Table of Contents

Preface and Organizing Committee

Chapter 1: Material Engineering and Technology

Z.C. Guo, M. Chen, D.B. Zhao and F.M. Zhang	3
Study on the Brush Plating Technology of Magnesium Alloy J.X. Li and L.C. Wang	7
Effects of Nano-TiO ₂ on Microstructure and Properties of Ceramic-Lined Composite Steel Pipes Produced by Centrifugal Self-Propagating High-Temperature Synthesis Y. Zhu, F. Huang, Y.X. Ge and H.J. Ni	10
Preparation and Properties Testing of Intelligent Color-Changing Camouflage Coating J. Zhang, J. Yu, J.F. Jiao, H. Chen and P. Liu	15
Analysis of Elastic Recovery Property Based on the Mesh Structure of Spun-Laced Nonwovens Y.J. Zhang, X.P. Xu, X.Y. Jin and Z.F. Zhang	19
Structure, Electrical and Optical Properties of the Polar ZnO(0001) Surfaces Q. Xiang, Z.H. Xiong, Y. Jiang, Z.Z. Qin and L.L. Chen	25
Structure and Optical Properties of Superlattices ZnO Doped with Mg Q. Xiang, Z.H. Xiong, Y. Jiang, Z.Z. Qin and L.L. Chen	30
Research on the Welding Technique of Quenching and Tempering Steel B.X. Guo and X.W. Du	36
Microstructure and Properties of Laser Cladding Fe-Al Intermetallics H. Ye, S.X. Peng, Z.L. Yan and X.B. Zhang	39
Chapter 2: Mechanical Engineering, Equipment and Industrial Technologies	
- · · · · · · · · · · · · · · · · · · ·	
Research on Improvement Road Impedance Function Based on Vehicle Navigation System R. Wang and Z.T. Wang	45
Research on Improvement Road Impedance Function Based on Vehicle Navigation System	45 49
Research on Improvement Road Impedance Function Based on Vehicle Navigation System R. Wang and Z.T. Wang Experiment Study on Spatial Magnetic Field of Large Gap Magnetic Drives System Y. Xu, Y.X. Pang, Y. Tan and W. Zou Transformer Fault Diagnosis Method Based on Support Vector Machine and Ant Colony L.L. Mo	
Research on Improvement Road Impedance Function Based on Vehicle Navigation System R. Wang and Z.T. Wang Experiment Study on Spatial Magnetic Field of Large Gap Magnetic Drives System Y. Xu, Y.X. Pang, Y. Tan and W. Zou Transformer Fault Diagnosis Method Based on Support Vector Machine and Ant Colony L.L. Mo Multi-Objective Biogeography-Based Optimization Algorithm for the Control of Robotic Manipulator	49 54
Research on Improvement Road Impedance Function Based on Vehicle Navigation System R. Wang and Z.T. Wang Experiment Study on Spatial Magnetic Field of Large Gap Magnetic Drives System Y. Xu, Y.X. Pang, Y. Tan and W. Zou Transformer Fault Diagnosis Method Based on Support Vector Machine and Ant Colony L.L. Mo Multi-Objective Biogeography-Based Optimization Algorithm for the Control of Robotic	49
Research on Improvement Road Impedance Function Based on Vehicle Navigation System R. Wang and Z.T. Wang Experiment Study on Spatial Magnetic Field of Large Gap Magnetic Drives System Y. Xu, Y.X. Pang, Y. Tan and W. Zou Transformer Fault Diagnosis Method Based on Support Vector Machine and Ant Colony L.L. Mo Multi-Objective Biogeography-Based Optimization Algorithm for the Control of Robotic Manipulator Z.D. Xu, H.W. Mo, Z.J. Xu and J.Q. Zhang Tunable Wavelength Filter Based on Complex Period Photonic Crystal	49 54 59
Research on Improvement Road Impedance Function Based on Vehicle Navigation System R. Wang and Z.T. Wang Experiment Study on Spatial Magnetic Field of Large Gap Magnetic Drives System Y. Xu, Y.X. Pang, Y. Tan and W. Zou Transformer Fault Diagnosis Method Based on Support Vector Machine and Ant Colony L.L. Mo Multi-Objective Biogeography-Based Optimization Algorithm for the Control of Robotic Manipulator Z.D. Xu, H.W. Mo, Z.J. Xu and J.Q. Zhang Tunable Wavelength Filter Based on Complex Period Photonic Crystal H.X. Yu, X.J. Gao and Y.L. Shi Design and Application of SCM-Based Caller Information Identification System	49 54 59 64
Research on Improvement Road Impedance Function Based on Vehicle Navigation System R. Wang and Z.T. Wang Experiment Study on Spatial Magnetic Field of Large Gap Magnetic Drives System Y. Xu, Y.X. Pang, Y. Tan and W. Zou Transformer Fault Diagnosis Method Based on Support Vector Machine and Ant Colony L.L. Mo Multi-Objective Biogeography-Based Optimization Algorithm for the Control of Robotic Manipulator Z.D. Xu, H.W. Mo, Z.J. Xu and J.Q. Zhang Tunable Wavelength Filter Based on Complex Period Photonic Crystal H.X. Yu, X.J. Gao and Y.L. Shi Design and Application of SCM-Based Caller Information Identification System L.M. Hu Research on Tropical Agricultural Products Quality Recognition and Detection System Based on Electronic Nose Technology	4954596469
Research on Improvement Road Impedance Function Based on Vehicle Navigation System R. Wang and Z.T. Wang Experiment Study on Spatial Magnetic Field of Large Gap Magnetic Drives System Y. Xu, Y.X. Pang, Y. Tan and W. Zou Transformer Fault Diagnosis Method Based on Support Vector Machine and Ant Colony L.L. Mo Multi-Objective Biogeography-Based Optimization Algorithm for the Control of Robotic Manipulator Z.D. Xu, H.W. Mo, Z.J. Xu and J.Q. Zhang Tunable Wavelength Filter Based on Complex Period Photonic Crystal H.X. Yu, X.J. Gao and Y.L. Shi Design and Application of SCM-Based Caller Information Identification System L.M. Hu Research on Tropical Agricultural Products Quality Recognition and Detection System Based on Electronic Nose Technology K. Zhang, H.F. Wang and S.P. Dai Research on Cooperative Relay Transmission in Power Line Communication Y.S. Li, Q.F. Shang and X.M. Li Study on LDPC Coded SFH System with Multi-Tone Interference L.L. Jia, A.J. Liu, D.X. Guo and G. Chao	495459646975
Research on Improvement Road Impedance Function Based on Vehicle Navigation System R. Wang and Z.T. Wang Experiment Study on Spatial Magnetic Field of Large Gap Magnetic Drives System Y. Xu, Y.X. Pang, Y. Tan and W. Zou Transformer Fault Diagnosis Method Based on Support Vector Machine and Ant Colony L.L. Mo Multi-Objective Biogeography-Based Optimization Algorithm for the Control of Robotic Manipulator Z.D. Xu, H.W. Mo, Z.J. Xu and J.Q. Zhang Tunable Wavelength Filter Based on Complex Period Photonic Crystal H.X. Yu, X.J. Gao and Y.L. Shi Design and Application of SCM-Based Caller Information Identification System L.M. Hu Research on Tropical Agricultural Products Quality Recognition and Detection System Based on Electronic Nose Technology K. Zhang, H.F. Wang and S.P. Dai Research on Cooperative Relay Transmission in Power Line Communication Y.S. Li, Q.F. Shang and X.M. Li Study on LDPC Coded SFH System with Multi-Tone Interference	49 54 59 64 69 75 79

Chapter 3: Data Acquisition and Data Processing

A Novel Algorithm for Action Landmarks Extraction J.J. Zhao and Y.M. Yang	97
Classification Algorithm Based on Category Attribute's Mathematical Expectation L. Zhang and J.L. Zhang	103
An Iterative Algorithm on the Spectral Radius of a Kind of Centrosymmetric Matrix D. Zhao and H.Y. Li	108
A Simulation and Prediction Method of the Height of Wheat Based on BP Neural Networks and the Ant Colony Algorithm H.Y. Li, X.X. Wu, T. Wang and D. Zhao	113
Research on Data Assimilation Methods of Multi-Space-Time Meteroligical and Hydrological Data L. Kong, Y.Z. Song and D.M. You	118
A Back Propagation Artificial Neural Network Applied to Body Constitution in Traditional Chinese Medicine Modeling Z.B. Li	123
Mining Methods Based on Vague Optimization Evaluation H.F. Wang, H.E. Ren, K. Zhang and H.X. Wang	128
Fire Detection Technologies Based on Video Image M.X. Li, W.J. Xu, Y. Zhang and J. Hou	134
Application of Snakes Model in Metal Fracture Images Processing Q. Wang and G.R. Weng	139
An Efficient View-Point Invariant Detector and Descriptor Z.G. Xu, C. Chen and X.H. Liu	143
Red Blood Cell Image Extraction Based on Mathematical Morphology L. Zhou and G.R. Weng	149
Mariculture Zones Extraction Using NDWI and NDVI H.J. Pan, X.X. Li, G.W. Wang and C.S. Qi	153
A Method of Determining the Pose of Planar Target in Vision Detection System S.N. Zhang, B.S. Wang and W.Q. Yuan	156
Research of Maneuver Ship Meteorological Instrument Data Real-Time Acquisition and Processing System	1.60
Y.Z. Song, L. Kong and Z.J. Wu	162
Chapter 4: Information Technologies in Manufacturing	
Design and Implementation of Metric Multi-Core Functional Simulator Y. Wang, B.Y. Zhang, Z.C. Fu and W. Hu	169
LBS Hybrid Encryption Scheme Based on IMSI Pseudonym L. Li, A. Chen, J. Chen and Z.H. Zhang	174
Comparison of Model Checking Tools W. Gong and J.W. Jia	181
A Method of Micro-Blog Sentiment Analysis Based on PAD Model H.T. Cao, M.C. Li, D. Jiao and B. Feng	186
Cyber Security Datasets Research Z.G. Wang, C.Z. Hu, M.L. Hao and F. Lu	191
Analysis of Class Design Coupling Based on Information Entropy D. Jiang, H. Zhou and X.P. Sun	196
Data Classification in Internet of Things Based on Evolutionary Neural Network B.Y. Zhang, W. Hu, J. Feng and W.H. Sun	202
Web-Based Meteorological Information System Design and its Applications in Intelligent Hydroelectric	300
Z.J. Wu, Y.Z. Song and H.S. Zhou Software Design and Implemention about the Automatic Mmunoenzymatic Analytic System	208
Y.L. Wen, L.Q. Zhu, J. Wang and M. Zhou	213

Research on Urban Digital Governance Framework Based on Grid Management L. Ding and L. Zhang	218
Research on the Integrated Management System of Supply Chain Based on Mobile E- Commerce Environment	
W.M. Zhao and Y.H. Luo	224
Research on Application of WMSNs in Ubiquitous Learning Environment J.H. Chen, J. Song and Y. Li	229