Materials Science and Information Technology II

Selected, peer reviewed papers from the 2012 2nd International Conference on Materials Science and Information Technology (MSIT 2012)
Advanced Materials Research Volume 532-533

Xi'an, Shaan, China
24-26 August 2012

Volume 1 of 2

Editors:

Suozhang Cai
Mingli Li

ISBN: 978-1-62276-239-2
ISSN: 1022-6680

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571

Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2012) by Trans Tech Publications Ltd.
All rights reserved.

Printed by Curran Associates, Inc. (2012)

For permission requests, please contact Trans Tech Publications Ltd.
at the address below.

Trans Tech Publications Ltd.
Laubisrutisr 24
CH-8712 Stafa-Zuerich
Switzerland

Fax: +41 (44) 922 10 33 Fax: +1 (603) 632-5611
e-mail: sales@ttp.net

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2634
Email: curran@proceedings.com
Web: www.proceedings.com

Table of Contents

Preface and Organizing Committee

Chapter 1: Materials Science and Engineering

Characterization and Analysis on the Thermal Transformation of Boehmite Synthesized by Yoldas Method
Q.C. Su, S.H. Zhang, P.L. Chen, X.J. Li, J. Fu and L.L. Ma 3

Two-Photon Three-Dimensional Optical Storage of a New Photobleaching Material
J.W. Cai 8

Kinetics of Thermal Oxidation of TA2
J. Hu, Y. Fang and Y. Wang 12

Experimental Study of Squeeze Casting of AZ31 Magnesium Alloy
Z.H. Guo, H. Hou, Y.H. Zhao and S.W. Qu 16

Modified N Doped TiO_2 Nanotubes with Magnetic γ-Fe_2O_3 as Visible Light Photocatalysts
Y.Z. Wang, G.L. Zhang, F.B. Zhang and X.B. Fan 20

Effect of Diamond on the Thermal Conductivities of Diamond-Copper Composites Prepared by Spark Plasma Sintering
Y.H. Dong, R.Q. Zhang and Z.G. Ye 25

Polyamide 6/Polyurethane/Graphite Composites Prepared by Anionic Polymerization Process. II. Friction and Wear
X. Deng, D.X. Li, J. Wang and J. Yang 30

Investigation on Preparation and Electrical Properties of Novel Perovskite Cathode Materials Doped with Multi-Elements for IT-SOFC
J. Zhao, L.L. Kong, C. Li and Y.C. Ma 35

Polyamide 6/Polyurethane/Graphite Composites Prepared by Anionic Polymerization Process. I. Mechanical Properties
X. Deng, D.X. Li, J. Wang and J. Yang 40

Study of Detecting Flaws in a Heavy Bridge-Making Steel Plate
H.H. Luo, H.X. Dong, Z.B. Dong and J. Hong 45

Fractal Characteristic and Impact Strength of PLA-Based Wood Plastic Composites
T. Qiang, D.M. Yu and H.H. Gao 49

Properties of Si_3N_4 Based Nanocomposites Prepared by Pressureless Sintering Method
M.L. Li, Q. Yu, Y. Xu, Q.G. Lu and C.J. Zhou 53

Preparation and Properties of Si_3N_4 Based Composites for Broad Band Radomes
M.L. Li, Q. Yu, Y. Xu, C.J. Zhou, Z.C. Qi and Q.G. Lu 57

Synthesis and Characterization of Terthiophene-Based Rod-Like Liquid Crystals
X.H. Liu, Z.X. Li, S.Y. Zhang and J.L. Pu 61

Study on the Microstructure in Weld Metal of Cr-Ni Stainless Steel under Different Welding Technology
H.B. Li, H.T. Li, M.Q. Li, X.J. Su and C.J. Li 66

Fabrication of SnO_2/Zn_2SnO_4/ZnO Nanocables through Thermal Oxidation of Zn and Sn Mixture Powders
L.M. Yu, X.H. Fan, J.Y. Shui, L. Cao and W. Yan 70

Fundamental Research of Sintering Process and Properties of Iron Base Composites
Y.F. Yang, W.B. Liu and Q. Mu 74

Study on the Interface Bonding Mechanism of Steel Sheet/Aluminum Foam/ Steel Sheet Sandwiches
M. Zhang, C.J. Chen and Q.M. Chang 78

Study on the Cu-ZSM-5 Catalyst for SCR System of Diesel Engine
W. Li, L.S. Chen, X. Liu and Y. Liu 82

Ti-Nb-Ta-Zr Alloy Rolling Deformation Texture
L. Yan, Y.L. Liu, L.G. Zhang and H.W. Yu 87

Fabrication of Electrospun Si/Carbon Composite Nanofibers as Anodes Materials for Lithium-Ion Batteries
H.M. Huang, Z.C. Chen and J. Yu 92

Properties of Fluorene Derivatives: DFT Investigation
B.W. Chen, G.J. Chang and L. Zhang 97

Wearing Performances of Floret Silk/Cotton Blended Sports Socks
W.L. Chen, M.M. He, M.Y. Zhang and Z.C. Tang 101

Hot Forming Flow Stress Prediction of Steel 50A1300 by BPA ANN
Z.X. Tang and X.D. Zhou 105

Study on the Influencing Factors Effecting Temporary Cavity Caused by a High Speed Steel Ball when Penetrating into Gelatin
X. Zeng, K.D. Zhou, L. He, P.H. Gong and Y.X. Jin 110

Technology Study on Sichuan Refractory Lead-Zinc Ore
S.Q. Zeng, X.L. Zhang, D.W. Liu and Z.C. Wei 115

Preliminary Study on Injection Molding Process of Single Polymer Composites
Q.C. Mao, J.N. Chen and J. Wang 121

Properties of Environment Friendly Nitrogen-Free Materials for Leather Deliming
Z.H. Sui, L. Zhang and J. Song 126

Mechanical and Tribological Properties of Diamond-Like Carbon Coatings with Different Ni Content
X. Ling, S.R. Yu and J.Y. Zhang 131

Effects of Operating Parameters and Loading Modes on the Dynamic Cell Performance of PEM Fuel Cells
H.C. Chiu, J.H. Jang, W.M. Yan, C.I. Lee and C.C. Yang 135

Synthesis and Structure of Zinc Oxide Aerogel
B.W. Chen, Y.T. Bi and L. Zhang 140

Study on Light Porous Unsintered Building Material
C.C. Jiang, G.Z. Li and Q.J. Li 144

Effects of Annealing Temperature on Crystallization Feature of $BaSi_2$ Films
Z.T. Hao and Z.Y. Yang 149

Photocatalytic Properties of Ag Surface Doped Nanocrystalline TiO_2-SiO_2 Composite Films
L.X. Guan, N. Zhao and M.M. Yao 153

Preparation of Nanostructured TiO_2 Electrode by an Organic-Medium Screen Printing Technique
H.P. Zhang and L.L. Qin 157

Preparation of Green Packaging Materials of Synthetic Paper and its Performance Research
E.Q. Yin, H.G. Sun and K. Li 161

Chapter 2: Design and Manufacturing

The Design and Optimization of Micro-Displacement Worktable
D.N. Guo and X.Z. Zhao 167

Selection of Bar Code in Timber Circulation
H.Q. Xu and L.H. An 173

The Present Development Situation of Air-Coupled Ultrasonic Non-Destructive Testing Technology
Z. Dong, Z.R. Jun, Y.Z. Ma and X.N. An 178

Optimal Design of the Needle Bed Slot Milling Machine Based on ANSYS
W.J. Qi and Z.K. Xu 183

Design of SPI Bus Communication in the Multi-Channel Data Acquisition Systems
B. Yang and X.W. Ding 187

Module Knowledge Management in Manufacturing Process
B. Ma and J.H. Che 192

Formal Specification Technology of Modeling Based on Feature
X.F. Zhao, Y.Y. Wang and Y.Q. Zhou 197

Process Evaluation of Key Parameters during Plant-Field Composting Using Genetic Algorithms and Near-Infrared Spectroscopy
G.Q. Huang, L.J. Han and X.Y. Wang 202

Three Dimensional Design and Unfolding Method of Sheet Metal Parts
B. Sun and H.F. Zhang 208

Chapter 3: Mechanical Engineering and Applied Mechanics

Wind Tunnel Test and the Analysis of Buffeting Performance of Free-Standing Tower of Cable-Stayed Bridge under Yaw Wind
G.H. Zhao, Y. Li and H. Bai 215

Vibration Reduction of Water Source Heat Pump Units Based on Particle Damping Materials
Z.Q. SUN, C.Z. Chen and H. Liu 220

Hydraulic High Speed On-Off Valve and its Application on Industry
W.N. Chen, Y.Z. Xu and L.H. Yang 224

Comparative Study on Dynamical Performance of Hybrid Ceramic and Steel Ball Screw Mechanism Based on Multi-Body Dynamic Simulation
H.K. Jiang, L. Liu and X.C. Song 229

The Effect of Heat Treatment on Mechanical Properties of Car Interior Fabric Used for Injection Molding
W.L. Chen, D.H. Yi and J.F. Zhang 234

Integrality Assessment of Tubular Joints in Aging Offshore Platform Based on Reliability Theory
H. Lin, G.M. Chen, Z.F. Wang and L. Yang 238

Absolute Blood Flow Measurement of early Stage Chicken Embryo Heart Using High Speed 4D Optical Coherence Tomography
Z.H. Ma, X. Liu, Q.Y. Wang and Z.H. He 243

A New Millimeter Wave Mixer Based on the Groove Guide
Y.F. Sun, Z.Q. Sun and P.Z. Wang 248

Research on the Influence of the Aerodynamic Measure on the Flutter Derivative of the Steel Truss Suspension Bridge
H. Bai, W. Guo, W. Li and Y. Li 252

Numerical Simulation for Subcooled Boiling Flow Process of High Pressure Liquid
A.M. Zhou, Y. Jiang, J. Chen and S.Z. Wang 257

Effect of Thermal Charging of Iron Ore Pellets on the Reduction Rate and Compressive Strength in Gas-Based Reduction Process
Z.C. Huang, D.G. Yang and L.Y. Yi 262

Design of Subsoiling Mechanism Based on Self-Excited Vibration Technology
X.Y. Wang 267

Finite Element Analysis of the Process of Drilling Medical Titanium Sheet
H. Shen, Y.F. Deng and J. Hao 272

Structure Design of a Novel Four Tracks Umbilical Tensioner
W.M. Wang, Y. Li, S.M. Zhang, D.X. Luo and X.X. Zhu 277

Influencing Factors of Hydraulic Property of CFBC Ashes
Y.M. Song, J.X. Liu, C. Wang, H.H. Zhong and T. Ding 282

CFD Simulation of Volute of Variable Geometry Turbocharger
J. Lei, Y.S. Wang and H.J. Ren 287

Design and Implementation of IEEE 1588 High Precision Clock Synchronization Based on GPS Time Service
K. Wang, Y.H. Hu, Z.M. He and H.J. Ma 292

Finite Element Simulation on Stress of Steel Sphere Shell
C.L. Song and J. Ji 297

Adjustment of the Resonant Cavity and Cooling System for Laser Machine
X.L. Yang and X.J. Li 301

Dynamic Characteristics of Bridge under Moving Constant Load
C.L. Song and J. Ji 306

Study on the Stress Relaxation of Polychloroprene Rubber by Molecular Dynamics Simulation at Different Temperature
Y.K. Gao, X.J. Ding, T. Hu, Y. Li and S.Z. Wu 311

Thermal Stress Simulation of Cooling Tube with Grid Plate Using Indirect Finite Element Method
C.L. Song and J. Ji 316

The Disease Treatment Measures and Intensification of Reinforced Concrete T-Shaped Girder Bridges
Y.X. Yang, Z.K. Yang and C. Qiao 321

Research on the Impact of Damping to the Flutter Derivatives of Steel Truss Suspension Bridge
H. Bai, C. Fang and Y. Li 325

Analysis of Image Characteristics of Plume and Spatter of High Power Disk Laser Welding Based on K-L Transform
Q. Wen and X.D. Gao 330

Study on Fatigue Resistance Design of A-Alloy Automobile Wheel
B. Zhang 335

The Analysis of Composite Yarn Fabric Mechanical Properties by KES System
J.J. Shi, B. Hu and Y. Xue 340

Extraction of Molten Pool and Keyhole Characteristics during High Power Fiber Laser Welding
R.H. Zhen and X.D. Gao 344

Wavelet-Based Finite Element Simulation of Alloy Crack
S. Zhang and L. Meng 348

The Numerical Simulation of the Impact on the Hangzhou Bay Bridge Offshore Platform and the Sightseeing Tower
H. Bai, F.L. Wang and Y. Li 352

The Influence of Matrix Concrete on the Strength of Recycled Concrete
H.Q. Zhao and G.Z. Li 357

Dynamic Mechanical Properties of Cyanate Ester Resin Modified by Functionalized POSS
Z.P. Zhang, J.Z. Pei, C.Q. Fang and S.F. Chen 361

Improvements on Throttling Pipelines Basing on Numerical Simulation
B. Zhu, Y. Su and H.J. Zhang 365

The Present Development Situation of Laser Ultrasonic Nondestructive Testing Signal Processing System
L.X. Xia, Y. Zhao, Y.Z. Ma and X.N. An 369

Optimization and Simulation Analysis on Bar Truss System of the Variable Parameters
C.L. Song and J. Ji 374

Parameter Optimization of Passive Dynamic Walking Biped with Knees
P.J. Zhang and K.F. Song 379

Contact Characteristics Analysis of Water-Lubricated Thrust Bearing under Low-Speed and Heavy-Load Situation
X.Y. Zhang, W. Wu, J.H. Zhou and Q.J. Wu 385

Design of Automatic Detection Device for Steel Bar Surface Defects
J.C. Zhang, W.B. Li and C.H. Lu 390

Seam Tracking Monitoring Based on Molten Pool Infrared Images
R.H. Zhen and X.D. Gao 394

The Integrated Mechanical Function Test System of Material and Structural Fatigue Damage
Y.L. Wei, B. Li, S.Y. Jin and K.K. Chen 398

Influence of Lumped Mass on the Natural Frequency of Cylindrical Pipe
B. Li, Y.L. Wei, D. Zhang and Q. Huang 403

An Efficient Response Surface Method Using Givens Transformation for Structural Reliability Analysis
W.T. Zhao, Y. Yang and T.J. Yu 408

Structural Design of Experimental Study on Rain-Wind-Induced Vibration of Strayed Cables
W. Li, W. Guo and H. Bai 412

Numerical Simulation on Heat Dissipating Performance of New Pipe with Grid Plate
C.L. Song and J. Ji 417

Research of Path Control Algorithm the Joint Cotton Bundle Stowage
J.L. Li, C.Y. Lv, S.Y. Ling and Z.F. Wang 422

A Discussion about Finite Element Analysis of Aircraft Wing Structure
W.T. Zhao, T.J. Yu and Y. Yang 427

Numerical and Experimental Study on a Honeycomb Ceramic Monolith
C.Z. Mao, Q.J. Guo and L. He 431

Numerical Model of the Start-Up Process of a Honeycomb Regenerator
C.Z. Mao, Q.J. Guo and L. He 436

Integrated Rolling Bearing Type Selection and Parameter-Driven Graphic Resource System
H. Yao and Y. Cao 441

Disease Detection and Capacity Analysis of the Double Arch Bridge
Y.X. Yang, Z.K. Yang and C. Qiao 446

Excavation and Support of Deep Foundation Pit Finite Element Analysis
X.L. Dong and D.N. Han 450

Simulation of Underground Water Inrush Spreading Based on Multiple-Phase LBM
Q.Q. Lu and G.Q. Huang 455

Nonlinear System Modeling Study Based on Fuzzy Neural Network with Chaotic Mechanism
W. Li and Y. Guo 460

Analysis of Rifle Recoil Based on Different Methods of Support
C.G. Wang, W.H. Xu and C. Xu 465

Test Study on Aerodynamic Performance of Three-Dimensional Stayed Cables in Two-Dimensional Flow Field
X.F. Xue, H. Bai, Y. Li, W. Li and S. Gong 469

Flow Analysis of Axial Compressor AV63-15 Variable Stator Simulation
W.H. Cheng, M.C. Li and C.P. Li 474

Fault Detection, Isolation and Tolerance Control for Robots: A Brief Survey for Last Decade
M.J. Shi 479

The Simulation Analysis of Manipulator Grab the Workpiece Based on PRO/E
L.M. Wang, L.L. Zhang, D.H. Jiang and D.W. Shao 483

Chapter 4: Automation and Control

Design and Implementation of Intelligent Parking Management Based on the SNMP Protocol
Q.N. Yang and Y.M. Li 491

Fuzzy Linear Matrix Inequalities Control for a Rectangular Thermosyphon
K. Qian, X.P. Pang, H. Yan and K. Liu 496

Design of Neutral Network–Sliding Model Based Large Envelope Flight Control Law
G.C. Xin, W.L. Chen and J.N. Tao 503

Neural Network Soft Sensor Model Based on Mechanism Chaotic Analysis and its Application
Y.H. Zhao, Y.H. Zhang and Z.G. Su 508

Center of Gravity Fuzzy Systems and the Probability Distributions Based on the Circle Operators
X. Yang, X.T. Wang and X.H. Yuan 515

Robust Fault-Tolerant Control for a Class of Uncertain Discrete Time-Delay Systems
D.G. Zhao and Y.C. Ma 521

An Investigation of Variable-Rate Fertilization Controlling System Based on XS-Base270 Platform
W.Y. Liu, Z.B. Su and Y.S. Yang 527

Debug and Development of ADAM 6022 Communication in Industry Automation Control
Y.C. Li, X.W. Liu, J. Kang and F. Gao 531

Control Types Option Research at Signal Intersection Based on LOS
T.X. Jiang, Q. Yu, N. Li and X.H. Deng 535

Multi-Vehicle Tracking Based Traffic Illegal Parking Detection
J. Wang and F. Chen 540

Study on the Key Distribution Mechanism of Feeder Automation System
J. Song and L.L. Wu 546

Design of a Switching Control Scheme for Uncertain Objects Based on PID-Type FNN and LS_SVMs
J. Zhao, G.P. Li and C.D. Zheng 550

Research and Design of Distributed Data Integration and Management for Electric Energy Information
X. Li, H.S. Ye, Q. Wang, J. Liu and X.X. Liu 555

Study on the Requirement Model for Battle Damage Assessment
C. Zhang, Q. Shi, T.L. Liu and W.K. Zhao 560

Multiagent Based Dynamic Resource Control for Decentralized Multi-Project Using Combinatorial Exchange
L. Wang, D.C. Zhan, L.S. Nie, D.H. Chu and X.F. Xu 566

Network Performance of a PLC Protocol for Smart Grid
L.P. Lu and P.X. Xu 571

Research of RFID Intelligent Access Control System in the Internet of Things
K.C. Wang, T.T. Wang, Z.F. Jia and M.K. Zong 576

The Application of LabVIEW in Data Acquisition System of Solar Absorption Refrigerator
L. Wang, Y.Y. Tan and X.L. Cui 581

Design and Implementation of Authorization Management System Based on RBAC
F. Zhao, L. Wang and X. Tian 586

Design and Implementation of Pan-Tilt Control System
Y.H. Wang, Z.C. Shi and H.W. Miao 591

Research on Agricultural Ecology Video Monitoring Systems Based on the Internet of Things
T.T. He, H.R. Bai, L. Wang and Q.P. Jiang 596

Design and Implement of Dynamic Context-Aware Monitoring System Based on OWL
D.J. Xue and W.X. Zhang 601

Design of a Remote Wireless Surveillance System Based on 3G
B.Y. Hu, Z.W. Ke, L. Huang and C.W. Wang 606

Performance Analysis of WiMAX System Base on AMC Optimized Algorithm
L. Liu, X.P. Zheng and L.J. Li 610

Research on Coach Control System in Voyage Training Simulator Based on GIS
J. Yuan, Y. Wu and J.B. Xiao 615

Equipment Command Simulation Based on Workflow
L. Chen, H.M. Yu, T. Jia and C. Ye 620

An New Agent Based Distributed Adaptive Intrusion Detection System
Y.B. Liu, L. Shi, B.Z. Wang, Y.Q. Wu and P.H. Wang 624

Implementation of Intelligent Laboratory Management System Terminal
Z.G. LIU 630

Face Detection Based on Statistical Color Model and Haar Classifier
X.B. Jia and L.Y. Li 634

Damage Evaluation Method for Integrated Electronic Information
C. Zhang, Q. Shi, T.L. Liu and W.K. Zhao 639

A Simulation System of Anti-Ship Missile Path Planning Oriented Ship Formation
G. Liu, S.Y. Lao, L.L. Hou and C. Yuan 645

The Optimized Analysis to Stock Management of Spare Parts Used for Maintenance and Ensurence
T. Liu, L. Zhang, Y.G. Chen, P. Xu and K. Lian 650

Simulation and Analysis to Control Algorithms of the Large Time-Delay System Based on Simulink
S.Z. Li, Y.G. Ma and Z. Zhao 654

The Application of Expert System in Automation Testing
L. Wang 659

Chapter 5: Information Processing and Computational Science

Design and Implementation of Embedded System Based on Modbus TCP/IP
Y.X. Li, M.L. Zhang, D.M. Niu and X.L. Zhang 667

Implementing Online Viterbi Algorithm as Standard Relational Queries over Streaming Data
R. Li and L. Zhang 672

A Memory Architecture Design for High-Performance Cloud Computing
L.Q. Luo and S.J. He 677

Design and Implement of Operation Simulation Scenario Generation Toolkit
Y.P. Fan, G.H. Li and J. Bai 682

Feature Extraction Technique of Acoustic Target Based on Wavelet Packet Energy and Principal Component Analysis
Y.L. Lü and Z.H. Zi 687

The Detection Method of Image Regional Forgery Based DWT and 2DIMPCA
X.Z. Pan and H.M. Wang 692

Research on Fingerprint Image Segmentation
J.T. Xue and H.W. Li 697

Doppler Signal Denoising Based on Feature Adaptive Wavelet Shrinkage Method
Z. Yin, J. Jin, Y. Wang and Y. Shen 702

Coexistence and Numerical Solutions of the Unstirred Chemostat Model
X.Z. Feng, M.H. Wei and C.T. Li 708

Implementing and Optimizing DES on Stream Processor
L. Yang, X.Q. Ni and H.Z. Liu 714

Computer Simulation for Medical Ultrasound C-Mode Imaging Based on 2d Array
S.Y. Hua, Y.C. Ming and M.Y. Ding 719

An Improvement of the Response Surface Method Based on Successive Linear Interpolation
W.T. Zhao, T.J. Yu and Y. Yang 724

The Modeling of Visual Perception for Virtual Soldier Based on Limited Rationality
Q. Xue, W.C. Xu, Y.X. Mao, P.G. Yu and Y.H. Li 728

Texture Image Segmentation Based on MRMRF in Contourlet Domain
X.J. Wang and X.F. Zhao 732

Application and Research of Bayesian Network in Data Mining
C.F. Zheng, L. Jiang, L.Q. Jiang and Z.J. Wu 738

Eight-Neighborhood Based Background Modeling
Y. Lu, M. Dai and L. Jiang 743

Research of Chinese Multi-Pattern Fuzzy Matching Method for SMS Spam Monitoring
J. Qin and S.Q. Yin 748

L-R Logical Key Tree Management Scheme Applying Hierarchical Data Processing
Y. Li, Z.P. Wang and H. Xu 753

A Joint Method Based on Wavelet and Curvelet Transform for Image Denoising
H. Wang, J.Z. Cao, L.N. Tang and Z.F. Zhou 758

Based on Immune Algorithm Heat Treatment Analysis of the Alloy
S. Zhang and L. Meng 763

Applying Web Mining Techniques for Constructing Webometrics Ranking early Warning System
S.M. Hsieh, S.A. Lo, C.C. Hsu and D.R. Chen 767

A Multiagent-Based Network Information Filtering System
Z.H. Mu 772

Anomaly Detection for DDoS Attacks via Behavior Profiles Deviation Degree
Y. Liu, J.P. Yin, Z.P. Cai and J.R. Lin 777

The Application of IaCLA Model to Adaptive Image Quantization
Y. Jiang, L.S. Wu and T. Huang 782

Blind CFA Interpolation Detection Based on the Entropy
X.Z. Pan and J. Xie 787

A New Method for Content-Based Image Retrieval via Subsets of Key Contours Fragments
C.Q. Tan, Y.F. Chen, F.X. Li and Z.Z. Yang 792

Image Denoising New Method Based on Fractional Partial Differential Equation
W. Jiang and Z.X. Wang 797

Application of Data Analysis of Public Transit Passenger Flow in Line Classification
T.T. Tong and J. Wang 803

A New Storage Design of Distributed Geographic Information
Y.L. Liu, Y. Yu and X.C. Du 808

Design and Implementation of Scalable Autonomous Centralized Fault-Tolerant Scheme for Satellite System
H. Zhou, Y.H. Tang and J.F. Jiang 813

The Multi-Level Metadata Indexing in Mass Storage System
D.J. Niu, Y.Z. Zhan and T. Cai 818

Application of Virtual Reality Technology in Teaching of Architectural Design & Construction
Y.X. Wang 823

Study on FSK Signal Demodulation Based on Chirp-Z Transform
J.H. Xia, J. Guo and X.M. Wang 827

The Method of Generating Building Ladder Profile Based on SketchUp
X.L. Zhang and G.W. Han 832

Designing Family Ontology with the Protégé OWL Plugin
L.P. Jiang 836

A Layered Trusted Computing Platform Module with Unified Deployment on Server
P.P. Shen, J.B. Yang, C.D. Gu and Y. Jiang 841

Research of Multi-Data Sources Report Model Based on Data Dictionary
Y.J. Lu and Q.H. Hu 846

The Application of Chaotic Encryption Model in the Network Identity Authentication
C.J. Pang 850

Detection of Pulmonary Nodules in CT Scanned Images Based on Region Growing with Optimization Parameters
Y. Li, Z. Miao and B. Chen 854

Multi-Scale Semantic Model for Unsupervised Object Segmentation
Y. Li, X.J. Li, Y.S. Zhang, X. Sun and H.Q. Wang 859

The Design of Storage Not Overflow Based on NAND Flash
J. Zhang, Y. Chu and S.C. Li 865

Characteristics Analysis and Model Application of Traffic Speed-Volume Relationship in Urban Elevated Roads
R. Song and K.F. Yan 871

A Novel Method to Estimate ARMA Time-Varying Parameter Using Grey Forecasting Model
W.Z. Chen 876

Parameter Optimization of Decentralized OS-CFAR System Based Modified PSO Method
P.Z. Liu, R.Y. Pan and G.F. Guo 881

A Survey on Mobility-Assisted Data Collection in Wireless Sensor Networks
J. Yu, Y. Hua and H.Q. Deng 887

Active Contour Driven by Edge and Region Image Fitting Energy
H.Y. Xu and M.H. Liu 892

Study on Clustering-Based Location Dependent Query
M.J. Wei, L.C. Xia, J.G. Jin and Q.H. Fan 897

A Model of Caching Geo-Data Sharing Based on Computer Cluster Technology
Y.M. Liu and W.C. Zhang 902

Design of the Software System of a Digital Axle Detector
Y. Wang, L.J. Zhang, X. Han and Z. Yin 908

A Grouping Cache Based Joins Query Algorithm in MANET
Y.H. Guo, X. Liu and Q.Q. Ren 914

Research on Data Mining Technology in Web Based on the Cloud Computing
F. Zhang and L. Liu 919

Low-Altitude Airship Remote Sensing Images Matching Based on Improved Hybrid Ant Colony Algorithm
B.L. Pan, W.N. Yi and X.H. Wang 924

A Model Study on Emergency Information's Spread under Mobile Internet Environment
X.W. Hou, H.Y. Shu and Y.P. Zhao 929

Image Recognition and Wireless Transmission–Based Intelligent Vehicle Access Control System
Y.Q. Feng and X. Li 934

Topical Concept Based Text Clustering Method
Y. Ding and X. Fu 939

Design of USB Communication System Based on C8051F340 MCU
H.S. Huang, K. Liu, L. Xue and X.Q. Zhang 944

Trademark Image Retrieval Using Weighted Region Information Entropy
Q.Q. Sun, Z. Ma and B. Dong 949

Image Matching Based on Analysis of Reliability in Log-Polar Field
Y.P. Xu, J. Tan, H.P. Li and Y. Tian 954

A New Outlier Mining Method Based on CLIQUE in Multi-Database
X.Q. Xiang and D.S. Liu 959

Design of the Information Service Platform Based on Expert Knowledge Database
S.Y. Dong, S.J. Li and J.Y. Wang 964

An Alpha-Dominance Relation in Disjunctive Set-Valued Ordered Information Systems
Y.J. Lv and W.S. Yang 969

Research and Design of Face Detection Based on OpenCV in CodeBlocks
X.C. Lv and Z.B. Zhang 974

A Frequency Estimation for TD-SCDMA UE
R.M. Peng and Y. Mei 979

A Study on Localization of Acoustic Emission Source Based on Algebraic Neural Network
Z.Z. Lin and X.M. Cheng 984

Nonlinear Analysis of EEG Using Fractal Dimension and Approximate Entropy
S.J. Geng, W.D. Zhou, Q.M. Yao and Z. Ma 988

AJAX-RMI Serialization and Deserialization Model Based on JSON and IocContainer
J. Li, Q. Huang and Y. Long 993

A New Smoothing Method Based on Nonsmooth FB Function for Second-Order Cone Programming
Y.F. Zeng, J.B. Jian and C.M. Tang 1000

The Application of Distributed Multi-Sensor Information Fusion Technology in Underwater Vehicle
Y. Li and Y.Q. Jiang 1006

A Bimaximum Entropy Method for Solving Nonlinear Constrained Continuous Minimax Problem
Q.H. Huang and D.X. Cao 1011

Earthquake Prediction Research Based on the Mining in Time Series of Groundwater Temperature
J. Zhang, Y.L. Lu and S.C. Wu 1016

Wavelet Shrinkage Based Variational Image Decomposition Model
M. Li, X.L. Sun and C. Xu 1021

Research of Adaptive Synthesis Rule for Conflict Evidences
S.W. Li and H. Li 1026

The Application of MLAMBDA for Time Series Radar Interferometry
J.Q. Mu and S. Zhan 1031

Research on Internet Monitoring System Based on Multi-Layer Text Information Filtering Method through Artificial Neural Networks
J.Q. Liu and M. Luo 1036

An Adaptive Image De-Noising Method Based on Singular Value Decomposition
C.B. Zhou and Z.J. Zhang 1041

Evaluation for the Hypersonic Near-Space Target Threat Based on GRA-TOPSIS Model
X.D. Wu, W.M. Li and L. Zhang 1046

Database Encryption for Dababase-as-a-Service
Z. Xiang 1051

The Visualization for SMT Based on Raster Data Engine
C. Liu, A.T. Zhang, T. Liu and H.S. He 1056

The Research on Slices' Data Repair and Filling Path Optimization
G.S. Zhu, W. Xu and Z.F. Xu 1060

The Implementation of Trusted Computing Based Network Trusted Management Information System
H.H. Lu 1064

Time Series Data Mining in Process Industry
J. Ren and J.F. Gao 1069

Research of Face Recognition Method Based on Multiple Classifier Fusion
Y.L. Xu and Y.M. Zhang 1075

Scalable MD5 Crypt Cracker on PetaScale Supercomputer
Z.C. Shi, C.Q. Yang and Q. Wu 1080

Research on Farmland Information Acquisition System Based on IoT
Y.E. Duan and X.J. Niu 1085

A Text Categorization Method Based on Features Clustering
Z.B. Feng, P.J. Zhang and J.J. Zhao 1090

Design of Real-Time Image Collecting Module Based on FPGA
J.W. Wang, M.Y. Ma and J.M. Leng 1095

Research on Internet of Things Based on RFID
L. Li 1100

A New Ship Detection Method for Massive Data High-Resolution Remote Sensing Images
H. Sun, Y. Li, G. Liu, H. Long and H.Q. Wang 1105

Design of SoC Verification System Based on Multi-FPGA
X. Han, Z.Y. Li, Y.S. Liu and W.L. Niu 1110

Parallel Performance of MPI Based Parallel FDTD on NUMA Architecture Workstation
X.M. Guo, W. Zhao, L.H. Zhang and W.H. Yu 1115

Based on Convolution Algorithm Single Crystal Finite Element Analysis
S. Zhang and L. Meng 1120

Study on Adaptive QoS Solution of Real-Time Video Stream in Wireless Network
X.Y. Xiong, B. Wang and D.X. Wang 1124

Research on Adaptive Mobile Map Based on Spatiotemporal Data Mining
Z. Yang, F. Ju and B. Shao 1130

The Research of LDPC Code in Communication System
D. Hu 1135

Fine-Grained Access Control Technology in the Data-Centric Business Process Model
C. Yan and S.J. Yu 1140

Road Conditions Test in Virtual Driving System Based on Cohen-Sutherland Algorithm
H. Sun, Y.Z. Wang, Y.L. Li and B.Z. Li 1147

The Redevelopment of Matrox Meteor-II/Digital Image Grabbing Board with VC++
C.F. Liu, B.L. Hu, C.L. Wang and L. Liu 1152

Improvement of Fractal Image Compression Coding Based on Quadtree
H.T. Hu and Q.F. Liu 1157

Research of Robust Feature for Speech Recognition
X.H. Ren and Y.X. Jiang 1162

A Video Compression Method for Wireless Transmission
Y. Zhou 1167

A Method of Solving Data Consistency of Disk Array Cache
W. Wang and S.Q. Yin 1172

XML Query Based on Indexed Sequential Table
Y. Yang and H.G. Li 1177

A Computer Simulation Study of the Rainfall Infiltration and Evaporation Process of Sand-Mulched Field
H.C. Zhao, H.T. Peng, G.F. Li, X.P. Zhang and B.X. Gu 1182

The Index Storage Model for Urbanization Data Combined Query
L.L. Zhao, S.A. Liu and J.S. Li 1186

Design of Text Categorization System Based on SVM
Z.Y. Liu, W.P. Wang and Y. Wang 1191

Parallel Processing of Product Configuration for Cloud-Based Mass Customization Service Platform
J.H. Che, B. Ma and Q. Zeng 1196

The Time Analysis of Perception
Q. Xue, W.C. Xu, Y.X. Mao, P.G. Yu and Y.H. Li 1201

An Improved Anisotropic Diffusion Model Based on Wavelet Transform for Image Denosing
R.L. Zhang, H.M. Liu, Z.H. Hu and W.J. Guo 1205

Design and Implementation of WebGIS Based Information System for Nature Reserve
X.X. Xue, W.D. Ding, M.C. Shi and W.B. Guan 1209

3DTV Video Acquisition and Processing for Visual Discomfort Alleviation
Y. Yang, Y.C. Zhang and J.Z. Li 1214

An Improved Error Concealment Based on Redundant Motion Vector Information
H.T. Deng 1219

Paratactic Spatial-Temporal Two Dimension Data Fusion Based on Support Vector Machines for Traffic Flow Prediction of Abnormal State
L. Chen, Q.R. Li, X.Y. Tian, X.S. Chen and R.X. Wang 1225

Design and Verification of Security Protocol for Information Transmission in Digital Campus
X.L. Li, Y.J. Luo, Y. Liang and Y. Wen 1230

Multiprocessor Scheduling Problem Based on Ant Colony Optimization Algorithm
Y. Li 1235

Realization of Text Categorization for Small-Scaled Dataset
H. Liu 1239

Automatic Construction of Collocation Dictionary Based on Text Mining
H. Zhang and Y.Q. Wang 1243

Research of the Construction of Network Data Storage in the New Period
X. Fang 1248

A New Method for Noisy Speech Classification Based on Gaussian Mixture Models
L.H. Yao, J. Xu and H. Jiang 1253

Multi-Objects Detection in Remote Sensing Images Using Multiple Kernel Learning
X.J. Li, H. Sun, X.W. Zheng, X. Sun and H.Q. Wang 1258

Research on Construction of Semantic Web of 3D Model Database
H. Jia, G.H. Geng and J.X. Yang 1263

Key Technologies in the Construction of a GIS System for Weather Data
D.Q. Li and D.W. Seng 1268

Research of Flood Prediction Based on Subjective/Objective Evidences Fusion Model
W. Wu and Y.M. Chen 1272

A Multi-Dimensional Time Series Data Mining Model for Weather Forecast
K. Liu 1277

Research and Improvement on Content-Based Web Search Engine
Z.C. Lin, L. Sun and X. Liu 1282

Simulation and Spectral Analysis of Sea Wave
J.B. Xu, X.Q. Bian and M.Y. Fu 1287

Computer Simulations of Chua's Circuits with Small-World Connection
G.Y. Zhang and J. Xing 1292

A Survey on Emotional Semantic Mapping in Image Retrieval
Z.R. Liu, Z. Li and X.L. Yu 1297

Virtual Assembly Simulation Method for Complicated Mechanical Product
B. Sun, S.Y. Zhang and Y. Cao 1303

The Simulation Method of the Torpedo Magnetic Fuse Introduction Signal
Z.L. Liu, H.J. Zhang and H. Li 1308

Design and Implement of Intelligent Orientation Online Help
Q. Zhang, C.F. Zheng, Y. Rong and X.L. Zhu 1313

Constructing a PU Text Classifier with Incremental Characteristic
S.Y. Ling and J.H. Gong 1318

Construction of Question Chain Data Center Systems Supported of Data Mining
L. Liang 1324

The Summary of the Application of Pattern Recognition in Image Progressing
Z.H. Xi, H.P. Liu, Z.Q. Ren and N. Li 1329

Cloud Storage Technology in Video Surveillance
Z.F. Zhao, X.J. Cui and H.Q. Zhang 1334

Research for the SSD-Based Storage Technology of Mass Remote Sensing Image
W.C. Zhang and Z.P. Chen 1339

Knowledge Integration for Analyzing ChIP-seq
D.Y. Zhou and Y.L. He 1344

Development of Vibration Data Processing Program
Y.F. Xu and Y.D. Zhou 1349

Harmonic Monitoring Based on BP Neural Network
B.F. Liu, Y. Chen and X.W. Fang 1354

Image De-Noising Based on Improved Data-Adaptive Kernel Regression Method
Z.P. Qiang, X. Chen, H. Lin and T.L. Zhao 1359

Research of Query Optimization Based on Improved Quantum Particle Swarm Optimization Algorithm in Distributed Database
F.M. Liu and J.Y. Wang 1365

Chapter 6: Algorithm Design

Adaptive K-Means Algorithm with Dynamically Changing Cluster Centers and K-Value
A.P. Deng, B. Xiao and H.Y. Yuan 1373

Blind Source Separation Based on Non-Gaussianity
B.Z. Yang 1378

Decision Tree Based Rules Redistribution Algorithm for IP Monitoring of Lawful Interception on IPv4 Networks
X. Ma, S.K. Qu, Q.Q. Tang and X. Huang 1384

A Robust Image Perceptual Hashing Scheme Based on Improved Normalization Algorithm
S.S. Sun, Y. Zeng, H.X. Zhang and J.S. Gui 1389

Research on the Adaptive Algorithm for Interference Cancellation
J. Dai, F. Zhang and H. Zhang 1394

A New Video Watermark Algorithm Based on the Property of the Video
C.Z. Yang, L.F. Liao, X.S. Zheng, Y.L. Zhao and G.Q. Liu 1399

Image Encryption Algorithm Based on Image Element and DFRCT
G.L. Zhu, X.L. Qin and X.Q. Zhang 1403

Reduction Algorithms of Incomplete Covering Decision Systems
S.P. Zhang and T. Feng 1409

A Faster Pattern Matching Algorithm for Intrusion Detection
F. Du 1414

FPGA Based Implementation of Semi-Fragile Watermarking Algorithm
F.M. Liu and X.Z. Pan 1419

OpenMP-Based Parallel Algorithms for Pi on Multi-Core Platform
Z.J. Gao 1424

A Diversity Guided Particles Swarm Optimization
N. Li and Y.X. Li 1429

A Novel Quantum Genetic Algorithm Based on Potential
X.L. Li and F. Meng 1434

A Novel Algorithm of Fractal-Wavelet Image Denosing
T. Xu and L. Huang 1440

EM Algorithm Based on Fuzzification and its Application
T.T. Tong and Z.H. Wu 1445

Shape Modification of NURBS Curves Using Genetic Algorithm
Y.H. Li, G.W. Mu and Z. Guo 1450

Investigating the Performance of Cosine Value and Jensen-Shannon Divergence in the kNN Algorithm
X.D. Li, H. Jia and L. Huang 1455

A Novel Approach to Computing with Words: A Statistical Algorithm for Algebra Operations of Cloud Model
Z.Q. Luo, P. Cao, X.W. Liu and S.Q. Ma 1460

Based on Ant Colony Algorithm Finite Element Analysis of the Alloy
S. Zhang and L. Meng 1468

Research on Extension of the Fuzzy Rough Set Theory
Y. Zhang 1472

An Extended Rough Set Model for Generalized Incomplete Information Systems Based on α-Limited Dominance Relation
J.L. Mo, Y.J. Lv and Y. Wu 1477

Simulation of Signal Based on the Reproducing Kernel Spline
X.J. Ma 1482

The Unscented Kalman Filter Estimators for High Dynamic Doppler Shift Environments
K. Zhao, K.G. Pan, A.J. Liu and D.X. Guo 1487

Range Particle Algorithm Application in the Solving Inverse Problem of Line Source
K.G. Yu 1492

The Research Based on GA-SVM Feature Selection Algorithm
H.M. Li, L.G. Yang and L.H. Zou 1497

Reliability-Based Structural Optimization Using Sequential Response Surface Method
W.T. Zhao, Y. Yang and T.J. Yu 1503

Research in SVM Sample Optimizes of ISODATA Algorithm
Z.J. Zhao, W. Gao, H.Z. Wang and K.F. Zhang 1507

Image Encryption Algorithm Based on Genetic Algorithm
G.L. Zhu, W.P. Wang and X.Q. Zhang 1512

Research on Encryption Algorithm Conforming to AES in WLAN
J. Li, L. Gan and F.F. Du 1517

Research on the Application of Co-Evolutionary Algorithms in Automated Negotiation
Q. Xu, Y. Yuan and F. Zhang 1522

Application of Least Square Algorithm for Ellipses Detection
C. Yuan, C. Wang and G. Liu 1527

The Research of Image Segmentation Algorithms
Z.X. Chi and L. Shi 1532

2-D Kernel Regression Algorithm for Image Denoising
Y.F. Yao, Y.G. Hu, C.S. Wang and W.W. Sun 1537

A Heuristic Algorithm for Decision Table Reduction
N. Su, F.F. Liao and Z.H. Wu 1543

A Universal Steganalysis Algorithm for JPEG Image Based on Selective SVMs Ensemble
D.Y. Chen and S.P. Zhong 1548

Fuzzy C-Means Clustering Algorithm for Image Segmentation Based on Improved Particle Swarm Optimization
Y. Yang, S.X. Guo, R.L. Tian and P. Liu 1553

The Segmentation Algorithm for Hand Vein Images Based on Improved Niback Algorithm
X.M. Guo, W.D. Zhou and C.Y. Wang 1558

A Rapid Initial Alignment Alogrithm Based on Strapdown Gyrocompass
S.H. Li, G.M. Yan, P.X. Yang and Y.Y. Qin 1563

3D Visualization Algorithm Based on Terrain Partitioning and Dynamic Levels of Details
W.H. Wang, H.L. Qiu and W. Li 1568

Research on Optimize Scheduling Model and Heuristic Algorithm Based on Capacity Balance
D.J. Xue 1573

Medical Image Segmentation Algorithm Based on Granular Computing
F. Wang, J.J. Ruan and G. Xie 1578

A Nighttime Vehicle License Character Segmentation Algorithm
S.B. Gao and D. Jin 1583

A Knowledge Rule Mining Method for the Evaluation of Library Service Quality Based on Genetic Algorithm
P. Wang and T.S. Yan 1588

Visual KEA: A Visual Model Based on Keywords Extraction Algorithm for Hub Pages
H. Peng and Z. Chen 1593

Transitional Compensation Algorithm for Correcting Non-Uniformity of LED Display Image
W.X. Su and Y.S. Chen 1600

Application of Data Fusion Based on Genetic Algorithm and BP Neural Network in WSN
Y. Xu, Z.X. Li and J.J. Liu 1606

Analysis on Using Average Curvature Algorithm to Simplify the Mapping of Large-Scale Battlefield Terrain Space Grids with LOD and its Errors
S.B. Liu, X.Y. Liu, Y.P. Yang and C. Wang 1611

Cost Optimization Problem of Hybrid Flow-Shop Based on PSO Algorithm
Z.H. Han, X.F. Ma, L.L. Yao and H.B. Shi 1616

Image Mosaic Method Based on SUSAN Algorithm and Log-Polar Transformation
C.P. Jiang, Y. Zheng, B. Xu and X.D. Xue 1621

An Extended Simplex Algorithm for Linear Programming
G.G. Zhang 1626

An Efficient Algorithm for Improved Shape Context Feature's Cost Matrix Computation
S.S. Li, Y.H. Zhao and J.A. Wang 1631

Approach for Solving Nonlinear Equation Group Based on Adaptive Genetic Algorithm
H.L. Shen, F.L. Cheng and H.R. Ren 1636

On-Line Modeling of Dynamic Nonlinear System Based on Bayesian Inferring Method Combined with Evolutionary Algorithms
Y.J. Liu, L.M. Di and Y.J. Fang 1640

The Research of PApriori Algrithm Based on OLAP
Y.L. Ma, G.Q. Zhang, W.C. Xu and L.J. Tong 1645

Improved Algorithm for Discretization of Decision Table
L.F. Chen and Y. Ma 1649

Study on Coarse-Grained Parallel Genetic Algorithm
Y. Chen and X. Wei 1654

Dual Aircrafts Path Planning for Forest-Fire Rescue by Artificial Immune Algorithm
L.F. Liu and S.Q. Zhang 1659

A Particle Swarm Optimization Algorithm Based on the Pattern Search Method
J.L. Zhang and D.W. Dai 1664

A New Algorithm of Video Key Frame Extraction Based on the Block of Frame Image
H.C. Feng, Y. Gong and W.G. Hu 1670

Research on Data Mining Based on Apriori Algorithm
P.J. Wang and Y.L. Zhao 1675

An Algorithms for Super-Resolution Reconstruction of Video Based on Spatio-Temporal Adaptive
M.H. Li, C. Lin, J.B. Tian and S.H. Pan 1680

An Improved SPRINT Algorithm
Z.K. Luo, H.Y. Sun and D. Wang 1685

Research on Algorithm of Function Set Mining Based on Interests
J.Z. Zhang, Y.X. Wang and R.Z. Zhang 1691

Application of Chaotic Encryption Algorithm in RFID Secure Mechanism
A.P. Deng and B. Xiao 1695

Study on Moving Object Detection Algorithm in Outdoor Video Surveillance System
X.Y. Xiong, B. Wang and D.X. Wang 1700

A New Hybrid Image Reconstruction Algorithm for Magnetic Induction Tomography
Y.Y. Chen, X. Wang, D. Yang and Y. Lv 1706

Evolutionary Algorithm Research Based on Neural Network for Fuzzy Cognitive Map
P.P. Liu and Y.J. Hao 1711

Short Text Clustering Algorithm with Feature Keyword Expansion
C.X. Jin, H.Y. Zhou and Q.C. Bai 1716

An Improved IPP Planning Algorithm and the Application
J. Gao 1721

An Efficient Algorithm for Computing the k-Error Linear Complexity Spectrum of Periodic Sequences
L.Y. Ma and H. Cao 1726

A Novel Filtering Algorithm Based on Least Square Support Vector
Y.Q. Li and Y.H. Xu 1732

Complex Relationship Mining Algorithm and its Application
T. He 1736

Fast Multilevel Thresholding Method for Image Segmentation Based on Improved Particle Swarm Optimization and Maximal Variance
Z.T. Peng, K.L. Fang, Z.Q. Su and S.H. Li 1741

A Robust Star Acquisition Algorithm Based on Facet Model
G.R. Li 1747

Near-Replicas of Web Pages Eliminating Repetitive Algorithms Based on MD5
J.Y. Yan, X.H. Ma and W.J. Zhao 1752

BP Network Optimization Based on Improved Genetic Algorithm
W.W. Sun, Y.F. Yao, C.S. Wang and Y.G. Hu 1757

An Audio Watermarking Algorithm Based on Chaos
H.B. Tang and B.B. Liang 1764

An Interactive Video Foreground Segmentation System Based on Modeling and Dynamic Graph Cut Algorithm
X.Y. Wu, L. Yang, S.B. Li and P. Xu 1770

An Efficient K-Shortest Paths Based Routing Algorithm
J. Lian, Y. Zhang and C.J. Li 1775

Study of Improving Support Vector Machine Algorithm Based on Medical Data Mining
W. Wu 1780

Research on the Genetic Algorithm Simulating Human Reproduction Mode and its Blending Application with Neural Network
T.S. Yan 1785

A General Algorithm Framework Design for Ship-Radiated Noise Target Recognition
Y.N. Li 1790

New Algorithm for Predicting RNA Secondary Structure with Pseudoknots
Z.D. Liu and D.M. Zhu 1796

An Energy Efficient Wireless Sensor Network QOS Multicast Routing Algorithms Based on Ant Colony Algorithm
Q. Zhang and H.J. Xiong 1800

Watermarking Algorithm Based on Video Features
C.Z. Yang, X.S. Zheng and Y.Y. Ding 1805

Schedulability Analysis Algorithm of Timing Constraint Petri Nets
H.F. Li and F.J. Feng 1810

The Research of Web Image Recognition Algorithms Based on Knowledge Base
L. Shi and Z.X. Chi 1815

Research on Unknown Static Parameter Estimation Problem of State Space Models Based on Particle Filter Algorithm
S.B. Jiao, F.C. Qian and J. Yang 1820

An Improved Apriori Algorithm Based on Similarity
A.P. Zeng, D. Liu and H.M. Chen 1825

Super-High Dimension Complex Functions Optimization Using Adaptive Particle Swarm Optimizer
Y. Zhang, B.Q. Liu and H.R. Chen 1830

An Improved Genetic Algorithm of Web Services Composition with QOS
Y.Y. Zhang, H.L. Xiong and Y.C. Zhang 1836

The Research and Improvement of APFFT Algorithm
J.T. Diao, J. Guo, N. Li, W. Yi, S. Liu, Q. Li and H. Xu 1841

Multiple Blind Watermark Algorithm Based on Wavelet Packet Transform and Two-Dimensional Chaos Scramble
T.Z. Zhao, T. Chen, J. Xu, T. Wang and W.Y. Shi 1846

Application of Thiessen Polygon Algorithm in Cellular Network Simulation System
L. Wei, H.Y. Chen, L. Li, H.M. Fu and L. Wei 1851

Plynomial Convergence of Primal-Dual Algorithms for SDLCP Based on the Monteiro-Zhang Family of Directions
G.Z. Li 1857

Application of Improved Artificial Fish Swarm Algorithm to Slope Stability Analysis
J. Liu, J. Li, J.Y. Huo and L.N. Liu 1861

A New Path Planning Algorithm Based on the Virtual Ridges for an Agro-Machinery
X.P. Bai, J.T. Hu, T.C. Li, X.G. Liu and L. Gao 1867

A Novel Color Face Segmentation Algorithm Using Multi-Feature
D.M. Wei and W.D. Zhou 1872