Linear Drives for Industry Applications IX

Selected, peer reviewed papers from the 9th International Symposium on Linear Drives for Industry Applications (LDIA 2013)

Applied Mechanics and Materials Volumes 416-417

Hangzhou, China
7-10 July 2013

Part 1 of 3

Editors:

Yunyue Ye
Ziqiang Zhu
Shaobo Zhong

ISBN: 978-1-62993-649-9

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© (2013) by Trans Tech Publications Ltd.
All rights reserved.

Printed by Curran Associates, Inc. (2014)

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, Committees and Reviewers

Chapter 1: Linear Motors and Other Electrical Machines

Design and Analysis of a New Linear Fault-Tolerant Flux-Reversal Permanent-Magnet Machine
L. Xu, W.X. Zhao, J.H. Ji and G.H. Liu 3

Design of Dual-Rotor Radial Flux Permanent-Magnet Generator for Wind Power Applications
P.F. Xu, X.X. Liu, K. Shi and Y. Du 9

Inductance and Flux Linkage Variation on Operation Performance for Multi-Segmented Linear PM Motor
M.N. Ma, L.Y. Li, H. Zhu and C.C. Chan 15

An Optimal Method for Minimizing Cogging Torque in Disc-Type Permanent Magnet Machines Using FEM and Genetic Algorithm
J.S. Shangguan and C.Z. Fan 21

Research on the End Effect Detent Force Reduction of Permanent Magnet Linear Synchronous Motor with Auxiliary Poles One-Piece Structure
H. Zhang, B.Q. Kou, S.L. Guo, H.L. Zhang, Y.X. Jin, C.N. Zhang and L.Y. Li 27

Performance Analysis of a Linear Motor with HTS Bulk Magnets for Driving a Prototype HTS Maglev Vehicle
Y.G. Guo, J.X. Jin, J.G. Zhu and H.Y. Lu 33

Design of a New Frog-Leg Winding Permanent-Magnet Brushless DC Motor
H. Zhang, C. Li and Y.J. Zhang 38

Magnetic Shielding for Coreless Linear Permanent Magnet Motors
K.J.W. Pluk, J.W. Jansen and E.A. Lomonova 45

Design and Experiment Analysis of Induction Machine Used in the Economical EV
X.H. Guo, X.F. Lu, G. Zhang and X.F. Song 53

An Exact Analytical Solution of Halbach Arrays Permanent-Magnet Motor for Magnetic Field on Load
C. Li, H. Zhang, L.B. Jing, Y.J. Zhang and J.B. Li 58

Analysis, Design and Prototyping of a Low-Speed High-Torque Six-Phase Fault-Tolerant Permanent Magnet Synchronous Machine for EVs
P. Zheng, F. Wu, Y. Sui, P.F. Wang and B. Yu 66

Investigation of a Single-Phase Oscillating PM Alternator for Free-Piston Stirling Engines
P. Zheng, J.G. Bai, Y. Sui, C.D. Tong and B. Yu 73

Punching Machine Driver Research Based on Pulse Electromagnetic Force Actuator
J. Rao 78

Characteristic Analysis of Moving Magnet Type Double-Sided Linear Synchronous Motor
H. Ding and L. Guo 82

Gravity Neighborhood Estimation Algorithm Based for Cylinder Linear Motor Parameter Optimization
W. Hu and J.W. Zhao 87

Copper Losses and Rotor Losses Calculation for the BLDCM Used in a Flywheel Energy Storage System
K. Liu, J.H. Hu, J.B. Zou, F. Xu and Y. Li 93

Optimal Design of a Double-Sided Permanent Magnet Linear Synchronous Motor for Ropeless Elevator System
L.R. Huang, J.W. Dong, Q.F. Lu, Y.Y. Ye and Y. Chen 99

Analysis and Optimization of a Linear Synchronous Motor with Novel Halbach Magnet Array
B.Q. Kou, L. Zhang, B.C. Zhao and C.N. Zhang 104

Design of a Miniature Short-Stroke Constant-Force Linear Actuator
R. Besuchet, A. Gabella and Y. Perriard 109

A New Linear Double Salient Permanent Magnet Motor with Complementary Winding
M. Cheng, R.W. Cao, W. Hua and X. Wang 115

Comparison of Linear Switched Flux Permanent Magnet Machines
Y.J. Zhou, Z.Q. Zhu and R. Nilssen 121

Optimal Design of a Five-Phase Outer-Rotor Permanent-Magnet Synchronous Machine
P. Zheng, Y. Sui, P.F. Wang, F. Wu and S.Q. Zhang 127

Performance Comparison between Surface-Mounted and Interior Brushless DC Motor
N.N. Zhao, Q. Yang, M.H. Zhang and W.G. Liu 133

Characteristic Analysis of Permanent Magnet Linear Synchronous Motor for Rope-Less Hoist System
H.C. Feng, X.D. Wang, B.Y. Xu and X.Z. Xu 139

Research on a Five-Phase In-Wheel Permanent-Magnet Synchronous Machine
P. Zheng, Y. Sui, B. Yu, F. Wu and P.F. Wang 144

Characteristic and Magnetic Field Analysis of a Novel Ironless Halbach Permanent Magnet Linear Synchronous Motor
L. Zhang, B.Q. Kou, B.C. Zhao and F. Xing 149

Research of Mathematical Model of the Twelve-Phase Linear Induction Motor with Double-Sided Long Stators
J. Rao, J. Xu, D.Z. Liu, X.D. Yang, X.P. Cui and W.M. Ma 156

Study on the Secondary Structures of Long Primary Double Sided Linear Motor
N. Wang, L.M. Shi, Y.M. Du, R.H. Zhang and N.Q. Jin 164

Research on the Temperature Field of Special Linear Motor
Y.H. Wu, X.M. Liu and C.F. Ji 169

Design and Analysis of a Novel E-Core Axial Field Flux-Switching Permanent Magnet Machine
W. Zhang, M.Y. Lin, L. Hao, L.C. Tai and Z.G. Pei 175

Analysis and Performance Evaluation of a High Thrust Force Density Segmental Stator Linear Switch Reluctance Machine for Low Cost Conveyor Applications
D.H. Wang and X.H. Wang 181

Force Prediction Including Hysteresis Effects in a Short-Stroke Reluctance Actuator Using a3d-FEM and the Preisach Model
N.H. Vrijsen, J.W. Jansen and E.A. Lomonova 187

Fast Optimization of a Linear Induction Motor by 3-Level Space Mapping Technique
J.L. Gong, F. Gillon and P. Brochet 195

Development of a Segmented Linear Variable Flux Reluctance Motor with DC-Field Coil
D. Wu, Z.Q. Zhu and R. Nilssen 203

Research on Power Supply Strategies of Long Stroke Primary Segmented Permanent Magnet Linear Synchronous Motor
L.Y. Li, H. Zhu, M.N. Ma and C.C. Chan 209

Electromagnetic Design of a New Electromagnetic Planetary-Gear Machine
P. Zheng, J.G. Bai, C.D. Tong, Y. Sui and Z.Y. Song 215

Structural Optimization of an Integrated Winding Structure Short-Stroke Planar Motor Driven by Square DC Coils and Permanent Magnets
H. Zhang, B.Q. Kou, H.L. Zhang, Y.X. Jin, C.N. Zhang and L.Y. Li 221

The Design Method for Actuators with Field Magnets of Dual Halbach Arrays
M. Morishita and T. Fukuda 227

Linear Vernier Machine with Permanent Magnets only on Armature Side
S. Shimomura and M. Takano 233

Thrust Optimization and Thermal Analysis of a Water-Cooled Double-Sided Permanent Magnet Linear Synchronous Motor
X.M. Zhang, Q.F. Lu, C.Y. Cheng, J.M. Shi, Y.Y. Ye and X.Y. Huang 241

Analysis and Comparison Study on the Characteristic of High Power LIM and RIM for Traction Applications
K. Wang, L.M. Shi and Y.H. Li 247

Design and Analysis of a Novel 2-D Permanent Magnet Array for Planar Actuator
L. Guo and H. Ding 253

The use of Quadrature Axis Flux Barriers in Linear Synchronous Machines
T. Cox, S.J.O. Proverbs and J.F. Eastham 258

Modeling and Design Optimization of Contactless Sliding Transformer System for Ropeless Elevators
P.L. Wang, X.Z. Xu, B.Y. Du, H.C. Feng, X.D. Wang and J.K. Si 264

Design and Electromagnetic Analysis of a Double-Sided Permanent Magnet Linear Synchronous Motor
X.M. Zhang, C.Y. Cheng, Q.F. Lu, Y.Y. Ye and X.S. Tao 270

Cogging Torque Analysis of Novel Dual-Rotor Axial Field Flux-Switching Permanent Magnet Machine
L. Hao, M.Y. Lin, D. Xu, X.H. Fu and W. Zhang 276

Comparison Study of Tubular Linear Surface-Mounted Permanent Magnet Actuator with Different Fractional Slot Winding
C.G. Wu, J.Z. Zhang, Y.T. Chen and M. Cheng 281

Starting Performance of Linear Flux-Switching Permanent Magnet Machine Applied in Marine Direct Drive for Electric Propulsion Applications
Q. Liu, H.T. Yu, J.D. Zhu, S.U. Zhou and C.Y. Liu 287

Considerations for Manufacturing and Experimental Validation of a PM, Tubular Motor for a Matrix Converter Driven Aerospace Application
M. Galea, G. Buticchi, L. Empringham, L. de Lillo and C. Gerada 293

Analysis and Modeling of Eddy Current Damping for Short-Stroke DC Linear Motor
D.H. Pan, J.X. Liu, F.J. Shen, L.Y. Li and M.N. Ma 300

A Linear Stator Permanent Magnet Vernier Machine Using Variable Halbach Arrays
Y. Du, K.T. Chau and M. Cheng 305

Design of a Moving-Coil Linear Generator for Marine Energy Conversion
L. Cappelli, F. Marignetti, E. de Santis, Y. Coia and R. di Stefano 311

A Study on the Structure of Linear Synchronous Motor for 600km/h Very High Speed Train
C.B. Park, B.S. Lee, J.H. Kim, J.H. Lee and H.W. Lee 317

Analysis and Optimization of Starting Characteristics of Tubular Linear Induction Motor
L.Y. Yan, D.K. Ye, X.M. Zhang, X. Shen and Y.Y. Ye 322

Cogging Force Reduction of Permanent Magnet Single-Phase Linear Generator Applied in Wave Energy Conversion System
J. Zhang, H.T. Yu, M.Q. Hu, Q. Chen and L. Huang 328

Design of a Contactless Power Supply for Magnetically Levitated Elevator Systems Integrated into the Guide Rail
R. Appunn, A.K. Putri and K. Hameyer 333

End Edge Characteristics of the Stationary Discontinuous Armature PM-LSM by Installing the Double-Auxiliary Teeth
S.J. Kim, Y.J. Kim and S.Y. Jung 339

Overload Capability of Linear Flux Switching Permanent Magnet Machines
Y. Amara, G. Barakat, J.J.H. Paulides and E.A. Lomonova 345

Comparison of a High Thrust Force Density Segmental Stator Linear Switch Reluctance Machine for with Different Topologies
D.H. Wang and X.H. Wang 353

Using Third Harmonic for Shape Optimization of Flux Density Distribution in Linear Permanent-Magnet Machine
K. Wang, Z.Q. Zhu and R. Nilssen 359

Modeling the Effects of Magnetization Variations on a Permanent Magnet Based Levitation or Vibration Isolation System
D.T.E.H. van Casteren, K.J.W. Pluk, J.J.H. Paulides and E.A. Lomonova 366

Synthetic Boundary Conditions for Analytical Magnetic Field Analysis of Halbach Magnet Arrays
H.Y. Lin, P. Jin and S.H. Fang 373

Influence of Actuator Reluctance Force on Linear Oscillating Systems
X. Chen and Z.Q. Zhu 379

Quantitative Comparison of Linear Magnetic Gear with Different Types of PMs
M. Chen, K.T. Chau, W.L. Li and C.H. Liu 385

Detent Force Analysis of Permanent Magnet Linear Synchronous Motor for Bearing Grinding Machine Application
D.K. Ye, L.Y. Yan, Y.Q. Liu and Y.Y. Ye 390

Multiobjective Design Optimization of Ironless Permanent Magnet Linear Synchronous Motors for Improved Thrust and Reduced Thrust Ripple
L.Y. Li, Y.B. Tang and J.X. Liu 395

Research on Combinations of Primary and Secondary Pole Numbers for Linear Switched-Flux PM Machines with Odd Pole Number of Primary
Y.X. Li, Q.F. Lu, J.T. Chen and Z.Q. Zhu 401

Research of Air-Gap Magnetic Field Distribution of Segment-Powered Linear Induction Motor
J. Rao, J. Xu, D.Z. Liu, X.D. Yang and W.M. Ma 408

Mathematical Model and Characteristics Analysis of the Novel Dual-Redundancy Permanent Magnet Brushless Machine System
Z.Q. Luo and D.L. Liang 418

Analysis of Vibration Caused by Electromagnetic Force on Stator End-Winding of Large Dry Submersible Motor
L. Shan, X.W. Cheng, Y. Fang and X.H. Bao 428

The Design of a Moving-Magnet Linear Oscillating Motor for Linear Compressors
T. Fei and H.T. Yu 433

Linear PM Machines Having Mixed Grade and Unequal Magnet Height Pole
N. Lin, Y. Shen and Z.Q. Zhu 439

Chapter 2: Systems Control of Electrical Drives

New Neural Network Inverse Control of Two-Motor Drive System
M. Kang, W.X. Zhao, J.H. Ji and G.H. Liu 447

Motion Control in a Free Piston Energy Converter Based on a Neural Adaptive PID Decoupling Controller
Y.M. Lu, X.F. Huang, J.P. Wang and Z.Q. Zhu 454

Analysis on Single Photovoltaic Grid-Connected Inverter Control System
H.F. Liao and Q.F. Liang 461

A New Burn-In Test System of Motor Controllers Using Zero-Sequence Current Control
S.C. Lu and Z.P. Pan 468

Digitalization Control and Characteristic Analysis of a Superconducting Inductive Energy Management System
J.X. Jin, W. Xu, X. Zhou and X.Y. Chen 474

An Effective Direct Torque Control Based on Space Vector Modulation for DTP-PMSM
W. Zhang, P. Zhang, X.H. Zhang and X.F. Shen 480

The Research of PID and Bang-Bang Controllers Based on the dSPACE
Y. Jiang and J. Ma 486

Design and Control of a Magnetically Suspended Ceiling Actuator with Infinite Planar Stroke
T.T. Overboom, J.P.C. Smeets, J.W. Jansen and E.A. Lomonova 492

The Highest Efficiency Control of the Stirling Linear Generator
H.L. Zhang, B.Q. Kou, S.M. Zhou, L.Y. Li and C.N. Zhang 503

Modeling and Torque Balance Control of the Novel Dual-Redundancy Permanent Magnet Brushless Machine System
Z.Q. Luo and D.L. Liang 509

Condition Monitoring and Fault Diagnosis for Hoisting System Driven by PMLSM
H.W. Zhang, F.S. Yu, X.H. Wang and X.H. Bu 521

Novel Control Platform Development for PMLSM Drive System Based on Virtual Instrument
J.X. Jin, W. Xu, Y. Chen, Y.G. Guo and J.G. Zhu 530

A New SVPWM Dead-Time Compensation Strategy for Low Speed Direct-Drive Motor
L. Cheng, D.R. Sun, X.J. Ye, Y.Y. Ye and Y. Jin 536

Proposal of Novel DTC Method for Long Primary Multi-Segmented PMLSM
L.Y. Li, H. Zhu, M.N. Ma and C.C. Chan 543

Design of Ultrasonic Processing Circuits in Borehole Sediment Thickness Measurement
D. Fan, Y. Gao and Q.G. Cai 549

Three-Degree-of-Freedom Dynamic Model Based IT2RFNN Control for Gantry Position Stage
P.H. Chou, F.J. Lin, C.S. Chen and F.C. Lee 554

The Research on Switch-Linear Hybrid of Precise Current Source
L.Y. Li, Q.M. Chen, J.X. Liu, H. Zhu and G.J. Tan 559

Short Circuit between Turns in Stator Winding of Induction Machine Fault Detection and Diagnosis
Y. Soufi, T. Bahi, H. Merabet and S. Lekhchine 565

Extended State Observer for Sensorless Single Phase Stirling Linear Generator Drives
S.M. Zhou, L.Y. Li, H.L. Zhang, B.Q. Kou and Y. Zhang 572

Study on SVM-DTC and Sensorless Technique in Long Primary Segmented Permanent Magnet Linear Synchronous Motor
L.Y. Li, H. Zhu, M.N. Ma and C.C. Chan 577

Iron Core Hysteresis-Based Position Sensorless Control of PM Brushless DC Motors
W. Sun, J.X. Shen, P. Li and K. Wang 583

The Design of Trigger Circuit for Power Thyristor
X. Jin and K. Hu 589

Design of Single Neuron Adaptive PID Based on Quadratic Performance Index for Linear DC Motor
L.Y. Li, Q.M. Chen, J.X. Liu, H. Zhu and G.J. Tan 593

Study on PMSM Integral Backstepping Controller Based on RBF Neural Network
Q. Yang, N.N. Zhao and M.H. Zhang 599

Control System of Switched Reluctance Linear Motor Drive Based on TMS320F2812 DSP
T. Wang, Y. Huo, X. Zhang and Q. Wang 606

Simultaneous Control of Traction and Levitation of Linear Induction Motor Driven by Additional Frequency Component Synchronous with Motor Speed
Y. Kotani, T. Morizane, K. Tsujikawa, N. Kimura and H. Omori 612

Simulation of Switched Reluctance Linear Motor Drive under Different Velocity Control Algorithms
Y. Huo, X. Zhang and C. Sun 619

S-Curve Algorithm Based on SCM
C. Wu, Y.W. Ge, G. Zhang and T. Bu 626

Speed Control of PM Linear Synchronous Motor Based on Disturbance Observer and Single Neuron PID Controller
Y.X. Tu, L.R. Huang, Y.Y. Ye, Y. Zhang and J. Ma 631

Control Strategies for Mechanically-Coupled High Speed Linear Drives
M. Rehm, H. Schlegel and W.G. Drossel 637

Research of Sliding Mode Control with Integral Compensator for Permanent Magnet Linear Synchronous Machine
Y.Q. Liu, D.R. Sun and Y.Y. Ye 646

Low Speed Compound Direct-Drive Permanent Magnet Synchronous Motor Control Systemwith Load Torque Compensation
L. Cheng, X.J. Ye, D.R. Sun, Y.Y. Ye and Y. Jin 652

Open-Circuit Fault Diagnosis and Fault-Tolerant Control of IPMSM System
K.P. Hao and H.M. Li 658

Optimal Time Control for a Magnetic Levitation Linear Servo System
B.Q. Kou, F. Xing, C.N. Zhang and L. Zhang 670

Piston Engine Fuel Injector Synthetic Clearance Overrun Fault and its Control
F.J. Ding 676

Frequency Control System of Liner Motor Based on AVR Micro-Controller
X.J. Ye, D.R. Sun, L. Cheng, Y.H. Yao and Y.Y. Ye 681

Digital Current Loop for Permanent Magnet Linear Synchronous Motor Based on DSP and FPGA
Y. Zhang, X.M. Zhang, Q.F. Lu, Y. Chen and Y.Y. Ye 686

Design and Implementation of a High-Performance PMLSM Control System with Deadbeat Current Control and SMC
L.Y. Li, Q.B. Guo, J.X. Liu and T.C. Wang 692

Output Voltage Control of Movable Contactless Power Transfer for Linear Induction Motor
H. Cai, L.M. Shi, Z.H. Zhang and Y.H. Li 698

Improved Model Based Predictive Torque Control Strategy with Fast Dynamic Response for Flux-Switching Permanent Magnet Machines
W. Xu and W.W. Yang 704

Field-Circuit Coupled Modeling for Linear Induction Motor Drive System
Z.H. Zhang, L.M. Shi, H. Cai and Y.H. Li 711

Chapter 3: Automation, Control and Mechatronics

Study of Power System Protection Devices Based on Automation Open Hardware Platform
B. Cai 721

Industrial Robot Mechanical Transmission Structure Design Analysis
G.L. Feng 727

Anticipation in Robot Navigation and Mining for Intresting Patterns
A. Gorbenko and V. Popov 731

Dynamic Simulation of Electric Automobile Drive Motor Based on ADVISOR
Z.Z. Zhang 735

Algorithm of Coal Mine Rescue Robot Model Based on PSO and GEP
X.C. Wang and X.G. Yue 739

The Research on NC Evolution and Prospects of Textile Machinery in Dong-Guan
L.G. Li 743

Automatic Generation of Modules of Visual Recognition
A. Gorbenko 748

The Research of Warehouse Automation System Based on ZigBee & RFID
B. Song, W.Y. Wang and Z. Sun 753

A New Artificial Immune Network Model for Mobile Robot Path Planning
M.X. Yuan, P.P. Zhang, H.Y. Li, S. Cheng and Y. Shen 757

Bionic Locomotion Control on Three-Section Leg of Quadruped Robot
J. Li, X.Y. Zhang, A. Liu and X.F. Zhang 762

Study on Monitoring of the Integrated Automation System with Web Technology
B.X. Sun 768

Research and Practice of Monitoring of the Integrated Automation System of Web Technology
D.F. Wu 772

A Precise Positioning System Based on DGPS and GIS for Automatic Driving Vehicle
J.G. Zhang, H.J. Li and B. Liu 776

Study of Intelligent Monitoring System of Low-Voltage Power Distribution
M. Sun 781

Design and Realization of Intelligent Energy-Saving Circuit
L.F. Li 785

The Vehicle Adjustable Suspension System Based on Data Mining
G.X. Li, K. Huang and K.F. Huang 790

N-C Machining Technology Development Present Situation and the Trend
H.C. Yang and M.Q. Wu 796

Research of Active Noise Control For Transformer Based on Piezoelectric Ceramic Actuator
Y.T. Chen, J.Z. Zhang, C.G. Wu and M. Cheng 800

The Design of Remote Intelligent Irrigation System Based on Web Servers
W. Li 806

Dynamic Modeling and Tracking Control Simulation for Large Electro-Hydraulic Servo System
F. Li, K. Wang, C.L. Ma and J. Yu 811

A New Method to Deploy and Control the Distributed Jamming against Phased-Array Radar
X.Y. Wang, J. He, Z.B. Hu and K. Wang 817

Closed-Loop Identification Using Laguerre Series Expansions for Second-Order Plus Time Delay Model
Q.B. Jin, S.N. Li, Q. Liu and Q. Wang 822

Application of DCS Control System in Air Separation Unit
C.L. Yuan, Y.H. Liu and W.L. Zhou 834

Design of Helicopter Manipulating Control System Based on LabVIEW
Z.G. Wu, X.M. Peng, G.C. Zhang, B. Xu and Q.L. Liu 839

Study on the Network Control of Construction Machinery Control and Computer Operating System
Q. Rong 845

A Robust Control Approach to Network Control Systems with Short Time Delays
Z.J. Dong, Y.G. Ma and W. Peng 849

Design of an Active-Vibration System Based on Sky-Hook Damper and Impedance Control
W.S. Yao, P.W. Hsueh and M.C. Tsai 860

Analysis of the Auto Intelligent Control Based on RFID Technology
X.J. Cao 866

Model Reference Adaptive Control of HMB Based on PSO-LS-SVM Inverse
X.X. Liu, J. Chen, Y. Du and K. Shi 870

Based on Programmable Controller Manipulator Automation Control Design
M. Ji and M.Q. Wu 876

Research of Carbon Monoxide Monitor System Based on Lonworks Industrial Control Network
Q.B. Xia 880

Research of Fuzzy PID Control Based on VHDL
X.S. Wang 885

Designed of Wireless Intellectualized Temperature Control System in Tobacco Preserve Based on Fuzzy-PID
X.H. Guo 890

Design of Mini-Message Bus Control System Compiler
Y.X. Li and G.Y. Li 895

Design of Wireless Intelligent Home Control System Based on Zigbee Technology
Y.H. Jiang and H.X. Yang 900

Research on Fuzzy Control in the Greenhouse for Humidity Monitoring System
Y.W. Zhang 904

The Control of the Braking Stability of Active Rear Wheel Steering Vehicle Based on LQR
Q.J. Liu and S.Z. Chen 909

Computer Information Management System for Mechanical Enterprises
J.L. Jiang 914

Study on Integration of Computer Aided Process Planning System and PDM System
H.X. Yang, W.D. Chen and H.S. Feng 919

Analysis of the Vibration Characteristic for an Orbital Friction Vibration Actuator
Y. Li, F. Xu, J.H. Hu, J.B. Zou and K. Liu 925

Design and Research on Online Sampling Device of New Cigarette Making Machine
W. Ying, G.B. Yi and Y. Zhou 931

Design of Intelligent Electrical Appliance System
B.Q. Li and Y.L. Chen 936

Control System Design of Improved Vertical Lifting Stereo Garage with Linear Motor as Transverse Device
D.R. Sun, X.J. Ye, L. Cheng, Y.H. Yao and Y.Y. Ye 940

Characteristics of a Fix-End Torsion Spring Oscillatory Actuator with Molded Silicone Rubber
Y.G. Bu, H. Kinjo, K. Oyaizu, K. Inoue, T. Mizuno and Z.H. Duan 946

Research and Design of the CAN/LIN Gateway Circuit in Vehicle
P. Huang 952

Research and Design on Digital Mask Lithography Control System
Y.Q. Gao, P.Q. Wang, Z.J. Shi and N.N. Luo 957

Study on PV Grid-Connected Inverter System MPPT Control
Q.F. Liang and H.F. Liao 962

Chapter 4: Sensors, Measurement Systems and Technologies

Application of Optical Fiber Sensor System in Offshore Oil Field
S.S. Guo, Y.Y. Wang, C. Wang and X.H. Liu 971

A Radar Equipment Warehouse Management System Research Based on the Internet of Things
H.H. Shen, Q.H. Liu, Y.Y. Han, Y. Liu and Z. Tang 975

Novel Sensor Design and Application for Detection of Dangerous Contaminated Marine Biotoxins
L.Y. Zhao 980

The Problem of Sensor-Mission Assignment in Wireless Sensor Networks
A. Gorbenko and V. Popov 985

Analysis on the Applicability of the Post-Stack Seismic Attribute Recognition Method in the Sand Bodies of the River-Way of Fuyang Oil Layer
X.R. Zhang, S. Fang, J.P. Liu and Y.H. Lou 989

New Flexible Wrist Force Sensor Operated by Robot Based on Parallel Kinematic Machine
C.L. Yuan, L.S. Kong, W.L. Zhou and J.B. Yang 995

Analysis on the Angle-Based Pattern Recognition Algorithm
S.H. Chen 1000

Design of WSN Nodes Drivers Based on Embedded Linux
J.W. Ju and X. Gao 1005

Design of XBT Automatic Projection and Measurement System
Y.B. Men, Y.J. Li, X.M. Li and D.L. Zhang 1010

SMS Based Monitoring System of TV Transmitting Station
X.J. Bai and L. He 1016

Analysis on the Structure and Monitoring Techniques of Cardiac Monitoring Equipment
H. Xu 1021

The Regularization Method with Morbid Problems of Equality Constraints
C.Z. Ma, Y.L. Du, Y.W. Gu, J. Fu and Q.M. Gui 1025

The Design and Realize of Wireless Electronic Timer for Track and Field Base on CC2430
F.X. Mao 1034

The Test and Research of Starting Speed Base on LabVIEW and Infrared
X.W. Xiong 1039

The Food Warehouse Temperature Measurement System Design Based on Microcontroller
Q.B. Xia 1043

Pool Boiling Heat Transfer Characteristics on Twisted Tube Bundles in a Flooded Evaporator
J.C. Zhou, D.S. Zhu, Z.Q. Huo, J. Li and Y. Li 1049

The Study and Application on Water Treatment Technology of High-Frequency Electric Field
S. Li and H.F. Wang 1056

Discussion on Magnetic Resonance Imaging Failure Analysis Methods
E.Y. Guo 1060

Analysis on the Infrared Imaging Diagnosis Technology for the Insulation State, Fault Types, and Components of Coupling Capacitor
L. Le 1064

The Study on Electric Parameters Automatic Test System
Q.L. Zhou 1068

Research on Traceability Method for Transmission Quality Problems
L.Z. Li 1072

Selection of the Intelligent Power Distribution Cabinets for the Computer Room of Video Monitoring Data Center
P. Chen and P. Hu 1076

A Novel Method on Real-Time Measurement of 2-DOF Motions of Spherical Ultrasonic Motor
Z. Guo, Y. Bai, L. Yi, J.F. Guo and J. Wang 1080

Realization of Algorithm for Wideband Sound Source Localization in Video Monitoring System
L. Li, Y.G. Su, S. Tian, Y. Li and Z.T. Li 1086

Investigation and Simulation of an Alarm Security Monitoring System
A.R. Zerek, Y.S. Ettomi and O.A. Soltan 1092

Design and Implement of User-Definable Monitoring System for In-Transit Hazardous Materials Based on Internet of Things
Z.Y. Yang and Y. Zhou 1097

Research and Design of Tunnel Monitoring System
W.B. Qu 1102

Design of Remote Health Monitoring System Based on Bluetooth and IP
H. He and C.Y. Gong 1107

Analysis of Circuit Junction of Automatic Fire Alarm System
M.L. Yu 1111

The Design of C8051F120-Based Remote Island Meteorological Measurement System
Y.B. Men, L.Q. Feng, F.L. Cheng and Y.F. Zhang 1115

Abrasion, Clearance and Matlab-Aided Optimized Profile Design of Cam Mechanism
Z.J. He, P. Xu and J.R. Lu 1120

Thermal Analysis of a Fluid Immersed Brushless DC Motor for Aerospace Applications
W. Chen, X.Y. Huang, J. Ma and Y.T. Fang 1126

Chapter 5: Data and Signal Processing

Analysis on the well Constraint Inversion of the Jason-Based Layer Flattening Seismic Data under the High-Resolution Isochronous Framework
S. Fang, X.R. Zhang, J.P. Liu and C.L. Xie 1135

Establishes the Precise Three-Dimensional Terrain Method Study Based on Anudem
Z.H. Zhou, J. Ma and W.D. Xu 1142

The DSP Design and Implementation of a Directional Audio System through N-Order Approximate Square Root Method
Y.C. Xu, Z. Liu and J.Y. Guan 1147

Analysis of Sensitivity and Diffusion Based on Video Fractional Spectrum
J.G. Jin, L. Wang, M.J. Wei and J.J. Su 1152

Design and Implementation of Speech Recognition System Based on FPGA
B.N. Yi 1156

Design and Development of Vehicle License Plate Recognition (VLPR) System to Improve Parking Lot Management
Y. Chen, B. Hu, B. Li, Q. He, H. Mo and G. Xiong 1160

Investigation the Influence of DCT Coefficients on the Image Retrieval Performance
S.L. Zhang, J.T. Dong, T.T. Shao and X.P. Zheng 1165

Target Type Recognition Algorithm of Imaging GIF Fuze
B. Liu, Y.Y. Fan and J. Guo 1170

A Speech Feature Extraction Algorithm Based on the Nonlinear Hopf Cochlea Model
J.G. Xing, M. Xu and J.X. Zhu 1176

Radar Orthogonal Frequency Division Multiplexing Waveforms Agility Processing with Compressive Sensing
F. Xie, F. Liu and X.H. Ye 1181

Target Tracking Technology Basing on Pedestrian Video
H. Shen and H. Liu 1187

Online Rebar Recognition Based on Multi-View Images
H.P. Fang, K.L. Fang and X.H. Liu 1192

Design and Implement ComGIS System
Y.W. Zhao, R. Gao and T. Zhang 1196

Study on the Extraction of the Water Bodies from Remote Sensing Image Using ENVI Software – Applied to the River Environmental Protection in Qinzhou
W.R. Qin 1200

Clustered-Dot Halftone Watermark Using Phase Modulation
P.F. Liu, H.W. Ai and L.Q. Ya 1205

Anti-Print and Scan Halftone Watermarking Algorithm Based on Edge Detection
H.W. Ai, P.F. Liu and S.C. Dong 1210

Wavelet Based De-Noising Using Self-Optimizing Method for ECG Signal
F.Y. Xiao, W. Tang and N. Fu 1214

Research on the Structure Characterization Algorithm of the Complex Network Cluster
L.X. Shuo, Y.Y. Chen and Z.X. Zhang 1220

The Research of wxWidgets Applied to Power System Graphics Software Development
K.W. Wang 1224

Intrusion Detection Engineering Management Based on Optimization of BP Neural Network
J.H. Zhao 1228

Inland Ship Recognition Algorithm Based on Neighboring Static Region Substitution for Background Updating
Z.Y. Wang, L. Xie, Z.Z. Yan and X.P. Yan 1233

The Recognition of Handwritten Digital Based on BP Neural Network
S. Gao 1239

Study on Fuzzy Clustering Algorithm of Spatial Data Mining
T.T. Zhao 1244

Structural Optimization of Double-Secondary PMSLM Based on Spatial Harmonic Suppression
P.P. Chen and J.W. Zhao 1251

Signal Collector Based on LabVIEW
K. Xia and Z.B. Yang 1257

Research on Adaptive Image Inpainting Approach Based on TV Model
M. Zhou 1262

A Relationship between Parameters of Two Representations of Discrete LTI ARMA System Model and the Corresponding Device Fingerprints
H.L. Yuan, Z.H. Bao and Y. Yan 1267

Analysis on the Application the of Ultrasonic Technology in the Medical Field
H.Y. Jiang and J.L. Shi 1274

Analysis on the Application Principles and Development Characteristics of Multispectral Image Technology
L. Lu 1278

The Virtual Endoscope of Neurosurgery Used for Transnasal Approach
J.C. Mo and D.M. Yao 1282

Dual K-Type Ridge Estimation of Inverse Problem with Morbid Equality Constraints
C.Z. Ma, J. Fu, Y.L. Du, Q.M. Gui and Y.W. Gu 1289

A New Class of Biased Estimate
C.Z. Ma, Y.L. Du, Q.M. Gui, Y.W. Gu and J. Fu 1296

Construction Method of Perfect Reconstruction Condition-Based Biorthogonal Wavelet
R.M. Li, L. Gong and Q. Xiong 1305

A Novel Channel Estimation Algorithm for Underwater Acoustic Systems
L.L. Wu and N.P. Cheng 1309

RFID Tags Collision Resolution on Physical Layer by Using C-Means Clustering Algorithm
Y. Tan, Y. Zeng, Y.F. Ling and H. Wei 1314

The Simulation Design of the Base Station Enclosing Structure's Heat Transfer Model
X.C. Shen, B. Dong and M.W. Zhao 1319

Study on the Smart Handheld Wireless Oscilloscope
J. Jiang, H. Qu and S.L. Tian 1325

Research and Implementation of Speaker Recognition System
B.J. Cui 1331

The Design of Embedded System Based on DaVinci DSP6467
D.T. Ma 1336

Study on the Application of UWB Positioning Technology in Multiplayer Mechanical Motion Capture System
G.T. Shi and S. Li 1341

Research on Clustering Recognition Algorithm without any Prior Information
L.X. Shuo, Y.Y. Chen and Z.X. Zhang 1346

An Automotive Airbag Detection Method Based on Image Processing
X.X. Shao and M.J. Xie 1350

Application of Face Detection Technology in Automatic Sweep Robot
G.X. Li and K. Huang 1355

The Shell Processing Technology Analysis
Z.M. Jia 1360

Analysis on Gravure Hot-Air Drying Parameters Based on Matlab
L. Cao and A.N. Wang 1363

The Design and Simulation of DDS Based on Multisim and C51
J. Ma 1368

Modeling and Case Study of the Production Line Layout System
Y. Zhao, X.Y. Pan and C.C. Li 1373

Study on Knowledge Management in Process Optimization of Manufacturing Enterprises Based on Data Mining
Y.B. Xiong and X.F. Zhong 1381

Application of the Gaussian Shaping Filter Technique on SoPC
C.H. Zeng, Z.L. Fang, X.J. Feng, N. Zhang, B. Qin and Z.S. Duan 1388

The Regularization Method Based on Complex Collinearity Diagnostics and Metrics
C.Z. Ma, Y.W. Gu, J. Fu, Y.L. Du and Q.M. Gui 1393

The Discretization Algorithm Based on Rough Set and its Application
Z.C. Shi, Y.X. Xia, C.G. Yu and J.Z. Zhou 1399

Algorithm to Deal with the Problem of Placing Cameras in Museum
S. Li 1404

Chapter 6: Information Technologies and Information Security

A Cloud Architecture for Service Security Management
W.Z. Jiao and X.X. Ye 1413

Design and Research on Intrusion Detection System in the Computer Network Security
Y.T. Sun 1418

Cheating Prevention Method in Visual Cryptography by Using Random Grids
H.W. Lin, X.S. Yang and S.W. Wang 1423

Security and Privacy Issues of the Internet of Things
C.C. Niu, K.C. Zou, Y.L. Ou Yang, G.J. Tang and Y. Zou 1429

Information Security System of the New Energy Automobile Production Line Based on RFID
X.J. Ruan 1434

Performance Analysis of Bit Error Rate in Full-Duplex Wireless Communications with Analog Cancellation Error
Z.J. He, S.H. Shao, Y. Shen, C.J. Qing and Y.X. Tang 1439

Study on the Design of Trusted Secure Cloud System Structure
X.L. Wang 1444

Research on Computer Wireless Network and Information Security
W.Z. Guo 1450

Study on the Design of Computer Interlocking System Security's Reliability
Y.P. Chen 1454

The Research of WSE-Based on Web Services Security
A.M. Hu 1458

The Design and Implementation of Smart Warehouse Management System (SWMS) Based on ZigBee
Z.W. Hu and X.J. Sun 1461

Research of Secure Data Aggregation in Internet of Things
F.Z. Sun 1466

Research on DEM Construction Method of Interpolation
S.Q. Yang and L.F. Miao 1470

Real Estate Intelligence System Based on Decision Support Technology
Z.F. Li and L.Y. Zhang 1475

Discussion of Information Exchange Process of Electrical and Mechanical Open System
Q. Wang and H.H. Jian 1479

Improving the Performance of RFID Tag Anti-Collision for Capture Effect
X. Yang, H.F. Wu, Y. Tan and R.Q. Lin 1484

Design and Implementation of Railcar Management System Based on SSH
L. Cheng, W. Ge and B. Xue 1489

Method of Data Collection in Requirement Analysis Phase Based on ERP
W. Yao 1495

Programming and Implementation of File Encryption System Based on Matrix Transformation
H.F. Xiang 1502

Analysis of the Universal Embedded Database Model Based on TPMS
J. Li and Y.J. Zhang 1507

Discussion on the Software Engineering Data Modeling in OWL
Y. Yang 1512

Role-Based Risk Adaptive Access Control Model
D.H. Huang and Y.Q. Yang 1516

Construction of Virtual Packaging Lab Based on Virtual Instrument and Information Control
L. Cao, Y. Yuan and M. Li 1522

Service-Oriented Computational Biology Community Cloud
Z.F. Li, X.C. Wang, Q. Guo and L. Kang 1527

Research on Network Public Opinion Monitoring Based on Matrix Theory and Mathematical Statistics
S.H. Feng 1533

Research and Implementation of Embedded Linux System Power Optimization
J.Q. Wang and F.Y. Yuan 1538

Research on a Development Framework of the 3D Interactive System Based on Andriod Phone
H. Peng 1542

Design and Implementation of a Fiber Optic Sensing Alarm System
Z.D. Chen 1548

Hybrid Combination of Machine Translation with Part-of-Speech Analysis
X.X. Hu 1552

Chapter 7: Communications

Research on Wireless Communication Technology Based on Cooperative Diversity
X.J. Sun and Z.W. Hu 1561

Analysis of the Application of Soft-Switch Technology in Mobile Communications
W.H. Ouyang 1565

A Wireless Mesh Network Node Query Method Research
Z.G. Wang 1570

Coverage Optimization Mechanism Based on Weighted Genetic Algorithm and Constrained Genetic Algorithm
C.W. Ma 1574

Research of GMR-1 in GEO Satellite Mobile Communications
C.M. Wu, Y. Shi, Z.P. Xu and Y.X. Cheng 1580

Study of Combined Function of Computer Network and Communication Technology
M. Liu 1586

Discussion on the Digitalized Transformation Trend of Computer Network Communication System
W.H. Ma 1590

Discussion on the Measures for Enhancing the Signals of Wireless Communication Network Sites
W.H. Ma 1595

Realization Scheme for LAPDM on GSM Virtual Base Station
K. Wang and G.J. Wan 1600

Component Analysis of GPRS Traffic Based on LLC Frames from a Live Network
H. Wang, Z.M. Lei, X.L. Gui and X.L. Wu 1605

On an Embedded Terminal Application of Cyber Source Allocation Scheme
Y. Chen 1610

Research on Vector Algebra Algorithm of Network Coding
X.S. Mei 1614

The Design and Implementation of the Employment Network Based on Lightweight Structural Frame Technology
H.Q. Liu 1619

The Design of Intelligent DNS Server on Campus Network
Y.L. Wang and J.H. Wang 1623

Study on Timing Recovery Loop Filter of the Digital Communication System
P. Wang 1629

Study on an Adaptive Distributed Linear Dispersion Code
Y. Li and W. Liu 1633

Energy Strategies for Wireless Sensor Networks
L.N. Yuan 1639

Chapter 8: Materials

Evolution of Microstructure, Precipitate and Magnetic Properties with the Different Annealing Temperature in High Grade Nonoriented Electrical Steels
T. Ye, C. Zhou and Z.Y. Gao 1645

The Application of New Environmentally Friendly Materials in Environmental Protection
Y.H. Zhao 1652

Analysis of New Materials of Computer Memory
Q.J. Zheng 1657

The Establishment and Calculation of Activated Carbon Adsorption Tower
J.Y. Yin and S.J. Zhou 1661

Study on Surface Characteristics of Vacuum Aluminized Paperboard
L. Cao and Y. Zhang 1666

The Cracking Research of Cladding Layer in Arc Cladding
Y. Cui, G.Y. Mo, T.B. Li and J.Y. Wang 1671

Research and Development on Self-Cooling Beverage Can Based on Refrigeration Material
L. Cao and H.H. Shi 1676

Design and Development of Cushioning Material Database Based on Cushioning Material
L. Cao and M. Li 1681

Study on the Influence of Nonlinear Effect on Pulse Trapping in Photonic Crystal Fiber
M. Yang, S.B. Li and K. Xia 1685

The Influence of the Technical Parameters on the Quality of Engineering Ceramics by Abrasive Waterjet
F.L. Zhang and J. Zhu 1689

Properties and Manufacturing Method of Silicon Carbide Ceramic New Materials
B.F. Liu 1693

Application of Nanometer Materials in the Design of Clothing
M.C. Ma and Z.H. Jiang 1698

Influences of Organic Compounds on Laccase Activity Tests
Y.L. Zhang, H.B. Zhang, Y.S. Zhu, M.L. Cao, M.Q. Ai and F. Huang 1702

Study on New Tea Soap Based Chelating Agent Synthetic Materials and the Repairing Effect of Heavy Metal Pollution in Environment
B.J. Li, L.C. Wang and M.Z. Long 1708

Study of the English Translation of Polymer Composite Materials
G. Li 1712

Application of Fiber Reinforced Composites in Sports Equipment
H.L. Wang 1717

The Equivalent Circuit Model of Floating-Gate Single-Electron Memorizer
L. Gong, R.M. Li, Q. Xiong and S.H. Zhou 1721

Elastic Properties of Cellulose by Molecular Dynamics Simulation
X.M. Zhang, S.Q. Shi and J. Cao 1726

Chapter 9: Technologies and Materials in Construction

Study on the Limit Value of the Spandrel-Braced Stone Arch Bridges
C. Kang 1733

Analysis on the Mass Concrete Test and Application in Stadium Project
C.H. Xu and Z.F. Jing 1738

Research on the Application and Energy-Saving Assessment of Phase Change Materials in Intelligence Architectural
Y.H. Jing 1741

Modified Duncan-Chang Model Considering Physical Properties of Saturated Clays
X.C. Wang, R.Q. Xu and J.L. Qian 1746

3D FEM Analysis on Settlement Characteristics of Composite Foundation Using Ram-Compacted Pile in High-Speed Railway
C. Shi, Y. Huang and R. Liu 1753

Decision Algorithm of Surrounding Rock Grades Based on the Variable Fuzzy Sets
Q.J. Zhang and J. Yang 1758

Damage Mechanism and Numerical Analysis of SRAP to Reinforce Hollow Slab Beam Interface
J.X. Zhou and B. Zhang 1765

Study on the Construction Technology of the Graded Granular Cushion at the Bottom of the Subgrade in Highway Engineering
C. Li, H.X. Li and M.Z. Zuo 1771

Study on the Evolution Mathematical Model for the Downstream Riverbed of Water Conservancy Hub Project
X.Q. Tian 1776

Discussion on the Application of the Concrete-Filled Steel Tube in Civil Engineering
C. Zhao 1781

The Inversion Analysis for Mechanical Parameters of Dam Based on the Artificial Fish Swarm Algorithm
G. Yang, H.Z. Liu, K. Zhu and D.S. Liu 1786

Chapter 10: Mechanical Engineering and Applications

The Mechanization of Rice Transplanting Cultivation Technique for High Yield
J.Y. Sun 1793

Discussion on the Accurate Modeling of Cylindrical Indexing Cam
Q. Peng 1798

A Truck Cab Abnormal Vibration Test and Analysis
Q. Li, Y.F. Liu and X.Y. Xu 1803

Discuss on Lightning Protection of Electrical Engineering
H.J. Peng 1808

Finite Element Analysis for Web Press's Fold Cutter
Y.C. Yuan, Q.Q. Jia and Z.Y. Shi 1813

Research on the Legal Claim in Large-Scale Mechanical and Electrical Engineering in Construction Project
W.F. Zhou 1818

Simulation and Optimization Design of Inversion Six-Bar Linkage on Loader
Y.L. Zu and J. Wei 1822

Vehicle Structure Design an Analysis – Design of Vehicle Braking Disc Based on Knowledge Engineering of CATIA V5
P.Q. Chu, K. Che, B.T. Zhang and A.R. Wei 1826

Experimental Study on the Reverse Cleaning and Regeneration of Diesel Engine's Metal Mesh Filter
Y.W. Zhang 1834

Formula SAE Racecar Suspension System Design
J. Li, S.H. Yu, N.F. Zhang, H. He, Z.J. Yang and Y.M. Jia 1840

Study on the Trajectory Simulation of the Ballistic Missile
H. Wang, C.M. Tong and J.J. Sun 1845

Research on the Ballistic Model and Simulation of Sensing Reconnaissance Submunition in Falling Stage
J. Li, Y. Li, Z.Y. Zhang and G.S. Liu 1851

Thermal Analysis of FSAE Racing Brake Disc Based on Algor
S.H. Yu, J. Li, N.F. Zhang, M.L. Jiang, Z.P. Liu and G. Zhu 1856

Appearence Design of Construction Machinery Based on Perspective of Industrial Design
Y. Zhou 1861

Research on the Whole Stability of WZ30-25 Backhoe Loader
Y.L. Zu and H. Rui 1866

Turning and Milling Machining Center Spindle Box of Three Dimensional Design
X.H. Chen 1870

Study on the PDC Bit Optimization Design Based on Rotary Steering Drilling
G.M. Han 1874

Regulation of Bolt Stamping Process
Y.H. Wu 1879

Dynamic Analysis of Support System of Permanent Magnet Traction Motors for High-Speed Trains
T. Li, J.C. Zhang and Y.T. Fang 1883

Profiled Hole Stamping Progressive Die Design
X.H. Gao and M.Q. Wu 1889

Chapter 11: Geology, Exploration and Processing of Mineral Resources

Application of Key Technologies of Expansion Pipe in Oil and Gas Well Project
Y. Wang 1895

Study on the Construction of Database of Mineral Resources and Reserve Space
S.J. Shi, L.X. Shuo and X.T. Cui 1899

Study on Comprehensive Measures of Long-Term Stable Dense Oil Reservoir
Y. Wang, D.B. Shao, H.J. Lu and X.B. Lu 1904

Cenozoic Tectonic Evolution and Controlling Factor on Hydrocarbon Accumulation in the Southern East China Sea Shelf Basin
Y. Bai, H.L. Wang, Q.R. Li and P. Wu 1908

A Study of Evaluation Model of Human Errors at Risk for the Petroleum Operation
B.F. Liu and S.H. Liu 1914

Optimization on Supply Chain Network Based on High-Tech Products Life Cycle
L. Zhang and Y.Y. Kong 1920

Matlab and Geoscope Joint Inversion Technology under the Constraint of Isochronous Facies Controlled Multi-Point Geological Model
S. Fang, X.R. Zhang, J. Li and C.L. Xie 1926

Study on the Geocad-Based Stochastic Model for the Reservoir Controlled by the Facies of the Fuyang Oil Layer in Gaotaizi Area, Songliao Basin
X.R. Zhang, S. Fang, J.P. Liu and M.X. Yang 1935

Study on the Correlation of Shallow Source Earthquake and Mine Dynamic Disasters in the Weast of Beijing
T.W. Lan, H.W. Zhang, J.Y. Yu and J. Han 1942

Chapter 12: Urban and Land Resource Planning, Transportation and Logistics

Prediction Scheme of Railway Passenger Flow Based on Multiplicative Holt-Winters Model
Z.M. Wei and H.C. Song 1949

Research on Integration of Information Flow and Logistics in VMI Based on TPL
L.Z. Gao 1954

Research on Electronic Products Recycling
Y. Zhao 1959

Research on Inventory and Transport in VMI Mode
X.Y. Che 1964

Cold Chain Logistics Temperature Monitoring System Based on Internet of Things Technology
L.Z. Wu and Y. Zhao 1969

Earthwork Calculation Based on GPS Discrete Elevation Points
R.B. Qiao 1974

TEAP: A Traffic Jam Early Alert Protocol in VANET
Q. Jiang and L.Y. Yu 1978

Application Models of IOT
X.H. Guo 1983

Traffic Engineering Product Chromaticity Testing Software Development
M.L. Duan, Q. Xiao, J.Q. Yang, C. Liu, L.J. Wang and X.M. Cui 1987

A Research on the Characteristics of Lightning in Hailstorms of Beijing Area by the Method of Analysis the Lightning Detection Data and Numerical Simulation
C.C. Zhang and M. Ma 1993

Study on Allocation for Transportation Mode of Urban Agglomeration Transportation Channel
L.L. Li 1997

Earth's Health Model Based on System Dynamics
Y. Lin, K. Lu and Y. Li 2003

Design on Environmental Emergency Monitoring and Management System Based on GIS
C. Xie, Y. Kuang and J. Wang 2011

Research on an Economic Monitor and Decision Support System Based on Data Warehouse Technology
Y. Kuang and C. Xie 2016

The Application of the Analytic Hierarchy Process (AHP) in Mine Geological Environment Evaluation
S.J. Shi, L.X. Shuo and X.T. Cui 2020

Study on the PNN Neural Network Inversion Based on the Integration of Seismic Multi-Attribute with Frequency Division RGB - Fuyu Oil Layer in Gaotaizi Area, Songliao Basin is Taken for an Example
X.R. Zhang, S. Fang, J.P. Liu and M.X. Yang 2025

The Managing and Analysis of Data Information in Monitoring the Passenger Flow
X.Y. Ji, J. He and J.H. Peng 2033

Chapter 13: Engineering Management and Production Organization

Research on the Talent-Post Matching Model of Material Warehouse Based on Support Vector Machine
S.A. Wang, Q.Z. Zhou and Q.D. Yong 2041

Recognition of Mechanical and Electrical Accessories in Monitoring Equipment in Nursing Work
Y.R. Liu 2045

Discussion on the Problems in Building Construction and Research on the Construction Management
Y.J. Xiao 2050

Engineering Management of Urban Infrastructure Based on Internet of Things
Y. Chen 2055

Construction Enterprise Core Competence Management Research Based on Qualitative Simulation
Z. Qian 2059

Design and Development of the Enterprise Asset Management System Based on EAM
G.X. He 2066

Study on the Maintenance Decision Making of Engineering Equipments Based on Fuzzy Reasoning
J.G. Ni, X.H. He and J.G. Sun 2072

A Status Evaluation Model of Human Errors Probability in Petroleum Operations
S.H. Liu, B.F. Liu and X.T. Liu 2078

Explore the Management of Hydro-Engineering Project and Related Issues about Quality Control
H.B. Tao 2083

Analysis of the Operational Risk Controls in the Electric Power Plant
C.Y. Wang 2087

Artificial Bee Colony Algorithm to Solve Dynamic Economic Dispatch Considering Wind Power Penetration
X. He and G.X. Wang 2092

On Perfecting Construction Hoisting Machinery Inspection Law
C.F. Shan 2097

Analysis of Resonance Transformer Design Based on Electronic Linear Accelerator
H.J. Peng 2102

Application of Cable Grading Perforating Technology in the Oil Field
Z.Y. Liu, F. Zhang, S.Q. Zhang, X.G. Yang and X.Y. Wang 2105

Research on the Unit Commitment of Thermal Power Plant Based on Genetic Algorithm
X. Liu 2110

Chapter 14: Related Topics

A Kind of New Electrolytic Capacitor-Less AC-DC LED Driver
W.L. Chen, Z.P. Wang and X.F. Dong 2117

Application of Jacobi - Conjugate Gradient Method in the Two-Dimensional Magnetotelluric Forward
C.L. Zhu 2123

$C_{6m} \times P_{m6}$
Y.G. Zheng and Q.W. Zhang 2128

Social Work Research under Automation Control
D.D. Wang and S.B. Zhou 2132