

Table of Contents

Preface and Committees

Chapter 1: Advanced Materials Engineering and Processing Technologies

Effect of Solution Casting Temperature on Characteristic of Nafion[®]-Mordenite Composite Membrane for Direct Methanol Fuel Cell T. Apichaya, P. Prapainainar and C. Prapainainar	3
Studying Mechanical Properties Specially Fatigue Behavior of (Polyether Ether Ketone)/Glass Fiber Composites in Aerospace Applications A.S. Najim and M. Adwaa	8
The Applications of the Electron Beam Machining Technology in Research of Materials Science H. Li, H.L. Liu, H.H. Yu and Y.P. Huang	17
Preparation Technology and Mechanical Properties of Al-6Zn-2Mg-2Cu Aluminum Alloy L. Yang, S.N. Wang, L. Lin, W. Wu and L.J. Chen	22
Effect of B₂O₃ Glass on the Sintering and Microwave Dielectric Properties of MgTiO₃-CaTiO₃ C.L. Pan, C.H. Shen, W.C. Lin and S.H. Lin	27
Development of Thermal Insulation from Oil Palm Fiber for Chimney of Fire Tube Steam Packaged Boiler S. Hassan, H.H. Al-Kayiem and A. Ghaffari	31
Effect of Furfural on Structure and Charring Properties of Phenolic Resins F.L. Yang, G.Q. Liu, H.X. Li, W.G. Yang, J.B. Yu, F. Qian and T.F. Ma	36
Combustion Properties of Briquette Charcoal from Durian Peel S. Hirunpraditkoon, S. Intharit, S. Srisumran and P. Wongvirojtana	41
The Analysis of Heavy Metals Pollution in Soil and Ecological Risk Assessment in Estuaries of Jiaozhou Bay, China D. Wu, Y.Y. Chen and J.J. Li	46

Chapter 2: Electronics and Integrated Circuits, Embedded Technology and Applications

New Method to Harmonic Isolation Based on High Selectivity Filter to Control of Shunt Active Filter with Experimental Validation Using DSPACE System M.M. Saleem	53
Static Performance of SiGe HBTs at Low Temperature M. Lakhdara, S. Latreche and C. Gontrand	59
Supervisory Control and FPGA Based DAQ Card S.M. Hafeez and Y.J. Ghauri	64
Research on A.C. Sampling Technique for the Electric Parameters Based on Embedded Linux and Frequency Self-Adapting T. Tao, H.Y. Zhang, X. Zheng, Z.X. Yuan and X.J. Wang	69
A Symmetrical Digital Selecting Type DC-DC Converter with Power Saving Techniques K. Eguchi, Y.N. Zhang, S. Terada and I. Oota	77
Design and Analysis of a Fibonacci Switched-Capacitor DC-AC Inverter K. Eguchi, Y.N. Zhang, K. Fujimoto and H. Sasaki	82
Design and Implementation of an Interleaved Boost DC-DC Converter for PEM Fuel Cells S. Somkun, C. Sirisamphanwong and S. Sukchai	87
Design of High-Resolution FPD System Based on Doglegged Sampling B.L. Zhang and J.Y. Wang	93
The Study on 24 Bits ADC's Acquisition Dynamic Range Extension Method X.X. Hu, Y.T. Teng, X.Z. Wang, C.H. Li and X.Y. Fan	98

Chapter 3: Power System, Heat and Energy Engineering, its Applications

A Protection Scheme of Ac Side Faults of Dc Distribution System Y.B. Gao, J.S. Zeng, P. Qiu, Y. Lu, X.M. Huang and X.D. Xu	107
Reliability Evaluation of Mid-Voltage DC Distribution Network with Multiple Topologies J.S. Zeng, Y.B. Gao, F. Yang, X.D. Xu, P. Qiu, Y. Lu and X.M. Huang	112
An Equivalent Modeling for Synthesis Load of Distributed Network with Small Hydropower Z.D. Xu, G.C. Sun, B.R. Pan, N. Xu, C.Q. Li and H.Z. Ma	119
Research on Optimal Economic Benefit of a Micro-Grid with Area Small Hydropower and New Energy Complementary G.C. Sun, Z.D. Xu, L.Y. Yang and H.Z. Ma	125
Decision Tree Algorithm for Real-Time Identification of Critical Voltage Control Areas R.A. Lis	132
The Diagnostics System for Power Transmission Lines of 6/10 kV R.I. Shagiev, A.V. Karpov and S.A. Kalabanov	138
The Study on Homogeneous Parameters of Light Water Reactor by the Nodal Diffusion Method Z.B. Liu, J. Ma, B.S. Wang and X.H. Duan	144
Improved Power Transformer Winding Deformation Fault Diagnosis Method H.Z. Ma, N. Jiang, C.N. Wang and Z.H. Geng	149
Efficiency of Vortex Tube Enclosure Cooling W. Rattanongphisat	154

Chapter 4: Mechatronics, Control and Automation of Manufacturing

Stabilization and Control of an Autonomous Quadcopter Y.N. Cooper, R.K. Ganesh Ram, V. Kalaichelvi and V. Bhatia	161
Robust Control of Weight Compensation of the Sections of Spacraft on the Weightlessness Simulation Bench T.A. Ezangina and S.A. Gayvoronskiy	166
Design of the Production Line Control System of Beverage Filling Based on PLC W.W. Hu and J. Chu	171
Simulation Research of Anti-Sliding Control of Urban Rail Brake System Based on AMESim and Simulink X.Y. Zhu, M.L. Wu, C. Tian and Y.F. Li	175
Automatic Control of the Electric Cross Sliding Welding Based on VC++ B.F. Qian and X.P. Ma	179
Strategy of Intelligent Energy-Saving Optimization Control and Energy Consumption Analysis on Regulator Control System of Closed Greenhouse M.G. Zhang, G.H. Wu and F. Liu	184
Speed Control System Research on Hydraulic Torque Forklift Y.N. Li, S.X. Chen and H.X. Xu	188
Effect of Variation of Fuel Composition on Gas Turbine Off-Design Performance Y.S. Park, S. Park, J.S. Lee and G.M. Choi	194
Performance Analysis of Linear Permanent Magnets Synchronous Motor by Scalar Control Method (v/f) Ö. Otkun, R.Ö. Doğan and A.S. Akpınar	199
Fault Diagnosis for Electrical Control System of Automobile Based on Support Vector Machine J.H. Cao	203
Stability and Robustness Analysis of a LASER Guided Missile System Using PID Controller M.S. Polimera and V. Kalaichelvi	208

Estimation of Losses on 3Φ Nano Coated Induction Motor D.E. Selvaraj, R. Vijayraj, M.R. Kumar, G. Dhivya, C.P. Sugumaran, M.R. Joshi, D. Krishnamoorthi, J. Ganesan, S. Geethadevi and S.D. Kumar	213
---	-----

Chapter 5: Detection and Monitoring, Signal and Image Processing, Data Mining, Algorithms and Computational Mathematics

Detection of Pedestrians in Motion with Rotation and Scale Variation Z.C. Ren, A. Wahid and J. Choi	221
Moving Object Tracking Using Multiple Views and Data Association Y.S. Ahn, A. Mohammed and J. Choi	226
Proper Features Extraction from the Multiple Sclerosis Disease Postural Disorders for Decision Support System Definition H. Pourakbari, Y. Sarbaz, J. Parvin and M.H. Vojudi	230
A Study on Regression Model Using Response Surface Methodology A. Nooraziah and V.J. Tiagrajah	235
Investigation of Threading Building Blocks Framework on Real Time Visual Object Tracking Algorithm M.C. Ang, E. Sundararajan, K.W. Ng, A. Aghamohammadi and T.L. Lim	240
Validation of the Developed Multi-Gas Monitoring System C.D. Cortez	245
Facial Prediction and Recognition Using Wavelets Transform Algorithm and Technique O.I. Paul and Y.H. Lu	251
Vibration Monitoring Using Wavelets Transform Feature Extraction Algorithm and Technique O.I. Paul and Y.H. Lu	256
Detection of <i>Amaranthus palmeri</i> sp. Seedlings in Vegetable Farms Using Genetic Algorithm Optimized Support Vector Machine W.K. Wong, M. Mariappan, A. Chekima, M. Nadarajan and B. Khoo	267
Railway Track Irregularity Data Mining and Time Series Trend Forecasting Research G. Zhou	272
Boosted Features for Face Authentication M. Hanafi and W.A.W. Adnan	276
Oscillation of Solutions to Second Order Stochastic Difference Equations J.S. Zeng, Y.B. Wang and S.F. Han	282
A New Calibration Method for Backscatter Signal in a Side Beam X-Ray Detection System J.M. Chen, W.J. Li, T.M. Shen and Q.Q. Chang	288
Chaotic Genetic Algorithm for Wavefront Correction in Adaptive Optics S. Kotiang and J. Choi	293

Chapter 6: Communication, Networks and Information Technologies

Privacy Data Analysis in Services Combination Process Based on CPN Y.L. Liu, G.Y. Zhai and J.T. Zhou	301
Depth Analysis of ZigBee Protocol on Wireless Sensor-Actuator Network T. Tao, Z.H. Tong, X. Zheng, X.G. Wu and L.N. Wei	305
Appearance of LTE and Completed in 3GPP Releases B. Izadi, S.M. Ebrahimi and T.S. Kiong	312
Accurate Characterization of Raindrop Size on the Performance of Optical Wireless Communication Links S. Kotiang and J. Choi	317
Energy Efficient Multi-Hop Wireless Sensor Networks with CMIMO-SM Scheme Y.Y. Peng and J. Choi	322
Research on the Risk Assessment Algorithm for Accounting Information System Based on Analytic Hierarchy Process S.H. Wu	327

Interface-Based Medicare Billing Software Design X.C. Ma, Y.H. Liu and P.H. Bao	333
Teleoperation Scheduling Algorithm for Smart Grid Communications in LTE Network A. Hajjawi, M.N. Hindia, M. Ismail, K.A. Noordin and M. Dernaika	340

Chapter 7: Design, Modelling and Strategical Technologies in Industrial Engineering

Modeling of the PLC Behavior in Intralogistics with Non-Autonomous Hybrid Petri-Nets L. Kopecki and S. Lauck	349
Numerical Study on the Fire Development Process of Typical Power Plant Multi-Floor Compartment X. Ma, W. He, C. Ding and Y. Jiang	354
A Review of Exploitation, Utilization and Strategic Research of Nonmetallic Minerals in China Z.H. Ye, L. Chen, Q. Yan and A.J. Wang	359
Development of Conceptual Model for Uncertainty Management on Project Completion Late Delivery in Environmental Issues B. Zirawani, M.N. Salihin and H.M. Noorfa	363
Three-Dimensional Pattern Blending Design of Five-Surface Plane Developed Drawing Q. Jia, X.L. Lv, W.D. Xu, J.H. Hu and X.H. Rong	371
Corn Production: A Subsurface Drip Irrigation Approach F. Liu, G.H. Wu, M.Y. Zhang and Q. Wang	375
Research on Influential Factors of Visual Website Aesthetics Basing on Multiple Linear Regression Method Y. Li and Y.Q. Huang	379
The Status Quo of Mechanical Methods Recycling Waste Printed Circuit Boards Y.W. Yang, F.W. Sun and Z.X. Tie	383
Virtual Reality Haptic Simulation of Root Canal Therapy A. Toosi, M. Arbabtafti and B. Richardson	388
Study on Rapid Aging Model of Bees and the Effects of Bee Fengbingkang Mistura on Rapid Aging Model of Anima M.S. Miao, Q. Wang and C.H. Tang	393
Effect of Genkwa External Application on Frostbite Model of Mices and Rats M.S. Miao, S. Tian, M. Bai, P.S. Zhu and Y.P. Chen	398