

Table of Contents

Preface, Conference Organization

Chapter 1: Instrument Design and Measurement Theory

Preliminary Experiment of CFRP Displacement Direct Measurement with Eddy Current Sensor	
L. Jiang, X.Z. Zhang, Y.J. Bai and C.L. Tang	3
Hardware Design of Test System for Missile Flight Control System	
D.Q. Chen, G.H. Cao, H.L. Fan, M.Y. Hou and J.H. Wang	9
Research on Detecting Radio Amendatory Channel	
D.Q. Chen, G.H. Cao, H.L. Fan, X.L. Bao and H.P. Wang	14
Design and Implementation of an Integrated Electrical Equipment Testing System for a Certain Air Defense Weapon System	
X. Zhao, Q. Hong, F.B. Yang and C.G. Zhang	19
The Moisture Testing System for Ultra-Dry Granular Material	
R.F. Zong and J.M. Tian	27
Testing System of Optical Head Spot Based on Labview	
X.M. Liu and J. Shi	32
Development Trends and Present Situation about the Error Detection of Plane Thread of Three-Jaw Chuck	
R. Ma and C.J. Sun	36
Development of the Gas Flowmeter Based on Assembled Hot-Film	
Z.W. Huang and J. Cheng	42
Electrical Properties of Polycrystalline α-HgI₂ Detector	
G.L. Liu, L. Yang, W.M. Shi, W.G. Yang, Y.L. Wang and L.J. Wang	46
An Inspection System and Measurement Algorithm of Geometry Status of Railroad Tracks	
J.L. Li	50
Research of Pump Performances Intelligent Test System	
J.Y. Wang and S.Z. Li	56
The Improved Method of On-Line Detection of Trace Iron in Power Station Steam-Water Based on O-Phenanthroline Spectrophotography	
C.M. Li, Y. Zhao, P.P. Yuan and B. Wang	61
Research and Design of Networked Virtual Instrument Electronic Test System	
Y. Zhou, Y. Li and W.B. Li	66
Preliminary Experimental Study on Multi-Parameter Measurement of Fluid Flow by Vibrating Tube	
X.Z. Zhang	70
Online Monitoring and Analysis of Plant Photosynthetic Physiology and Environmental Factors	
Z.H. Jiang, C.S. Wang, J. Zhang, Y. Yue and S.W. Li	75
Inductosyn Angle Measurement Method Based on the Pulse Subdivision	
W. Zhou, J. Zhang, S.Q. Wang, K. Zhu and Z.L. Xu	81
Design of Water and Fertilizer Measurement and Control System for Seedlings Soil Based on Wireless Sensor Networks	
Y.X. Song, J.L. Ma and X.J. Zhang	86
Phase Difference Algorithm Based on TMS320F28335 Enhanced Capture Module	
Y.P. Yao, H.L. Zou and S.X. Zhang	92
Windage Yaw Angle Detection of Suspension Insulator Strings Based on Edge Feature Matching	
H.J. Lu, Y.X. Lv, W.Q. Ma, X.L. Zhao and X.L. Zheng	98
Research on Realization Methods of Gaussian System	
L.H. Xu, Y.B. Yuan and W.Y. Piao	104

Manufacturing Error in the Application of Improving Spectrum for a Vertical Coupling Microring Resonator	
Y.H. Wang, Z.K. Qin, C.X. Wang and L.Z. Wang	114
Test Points Optimal Design for Hydraulic System MSIF Fault Diagnosis	
H.Q. Zhu, Z.S. Ma and H.G. Sun	119
The Design of Performance Testing System for Small Motors	
T.Y. Li, J.H. Xue, J.P. Du, H. Rong and Y. Fan	125
A Fuzzy Temperature Control System for Pressure-Sensitive Paint Measurement	
J.G. Mao, H.Y. Zhang, G.M. Lu and J.K. Xu	129
Design of the Mixed Gas Quantitative Analysis Based on Grating Spectral	
L.J. Zhu, J.H. Chen, S.S. Kang and Y.D. Xiao	135
Study on Groundwater Level Testing System Based on Wireless Network in Irrigation Region	
B. Zhao, S.J. Yi and L.H. Kuang	140
Development of Detection Platform for Grid-Connected Photovoltaic Inverters	
T.Y. Li, H.G. Yan, J.H. Xue and J.P. Du	145
Optimal Weighted Least Square Data Fusion Method for Redundant IMU Based on Calculation of Measurement Error	
C. Xing and H. Zhang	149
Experimental Study on a New Type of Cooling Device Used in High Heat Dissipation of CPU	
M. Liu, F. Wang, L. Lou, S.L. Dai and W.F. Da	156
The All-Optical Fiber Perimeter Alarm System	
D.S. Wang, Y.T. Wang and W.W. Pan	160
A Packaging Structure with the Capability of Vibration and Sound Isolation of the Fiber Interferometer Based on the Method of Suspension Type	
X. Dai, Y.J. Wang, Q. Zhao, Y.H. Liu, F. Li, X. Gao and B.X. Bo	164
Wet Gas Over-Reading Characteristic Research of Inside and Outside Tube Differential Pressure Flowmeter	
L.D. Fang, X.J. Wang, X.T. Li, L.L. Pang and Y.J. Liang	168
The Design of Fire Proof Leakage Current Circuit Protective Device Based on AVR MCU	
A.S. Feng, Q.H. Wang and X.Y. Ge	172
Research on Radio Frequency Identification Technology in Automated Press Line	
Y.Z. Men, H.B. Yu, H. Wang and J.G. Gao	176
Design of Detection System for Residual Voltage Based on SOPC	
W. Zhu, Y. Wang, C. Jiang and J.M. Zhu	180
Research about a High-Sensitivity Automatic Liquid Manometer	
X.J. Li, W. Wang and Z.J. Ma	186
Design and Realization of Resolution Detection System for AD7730	
X.M. Chang, B. Sun and S.X. Yao	190
A Non-Contact Speech Enhancement Algorithm Based on Wavelet Packet Adaptive Threshold	
H.J. Xue, S. Li, T. Jiao, G.H. Lu, Y. Zhang, J.Q. Wang and X.J. Jing	194
Design of Protection Functions Test System for Intelligent Low Voltage Electrical Apparatus Based on Flexible Test Technology	
W. Xu, Q. Xie and H.G. Xu	199
Laboratory Measurement of CO₂ Emissions from Agricultural Waste Burning in Northeastern Thailand	
N. Khosavithitkul, K.J. Haller, N. Chuersuwan and T. Wannasook	204
Measurement System for Characterizing Compression Properties of Textile Materials	
B.G. Yao, L.X. Yan, S.Y. Hong and J.C. Wang	208
Grain Moisture Content Measurement System Based on Time-Domain Transmission Technology	
Z.M. Tong, L.H. Rong and C.J. Huang	214
A Consumption Authenticator Based Mechanism for Time-of-Use Smart Meter Measurements Verification	
S. Camara, R. Machado and L.F.R.C. Carmo	218
Research and Design for Three-Axis Electromagnetic Leakage Detector	
J.S. Qian, Z.R. Zhou, Y. Wang, T.G. Shao and J.B. Zhang	223

Multistage MMIC Power Amplifier Automatic Testing System S.H. Ouyang, M.Z. Peng, J. Wu, Y.K. Li and X.Y. Liu	227
Design of Parallel Operated Counter based on ARM + FPGA L. Yu, K.J. Li, Q.Z. Cai and W. Zhang	234
Research and Design of Virtual FIR Digital Filter Based on LabVIEW J. Liu and R.X. Guo	240
Computer-Aided Diagnosis for Pneumoconiosis Based on Texture Analysis on Digital Chest Radiographs C.X. Cai, B.Y. Zhu and H. Chen	244
Design of Greenhouse Environment Monitoring System Based on Qt Platform X. Chen and J. Sun	248
Design and Implementation of PAL to LVDS Video Adapter Based on FPGA L.F. Wu, L.J. Yun, J.S. Shi, K. Wang and M.H. Wu	254
Design of Automatic Measurement System of Lithium Battery Electrochemical Impedance Spectroscopy Based on Microcomputer W. Li, G.W. Liu and F.H. Yang	259
A Kind of Virtual Instrument Based Data Acquisition for Vehicle Test K. Liu and L.R. Wang	265
Based on Image Processing Technology of Video Precision Measurement System J.L. Wang, J. Zhu and S.Y. Zhang	269

Chapter 2: Reliability of Instrument and Fault Diagnosis

Assessment of Information System Assurance Capability Based on SVM D.H. Wu, Y. Fu and J.S. Wang	275
Reliability-Based Sensitivity Analysis for Machining Precision by Saddle-Point Approximation Y.J. Jin	280
Software Platform for General Purpose Test and Diagnosis B. Xu, L.W. Guo and J.S. Yu	284
Antiaircraft Gun Automatic Fusion Diagnosis Based on D-S Evidence Theory Z.S. Wang, L.W. Tang, W.W. Yu and J.H. Cao	288
A Radar Fault Prediction Based on LM-BP Neural Network S.H. Liu, Z.J. Bi and W. Zhang	293
Fault Diagnosis Based on Mathematical Morphology and Probabilistic Neural Network for Progressing Cavity Pump Well N. Zhang, Z.J. Han, G. Lu, Q. Shao and Y. Lu	298
The Fault Diagnosis System Design Based on PMA T.J. Li, L. Gao, Z.Y. Liu, Y.R. Xu and J. Xu	304
Design and Application of Integrated Diagnosis Inference System B. Xu, W. Feng and J.S. Yu	308
Research on Key Technology of Knowledge-Based Intelligent Fault Diagnosis of Hydraulic System X.X. Liu and Y.F. Tan	313
Study on the Interlaboratory Comparison Test of the Electronic Test Method for Raw Silk J.M. Xu, Y. Zhou, S.Z. Dong, F. Gatti, D.P. Wu, X.E. Bian and Z.M. Zhao	317
Study on Condensation of the Moisture in Current Transformers with Current Flow Considering Sharp Temperature Decrease Z.H. Yan, X. Ren, H. Ren and W.D. Ding	322
Application of Fault Detection Based on Variable Precision Rough Sets N. Chen, S.P. Yang and C.Z. Pan	328
The Evaluation Method of Critical Equipments in a PdM System Y.C. Xia	332
ADS40 Test Field Calibration Using Posteriori Compensation Method X.R. Tu, M.Z. Xu, W. Shen and W.D. Zhu	336
Accuracy Analysis of SRTM-DEM in Qinling-Dabashan Area S.B. Liao	342

An Electric Power System Fault Diagnosis Method Based on PSO and FCM J. Cheng	347
Application of Three-Cornered Hats for Frequency Stability Analysis of Atomic Clock Z.J. Liu, W.K. Yang, Z.C. Lv, X.W. Zhu and G. Ou	351
Incorporating the Testing-Effort Function into the Inflected S-Shaped NHPP Software Reliability Model Q. Zhao, X.F. Yu and C.W. Zhang	356
Study on Calibration Technology for Helium Mass-Spectrometer Leak Detector L. Zhao, Y. Feng, Y.J. Chen, D.X. Zhang, W.J. Sun and R.F. Zhang	360
Error Analysis of the Micro Temperature Control System Z.W. Han and K.F. Song	364
Safety Warning System of High Temperature and Pressure Pipeline Based on GSM X.H. Huangfu, Y.M. Liu, T. Liu, J. Lou and Q.M. Cai	368
An Improved Wide Area Travelling Wave Fault Location Algorithm Y. Chen, D. Liu and B.Y. Xu	373
Research on Equipment Maintenance Support Capability Evaluation Based on Cloud Theory H.Q. Gu, C. Zhang and Q. Shi	379
Remote Diagnostic System Based on Video Monitoring of Network Engraving Machining Processing Status B.J. Ma and Y.W. Song	384
Cause Analysis of Digital Substation Main Transformer Differential Protection Misaction T.M. Wang and B. Gao	389
Research of Electronic Failure Knowledge Management Mechanism Based on Simulation Acquisition J.M. Wang and J.D. Huang	396
Fault Diagnosis Expert System for Special Electronic Equipment Based on the Fuzzy Neural Network X.Z. Yin and J.G. Wang	401
One Fusion Approach of Fault Diagnosis Based on Rough Sets Theory and Dempster-Shafer Theory Y.Q. Su, J.H. Cheng and T.X. Xu	405

Chapter 3: Precision Instruments and Computer Vision

Coarse Alignment for SINS Using Gravity in the Inertial Frame Based on Attitude Quaternion W.D. Zhou, H. Ma, Y.R. Ji and J.L. Song	413
Research of Image Compression Based on Fractal Coding D.M. Wang and J.Y. Lu	418
Research on the System of Supercapacitor Parameters Measurement Based on High and Constant Current Control X.H. Li, Y.P. Li and M.H. Zou	423
Design and Experimental Research on Double-Pitch Time-Sharing Meshing Silent Chain S. Ding, X.L. Liu, Y.B. Zhang, J.G. Lu, J.J. Liu and G.Y. Zhu	429
Prediction of Calibration Value for Inertial Instrument Based on Genetic Neural Network Z.D. Hu, T. Yang, Y.P. Wang and X.M. Tang	433
High-Speed and Robust Scene Matching Algorithm Based on ORB for SAR/INS Integrated Navigation System F. Chen and Y.X. Xu	439
Explanation of Doubtful Points of API Round Thread Casing and Coupling Thread Standoff Y. Fu, Z.Y. Wei, X.L. Bai, N. Feng, J. Wu and Y.F. Ai	444
Analysis of Spectral Resolution of a Portable Cross Czerny-Turner Spectrometer G.D. Zhang and H. Lin	449
Study of a Calibration Method of the OCTG Standard Template Based on Coordinate Measuring Machine X.L. Bai, X.F. Ma, Y. Fu, X.L. Han and Z.Y. Wei	457

An Identification System for Classifying Nonwoven Quality S.W. Wang and T.L. Su	466
Design and Implementation of Panoramic Video Surveillance System Based on OMAP4460 Y. Liu, J.R. Zhang and J. Gao	470
Theoretical Analysis for Relations between Nonlinearity Errors and PBS in Heterodyne Interferometer H.J. Hu and C. Zhang	474
Real-Time and Robust Stereo Visual Navigation Localization Algorithm Based on ORB Y.X. Xu and F. Chen	478
A Wood Color Classifier Based on CAV and SVM X.Y. Hu, P.L. Wang and J.Y. Xu	483
Drift Error Analysis of Atomic Spin Gyroscope S.A. Wan, J.C. Fang and Y. Chen	488
Kinematic Modeling and Analysis of Articulated Arm Coordinate Measuring Machines G.B. Gao, W. Wang, H.Q. Li and J.J. Zhou	494
Pedestrian Tracking with HOG and Color Histogram Features L. Guo, G.X. Zhang, P.S. Ge and L.H. Li	498

Chapter 4: Automation Instruments

Algorithm Based on Lagrange Interpolation and ZoomFFT for the Power System Interharmonics Detection T.T. Pang, G.W. Liu, Z.X. Zhu and X. Zhao	505
A High-Frequency Inverter Based on Double Closed-Loop Control L. Yang and G.W. Liu	509
Three Dimensional Manipulation of Cells Using Holographic Optical Tweezers T. Tao, J. Li and Y. Lin	513
Application of Laser Microscope System for Evaluation of Separation Agents P. Reiterman, M. Kostelecká, K. Kolář and P. Konvalinka	517
Design of Intelligent Display Meter Based on ARM K. Gan, X.W. Peng and Z.D. Zhao	525
Progress in the Development of a Miniature Mass Spectrometry Q. Yu, K. Ni, F. Tang and X.H. Wang	529
The Development of Remote Monitoring and Analysis Platform based on Embedded Systems W. Hao, Y.H. Duan, L. Li and X.Y. Wang	533
Development for the Online Calibration Equipment of Open Channel Flowmeter W. Zhu, W.Q. Chen, C.L. Wang, W.Y. Shen and W.G. Zhao	538
Digital Design and Implementation of Measuring Oil Color Y. Ling, C.H. Liao and J.G. Xing	544
Design of Intelligent Valve Positioner L.H. Gu, X.Y. Ge, X.D. Yao and B. Jiang	552
The Design of Multifunctional Household Electronic Medicine-Chest F.J. Yang and X.Y. Huo	557
Design and Implementation of Cholecystolithiasis Automatically Perfusion-Dissolved Instrument T.S. Zhou, Z.B. Ling and J. Wang	562
A New Design of Distributed and Smart Automatic Weather Station F.L. Huang, Y.L. He and W.Y. Lei	566
Study on the Dual-Frequency Excited Electromagnetic Flowmeter T.J. Liu and Y.J. Chen	571
Development of a Self-Power Peak Expiratory Flow Meter S. Wang, Z. Gaing, R. Garcia, P. Chang and C. Chen	576
Design of Digital Advertising Screen Display J. He and L.G. Chen	581

Chapter 5: Electrical and Electronic Instruments and Equipment

Research on Characteristics of Human Gait by Electrostatic Detection P.F. Li	587
Life Cycle Cost Model of Power Transformer under the New Environment J. Hu, K. Li and R. Ma	591
Analysis on the Anti-Interference Performance of UWB Receivers M. Liu, M. Liu and Y. Wang	597
Low-Cost Sustainer with a Simple Energy Recovery Circuit Utilizing Parallel Resonance H.L. Do	602
Analysis of Charge Circuit and Discharge Circuit in Electromagnetic Riveting J.H. Deng, Y.M. Zheng, C. Tang and Y.R. Zhan	606
Design of the FMC Intelligent Controller K.W. Huang	610
Decrement Signal Generator of High-Precision E Exponential Based on ARM B.Q. Yin, Y. Wang, L. Yang, S.S. Guan, P.P. Tian and S.Y. Li	614
A New Method to Reduce the Size of Lut in Digital Frequency Synthesizer Y.P. Cao and Y.H. Dou	618
Exploration in Adjustment of AC Electric Bridge C.X. Bei, D.D. Wu and J.X. Peng	623
The Application of NetGAP in Electric Mobile Access System Z.J. Dai and X.W. Li	627
Load-Adaptive Soft-Switching Energy Recovery Sustainer for Plasma Display H.L. Do	632
Design and Implementation of 30kW Three-Phase PV Grid-Connected Inverter W.W. Tang, L.L. Chen, H.X. Yin and H. Dong	636
Phase Compensation Method for Electronic Instrument Transformers Z.K. Li, J.J. Zhao, H. Ji and Y. Fu	641
Modulation Transfer Function Measurement System at Different Contrasts for CCD Camera W.J. Li, C. Liang, N.Z. Jin and M.L. Zhou	648
Research on High Frequency and High Voltage Switching Power Supply for Electrostatic Precipitator G.J. Han, J.L. Deng and D. Xu	653
Research and Implementation of the Triangular Wave Pulse Power Device D.Y. Wu and S.B. Yu	657
Phase Locked Loop Pulse Signal Frequency Multiplication Circuit Design Based on FPGA Y.Y. Zhou and Y.M. Shen	661
PLC-Based Communications Network Design for EV Charging & Swapping Stations L.G. Ma, Y.N. Wu and Y. Wang	665
Design of High Current Two-Way DC/DC Converter in Lithium-Ion Battery Formation Equipment D. He, G.W. Liu, K. Song and D. Wu	671
Analysis of the Principle and Suppressed Measures of Low Frequency Oscillation in Interconnected Power System Q.L. Wu, X. Cheng and J.C. Tan	676
Design and Application of Decision Support System for Power Loss Reduction of Rural Power Network B.X. Chen and J.C. Tan	682
Theoretical Line Loss Calculation in 10kV Power Distribution Network Based on an Improved Alternative Method B.X. Chen and J.C. Tan	687
Design of a Sawtooth Generator Applied for Class-D Audio Power Amplifier Z.Y. Liu, X.X. Jing and W. Xi	693
Effect of Structural Parameters on High Frequency Characteristics of Microstrip Meander-Line Slow Wave Circuit C.T. Chen	698

An Adjustable Linearization for RF Power Amplifier K. Yue and X.B. Ma	703
Short-Circuit Model and Simulation Characteristics of Synchronous Generators W.Q. Song, Q.Z. Liu, X.D. Teng and C.G. Yu	709
A New Timing Extraction Algorithm and its Application in all Digital Receiver J. Lv, T. Li and W.T. Sun	717
Research and Development of Test Platform for Plug-In Fuel Cell Vehicle's Hydrogen Management System L. Li, X.N. Lai, W.M. Liang, B.L. Wang and F. Liu	721
Electric Leakage Protection System Based on Wireless Monitoring Network X. Zhao and Z.Y. Wang	728
Design of the Heat Dissipation for 4W High Power LED Lamp C.Y. Gao and W.Q. Li	734
A Novel Type of Solid-State Soft-Starter Z.W. Xu and H. Wang	738
The Research of The Pulse Power Source Sequential Control System J.L. Gu, H.E. Luo, L. Dou, N. Shen, Y. Xia, H. Tie, Z.X. Li and B.M. Li	742
Application of Common Information Model in Analyzing the Area of Vulnerability to Voltage Sags D. Li, S.Y. Zhou, S. Tao, J.J. Xue and X.N. Xiao	747
A Current Comparator Based Four-Terminal Impedance Bridge Y.J. Wang, Z.W. Qu and X.C. Hu	752
Simulation Research on High-Frequency Response Characteristic of Rogowski Coil Based on the Distributed Parameter Model P. Li, T. Liang, Y.C. Cheng and L. Zhao	758
AC-DC Converter with Power Factor Correction Function H.L. Do	763
A Low-Cost Hybrid Active Power Filter for High Voltage System Y. Li and G. Li	767
A Novel Framework of the Life Cycle Asset Management for Transmission and Transformation Equipment of Power System Y. Wu, J.B. Wan, K.Y. Wang and R. Ma	773
Design and Development of Electric-Bus Battery Swap Control System Based on Quantum Platform Y.H. Wang, Y. He and X.T. Liu	778
Numerical Simulations of TWC Light Off Characteristics Based on Amesim Z.W. Wu, G.M. Feng, H. Chen and D.H. Hu	785
Design of Test System for one Type of Airborne Photoelectric Equipment Based on PC104 Bus M.Y. Hou, H.L. Fan and X.Y. Jing	789

Chapter 5: Electrical and Electronic Instruments and Equipment

Study on Digital Voltage Instrument Transformer Calibrator Based on Principle of High Potential Difference Measurement F. Pan, J. Hu, Y. Xiao, W.M. Sun, Q. Song, Q.L. Meng and D.Q. Zhang	795
The Research of Fuzzy Self-Adaptiving PID Control Technology on Inverter Power K. Zhao and F. Li	801
The Application of HPLC for the Detection of tHcy and the Diagnosis of Central Retinal Artery Occlusion H.Y. Zhou, W.S. Zhang, L.N. Wang, J.L. Hao, S. Wang and H. Zhang	805

Chapter 6: Sensors and Its Application

Design of Rotate Speed Sensor Based on MR Elements K. Jiang, P. Yang and R.T. Ma	811
--	-----

Research of Precision Conditioning Circuit in Laser Differential Confocal Sensor J.J. Guo, L.R. Qiu and W.Q. Zhao	815
Study on Surface Acoustic Wave Air Flow Sensor for Vehicle J.J. Tan, Z. Wan, X. Xiong, F. Li and S. Li	822
Gamma Radiation Effect on the Electrical Properties of PANI Film A. Omar, A. Baraka, A.H. Zaki and K.A. Sharshar	828
Temperature Compensation System of Diesel Engine Piezoresistive Pressure Transducer Based on Neural Networks and LabVIEW Z.J. Tong, X.H. Shi, X.D. Du, S.W. Wang and T.P. He	833
An Energy Efficient Routing Protocol Based on the Shortest Path in Mobile-Sink Wireless Sensor Networks M. Chen, X.M. Xu, S.H. Zhang and G.F. Feng	837
Mechanism and Simulation of Bi-Layered Micro Optical Fiber Resonator S.J. Zhang, Y.M. Liu and X.H. Huangfu	841
Wavefront Aberration Correction with Conjugated Combination Models of Zernike Modes S.S. Niu, J.X. Shen, C. Liang and Y.H. Zhang	847
Detection of Sulfamethazine Residues in Milk by Surface Plasmon Resonance-Based Biosensor Inhibition Immunoassay Y.L. Fu, M.M. Pan and S.J. Sun	852
Low-Frequency Wireless Accelerometer to Bridge Health Monitoring Q. Li and T. Wang	858
Application of Differential Interference in Electromagnetic Rail Gun Strain Measurement J.L. Gu, H.E. Luo, K.J. Qiang and B.M. Li	863
Experimental Research on the Acceleration Sensitivity of Quartz Crystal Oscillators L.Z. Ji, Q.X. Shan, J. Yang and M. Lin	869
Energy-Saving Technologies of WSN in Water Quality Monitoring R.M. Zheng	876
Ethanol Gas Sensor Based on Self-Assembled Multi-Walled Carbon Nanotube Film K. Wang, D.Z. Zhang, J. Tong and B.K. Xia	881
A Direct Measurement Method of Building's Shunt Coefficient X.C. Zhang, X.B. Sun and X.Y. Mou	885
Thermo-Sensing System Using a 3D Measurement Sensor (Kinect Sensor) T. Li and K. Kawasue	889
Study on an Optimization Method of Deployment for Wireless Sensor Networks in Buildings M. Zhu, X.F. Yu, J.W. Hu and B. Wang	895
Extended Simulation Framework for Industrial Wireless Sensor Networks Reliability Modeling S.H. Duan, Y.D. Wan and Q. Wang	903
A Novel Monitoring Network System of Wireless Sensor Network M.H. Yuan and Y.Q. Gong	908
Multisensor Data Fusion Based on Rough Set and ART2 Network X.H. Chen and H. Liu	912
Design of Strain Sensor with High Accuracy Used under Water A.J. Zhang, X.M. Xie, Y.S. Liu and C.M. Wang	916
The Simulation Technology Research of Hall Current Sensor S.Z. Huang, Y.J. He and Q.Y. Guo	921
A Novel Dynamic Approach of Accelerometer Calibration in GPS/DR Integrated Navigation System Y.R. Wang, H. Zhang and Q.F. Zhou	927
Real-Time Monitoring of Hydrogen Sulfide in Air by Cataluminescence-Based Gas Sensor K.W. Zhou, H.W. Yang, X.F. Li and Y.Y. Yang	934
Study on the Dynamic Character of the Six-Axis Heavy Force Sensor S. Lin, X.Y. Wang and Z.Y. Jia	938
Study on Alteration Information Extraction by Using Assimilation of Multi-Sensor Spectral Data L.J. Zhao, W.F. Zhang, L.F. Zhang and J.B. Xie	943

Wireless Sensor Network Indoor Environment Monitoring System Based on LabVIEW X. Wang, X. Lu and H.X. Wang	948
Analysis and Comparison of WSN Routing Protocols Oriented to WBAN Y.D. Wang and Y. Liu	952
Application of D-S Theory in Information Fusion of Water Quality Measurement Sensors H.F. Li, H. Zuo and X.F. Hua	956
Research on Wireless Sensor Monitoring Networking Technology for Coal Mine Safety Z.X. Liu, Y.H. Shi, X. Wang and M.X. Feng	960
Research on Link Loss Rate Inference Based on Data Aggregation in Wireless Sensor Network W.L. Ji and J. Yao	967
RFID Indoor Localization Algorithm Based on PSO P.Z. Wen, T.T. Su and L.F. Li	972
A Design and Implementation for Optical Fibre Vibration Sensor K.X. Sun, H. Zheng, J.B. Tang and X.F. Cheng	976
Ion Mobility Spectrometry for Monitoring Chemical Warfare Agents J. Zheng, T.M. Shu and J. Jin	980
A study of a Silicon Carbide Capacitive Pressure Sensor Applied in Harsh Environment H.J. Lv, H.Y. Yu, J.H. Hou and T. Geng	984
Research on a New Stress Sensor Based on the Amorphous Alloy C.W. Liu	988
Based on Multi-Sensor Data Fusion Operating Machinery Velocity Monitoring System X.Y. Xu and C.J. Huang	993
Ground Surface Deformation Sensor Based on Cable Impedance R.Y. Tong, Q. Li, M. Li and X. Li	998
Smart Building Control Based on Wireless Sensor-Actuator Networks S. Li, C.X. Fan, J.W. Zou, X.Y. Zhang and Z.G. Wen	1004
The Design and Simulation of the Array Induction Logging Tools' Signal Conditioning Circuit Y. Hu, H.L. Hu and D.J. Huang	1010
Clustering Algorithm for Heterogeneous Sensor Network Based on Energy Matrix X.C. Dang and Z.J. Hao	1014
Analysis of Sensitivity and Linearity of SiGe MEMS Piezoresistive Pressure Sensor S.M. Shaby and A.V. Juliet	1024
Research and Improvement about LEACH Routing Protocol for Wireless Sensor Networks L. Wang and Q.L. Zhu	1028
Research on Interference and Topology Control in Wireless Sensor Networks T. Song	1033
A Novel Localization Scheme for Underwater 3D Acoustic Sensor Network Q.M. Zhou and B. Zhu	1038
Application of N6841A RF Sensor in Automated Radio Monitoring N. Zheng, T.H. Chen and S.Y. Cheng	1044
Ant-Colony-Based Geographic and Energy Balance Routing for Sensor Networks J.C. Xiao, P. Zeng, H.L. Zhang and D. Li	1049
Technology Research of Digital Closed-Loop Fiber-Optic Gyroscope D.S. Yang	1056
Electrical Characteristic Analysis of Electrical Capacitance and Resistance Dual-Modality Tomography Sensor Based on Metal-Wall J.C. Zhao, W.L. Fu, J.J. Lei, B. Qiu and X.Y. Li	1060

Chapter 7: Control Technologies and Applications

Application of Synchronization Control Method to Zagzag System Y. Li and C.L. Zheng	1067
Analysis on EPS Machitrical Dual Closed-Loop Control System W.Y. Wei, J.Y. Chen and G. Xie	1071

The Application of Fuzzy Smith-PID Controller in Coupled-Tank Liquid-Level Control System	
L. Li, Z. Yong and L. Ai-Lian	1076
Synchronization of Multi-Chaotic Systems with Ring and Chain Intermittent Connections	
Q.L. Zhang	1081
Application of a New Type of Composite Adaptive Controller in the Lithium Battery Charging System	
J. Zhang, G.W. Liu and Z.X. Zhu	1088
Water Consumption Analysis System Based on Data Mining	
Y.Y. Wen, W.M. Huang, J. Wu, Y. Chen and J.Q. Song	1093
Maximum Power Point Tracking Control of PMSG Wind Turbine Based on Action Dependent Heuristic Dynamic Programming	
S.J. Song, F.L. Zhang and B.L. Liao	1098
Application of LS-SVM Control Model in Circulating FLuidized Bed Electric Power Generation Process	
M.M. Gao, J.Z. Liu, K.Y. Li, Y.W. Zhu, Y. Zhou and H.J. Mo	1105
Research Self-Adjusting T-S Fuzzy Control System Based on LS-SVM Online Prediction on CFBB	
M.M. Gao, J.Z. Liu, X. Zhang, X.J. Lei, J. Tang and J.W. Zhong	1109
Design and Implement of Automatic Control System of the Campus Ringer	
G.S. Fang	1113
Obstacles Avoidance for UAV SLAM Based on Improved Artificial Potential Field	
X.B. Wang, C. Song, G.R. Zhao and J.L. Huang	1118
Research on a Direct Generalized Predictive Control for Circulating Fluidized Bed Combustion System	
H. Lai, Y.Z. Meng, M.J. Qi, W.Q. Ge and L.L. Cui	1122
Longitudinal Control Law Design and Simulation of Fixed-Wing UAV	
Z. Duan	1128
A New Complex Incident Response Plan Decision-Making Model	
P. Liu, B.Y. Xu, F. Hu, H.F. Yu and J. Li	1133
Development of Intelligent Controlled System for Object Special-Shaped Stone	
M.M. Xiao	1139
Design of DC Motor Speed Control System Based on Sopc Technology	
Y. Yao, J.L. Jia, G.J. Chen and X.H. Wang	1143
Guaranteed Cost Control Approach for a Class of T-S Fuzzy Descriptor Delay Systems	
W.H. Tian, L.X. Li, W. Deng and Y. Zhao	1148
Guaranteed Cost Control of Multiple-Time-Delay T-S Fuzzy Descriptor Systems	
Y.L. Li, Z.L. Zhang, W.H. Tian and Y. Wang	1154
Research on Deadbeat Control for Three-Phase Grid-Connected Inverter in Model Based Design	
G.J. Han, M. Zou and W.Z. Min	1159
Constant Palstance Control of Combine Cylinder Based On Nonlinear PID	
M.B. Yu, D.A. Zhao and J. Zhang	1164
Time Delay Estimation on COREX Parameters Based on Dynamic Time Warping Method	
C.X. Zhao, J.W. Xu, M. Li and J.H. Yang	1168
Design and Implementation of Goalkeeper Defensive Strategy on the Soccer Robot Simulation Game	
S. Zhang	1176
Relaxed T-S Fuzzy Control Design by Descriptor System Approach	
C.H. Sun and Y.C. Yeh	1180
Control Scheme of Novel Pressurized Stripper and the Industrial Implementation	
D.C. Feng, M. Pan, Y. Qian and X.W. Wang	1184
Direct Adaptive Fuzzy Predictive Control and its Application to CSTR Process	
C.L. Su, M. Lina and P. Li	1191
Decoupling Control of Dynamic Emulation for Transmission Test Rig	
W.L. Li, J. Ke, B. Deng, X.H. Shi, X.H. Zou and P. Yi	1195

Control & Communication Link System Theory and Its Application on Pig Slaughter Control	
J.C. Huang, M.S. Cai and Q.X. Zhang	1201
Design and Application Study of Optimization PID Control with Changing Integration Rate	
H.X. Niu and T. Hou	1205
FPGA Implementation of NAND Flash Wear-Levelling Algorithm	
J.H. Wen, W.J. Wang, W. Gao and X.N. Fan	1209
Research on the Automatic Control System of Industrial Kiln of Hot-Dip Galvanizing	
X.M. Liu and S.Q. Wang	1213
Research on RBF Neural Network of Wet Cooling Tower Under Cross-Wind Conditions	
R.K. Gong, C.H. Wang, L.J. Zhao and Y.N. Zhang	1217
Force Feedback Calculation of Thread in the Desktop-Based Thread Force Feedback System	
S. Liu, P.D. Wu, J. Huang and M.C. Shan	1221
Sensorless Control of PMSM with Compensated Sliding Mode Observer	
Z.Y. Song, J.Q. Li, M.G. Ouyang, L.F. Xu and J.M. Hu	1226
Thermal Power Plant Electrical Network Flow Calculations Based on AnySimu Platform	
C.L. Liu and Y.L. Gao	1234
Nonlinear Predictive Decoupling Control of Rotorcraft UAV Using Serial Decoupling Method	
X.G. Ruan and X.Y. Hou	1240
Application of Fuzzy PID Control in Sluice Control	
F.C. Huang, H. Feng, Z.L. Ma, X.H. Yin and X.W. Wu	1248
Study on the Speed Control of a Marine Diesel Based on Fuzzy RBF-PID Strategy	
Q.F. Kong, F.M. Zeng, J.C. Wu and J.M. Wu	1255
Application of Kalman Filter in the Attitude Four-Axis Aircraft Control System	
X. Cui, Z.Y. Fan and H. Sun	1261
Based on the State Feedback Optimal Controller Design	
W. Zhang	1265

Chapter 8: Fluid Power Transmission and Control

Numeric Simulation of Gas-Dynamic Processes in the Swirl Combustion Chamber in STAR-CCM+	
I. Kuksov, S. Mochalov and V. Sarychev	1271
Simulation of the Flow Parameters of the Multi-Microchannel Aerostatic Restrictor	
Y.B. Zhang, C.Q. Li and D.S. Li	1278
Numerical Simulation Study on Air-Flow Migration Law about Vortex Air Curtain of Plane Wall Fan Drum	
G. Zhou, S. Cao, D.M. Wang, W.M. Cheng and W. Nie	1285
The Development of the Durable Test-Bed of the Hydraulic Pump	
L.R. Wan, H.X. Kang, Z.H. Liu and C.L. Wang	1293
Fault Simulation of Relay Valve Based on AMESim	
Z.K. Tao, C. Tian and M.L. Wu	1297
Simulation Study on a New Type of Cooling Device Used in Heat Dissipation of Server	
C. Guo, F. Wang, Y. Qu and N. Jin	1306
Computer Fluid Dynamics Analysis of Cryogenic Oil Mist and Structural Optimization of Spraying Nozzle	
L.T. Zou, S. Zhang and Q. Zhang	1310
Analysis of Pressure Field for Flow Past a Circular Cylinder with a Slit	
H. Wang, Y.M. Huang and M. Lin	1316
Study on Interphase Force Quantitative Detection Device of Horizontal Pipe Gas-Liquid Two-Phase Flow	
L.D. Fang, Q.H. Lu, X.M. Xiang, Y.J. Liang and H. Qing	1320
Study on Entrainment Force between Phases Perpendicular to Horizontal Flow Direction in Gas-Liquid Two-Phase Flow	
L.D. Fang, R. Liu, X.M. Xiang, H. Qing and Y. Zhang	1324

Analysis of the Transitions and Energy Losses of a High Flow Rate High Speed On/Off Valve	
J. Chen, Z.M. Su and Q. Zhou	1328
Durability Testing System with Power Recycle for the Variable Displacement Closed-Loop Hydraulic Pumps	
H.B. Wang and J.K. Hu	1333
Influence of Temperature Factor on Fluid–Structure Coupling Characteristics of Hydraulic Piping System	
C.L. Peng and X.D. Wang	1338
Influence of Turbulence Intensities onto Transmission Line Conductor Wind Loads	
H.X. Dang, F.L. Yang and J.B. Yang	1344
Hydraulics Analysis System for Extended Reach Drilling in China and its Application	
X.L. Guo, Z.M. Wang and Z.H. Long	1349

Chapter 9: Mechatronics

3D Rotary Model Design Based on Accelerometer	
L. Qian	1357
The Improvement of Control Methods for Small and Medium-Sized Hydraulic Forging Machine	
X.X. Yan and T. Chen	1361
Development of Exclusive Controller and HILS for Active Magnetic Bearing System	
S.J. Go, C.Y. Kim, M.K. Park, Y.J. Lee and B. Yao	1365
Direct Torque Control Servo System for Permanent Magnet Synchronous Motor	
X.W. Tu, Y. Yang, X. Chen and Z.X. Yu	1370
High Gain Observer for Drag Tracking in Mars Entry Longitudinal Guidance	
K. Wu, H.T. Cui, D.M. Ma and P.Y. Cui	1374
The Assistant Deployment of the Space Mechanism on the Ground	
S.M. Xing and Y. Song	1379
Vibration Frequency Fuzzy Adaptive Control of the Flexible Lunar Regolith Sampler Based on the Dynamic Prediction by Using the RBFNN	
W. Lu, H. Zeng, A.G. Song, W.M. Ding, Y. Ling and B.G. Xu	1385
Real-Time Control and Data Exchange Method in Software CNC System Based on PC	
K.Q. Wang, J.W. Yang and L.Q. Lei	1392
Research and Application of the Deep Horizontal Drilling and Completion Technology for Liaohe Oilfield Buried Hill Reservoir	
G.M. Nie, D. Guo, Y. Wang and X.W. Cheng	1396
Improved Analytic Guidance Algorithm for Mars Entry	
H.Y. Xu and H.T. Cui	1400
Reliability Analysis Based on the Deceleration Electric Wheel	
F.Z. Xie, B.X. Zhang, C. Xiao and X. Song	1406
Modeling and Testing of Linear Electric Servo System	
X.J. Zhao and F. Lin	1411
Design of a Digital Controller for the Pneumatic Actuator	
F. Lin and Z.W. Gong	1418
Research on the Mechanism of Multi-Source Piezoelectric Vibratory Feeder	
Y. Wang, W.F. Wu and S.P. Shi	1427
Analysis on a Novel Halbach-Type Transverse-Flux Linear Oscillatory Motor for Linear Compressor	
M.Z. Lei, W.Z. Dai and L.Q. Wang	1431
Experimental Research on Transmission Characteristics of Working Mechanisms for Servo Mechanical Presses	
J.G. Hu, Y.S. Sun, Y.Q. Cheng and W.P. Ruan	1438
CNC System Based on FPGA for Line Contact Machining	
K.Q. Wang, J.W. Yang and C.C. Li	1444
Optimization of Casing Wall Structure of Electrostatic Precipitator - A Case Study	
Y.F. Yu and D.F. Wang	1449

Full Software CNC System for Line Contact Milling K.Q. Wang, J.W. Yang and C.C. Li	1455
Analysis for Packet Dropout of Brushless Direct-Current Motor Networked Control System X.P. Zong, M. Zhang and L. Zhao	1460
Traction and Transmission Monitoring System of EMU's Y.H. Zhao and Q.Y. Zhu	1465
Analysis on Geometry Error Software Compensation Technology Model of Gantry Five-Axis NC Machine Tool H.G. Han, X.L. Hu, Y.C. Li and F.S. Shang Guan	1470
The Analysis of 4WD Vehicle Overtaking Based on Electric Wheels X. Zhu and J.G. Song	1475
Study on Open CNC Control System Based on GUC Motion Controller J.W. Zhao and W. Xie	1482
Single-Loop SVPWM Modulate Strategy for Permanent Magnet Synchronous Motor Control System Q.X. Zhou, Y. Zhou and Y.F. Zhang	1487
Design of Integrated Control System for Microfluidic PCR Analysis Instrument J.D. Xu, X.F. Lv, Y. Liu, X.Q. Li and Y.L. Deng	1491
A System of Position Control for Cylinder Based on Self-Tuning Fuzzy Control R.K. Gong, L.J. Zhao, C.H. Wang and Y.N. Zhang	1496

Chapter 10: Modeling, Analysis and Simulation

Research on Production Optimization Model of the Closed-Loop Supply Chain with Remanufacturing Based on Product Differentiation H.W. Jiang	1503
Simulation-Based Comparison of Pull-Push Systems in Motorcycle Assembly Line U. Sutee and P.K.D.V. Yarlagadda	1507
Research on the Hybrid Modelling Method Based on Mechanism and Identification for Marine Diesel Q.F. Kong, F.M. Zeng, J.M. Wu and J.C. Wu	1514
Explore on Digital Restoration of Historic Buildings in Colleges Based on the BIM Concept - As the Example of Jilin Architecture and Civil Engineering Institute Hong Qi Campus R. Han, Y.H. An and X.Y. Xie	1520
Double Resonance Hybrid APF and the Compensating Simulating Analysis Y. Li and G. Li	1526
Method of Moments (MoM) for the Analysis of Dielectric Double Periodic Structures S. Zhao, N.Q. Zhang and D. Li	1531
Research of Cargo Truck Model Based on the Lift Bucket S.L. Chen, T.G. Gao, Y.Q. Tu, X.N. Wang and F. Zhang	1535
Simulation Analysis of a PSO-Based Vehicle Collision Avoidance Method under Cooperative Vehicle Infrastructure Environment J. Liu, B.G. Cai, Y.P. Wang and J. Wang	1539
Multi-Mode Flight Control Simulation of UAV Based on Stateflow and GUI N. Zhang, H.W. Chen and K.Y. Qin	1545
City Fire Forecasts and Analysis Based on Nonlinear Auto-Regressive Time-Series Model S.P. Liu and Y. Zhang	1550
DMFSsim: A Distributed Metadata File System Simulator Q.M. Wu, K. Xie, M.F. Zhu, L.M. Xiao and L. Ruan	1556
A Mountain Highway Slope Stability Analysis L.J. Zhong, J. Liu, D.D. Yang, L. Feng and H.H. Wang	1562
The Design and Simulation of IGBT Inverter Buffer Circuit Z. Mi, H.K. Liu and X. Zhang	1567
A Real-Time Transient Model of CF6 Turbofan Engine H.T. Yao, X. Wang and X.X. Kong	1573

Chapter 11: Artificial Intelligence

Different Types of Association Rules Mining Review J. Tan	1589
A New Training Algorithm for RBF Neural Network based on Dynamic Fuzzy Clustering Y.J. Cui, Y.D. Ma, J. Li and Z. Zhao	1593
Weighted Association Rules Mining Algorithm Research J. Tan	1598
The Research on Recognition of the Irregular Objects G.H. Han and X.J. Ma	1602
H_{∞} Consensus of Multi-Agent Systems with a Leader L.P. Mo, H.Y. Zhang and H.Y. Hu	1608
Human Ear Recognition Based on Phase Congruency and Kernel Discriminant Analysis S.Z. Lei and Q. Zhu	1614
Research on Parameters Optimization Algorithm in Support Vector Machine Based on Immune Memory Clone Strategy F. Zhu and J.F. Wei	1618
Study on Path Based Hierarchy Aggregation in DS-TE Environment Y.B. Zeng, Y.J. Chen and H.Y. He	1622

Chapter 11: Artificial Intelligence

A Multi-Classified Method of Support Vector Machine (SVM) Based on Entropy Y. Yue	1629
Research on Interactive Visualization Clustering Method Based on the Radar Chart H.J. Li, Z.Q. Li, J.X. Peng and L.H. Zhang	1633
Stressed Speech Recognition Method Based on Difference Subspace Combined with Dynamic Time Warping C.G. Lv, R.B. Zhang and P.H. Li	1640
A Novel Technology in Surveillance Video for Detecting and Forecasting a Robbing Incident D.P. Gao and Q.X. Zhu	1647
Illumination Invariant Face Recognition Using Nonlocal Total Variation in Logarithmic Domain C.Z. Xu	1652
Research of Intelligent Search Engine Based on Multi-Ontology S.D. Zhang, C. Zhang and J. Wang	1659
Study on Techniques of Hand Gesture Recognition S.F. Mi and L.H. Li	1664
Access Control System Based on Speech Recognition Z.X. Wei and J.M. Liang	1668
Optimal State Feedback Control in Operator Domain for Multi-Rate Networked Control Systems with Long Time Delay Y.P. Wang, Q.X. Zhu and Z.P. Li	1672
Study of Speech Emotion Recognition Based on Prosodic Parameters and Facial Expression Features Y.T. Wang, J. Han, X.Q. Jiang, J. Zou and H. Zhao	1677
Search and Rescue Robot Path Planning in Unknown Environment T. Pang, X.G. Ruan, E.S. Wang and R.Y. Fan	1682
Research on the Model of Intelligence Redundancy Gateway System H.Y. Ju and X. Wang	1688
Study of the Modern Information Technology and its Application in Intelligent Tourism H.W. Yin	1694
Correct the Extreme Properties of Mono-Attribute Dependability Q.Q. Meng and J.L. Kan	1700

A Robust and Efficient Face Recognition System Based on Luminance Distribution Using Maximum Likelihood	1705
C.T. Hsieh and C.S. Hu	
Improved Real Quantum Evolutionary Algorithm and Application	1710
J.C. Chen and A.Y. Tu	
A New Extension of Locality Preserving Projections for Image Feature Extraction	1715
G.H. Huang	
The Research of Least Square Support Vector Machine Model and its Simplified Method	1719
W.J. Zhao and T. Zhang	
A System of QR Barcode Recognition Based on Mobile Phone	1724
Y.L. Yang and Z.X. Zhang	
Real Time Dynamic Threshold Clustering Method for Ancient Chinese Character Identification	1728
F. Yang, L. Jiang, J.H. Si, C.F. Liu and X.D. Tian	
Research on Automatic Identification of Airplane Targets on Infrared Images	1733
Z.L. Xu, W.J. Zhao, H.W. Wang and Q.L. Liu	
Application of Immune Genetic Algorithm in Survey Data Processing	1737
W. Chen	
FPGA-Based Implementation of Face Recognition Based on Gabor and DCT	1741
G.H. Lai, L. Min, S. Liu and X.F. Wang	
A Study on the Agent-Based Vehicles Dispatching Optimization at Container Terminals	1745
N.N. Yan and D. Zheng	
Study on Auto-Search Algorithm Based on Subsection Correlation for Loran-C	1751
Y.B. Zhu, K.J. Cao and B. Li	
Design of WSN-Based Intelligent Light Control System	1756
A.N. Hu and Y. Liu	
Lithofacies Recognition Based on Extreme Learning Machine	1762
Y.J. Tian, H.X. Pan, X.C. Liu and G.J. Cheng	
The Application Research on Fuzzy Theory and Genetic Algorithm	1768
X.Q. Wu	
Algorithms for Automatic Modulation Recognition in Wireless Monitoring Applications	1772
Q. Ge, Q. Wang, X. Yan and L. He	
Evaluation of NCM Effectiveness Base on SOM-BP Cloud Neural Networks	1779
G.H. Zhang, J.T. Shi, M. Zhou, H.B. Yang and M. Wang	

Chapter 12: Industrial Robot and Automation

CAN-Bus Communication Design for Automated Mechanical Transmission	1787
H.K. Zhang and W.J. Li	
Discussion on the Reclosing Coordination of 3/2 Circuit Breaker Connection Mode	1792
L.J. Dou, X.X. Sun and Y.K. Jia	
Speed Sensorless Vector Control of Cascaded Inverter for Asynchronous Motor	1797
Q. Yang, Y.F. Zhang, S.B. Qian and B. Li	
The Development of a Graphical Open-Ended Integrative Platform for Short-Circuit Calculation and Relay Setting of Power System	1802
Z.B. Li, P. Gao, J.S. Ma and Y.S. Yan	
Error Compensation of Stator Resistance Estimation in Sensorless Induction Motor Drives	1812
Z.C. Li, Z.P. Yin and L. Zeng	
Control System Design for Tracked Trailing Mobile Robot	1816
R. Zhu and H.C. Xu	
Human Simulated Intelligent Control for Permanent Magnet Synchronous Motor	1821
P. Xu, J. Xiao, S. Li and Y. Yang	
Virtual Design and Test of Manipulator's Clamping Mechanism for Carrying Cylindrical Lithium Battery	1828
G. Wang, W.G. Zhang, Z.Y. Lu and M.Y. Zhao	

Research on Intelligent Decision-Making System of Variable Spraying for Mobile Robot in Greenhouse G.Q. Gao, H.Y. Zhou, X.M. Niu and Z.M. Fang	1835
Research on Statistical Process Control for Aluminium Electrolysis Reduction D.Y. Cao, X.Z. Song and J.H. Li	1839
Dynamic Modeling and Analysis of a Fruit and Vegetable Picking Robot Y. Wang, Y.W. Ge and X.L. Wang	1845
PID Control of Double-Loop Speed Control System Based on Bacteria-Particle Swarm Hybrid Optimization Algorithm T. Cheng, W.X. Lin and W.L. Li	1850
Simulation Design of Visual Servo Based on Homography Matrix Decomposition X.P. Zong, Y.X. Li, P.G. Wang and W.D. Liu	1855
A Numerical Controlled Constant Current Source Based on Power MOSFET K. Wang, Y. Gao and Y. Fan	1859
Survey on Capacitive Current Measurement Principles for Automatic Tuning Arc-Suppression Coil Z.R. Chen, W.B. Li and P.F. Xu	1863
Distributed Street Lighting Control System with IntelliSense F. Li and F. Yang	1869
Study on the Performance of Cascaded STATCOM Based on DC-Link Voltage Balancing Method Y.T. Wang and Y.C. Sun	1875
Identification of Two Degree of Freedom Robot Arm's Joints' Time-Varying Stiffness R. Xu, Q. Chen and G.L. Yang	1880
Robot Handling System Based on Visual Information M.Z. Zhang and X.M. Jia	1885
Research on Improved Power Harmonic Current Detection Methods J.Y. Wang, Z.H. Shen, Y.L. Zhou and P.J. Zhang	1889
The Kinematics Analysis and Intelligent Control Based on 5R Stacking Mechanism W. Li, X.Y. Cao and J. Lu	1896
Study of Reconfiguration Algorithm in Distribution System Based on Hopfield Network N. Wei, Z. Cheng and X.M. Wu	1900
PID Parameter Optimization in Joint Control of Air Duct Cleaning Robot Z.W. Zhou, W. Sun, C. Wang and Q. Zhu	1904
The Design and Application of PLC Master-Slave Control System Based on MPI J.Z. He, Z.X. Zhao and Z.N. Zhong	1908
Based on Compression Sensing of Video Coding in Robot Servo System J. Xu, X.L. Jiang and X.Y. Yu	1913
The Mobile Robot Navigation System Design Based on GPS and GIS D.H. Yan, D.A. Zhao and H.L. Shen	1918
Probabilistic Roadmaps Based Motion Planning of a 4 Degree of Freedom Robot Y.T. Liu	1922
Simulation and Application of PLD in Electric Power System Circuit C. Liu, Z. Li and J.J. Hou	1931
Research on the Technology of Intelligent Switch Components Device J.J. Hou and Y.M. Cai	1936
The Design and Implementation of an Integrated Distribution Automation Scheme Z.H. Liu, J.W. Zhang, X. Zhao and F. Yang	1942

Chapter 13: Automotive Control System

Research and Application of Constant Motion Controlled by Two-Axle Y.K. Xu, R. Wu and S.S. Yao	1949
Design and Realization of Experimental Autonomous Driving System Based on Neural Network Control Q.F. Kong, F.M. Zeng, J.C. Wu and J.M. Wu	1953

Fuzzy Control Strategy of Powershift Transmission of Tractor Z.Q. Xi, Z.L. Zhou and Y. Li	1959
Sensorless PMSM Control for Automobile Air-Condition Based on Sliding Mode Observer H.B. Wang, J.L. Shi, G.R. Chen and D.J. Xue	1964
A Research on Impact Compensation Control Strategy of Electric Power Steering System Based on Whole Vehicle Dynamics G.X. Tan, Y. Song, C. Lin and W.G. Jian	1969
Research on Test and Simulation of New Type Steering System for Construction Machinery L.Y. Ma, N.X. Liang, Y.W. Cao and S.X. Gui	1974
Influence of Suspension Nonlinear Hysteretic Characteristic on Handling Performance P. Ji, H.J. Jia and S.S. Feng	1978
Research on the Control System of Car'S Power Supply K.G. Fan, H. Qiao, W.Y. Jia and Y.F. Sheng	1982
Design and Implementation of the Management Platform for Electric Vehicle and Charging Electric Facilities W. Song and X.H. Chen	1987
Modal Analysis and Optimization of Electric Vehicle's Fast-Swap Battery Box Z.Y. Lu, Y.Y. Zong, M.Y. Zhao and H. Zhang	1992
Study of Sliding Mode Control in Self-Balancing Two-Wheeled Inverted Car D.Y. Gao, P.W. Han, D.S. Zhang and Y.J. Lu	2000
Design of Integrated Monitoring System for Electric Vehicle Charging Station Based on Weblogic H. Li, G.M. Sun and Y. Chu	2004
The Empirical Study in Smart Power Consumption Based on the Adjustment and Control System K. Huang, T.Y. Li and Y.B. Yang	2010
The Influence of Torsional Damper Performance Parameter on Transmission System Torsional Vibration W.K. Shi, G.M. Wu, S.D. Nie, S.C. Wang and Z.Y. Chen	2015
Roll Stability Model of Lateral Load Transfer of Passenger Vehicle Y.Z. Men, H.B. Yu and X.S. Li	2019
Alnic Measuring System for Rail Type Vehicles X.J. Su and G.Q. Guo	2023

Chapter 14: Intelligent Traffic Control

Self-Organized Traffic Signal Coordinated Control Based on Interactive and Distributed Subarea H. Wang and Y.X. Liu	2031
Traffic Networks Layout and optimization in Transportation Channel Based on Four-Factor Method G.H. Su and W.Q. Chen	2038
The Emergency Medical Service Facilities Location and Scheduling in the Earthquake Disaster Z.X. Li, H.F. Zhao and G.W. Huang	2043
Research on Simulation of Maritime Macroscopic Traffic Safety J.X. Yang and Q.W. Wang	2051
Ship Transportation Forecasting Based on Extension Neural Network J.X. Yang	2055
Research of Ship-Bridge Collision Early Warning in Three Gorges Reservoir Area X.H. Yang, M. Zhang and X.C. Xing	2059
The Weaving Section Length Optimization Based on the Optimal Velocity Car-Following Model and Symmetric Lane-Changing Rule X.M. Liu and S.F. Lu	2064
Traffic Overflow Modeling and Numerical Simulation J.S. Pan and L.D. Zhang	2072

The Analysis of Characterization of Urban Traffic Congestion Based on Mixed Speed Distribution of Taxi GPS Data S.F. Lu, Y.H. Mai and X.M. Liu	2076
Two Dimensional Cellular Automaton Model of the Mixed Traffic Flow for Urban Traffic L. Yang, J.H. Hu and L.J. Kong	2082
Research on the Real-Time Prediction Model of the Traffic Flow Based on Wavelet Neural Network H.Y. Wen, G.F. Yang and W.T. Wu	2088
A Comprehensive Multi-Mode Traffic Information Service Platform for Pedestrian and Bicycle Traffic Z.H. Qu, C. Qi and H.Q. Zhang	2095
Reserch on Traffic Congestion Detection Using Realtime Video L. Xu, Q. Ba and S. Hu	2100
Design and Implementation of Vehicle Self-Navigation System in Urban Intelligent Traffic H. Zhu	2107

Chapter 15: CAD/CAM/CAE/CIM

Vehicle Body and Wheel Motion Simulation Platform Based on LabVIEW H.F. Li, Y.Z. Luo, X.L. Zhang and D. Pan	2113
To the Question of Parametrical Dynamic Three-Dimension Model Design of the Automated Power Generating Complex Mixer I. Zhukov, A. Varnava, A. Knyazev and A. Nagibin	2120
A New Method Based on Finite Element Analysis for Crankshaft Strength Z.H. Xu, Z.Q. Cui and X.H. Wang	2125
The Research of Aeroplane Engine Blade 3D Point Clouds Processing H. Wang, D.Y. Wang, T.J. Dong and T. Wang	2129
Study on Collaborative Design for Distribution Engineering Based on CAD and Knowledge Management Y.Q. Liu and J.D. Cai	2133
Numerical Analysis of Stress and Temperature Coupled Field for Boiler Superheater in Thermal Power Plant R. Zhu and J.X. Ren	2139
T-B Spline Curves with a Shape Parameter L.J. Chen and M.Z. Li	2144
Research and Development of Complex Curved Surface Mechanism Parts Based on Network CAD/CAM/DNC Q.B. Wang, Y.J. Gu and D.Q. An	2149
Computer-Aid Cartography of Map Symbol Design J. Li, Y. Wang, Y. Wang and H. Chen	2153
The Application of FLAC Software in Stability Analysis of Highway Slope Reinforced by Prestressed Anchor Cable H.M. Wang, L. Cao, J. Yao and Z. Li	2158
Knowledge Fermentation Feedback Control Research in Sprayer Innovative Design on the Basis of Rapid Prototyping S.Y. Zhang, T.H. Zhang, L.C. Gu, L. Guo and R.P. Xu	2163
Applied Research on 3D Modeling Technology in Material Design X. Jing	2170

Chapter 16: Optoelectronic Technology

The Design of Display System for Elevator Enclosure Based on STC11L60XE Q.S. Cao, J. Li and J.H. Zhou	2179
The Measurements of Spectral Reflectance Spatial Distribution on Mc-Si Solar Cell Surface X.D. Zheng, Y.Z. Ye and L.F. Shen	2184
Research of CMTS Based on Passive Optical Network X.L. Liu	2188

Non-Uniform Spectral Amplitude Encoding for Optical Wireless Communication Links through Atmospheric Turbulence	
C.Y. Chen, H.M. Yang, Y. Lou and Z.G. Jiang	2192
The High Speed Optoelectronic Isolator Design in Laser Radar	
Z. Zhang and X.W. Cheng	2196
A High-Speed and High-Linearity BiCMOS Optically Coupled Isolation Amplifier	
S.H. Li, N. Yang, L. Cheng and S.H. Zhang	2200
Theoretical and Experimental Study on Flat Optical Comb Generation Based on Re-Circulating Frequency Shifter	
Y.X. Song, H.N. Li, Y.C. Li, J.L. Han and X.X. Duan	2204
The Key Issues to the Switch of the Multi-Channel Video Signal	
Y. Wu, N. Liu and X.J. Ren	2210
10 Gb/s Burst-Mode Transimpedance Preamplifier in 0.13μm CMOS Technology	
G.W. Gu and E. Zhu	2215

Chapter 17: Embedded Systems

Design of a Synthesized Merging Unit Based on IEC 61850-9-2	
Y.M. Wang and J.C. Tan	2223
Research of Remote Monitoring Based on Embedded System and GPRS	
C.A. Chu and Y.T. Chen	2228
Design and Realization of SDRAM Controller Based on FPGA	
G.H. Li and Z. Wu	2233
Remote Data Acquisition System Based on Embedded RT-Thread	
X.F. Shi, T. Feng and X.M. Zhang	2238
The Embedded System of Forest Resource Information Acquisition Based on OMAP3530	
Y. Liu, Y.T. Zhu, Y.R. Li and C. Ni	2242
Synchronization Analysis for Hard Real-Time Multicore Systems	
M.L. Yang, H. Lei, Y. Liao and L.H. Hu	2246
Research of Video Signal Generator in Aircraft Based on FPGA+DSP	
Y.L. Jia and J. Gao	2253
Research of Monitor System of Electric Vehicle Charging Pile Based on ARM-Linux	
J.C. Xu, X. Liu, H. Shi and W.S. He	2258
Design of Video Motion Detect System Based on SOPC	
J.C. Xu, S.B. Hao and X. Liu	2263

Chapter 18: Communication Technology and Network Security

Observing Far-Distance Ionosphere Disturbance Effect	
G.Y. Shi, J.X. Chen and J.X. Yang	2271
The Design of Wireless Broadband Communication System Based on OFDMA	
Z.X. Liu, J.M. Dai and B. Liu	2275
The Research of Distance Learning Video Living and Video on Demand Based on Wireless Mobile Network	
J.C. Zhao and J.X. Guo	2279
A Novel DSR-Based Protocol for Signal Intensive UAV Network	
J. Li, X.L. Zhang, J.H. Bao and G.L. Geng	2284
The Application of Blind Signature Based on RSA Algorithm	
C.H. Duo, Y. Yue and C.P. Yuan	2290
Research on Beamforming Technique for Communications in Moving of Warship Circular Array Antenna	
Q.H. Wu and A.Q. Zhang	2295
Exploration and Practice for Virtual Local Area Network (VLAN) Technology	
L.F. Zhao	2299
Study on Network Communication Protocol of UNISCOPE	
J. Chen	2303

The Design Policy of Large Information System Security Protection Based on Classified Protection	
J. Qu, G.Y. Chen, L. Ma and M. Li	2307
Analysis on Network Security and Corresponding Preventive Measures	
J. Chen	2312
Design and Application of DECT Voice Gateway System Based on Mobile Network	
Y. Han	2316
Study on Acoustic Communication Methods in Periodic Tube Structure	
Z.G. Li, W.J. Shu, Z.C. Guan and M.Q. Huang	2323
A Metropolis Criterion Based Fuzzy Q-Learning Flow Controller for High-Speed Networks	
W.W. Liu, X. Li, X.N. Qin and D. Yu	2327
Data Desynchronization Attacks on Two Lightweight Security Protocols for the RFID System	
M.L. Deng, H.J. Zhang and W.J. Zhu	2331
A Distributed Network Risk Assessment Method Based on Attack Graph	
T.C. Yang, M. Fang and Q.F. Shao	2335
A Traffic-Flow-Phase Adaptive Routing Algorithm for VANETs	
D.W. Li and P. Wang	2343
The Research and Design of Instrument Management System Based on Wireless HART Technology	
C. Pan, H. Ding and H.Y. Wang	2350
A Real Time Video Transmission Routing Protocol in Multi-Interface Multi-Channel Ad Hoc Based on Queue Length and Delay Constraint	
L. Song, T.S. Li and Y. Chen	2354
Application of Modbus Communication Technology in Steam Injection Control System of Thermal Recovery Station	
Y.H. Zhu and B.L. Liu	2362
A XSS Defensive Scheme Based on Behavior Certification	
H.J. Xu, X.M. Hu and D.D. Zhang	2365
Research on First-Price Sealed Auction Game Handoff Strategy	
Z.H. Ge, W.W. Wang and T.S. Li	2370
Minimum Interference in UWB and WiFi Networks	
H.Y. Wu, W. Li, B.H. Bai, P. Sun and Z.D. Shen	2375
Design of CAN Communication in the STM32-Based Lithium Battery Formation System	
Y. Li, G.W. Liu and Z.X. Zhu	2379
QoS-Supported for 802.11e EDCA Protocol Optimization in Wireless Mesh Network	
X.H. Wang, T.S. Li and Z.H. Ge	2384
Group-Activity Based Access Control Model for Manufacturing Grid	
Z.H. Ge and T.S. Li	2388
An Authentication Scheme for XOR Network Coding Based on Network Lifetime	
G.S. Jiang, T.F. Qin, Z.H. Tang and G.H. Sun	2395
Design and Implementation of Dual-Channel and Dual-Mode Timing Module Based on Beidou & GPS	
X.S. Pan, Z.G. Zhou, M. Zhou and B. Qi	2402
The Design of RSSI Acquisition of Wireless Communication Network Based on ZigBee	
X.Y. Ge, Q.H. Wang and L.F. Wei	2407
The Design of High Available Single Sign-On Server of Nginx-Based	
Q.F. Shao, T.C. Yang and W. Hou	2411
Karatsuba-ZOT Multiplication Algorithm and its Application in Cryptography	
S. Jahani and A. Samsudin	2417
Designing and Implementation of High Concurrent SSL VPN Server	
J. Chu	2424
Modeling of MIMO Time-Varying Channel	
H. Li, J.F. Shi, J.P. Wu and R.F. Hao	2430
Confidentiality and Integrity Protection Method Based on One Time Encryption	
M.S. Guan and H.F. Ma	2434

Research on Radio Frequency Assignment Mechanism of the RoFSO Network Based on Site-Specific Cognition and Utility Function	
Y.F. Li, P. Yue and C. He	2439
TDMA-Based Time Slots Assignment Algorithm	
J. Lu and D.Z. An	2445

Chapter 18: Communication Technology and Network Security

Hamming Product Code Based Multiple Bit Error Correction Coding Scheme Using Keyboard Scan Based Decoding for on Chip Interconnects Links	
M. Maheswari and G. Seetharaman	2457
Design of Open Laboratory Management System Based on RFID	
Y.H. Dong and X. Yu	2462
Formal Verification for SpaceWire Data Flow Control Using Model Checking	
W. Hua, X.J. Li, Y. Guan, Z.P. Shi, J. Zhang and L.L. Dong	2466
A Network Identity Authentication Protocol Based on Fingerprint and Probabilistic Encryption of RSA	
L.J. Zhu	2471
The Construction and Performance of a Novel Intergroup Complementary Code	
W.Z. Huang, Y. Wang and Z.G. Zhou	2475
Binomial Bit-Rate Computation Model Based on Wireless Channel	
W.M. Yang, J. Zhang and J.X. Peng	2482
Antenna for Wireless Communications on Unmanned Aerial Vehicles	
X.L. Guo, H.B. Ji, H.H. Yin and J. Huang	2487
Physical AWGN Channel Emulator for Bit Error Rate Test of Digital Baseband Communication	
A. Boscolo, F. Vatta, F. Armani, E. Viviani and D. Salvalaggio	2491
Research on Next Generation Networks Resource Addressing Based on IPv6	
C.C. Shen and C.F. Dai	2496
The Research of Network Public Opinion Hotspots Technologies for Internet Web	
J.C. Zhao and J.X. Guo	2500
The Design of ZigBee Wireless Network for the Detection Platform of the Cylinders	
Y. Li and Q.X. Gu	2504
Security Integration of WAPI Based WLAN and 3G	
D.Y. Chen	2510
Research on Carrier Recovery Algorithm for High-Order QAM over Digital Cable TV Monitoring System	
L. Wang, Q. Wang and X. Yan	2514
Emergency Decision System for Surface Gathering and Transporting of CBM Based on Technologies of 3G Wireless Video Monitoring and 3S	
J.H. Wu and X.P. Rui	2519
A Fuzzy Logic-Based Approach for Multi-Places and Multi-Sensors Data Fusion	
Y. Lv	2524
Survival Situation Awareness Based on Multi-Feature Fusion	
J.H. Zhao, L.X. Shuo and X. Qian	2528
Research on Performance of Unidirectional Links Routing Protocol With Different Mobility Models	
W.Z. Sun and Q.Z. Zhang	2533
Architecture of Mobile Payment System with Tolerate Mechanism	
J.H. Zhao, L.J. Yin, L.L. Xiong and X. Qian	2539
The Application of 3G Technology in the Video Transmission System	
Z.X. Liu, J.M. Dai and T. Wang	2544
Efficient Utilization of FPGA Using LUT-6 Architecture	
R. Zia, M. Rao, A. Aziz and P. Akhtar	2548
Design of a Ring Monopole Dual-Frequency Antenna Fed by Coplanar Waveguide	
Q. Wang	2555

Chapter 19: Software Development and Mathematical Modeling

The Database Design Based on Native XML Database Technology L.S. Wang, T.J. Li, T. Sun, Z.Y. Liu and X.D. Sun	2561
A Precise Recycle Module of e-Paper as a Clean Production Process for Environmental Protection Considerations P.S. Pa	2565
Designing of the Urban Public Bus Operation Dispatch System H.G. Wang	2569
Design and Development of Upper-Computer Software for AC Servo System L. Chen, X.L. Liu and H.H. Pan	2574
System Analysis and Numerical Simulation of Land Subsidence in Shanghai G.D. Wang, J.C. Kang, G.D. Yan and Q.C. Han	2578
Modified Block Symmetric SOR Preconditioners for Large Sparse Saddle-Point Problems L.T. Zhang and S.H. Cheng	2583
A Software Refactoring Paradigm for Controlling Changes on Control System F.X. Xiao, Y. Li, X.D. Zhu and D.J. Fan	2587
Research and Exploration for Pornographic Image Information Detection System M. Tu and W. Xiao	2592
Research and Implementation of Asynchronous Video Converter based on Linux H.B. Ni and S.X. Cao	2596
Combining Multiple Ontologies Using E-Connections S.L. Zheng, S.Q. Tang and R. Sunderraman	2601
Design of the Digital System about the Fire Safety for Urban Architecture Based on Network Z. Jiang and J. Jiang	2606
Design and Implementation of City Internet Fire Safety Digital Monitoring System Z. Jiang and J. Jiang	2611
Design and Implementation of Mine-Map Management Information System Based on B/S Model H.J. He, Y.M. Yan, W.L. Li and Y.N. Zhao	2616
Research on the Evaluation Models of Network Video Users X. Ni, L. Luo and S.X. Cao	2620
Study on Scene Rendering Using Ray Tracing Z. Li	2625
SAR Image Registration Using Ratio Mutual Information C.R. Wei, C. He and H. Sun	2630
Automatically Transforming Legacy XML Documents Into OWL Ontology S.H. Yang, J.Z. Wu and A.P. He	2638
The Research on the Reliability of Computer Information Systems Based on Bayesian Networks M. Yang, R. Guan, M. Deng, Y.P. Yu, Z.M. Qian and Z. Li	2645
$x^2 + q^{2m} = 2y^p$ J.P. Wang	2650
Design and Implementation of FFT Module Based on Virtex Series FPGA X.H. Zhang, M.Y. Wu, H.J. Lin and Z.Z. Tang	2654
Security Access of Power terminal on Trusted Computing in Smart Grid S. Deng, W.M. Lin, T. Zhang and Y.Y. Ma	2659
Integrated Query of Multi-Resources Information in the Way of SaaS Application B. Zhou and W.L. Liu	2665
Design and Implementation of 3G E-Commerce Trading System Based on Data Encryption and Web Service W. Dong, L.X. Ma and L. Liu	2669
Digital Halftoning Based on Clustering Analysis and Weighted Least Squares Z.F. He, Z.L. Zhan and Y.H. Zhang	2676

Research on Software Fault Diagnosis System Based on Multi-Agent Architecture G.S. Chen and G. Niu	2681
The Construction of Intelligent Recording and Broadcasting System of Streaming Media Courseware J.F. Wang	2685
JSSlicer: A Static Program Slicing Tool for JavaScript L.M. Wang, Y. Xian, L. Zhang and X.Y. Liu	2690
A Method of Testing Generation Based on Prioritized Pair Y. Wang, H. Wu and Z.Y. Sheng	2696
A Preliminary Study on Software Architecture Evolution in Agile Development Process X.H. Wang and X. Zeng	2701
Software Engineering Analysis and Practice of Information System G. Xiang, H. Wang, H. Wang, G. Zhang and B. Jiang	2709
Design of Human Machine Interface Based on ARM and Linux K. Zhang and X.W. Peng	2714
The Quantified Evaluation Method of Project Test Based on Multi-Computing Y.G. Liu, S.Z. Liao and B.B. Liao	2718
Designing Highly Intelligent Unmanned Aerial Vehicle-Borne Software B.Y. Zhou and L. Tian	2722
Two-Level Secret Key Image Encryption Method Based on Piecewise Linear Map and Logistic Map Y. Zhang	2728
Scheme of Mapping from XML Document to Relational Database S.Q. Huang	2732
Food Safety Test Information System Design K. Chen, H. Tan and H.B. Yang	2737
An Improved J-M Software Reliability Growth Model Y.Z. Liu, X. Luo, J.X. Ao, K. Xue and P. Luo	2741
Key Problem of Solving Nonlinear Reynolds Equation G.P. Wang, H.L. Chen, S.M. Qi and L. Yu	2751
Design of Software of the Universal Test Platform for Airborne Guidance Weapon Based on PAWS X.H. Fu, J. Shen and B.G. Luo	2758
Software Design of Test System for Missile Flight Control System D.Q. Chen, G.H. Cao, H.L. Fan, J.H. Wang and D. Qi	2764
A Compressed Representation of a Image H.T. Wang	2769
Lossless Digital Watermarking Technology for Vector Maps J.G. Sun, G.Y. Zhang, C.G. Men, Y.X. Wu and X.H. Wang	2773
The Research of the Accessibility Website Design Based on Web Log Mining H.Y. Tang and X.Y. Zhan	2779
On a Multiple Hardy Hilbert Type Integral Inequality B.J. Sun	2783
Methods for Computing the Gravitational Potential of a small Solar Body C.H. Liang and Z. Yun	2787
Design and Implementation of a Pager Based on Facelets Technology B.Y. Lou and J. Zhao	2792
Optimal Configuration Strategy of Multi-Granularity Components in a Complex Service Modelling Environment Y.C. Yin	2797
Research on the Hereditary Properties of the Cartesian Product Operation of Graphs H.D. Wang, B. Wang and Y.Z. Hu	2802
Visualizing Phylogenetic Trees: Algorithms and Visual Comparison Techniques W.M.N.W. Zainon, A.Z. Talib and B. Belaton	2807
Storage Model of Native XML Database Based on Object-Oriented Database X.M. Zhang and H.B. Nie	2812
Overview of Privacy Protection Technology Based on Database Application H.F. Wei, B.Z. Wang, X. Deng and A.H. Wu	2816

Implementation of a General Role Permission Management Method Based on Menu Items Q.M. Lou	2822
Application of Data Mining in Analysis about Source of Students of Civil Universities Q. Zhang	2827
A SCADA System Regression Testing Method Based on Component Modification Assessment K. Xie and G.F. Zhang	2833
Research and Design of Software Quality Control System Based on the CMMI System Y.L. Fang, B. Han and W.F. Zhou	2837
Research on an Improved CHI Feature Selection Method Y.F. Qiu, W. Wang and D.Y. Liu	2841
A New Kind of Based on the Graph K-Means Clustering Initial Center Selection Algorithm H.Y. Zhou	2845
Design of Network Education Evaluation System Based on Data Mining Technology Y. Cheng and Y.L. Wang	2849
Efficient Information Piggybacking Algorithm for Purging Stable Message Log J.H. Ahn	2853
On a Generalization of Hilbert's Inequality and its Reinforcement G.W. Xi	2858
OPC UA Information Modeling: A Case Study for Smart House M.J. Yi and M. Son	2862
Retrieval and Modelling of Software Evolution Process Component J.L. Li	2867
Key Technologies in Design and Realization of Simulation Software for the Satellite Experimentations' Inversion L. Shi, Z. Li, C. Xu and Y.Z. Shao	2872
A Method of the Post-Processing of Printed Formula Extraction S.Y. Yu, Y. Shang, F. Yang and X.D. Tian	2878
A Task-Oriented Group Selecting Model of Intermediate Ordnance Equipment Technique Support Force Y. Sun, C. Yu, X. Wang and X.W. Jiao	2882
Design and Implementation of E-Learning System for Code-Switching Bilingual Teaching G.Y. Shi, S. Liu and P. Chen	2886
Sensitive Webpage Filter Based on Multiple Filtering D.M. Wang, M. Ma and Y. Sun	2891
A Natural Language User Demand Semantic Model for Remote Sensing Image Retrieval X. Zhang, L.Y. Chen and X.Y. Zhu	2897
Design and Implementation of Configurable FFT/IFFT Soft-Core Based on FPGA G.G. Zeng and J.Z. Ren	2901
On Multipath Routing Algorithm of Multiple QoS Based on DSR Protocol C.X. Wang, T.S. Li and Z.H. Ge	2910
Photo Viewer Using Geometry Method Y.H. Ou, D. Liu, Z.T. Hu and Y. Tan	2915

Chapter 20: Computer Applications in Industry and Engineering

Verifying the Correctness of GIS Service Chain Based on Pi-Calculus J.Z. Liang	2923
The Research on Computation Resource Scheduling Strategy for B2C Automatic Negotiation in Cloud Computing Platform H.W. Han and Z.F. Zhu	2929
Research and Application of Tabular Processing Method of Serial Communicaiton Data in Excel X.F. Li	2934
An Improved Method of Tracking the Motion of Sperm Target Z.R. Deng, W.M. Huang, D. Yu and Y.W. Li	2940

Study on E-Commerce Trust Prediction Mode Based on Combination Parameters S.Z. Zhang and H.D. Zhong	2944
Internet-Oriented Environment for Scientific Computing Resource Sharing S.F. Zhang, J. Han and F. Jiang	2953
A New Agglomeration Method for Isotropic Unstructured Grids Z.Z. Li, Z.H. Wang, W. Cao and L. Yao	2957
Semi-Automated Computer Analysis of Retinal Vessels in Premature Infants R. Turior, P. Chutinantvaron and B. Uyyanonvara	2962
Research on Parallel Geo-Spatial Index Replication Strategy Based on PC Cluster System and its 3D Visualization Application Y.J. Wang, H.C. Dou, S.J. Deng, L.Y. Cheng, L. Wang, J.P. Li and Z.B. Zhou	2969
The Synthetic Evaluation Method of Quayside Container Crane Selection for Container Terminal W. Yan, X.L. Fang and H.J. Lu	2976
Exception Handling in Service-Based Business Processes by Applying Adaptation Planning Graph Z.M. Shang	2982
A Component Query Method Based on Facet Description Y.L. Li and Y.H. Zhu	2986
On-Line Signature Verification Utilizing 3-Axis Force Features Extraction Based on DWT D. Liu, Y.J. Ge and X.Y. Zhang	2990
Construction of Online Informal Learning Environment Based on Digital Bloom Y.L. Wang and Y. Cheng	2996
The Application of Data Mining in the Civil Aviation Accident Analysis D.W. Zhu and Y. Ni	3000
Prediction for Network Traffic Based on Modified Elman Neural Network X.Q. Wang, Z.T. Zhao and S.W. Zhang	3005
3D Medical Images Registration Based on GPU Parallel Computing L. Meng	3010
A Control Algorithm of LCD Dynamic Backlight Based on PSNR X.B. Zhang, X. Liu, B. Liu, J.H. Han and H.X. Wu	3014
Model Checking for SpaceWire Error Detection Module L.L. Dong, Y. Guan, X.J. Li, Z.P. Shi, J. Zhang and W. Hua	3020
Digital Image Watermarking Based on Second Generation Wavelet Transform J.Q. Kong and D.Q. Zhou	3026
Recognition of Surface Roughness Based on Fractal Theory and the Microscopic Images Z.Z. Guan, M.H. Ye, X.C. Yin and X.H. Luo	3030
Fast Fractal Image Coding Method Based on RMSE and DCT Classification X.Q. Lv, S. Yang, X. Zhang, Y. Wang, Y.F. Shi and L. Wei	3034
CIM/XML Format-Based SCADA Data Analysis and Application S.P. Wang, Y.F. Xu, S.X. Ma and L.H. Qi	3040
Video Splitting Based on Error-Distortion Computation Model J.X. Peng, J. Zhang and W.M. Yang	3047
Implementation of Meta-Services for Content Delivery Network Service in the Cloud Environment X.Y. Wang, X. Jin, L.H. Fan and W.T. Huang	3053
Research on the Method of Orthogonal Three-Direction Chain Code Used in Corner Detection of Hand Gesture L.H. Li and S.F. Mi	3059
The Role of the Integrated Management of Spatial Data in Urban Management Z.M. Zhou	3063
Requirement Analysis and Identification of Challenges and Issues for RTDBs in Cloud Computing M. Irfan and H. Zhu	3067
Rendering Algorithm of the Sky Illumination Based on GPU W.L. Yu and L.M. Zhang	3071
Cascade Network in Reversible Logic Gate Based on Series Connection Z.J. Guan, W.P. Ding and X.Y. Cheng	3075

Design and Realization of Agricultural Information System Based on WebGIS D.S. Xu	3080
Dependency Injection mechanism in Intelligence Information System of Power Quality J. Gong, C.H. Lv, L.H. Qi and S.X. Ma	3085
A Registration Method Based on Image Edge Normalized Correlation L.F. Bai, L.Q. Zhang, X. Jing and J. Yue	3092
Design and Implementation of Archives Query System Based on B/S Structure L.F. Zhao	3098
An Improved Supervised Word Sense Disambiguation Methods in the Biomedical Domain J.C. He, K. Ren and W.J. Yu	3103
Research on Visualization of Spatial Data and Symbols Based on ArcGIS X.D. Sun	3107
Research of Extracting Chinese Automatic Abstracting Processing Based on Semidiscrete Matrix Decomposition Y. Luo	3112
A New Partitioning Method Based on AOI Model Matching in CVE Systems X.M. Hu and B. Wang	3116
An Improved Semidiscrete Matrix Decomposition and its Application in Chinese Information Retrieval Y. Luo	3121
Design and Implementation for universal Privilege Management Infrastructure J. Li	3125
DOI of Local Information Service Database Based on CALIS-Standard B. Zhou, W.L. Liu and X.H. Liu	3130
A New Data Perturbation Method of Reference Control in Statistical Database G.L. Zou and M.M. Zhang	3134
Web Integrating Analysis Based on XML and Ontology J. Zhang and Y.H. Li	3138
Automatic Tortuosity Classification Using Machine Learning Approach R. Turior, P. Chutinantvarodom and B. Uyyanonvara	3143
Web3D Technology Research Based on the HTML5 S.D. Zhang, L. Yu and J. Wang	3148
Online Visual Inspectionsystem for OLED Defects Y.C. Liang, J. Gao, C.X. Jian and X. Chen	3153
A Locality Sensitive Hashing Technique for Categorical Data K.M. Lee and K.M. Lee	3159
Efficient Identification of Frequent Family Subtrees in Tree Database K.M. Lee and K.M. Lee	3165
RETRACTED: Deconstructing Web Services C.G. Shi	3171

Chapter 21: The Internet of Things

Service Discovery Architecture Applied in Cloud Computing Environments J. Zhang, L.W. He, F.Y. Huang and B. Liu	3177
Applying the Technology of Internet of Things to Urban Pipeline Gas Metering via Mobile Data Acquisition L.W. Bao, W.Q. Huang and H.Q. Fan	3184
The Design and Implementation of Construction Site Safety Supervisory System Based on the Internet of Things Z.H. Jiang, F. Huang, D.X. Wang, B. Hu and J.J. Dou	3190
Mechanism on RFID Tag Privacy Information Coordination Protection J.J. Cheng, C. Cheng, K.F. Yu, A. Ylä-Jääski, Z. Li and H. Zhang	3195
Internet of Things and its Application in Intelligent Logistics X. Yu and Y. Bai	3201
Research on Exhibition Logistics Information Platform Construction S.X. Zhang	3205

An Efficient Trajectory Clustering Framework Based Relative Distance G. Bo, L.X. Liu, J.B. Fan and J.Y. Chen	3209
In-Network Time-Series Data Compression for Electric Internet of Things J.K. Zhao, L.S. Mu, H. Ouyang, P.F. Zhu, Y.K. Li, L.H. Yang and L.J. Chen	3213
An Application Study of the AISAS Model-Based Hotel E-Marketing J.Q. Kuang	3224
Design and Implementation of Long Range UHF RFID Reader H. Xia, J.M. Song and C.J. Su	3229
Method of Design and Implementation Cloud Service L.Z. Duan and W.Y. Duan	3238
The Internet of Things' Monitoring and Dispatching System for Port Based on SOCKET Communication D.F. Liu	3245
An Automatic Control Method for Central Heating of Public Buildings F. Li, Y.C. Wang and L. Zhou	3249
A Flexible Security Architecture for the Internet of Things Q.W. Wu and L.Z. Jiang	3255