Table of Contents

Preface, Organizing Committee

Chapter 1: Material Science and Technology

Synthesis of PEG200 Lauric Acid Diester and the Performance Test of Viscosity T.Y. Chen, Y.J. Liu, G. Zheng and Y. Sun	3
Synthesis and Imidization of Polyamic Acid J.L. Cheng, C. Zhou, G. Zheng and Y. Sun	9
Electrochemical Property of Terbium Doped Tantalum Oxide Film Electrode Y.H. Zhao, L.C. Hou, W.F. Liu, S. Liang and X.J. Wang	16
Effect of Different Precursor and Carbon Fibre Content on Unidirectional C/C Composites Interlaminar Bonding Strength	
H.L. Liu, X.J. Liu, Z.J. Qiao, T.Q. Li and Z.J. Hu	22
A Dissertation on Polysiloxane-Antifoaming-Agents: Antifoaming Principles, Synthesis and Compound S.S. Han, J.Y. Xu, G. Zheng and Y. Sun	26
Studies on Ceramics Technique	20
H. Liu	31
Influences of the Compatibility between the Polymer and Solvent on Ordered Microporous Structure Formation by Water Droplets Templating X.T. Han, L.H. Wang and Y.H. Liu	36
An Image Analysis Method for Studing Yarn Cross-Sectional Structure	
H. Zhen and K. Yang	41
A Novel Photonic Crystal Fiber with Two Rings of Hybrid Elliptical Air-Holes for Single-Polarization Single-Mode Operation H.J. Zheng, C.Q. Wu, J. Wang, Z. Wang, S.L. Liu and X. Li	45
A Single-Polarization Single-Mode Photonic Crystal Fiber with Four Lines of Small	
Elliptical Air-Holes H.J. Zheng, C.Q. Wu, Z. Wang, J. Wang, S.L. Liu and X. Li	50
Study on Al-Doped ZnO Nanofibers Prepared by Electro-Spinning Technique Q. Li and H.M. Zhang	55
Research on On-Line Detection Technology for Yarn Evenness R.W. Yuan and X.M. Jiang	60
Research on Polyvinylidene Fluoride Hollow Fiber Hemodialyzers J.H. Guo, J. Zhang and X.L. Lü	67
Material Classification Using Random Forest	
Z.M. Zhao, C.H. Li, H. Shi and Q. Zou	73
Molecular Dynamics Deformation Simulation of Carbon Nanotube Probes M.Y. Zhou, Y.L. Tian, Z. Ren, H.Y. Zheng and R.B. Wei	80
Simulation of Temperature and Stress Field of Titanium Alloys under Laser Cladding Z. Ren, Y.L. Tian, M.Y. Zhou, H.Y. Zheng and S. Zhang	87
The Thermal Conductivity Simulation Calculation of Polyacryonitrile-Based Carbon Fiber/Pitch-Based Carbon/Carbon Composites C.C. Bai, X.J. Liu, J. Wan, H.L. Liu, T.Q. Li and Z.J. Hu	93
The Real-Time Detecting Application of CNTs in 3D Braided Composite Material	75
J.M. Guo	99
Structures and Properties of Modification Copolyester Fiber Y. Sun, G. Zheng, H.X. Yang, L. Zhou, Y.J. Liu, C. Zhou and J.Y. Xu	104
Synthesis, Characterization and Anticorrosion Performance of Modified TiO_2 as Inhibitor L.L. Liu, Y. Li, B.W. Hao and S.Z. Wang	109
Optimized Simulation for GaN Growth in Vertical HVPE Reactor C.Z. Zhao, L.Y. Yu, C.X. Tang, M. Li and J.X. Zhang	116

A Novel High Efficiency Solution of High Power LED Lighting Q. Fan, X.S. Fu, Y.L. Liu, P.J. Niu and T.C. Gao	121
Path Planning of the Robot for Aero-Engine Turbine Blades Maintenance X. Pu, L.Y. Li, T.Q. Wang and J.H. Li	127
Study and Implementation of Expendable Current Profiler Measurement G.X. Ren and Y. Cheng	133
State Characteristic Parameters Extraction Method of Wind Turbine Blades Based on the Length Fractal Dimension Y.F. Li, Y.X. Xu and X.H. Ma	139
The Design of the Detection and Localization of the Color Image for the Location of Road Traffic Signs X. Ma and H.L. Li	143
The Finite Element Analysis in Measurement System of Airplane Fuel Mass X.W. Sui, X.G. Qi, D.P. Li, G.X. Zhang and Y.M. Fan	147
The Motion Control of Clothes Model Robot and Measurement of Clothes Energy Consumption	
X.W. Sui, X.G. Qi, H.W. Zhao, D.P. Li and Y.M. Jiang	153
Quality Detection and Specie Identification of Apples Based on Multi-Spectral Imaging C.X. Tang, E.B. Li, C.Z. Zhao and C. Li	158
Study on the Factors Influencing Spreading Resistance of Heat Sinks D.Y. Gao, J.X. Zhang and P.J. Niu	165
Theory Study on Structure Property of N-Ethyl Morpholinium Ionic Liquid of Different Alkyl Length L.M. Wang and C. Xia	170
The Radial Velocity Measurement and Error Analysis for Low Resolution Spectra B. He, F. Zuo, A.L. Luo and Y.B. Li	175
SHSD Demodulator of Interferometric Integrated Optical Acceserometer Based on SOPC J.H. Wang, F. Wang, Y. Zheng and H.K. Zheng	182
A Novel Faint Signal Processing Method for Sensitivity Improvement of Pump/Probe-Based LG/LD SAW Spectroscopy System M.S. Bai, X. Fu, D. Dorantes, B.Y. Jin and X.T. Hu	188
Fluorescent DNA Biosensors on Silica Microspheres X.M. Ma, J.M. Zhang, Z. Dai, X.Y. Chen, X.Q. Wang and Q.Y. Zhang	195
Automatic Detection of Illuminant Reflection in Indoor Vision-Based Navigation S.B. Wang, J.M. Wang, X. Wang, L. Ma, R.Z. Dou and Y. Leng	201
Research on the Utilization of AR Coating to Improve the LED Luminous Efficiency H.J. Gao, L.Y. Yu and P.J. Niu	208
Electrochemical DNA Biosensor for the Detection of Short DNA Species by Using Compound Co(phen) ₃ ²⁺	
C. Zhou, B.W. Cheng, X.P. Fan, Z. Dai, G. Zheng, Q.Y. Zhang and G.P. Chen	213
The Low Beam Light Optical Configuration of High Brightness LED Headlamp T.C. Gao, S.Y. Yao and H.T. Tian	219
Secondary Optical Design of LED Road Lights T.C. Gao, Y.J. Ai and X.Y. Li	223
Fabric Defect Detection Method Based on Gabor Filters Y.B. Liu, Z.T. Xiao, F. Zhang and J. Wu	229
Isobaric Vapor Liquid Equilibrium (VLE) Data of the Systems Ethylene Glycol-Glycerol and 1,2-Propylene Glycol-Ethylene Glycol at 20Pa J.W. Zhang, P. Bai and W. Zhang	235
The Content Determination of Strongly Acidic Alkyl Phosphate with the Method of Potentiometric Titration	
Q. Wang, G. Zheng, Y. Sun, X.J. We and J.J. Ai	241
Improvement of Gaussian Random Measurement Matrices in Compressed Sensing B. Wang and S.X. Ma	245
Partition Slub Yarn into Slub Parts and Base Parts H.M. Lv and C.Q. Ma	251
Design of Antenna with a Solar Cell as a Parasitic Element in the UHF RFID Tag X.N. Wan, J.X. Li, X.S. Cui and L.H. Mao	257

Quantum Chemical Calculation on ¹ H NMR Chemical Shifts of PMMA/PVPh Blends W.G. Fu, L. Chen, B.H. Li and P.C. Sun	263
Application of Coordinate Measuring Machine in Reverse Engineering D.P. Li	269
The Design of Large Image Scan Using Phototransistor Array Z.H. Zhang, R. Luo and J.S. Li	275
Study on Biodegradation of Corn Straw L.W. Lu	280
Laser Surface Strengthening on Module Steel G.P. Zhang	285
Semi-Continuous Reactive Batch Distillation for Production of Methyl Formate Y. Li, H.M. Qu, Y. Tian, S. Song and P. Bai	290
Study on Luminance Uniformity Correction for the LED Flat Panel Display X.Z. Xu, Y.M. Feng, S.F. Wang and P.J. Niu	298
Using Perturbation FEM Compute the IC Interconnect Parasitic Capacitances Considering Process Variation H. Qu, X.Y. Xu and Z.X. Ren	303
Mercerizing Lye Concentration Online Measurement and Control X.Y. Zhou and S.H. Zhao	310
Fractal Prediction Model of Friction Coefficient in Dry Friction Pair J.J. Zhou, S.H. Yuan and C. Wei	315
Combustion Kinetics of Pellets Made by Sewage Sludge, Pulverized Fuel Ash and River Sludge	
B.F. He, L. Wang, D.Y. Chen, L. Lu and Z.P. Chen Pattern Recognition of the Steel Rod Based on Artificial Neural Network and SVM	321
H.C. Sun	329
Efficient Terahertz Surface-Emitted Difference Frequency Generation in Periodically-Inverted GaAs Crystals Z.M. Rao, Z.F. He and J.Q. Du	334
Experimental Study on Strength Characteristics of Cement-Soil under Fixed Spherical Pressure Condition X.J. Song, W. Wang and H.B. Xu	338
Effect of Voids on Moisture Absorption of CFRP Laminates in Hygrothermal Environment A.Y. Zhang, J.S. Zhang, Y.C. Li, D.H. Li, D.X. Zhang, H.Y. Xiao and J. Jia	342
Cloning, Expression and Characterization of β-Glucosidase from L. Delbrueckii Subsp. Delbrueckii in <i>Escherichia coli</i>	2.47
X.H. Zhao, J. Zeng, H.Y. Gao, C.B. Li and C.J. Liu Finite Element Numerical Simulation of Two-Dimensional Ground Water Solute Migration	347
Question M.L. Zhao	352
A Case Study on Energy Saving and New Energy Services Q.B. Wei	357
2-(2'- Chloro Phenyl)- 5- (2'-Hydroxyl Phenyl)-1,3,4-Oxadiazole as a Florescent Probe for DNA Determination M. Ding, Y.J. Lei and O.Y. Jie	361
The State-of-the-Art Surveys for Application of Metal Magnetic Memory Testing in Remanufacturing	
Y.L. Zhang, D. Zhou, P.S. Jiang and H.C. Zhang Research of Water Heater Automatic System	366
T.J. Li, Q. Xu, J.C. Ren, B.Z. Huang and M.B. Zhu The Energy Saving Effect Evaluation for Outside Wall with Different Material in Island	373
District Y. Zhang and X.W. Gong	377
Using Fuzzy Rough Concept Lattices Merging and Presenting Domain Ontology H.S. Xu and L. Wang	384
3D Surface Acquisition and Reconstruction for Assessing the Extent of Strain Ratcheting and Wrinkling in Steel Tubulars	
M. Zeinoddini, M. Peykanu and A. Abzal	388

New Technologies for Submillimeter Laser Ranging J. Blazej, I. Prochazka, J. Kodet and P. Panek	397
Photonic Logic Gate Design Based on Frequency-Sensitive Optical Response of an EIT Photonic Crystal	
T.C. Liau, J.J. Wu, J.Q. Shen and T.J. Yang	402
Research in the Workflow Engine Based on Micro Kernel Z.S. Hou, Z. Yu, W. Zheng and X.G. Zuo	409
Strain Performance of Fiber Bragg Grating Sensor Fixed by Different Adhesives H.P. Gong, X.R. Li, Y.X. Jin and X.Y. Dong	415
Advances on the Extraction and Separation Technologies in Tea Aroma Components Research	
K.Y. Gao, X.F. Huang, Y. Yang, L. Yang, Q.D. Xia, Y.F. Wei, T. Zhou and Y.S. Qin Measurement of Wall Thinning through Insulation with Ferromagnetic Cladding Using Pulsed Eddy Current Testing	421
Z.Y. Xu, X.J. Wu, C. Huang and Y.H. Kang Design and Test of Magnetorheological Damper with Embedded Controller	426
H.S. Hu and J. Wang	430
Model Reference Adaptive Control for Magnetorheological Damper Subjected to High Impact Load H.S. Hu and J. Wang	436
Removing Direct Wave of Through-Wall Radar Based on Singular Value Decomposition H. Xu, B.Y. Li and L. Yao	442
AE Signal Analysis of Carbon Fiber Reinforced Composites Based on Hilbert-Huang Transform	772
C. Lu, P. Ding and Z.H. Chen	447
Material Flow Estimation of Deep-Drawn Product by Using Finite-Element Simulation Y. Kotani, H. Watari and A. Watanabe	452
Numerical Simulation for Relationship between Vortex Evolution and Diffusion of Aerosol in Human Mouth-Throat Model	4.5.6
F.S. Li, D. Sun, X.X. Xu, X.G. Zhao and S.L. Tan	456
Research of Anticorrosion in Desulfurization Flue H. Zhu	462
Design of Software and Hardware Based on JRB230240B LCD J.T. Zhang, J.G. Zhan, Z.G. Yan, X. He and L. Ma	467
Evaluation and Classification of Black Soil Structure Degradation in Jilin by Factor Analysis and Dynamic Clustering Analysis	
C.C. Niu, Q. Wang, W. Zhang, K. Wang and Z. Guo	472
Numerical Analysis of Effect of the Number of Nozzles on Water Mist Flow Field for Gas Explosion Suppression F.M. Meng and Z.C. Liu	478
Microscopic Displacement Mechanism of Surfactant/Polymer Driving Residual Oil in	7/0
Conglomerate Reservoir S.N. Cong and W.D. Liu	483
The Three-Dimensional DEM Modeling of Gravel Materials R. Luo, P. Chen, T. Yang, H.Z. Zhang, P. Li and Y.W. Zeng	488
Recent Development in Friction Test Methods and Apparatus of Polymer Composites Y. Tian, M.J. Guo, J.S. Zhang, Y.C. Li, D.X. Zhang and D.H. Li	494
Research and Practice of New Gas Sensors Based Materials on Internet of Things S. Qin, L. Qu, D. Wei, B.C. Zhang and N.W. Qiu	497
Research and Development of Thin Film Gas Sensor and its GPRS Wireless Sensor Based on Internet of Things S. Qin, B.C. Zhang, D. Wei, L. Qu and N.W. Qiu	503
Estimation of Thickness of the Sediments in a Circular Pipe by Finite Element Method Y.A. Yin, K. Horoshenkov and G.B. Ou	509
Principle and Method for Oxidation Layer Measurement in Electrolytic In-Process Dressing (ELID) Grinding	
B.J. Ma and Y.X. Wang	515

Study on CA-Based Quality Prediction Model of Internal Cracks in Continuous Casting Billet	
W.H. Liu, Z. Xie and G.L. Jia	520
The Research of the Improvement of Iris Location of the Sobel Algorithm S.P. Li and X. Dong	525
Effects of Soil Compaction to its Shear Property L.L. Liu, J.Q. Li, S.C. Fan, X.J. Li, W.F. Fan and H. Li	530
3D Model Based Machining Process Planning J. Zhao, D.H. Zhang and Z.Y. Chang	534
Chapter 2: Measuring and Testing Technique	
Camping Performance Experiment of Gas Thrust Bearing with Elastic Pressure Equalizing Groove	
J.A. Zhang, K. Ren, L. Wang and B. Liu	547
Study on Bonding Wire Breakage Detection Using Diffraction of Light X.Y. Wang, Y. Xiao, X.Y. Ge and J.N. Sun	553
Monitoring Data Analysis of Dalian Subway Tunnel and Inversion of Rock Parameters L.Y. Wan, J.X. Wang, A.N. Jiang and Z.P. Song	559
Displacement Back Analysis Based on Return Mapping Algorithm and Differential Evolution Algorithm J.X. Wang and A.N. Jiang	564
Determination of Cadmium in Bivalve Molluscs by Microwave Digestion with Inductively Coupled Plasma-Mass Spectrometry	
G.W. Jin, Q. Gong, Y.Q. Čai, X.L. Li, Y.F. Shi, R.R. Gu and Q. Yang Analysis and Experimental Study on the Characteristics of Leakage of Rotary Seal Using	569
Sealing Ring C. Wei, J.H. Hong and J.B. Hu	573
Overpressure Measurement on the Thermal Explosion of Shell Charge C.L. Wang, Z.Y. Cai, Y.Z. Tang, S.W. Zhao, X. Li, Y.R. Lin and Z. Chu	579
Research on Laser Measuring Instrument for Tunnel Surface D.X. Li and Z.X. Hu	585
Relative Thermal Contrast Analysis in the Inspection of Wind Turbine Blades Using Pulsed Thermography Z. Zeng, N. Tao, L.C. Feng, Y.S. Li and C.L. Zhang	591
A Non-Destructive Testing Based on Electromagnetic Measurements and Neural Networks for the Inspection of Concrete Structures	
N.P. de Alcantara, D.C. Costa, D.S. Guedes, R.V. Sartori and P.S.S. Bastos	597
Imaging and Testing of Ultrasonic Sh Guided Waves in Plate with Lap Welding Structure X.J. Zhu, Z.D. Han, D. Du, Y.F. Chen and K.Y. Yuan	603
Thermal Characteristics Simulation of the Commissioning Process for New Buried Heated Oil Pipelines	
G.Q. Chen, M.H. Zhao and B. Xu	610
Measurement System for Non-Cylinder Pin Hole of Piston Z.Y. Yang, D.H. Liu, F. Yang, Z.G. Xie and Y. Huang	617
Young's Modulus Detection for Ultra-Thin Film by LSAWs Technique with Wavelet and FIR Filter De-Noising X.M. Shan, X. Xiao and Y. Sun	623
Modal Parameter Validation in Coupled Vibro-Acoustical System Y.F. Xu and J. Wang	629
Research on the Quantitative Analysis of Subsurface Defects for Nondestructive Testing by Ultrasound Lock-In Thermography	
J.Y. Liu, Q.J. Tang and Y. Wang Land Subsidence Detection by PSInSAR TM Based on TerraSAR-X Images H.L. Jia, B. Yu, R. Zhang and M.Z. Sang	635 641
Research on High-Accuracy Low-Power Ultrasonic Flow Measurement and Instrument	041
W.G. Zhao and X.S. Zhao	646

Transient Analysis of Plane Wave Reflection from a Lorentz Half Space Q.S. Zeng and G.Y. Delisle	653
A Watermarking Algorithm for Relational Database Based on Image G.C. Ji, Z.R. Lin and J.M. Li	661
Mechanism Analysis of Induction-Type Coil Target for Velocity Measurement X.F. Xiong, D.R. Kong and X.F. Ruan	666
Research of Measurement Method of Two Dimensional Configuration Drag Test in Wind Tunnel in Case of High Lift Y.Q. Jiao, X.P. Chen and Z.L. Zhi	671
An Improved Incremental Training Algorithm of Support Vector Machines L. Qin, H.W. Yin, X.J. Shi and Z.C. Xiao	677
A Joint ICI Mitigation Method Based on Decision Feedback and Pilot Tracking Y.M. Cheng, P.Y. Zhu, L.L. Pan and W.D. Chen	682
Mining Successful Weight Loss after Bariatric Surgery by Using Multivariate Adaptive Regression Splines Y.C. Lee and C.K. Lee	688
Risk Management of Electric Energy Consumption in Industrial M. Khodpan, S. Vongchavalitkul and S. Patamatumakul	691
A Novel Elman Algorithm Based on Sectional Least Squares W.X. Tan, M.S. Pan and X.R. Xu	695
A Cost Function-Oriented Quantitative Evaluation Method for Unmanned Ground Vehicles Y. Sun, G.M. Xiong, H.Y. Chen, S.B. Wu, J.W. Gong and Y. Jiang	701
Based on Biped Robot Walking in Horizontal Surface Research of Dynamic Simulation H.B. Wang	707
Surface Accuracy Measurement of a Novel Inflatable Antenna by Photogrammetry G.C. Lin, X.H. Bai, H.F. Tan and Z.M. Wan	713
Processing of Sonar Image Based on Compressive Sensing Z.J. Xu, H.L. Dai and P.P. Cao	719
Groundwater Vulnerability Assessment System Based on GIS L.Z. Zhang, Y.B. Zhang, X.Y. Zhou, G.L. Liang, Q. Wang, Z.Z. Cai, Z.B. Huo and J.X. Zhu	724
The Application of Kalman Filter in Optical Measurement of Benzene	731
An Improved Blind Multiuser Detector Algorithm Based on Subspace Tracking Z.S. Hou, Z. Yu, X.G. Zuo and W. Zheng	737
Research and Development the Method of Transformer Winding Deformation Fault Diagnosis Based on FRA	
S.X. Qian, Z.P. Li, X.J. Gu and Q. Du	742
Real-Time Detection of the Repose Angle of Solids in Rotating Drum Based on Image Processing X.Y. Liu and Y.Y. Zhang	748
Measuring the Phthalates of Xiangjiang River Using Liquid-Liquid Extraction Gas Chromatography	740
X.J. Zhu and Y.Y. Qiu	752
Statistic Analysis of Examination Results and Examination Design Quality J.S. Yin	756
Empirical Tests of Scale-Free Geometry in NASA DATA F.J. Wu	762
Loading Priority Evaluation Based on PRISM Classifier Y. Feng, L. Xia, L.M. Wang, L.P. Bu and Y. Shao	768
Optimal Placement of Phasor Measurement Units Based on Information Entropy Property Evaluation V. Fong, I., Via, I. M. Wong, V. I., Van and I. F. Viao.	771
Y. Feng, L. Xia, L.M. Wang, X.L. Yan and L.F. Xiao Experimental Study of Static Aerodynamic Coefficients of Bridge Section	774
L. Gao, J.X. Liu and M. Liu Analogy Analysis about Shape Coefficient of the Abnormal Roofing Structure with the	780
Standard L. Gao, H. Bai, R. Min and J.W. Li	785

Transverse Vibration Measurement and Analysis of a Three-Point Supported Dual-Span Rotor System with Angle Misaligned Flexible Coupling G.Q. Feng, B.Z. Zhou, L.J. Lin and Q.K. Han	790
Adaptive Edge Detection Method for Image Polluted Using Canny Operator and Otsu Threshold Selection J.G. Yang, B.Z. Li and H.J. Chen	797
Model Research on the Evaluation of Traffic Sustainable Development Y. Luo and X.C. Guo	805
Western Region County-Level Highway Fuzzy Comprehensive Evaluation Research Y. Luo and X.C. Guo	811
Application of LabVIEW in Emulation Study on Time-to-Count Measuring System Y.F. Lai, Z. Zeng, J. Sun and S.L. Lui	817
A Method to Improve the Accuracy of Adjustable Phase Difference of Signal Generator J. Guo, B.W. Liu and P.P. Dong	823
Optimizing the Design Parameters of Spherical-Cymbal Transducer Based on Comprehensive Point-Rating Method S.L. Wu, Q. Zhang and J.L. Xiong	828
The ERP Detection of Mental Arithmetic Strategies D.H. Peng, J. Chen and H.T. Wei	834
Research on Corrugated Diaphragm Sensing Technique Detecting the Pressure outside the Casing	
J. He, H.J. Dong, H.L. Pan, G.J. Cheng and Y. Xing Numerical Simulation of the Double-Cones Flow-Meter on its Expansibility Factor	840
J.N. Liang, G.W. Liang and H.F. Liang A Survey of Image Edge Detection Based on Grey Theory H.P. Tian	847 853
Image Matching Based on Bacterial Foraging Algorithm H.P. Tian	859
The Research of Pedestrian Platoon Multiple Events at Signalized Intersection H. Zhang, Q. Yu, J. Rong and L.P. Shi	864
Determination of Surface Acoustic Admittances by Inverse Solution of Finite Element Modeling in the Pipes	0.50
Y.A. Yin, K. Horoshenkov and G.B. Ou Sensor Compensation Based on Adaptive Ant Colony Neural Networks Y.E. Wang, G.C. Liong, L.C. Liong and L.L. Live	870
X.F. Wang, C.C. Liang, J.G. Jiang and L.L. Ju The Propagation Properties of the Vector Dark Soliton J.L. Wang, K.R. He and J.F. Hu	876 881
Measurement and Analysis of the Chinese Elite Male Swimmers' Basal Metabolism of Nicotinamide Using NMR-Based Metabonomic Technique	001
J.H. Li An All-Around Measurement and Evaluation of the Chinese Elite Youth Canoeists'	885
Physical Characteristics Using Factor Analysis Model J.H. Li	890
Research on the Detection of Faulty Insulator Strings Y.X. Nie, X.G. Peng and X.N. Xu	895
Microwave Power Real-Time Soft-Measuring Based on Improved BP Neural Network L. Lei and Z.X. Ouyang	902
Surface Shape Measurement Using Extended Photometric Stereo Z.Y. Zheng and B. Yang Proceeding Texts billion Foreign Method of Courseling Extended Proceeding Texts Data in	908
Research on Testability Evaluation Method of Complex Equipment Based on Test Data in Development Phase C.H. Chang, J.P. Yang and P.J. Cao	913
The High-Speed Ultrasonic Testing Method for Steel Pipes Based on Linear Reciprocating Probes	
Y.H. Kang, J. Tu, J.B. Wu and Y.H. Sun Quantitative and Comprehensive Evaluation of Qualitative Indices in Dam Safety	919
Monitoring B. Xu, H. Xia and Y. Yao	924

Initial Design of FAST Engineering Surveying Control Network Y.B. Luo, L.C. Zhu and W.L. Ma	932
Experimental Research on Transition and Flow Separation of Laminar Airfoil Y.Q. Jiao, Y. Lu and C.S. Xiao	937
The Slipping Shoe Motion Trajectory Analysis and Simulation of Spherical Swashplate Type Axial Piston Pump Y.Q. Chen, J.J. Chen and S.M. Su	943
Integrated Application of Three In Situ Stress Measurement Techniques Y. Li, L. Qiao and Z.L. Sui	949
Study on a Method to Measure Welding Arc Plasma Axis Temperature at Fixed Point Z.L. Yu, F.G. Lu and A.H. Liu	954
Implementation for High-Precision and Non-Contact System for the Measurement of Crankshaft and Camshaft	0.50
D.L. Cheng, Y. Wang, Y.J. Ren and X.Y. Yang Acoustic Method of Detection of Optical Thin Films Damage Y. Ding, J.H. Su and H.F. Liang	959 965
Virtual Instrument-Based Cable and Harness Test System Hardware Design and Development	703
Q. Wang	970
Lab Windows/CVI Platform-Based Cable and Harness Test System Software Design Q. Wang	977
Measurement of Flame Height by Image Processing Method L.G. Zheng, M.G. Yu, S.J. Yu and C. Lu	983
A SAT-Based Pattern Generation Method for Diagnosis Multiple Scan Chain Faults F. Wang, D. Wang and H.G. Yang	989
A Vernier Delay Line for Time Interval Measurement X.G. Wang, F. Wang and H.G. Yang	995
Research of a Measuring System for UV Absolute Spectral Response Based on ECPR Q. Hu, Y.Y. Yang, P.F. Gao and S. Zheng	1001
FPN Analysis and Processing of the Science Grade CCD Alta U9000 Y.L. Yuan, Y.B. Luo, C. Zhang and Y.X. Zhu	1007
Design and Development of Crude Oil Security System Based on Photoelectric Beam Detector G.C. Ren and B. Chen	1011
Application of Data Protection in Motor Test and Control System	1011
Y.H. Yang, H.L. Gao, X.H. Wang, J.F. Tang and Y. Zhang	1016
Novel Measurement Method of Small Phase with Interference Phase Contrast L.P. Pan and C.G. Li	1020
The Design of Automatic Detection and Classification System for Recycled Drill Pipe Y.H. Kang, J.B. Wu, J. Tu and Y.H. Sun	1024
Analysis and Evaluation of InSAR Phase Unwrapping Approaches S.B. Zhang and T. Fu	1029
Precision Analysis of Gravity Vertical Gradient Measurement Based on CG - 5 Relative Gravimeter Q.B. Wang, R. Zhou and W. Sun	1036
Study on Sub-Pixel Techniques for Accurate Image Measurement of Displacement Z.D. Xie and X.J. Zhang	1042
Research and Implement the Image Retrieval Method Based on the Shape Feature X.J. Guo, Q.R. Wang, C.J. Li and Y.J. Liang	1048
A Wireless Pulse Signal Acquisition System for Status Monitoring of Ship Navigators Y.Z. Lu and W.L. Yang	1052
Study on Texture Features of Cingulum in Different Gender Patients with Alzheimer's Disease and Mild Cognitive Impairment Based on MR Images X. Wang, L.Z. Tong, X. Li, X.X. Zhou and H.F. Yang	1060
Work Piece Length Measure System Based on Image	1000
K.M. Sun and C.H. Yu	1066

A Novel Method for Online Measuring the Short-Circuit Impedance of Distribution	
Transformers X. Li, M.Y. Chen and S. Cheng	1072
Measurement of Laser Ablation Micro Impulse Using the Torsion Pendulum Interferometry	10-0
J.F. Ye, G.Y. Wang and D.K. Wang	1078
The Measurement Correction of MEMS Gyroscope Based Interlaced Kalman Filtering J.J. Lu, J. Zhou, X.D. Lu and X.J. Liu	1083
Conflict-Driven Learning in Test Pattern Generation X. Liu	1089
Measurement of the Ratio of Tea Polyphenols to Amino Acids in Green Tea Infusion Based on near Infrared Spectroscopy S.R. Ai, R.M. Wu, L.Y. Yan and Y.H. Wu	1093
3D Groundwater Modelling Using Well Drilling Data in Tanggu, China Y. Sun, F.T. Qu and Z.G. Liu	1098
Direct Phase Detection Utilizing Phase Contrast Imaging S.P. Yuan, C.G. Li and L.P. Pan	1104
Static Friction Research of LIGA-Microstructure: Comparison between Theory and	
Experiments Q.Q. Wang, G.C. Shi and X. Xiong	1109
Application of Distributed Hydrological Model Based on Multivariant Checking for Monitoring Regional ET	
M. Liu, J.H. Liu and J.E. Zhang	1115
Research and Experiment on Nonlinear Correction Algorithm of Metal Tube Rotameter G.Z. Shen, T. Zhang, Y. Xu and Y.X. Wei	1123
Negative Temperature Coefficient of PVC Filled with Carbon Black J.X. Li	1128
Research on Parallel DBSCAN Algorithm Design Based on MapReduce Y.X. Fu, W.Z. Zhao and H.F. Ma	1133
Research of Electrochemistry Measuring System Based on Saliva Glucose L.Y. Jiang, L.J. Ren, Q.H. Chen and G.Z. Cui	1139
Grid-Based Corner Detection of the Microscopic Camera Calibration W. Yuan, G.Y. Jiang, Y.G. Wang, M. Yu, F. Shao and Z.J. Peng	1145
The Perceptual Study of the Tolerance of Spectral Images Based on Bootstrap Analysis Q. Chen, L.J. Wang and S. Westland	1151
High-Speed LMS Algorithm's Design and Implementation Based on FPGA J.J. Liang, J.M. Gao and W.X. Ling	1157
Design of Temperature Monitoring System Based on MSP430 F. Hu, W.Q. Yin and C.R. Chen	1162
One Reduction Method of Telecommunications Nework Events C.G. Dong, J.P. Wu and Q.S. Zhang	1166
One Fault Diagnosis Method of Telecommunications Network C.G. Dong, J.P. Wu and Q.S. Zhang	1172
The Development of Fault Diagnosis Expert System for High Speed Construction Machinery Based on Portable Data Terminal	
W. Deng, M. Lu, G.L. Lu, Z.Q. Cui and X.Q. Yang	1178
Design and Implementation of Turbine Flow Sensor Based on Photoelectric Detection D.Z. Zheng, F. Wang, J.Y. Shi and H. Wang	1183
Comparison of the Unified Segmentation Method and the New Segmentation Method on Detection of Grey Matter and White Matter Changes in Alzheimer's Disease Based on Voxel-Based Morphometry	1190
L.J. Hu, L.Z. Tong, Y.Y. Duan and B. Wu Measurement of Cavity Volume Based on Machine Vision	1189
J.J. Hao, Z.T. Liu, Q. Jiang and X.L. Liang	1196
Method of Parallel System Performance Evaluation Based on Multi-Level Fuzzy Synthetic Evaluation Model	
X.M. Hou, L. Yu, Z.B. Li, Z.P. Du and B.Y. Lian	1202

Shear Test on Mixed Slide-Zone Soils of Landslide under Different Water Content T.K. Nian, Z.K. Feng, P.C. Yu and H.J. Wu	1208
Nanosecond Pulse Near-Field Sensing Based Non-Contact Physiological Signals Measurement	
H.D. Lin, Y.S. Lee, Y.J. Su and B.N. Chuang	1214
Advances in Shock Testing Facilities for Naval Shipboard Equipments G.X. Wang and Y. Hu	1220
Dynamic Prediction and Measurement of Overpressure for Venting of Gas Explosion X.P. Wen, M.G. Yu, Z.C. Liu, W.C. Sun and L.G. Zheng	1226
Research and Application of Moore's Time-Varying Loudness Model W. Liu and L.S. He	1231
A Case Study: Low Power Design-for-Testability Features of a Multi-Core Processor Godson-T	
D. Wang, D.R. Fan and Y. Hu	1237
Salt and Pepper Noise Removal Based on GA-BP Algorithm Y.M. Song and X.J. Li	1243
Study on one Kind of Test Method of Simplified Side Impact Using Sled Test Z.X. Liu, L. Lou and Y.S. Yang	1249
Local Variance Based Color Image Quality Assessment Method Y.Q. Wang	1254
Lamb Wave-Based Damage Location Detection Method of Composite Plate L.S. Zhang, H.G. Chen, J.M. Li and L. Tian	1260
A Profiled Strip Measurement Equipment Based on Machine Vision C.Y. Cai and X. Li	1267
The Research of Oil Pipeline Leak Detection and Location Based on PVDF Piezoelectric	
Sensors Q. Wang, Z. Wan, Z.G. Jing and X. Xiong	1273
The Design about Gauge Visual Detection System between High Signals and Contact Net X.L. Zhu, Y. Yu, C.Z. Li and A.F. Hui	1278
Experiment and Numerical Simulation Study on the Viscosity Impact of Turbine Flowmeter's Performance	1202
J.L. Zhao, L.J. Sun, T. Zhang and L. Cao	1283
Research and Design of Laser Accurate Displacement Measurement System X.G. Wang, Y.W. Bai and K. Liu	1289
Real-Time GPS Clock Monitoring with IGS Ultra-Rapid Products Y.J. Heo, J. Cho and M.B. Heo	1293
An Image Adaptive Watermarking Algorithm Based on Ridgelet Transform and Two- Dimensional Fuzzy Partition	
H.Y. Yu	1299
Based on Wavelet Transform and Fuzzy Algorithm of Coal Storage Image Edge Detection Algorithm	
B. Qu, Y.J. Zhao and C.Y. Bai	1305
Test and Analyze on Thermal Balance of Evaporation Process in Alumina Refinery Y.P. Wu, X.Q. Peng and J.Z. Zhang	1310
Positron Emission Tomography (PET) for Flow Measurement A.E. Ruggles, B.Y. Zhang and S.M. Peters	1316
Research of New Certain Metrics of Network Invulnerability Y. Fu, H.L. Zhao and H.T. Yang	1322
Implement a Low Noise Portable ECG Circuit C.S. Wang, C.W. Liu and T.H. Wang	1327
Temperature Measurement with High Accuracy Q.F. Du	1333
Storage on Map Database Based on Dynamic Base State Model with Amendment B.G. Yang, B.G. Zhang and H.Y. Ren	1339

Electrocatalytic Oxidation of Hydroxylamine at Electro-Polymerized Poly(cobalt(II) tetraaminophthalocyanine)/Multi Walled Carbon Nanotubes Modified Electrode X.P. Hong, Y. Zhu and J.Y. Ma	1347
Analysis of Maladjustment Sensitivity and Calibration Method for a Positive-Branch Confocal Unstable Resonator X. Zhang	1351
Design of a Robust $H\infty$ Controller for a Magnetic Levitation System G. Zhang and J. Li	1356
A Real Time Inversion Method for Calculating Multi Laser Wavelengths' Extinction Coefficients Profile of Atmospheric Aerosol D. Hao, B.Z. Hui and Y.Y. Sun	1363
Acoustic Emission Analysis on Low Velocity Impact Damage of 2D C/SiC Composites J.S. Wang, L.J. Yao, L. Zhang, B. Li, L.D. Chen and X.Y. Tong	1367
CT Analysis Method for Particular Lithology Reservoir Rock Y. Zhou, H.K. Guo, G.Q. Wei and Y.J. Zhang	1372
Numerical Correction High Temperature of Near-Infrared Colorimetry L.H. Yuan, G.H. Wu and M. Li	1378
A Continuous Output Feedback Finite-Time Speed Tracking Control of PMSM Y. Yan, S.H. Yu, Z.Q. Yang and J.L. Du	1384
An Improved Comprehensive Index Method for the Evaluation of Rock Burst Risk in Mining	
Z.Z. Zhang, F. Gao and X.J. Shang	1389
Design of 183.31GHz Interferometer with Two Elements F.L. Sun, S.W. Zhang, Y. Zhang and J.Y. He	1395
Motor Fault Diagnosis Based on Wavelet Analysis and Fast Fourier Transform Q.X. Zhang, J. Li, H.B. Li and C. Liu	1401
Energy-Efficient of Non-Invasive Motor for On-Line Monitoring System Based on Reasoning Model	
Q.X. Zhang, C. Liu, Q. Miao, H.B. Li and J. Li Research on XML Based Data Integration in PCS of Process Industry	1406
Q. Li and X. Qu	1411
Impact of Rough Wall Surface on Electromagnetic Wave Propagation Characteristics in Mine Tunnels S.H. Yao and X.L. Wu	1417
Cross-Coupling Synchronization Control of High Precision Permanent Magnet Linear	
Motors J.N. Sun, Y. Xiao, X.Y. Ge and X.Y. Wang	1422
Design and Implementation of Miniature 3-Axial Fiber Optic Rate Sensor J.W. Wu, L.J. Miao and Y.J. Wu	1428
Study on the Intelligent Electric Power Monitor Based on ARM D. Liang, C.C. Lin and G.Z. Xiao	1434
A Multi-Scale Image Matching Recognition Algorithm Based on Phase Correlation Y.G. Tian, M.G. Wang and Y.P. Fan	1438
Experiment Equipment of Newton's Second Law Based on Photoelectric Sensor H.Q. Sun, M. Yang, W.Z. Zhang and J.S. Yu	1444
Rotor Dynamic Balance on the Field for Cooling Fan of Engine Q.B. Wei	1448
Study of Polyphase Decomposition Zoom-FFT Algorithm in Non-Invasive Motor Monitoring System Y.L. Zhang, Y. Gao, P.S. Jiang and H.Y. Xu	1452
Analysis Methods of Power Characteristics for Hydraulic Pressing of the Traction Drive	1102
Device C. Wei, C.J. Shen and S.H. Yuan	1458
The Brake Assist System of Automobile Overhaul Competence Analysis C.Y. Chao, S.C. Yang, Y.W. Guo, C.S. Yieng and T.J. Liao	1464
An Innovative Electronic Current Transformer Applied in High Voltage Systems Z.Q. Tian, Z.H. Li and Y. Tong	1471

Application of Adaptive Fuzzy-PID Control in Servo Spindle Rigid Tapping J. Lu, H.X. Zou, L. Shen and X.J. Zou	1477
Study Performance of Pure Electric Buses Based on the Fuzzy Control Strategy F.J. Zhou, C. Lin, J.R. Nan, G. Wang and W.K. Cao	1482
Research on Two-Position North-Seeking Method Based on the Single Axis FOG D.H. Li, F. Zhou and X.B. Wu	1489
Research on Transverse Sensitivity Property of Cymbal Piezoelectric Vibration Acceleration Sensor C.Z. Li, D.H. Li, S. Zhai and J.A. Li	1495
Research on Brushless DC Motor Speed Control System Based on Passivity-Based Control S. Zhai, D.H. Li, X.B. Wu and C.Z. Li	1501
An Integrated Measurement Platform for Piezoelectric Transformer Based on Virtual Instruments X.C. Zhang, M.K. Li, J.Q. Liu and Y.X. Fu	1507
A Study on Pore Diameter Distribution of Saliniferous Dredger Fill Consolidated by Vacuum Preloading	
X.Q. Yuan, Q. Wang, Y.B. Xia, J. Song and S. Lin Theoretical and Numerical Analysis of Waste Heat Utilization Device for Coal Gangue Brick Tunnel Kiln	1511
F.M. Meng, J.F. Wan and H.X. Li	1517
A Novelty Control Strategy for the Photovoltaic Supercapacitor and Battery Hybrids Storage System Y. Yuan, M. Machmoum, S. Bourguet and N. Amelon	1522
Research and Design on Intelligent Outdoor Solar Charging Station	
Y.C. Shen, Z.H. Fan, G.J. Zuo, C.Y. Gong and W.J. Zhang Film Shape Research of Slipper Bearing in Axial Piston Pump Based on Genetic Algorithms	1528
H. Liu, Z.X. Peng and C.J. Shen Effect of Manufacturing Condition on Forming a Screw-Threaded Stainless Fuel Filler	1533
Tube N. Kamei and H. Watari	1539
Auto-Read Photoelectric Autocollimator Based on DSP and Area Array Imaging Sensors Q. Hu, Y.Y. Yang, P.F. Gao and W.J. Wu	1545
Study on the Compensation for Mounting Eccentric Errors of Circular Grating Angle Sensors	
G.B. Gao, W. Wang, L. Xie, D.B. Wei and W.Q. Xu Experiment Study on Decreasing Blasting Vibration Adopting Large Diameter Hole-by-	1552
Hole Initiation R.S. Yang, Y.L. Che, G.L. Yang and C. Huo	1556
Fault Diagnosis of Wet-Shift Clutch Based on STFT and Wavelet M. Chen and B. Ma	1560
Research Progress on Application of Magnetic Suspension Balance in Basic Physical Properties Measurement	1500
Y. Shen, Y. Zhang, Y.C. Song, Y.H. Guan, W.W. Jian and Y.C. Zhan	1568
A Method for Detecting Deformation of Pipeline Based on Distributed Fiber Optic Strain Sensor L.Q. Yi, C.F. Qian, K.Q. Ding and S. Qiao	1574
The Meteorological Information Applies Optimization of Research in the SCIPUFF Nuclear Proliferation Analogous System W.T. Chen, F.C. Lu and J.C. Tsai	1578
Research on Measurement Technology of Impulse Current Based on Hall Sensor Y. Sun, Q.F. Li, C. Lu and Z.H. Chen	1578
A Rapid Way to Build Prototypes of Wireless Sensor Network Based on Virtual Instruments Technology	1505
X.C. Zhang, Y.X. Fu, J.Y. Yu, Y.P. Yan and J.Q. Liu	1588
The Mechanical Properties Study of Woven Fabrics Y. Liu, Z.M. Deng and Y.R. Chen	1592
Approach of Automatic Measuring Minimum Distance between Profiles at Cutting Area for Rough Milling X.L. Fan and G.R. Hua	1596

Algorithm of Obtaining Maximum Diameter of Ball Mill Using in Semi-Finish Milling for Complex Mold	
X.L. Fan and G.R. Hua	1601
Experimental Study of Gasoline Flame Propagation Characteristic K.Q. Wang, L. Le, J.J. Qi, Q. Zhou and Y. Huang	1606
The Research of Vibrator Wireless Monitoring System Based on Compressive Sensing W. Shen, J.Z. Wang and J. Li	1612
Experimental Study on Effect of Pulley Diameter and Lubricant Grease on Multi-Layer Winding Wire Rope's Fatigue Endurance	
Z.H. Hu, J.Q. Hu and Y. Hu	1618
Research on the Calibration of Uniaxial Rotary SINS S.T. Shang, K. Miao and R.T. Wang	1624
A New ESP Design and Development Guideline Based on the System Vehicle-Driver- Environment	1629
Z.H. Gao, J. Guo, H. Guan, Y.L. Dong and Y.J. Qiao Design of High Precision Sunlight Intensity Measurement Device	
S.W. Chen Analyses of Electromagnetism Guided Waves in Metal Pipe by Using of Multi-Scale	1635
Entropy S.W. Chen, D. Mi and Z.S. Xu	1639
Evaluation of Taste Quality in Green Tea Infusion Using Electronic Tongue Combined with LS-SVM	1037
S.R. Ai, R.M. Wu, L.Y. Yan and Y.H. Wu	1643
The Effect of Seawater Salinity on the Equilibrium Time of Oxidation Reduction Potential Y. Wang, D.X. Liu, M.T. Ju, Z.H. Jin and T.L. Li	1648
Electro-Mechanically Integrated Circuit Models for DC Motor Driven Systems C.H. Lin	1652
System Modeling and Fuzzy Control of a Thin-Disc Type Piezoelectric Actuator S.C. Mou	1658
Verifying and Simulating of the Novel Analytical Method of the Steady-State Error for Nonunity Feedback Control Systems S.C. Mou	1670
Implementing Iterative Learning Control to Reduce Torque Ripple of Permanent Magnet Synchronous Machine Z. Huang and H.X. Cheng	1676
Feature Extraction in the Image Recognition for Plateau Pikas (<i>Ochotona curzoniae</i>) M.H. Cao, H.Y. Chen, H.Q. Wang and W.F. Wang	1682
Whole-Circuit Models for the BDCM/LBDCM Driven Electro-Mechanical Systems C.H. Lin	1687
The Electromagnetic Field Analysis of Permanent Magnet Synchronous Generator Based on ANSYS	
H. Li and F. Liu	1693
A New Model of Bundle Adjustment Used in Camera Calibration J.H. Cheng and L.X. Tang	1699
Quantum Three-Qubit Phase Gate Operation by Using an Artificial Atom in a Three-Mode Cavity	
L.X. Xia and Q.Z. Lei	1705
A Super-Stable Optical Interferometer with Multi-Pass and its Simple Application L.X. Xia and Q.Z. Lei	1710
The Isolator of Industrial Automatic Control System Selection and Application J.M. Zhang, H.S. Wang and B.D. Gan	1714
Key Technologies in Image Processing of Interferogram J.H. Su, W.B. Wan, L.H. Yang and J.Q. Xu	1719
Double Loop Autopilot Design Based on Frequency Domain M.S. Pang, D.H. Li, J.F. Fan and X.F. Li	1724
Automatic Calibration of Clamp-On Ultrasonic Flowmeter Based on Fieldbus Control	
System Q.Q. Hou, Y.M. Huang, Z.L. Zhang and B. Sun	1730

Wind Tunnel Test on Icing on a Straight Blade for Vertical Axis Wind Turbine Y. Li, F. Feng, S.M. Li, W.Q. Tian and K. Tagawa	1735
Research on Harmonic Detection Methods of Electrified Railway X.Z. Xu and W. Wan	1740
Design and Finite Element Analysis of Airborne Cloud Liquid Water Sensors Q.Q. Liu, W. Dai and X.W. Tang	1744
Guidance Law Design for Space-Based Anti-Missile Boost Phase Intercept H. Huang and Z.F. Zhu	1749
The Design and Implementation of Three-Phase SPWM Based on DSP F. Lv, T. Luan and C.H. Zhang	1754
Research on Intelligentized Recognition Technology for Double Wavelength Laser Measurement of Thin Film Thickness H.R. Li, J.H. Su, A.M. Ge and L.H. Yang	1760
Design and Realization of Communication System Based on Power Line Carrier G. Li and X.L. Che	1765
Quantitative Relationship of Electro-Optic Characteristics in AC Corona Discharge under Different Voltage and Humidity X.X. Tong, Y.G. Yuan, L.G. Wu, S.W. Liang, M.H. Lin, L.J. Ma, P. Liu and T.F. Xu	1771
Noise Analysis for Simple Lidar Detecting Wake Profiles Based on Bubble Laser Backscattering at 180° L.P. Su, W.J. Zhao, D.M. Ren and S.Y. Chen	1777
Calibration of an Industry Robot and External Axle Based on Ant Colony Optimization Y. Wang, J. Huang, D.F. Wu and Z. Ma	1782
Forecasting EGR Rate of Diesel Engine Based on Neural Syncretic Theory S.B. Yang and M.J. Hu	1789
Simulation to Compensate Ripple of Air Bearing Stage with Flexure Hinge Mechanisms D.H. Ahn, D.G. Gweon and D.P. Hong	1795