shan, Y.C. Liang and W.Q. Ge	304
Adaptive Pixel Crosstalk Compensation for CMOS Image Sensor C.R. Zhao, X.M. Chi, Z.Y. Wang, W. Yan and D. Li	310
A Clock Optimization Method in the Digital Zooming of the Image Signal Processing	
System D. Li, X.L. Wang, S.M. Chi, C.R. Zhao and B. Yang	315

A Novel Rapid Full-View Measuring Method by Coded Structured Light H.B. Wu, L. Tian, B.Y. Wang, C. Liu, Y. Wang and Z.Y. Wang	319
Design and Implementation of Unified DCT/IDCT Architecture Based on FPGA H. Huang, J.M. Liu, X.B. Lu and B. Yu	323
Diffusion-Substitution Mechanism for Color Image Encryption Based on Multiple Chaotic Systems	
T.J. Zhang, A.A.A. El-Latif, M. Amin and A. Zaghloul	327
Detecting Human Actions by 3D Deformable Parts Models M. Yang and Y. Yang	331
Video Segmentation Algorithm Based on Improved Kirsch Edge Operator and Three- Frame Difference C.Y. Chen and M.Y. Zhao	335
<b>Denoise PET Images Based on a Combining Method of EMD and ICA</b> Q. Wei and Q. Liu	340
An Improved C-Means Clustering for Image Segmentation T.F. Zhang	344
Coded-Structured Light System Calibration Using Orthogonal Phase Shift Coding Combined with Zhang's Method X.Y. Yu, X.L. Meng, H.B. Wu, X.M. Sun and L. Wang	348
Stereo Matching Algorithm Based on Pyramid Double Dynamic Programming	
J.Z. Wei, S.C. Yu, W.F. Dong, C. Feng and B. Xie	352
Accurate Calibration Method for a Computer Vision System J.Z. Wei, S.C. Yu, H.B. Wu, Y.W. Zhang and Y.M. Feng	356
A Image Retrival Method with Multi-Features Based on Dempster-Shafer Theory M. Ji, X.M. Sun, X. Chen, L.J. Qi, L. Bao and L. Huang	360
The Projector Calibration Based on ZHANG's Self-Calibration Method G. Yu, B.Y. Yu, S.C. Yang, L. Wen, W.F. Dong and H. Wang	364
Sonar Image Segmentation Using the Level Set Method without Re-Initialization G.Y. Liu, Y.J. Pang, H.Y. Bian and E.M. Zhao	368
Cryptanalysis of Elementary Cellular Automata Based Image Encryption T.J. Zhang, I.M. Manhrawy, A.A. Abdo, A.A.A. El-Latif and R. Rhouma	372
Analysis of the Tongue Body Fat and Thin Based on the Neural Net K. Zhang, C.H. Ding, J.Q. Du, C.H. Wang and J. Shi	376
Chapter 5: Communication and Signal Processing	
The Beidou Satellite High-Precision Timing Applied Research Z.P. Hu, Y. Hua and S.F. Li	381
A New Method of Time Domain Coherency for Radar Emitter Signal Sorting L.R. Guo, M.H. He, C.L. Yu and B.Q. Wang	386
Design and Implementation of GPS L2C Signal Tracking Algorithm X.F. Zhu, F. Shen, Y. Yang, D.R. Yang and X.Y. Chen	392
Design and Implementation of Digital Communication Platform Based on FPGA/DSP S.G. Zhou, W.J. Shang, N. Wang and V. Rublev	398
The Research of Multi-Points Sources Signal Power Synthesis Technology Q.B. Liu, F.L. Zeng and Q.J. Chen	402
A Flat Fiber Raman Amplifier by Optimizing a Single-Wavelength Laser Diode Y. Ma, Y.C. Li, C.Y. Liu and J.R. Yang	409
Simulation of FBG Wavelength Signal Demodulation Based on Sideband Filter N.K. Ren, Y.L. Xiong, M.Z. Wu, H. Xu, Z.Y. Ma and J.Y. Zou	413
Research on the Method of CPM Signal Phase Smoothing Based on Different Power Sine Function	
W.J. Shang, S.G. Zhou, N. Wang and V. Rublev	417
Corrected Differential Evolution Particle Filter for Nonlinear Filtering C.Z. Zhang and L. Li	422
Implementation of FFT Algorithm Based on IP Core C. Ma and Z.L. He	426

Design of Router Supporting Multiply Routing Algorithm for NoC Z.P. Jiang, R. Xu, C.C. Dong and L.H. Cui	431
Research on Signal Aliasing in Long Baseline Positioning System J. Cao, D.J. Sun and D.L. Zhang	435
A Novel Algorithm for Multiuser Resource Allocation of OFDM Z.N. Zhao, J. Wang and H.W. Guo	440
A Modified DFE-MMSE Equalization Algorithm Y. Xia, F. Ye, Y.B. Li and L. Wang	444
<b>Power Allocation Algorithm Based on QoS Strategy in Power-Line Communication</b> K. Zhou, Y. Deng, W. He and X. Zhang	450
A Novel DFT-Based Channel Estimation for LTE-A Uplink L. Wang, F. Ye, Y.B. Li and Y. Xia	457
Based on the Jerk System Phase Space Division of the Study of the Method J. Yi, L.M. An, D.H. Li, J.Y. Tian, X.H. Wang and C.X. Liu	463
Design of an Ultra-Wideband Four Arms Sinuous Antenna W. Wang, X.T. Wang, Y. Li and S. Song	469
The Wireless Sensor Networks Based on Adjacent Strong Edge Chromatic Number Z.J. Sun and J. Chen	474
The Effects of RB Usage on Single User Rate in TD-LTE T. Li	478
Effects of Energy Harvesting Rate on Lifetime and Throughput Capacity in Wireless Sensor Networks	
Y. Zeng, X.D. Zhang and Y.H. Dong	482
Modified Fast Directional Multilevel Algorithm for Analysis of Scattering of Microstrip Patch H. Chen and F.Y. Jie	486
The Analysis on Research Progress of the Typical Hybrid Routing Protocol in Ad Hoc	
Networks J. Wu, G.Z. Hou, Z.G. Chen and L.Q. Tian	490
Mobile Prediction Idea Based Clustering Algorithm and Related Mathematical Quantitative	
<b>Description</b> J. Wu, T.J. Shao, Z.G. Chen and D.S. Cao	494
Description	494
<b>Description</b> J. Wu, T.J. Shao, Z.G. Chen and D.S. Cao	494 501
Description J. Wu, T.J. Shao, Z.G. Chen and D.S. Cao  Chapter 6: Mechatronics, Control and Automation  Design of Coal Mine Main-Fan Automatic Monitoring System Based on ZigBee	
Description J. Wu, T.J. Shao, Z.G. Chen and D.S. Cao  Chapter 6: Mechatronics, Control and Automation  Design of Coal Mine Main-Fan Automatic Monitoring System Based on ZigBee H.Q. Zhang and Z.H. Zhang  Chaotic Decision Model in the Collaborative Decision of Command and Control System	501
Description J. Wu, T.J. Shao, Z.G. Chen and D.S. Cao  Chapter 6: Mechatronics, Control and Automation  Design of Coal Mine Main-Fan Automatic Monitoring System Based on ZigBee H.Q. Zhang and Z.H. Zhang  Chaotic Decision Model in the Collaborative Decision of Command and Control System Y.J. Xiao, D.X. Zhang and Z.S. Shi  Effectiveness Evaluation Model for Collaborative Command and Control System	501 505
Design of Coal Mine Main-Fan Automatic Monitoring System Based on ZigBee H.Q. Zhang and Z.H. Zhang  Chaotic Decision Model in the Collaborative Decision of Command and Control System Y.J. Xiao, D.X. Zhang and Z.S. Shi  Effectiveness Evaluation Model for Collaborative Command and Control System Y.J. Xiao, Z.M. Qiu and Z.S. Shi  Design the PCI Bus Servo Control Card Based on the PCI9052  W.L. Guo, H.J. Xing and X.N. Dong  Study of Nonlinear Observer for Dynamic Friction Compensation of High-Accuracy Servo-	501 505 509
Description J. Wu, T.J. Shao, Z.G. Chen and D.S. Cao  Chapter 6: Mechatronics, Control and Automation  Design of Coal Mine Main-Fan Automatic Monitoring System Based on ZigBee H.Q. Zhang and Z.H. Zhang  Chaotic Decision Model in the Collaborative Decision of Command and Control System Y.J. Xiao, D.X. Zhang and Z.S. Shi  Effectiveness Evaluation Model for Collaborative Command and Control System Y.J. Xiao, Z.M. Qiu and Z.S. Shi  Design the PCI Bus Servo Control Card Based on the PCI9052  W.L. Guo, H.J. Xing and X.N. Dong	501 505 509
Design of Coal Mine Main-Fan Automatic Monitoring System Based on ZigBee H.Q. Zhang and Z.H. Zhang Chaotic Decision Model in the Collaborative Decision of Command and Control System Y.J. Xiao, D.X. Zhang and Z.S. Shi Effectiveness Evaluation Model for Collaborative Command and Control System Y.J. Xiao, Z.M. Qiu and Z.S. Shi Design the PCI Bus Servo Control Card Based on the PCI9052 W.L. Guo, H.J. Xing and X.N. Dong Study of Nonlinear Observer for Dynamic Friction Compensation of High-Accuracy Servo-System	501 505 509 513
Design of Coal Mine Main-Fan Automatic Monitoring System Based on ZigBee H.Q. Zhang and Z.H. Zhang Chaotic Decision Model in the Collaborative Decision of Command and Control System Y.J. Xiao, D.X. Zhang and Z.S. Shi Effectiveness Evaluation Model for Collaborative Command and Control System Y.J. Xiao, Z.M. Qiu and Z.S. Shi Design the PCI Bus Servo Control Card Based on the PCI9052 W.L. Guo, H.J. Xing and X.N. Dong Study of Nonlinear Observer for Dynamic Friction Compensation of High-Accuracy Servo-System L.Z. Wang Solar Tracking Device Based on Electronic Compass and Accelerometer Z.R. Zhang, Y. Ma, B. Jiao and T.L. Liu The Analysis of the Phase Noise of the Closed-Loop Driver Circuit in Micromechanical Gyroscope Based on the Phase-Locked Principle	501 505 509 513 517 522
Design of Coal Mine Main-Fan Automatic Monitoring System Based on ZigBee H.Q. Zhang and Z.H. Zhang Chaotic Decision Model in the Collaborative Decision of Command and Control System Y.J. Xiao, D.X. Zhang and Z.S. Shi Effectiveness Evaluation Model for Collaborative Command and Control System Y.J. Xiao, Z.M. Qiu and Z.S. Shi Design the PCI Bus Servo Control Card Based on the PCI9052 W.L. Guo, H.J. Xing and X.N. Dong Study of Nonlinear Observer for Dynamic Friction Compensation of High-Accuracy Servo-System L.Z. Wang Solar Tracking Device Based on Electronic Compass and Accelerometer Z.R. Zhang, Y. Ma, B. Jiao and T.L. Liu The Analysis of the Phase Noise of the Closed-Loop Driver Circuit in Micromechanical Gyroscope Based on the Phase-Locked Principle G.S. Wang and X.W. Liu	501 505 509 513
Description J. Wu, T.J. Shao, Z.G. Chen and D.S. Cao  Chapter 6: Mechatronics, Control and Automation  Design of Coal Mine Main-Fan Automatic Monitoring System Based on ZigBee H.Q. Zhang and Z.H. Zhang  Chaotic Decision Model in the Collaborative Decision of Command and Control System Y.J. Xiao, D.X. Zhang and Z.S. Shi  Effectiveness Evaluation Model for Collaborative Command and Control System Y.J. Xiao, Z.M. Qiu and Z.S. Shi  Design the PCI Bus Servo Control Card Based on the PCI9052  W.L. Guo, H.J. Xing and X.N. Dong  Study of Nonlinear Observer for Dynamic Friction Compensation of High-Accuracy Servo- System L.Z. Wang  Solar Tracking Device Based on Electronic Compass and Accelerometer Z.R. Zhang, Y. Ma, B. Jiao and T.L. Liu  The Analysis of the Phase Noise of the Closed-Loop Driver Circuit in Micromechanical Gyroscope Based on the Phase-Locked Principle G.S. Wang and X.W. Liu  Development and Research of Open CNC System Based on Motion Controller H.W. Zhang and C.J. Chen	501 505 509 513 517 522
Design of Coal Mine Main-Fan Automatic Monitoring System Based on ZigBee H.Q. Zhang and Z.H. Zhang Chaotic Decision Model in the Collaborative Decision of Command and Control System Y.J. Xiao, D.X. Zhang and Z.S. Shi Effectiveness Evaluation Model for Collaborative Command and Control System Y.J. Xiao, Z.M. Qiu and Z.S. Shi Design the PCI Bus Servo Control Card Based on the PCI9052 W.L. Guo, H.J. Xing and X.N. Dong Study of Nonlinear Observer for Dynamic Friction Compensation of High-Accuracy Servo-System L.Z. Wang Solar Tracking Device Based on Electronic Compass and Accelerometer Z.R. Zhang, Y. Ma, B. Jiao and T.L. Liu The Analysis of the Phase Noise of the Closed-Loop Driver Circuit in Micromechanical Gyroscope Based on the Phase-Locked Principle G.S. Wang and X.W. Liu Development and Research of Open CNC System Based on Motion Controller H.W. Zhang and C.J. Chen Application of the K-Means Immune Particle Swarm Optimization Algorithm in the Steam Generator Water Level Control	501 505 509 513 517 522 526 530
Description J. Wu, T.J. Shao, Z.G. Chen and D.S. Cao  Chapter 6: Mechatronics, Control and Automation  Design of Coal Mine Main-Fan Automatic Monitoring System Based on ZigBee H.Q. Zhang and Z.H. Zhang Chaotic Decision Model in the Collaborative Decision of Command and Control System Y.J. Xiao, D.X. Zhang and Z.S. Shi  Effectiveness Evaluation Model for Collaborative Command and Control System Y.J. Xiao, Z.M. Qiu and Z.S. Shi  Design the PCI Bus Servo Control Card Based on the PCI9052 W.L. Guo, H.J. Xing and X.N. Dong  Study of Nonlinear Observer for Dynamic Friction Compensation of High-Accuracy Servo- System L.Z. Wang  Solar Tracking Device Based on Electronic Compass and Accelerometer Z.R. Zhang, Y. Ma, B. Jiao and T.L. Liu  The Analysis of the Phase Noise of the Closed-Loop Driver Circuit in Micromechanical Gyroscope Based on the Phase-Locked Principle G.S. Wang and X.W. Liu  Development and Research of Open CNC System Based on Motion Controller H.W. Zhang and C.J. Chen  Application of the K-Means Immune Particle Swarm Optimization Algorithm in the Steam	501 505 509 513 517 522 526

Key Technology Research Based on the Smart Home BSNs C.Y. Wang and J. Zhang	542
Database Design of NC Cutting Tool Matching and Management System X.L. Sui, D. Wang, X.Y. Liu and Y. Teng	546
<b>Exponentially Stable Sampled-Data Control for Uncertain Systems</b> L.Y. Fan	551
Simulation Research on Fuzzy Control of Main Steam Temperature in Power Series S.Q. Tian, Q. Wei and X.F. Mu	555
Impact Velocity Analysis of Capacitive RF-MEMS Switch R. Wu and M.X. Song	560
Microwave Performance Simulation of RF-MEMS Switch R. Wu and M.X. Song	564
Chapter 7: Methods, Devices and Systems for Measurement and Monitoring	
The Design of Wind Control LED Display System Applied on Ice Lantern L. Lan, Y.J. Cao and J.M. Cao	571
Design of the Pulse Wave Digital Filters Based on MATLAB H.L. Zhang, G.L. Zhang and K. Zhang	576
$lem:measuring the Submarine's Induced Magnetic Field by Geomagnetic Simulation Method Z.Y.\ Zhang and\ J.\ Yi$	579
<b>Design of Induced Power Supply System for On-Line Monitoring Device of Power Cable</b> X.L. Wei, B. Zhu, B. Pang, T. Liu, S. Wang and R.H. Li	585
Research on PCB Rogowski Current Transformer Based on AD7742 X.L. Wei, B. Zhu, B. Pang, T. Liu, S. Wang and R.H. Li	589
Research on Small-Capacity Capacitor Type Sensor Detection Method W.T. Hu, Y.X. Zhang, Y. Sun, W.S. Liu and L.Z. Zhang	594
The Measurement of DC Electric Field for Transformer Oil System Based on the Kerr Electro-Optic Effect T. Shen, C. Hu, M.X. Song, X.L. Wei and Q.R. Yang	598
Research on a Liquid Color Detecting Device Z. Zhou, D.X. Li, Y. Qin and L.F. Liu	602
Coal Mine Safety Monitoring System Based on ZigBee X. Liu, H.Q. Zhang and Z.H. Zhang	608
The Design of Wireless Video Monitoring System Based on FPGA Y.J. Yue, X.J. Zhang and C.M. Sha	612
Hydrogel Coated Long Period Grating Sensor for High Relative Humidity Measurement X.J. Yu, J.T. Zhang, X.F. Chen and S.C. Liu	616
A New Sensor for the Electrical Equipment Leakage Current X.L. Wei and W.L. Zheng	620
<b>Evanescent Field Absorption Sensor Based on Special U Shaped Optical Fiber</b> C.L. Liu, E.M. Zhao, E.T. Li, A. Zhou and X.H. Yang	624
A Measuring Method of Liquid Food Conductivity Based on Pulse Response Measurement Method X.L. Wei and Y.L. LI	628
Piezoelectric Resonant Temperature Sensor Y. Yu, J. Xu, J. Ma and H.Y. Chen	632
Research on the On-Line Measuring Method of Transformer Short-Circuit Reactance Y.B. Wei and D. Zhang	636
Analysis of Data Mining Method for Near Infrared Spectral Data of Dairy Products Based Orthogonality	- • -
L.J. Wang, Z. Zhou, Y. Qin, J.Y. Yin, J.Y. Guo, W.N. Dong and D. Wang  The Equal Precision Measurement Data Processing System Based on Virtual Instrument	641
L.F. Zhang and S.Y. Wang	647

A Synchronous Sampling System of On-Line Monitoring for Long-Distance Cable Insulation Based on DSP and GPS	
X.L. Wei, B. Zhu, B. Pang, T. Liu, S. Wang and R.H. Li	653
Design of Wireless Sensor Network for Fire Detection N. Du, Z.L. Liu and H.G. Dong	657
<b>Chapter 8: Power Engineering and Power Supply</b>	
Study on Low Frequency Oscillation of Wind Power System Based on HHT H.L. Xie and T. Yue	663
<b>CHP Microgrid Optimized Operation Based on Bacterial Foraging Optimization Algorithm</b> R. Li and P. Li	668
Community Based of CHP Microgrid Optimal Operation R. Li and P. Li	673
Power Supply Efficiency Analysis and Techno-Economic Evaluation of IGCC Projects C.S. Xie, C.C. Zhao, P.Y. Zhong and C.Y. Zhou	677
Study on Relationships between High-Frequency High-Voltage Pulse Breakdown Voltage of Air-Gaps and Pulse Delay Time	692
L.L. Li, Y.L. Wang and H.D. Yang The Control Technology of the Z-Source Three-Phase Four-Leg Inverter Based on	683
Computer Simulation M. Su, X.Y. Ma and Y. Sun	688
<b>Power System Probabilistic Production Simulation Including Efficiency Power Plant</b> C.S. Xie, P.Y. Zhong, C.C. Zhao and C.Y. Zhou	695
Study on Fault Diagnosis Method for Nuclear Power Plant Based on Fuzzy Rough Sets and Decision Tree	
Y. Mu, G.M. Sheng, H. Xia, P.N. Sun and Y. Qian	701
Chapter 9: Engineering of Weapons Systems	
Chapter 9: Engineering of Weapons Systems  Research on Temporal Fire Distribution of Shipboard-Gun Neutralization Firing Anti-Shore	
Research on Temporal Fire Distribution of Shipboard-Gun Neutralization Firing Anti-Shore D.Q. Liang, X.W. Sun, H.C. Wang, D.H. Wang and F. Tian	709
Research on Temporal Fire Distribution of Shipboard-Gun Neutralization Firing Anti-Shore D.Q. Liang, X.W. Sun, H.C. Wang, D.H. Wang and F. Tian  Operational Capability of Ship-to-Air Missile Weapon System Y.H. Lu, J.H. Dou, X.B. Yang and C.W. Zhu	709 713
Research on Temporal Fire Distribution of Shipboard-Gun Neutralization Firing Anti-Shore D.Q. Liang, X.W. Sun, H.C. Wang, D.H. Wang and F. Tian  Operational Capability of Ship-to-Air Missile Weapon System Y.H. Lu, J.H. Dou, X.B. Yang and C.W. Zhu  The Research of Conventional Weapons Proving Ground Information System Construction X.Y. Zhang, K. Lu, H.J. Wang and H.H. Ma	
Research on Temporal Fire Distribution of Shipboard-Gun Neutralization Firing Anti-Shore D.Q. Liang, X.W. Sun, H.C. Wang, D.H. Wang and F. Tian  Operational Capability of Ship-to-Air Missile Weapon System Y.H. Lu, J.H. Dou, X.B. Yang and C.W. Zhu  The Research of Conventional Weapons Proving Ground Information System Construction X.Y. Zhang, K. Lu, H.J. Wang and H.H. Ma  Research on Armored Mechanized Forces' Equipment Support Simulation Training System X.Y. Zhang, K. Lu, H.J. Wang and H.H. Ma	713
Research on Temporal Fire Distribution of Shipboard-Gun Neutralization Firing Anti-Shore D.Q. Liang, X.W. Sun, H.C. Wang, D.H. Wang and F. Tian  Operational Capability of Ship-to-Air Missile Weapon System Y.H. Lu, J.H. Dou, X.B. Yang and C.W. Zhu  The Research of Conventional Weapons Proving Ground Information System Construction X.Y. Zhang, K. Lu, H.J. Wang and H.H. Ma  Research on Armored Mechanized Forces' Equipment Support Simulation Training System X.Y. Zhang, K. Lu, H.J. Wang and H.H. Ma  Detection Performance Analysis of Space-Based Radar to near Space Hypersonic Target S. Xiao, X.S. Tan, H. Wang and Z.F. Zuo	713 717
Research on Temporal Fire Distribution of Shipboard-Gun Neutralization Firing Anti-Shore D.Q. Liang, X.W. Sun, H.C. Wang, D.H. Wang and F. Tian  Operational Capability of Ship-to-Air Missile Weapon System Y.H. Lu, J.H. Dou, X.B. Yang and C.W. Zhu  The Research of Conventional Weapons Proving Ground Information System Construction X.Y. Zhang, K. Lu, H.J. Wang and H.H. Ma  Research on Armored Mechanized Forces' Equipment Support Simulation Training System X.Y. Zhang, K. Lu, H.J. Wang and H.H. Ma  Detection Performance Analysis of Space-Based Radar to near Space Hypersonic Target S. Xiao, X.S. Tan, H. Wang and Z.F. Zuo  Cooperative Path Planning of Jammer Formation in Penetration Attack J.J. Ou, A. Zhang and Z.Q. Chen	713 717 724
Research on Temporal Fire Distribution of Shipboard-Gun Neutralization Firing Anti-Shore D.Q. Liang, X.W. Sun, H.C. Wang, D.H. Wang and F. Tian Operational Capability of Ship-to-Air Missile Weapon System Y.H. Lu, J.H. Dou, X.B. Yang and C.W. Zhu The Research of Conventional Weapons Proving Ground Information System Construction X.Y. Zhang, K. Lu, H.J. Wang and H.H. Ma Research on Armored Mechanized Forces' Equipment Support Simulation Training System X.Y. Zhang, K. Lu, H.J. Wang and H.H. Ma Detection Performance Analysis of Space-Based Radar to near Space Hypersonic Target S. Xiao, X.S. Tan, H. Wang and Z.F. Zuo Cooperative Path Planning of Jammer Formation in Penetration Attack J.J. Ou, A. Zhang and Z.Q. Chen Study on a New Algorithm for Tracking Ballistic Missile in Free Flight Phase C.X. Chen and D.Y. Zhou	713 717 724 730
Research on Temporal Fire Distribution of Shipboard-Gun Neutralization Firing Anti-Shore D.Q. Liang, X.W. Sun, H.C. Wang, D.H. Wang and F. Tian  Operational Capability of Ship-to-Air Missile Weapon System Y.H. Lu, J.H. Dou, X.B. Yang and C.W. Zhu  The Research of Conventional Weapons Proving Ground Information System Construction X.Y. Zhang, K. Lu, H.J. Wang and H.H. Ma  Research on Armored Mechanized Forces' Equipment Support Simulation Training System X.Y. Zhang, K. Lu, H.J. Wang and H.H. Ma  Detection Performance Analysis of Space-Based Radar to near Space Hypersonic Target S. Xiao, X.S. Tan, H. Wang and Z.F. Zuo  Cooperative Path Planning of Jammer Formation in Penetration Attack J.J. Ou, A. Zhang and Z.Q. Chen  Study on a New Algorithm for Tracking Ballistic Missile in Free Flight Phase C.X. Chen and D.Y. Zhou  Conceptual Model of Information Naval Gun Weapon System Using Weapon System Engineering Method	713 717 724 730 735 743
Research on Temporal Fire Distribution of Shipboard-Gun Neutralization Firing Anti-Shore D.Q. Liang, X.W. Sun, H.C. Wang, D.H. Wang and F. Tian  Operational Capability of Ship-to-Air Missile Weapon System Y.H. Lu, J.H. Dou, X.B. Yang and C.W. Zhu  The Research of Conventional Weapons Proving Ground Information System Construction X.Y. Zhang, K. Lu, H.J. Wang and H.H. Ma  Research on Armored Mechanized Forces' Equipment Support Simulation Training System X.Y. Zhang, K. Lu, H.J. Wang and H.H. Ma  Detection Performance Analysis of Space-Based Radar to near Space Hypersonic Target S. Xiao, X.S. Tan, H. Wang and Z.F. Zuo  Cooperative Path Planning of Jammer Formation in Penetration Attack J.J. Ou, A. Zhang and Z.Q. Chen  Study on a New Algorithm for Tracking Ballistic Missile in Free Flight Phase C.X. Chen and D.Y. Zhou  Conceptual Model of Information Naval Gun Weapon System Using Weapon System Engineering Method X.W. Sun, F. Tian, D.Q. Liang, H.Y. Shan and X.J. Zhang Research on the Simulation of Naval Gun Exterior Trajectory Differential Equations in	713 717 724 730 735
Research on Temporal Fire Distribution of Shipboard-Gun Neutralization Firing Anti-Shore D.Q. Liang, X.W. Sun, H.C. Wang, D.H. Wang and F. Tian  Operational Capability of Ship-to-Air Missile Weapon System Y.H. Lu, J.H. Dou, X.B. Yang and C.W. Zhu  The Research of Conventional Weapons Proving Ground Information System Construction X.Y. Zhang, K. Lu, H.J. Wang and H.H. Ma  Research on Armored Mechanized Forces' Equipment Support Simulation Training System X.Y. Zhang, K. Lu, H.J. Wang and H.H. Ma  Detection Performance Analysis of Space-Based Radar to near Space Hypersonic Target S. Xiao, X.S. Tan, H. Wang and Z.F. Zuo  Cooperative Path Planning of Jammer Formation in Penetration Attack J.J. Ou, A. Zhang and Z.Q. Chen  Study on a New Algorithm for Tracking Ballistic Missile in Free Flight Phase C.X. Chen and D.Y. Zhou  Conceptual Model of Information Naval Gun Weapon System Using Weapon System Engineering Method X.W. Sun, F. Tian, D.Q. Liang, H.Y. Shan and X.J. Zhang	713 717 724 730 735 743
Research on Temporal Fire Distribution of Shipboard-Gun Neutralization Firing Anti-Shore D.Q. Liang, X.W. Sun, H.C. Wang, D.H. Wang and F. Tian  Operational Capability of Ship-to-Air Missile Weapon System Y.H. Lu, J.H. Dou, X.B. Yang and C.W. Zhu  The Research of Conventional Weapons Proving Ground Information System Construction X.Y. Zhang, K. Lu, H.J. Wang and H.H. Ma  Research on Armored Mechanized Forces' Equipment Support Simulation Training System X.Y. Zhang, K. Lu, H.J. Wang and H.H. Ma  Detection Performance Analysis of Space-Based Radar to near Space Hypersonic Target S. Xiao, X.S. Tan, H. Wang and Z.F. Zuo  Cooperative Path Planning of Jammer Formation in Penetration Attack J.J. Ou, A. Zhang and Z.Q. Chen  Study on a New Algorithm for Tracking Ballistic Missile in Free Flight Phase C.X. Chen and D.Y. Zhou  Conceptual Model of Information Naval Gun Weapon System Using Weapon System Engineering Method X.W. Sun, F. Tian, D.Q. Liang, H.Y. Shan and X.J. Zhang  Research on the Simulation of Naval Gun Exterior Trajectory Differential Equations in Real-Time Solution	713 717 724 730 735 743

Energy Efficiency Analysis of Piston Type Air Compressor S.L. Zheng, Y.Y. Mao, X.P. Wang, Z.Y. Zheng, S.X. He, Z.Y. Huang and D.D. Wang	769
The Optical Design of Achromatic Phase Matching System Based on ZEMAX L.Y. Zhang, Y.J. Liu and J.Z. Huang	774
Mechanical Design of End Support in Coal Mine H.W. Zhou	778
System Precision of Thermal Insulating Door in Environmental Laboratory H.W. Zhou	782
Study on Feature Extraction of Ship Radiated Noise Based on Cepstrum and Anti-Noise Property S. Zhan	786
Chapter 11: Material Science and Technologies of Processing	
Digital Henon Sequences Generation and its Analysis B.B. Song, J. Pan and Q. Ding	793
Fluorescence from the Compound System of PVK Molecules and SiO <sub>2</sub> Nanoparticles with Different Sizes	
L.M. An, Y.F. Duan, H. Liu, J. Yi, C.X. Liu, X.G. Li, L.Z. He, L.S. Zhou, P.Y. Wang and W.Y. An	797
Charge Transfer and Energy Transfer between CdSe Semiconductor Nano Crystals and Polyaniline Molecule	801
W.L. Zhou, T. Cai, J. Xiao, X.T. Han, J.B. Liu, L. Xu, J.G. Chi, S.H. Gao, X.P. Cai and L.M. An <b>Synthesis of CdS-Capped CdSe Nanocrystals without any Poisonous Materials</b> W.L. Zhou, T. Cai, Y. Chen, X.L. Chen, Y.Q. Qu, X.B. Huang, W.J. Dai, D.H. Xiao, C.B. Yu, H. Wei and L.M. An	806
Advantages and Challenges Analyzed Utilizing MMA as the Printable Material to Fabricate Optical Waveguides H.B. Li, H. Liu and E.M. Zhao	810
Electrical Conductivity and Breakdown Characteristics of SiC/LSR Nanocomposites at Different Temperatures	01.4
N.Q. Shang, Q.G. Chen, Y.J. Qin, M.H. Chi and X.L. Wei  Pre-Mixed Abrasive Water Jet Cutting in the Marble J.S. Xia, Q.Z. Jia and Z.Z. Sun	814 818
MgAl/PbPc/Cu Organic Thin-Film Diode Preparation and Gas-Sensing Characteristics	010
Analysis  J.B. Chen, P. Yu, Y. Zhang, Y. Shan and D.X. Wang	822
The Fabrication and Characteristics of CuPc Thin Film Phototransistor Y.S. Zhang, M. Zhu, D.X. Wang, Z.Y. Wang, Y.Y. Wang and J.H. Yin	826
The Dynamic Characteristics of Al Gate CuPc Thin Film Transistor Z.Y. Wang, D.X. Wang, Y.S. Zhang, Y.Y. Wang, J.H. Yin and H. Zhao	830
The Preparation and Characteristics Analysis of ZnO/Ni/ZnO Schottky Junction TFTs Y. Shan, Y.H. Wu, D.X. Wang, Y. Zhang, J.B. Chen, J.H. Yin and H. Zhao	834
The Analysis of Photocurrent Multiplication in Organic Dye CuPc Transistor with Wide Wavelength Light Y.Y. Wang, D.X. Wang, Y.S. Zhang and Z.Y. Wang	838
Research of Silicon-Based Micro Direct Methanol Fuel Cell	
S.S. Cao The Design and Characterization of Three-Dimension Metamaterial for Terahertz	842
Frequencies Q. Wang, Y. Wang, Y.L. He, W.C. Zhang and X. Wang	846
The Effect of Components Based on Synchronous Radiation SAXS on Micro-Structure of PI/TiO <sub>2</sub> Nano-Composite Film L. Yao, J.H. Yin, G.Y. Li, X.X. Liu and G. Mo	851
The Research of Trap Level Distribution of PI/AIN (Treated)-MMT Films with Different Contents Based on Decay Charge Theory	031
Y.Y. Liu, J.H. Yin and Y. Lei	855

PIC/MCC Simulations for the Oxygen Microwave Breakdown at Atmospheric Conditions H.H. Wang, D.G. Liu, L.Q. Liu and L. Meng	859
The Preparation of Alq <sub>3</sub> /CuPc Heterojunction Organic Electroluminesence Diodes Y.H. Wu, Y. Shan, D.X. Wang, C.M. Meng, Y.W. Yang, J. Fu and S.K. Deng	863
Solute Field in Liquid Ahead of the Solid-Liquid Interface during Dendritic Solidification Incorporating Relaxation Effect	
X.Z. Jin, H.Y. Wang, N. Wang, X.G. Lan and S. Li	867
Study on Preparation and Refining Efficiency of Al-5Ti-1C Master Alloy Refiner F.W. Kang, Y. Xiong, X. Bai, D.D. Zhang, P. Liu, T.L. Yang and Y.C. Feng	871
Optimized Technical Characteristics of Polysilicon Nanofilm X.B. Lu, L.H. Cui and M.Y. Ren	875
Effect of Charge Transferring Materials on Photoluminescence Properties of CdSe/ZnS Quantum Dots	
X.L. Chen, Y.Q. Qu, G.F. Li, H. Wei, L.Y. Zhang and L.M. An	879
Study on Photoluminescence Quenching of CdSe Core/Shell Quantum Dots with Organic Charge Transferring Material Y.Q. Qu, L.Y. Zhang, L.M. An, H. Wei and G.F. Li	883
Self-Propagating High-Temperature Synthesis of Ni-Cu-Zn Ferrites with Alternative Fuel	005
of Carbon Powder	
Z.H. Wang, J.X. Jiang, C.L. Tan, Z.H. Zhu and F. Xu	887
Effect of PVP Hydrophilic Additive on the Morphology and Properties of PVDF Porous	
Membranes Y.W. Guo, W.W. Cui, W.H. Xu, Y. Jiang, H.H. Liu, J.Y. Xu, Z.Q. Gao and L.Z. Liu	891
Analysis to Milling Force Base on AdvantEdge Finite Element Analysis F.C. Zhang, Q. Wang and R. Yang	895
Research on the Effects of Ultraviolet Aging of Polyethylene Trap Distribution L.J. He, C. Zhu, H.C. Huang, S. Wang, H.P. Xie and C.T. Chen	899
Characteristics Research of New Type Silicon Magnetic Sensitivity Transistor Differential	
Structure by ATLAS X.F. Zhao, H.Y. Guan, H. Sui and D.Z. Wen	903
Fast Solidification and Electrical Conductivity of Apatite-Type Nanoceramics Q. Li and L.M. Dong	909
Particle Size Effect on the Corona Resistant Properties of PI/TiO <sub>2</sub> Composite Films G.Y. Li, J.H. Yin, L. Yao and X. Zhao	914
Structure and Property Stability of Rapidly Solidified In-Sn γ-Phase Alloy J.Z. Wang, M.L. Liu and D.Y. Li	918
Influcing Factor Research of Kerr Effect	
R.L. Guo, N.N. Sun, M.X. Song and Q. Liu	923
Type Conversion of Undoped NiO Thin Films Fabricated by Electron Beam Evaporation	
<b>Technique</b> Q.C. Liang, M. Zhao, D.Y. Jiang, X. Wang, J.X. Zhao, S. Gao, J.M. Qin, J.H. Hou and Y. Cui	927
A New Type of EO Polymer Based on Polyphosphazenes Y. Zhang, C.J. QIU, Y. Li, W.L. Zhang and X. Wang	932
The Stress Distribution and Influence of VDMOS Device Based on ANSYS J.H. Yin, S.T. Gao and M.H. Chen	936
Analysis of Electric Field Homogenization of Converter Transformer Barrier System Based	
on Nano Modification of Pressboard Q.G. Chen, H.Q. Liu, X.L. Zhuge, M.H. Chi and X.L. Wei	940
<b>Experimental Investigation of Emulsifying Viscosity Reduction of a New Viscosity Breaker</b> F. Wang, C. Ai, D.D. Yuan, S. Liang and G.M. Qu	946
The Photocurrent Characteristic Analysis of the Copper Phthalocyanine Organic Thin Film Transistor Irradiated by 700 nm Monochromatic Light	2 - :
Y. Zhang, D.X. Wang, J.B. Chen, Y. Shan, J.H. Yin and H. Zhao	951
Chapter 12: Engineering Management and Logistics	

Order Batching Picking Based on Activity Based Classification Storage  $L.\ Guo$  and  $X.J.\ Yang$ 

957

Analysis of Financial Agglomeration Effect on Corporate Financing Behavior F.F. Li and J.Y. Huang	961
Research on Seasonal Index Based on Dynamic Clustering of the Daily Railway Passenger Flow Title Z.Z. Wei and F.Z. Wang	966
Evolving Model Research of Layered Agri-Food Supply Chains Weighted Complex Networks Y. Li, Z.P. Du and L. Zhang	972
Affective Identification Motivation Mechanism of Sino-Japanese Bi-Cultural Teleworking Teams B. He, S.Y. Li, H. Zheng, C.Z. Ma and X. Tang	976