

Table of Contents

Preface, Committees and Sponsors

Chapter 1: Advanced Materials Engineering and Processing Technologies

An OLED Surface-Plasmon-Polariton Mode Energy Extraction Method Using a Dielectric Extraction Layer H.N. Lee	3
Effect of Post Curing, Fibre Content and Resin-Hardener Mixing Ratio on the Properties of Kenaf-Aramid Hybrid Composites R. Yahaya, S.M. Sapuan, M. Jawaaid, Z. Leman and E.S. Zainudin	7
Environmental Friendly Sulphoaluminate Cement Based Rapid Hardening and Repair Materials M.J. Lu, M.F. Ba, D.Y. Man, S.Y. Ma, J. Yang and S.Z. Shao	12
Membrane Processing of Refined Palm Oil Wastewater Using TiO₂ Entrapped Nanoporous PVDF Membrane E. Yuliwati and A.S. Mohruni	16
Discharge Criterion along the Surface of Solid Dielectric in SF₆ under High Pressure D.A. Glushkov and A.I. Khalyasmaa	21
The Photodegradation Performance of Phosphotungstic Acid/CdS Composite Materials to Organic Dyes T.S. Wang, S. Bao, L. Xu, Z.R. Liu and L.M. Duan	25
Rigidity Analysis of Kenaf Thermoplastic Composites Using Halpin-Tsai Equation M.R. Mansor, S.M. Sapuan, E.S. Zainudin, A.A. Nuraini and A. Hambali	29
Preparation and Characteristics of Electrospun Silver-Containing PHBV Ultrafine Fiber M.H. Min, Y.Y. Shi, X.X. Chen, J.G. Shi, H.Y. Ma, H.L. Huang and L.M. Wang	34
Pore Size Control of Ordered Mesoporous Carbons and Adsorption Performance of Dye Molecules Y. Cao, J.Z. Zhu, Y. Ding, G. Han, R.L. Fan and H.Q. Fu	38
Investigating the Effects of Blending Ratio and Injection Parameters on the Tensile Properties of Glass Fiber-Filled Nylon 66 Composite Gear N.M. Mehat, N.S. Zakarria and S. Kamaruddin	43
Polycrystalline Silicon Wafer Surface Color Defect Inspection Based on Machine Vision H. Wang, R. Miao, X.S. Wu, W.Y. Ni and X.C. Tang	48
Investigation into the Differences Thermal Properties of SLS Polymer Powder Materials Using Differential Scanning Calorimetry (DSC) Y. Way, H. Puwanto, M. Aichouni and Farizahani	53
Preparation of High Solid Content Polyurethane Emulsion with Sulfonate Hydrophilic Chain-Extending Agents X.L. Wei and F.X. Zhang	57
Asbestos and Alternative Materials L.A.C. Lopes and L.A. Salles	61
Relationship between Foamability and Nanoparticle Concentration of Carbon Dioxide (CO₂) Foam for Enhanced Oil Recovery (EOR) T.A.T. Mohd, M.A.A. Shukor, N.A. Ghazali, N. Alias, E. Yahya, A. Azizi, M.Z. Shahrudin and N.A. Ramlee	67
Preparation of Hydroxyapatite Composite Coatings with Interlayer of TiO₂ and its Corrosion Behaviors C.H. Liang, S.S. Wang, N.B. Huang and B. Wu	72
Encapsulation of Multi-Enzymes on Waste Clay Material: Preparation, Characterization and Application for Tapioca Starch Hydrolysis N.A. Edama, A. Sulaiman, K.H.K. Hamid, S.N.A. Rahim, A.S. Baharuddin and M.N. Mokhtar	77
The Optimum Number of Trays and Solvent Circulation Rate in Removing Acid Gases in Absorption Unit E. Yahya, N.H. Alias, T.A.T. Mohd and A.H. Ghazalli	83

Effect of Leaching Treatment on Mechanical Properties of Natural Rubber Latex (NRL) Products Filled Modified Kaolin	
H. Harahap, E. Surya, I. Surya, I. Hanafi and B. Azahari	90
Optimization of Drying and Extraction Process of <i>Pereskia bleo</i> Leaves in Determining Antioxidant Properties Utilizing Pareto ANOVA	
S.F. Abdul Manaf, N.S. Ab Aziz, S. Abdullah, R. Raslan, F. Hamzah and N.H. Alias	96
Performance Evaluation of Agarwood Distillation Waste as Retarder for High Strength Oilwell Cement	
A. Sauki, A. Azizi, N.H. Alias, N.A. Ghazali, T.A.T. Mohd and M.N.M. Najmi	101
Filled-NR Conductive Thin Film: A Simple Route of Graphene Dispersion in Natural Rubber Latex	
T. Siriyong, C. Boonyuen, C. Warakulwit and W. Keawwattana	106
A Study on Effect of PFA on Stabilized Material Using Direct Shear Test	
M.S. Shakri, M.A. Hafez and M.A. Adnan	111
Enhanced Thermal Conductivity of Nanofluid by Synergistic Effect of Multi-Walled Carbon Nanotubes and Fe₂O₃ Nanoparticles	
L.F. Chen, M. Cheng, D.J. Yang and L. Yang	118
NIR and Upconversion Luminescence Properties of Nd³⁺ Doped in Gd₂O₃-CaO-SiO₂-B₂O₃ Glass System	
S. Insiripong, S. Kaewjeang, U. Maghanemi, H.J. Kim, N. Chanthima and J. Kaewkhao	124
To Produce Electromagnetic Shielding Material from Lignin of Black Liquor	
F.F. Chen, Y.Q. Xiong and S.L. Du	129
Investigation into the Differences Chemical Properties of Laser Sintering Polymer Powders Using Fourier Transform Infrared Spectroscopy	
Y. Way, H. Puwanto, Farizahani and P.T. Pham	133
Chiral Structure in a Hard/Soft/Hard Layered Magnet	
Z.J. Wang, Y.T. Liu, H.W. Xiao and N. Chen	137
Effect of Aging Treatment on Structural and Mechanical Properties of CuCrZr/AlN Nanocomposites	
M. Gu, Y.C. Wu, M.H. Jiao and X.M. Huang	141
Numerical Analysis on High Speed Liquid-Solid Impact of 17-4PH Material	
M. Li, P.F. Zhao, G.H. Wang and J. Liu	147
Gas Phase Synthesis of Vanadium Oxide Nanoparticle Films with Temperature Controlled Surface Plasmon Resonance Properties	
Y.L. Nan, S. Xu, F. Liu and J.F. Zhou	152
Biodiesel Preparation with Solid Base Catalyst under Ultrasonic Assistant	
A.P. Shi, J.M. Zhu and Q. Ma	158
Study on Microphase Separation of Waterborne Polyurethane by the Infrared Spectroscopy Peak Fitting	
M. Zhao, W.C. Xu and S.Y. Luo	164
Electro-Reduction of Ilmenite to Fe_xTi Alloys in Molten CaCl₂	
X.L. Zou, X.G. Lu, W. Xiao, S.L. Gu and B. Shen	172
Review of Copper Atmospheric Corrosion in H₂S	
P. Wang, Z.H. Yin, H.T. Ren, S. Xu and D.W. Ma	177
Optical Properties of Two Malposed Silver Triangular Nanocylinder Arrays	
Z.J. Cai, G.Q. Liu, Z.Q. Liu, X.N. Zhang, Y. Hu, Y.H. Chen, X.S. Liu and M.L. Liu	182
Study on the Optimal Proportion and Properties of Stabilized Soil Using Beach Clay	
X.W. Zheng, W. Li, G.C. Wang and L. Sha	187
Yields Performance of Automotive Paint Sludge via Microwave Assisted Pyrolysis	
Z. Januri, N.B.A. Rahman, S.S. Idris, S. Matali and S.F. Abdul Manaf	191
Optical Characteristics of Chemically Prepared ZnO Nanostructures on Silica Modified Polyaniline Nanocomposites	
K.M. Emphasis, R.M. Vequizo, R.T. Candidato, M.K.G. Odarve, F.R.G. Bagsican, J.E. Gambe, B.R.B. Sambo and A.C. Alguno	196
Morphological and Optical Characteristics of Zinc Sulfide on Silica-Modified Polyaniline Grown on Glass and Platinum-Coated Substrates	
F.G. Sanico, R.T. Candidato, R.M. Vequizo and A.C. Alguno	201

The Use of Response Surface Methodology (RSM) in Experimental Design of Membrane Treatment in Treating PW from Oil and Gas Field	
M.Z. Shahrudin, T.A.T. Mohd, N.A. Ghazali, N.H. Alias and M.N.H. Talib	206
Magnetic Attenuation in Superconducting Cylinders by Beer-Lambert Modified Model	
A. Changjan, S. Punchoo and P. Udomsamuthirun	211
Transient AC Electro-Osmotic Flow of Generalized Maxwell Fluids through Microchannels	
Z. Yin, Y.J. Jian, L. Chang, R. Na and Q.S. Liu	216
Tribological Properties for Cast Iron CrMo at High Temperature	
Y.T. Yan and X.B. Gan	224
Effect of Fly Ash Content on Mechanical Properties of Cement-Fly Ash Stabilized Crushed Stones	
X. Chen, J.W. Liu and M.K. Zhou	228
Poplar Wood Veneer Stain Retardant Study the Integration Process	
D.J. Shen	233
The Effects of Cu Content on Microstructure and Mechanical Properties of Thixoformed A319 Aluminium Alloys	
M.S. Salleh, M.Z. Omar, J. Syarif, K.S. Alhawari and M.N. Mohammed	237
Under-Deposit Corrosion Rate Evaluation in Cooling Water System by Weight Loss, Profilometric and Electrical Resistance Methods	
K. Rithdang, P. Wongbunyakul, P. Jamawatr, P. Lortrakul and G. Lothongkum	242
Effects of Curing Systems on the Strength and Microstructure of Reactive Powder Concrete with Iron Tailing Sands	
Z.G. Zhu, B.X. Li, J.C. Liu and X.D. Lv	247
Thermal Treatment Effect on Catalytic Activity of Au/TiO₂ for CO Oxidation	
A. Mahmood, S.M. Ramay, Y. Al-Zeghayer, S. Haider, M.A. Shar and Y. Khalid	254
Thermodynamic Solidification Path Assessment and Microstructural Comparison of Deep Eutectic Au-Cu-Si System	
K. Thipayarat, A. Lewan, E. Nisaratanaporn and B. Lohwongwatana	259
Photovoltaic Performance Improvement of Dye-Sensitized Solar Cells (DSSCs) Based on Y-Doped TiO₂ Thin Films	
Q.P. Liu	264
Effect of Al Addition in Cast Nickel Base Superalloy, GTD-111 on Microstructures and Oxidation Behaviors at 900°C and 1000°C	
P. Wangyao, T. Eriyakul, S. Polsilapa, P. Srigiofun and O. Srihakulang	268
Effect of Al and Ti Additions in Cast Nickel Base Alloy, Grade Hastelloy X by Arc Melting Process on Microstructures and Oxidation Behavior at 900°C and 1000°C	
P. Srigiofun, P. Wangyao, G. Lothongkum and E. Nisaratanaporn	274
A Study of Gold Recovery from E-Waste by Bioleaching Using <i>Chromobacterium violaceum</i>	
J. Dangton and Q. Leepowpanth	280
Surface Modifications of Mg Alloys Based on Micro-Arc Oxidation Methods from Manufacturing Perspectives	
H. Tao, K.H. So, E. Li, X.Z. Zhang and G. Lai	284
Effects of Laser Cladding of Silicon Carbides Particles and Iron Based Powder	
M.W. Yip, S. Barnes and A.A.D. Sarhan	289
Investigation of the Thermal Properties of Different Grades Polyamide 12 (PA12) in Improving Laser Sintering Process (SLS)	
Y. Way, D.T. Pham and K.D. Dotchev	294
Numerical Analysis for Process Parameter Effect in Electromagnetic Impact Welding of Aluminum Alloy Sheet	
D.Y. Kim, H.I. Park, J.H. Kim, S.W. Kim and Y.S. Lee	297
Synthesis of Single-Crystalline Gold Nanosheet Having Multilayer Structure under the Polymeric Bulk Condition	
S.H. Cha	301
Design, Manufacturing and Welding of Aluminum Alloy UHV Chambers for Taiwan Photon Source	
C.C. Chang, C.K. Chan, C.L. Chen, G.Y. Hsiung and J.R. Chen	305
Effect of Cold Rolling Process on the Microstructure and Corrosion Behaviors of 316L Stainless Steel in Simulated Body Fluids	
W.M.F.W. Mohamad, M.Z. Selamat, B. Bundjali and M. Musa	310

Steam Methane Reforming of Natural Gas with Substantial Carbon Dioxide Contents – Process Optimization for Gas-to-Liquid Applications W. Maqbool, S.J. Park and E.S. Lee	316
Preparation of Gold Nanocrystals Having Various Morphologies under Polymeric Bulk Phase S.H. Cha	321
Optimization Sol Gel Process Parameter of $\text{CaCu}_3\text{Mn}_4\text{O}_{12}$ A. Nurulhuda, Y. Hafizzal, A.R.M. Warikh, A. Rafidah, Y. Suhaila, A. Azrina and I.S. Anwar	326
The Technological Conception of Quality Assurance in the Surface Treatment of Aluminum and Copper Alloys M.Y. Kulikov, V.E. Inozemtsev, D.A. Nechaev and M.N. Oo	331
Study the Effect of Vegetable-Based Lubricant on Surface Roughness during Milling Operation by Using Response Surface Methodology A.A. Siti and Y.L. Yap	336
Production of Self-Healing PI Polymeric Films with Encapsulated TMPTA in PU Microparticles G. Tleubayeva, B. Khudaibergenov, R. Iskakov and I. Tleubayeva	344
Low Temperature Annealing Effect on Electrical Properties of Multicrystalline Silicon Wafers for Photovoltaic Application A. Boucheham, D. Bouhafs, N. Khelifati and B. Palahouane	349
Controlling the Growth of ZnO-SiO_2 Nanostructures Using Pt-Coated Si Substrate A.D.M.V. Peguit, R.T. Candidato, R.M. Vequizo, M.K.G. Odarve, B.R.B. Sambo, F.R.G. Bagsican, J.E. Gambe, G.G. Paylaga, M.E. Jabian and A.C. Alguno	354
Growth of Zinc Oxide Nanostructures on Electrochemically-Etched p-Type Silicon(100) Substrate by Chemical Bath Deposition Method H.M.D. Paculba and A.C. Alguno	358
The Analysis of Influence on the Edge Drop of Tandem Cold Rolling Mill X.M. Zhou and X.X. Cheng	363

Chapter 2: General Mechanical Engineering and Applied Mechanics

A Modified EEMD Decomposition for the Detection of Rolling Bearing Faults Y.C. Shi, Y.Y. Jiang, H.F. Gao and J.W. Xiang	369
Research on Stochastic Resonance Method Based on Bee Colony Algorithm and its Application to Bearing Fault Diagnosis X.H. Cui, Y.Y. Jiang, H.F. Gao and J.W. Xiang	374
Effects of Temperature and Volume Agglomerate Fraction on Mechanical Response of PEMFC Electrodes Y. Xiao and C.D. Cho	379
Structural Optimization of the Telescopic Boom of a Certain Type of Truck-Mounted Crane Z.W. Chen, Z. Cui, Y.J. Fu, W.P. Cui, L.J. Dong and W.G. Jiang	383
A New Plasmonic Filter through Double Metal Films Perforated with Rectangular Grooves and Circular Holes X.N. Zhang, G.Q. Liu, Y. Hu, Y.H. Chen, Z.J. Cai, Z.Q. Liu, X.S. Liu and M.L. Liu	389
Metallic Ellipsoidal Array – Film for Enhancing Transmission via Plasmonic Coupling Y. Hu, G.Q. Liu, X.N. Zhang, Y.H. Chen, Z.J. Cai, Z.Q. Liu, X.S. Liu and M.L. Liu	393
The Design of a Cylindrical Cam Structure whose Profile could be Reconstructed L.J. Shi, W.J. Chen, Y.J. Hu and Z.Y. Shao	397
Strain Measurement in the Steel Shell Surface Impacted by a Falling Ball W. Liu, J. Song, H. Guan, X. Han, J.Z. Wu, W.G. Yang and X.P. Li	401
Analysis and Calculation of Spud Clamshell Dredger's Heeling H.B. Xiao, K.F. Lu and S.Q. Lu	406
Dynamical Penetration Simulation of Solid Target under Shaped Charge Liner F.S. Wang, Y.Y. Ji, J.L. Zhang and S.J. Qiao	410
The Study Wear Resistance of the Modified Surface of the Cutting Tool A.S. Vereschaka, A.A. Vereschaka and M.S. Migranov	417

Mechanical Effects and Existing Problems Analysis of Anchor Frame Combination Supporting Structure	422
W. Jing, W.P. Xue, R.S. Yang, K.L. Zhou and J.P. Li	
The Inversion of Formation Parameters after Volume Fracturing	428
J. Peng, X.M. Shao and D.S. Zhou	
Multi-Pulse Chaotic Dynamics of a Composite Laminated Plate with Strong Coupling	431
Y. Zhao, W. Xu and J.H. Zhang	
Metallurgical Defect and Hydrogen Embrittlement Failure of a Gear	438
Y.Z. Gao, Z.W. Yu and X.L. Xu	
The Optimized Design of Tower Crane Hoisting System Based on the Improved Particle Swarm Optimization Algorithm	444
S.C. Yuan, C.F. Wang, H. Xue, F. An and D.H. Wang	
Finite Element Analysis of the Influence of Balance Mode on Rolling Mill Universal Spindle Strength	449
Z.Q. Guo and Z.L. Xu	
The Research on Analysis and Test Technology of Automobile Gearbox Assembly Process	454
E.M. Zhou, X.F. Shi and L. Pan	
Simulation Analysis and Experimental Research on Direct-Drive Wave Turbine	459
Y.G. Li, Z. Wang, S.M. Wang and L.Y. Wang	
Pattern and Direction Based Smoothing Methods for Surfaces Modeling of Integral Impeller	464
J. Zhao and L.W. Song	
Research of Wind Velocity Field of the Loading Area in Case of Empty Refrigerated Compartment of the Single Temperature Zone Refrigerator Transportation Vehicle	469
J.M. Wang, Z.L. Ding, C.Z. Huang and Z.L. Jiang	
Slope Stability Analysis Based on Coupling Multiple Factors	475
Z.Q. Sun	
Simulation Research on Rolling Element Bearing Feature Extraction Based on Recursive Least-Squares Lattice-Ladder Algorithms	481
J.P. Zhu, Y.X. Zhang, S. Zhang and X.L. Wang	
Comparison of Suppression Cavitations Schemes within Hydraulic Valve	487
L.H. Yang, S.A. Liu, Y.L. Chen, X.H. Zhou, C.X. Wang, Y.M. Yao and J.L. Liu	
Investigation into the Polishing of Stainless Steel Using Sisal Wheels	491
P. Tevinpibanphan, S. Prombanpong and V. Tangwarodomnukun	
Effect of Process Parameters on Surface Roughness in the Cloth Wheel Polishing of Stainless Steel	496
S. Sonthimool, S. Prombanpong and V. Tangwarodomnukun	
Automatic Wiper System Based on the Adjacent Capacitive Edge Effect	501
P. Wang, W.Q. Yuan and Y.T. Wang	
Effects of Flap Wheel Grinding Parameters on Surface Roughness for Stainless Steel	506
J. Somgumnerd, V. Tangwarodomnukun and S. Prombanpong	
Experimental Investigation on Axially Loaded PFRP Compression Members Having Double C-Sections	510
S. Seangatith, J. Thumrongvut and C. Chatwivat	
Modeling and Simulation of Railway Vehicle Using ADAMS/Rail	515
W.M.Z.W. Abdullah, H. Jamaluddin, M.H. Harun, R.A. Rahman and K. Hudha	
Reynolds Number Effect Investigation of Shock Wave on Supercritical Airfoil	520
X. Xu, D.W. Liu, D.H. Chen and Y.J. Wang	
Undersea Observatory Platform Shape Design and Sinking Calculation Based on Fluent	525
Y. Hong and Y.S. Liu	
Nonlinear Analysis of Stochastic Heave Motion for Truss Spar	531
W.J. Shen, Y.G. Tang and L.Q. Liu	
Analytical Investigation on Optimum Member Angle of Lattice Truss Structures	537
S.W. Kim and D.Y. Kim	
Research on the Effect of Prefabricated Crack Distribution about Crack Propagation	542
L. Zhu	
Water Desalination System: Experimental Study on the Performance of a Multi-Stage Still	546
T. Zahia, A. Hanane, B. Randha, Z. Djamila and A. Mohamed	

Analysis of Factors influencing Galvanized Sheet Friction based on Orthogonal Experiments	
Y. Huang, H.F. Liu, T. Zhou and L.G. Wang	550

Chapter 3: Applied Thermodynamics, Heat Transfer, Energy Conversion

Experimental Study on Thermal Effect of Shear Strength of Cohesive Soil	
D. Zhou, C.H. Liu, B. Guo and G.Y. Yue	561
Investigation and Analysis on Energy-Saving Status in Building Lighting in China, Japan and Korea	
J.L. Jiang, X.Y. He, Y.C. Zhang, Y. Fang, W.H. Xiao, N.Y. Zou, A. Okhee, M. Miyamoto, Y. Inoue and M. Kunishima	567
Using MATLAB and COMSOL Multiphysics for Optimization of the Model of Underground Thermal Processes at Old Mining Dumps	
S. Ozana, M. Pies and R. Hajovsky	571
Analysis of Temperature and Heat Flow Characteristics in Underground Tunnel	
H.M. Xie and M.D. Li	579
The Experimental Study on the Effects of Supply Air Angle on Indoor Thermal Environment	
Z.Q. Liu, G. Li and Y. Su	584
Application of Water-Intake Methods on Open-Loop Surface Water Source Heat Pump	
W. Zhang	588
Introduction of Respirable Air Conditioner Based on the Principle of Gravity Circulation	
D. Yang, Q.M. Wen, C.J. Zhang, X.T. Liu and S.J. Wei	592
Heat Transfer Analysis of Groundwater Flow for Ground Heat Exchangers in the Multi-Borehole Field of Ground Source Heat Pump under the Intermittent Operation	
C.C. Zhang and Y.J. Yu	595
Numerical Modeling of the Flow and Pollutant Dispersion in Street Canyons with Ground Thermal Effect	
N.B. Zhang, Y.M. Kang, K. Zhong and J.P. Liu	601
Thermodynamic Effects on Hydrate Formation in Deepwater Pipeline	
A. Abbasi and F.M. Hashim	607
The Tilt Angle of the Solar Panels has the Highest Power	
M. Khodphan	612
Empirical Analysis on Peasant Households' Willingness of Using Solid Biomass Fuel	
L.B. Ma	617
Theoretical Investigation on Electron Transport and the Effect on Thermal Transport in Graphene Ribbon	
J.F. Wang and H.Q. Xie	622
The Experimental Study of Floor Heating for Solar House	
Y.F. Jing, G.Z. Ding, J.J. Miao, C.K. Ou and J.Y. Tan	626

Chapter 4: Instrumentation, Measurement Technologies, Analysis and Methodology

A Novel Change Detection Method Using Independent Component Analysis and Oriented-Object Method	
X.C. Li, C.Y. Jia and W.H. Li	633
Visual Pop-Can Detection Method Based on AdaBoost	
X.Y. Lin, Y.B. Xue and B.H. Guo	637
Research on Method of Metro Monitoring Model Based on Grey Prediction Algorithm	
M.H. Liu and X.B. Sun	641
The Numerical Simulation of Underwater Electric Field Sensor Calibration Traceability	
P. Hu, R.Y. Yue and J. Tian	646
A Numerical Simulation of VOCs Distribution in Indoor Environment of a Dormitory	
S. Bin and Z.H. Yang	650

A Current Harmonic Detection Method via Input Observer P. Li, D.B. Huang and P. Wang	655
A New Method of Continuous Blood Pressure Measurement Based on the Pulse Image Sensor A.H. Zhang, R. Shen, X.Z. Zhou, D.M. Lin and Z. Wei	659
Experimental Study on Measuring the Steel Stress via FBG Sensors H.W. Lin and Y.X. Zhao	663
Design and Simulation of Polarized Neutron Reflectometry at CARR R.D. Liu, Y.T. Liu, D.F. Chen and T.F. Li	668
Numerical Simulation of Fractured Rock Slope with Shear-Slip Behavior Q. Gao and G.H. Wang	673
Characterization of Heavy Metal Contaminated Wastewater Using a Coaxial Sensor and Electromagnetic Wave Reflection Technique N. Puangngernmak and S. Chalermwisutkul	678
Development of a Railway Track Displacement Monitoring by Using Digital Image Correlation Technique L. Iryani, H. Setiawan, T. Dirgantara and I.S. Putra	683
Research on Underwater Binocular Camera Calibration and Distortion Analysis in Current Disturbance Y.J. Pang, D. Wang, H. Huang and M.W. Sheng	688
Video Copy Detection Based on Principal Component Analysis Y.Y. Hou	693
Bearing Damage Detection Based on Sound Signal M. Aswin, I.N.G. Wardana, Y.S. Irawan and H. Suyono	698
Tool Fault Analysis with Decision Tree Induction and Sequence Mining K. Kerdprasop and N. Kerdprasop	703
Alternative Working Electrode for the Determination of the Antioxidant Content by Electrochemical Techniques C.Y. Liu, W.W. Yu, Y.G. Huang, N.N. Wang, L.P. Zhu, Z.C. Luo and Z.P. Zhu	708

Chapter 5: Electronics and Integrated Circuits, Embedded Technology and Applications

Model Reduction and Controller Design of a DC-DC Converter L.B. Wang, J.J. Liu, H.F. Chen, Y. She and Y.Z. Wang	715
An Automated-Switching Precision Decade Capacitor J.C. Hsu, J. Gong and C.F. Huang	719
Influence of Inhomogeneous Anisotropic Ground Conductivity upon the Directivity of ELF Line-Current Antenna C. Liu, H.N. Wu and Y.P. Li	725
The Fully Digital Controlled Corrector Magnet Power Converter with a Shunt as a Current Sensing Component B.S. Wang, C.Y. Liu and K.B. Liu	730
Radio Telemetry Unit for Online Monitoring System at Mining Dumps M. Pies, R. Hajovsky, M. Latocha and S. Ozana	736
The Wireless Sensor System Based on the Chip of STM32 and SH79F32 C.J. Qi and H.W. Wang	744
Data Acquisition and Wireless Data Transmission of Lightning Electromagnetic Field G.H. Du and Y.M. Tian	748
Signal Integrity Analysis of High-Speed Differential Vias L.B. Zhao and Q.H. Chen	754
Investigation of Melting Current in Glass Tube Fuses C. Ketthanom and C. Chaijumrus	760
An Optimized Combination of Frequency Domain Adaptive Equalizers K.C. Leng, C. Bie, X. Gong, R. Xu and Y.C. Guo	766
The Impedance Characteristics of ELF Line-Current Antenna over Inhomogeneous Anisotropic Ground C. Liu, B. Wang, H.Q. Xu and Y.L. Liu	771

Star-L-Shaped Circularly Polarized Ultra-Wideband Microstrip Antenna for Wireless Applications	
R. Yuwono and R. Syakura	776
Multiband Antenna Formed of Superimposed Compressed Loops	
J. Sivaraks and S. Malisuwan	780
Hardware Implementation of Modeling Frequency Coded Serial Communication for Eurobalise Using ASK Module	
P. Ehkan, F.F. Zakaria, M.S. Razalli, F.A.A. Fuad, M.N.M. Warip and L.C. Yuen	785

Chapter 6: Electrical Engineering and Electric Machines

Research on Inverse Form Innovation Design for ATSE with Dual Power Supply	
H. Yang, Z. Zhang and Y. Luo	801
Proposed Control Method of Doubly Fed Induction Generator Rotor Side Converter Based on System Frequency Regulation	
E. Zakieldeen, Y. Tang and Y. Li	806
A Modeling and Simulation Method for SVPWM	
J.Q. Lin, X.Y. Cheng and X. Mu	815
Modeling and Simulation of Improved Vector Control System for PMSM	
X.J. Wang, T. Zhou, J.X. Feng and Y.P. Pei	819
Design of Horizontally Vibrating Linear Motor for Thin Smart Phone	
K.B. Lee, J.H. Kim and J.H. Kim	824
A Model Predictive Control Method for Bidirectional DC-DC Converter in the ZVS Condition	
P. Li, D.B. Huang and Y.R. Zhang	829
Study on Problem of Sensorless PMSM Parameters Identification	
H.J. Wang and Y.K. Fan	834
Research on Optimization Design of Low-Voltage Circuit Breaker Power System	
J.B. Ding, H. Li and J.D. Cao	839

Chapter 7: Power System and Energy Engineering, its Applications

Analysis of the Characteristics of PMSG Tidal Current Power Generation System Using PMSG and Water Tunnel	
W.Y. An, H.T. Lim, S.H. Lee, C. Lee, G.S. Kim and C.H. Jo	847
Fault Diagnosis Method for Power Network Based on Combinational Cross Entropy Algorithm	
L. Bian and C.Y. Bian	851
Effect of Contacting Air Surface of Cathode on Microbial Fuel Cells	
C.T. Wang	855
Trust and Power Factor Regulation Based Power Control Scheme for High Penetration Photovoltaic	
Y. Gao, J.L. Mao, B.L. Zhang, A.S. Zhou and Y. Liu	860
Wartime Nuclear Power Plant Security Protection Research	
N.J. Du and Y.G. Shen	864
The Research on the Design Method of Micro Grid Operation Control Strategy Based on the Analysis of the Typical Example	
N. Wang, H. Tan, S.S. Shi and Z.Q. Yuan	868
Design of an Intelligent Solar-LED Streetlight	
Y.Y. Zhang, X.F. Lu, R. Cai, J. Gong, S. Liu and J.Y. Bao	873
The Effect of Power Supply of LED Lamp	
P. Kerdlap	880
Research of Rough Set Theory on Forecast of Power Generation for Grid-Connected Photovoltaic System	
Y.Z. Li, Q. Deng and S.Y. Lv	885
A Novel Sliding Mode Control Based Low Voltage Ride through Strategy for Wind Turbine	
B. Zeng, J.X. Zou, K. Li and X.S. Xin	890

Rotation Energy Harvesting Device B.J. Tsai and J.C. Wang	895
A Suitable Method of Energy Storage Capacity Optimization Based on DFT for BIPV B. Li, S. Chen and S.Y. Liang	901
Modeling of Water Removal from PEM Fuel Cell during Gas Purging J.B. Wang, Y. Yin and Q. Du	910

Chapter 8: Mechatronics and Robotics

Intelligent Control System Design of a Unmanned Quadrotor Robot S.J. Baek, Y.P. Jeon, U.R. Cho, J.H. Park, D.J. Lee and K.T. Chong	917
A Mobile Robot Obstacle Avoidance Using Fuzzy Logic and Model Predictive Control B. Baasandorj, A. Reyaz, P.J. Ho, C.W. Cheol, D.J. Lee and K.T. Chong	922
Development of a Force Feedback System for Omni-Directional Telepresence Robot J.U. Hwang and T.H. Park	928
Intelligence Dumping into Autonomous Robotic Systems for Higher Autonomy M. Cotsaftis	933
A New Approach for Face Recognition Performance Evaluation for Robot Using LED Monitor M.Y. Cho, Y.S. Jeong and B.T. Chun	939
Actuation by Pneumatic Muscles of a Parallel Asymmetric Gripper System D. Negrea, A. Deaconescu and T. Deaconescu	943
Dynamic Response of Commuter Rail Vehicle under Lateral Track Irregularity M.H. Harun, W.M. Zailimi, H. Jamaluddin, R.A. Rahman and K. Hudha	948
A Simulation of the Number of Particles Trapped by the Circulating Filter of a Hard Disk Drive and their Trajectories J. Thongsri and V. Pongkom	953
FEM Analysis for the Influence of Manufacturing Process Defects on Dynamic Behavior of Thin Chromium Microbeam H. Bourouina, R. Yahiaoui, B.Y. Majlis, A. Hassein-Bey, M.E.A. Benamar and A. Sahar	958
A Study on the Key Technologies of a Kind of Automatic Packaging System B.J. Chen, T.Z. Ge and J.Z. Wang	963
Research on the Key Issues of Numerical Controlled Machine Layout Design Z.G. Xu	968

Chapter 9: Control and Automation of Manufacturing

PI Control of Proportional Valve-Cylinder Water Hydraulic System X. Ba, X.H. Luo, X.F. Zhao and Y.Q. Zhu	977
Two Types of Neural Network Prediction Models and Time Complexity J.M. Zhang, L. Zhu and S. Rekheja	985
Design and Simulation of Automatic Control System for Feed-Drier S.Y. Di and H.Y. Chi	990
The PWM Rectification System Based on Intelligent PI Controller X.B. Wang, B.D. Bai, Z.F. Hu and D.Z. Chen	995
Design of Automation Control System for Lubricant Syringe H. Liu, J.W. Shu, C.L. Li, R.K. Chang, X.F. Jin and X.S. Wang	999
Design of Auto Lifting Control System Based on PLC F.Z. Qin, H.Y. Song, X.L. Liu and H.C. Niu	1003
Oscillation of Second-Order Nonlinear Differential Equations Q. Zhu and Z.B. Ma	1007
Organize Method on Platform of Machine Automation Control System D. Du, G.Q. Wen, J.Y. Zhao and M.J. Ge	1011
The Optimal Control Strategy of Frequency Carrier Intelligent Shutoff T.J. Yang and X.L. Zhang	1017

Study on Hydraulic System of Test Stand for Subsea Control Module H.X. Gong, J. Li, Y.P. Wang and H.G. Qu	1023
Application of Genetic Programming Method Combined with Neural Network in HVAC Optimal Operation C.W. Chen, Y.C. Chang, W.T. Liao and C.W. Lee	1030
The Design and Research of Automatic Control Feeding System X.J. Wang, J.J. Zhang, J.X. Feng and Y. Meng	1035
Multi-Processing Feed-Back Decision Making for Scheduling Gates in Manufacturing System B.L. Sefidgari and S.P. Shamchi	1040
Optimal Sequence-Dependent Job Scheduling of Packing Process with Multiple Non-Identical Machines in Tablet Production A. Sodsangaroonngam, C. Soontravanich and C. Khompatraporn	1046

Chapter 10: Signal and Image Processing, Data Mining and Computational Mathematics

Inverse Kinematics of NAO's Right Arm towards its Handwriting a Chinese Character Based on Corner Detection of Character Template E.D. Arisandi and S.Y. Qin	1053
A New Method of Parameters Determined in PCNN S.M. He and D.H. Wang	1059
A Promotion of a Color Morphological Filter S.M. He	1064
An Improved Filtering Algorithm for Impulse Noise with High Density Based on Edge Information Preservation W.Z. Zhao, H.L. Jing, B.Z. Yang and H. Zhang	1068
Image Copy Detection Based on DCT Ordinal and Block Median Y.G. Sun, Y. Yang and J.Y. Liu	1072
The Blind Watermarking Method Simulation Research Based on Wavelet Tree Quantization F. Sun and P. Li	1076
Research of Signal Processing Based on Kalman Filter and Particle Filter O.Y. Jin, Y.S. Li and J. Liu	1080
A Frequency Reuse Scheme Based on Interference Pre-Cancellation and Resource Scheduling for Multi-Beam Satellite Downlink Signal Y.N. He, W. Zheng, B. Li, Y.Z. Gao and J.J. Wu	1085
Quality Control Oriented Data Analysis and Application of Traditional Chinese Medicine Extraction Process P. Lu, M. Jiao and B.G. Hou	1089
Driver Fatigue Monitoring Based on Head and Facial Features Using Hierarchical Bayesian Method D.Y. Jia and S.X. Zou	1093
The Application Research of Data Mining in Research-Oriented Learning Platform Building C.E. Zhang, X.F. Hou and Y.F. Zhang	1098
Improved Relative Term Frequency Probability Feature Selection for Document Categorization Q. Li, L. He and X. Lin	1102
Facial Expression Recognition Based on the Texture Features of Global Principal Component and Local Boundary W.H. Zheng, W. Wang and Y.D. Ma	1110
Mixed Expression Recognition & Analysis Based on Compressed Sense and Subjection Degree J. Cai, Y.Y. Li and Y. Zhang	1118
NURBS Curve Extraction from 2D Laser Sensor Data and 3D Simulated Data R.J. Yan, J. Wu, J.Y. Lee and C.S. Han	1124

A New Method for Processing Symbolization Time Series Q. Wang	1130
Comparison Study of the Clustering Analysis Methods in the Load Time-Variation Research Y. Lin, Y. Fan, L.X. Wu, Y.H. Xu and G. Song	1135
Study on Wavelet De-Noising of High Frequency Current Signal for Rotor Position Self-Sensing of PMSM X.M. Zhou, X.H. Ma and X. Qi	1139
The Use of OpenMP Parallel Standards in Massive Data Delaunay Triangulation J. Li, B.X. Guo and X.W. Xiao	1143
Approaches in Pattern Recognition and Classification Based on Coin Images C.K. Wong, M.A. bin Mohd Shukran and F.Y. Lee	1148
Global Color Composition for Curved Screen Display System Z.J. Lin and D.M. Lu	1152
An Iterative Indexing PLANO Frame Work for Graph Feature Mining A.P.M. Monickaraj, K. Vivekanandan and D.R. Chitra	1156
Wideband LFM Signal Parameter Estimation Based on Compressed Sensing Theory N. Ma and J.X. Wang	1160
Hybrid Radio and Visible Light Communications in Inter-Vehicle Communication X.A. Huang, C. Sugimoto and R. Kohno	1166
Research of the Transient Signal Recognition Based on Empirical Mode Decomposition W.J. Wang and K.F. Chen	1173
An Improved Normalized Cut Image Segmentation Algorithm with k-Means Cluster W.T. Yu, J.L. Wang and L. Ye	1179
Object Update-Based Mean Shift Tracing Algorithm Combined with LBP M.Z. Liu, M. Sun and Y.F. Wang	1185
Application of Kalman Filtering and Smoothing for Airborne Gravimetry W. Zheng, G.B. Zhang and R. Li	1192
Exact Soliton Solutions of the Variable Coefficient KdV Equation with Forced Term Y.M. Bao and S. Bao	1196
Predicting BEOL Key Qualities by Mahalanobis-Taguchi System – An Example of Taiwan’s Semiconductor S.Y. Lin and H.L. Teng	1201
Solution of Travelling Salesman Problem Using Ant Colony Algorithm S.D. Gülcü, Ş. Gülcü and H. Kahramanli	1206
Research on Application of Ant Colony Optimization W. Rui and Z.T. Wang	1213
Application of Ant Colony Algorithm R. Wang and Z.T. Wang	1217
Optimization and Simulation of OFDM System Based on Orthogonal Wavelet Z.Y. Sun and F.M. Zeng	1221
Joint Multiple-Access Channel Effective Order and CIR Estimation Algorithm for Multi-User OFDM/SDMA System S.Z. Li, Z. Zhang, X.M. Mu and J.K. Zhang	1227
Adaptive Equalizer for DS-CDMA Multi-User Communication System Using Sign-Algorithm Based on Laguerre Filter Structure P. Sirithummachak and C. Benjangkaprasert	1231
Wind Speed Prediction Based on Improved Grey Neural Network Model B. Zeng, J.X. Zou, K. Li and X.S. Xin	1235
The Automata Model of Interval Speed CPNs W.Z. Liao	1241
Multi-Level Indicators Reduction Approach for Complex Index System D.Y. Jia, X.H. Liu, S.T. Feng and K.Y. Zhou	1249
Numerical Simulation of Droplet Ejection Based on VOF Method X.Y. Suo	1257
Analysis of HCV’s Linearity Using Support Vector Machine (SVM) Y.S. Hwang, B.J. Jun and T.S. Yoon	1265

Chapter 11: Communication, Networks and Information Technologies

Information Extraction of Pro/E Swept Features Based on Pro/Toolkit J.C. Zhao, J.F. Dong, Y.X. Fang and F.S. Huang	1273
An Optimization Model and Genetic Algorithm Solution for Automated Celestial Navigation of Ships H. Li, G. Lu, W. Wang and A.G. Wang	1277
A Multi-Band Carrier Aggregation Scheme for Mobile Satellite Communications Y.Z. Gao, X. Yang, X. Geng, J.B. Li and J.J. Wu	1282
Access Control Algorithm with Limited Power Constraint for Mobile Satellite Communications Y.Z. Gao, X.H. Xia, Z.M. Su, X. Luan and J.J. Wu	1286
A Method of Interface between Matlab PV Model and PSASP Transient Stability Program J.M. Zhang and Y.S. Li	1290
TCP Communications Research Based on Embedded WinCE and LabVIEW X.H. Wang, Y.S. Li and J. Liu	1295
Studying the Impact of 32-Bits AS Numbers on Constructing Internet AS Graphs M.Z. Masoud and I.A. Jannoud	1299
A New Intrusion Detection Method Based on Machine Learning in Mobile Ad Hoc Network L.C. Cao, W. Han and S. Dong	1304
Study on High-Performance Simulation Computer for Large-Scale System of Systems Simulation Z.Q. Zhao and J.X. Hao	1311
Investigating the Effect of Software Complexity Metrics on Software Cost B. Falah, S. El Alaoui and H. Abbadi	1319
A Design for Fault-Tolerant Communication Middleware Based on Time-Triggered J. Jin and Q.F. Gu	1326
Design of Theme Crawler for Web Forum Z. Qiu, C.J. Dai and T. Liu	1330
Design and Implementation of the Network Electronic Identity Management System L.S. Ni and B. Chen	1334
Development of Bluetooth Roll Call System Based on Android Platform M.L. Ding, L.P. Li and M.L. Ding	1339
On the Construction of Efficient Private Signature Scheme B.Y. Kang, H. Xu and Y.Z. Niu	1343
Alternative Antenna Research to Optimize MIL-STD-188-125-1 Standard Shielding Effectiveness Measurement H.J. Kang, J.J. Bang, C.S. Huh and U.Y. Huh	1347
A Modified Energy Detection Algorithm Based on Primary User Activity for Cognitive Radio Networks G.T. Han, Y.Q. Ding, X.M. Mu and J.K. Zhang	1351
Joint Transmit Antenna Selection and User Selection in Cognitive Radio MIMO Systems J. Li, S.Z. Li, X.M. Mu and J.K. Zhang	1355
A Velocity and Transmission Environment Based Handover Algorithm for Heterogeneous Networks C.L. Yang, J.X. Wang, H. Yu, Q. Kuang, J. Speidel and M. Wang	1359
Joint Linear Precoding and Power Allocation for MU-MIMO CR Systems with Imperfect CSI W. Wang, Y.H. Lu, D.Y. Li and S.Y. Yang	1363
Partial Interference Alignment Schemes for the K-User MIMO Interference Channel X.L. Lv, G.M. Zhang, G.B. Li, G.M. Lv and C. Zhang	1368
The Design of Android-Based Video-on-Demand System and its Implementation X. Liu	1377
The Method for Broadband Folded Dipoles Using Branch Current Redistribution X. Xie, C. Liu, L. Zhou and H.N. Wu	1381

Design of a Smart Antenna Using Butler Matrix for WLAN Applications N. Soualmi and H.M. Li	1385
A Novel Coverage Off-Duty Eligibility Rule in Wireless Sensor Networks Y.F. Fu and Q.X. Xiong	1389
An Effective Improved On-Demand Routing for LEO Satellite Networks Z. Ren, B.Y. Du, Y.W. Liu and J.B. Li	1393
Design of IOT Gateway System Based on WMMP-T Protocol C. Wu and Z.P. Zhou	1397
Design of Wireless Voice Communication System in Underground Coal Mine Based on ZigBee D.H. Wang, Q.Q. Zhang and Y.F. Sun	1402
Study on WSN Localization Algorithm and Simulation Model for Intelligent Transportation System Z.F. Li and L.Z. Gao	1407
Research on Particle Swarm Optimization-Based Node Positioning Algorithm for Wireless Sensor Networks J. He and L.Y. Li	1415
Improved Clipping Technique for PAPR Reduction in OFDM M.R. Anjum, M.A. Shaheen, F. Manzoor and M.A. Dida	1420
A Non-Uniform Node Distribution Policy for Routing Holes Avoidance R. Yan, Y. Yang, X.P. Kong, W.C. Xu and Y.Y. Zhou	1424
An Item-Level Access Control Framework for Inter-System Security in the Internet of Things Y. Xie and D. Wang	1430
Preliminary Study on Collaborative Lesson Planning Based on Cloud Platform S.Q. Liu and D.D. Zou	1433
Management of Big Data in the Internet of Things in Agriculture Based on Cloud Computing H.Z. Wang, G.W. Lin, J.Q. Wang, W.L. Gao, Y.F. Chen and Q.L. Duan	1438
A Fine-Grain Price Analysis for Online Transaction Data X. Ji and Y. Chen	1445
Research and Design of Web-Based Autonomous and Collaborative Teaching Mode under Blended Learning C. Liu	1450
Control of Synchronization on Community Networks M. Li, X. Jiang, L.L. Ma, Y.F. Ma, Q.T. Guo, Y.J. Lei and Z.M. Zheng	1454
Responsive Web Design for Mobile Device Screen Optimization F.Y. Lee, M.A. bin Mohd Shukran and C.K. Wong	1460
Solving Bottleneck Problem by Transmission Power Control under Various Compression Assumptions for Wireless Sensor Networks R.H. Cheng and C.M. Huang	1465
A Group Persistent Assignment in Contention Slots of DOCSIS T. Pawasopon and S. Sittichivapak	1471
Calculating the Reliability and Reputation of Agents in E-Commerce Multi-Agent Environments E. Majd, V. Balakrishnan, S. Gharib, K. Pourmahdi, L. Shakeri and M.F. Abadi	1478
Mathematical Programming Models for Flexible Manufacturing System Planning and Scheduling Problem S. Paslar, M.K.A. Ariffin, M. Tamjidy and S.H. Tang	1483
Study on Water Conservancy Information System Based on Cloud Computing H. Liu, X.M. Liu and Z. Wan	1488
Proposed System Model for Android Augmented Reality System in Malaysia Military Operations – Unit Positions M.A.M. Shukran, K. Maskat, W.S.S. Sharif, M.S.F.B.M. Yunus and M.S. Ariffin	1493
A Development of Next-Generation Port Simulator for the Performance Evaluation of Port Crane M.N. A, M.J. Koo and K.S. Lee	1498
Dynamic Federal Collaborative Development Method for Heavy Military Vehicles J. Ji, W.Y. Chai, G.X. Xue and G.Y. Li	1504

An Empirical Research on E-Marketplace Basic Functions R. An and J.Z. Guo	1510
Adaptive H_{∞} Power and Rate Control for Time-Varying Uncertain Wireless Networks via Dynamic Output Feedback C.W. Han, D.H. Sun, Z.J. Li and Y.T. Shi	1524
A Neural-Q-Learning Based Approach for Delay Tolerant Underwater Acoustic Wireless Sensor Networks L. Zou, D.F. Huang and R. Togneri	1530
Research and Application of Information Management for NC Equipment Z.L. Fang, X.J. Wu and B.X. Fang	1536
A Level-Dependence Model and it's Application in SFMEA Y.M. Wu, L.J. Wu and L. Sun	1543
Information Processing in Searching Tweets Q. Liu and J.P. Liu	1549
A Research of HTN-Based Anytime Planning Algorithm on FPS Games J.L. Dong	1553
A MapReduce Model to Process Massive Switching Center Data Set W.C. Yang, R. Li and Z.D. Shang	1557
Pixel Value Graphical Password Scheme: Identifying Design Features and Requirements M.A. bin Mohd Shukran, M.S.F. bin Mohd Yunus, W.S. Sham Shariff, M.S. Ariffin and K. Maskat	1561
Study on the Multi-Layer Structure Design of the Power Marketing Demand Side Monitoring Center System W.F. Jiang and J. Zhou	1566
Modeling and Simulation of Indoor Millimeter Wave Propagation Characteristics Z.Y. Sun and F.M. Zeng	1571

Chapter 12: New Technologies, Methods and Technique in Civil Engineering

Numerical Simulation of Dynamic Compaction Construction H. Lin, S. Ji, B. Li and M. Liu	1581
Integrated Model for MCDM: Selection Contractor in Malaysian Construction Industry W. Alzoher and A.R. Yaakub	1587
Surface Quality of Actual Structure with Concrete Using Expansive Additives H. Yashwanth and Y. Mochida	1596
Design Guidelines for Buildings in Saudi Arabia Considering Energy Conservation Requirements A.M. Al-Shaalan, W. Ahmed and A. Alohalay	1601
Vibration Response Analysis on Deep-Water Piers under Earthquake and Wave Coupling Motivation Z.J. Wang, L.M. Wu and S.X. Xiao	1607
The Fuzzy Evaluation of Compatibility between PC-HPWR Agent and Cement F. Wang, S.S. Zheng and X.F. Wang	1613
The Bionic Optimization and Analysis and Calculation of the Cast-Steel Joint with Three Branches Z.H. Zhu, W.F. Du, Z.F. Sun and L.M. Zhu	1618
Measurement and Analysis of the Structural Noise of Urban Bridges T. Jin, Q. Huang, Y. Ding and L.F. Zhu	1623
Architecture and Paper Structures – Could Paper-Folding Become a Methodology in Architecture? S.E.M. Calretas and M.S.M. Kong	1627
Optimization Design Study on Uniform Air of Structure of the Cavity Plenum of Badminton Gymnasium Z.L. Zu, C. Chen, L. Yan and N. Li	1635
Review on the Study of Green Design Performance for Building Refurbishment Project: Finding the Gaps in Knowledge S.N.A.A. Sekak, I. Rahmat, N. Ahmad and Y.M. Junus	1641

Risk Management of Construction Schedule by PERT with Monte Carlo Simulation Y. Liu and Y. Li	1646
Review of Durability of Fiber Reinforced Polymer (FRP) Reinforced Concrete Structure Y.H. Huang and Y.C. Guo	1651
Research on the Waterproof Properties of Lightweight Gypsum Materials L.L. Li and G.Z. Li	1655
Effect and Action Mechanism of Superplasticizer on Foamed Cement C.W. Du and G.Z. Li	1659
Effect of Admixtures on the Performance of Recycled Fine Aggregate Cement Mortar F.X. Wang, G.Z. Li and J. Chen	1663
Research on the Wall Crack Grouting Technology of Brick-Concrete Structure B. Jia, K. Li, X. Liu and N.Q. Meng	1667
Based on ANASYS Immersed Tube Tunnel Three-Dimensional Finite Element Analysis Y.K. Wu, T.J. Sun, Y.Q. Wang and Y.L. Xie	1672
Occurrence Analysis of Cracking Concrete Floor Caused by Alkali-Aggregate Reaction X.Q. Bai, T.C. Wang, P.Y. Zhang, D. Yan and T. Liu	1679
Numerical Analysis on the Impact of Windows and Interior Doors on Indoor Airflow of Rural Residence X.Z. Fu and J. Dong	1683
Exploration for the Technology of Tradition Building Materials and Consolidation Mechanism M. Dai, C.S. Peng, W. Zheng, J.L. Wang and X. Qian	1689
Introduction to the Urban Space Stereo Greening B.W. Zheng, Z.L. Li and J.X. Guo	1696
Simulation Analysis of Building Green Facade Eco-Effect X.C. Pan and Y.X. Xiao	1701
CFD Investigation for Indoor Environment of a District Standard Room in Jinan City D. Yang, Q.M. Wen, C.J. Zhang, X.T. Liu and S.J. Wei	1706
Low Cycle Test Research on Seismic Performance of Recycled Concrete Block Wall W. Guo, B. Jia, C.T. Zhang, X. Liu and S.F. Liu	1712
Micro-Analysis Ballast-Geogrid Pull out Tests Interaction G.Q. Jing, X.H. Luo and Z.J. Wang	1716
The Evaluation Method for Tunnel Structure Health Condition Based on Asymmetric Proximity S.W. Zhou, Q.M. Xiang and Y.Q. Wang	1721
Identification of Transverse Crack in Beam like Structure Using PSO D.N. Thatoi, S. Choudhury, P.K. Jena, H.C. Das and A.K. Subudhi	1728
Comparison of Several Extreme Learning Machine Algorithm for Modeling Concrete Compressive Strength J. Tang, D. Yan and L.J. Zhao	1735
The Numerical Simulation and Research and Application of Energy-Saving Effect of Air Curtain of the Dining Room K.R. Ma, Y.J. Wang and X. Wang	1739
Research on Cracks Zone of Clay Aquiclude in Overburden Q.X. Huang	1744
Construction Numerical Simulation of Cable-Supported Barrel Shell Structure Considering Construction Nonlinearity J. Li, J.H. Yu, X.Y. Yan and H.B. Liu	1748
Wind-Induced Performance of Long-Span Bridge with Modified Cross-Section Profiles by Stochastic Traffic J. Wu	1753
Analyses on the BIM Technology Using in the Design of Green Village Buildings Y.F. Li, H.C. Wang, M. Zhao and W.Y. Pan	1758
Numerical Simulation on Embedded Steel Frame Concrete Blast Wall Resisting Air Shock Wave H.J. Wang, Y. Yao, Z.Q. Zhang, X.P. Yang and Y.P. Zhu	1763

The Construction of Modern Residences Based on the Concept of “Ecological” Green Community	
Q. Liu and Z.L. Zhou	1768
Study on Green City Construction and Sustainable Development – Low Carbon City from Theory to Create	
Q. Liu and J.H. Zhuo	1773
Research on Slow Lane System Planning and Design: A Case Study of Guangzhou International Biological Island Greenway	
J.Y. Wu	1778
Establishment and Solution of the RNC Flow Network Model	
L.Y. Sun, L.J. Zhen and Y.T. Li	1783
Research on Detail-Structure Construction Technology of Outside Heat Preservation of Exterior Walls	
X. Zhao, Y.P. Ding and X.Y. Zhang	1790
A Validation Study for CFD Simulation of a Simplified Urban Model	
A.F. Mohammad, S.A. Zaki, M.S.M. Ali, A. Hagishima and A.A. Razak	1795
Real-Time Simulation of Pipe Network Based on EPANET	
G.Y. Zhang	1800
Application of Vertical Planting Technology in Green Building	
J.Q. Pan and T.T. Liu	1804
A Research on Key Technology in Overturn-Preventing of Longxi Tower’s Monolithic Movement	
D.F. Shang, T.C. Wang and Z.F. Yang	1810
Application of Green Lighting Technology in Highway Service – A Case Study of Mt. Lushan West Sea Tourism Highway Service	
X.C. Qin, S.G. Shao and Y. Shen	1815

Chapter 13: Traffic and Transportation

Evaluation for the Location Selection of Airport Based on WLSM-TOPSIS Method	
C.Q. Yang, T. Wu and Y. Liao	1823
Research on the Calculating Method of Low-Carbon City Public Transit Bearing Rate	
Z.Q. Lei, R.L. Wu, J. Yin and P. Wang	1828
Study on the Scheme Selection of Large-Scale Highway Transportation	
H.T. He and X.W. Wu	1835
The Laws and Measurements Analysis about Urban Rail Transit Noise and Vibration Reduction	
C.H. Chen and L.Y. Peng	1839
The City Traffic Service Platform Based on MPI Model	
J. Song, Y.H. Cheng, X.Z. Zhang and Y.F. Zhang	1844
The Simulation of Non-Gaussian Vibration Environment on Railway	
J. Zhao and D.P. Zhu	1848
Research of a MapReduce Model to Process the Traffic Big Data	
W.C. Yang, H. Chen and Q.Y. Qu	1853
Application of Multidimensional Data Model in the Traffic Accident Data Warehouse	
M.Z. Liu and M. Sun	1857
A Study of the Traffic Flow Predictive Model Based on Mathematical Statistics and Stochastic Process	
H. Zhang, H.Y. Zhang and M.X. Liu	1862

Chapter 14: Oil and Gas Engineering

Effective Bridging Agent Particle Sizes of Reservoir Drilling Mud	
A. Azizi, A. Sauki, N.A. Ghazali, N.H. Imam, S.K. Jamaludin and T.A.T. Mohd	1871

Carbon Dioxide (CO₂) Foam Stability Dependence on Nanoparticle Concentration for Enhanced Oil Recovery (EOR) T.A.T. Mohd, A.H.M. Muhayyidin, N.A. Ghazali, M.Z. Shahrudin, N. Alias, S. Arina, S.N. Ismail and N.A. Ramlee	1876
Determination of Irreducible Water Saturation and its Application in Analysing Water Producing after Fracturing X.W. Zhang, G.S. Cao, L.J. Niu and G.L. Wang	1881
Calculation Method of Earth Stress in Zhenjing Oil Field in China L.M. Ran, H.P. Pan and Y.G. Zhao	1885
Numerical Coupling of Drilling Vibration to Riser's Oscillation W. Pao and F.M. Hashim	1893

Chapter 15: Product Design and Industrial Engineering

Improving the Design of Peripheral IV Therapy by Employing Product Development Approach and Rapid Prototyping Technology Y. Way, M. Azrai and A.H. Mohamad	1901
ε-SVR-Based Predictive Models of Energy Consumption and Performance for Sintering J.K. Wang, F. Qiao, G.C. Li and X.C. Zhu	1905
Application of Variation Weight Fuzzy Comprehensive Evaluation Method on Decision-Making of Stamping Process P. Chen, H.F. Mei and R. Hu	1911
Research on the Methods of Integrated Implementation of ERP and BPR Z.G. Li and F.Y. Shi	1916
Kansei Quality Prediction Method of Product Form Design Based on Quantification Theory Z.Y. Xiong, Y.X. Weng, L.J. Jiang and L.Q. Ruan	1922
A Heuristic Approach to Capacity Assignment in Pharmaceutical Manufacturing Production Line S. Engudomnukul, S. Prombanpong and T. Somboonwiwat	1928
Product Maturity-Driven Collaborative Development Flow Controlling Method for Heavy Military Vehicles J. Ji, G.X. Xue, G.Y. Li and W.Y. Chai	1934
Risk Analysis in Military Operation Network Effectiveness Evaluation C. Li, X.F. Zhang, Y.H. Zeng and L.B. Ye	1939
Sensory Fuzzy Evaluation System Applied in the Cabs of Mine Vehicles Z. Chen, N. Chang and X.L. Ma	1943
Study on the Pharmaceutical Distribution Enterprise IT Adoption Influencing Factors Model C.C. Lin and Y.P. He	1947
The Use of Interval Type-2 Fuzzy TOPSIS in Supplier Selection A. Otheman, A.T.A. Ghani and L. Abdullah	1954
A Novel Integrated AHP-QFD Model for Investment Banks H. Mihanizadeh, Y. Widiatama, M.G. Nik, H. Gholami and Z.A. Laskoukalayeh	1959
Network-Fit in a Disruptive Environment: Assessment of the Strategic Fit among Partners of a Value-Added Network A. Kampker, P. Burggräf and C. Nee	1965
An Empirical Study of Perceptual Factors Underlying Customer Reactions for New Product Positioning in Notebook Industry C.W. Yeh, C.C. Fang and T.Q. Lee	1971
Analysis on Convergence in Green Technology Field Using Patent Information D.H. Jeong and Y.I. Kwon	1981
Enterprise Logistics System and Simulation Control Technology F. Sun and P. Li	1994
Integrated TRIZ-AHP Support System for Conceptual Design M.U. Rosli, M.K.A. Ariffin, S.M. Sapuan and S. Sulaiman	1998