Table of Contents

Preface, Committees and Sponsors

Chapter 1: Material Science, Processing and Technologies

V. Loganina, L.V. Makarova, R.V. Tarasov and C.V. Zhegera	3
Metallogenic Features Modeling and Deep Mineral Exploration of Laochang Ore Field in Ge Jiu	
Z. Wu, J.P. Chen and M.L. Xu	7
Projection Method for Material Selection Problem with Interval Numbers L.W. Yang	14
Grinding Wheel Abrasive in Material Selection Using Fuzzy Grey Relation Analysis Method J.H. Leng	18
Polyaniline Composites Using Three Different Acid as a Secondary Dopant: Preparation and Properties	10
H.H. Qi, J. Chen, N.L. Chen, H.X. Feng and J.H. Qiu	22
Structure of Smart Materials and its Application in Construction Industry Y.H. Jia and J.X. Heng	26
The Study on Mechanical Properties of POSS Hybrid PVA Hydrogels Y. Chen, J.H. Yang, W.Y. Liu and G.S. Zeng	30
The Swelling Behavior of Water-Soluble POSS Hybrid PNIPA Nanocomposite Hydrogels Y. Chen, J.H. Yang, W.Y. Liu and G.S. Zeng	34
The Mechanical Properties of Inorganic/Organic Co-Crosslinked PDMAEMA Hydrogels Y. Chen, W.Y. Liu, G.S. Zeng and J.H. Yang	38
Research on Strain Gauge Protecting-Process to Measurement Data Accuracy of Composite Material Structure J. Zuo, G. Chen and G. Wang	42
The Mould Flux Viscosity Designing of High Carbon Steel for Thin Slab Continuous	
Casting H.R. Li, L.G. Sun and L.Q. Ai	48
The Mould Flux Crystallization Properties Designing of High Carbon Steel for Thin Slab Continuous Casting	50
H.R. Li, L.G. Sun and L.Q. Ai Effects of Impunities on Silican Diagrams Properties	52
Effects of Impurities on Silicon Dioxide Dielectric Properties T. He	56
Unfolding Method of Non-Developable Surface for Sheet-Metal Design B. Sun and X.L. Wang	60
The Clinical Application and Evaluation of Artificial Cruciate Ligament Materials for Knee Exercise Injury Z. Wang and Y.P. Han	64
Application and Realization of Digitization of Traditional Metallographic Microscope S.L. Huang and J.Z. Cui	68
Characteristics of Electron Structure and 4f Orbital of Rare Earths and Their Reinforcement of Wastewater Degradation	70
J.C. Kuang Applied Technology in Using HPLC for Determining Aflatoxin Contents in Peanuts Y.G. Shi, W. Zhong, H. Wen, J. Ma and P. Sun	72 76

Chapter 2: Applied Mechanics, Mechanical Engineering, Electrical and Electronic Engineering

Simulation on the Behavior of Individual Vehicles with Influence Evaluation of Flow Rate and Speed Limits on Freeway	
S.Y. Wu, X.T. Yu, Z.W. He and X. Wen	83
Effect of Jet Hole Size on Drag Reduction Performance of Bionic Jet Surface Z. Gang, F. Li, W.X. Liu, S. Zhang, H.S. Bi and X.X. Zhang	87
Optimization of Horizontal Plate Fin Heat Sink in Natural Convection for Electronics Cooling by Simulated Annealing Algorithm L. Zhou and Y. Liu	91
Error Analysis of a Non-Contact Parallel Plane Sensor Based on Monte Carlo Method L. Ha and L.J. Fang	96
The Leakage Causes and Improving Measures of CB Series of Gear Oil Pump Based on Mechanical Mechanics T. Qin and F.L. Wang	100
Design and Implementation of AES Key Generator Based on FPGA H.Y. Li, G.H. Cai, H.C. Sun and X.C. Ma	104
Study on Double Long-Primary Short-Secondary Linear Induction Motor for Magnetic Elevator	100
S.M. Gao, Q.Y. Ju and F.Y. Mu	108
Experimental Hydro- and Aerodynamics Research on Arrow X.A. Long	113
Analysis for Nonlinear Aeroelasticity on Structure and its Current Progress R. Li and C.H. Tang	118
Simulation on Magnetorheological Suspension Structure of Automotive X.E. Wang and Z.Y. Chen	122
The Formation of Temperature Controller by PSoC W.B. Lin and Y.Y. Lu	127
Research on the Work Space Optimization of the Six Bar Parallel Machine Tool J.H. Hou and C.F. Duan	131
The Design of Passive RFID Reader System Based on MF RC500 S.L. Huang and J.Z. Cui	135
The Design of Measurement System Based on Digital Temperature Sensors S.L. Huang and J.Z. Cui	139
Research on the Optimization Design of Gas-Solid Coupling of Wind Turbine Blades Z.Q. Xu	143
Research on Wind Turbine Blade Load Based on the Analysis of Structural Dynamics Z.Q. Xu	147
Study on Fault Testing System of Photovoltaic Cells Y.C. Jiang, F.Q. Yang and B.G. Sun	151
Research on Electromagnetic Energy Absorbed by Human Body in the Vicinity of High-Voltage Transmission Line	155
A. Wang, Z.W. Chen, R. Guan, Y.H. Zhu and L.Q. Zhao The Property Analysis of the Leaf Spring Based on Abaqus and Elastic Mechanics	155
S.H. Liao, H.L. Su and T.R. Wei	159
Research on Electromagnetic Environment of Transmission Line P.L. Li, S.Q. Lv and T.L. Li	165
Applied Technology in Road Identification Study of Off-Road Vehicle Y. Han, G.W. Meng, C.S. Huang and Y. Hao	169
Signal Detection Technology in Shipboard Power System with Grounding Fault Line Selection by Current Travelling Waves Based on Mathematical Morphology L. Chen, B. Shen and X.F. Zhang	182
Applied Technology in Printed Circuit Board Inspection Base on Connected Components Matching and Analysis C.Y. Zheng	188
Research on Optical Signal Carrier Transmission Technology J.L. Bai, L.B. Zhong, W.H. Xu and J. Lin	193
Design of Embedded Control System for Window-Cleaning Robot C.J. Zhu and Z.F. Sun	197

The Overview on Sticking Breakout Behavior for Thin Slab Continuous Casting H.R. Li, L.G. Sun and L.Q. Ai	201
Chapter 3: Applied Information Technologies, Network, Data Processing and Computational Methods	
Research on Information Process with a Computational Approach to Some Odd-Graceful Trees	
J.M. Xie, B. Yao, M. Yao and X.E. Chen	207
Application of Computer and Information Technology in the Dormitory Management X.J. Wang and Q.J. Li	211
Application of Information Technology in Interpretation with Note Methods for Exploration-Internalization X.Z. Tian	215
Research on Speech Recognition System with Speaker Identification Based on the Cloud Server X.Y. Liu and B.L. Yuan	219
Applied Technology in a Developed Simulation Model of Pedestrian Crowd Dynamics during Emergency Evacuation	
M.H. Li, Z.Z. Yuan and Y. Xu Applied AHP Technology and Information Technology in Evaluation for Teaching Quality of University	223
Y.M. Guan	229
Data Processing for Correlation Analysis between Extracurricular Sports Activities and Mental Health in Rural Middle School Students Y.Q. Su	233
Research on Computer Technology with Informatization in Higher Education L. Zhou	237
Applied-Information Technology in Power System with Short-Term Load Forecasting Based on SPSS and BP Neural Network J.P. Chen, C.H. Xia and Z.P. Tian	241
Design and Application of Wireless Sensor Network System with GPRS Technology Q. Tan and J.L. Qiao	245
Research on Information Technology for Consultation Service System with Design and Practice for National Fitness Management K.F. Wang and L. Zhang	249
Applied-Information System in Accounting Data Security via Cloud Computing Systems F. He	253
Design of Network Information Security System Y.N. Zhang, L. Han and X. Cao	257
Research on Request Handling Mechanism of Web Server Clusters L. Han, X. Cao and Y.N. Zhang	261
Study on Dehazing Technology of Digital Image X. Cao, Y.N. Zhang and L. Han	265
Research on Image Technology with Application of K-Means Based on Genetic Simulated Annealing Algorithm in CT Image Segmentation L.L. Zhu and L. Wang	269
Applied-Information Technology in Design of Core Particle Classification Test System Based on GPIB Interface	
T. Song, P.G. Hou and G.H. Yu Applied Technology the Test of Elevator Running Mileage (Dynamic) of Scientific	273
Significance J. Gao, Y.F. Teng and W.C. Yuan	277
Using Maximum Information Selection Strategy to Computer Adaptive Test Y.J. Jing, X. Li and T.H. Liu	282
Applied-Information Technology with DSP-Based Recognition Algorithms of Driver Fatigue Z.H. Deng, R.J. Jing and L.Y. Liu	286

Design and Development of Detection Node in Wireless Sensor Network Based on Neural Network	
S.M. Duan	292
Experimental Study of Information Processing Application in Second Language to Computer Interface of Brain X.J. Li, J.J. Yang, Q.Y. Guo and J.L. Wu	296
Applied Technology and Data Processing in Plight and Breakthrough of Academic Research for Librarian Q. Chen	300
Information Processing with Combination Method for Dependent Evidences Based on Principal Component Analysis J. Yao, T. Hu and J.J. Yang	304
Research on Applied-Information Technology with Management Pattern of Multi-Media Devices and Design of RFID System Z.Y. Yang, P.P. Chao, Y.J. Gao and L.Q. Zhao	311
Algorithm of Video on Demand Scheduling by Protocol of Video on Demand and Multimedia Encoding Technology G.F. Kuang, X.H. Li and C. Li	316
Topology Analysis for the Damaged Road Network Based MapX X.R. Yin	321
Information Processing in Design and Testing of Financial Early Warning Method of Listed Companies in China - Based on the Logistic Regression Analysis Y.M. He, M. Li and X.Y. Xu	325
Applied-Information Technology in Design of Diabetic Rehabilitation Management System Based on the Technology of Mobile Internet H.L. Wang and X.F. Peng	329
Applied Technology in Data Evaluation and Position Quality of ADS-B System J.H. Wang	333
An Improved Initial Clustering Center Selection Method for K-Means Algorithm H.B. Zhou and J.T. Gao	337
Technology Study on the Perception of Stereopsis in Fovea Field Y. Wu, Q. Li, X.B. Han and H.L. Shen	341
Research on the Monitoring of Internet with Public Opinions Based on Micro-Blog in Universities L.X. Gan and W. Tu	345
The Teaching Web-Site Building of Technician Certificate for Electronic Elements Soldering and Taking Apart W.B. Lin	349
Research on Information Technology in Effective Class Activities with Effective Class Measures	349
C.L. Xie Estimate Volumes of Convex Polytopes: A New Method Based on Particle Swarm	353
Optimization S. Xu and D.B. Cai	357
Intelligent Optimization of Optimal Operating Mode in the Production Process of Copper Converter Y.Y. Shao and W.B. Liu	261
Design and Implementation of an Encryption/Decryption System Based on FPGA X.C. Ma, G.H. Cai, H.C. Sun and H.Y. Li	361 368
Numerical Investigation on Unsteady Flow Field of the Forward-Facing Cavity and Opposing Jet Combine Thermal Protection System	300
H.B. Lu	372
Research on the Ecological Water Demand Based on Physical Habitat Simulation Model J.X. Chen, R.Z. Qiao, W.H. Li and X. Wen	376
The Test Research and Data Comparison of BI by Automation Implementation X.Y. Xie, J.H. Wu, Q. Zhou, J. Chen, H.P. Si and K.Y. Lin	380
The Study of Deformation Monitoring Based on the Ground Three-Dimensional Laser Scanning Technology	
B. Liang, C. Yue, X.H. Chen, B. Wang and X.K. Sun	387

A CNC Equipment Distributed Monitoring System Based on Cloud Computing Technology R.Y. Zhang, G. Ma and G.H. Cheng	392
Research on Wireless Sensor Networks with an Improved DV-Hop Localization Algorithm Based on Weighted Processing and Error Modification H.X. Zhou, C. Cui and J.J. Ye	396
Predictive Method of Networked Control of Industrial Automation Systems H.M. Lu and L.X. Zeng	402
Robust H_{∞} Fuzzy Control for Nonlinear Networked Control System and its Application Q.F. Wang and H.B. Wang	406
Research on Stability of Intelligent Control System for Turning with Management Method L.X. Zeng and H.M. Lu	411
Study on Measurement Errors of the Ball Type Sensor in the Power Frequency Electric Field	
Y.Y. Lin, Y.Y. Zhao and P.L. Li	415