Table of Contents

Preface, Committees and Sponsors

Chapter 1: Material Processing and Chemical Engineering

First-Principles Study on the Elastic and Electronic Properties of 2H-CuGaO ₂ W.T. Liu and Z.T. Liu	3
The Study of Electron Energy Loss Spectroscopy of Ni-4.8at%Ti Alloy	
W.G. Yang, D.H. Li, H.J. Cai, X. Cai, H. Chen, H.F. Xiang and F.S. Wei Molecular Dynamics Simulation of Rarefied Gaseous Flows in Nano-Channels	8
Z.H. Mao, F.B. Bao and Y.L. Huang	12
Study of Applying Aramid Fiber Treated Insurface to EPDM Rubber Composite Materials X.H. Lu, C. Liu, J. Tian and Y. Li	18
The Finite Element Simulation of Surface Wrinkling of Rigid Films on a Compliant Thin- Substrate H.Y. Zhou and Q. Xia	22
Tensile and Compression Behavior of Woven Glass/Epoxy Nano Composites Based on Spraying Methodology	
A. Sarim, B.M. Zhang and C.C. Wang	27
Fatigue Crack Growth Behavior of FSWed Joint Joined with a Bobbin Type Tool in Different Aluminum Alloys	
P. Buahombura, Y. Miyashita, Y. Otsuka, Y. Mutoh and S. Nobushiro	32
Simulation of Thermal and Mechanical Response of (Zr,W)B ₂ Ceramic after Oxidation J. Wei, M.K. Dehdashti, L.R. Dharani, K. Chandrashekhara, G.E. Hilmas and W.G. Fahrenholtz	40
Synthesis of CdTe/Fe ₃ O ₄ for Quantitative Detection of BSA X.P. Yang, X.C. Yang, Y.L. Fu, X.M. Cheng and Z.J. Tan	45
Recent Progress in Titanium Silicide Nanowires: Properties, Preparations and Applications J. Du, J. Liu, H.Q. Fu, B.H. Li and Q. Wu	50
Formation and Evolution of Liquid Pools Entrapped within Primary Particles of <i>In Situ</i> Mg ₂ Si/AM60B Composite with Fine-Grains during Partial Remelting S.Q. Zhang, T.J. Chen, Y. Ma, Y.D. Li and Y. Hao	55
Synthesis of Y ₂ O ₃ Nanoparticles by Modified Transient Morphology Method A. Amirabadizadeh and Z. Momeni Larimi	62
Structure and Magnetic Properties of Ga Substituted Ni-Ferrites A. Amirabadizadeh, Z.M. Larimi and S. Eghbali	68
Capacitance and Glass Transition Temperature of Nano Structured Alumina Polycarbonate	
Composites L.K. Sudha, R. Sukumar and K.U. Rao	73
Rapid Solidification and Phase Composition of Gd-16wt%Co Alloy in Laser Melting Conditions	
W.J. Yao, F.J. Zhang, Z. Lu, N. Wang, Y. Jung and J.Y. Lee	79
Homogeneous Deposition Precipitation Method for Synthesis of Carbon Nanofibre Based Cu-ZrO ₂ Catalyst for Hydrogenation of CO ₂ to Methanol I. Ud Din, M.S. Shaharun, D. Subbarao and A. Naeem	83
Electrical Characteristics of n-Type Nanocrystalline FeSi ₂ /Intrinsic Si/p-Type Si Heterojunctions Prepared by Facing-Targets Direct-Current Sputtering N. Promros, S. Funasaki, R. Iwasaki and T. Yoshitake	88
Surface Modification of SiC Reinforcements & its Effects on Mechanical Properties of Aluminium Based MMC	
M. Vanarotti, P. Shrishail, B.R. Sridhar, K. Venkateswarlu and S.A. Kori	93
B _x In _{1-x} N N. Omehe and D. Ojuh	98

Microstructural Study of the Magnesium Alloy (Az31) Galvanostatically Etched for Different Periods Followed by Copper Electrodeposition in the Alkaline Copper-Sulfate Bath	
C.A. Huang, J.H. Chang, T.H. Wang and J. Mayer	104
Energy Absorption of Hybrid Composite Tubes under Axial Compression A. Othman, A.A. Arifin, S. Abdullah, A.K. Ariffin and N.A.N. Mohamed	109
Analysis of Crushing Laminated Composite Square Tubes under Quasi-Static Loading A. Othman, A.A. Arifin, S. Abdullah, A.K. Ariffin and N.A.N. Mohamed	113
Hot Deformation Behavior of TC21 Alloy H.L. Xu, H.B. Dong and Y. Wang	117
Effect of Hot Isostatic Pressing on Fatigue Life of Cast Aluminium Alloy-354 A. Kalra	122
Scaling Laws of Wear by Slurry Abrasion of Mild Steel A. Rathod, S.G. Sapate and R.K. Khatirkar	126
Effect of Different Lubricants on Small Hole Drilling in Ti-6Al-4V – A Taguchi-Grey Approach	
J. Prasanna, R.D. Chordia, S. Sai Prashanth and M.V. Raman	131
Structural and Magnetic Properties of Zn _{1-x} Ni _x O Nanoparticles Synthesized by a Wet Chemical Method J. Jadhav and S. Biswas	137
Phase Composition and Microhardness of Surface Layers 34CrNi1Mo Steel after Electrolytic-Plasma Processing	137
M. Skakov, L. Yerygina and M. Scheffler 6063 Aluminum Alloy Online Quenching Surface Heat Transfer Coefficient and the	142
Temperature Field Simulation H. Wang and H.B. Yang	146
Modelling the Interatomic Potential of Cubic Zirconia I.D. Muhammad and M. Awang	151
Microstructural Evolution of Magnesium Alloy during Hot Compression X.C. Li, Y.L. Lu, J.T. Wang and L. Dou	158
Kinetics and Mechanism of Palladium Pressure-Cyanide Dissolution J.S. Zhao and L. Yan	164
Theoretical Investigation of the Decarbonylation of Acetaldehyde by Ni ⁺² Using Density Functional Theory H.F. Liu, X.M. Min and H.X. Yang	168
Multi-Criteria Optimisation in Drilling of Epoxy/Glass Fabric Hybrid Nanocomposite Using Grey Relational Analysis	
S. Ponnuvel and T.V. Moorthy	172
Dynamic Correlation Function of Monodispersed Colloid S. Promkotra and T. Kangsadan	176
The Influence of Calcination Temperature on the Formation of Zinc Oxide Nanoparticles by Thermal-Treatment	
N.M. Al-Hada, E. Saion, A.H. Shaari, M.A. Kamarudin and S.A. Gene Oxygen Partial Pressure Effect on Nano-Structure and NO Gas Detection Sensitivity of	181
Sputtered MoO ₃ Thin Films K. Khojier, M. Fasihnikoutalab and G. Moradi	185
Effect of Synthesis Parameters for Lamellar Structured Nanocrystalline Bismuth Phosphorus Oxide Formation	191
Synthesis and Characterization of Nano-Structured Mixed Oxides M.A. Salam, S. Sufian and T. Murugesan	196
Effects of Synthesis Conditions on the Textural and Morphological Properties of Mesoporous Silica (SBA-15)	201
S.F.H. Tasfy, N.A.M. Zabidi, D. Subbarao and M.S. Shaharun Non-Isothermal Crystallization Kinetics of Polyvinyl Alcohol-Graphene Oxide Composites	201
C.P. Li, M. She and L.X. Kong Preparation of Self-Assembled Iron Oxide Nanorings with Nano-Aluminum	206
L. Zhang, D.L. Sheng, R. Zhang, E.Y. Chu, J.P. Liu and S.L. Zhou Electrophymical Micro Machining of Steinless Steel in EDTA Complex Electrophys.	210
Electrochemical Micro Machining of Stainless Steel in EDTA Complex Electrolyte H. Chen, L. Shi, Z.Y. Wang and S.Q. Yu	214

Effect of Electron Thermal Carriers on Thermal Diffusivity of Metals S. Jibrin, M. Maarof Moksin, M.S. Husin, A. Zakaria, J. Hassan and Z. Abidin Bin Talib	219
Mechanical and Microstructural Behaviors of Directionally Solidified Al ₂ O ₃ /Al ₁₆ Ti ₅ O ₃₄ Eutectics	
S. Abali	224
Experimental Study on the Magnetic Characteristics of Magnetic Shape Memory Alloy Materials	
T. Li, S.L. Wang, T. Yang and G.Y. Weng	230
Determination of Sodium Salvia Miltiorrhiza's Optimal Analytical Conditions Detected by HPLC Method T. Wang	235
Prediction of Retarded Fatigue Life due to a Single Overload Spike Using an Exponential Model	
N.L. Lu, W.G. Zhan and Y.M. Wang	240
Study on Surface Feature of Large Die and Polishing Quality during Floating Polishing S.W. Zhang and X.C. Xu	245
Shear Wave Attenuation and its Micro-Mechanism of Polymers Z.P. Tang and T. Li	249
Characteristic of TiN Film Prepared by Multi-Arc Ion Plating S.Q. Hou, J.J. Dai, X. Song, Y.Y. Song and Z.H. Li	254
Investigation of Optical Properties of Aluminium Doped Zinc Oxide Thin Films Deposited	
by Magnetron Sputtering J.H. Gu, T. Zhang, Z.Y. Zhong, C.Y. Yang and J. Hou	259
Curved Layer Fused Deposition Modeling with Varying Raster Orientations B. Huang and S. Singamneni	263
Simulation of Cold Extrusion Process of Hollow Pieces J.L. Ren, X.X. Chen, C.Y. Zhang and X.F. Liu	270
Surface Quality of High Speed Milling of Silicon Carbide by Using Diamond Coated Tool M. Iqbal, M. Konneh, A.Y.B. Md Said and A.F. Bin Mohd Zaini	275
Analysis of Hot Stamping for Automotive Structure W.L. Liu, T.H. Chiang and C.H. Tseng	279
Visco-Elastic-Plastic Constitutive Model for A7N01-T6 Alloy Welding and Analytical Solutions with Finite Element Codes K.J. Song, Y.H. Wei, Z.B. Dong, K. Fang, W.J. Zheng and R. Ma	284
Characterization of Welded Austenitic Stainless Steel Precipitation during Elevated	
Temperature P. Tosapolporn	288
Investigation on Surface Roughness and Cutting Temperature in Turning AISI 316 Austenitic Stainless Steel Using TiAlSiN Coated Carbide Insert	201
M. Ozarkar, R. Bhatkhande, S. Jerath and A.P. Kulkarni Optimization in Dry Sliding Wear Test of Al 2219 – SiCp Composite Using Taguchi Based	291
Grey Relational Analysis R. Ganesh and C. Kesavan	296
In-Plane Plane-Strain Formability Investigation of Friction Stir Welded Sheets Made of Dissimilar Aluminium Alloys M. Kumar, S.V. Keilag and B.C. Narayanan	201
M. Kumar, S.V. Kailas and R.G. Narayanan Effects of Annealing on Pulsed Laser Deposited TiO₂ Thin Films	301
S. Dwivedi and S. Biswas	306
Evaluating the Strength of the Friction Stir Welded Joints at Various Rotational Speeds R.R. Varma, A.B. Ibrahim and B.R. Reddy	312
Predictive Model for Circularity Error of Drilling on GFRP Composite Laminates Using Fuzzy Logic	
S.M. Shanmugasundaram, L. Damodhiran, V. Billan and D. Gu	316
Effect of Temperature and Pressure on the Mechanical Properties of Kenaf Binderless Board	
N.L.A. Rahman, N.A. Nordin and M.F. Ahmad	321
The Effect of Holes on the Dynamic Behavior and Energy Absorption of Aluminum Alloy AA7005 Tube	
B. Simhachalam, C.L. Rao and K. Srinivas	325

Zero Poisson's Ratio Honeycomb Structures-An FEA Study I. Ali and J.J. Yu	329
Porous Copper Fabricated through Powder Metallurgy Route Using NaCl Space Holder N.A. Nordin, M.H. Ismail and N.M.F.N. Jafar	335
A Subject-Specific Dynamics Model for Predicting Impact Force in Elderly Lateral Fall Y.H. Luo, M. Nasiri Sarvi, P.D. Sun and J. Ouyang	339
Superplasticity of Inconel 718 Alloy by Strain-Reduced Superplasticity Deformation Process	244
H.B. Dong, Y. Wang and L. Wang Establishment Methods of Constitutive Equation for Metal Plastic Forming N.H. Wang, L.F. Yang and Y.L. He	344 348
Simulation of Initial Ribbon Formation during Planar Flow Melt Spinning Process M. Sowjanya, T.K.K. Reddy, B. Srivastha and B. Majumdar	352
The Design of Damping Block in the Tire Tread Extrusion Die P.F. Wen, P.P. Xu and K. Ding	356
Hydrophobicity Enhancement of the Polyvinyl Alcohol/Rice Starch/Silk Fibroin Films by Glycerol	2.60
P. Kuchaiyaphum, T. Yamauchi, R. Watanesk and S. Watanesk Crosslinking Density of Silk Fibroin – Rice Starch Hydrogels Modified with Trisodium	360
Trimetaphosphate A. Racksanti, S. Janhom, S. Punyanitya, R. Watanesk and S. Watanesk	366
Spontaneous Emission of a Two-Level Atom in Chiral Photonic Structures N. Akıncı	373
The Development of 14.5Tex Eri-Silk/Bamboo Fiber 65/35 Blended Yarn for Knitting W.Z. Wang, L.S. Fan, M. Du, L. Zhao and T. Zhu	378
The Study on Eri-Silk Degumming Process Optimization and its Properties W.Z. Wang, L. Zhao and L.S. Fan	384
Electrochemical Behavior of 430 Ferritic Stainless Steel in HCl Solution with Different Concentration of Hydrochloric Acid X.L. Li, P.Y. Shi, Y.Y. Yue, Q. Xie, C.J. Liu and M.F. Jiang	390
Electrochemical Behavior of 430 Ferritic Stainless Steel in HCl Solution at Different Temperatures	270
P.Y. Shi, X.L. Li, Y.Y. Yue, C.J. Liu and M.F. Jiang	394
Influence of Injection Molding Parameters on the Consistency of Molding Process S. Azmoudeh, H. Zamani and K. Shelesh-Nezhad	398
Delamination Analysis Using Digital Image Processing for Developing a Prediction Model for Drilling on GFRP Composite Laminates S.M. Shanmugasundaram, L. Damodhiran and M.K. Rajendran	403
Effect of Solvent Composition on the Formation of Hydroxyapatite/Silk Fibroin Composites Prepared Using Sol-Gel Method	400
S. Sriudom, H. Niamsup, S. Saipanya, R. Watanesk and S. Watanesk Research Progress of Sawing Mechanism for Free Abrasive Wire Saw	408
J.S. Wang, C. Wang and Z.F. Li The Effect of Fe-Ion Irradiation on Hardness Changes in P92 Ferritic/Martensitic Steel	414
J. Zhu and Y.Z. Shen 3D Modeling for Dynamic Response of Mixed Phase during Phase Transition	418
Y.B. Guo and Z.P. Tang Rapid Dissociation of Cortical Neurons from Neonate Rats and Patch-Clamp Recording X.L. He, J.H. Wang, Y. Zheng, Y. Zhang and G. Li	422 427
Chapter 2: Mechanical Engineering	
Dispersion Properties of High Pressure Emulsified Jets	
D.J. Zhong Performance and Emission Characteristics of Direct Injection C.I Engine Retrofitted with	437
Mono-CNG System S.A. Osman, A.J. Alimin, M.Y. Ismail and K.W. Hui	443

The Structural Analysis of the Different Forms of the Wind Turbine Spread Foundation under Extreme Loads	
C. Chen, J.Y. Li and L. Hu	448
Computation of Hoisting Forces on Wind Turbine Blades Using Computation Fluid Dynamics	452
Y. Wang, D. Tian and W. He Simulation Research of Interior Ballistics Performance for a New-Type Light Caliber	452
Cannon J.N. Li, X. Liao and F.Q. Nan	458
Bearing Capacity Analysis for Statically Indeterminate Attachment System of Tower Crane Considering Single Limb Instability N.L. Lu and S.R. Wen	463
The Out-of-Plane Stability Analysis of Crane Jib with Two Symmetric Drawbars N.L. Lu, C. Chen and S.M. Liu	469
Out-of-the-Lifting-Plane Stability Analysis of Crane Telescopic Boom with Cable Exerted at the Top N.L. Lu, L. Du, S.M. Liu and Y. Xue	474
Transient Pressure Analysis of Wells Intercepted by Partially Penetrating Finite Conductivity Hydraulic Fractures	
D.T. Lu, Q. Xie, C. Niu and L. Wang	479
Research on the Inspection Information Extraction from 3D Models of Sheet Metal Parts by the Photoelectric Equipments L.W. Zhao, D. Wang, B. Hao and L. He	486
Load Bearing Capacity Investigation and Coating Failure Mechanism for Coated Spur	
Gears J.L. Feng and Y. Qin	491
Uncontrolled Generation of Synchronous Traction Motors in EV/HEV/PHEV X.F. Ding and Z. Li	497
Analysis of Losses and Thermal in Induction Motors X.F. Ding and H. Chang	503
Thermal Characteristics Analysis of Mill Head of Five-Axis CNC Mill Machine Based on Finite Element Method V.H. Sur, W. Vice, B.K. Hward M.E. Hward	509
Y.H. Sun, W. Xiao, R.K. Hu and M.F. Huang Research on Optimal Design and Processing of High-Speed Ceramic Ball Bearings without	309
Inner Rings S.H. Li, M.H. Feng and Y.H. Wu	513
Mechanical Behavior of Wedge Adjustment Bending Device of Cold Leveler A.R. He and N. Xiang	518
Design Optimization of Mini Multi-Nut Post Harvesting Machine G.U. Shinde, S.K. Biradar, G. Yadav and P. Sethi	522
Bearing Board's Force Analysis of the Rodless Drilling Set and its Prototype Test W.W. Liu, C.S. Hu and N.L. Lu	526
Design of a Globally and Exponentially Convergent State Observer and its Application to a Mechanical System with Coulomb Friction H.C. Kim, D.E. Chang and S.H. Song	532
Reduction in Finish Match Grinding Cycle Time of Valve Cone through Process Optimization B.H. Jaikumar, H. Raja and S.N. Satish	536
Study on Failure Trend of Single Shear Hydraulic Lift Platform Structure on Basis of Static Strength Analysis Y.S. Sun, Q.H. Ma and L. Xuan	544
Design, Manufacturing and Performance Analysis of Spiral Coil Pump N.R. Patil, S.R. Gaikwad, R.A. Navale and D.S. Sonawane	549
Study on Failure Trend of Lateral Lifting Platform Structure on Basis of Static Strength	
Analysis Y.S. Sun and L. Xuan	553
Analysis of Lubricating Oil Deterioration in Four-Wheeler A.A. Bhosale, K. Joshi, T. Karadkar, K. Mangidkar and P. Mundhe	558

Vibratory Movement of the Friable Material in the Conditions of Combined Vibrations of the Working Member	
V. Zviadauri, T. Nadiradze, M. Chelidze and G. Tumanishvili	562
Design of a Hybrid 5-Axis Machine Tool with Fused-Deposition-Modeling Capability W.C. Lee and S.C. Chung	566
Effect of Dispersed Phase Viscosity on Emulsification in Turbulence Flow C.W. Liu and M.Z. Li	571
Special Features of Strain and Fracture in Steels under Impact Fatigue Loading A. Popelyukh, I. Bataev, P. Popelyukh and A. Chumachenko	576
Non-Standard Structure Design and Modal Analysis of Embedding Function Module of Tool Holder	£01
G.H. Li, X. Hong, L.L. Guo, W. Bo and G.Y. Tan Study on the Inspection & Planning System for Sheet Metal Parts Based on its Three	581
Dimensional Model L. Hua, D. Wang, B. Hao and L. He	585
The Research on Natural Characteristic and Eigensensitivity of Ravingneaux Compound Planetary Gear Sets B. Qian and S.J. Wu	590
Modal Properties of Hybrid Carbon/Kevlar Composite Thin Plate and Hollow Wing Model H. Haidzir, D.L. Majid, A.S.M. Rafie and M.Y. Harmin	597
Conceptual Aircraft Design Exploration through Functional Approach F.I. Romli	602
Identification of Modal Properties of Composite Thin Plate Using OMA in Wind Tunnel	
Environment Z.A.C. Saffry, D.L. Majid, F.I. Romli, F. Mustapha and E.J. Abdullah	606
Terminal Area Energy Management Trajectory Planning for an Unpowered Reusable Launch Vehicle with Gliding Limitations	
M. Zhou, J. Zhou and J.G. Guo	611
Comparison of Two New T-Shape Standing-Wave Ultrasonic Motors X.Y. Hou, H.P. Lee, C.J. Ong and S.P. Lim	616
Effect of Axial Gap between Diffuser Inlet and Impeller on Efficiency and Flow Pattern of Centrifugal Fans M. Gholamian, G.K.M. Rao and B. Panitapu	621
Flow Pattern and Efficiency Changes of Squirrel Cage Fans due to Inlet Diffuser Diameter	021
Changes - Using CFD Method and Experimental Validation M. Gholamian, G.K.M. Rao and P. Bhramara	626
Optimizing Leading Edge Structure for Aerosol Sampling Diffuser B.Q. Wang, S. Yao, Z.B. Wang, W. Yang and Z.P. Bai	631
Investigation on Structure & Dynamics of Rail Flaw Detection Vehicle	625
Q.G. Yuan, J.M. Zhang and L.W. Man Design of a Hybrid 5-Axis Machine Tool with Fused-Deposition-Modeling Capability	635 640
Applied Research on Reliability Evaluation of CNC Machine Tools Based on D-S Evidence Theory	040
J. Yu, W.S. Tang, T.T. Wang, Q.C. Li and Z.G. Li	645
Stamping Die Design of a Kind of Textile Machine Needle X.P. Hu and G.Y. Wang	650
The Structural Design and Analysis for the Box-Wrench's Hot Extrusion Die X.P. Hu and W.L. Diao	655
Welding Performance of a Homemade Friction Stir Welding Tool I. Hilmy and E.Y.T. Adesta	660
Chapter 3: Electrical Engineering, Electric Machines and Mechatronics	
Design of the New System of Verify Gas Relay K. Liu, X. Xiao and J.Z. Zhang	667
Analysis and Calculation of Electromagnetic Torque for the Voltage Source Traction Motors	
X.Y. Wu, Z.M. Chen and Z.H. Huang	672

Research on Velocity-Displacement Curve for Mechanical Linkage Servo Press J. Yu, L.C. Zhang, Y.S. Shi, H.Y. Xiong and Z.Y. Zhao	678
Performance Enhancement of a Stack Ultrasonic Motor Using PZNPT Material X.Y. Hou, H.P. Lee, C.J. Ong and S.P. Lim	683
Decentralized Fusion Filtering with Different Sensor Memories in Dynamics System with Uncertainties I.Y. Song, S. Huh and V. Shin	688
Nonintrusive Efficiency Estimation of Induction Motors Based on an Adaptive Extended Kalman Filter	
H.X. Yu and C. Li	698
Optimization of Multi-Pole Three Phase Permanent Magnet Synchronous Generator for Low Speed Vertical Axis Wind Turbine M.S.A. Khan, R.K. Rajkumar, R.K. Rajkumar and C.V. Aravind	704
A Comparative Analysis of Three-Phase, Multi-Phase and Dual Stator Axial Flux Permanent Magnet Synchronous Generator for Vertical Axis Wind Turbine M.S.A. Khan, R.K. Rajkumar, R.K. Rajkumar and C.V. Aravind	709
Design and Manufacturing of Absorber for Solar Desalination System M.S. Sapre, A.B. Auti and T.P. Singh	716
Vibration Characteristics Analysis of Wind Turbine Towers under Foundation Conditions X. Song, Y.G. Wu, J.Y. Li and R.Z. Zhao	721
Control of PMSG Wind Energy Conversion System with TS Fuzzy State-Feedback Controller	
N. Kaewpraek and W. Assawinchaichote	728
The Finite Element Analysis and Comparison of Wind Turbine Tower under Static Wind Load and Fluctuating Wind Load C. Chen, H.Y. Chen and T. Lu	733
Design, Modeling and Finite Element Static Analysis of a New Two Axis Solar Tracker Using SolidWorks/COSMOSWorks F. Ferroudji, T. Ouattas and C. Khelifi	738
Modeling and Static Analysis of an Areogenerator Savonius Cracked by Using SolidWorks/CosmosWorks Software	
C. Khelifi, M. Ouali, F. Ferroudji and L. Adjilout	744
Chapter 4: Power System and Energy Engineering, its Applications	
Corrosion Conditions Analysis of In-Service ACSR Overhead Lines Y.J. Deng, J.C. Yu, K.Q. Xia and L. Yang	753
Performance Comparison between STATCOM and SVC to Enhance Power System Stability	
T.G. Tran, X.M. Zha and L.N. Giang	759
Fundamental Frequency Estimation in Power System through the Utilization of Sliding Window-LMS Method H.M.M. Alhaj, N.M. Nor, V.S. Asirvadam and M.F. Abdullah	761
Research on Topology and Performance of Grid-Connected Inverter for Direct-Driven WGS	764
R. Chen and J.L. Tian	772
An Energy Integrated Solid Oxide Fuel Cell System: Modeling and Simulation C. Wutthithanyawat and N. Srisiriwat	777
Analysis on Commutation Failure and DC Differential Protection Unwanted Action of Yunnan-Guangdong UHVDC	704
H.F. Xie, G.Y. Yang, G.Q. Peng, X.P. Chen, Y.Z. Chen, D. Feng, Q. Wang and Y.Z. Chen Solid Oxide Fuel Cell and Steam Reformer System Steady State Modeling N. Sriginiyat and C. Wutthishanyayat	784
N. Srisiriwat and C. Wutthithanyawat A Formation System of Large Canacity Power Li Ion Rottery	790
A Formation System of Large-Capacity Power Li-Ion Battery L.J. Wu, L. Huang, B. Ma and X.B. Li Equivalent Enthology Duon Method with Application in a 220 May Double Burnning	796
Equivalent Enthalpy Drop Method with Application in a 330 Mw Double Pumping Cogeneration Unit and its Thermal Characteristics Analysis Y. Zhu, Q.J. Li, L.K. Zheng and Y.X. Fang	802

Economic and Energetic Analysis for Optimizing the Length of Flat-Plate Solar Air Heating Collectors	
N.Y. Fathi and S.M. Alamen	810
A Criticality Assessment Method for Power Transmission Lines in Power System W.Y. Liu and C. Liang	817
Performance Improvement of Dye Sensitized Solar Cell by Using Recycle Material for Counter Electrode	
N. Gomesh, M. Shafawi, M. Irwanto, M.I. Yusoff, M. Fitra and N. Mariun	823
Research on the On-Line Monitoring System for Winding Deformation of Distribution Transformers Based on FRA Z.Y. Zhang, T. Chen and Y.B. Wang	827
Research on Nonlinear Modeling for Power Transformer over Wide Frequency Range Z.Y. Zhang, X. Ge and Z.C. Wang	832
Modelling Interconnection of Future Combustion Engine Power Plants with Traditional Grid	025
H. Murtaza, A. Raili and H. Seppo An Improved Calculation Method for the Wide Frequency Admittance Parameters of	837
Transformer Based on FEM	0.43
Z.Y. Zhang, X.D. Zhang and L.M. Gao Review of Smart Grid Demand Response with Clean Energy Access	842
Z.Q. Wang and Y. Leng	847
The Summary of HVDC Commutation Failure and Example Analysis Q.J. Wu and X.Z. Wang	853
A Study on Generating Electricity by Using Exhaust Waste Heat in a Diesel Engine H. Aydogan, A.E. Ozcelik, M. Acaroglu and H. Işik	858
Chapter 5: Electronics and Integrated Circuits, Embedded Technology and Applications	
A CRLH TL Transmission Line Structure and its Application to Bandpass Filter Design Y.L. Guan, X.K. Tang and S.L. Zhou	865
Total Harmonic Reduction Using Switching Frequency in H-Bridge Cascaded Multilevel Inverter	
P.K. Dhal and C.C.A. Rajan	869
The Research of Hiding Technology of Hardware Trojan in Chip X.P. Niu, Q.B. Li and X.D. Xie	876
Development of Varied CMOS Ring Oscillator Topologies in 0.13-μm CMOS Technology S.A. Zainol Murad, R. Ismail, M.S. Mukhzeer, A. Mohd Fairus and S. Rohana	882
Design of Solar Collector Tubes Thermal Performance Parameters Detection Device on Embedded Linux	
M.Y. Wen, S.Q. Qi and N.N. Chen	887
Development of Release Film Automatic Adhesion Machine for Production of Flexible Printed Circuit Board M.J. Chung and D.H. Cha	892
Design of Intelligent Concentrator Basing on M-Bus and Embedded Linux S.Q. Qi, M.Y. Wen and Z.X. Wu	896
A Multi-Channel, 16-Bit, 250[kHz], Simultaneous Sampling ADC W.Q. Gao, H. Wan, J. Zhang, P. Yang, Y.L. Zhang and Y. Tao	901
Chapter 6: Data and Signal Processing	
Chromatic Confocal Displacement Measurment Based on Correlation Algorithm C.H. Niu and Y. Lv	909
A Robust True-Color Watermarking Scheme Based on Discrete Cosine Transform C.H. Niu and Y. Lv	915
Multiband Camera System Using Color and Near Infrared Images Y.S. Kang and D. Shin	922

Computerized Unripe and Ripe Durian Striking Sound Recognition Using Syllable-Based HMMs R. Phoophuangpairoj	927
Mining Heat Stress Induced Genes Encoding Heat Shock Proteins (HSPs) and Heat Stress	, _ ,
Transcription Factors (HSFs) in Strawberry (<i>Fragaria x ananassa</i>) L.F. Lin, S.Y. Liao, J.H. Yen, S.J. Chiou, C.Y. Lee and M.L. Chou	936
Improved RX Algorithm with Global Statistics L.L. Wang, Z.Y. Li and J.X. Sun	942
An Algorithm for Large-Scale Terrain Generation Based on Quadtree N.M. Fan and Z.F. Zhang	946
Diagnosis Information Sharing of Weapon Equipment Based on SOA H.X. Jiang, B.H. Wei and C. Wang	951
Analysis of PCB via for Signal Integrity Using ANOVA S.L. Zhou, Y.L. Guan and X.K. Tang	956
Research on Key Algorithm of a New Generation Video Coding Standard HEVC G. Wang, H.X. Chen, M.S. Chen and Y.Y. Liu	961
A Target Location Algorithm Based on Image Registration Z.S. Shi and Y.W. Dong	966
The Analysis and Solution of a PLL Signal Source's Abnormity Y. Yang, Y.B. Hu and W.G. Huang	971
A Novel Edge Detection Algorithm of Color Image D.R. Song, D.Y. Xu and L. Li	976
2D-Laser Scan Registration Using Multi-Scale NDT with Polar Scan Clustering P. Saranrittichai, N. Niparnan and A. Sudsang	981
Thermal Entanglement and Dense Coding in Two-Qubit XX Spin Chain under an Arbitrary	
Magnetic Field H.L. Huang and Z.Y. Sun	986
Modified CMFB Circuit with Enhanced Accuracy for Data Converter Application M.F. Ahmad, S.A.Z. Murad, M.M. Shahimin, S.A.A. Rais and A.F. Hasan	992
An Efficient Motion Estimation Algorithm for H.264/AVC X.H. Zhang	997
The Implementation of Camellia and SMS4 Cryptographic System Based on FPGA Dynamic Reconfiguration Technology J.X. Wang and M.L. Sui	1002
The Pair-Wise Error Analysis on Space-Time-Frequency Coding MIMO-OFDM System C. Shao, C. Wang and L.K. Zhao	1010
A File Encryption System Based on Fingerprint-Embedded Storage G.F. Huang	1017
A Novel Algorithm for MFSK Signal Classification J.F. Xu, F.P. Wang and Z.J. Wang	1022
A New Classification Algorithm of MPSK Signals Based on Phase Distribution J.F. Xu, F.P. Wang and Z.J. Wang	1028
Color Face Recognition Based on Quaternion Zernike Moment Invariants and Quaternion BP Neural Network	
B.J. Chen, H.Z. Shu, G. Chen and J. Ge	1034
Development of a Tool for Assisting Group Conversation by Re-Voicing Supportive Responses M. Nergui and M. Otake	1040
Copula Reliability Calculation Model for K/N (F) Systems Considering Failure Correlation	1040
J.Y. Tang, P. He and S.J. Cheng	1045
Vortex Tracking Algorithm and Visualization Based on Feature Flow Fields J.Q. Wang, P. Wang and J. Chang	1052
Chapter 7: Measurement, Monitoring and Testing Technologies	
Effects of Dielectric Materials on Impedance Characteristics of Embedded Small Normal Mode Helical Antenna	
Y. Liao, Y. Zhang, Z.C. Liang, J.P. Fang and W. Gao	1059

Experimental Research on the Health Monitoring of the Composite Patch System Using Lamb Waves	
Y.S. Zhang, Z. Wang and Z. Wang	1064
Effects of Gamma Irradiation on Dosimetry Characteristic of <i>Rhizophora apiculata</i> Dye Solution	
A. Baha, A. Sharif and S.Z. Abdullah	1069
Design and Modeling of a CMOS MEMS Gravimetric Sensor M.G. Abdalrahman, J.O. Dennis and M.H.M. Khir	1073
A Fault Tolerant Integrated Navigation Scheme Realized through Online Tuning of Weighting Factors for Federated Kalman Filter M. Ushaq and F.J. Cheng	1078
A Design and Application of Security-Monitoring System for Tiny Relics Y. Zhou, Y. Yao and M. Wu	1086
Bond Behavior of Standard and Reinforced Anchorage between CFRP Sheet and Natural Calcareous Stone L. Anania, A. Badalà and G. D'Agata	1091
Warpage Characterization of Thin and Centrally-Gated Injection Molded Part by Applying Cavity Pressure Measurement H. Zamani, S. Azmoudeh and K. Shelesh-Nezhad	1099
The Application of Improved Fuzzy Analytic Hierarchy Process (FAHP) in the Condenser	1099
Fault Diagnosis J.M. Yang, Y.Q. Jia and F.Y. Liang	1104
Design of Automatic Detection System of Ceramic Tile Flatness Y.L. Ma and W. Wang	1109
Theoretical Study on Coal Mine <i>In Situ</i> Stress's Monitoring Method H.B. Wang, C. An and S.D. Zhang	1113
The Measurement of Railway Using VRS GPS E.S. Lee, W.S. Lee, K.M. Lim and M.S. Bang	1118
Application of Cross-Correlation Algorithm in Submarine Sediment Resistivity Measurement	1122
L.J. Wu, B. Ma, Q. Chen and W. Jiang Impact Test and Bioactivity Properties of Polycaprolactone (PCL) by Addition of Nano-	1123
Montmorillonite (MMT) and Hydroxyapatite (HA) R.H.A. Haq, M.S. bin Wahab and M.U. Wahit	1129
On the Measurement of Friction Coefficient at the Curved Surface in Metal Forming C.L. Wu, L.F. Yang and Y.L. He	1134
Chapter 8: Control Systems	
A Variable Structure Attitude Control System Design Based on Finite Time Stability R.M. Jiang, J. Zhou and J.G. Guo	1141
Design and Simulation of Electro-Pneumatic Motion Sequence Control Using FluidSim R. Kumar and J.R.B. del Rosario	1146
Teleoperation Transparency Using Model Predictive Control H. Nasry, W. Xu, J.W. Gong and H.Y. Chen	1151
Research on the Three-Dimensional Simulation and Emulation Technique of NC Machining Based on CORBA Y. Zhang and X. Shi	1156
Active Control Comparison of Vibration in Flexible Spacecraft Using Different Active Friction Joints	
S.B. Mojaz and H. Kashani	1160
Improvement Shifting Control of Continuously Variable Transmission (CVT) by Using PID, Pole Placement and LQG S.Y. Ma, B. Sameh, S. Samo and A. Bary	1165
Multichannel Computer Screen Recording System Based on FPGA and ARM C.F. Liang, B.C. Li, Y.F. Tang and H.L. Sun	1171
MAB-I (Mobility Assistant for Blind)	
G.C. Vivek Chakaravarthi, B.R. Sathish Kumar and R.P. Ramesh	1178

Improved BP Algorithm Applied to Motion Control of UV J.G. Wang, G.Y. Hu and C.M. Jiang	1183
The Design of Automatic Control System for Greenhouse Based on Microcontroller X.Y. Sun	1188
Researches on Control and Application of Wrinkles in the Thin-Walled Metal Plastic Forming Process Z.L. Hu, L.F. Yang and Y.L. He	1193
The Use of dsPIC in the Identification of Inertia Moment and Friction Coefficient of PMS and DC Motors	
H. Terzioğlu, F.A. Kazan and M. Selek	1197
The Effect of Pheromone in Ant-Based Hyper-Heuristic A.A. Zalilah	1202
The Research of Energy-Saving in Air Conditioning Water Cooling System by Frequency Conversion Pump and Constant Pressure Control H.J. Wang, F. Wang, Y.Y. Huang and L. Zhang	1207
Development of Intelligent Winch Rope-Aligning System L.J. Wu, X.B. Li, Y.H. Yang and Y.F. Li	1211
Bundled Software for the Desing of Interval Dynamic Systems T.A. Ezangina and S.A. Gayvoronskiy	1217
Speed-Tracking Driver Model Used in Hardware-in-Loop Simulation Q. Song and L. Luo	1222
System Identification and Control of Fast Steering Mirror Based on Voice Coil Actuators W. Chen, S.H. Chen, X. Wu and W. Fu	1227
Design of Anti-Pinch Window Lift Control Module J.X. Chang, W.S. Wu and F. Luo	1234
Predictive Control of Networked Control Systems with Time Varying Delay L. Li and Y.G. Sun	1239
Chapter 9: Robotics Technologies and Applications	
Modelling and Characterization of a Maze-Solving Mobile Robot Using Wall Follower Algorithm J.R.B. del Rosario, J.G. Sanidad, A.M. Lim, P.S.L. Uy, A.J.C. Bacar, M.A.D. Cai and A.Z.A.	
Dubouzet	1245
Offline and Simplified Industrial Automation Processes Employing Robotic Manipulators E.R. Magsino and J.R.B. del Rosario	1250
A New Navigation of Behavior-Based Olfactory Mobile Robot S. Nurmaini, B. Tutuko and T.A. Rahman	1255
Numerical Modeling of the Oil Spill Trajectory and Real-Time Tracking Using Intelligent Swarm Robots	
M. Pashna, R. Yusof and Z.H. Ismail An Advanced Compliance Controller for a Robot Manipulator Contacting with Unknown	1261
Environments D.H. Cha, M.J. Chung and J.H. Shim	1266
A Novel Path Planning Algorithm for Autonomous Underwater Vehicle B. Yin, B. Liu and J. Cao	1271
Design and Kinematic Analysis of Parallel Robot for Ankle Rehabilitation M.N.S.B.S. Aman and S.N.B. Basah	1279
Chapter 10: Manufacturing and Industrial Engineering, Management Applications	
Analysis of VOCs Removal Efficiencies by Zeolite Boiling Stone Rolling System J.T. Lee and S.J. Chen	1207
****	1287

Trends and Developments in the Manufacturing of Polymer Nanofibrils with the Electrospinning Technique	
R. Das and N.J. Burbery	1298
Empirical Research on Competitiveness of Hebei Iron and Steel Co., LTD Y.L. Chang and J.H. Guan	1304
The Disclosure Mode Selection of Accounting Information Based on Corporate Management Structure	1200
T. Wu and J.H. Guan The Development of a Knowledge Based System for the Process of Risk Assessment in the	1309
Workplace P. Baron, S. Šoltésová and M. Kočiško	1314
Rotary Hammer Forging, a New Manufacturing Process M.M. Hamdy	1321
Lateral Transfer Device for Hospital Stretcher S.A. Kedar, G. Deshpande, A. Bhusawalkar, M. Yawalkar and K. Sarmah	1330
A New Dispatching Model of Automated Lifting Vehicles in Automated Container Terminal with Limited Buffer Space	
S.H. Sadeghian, M.K.A.B. Mohd Ariffin, S.H. Tang and N.B. Ismail	1334
Improvement of Production Line Layout Using Arena Simulation Software M.A.B.M. Said and N.B. Ismail	1340
Contourlet-1.3 Texture Retrieval with Energy, Standard Deviation and Kurtosis Z. Guo and X.W. Chen	1347
Current State of Energy Consumption and Countermeasures of Energy Saving for Iron and Steel Industry in China Z. Qiao, J.Z. Liu, J.S. Wang and Q.G. Xue	1353
Comprehensive Assessment of the Earthquake Emergency Response Ability of Counties Y. Deng, G.Z. Nie and G.W. Su	1358
Application on Gob-Side Entry Retaining Technology with Coal Gangue Bag Packing in Medium-Thick Coal Seams H.B. Wang, C. An and S.D. Zhang	1364
Application of Computer Simulation to Mineral Processing of Shaking-Tables Y.Q. Tu and G.H. Ai	1369
Research on the Evaluation System of Circular Economy Development of Three Gorges Reservoir Region D.K. Liu	1375
Artificial Neural Network Models Based Financial Risk Forewarning Management and Analysis of Listed Company	13,0
X.X. Dou	1381
Chapter 11: Civil Engineering	
Dielectric Properties of Concrete Specimens after Heat Stress M. Lunak, I. Kusak and Z. Chobola	1389
The Use of Acoustic Methods for Non-Destructive Testing of High-Temperature-Degraded Cement-Based Composite Z. Chobola, D. Štefková and K. Šamárková	1395
Using of Impact-Echo Methods to Assessment of Reinforced Concrete Structures Corrosion K. Šamárková, Z. Chobola and D. Štefková	1400
The Strength Research of Pressure Pipeline Reinforced with CFRP J. Han and Y. Liang	1405
Experimental Research on Joints Behavior of Concrete-Filled Steel Tubular Columns M.L. He, H.L. Yu, Y. Cao and Y.K. Xia	1409
Study on Flexural Behavior of Pre-Stressed Concrete Hollow Slabs Strengthen with CFRP B. Wang and J. Han	1413
The Principal Component Analysis about Optimal Ratio for High Performance Pavement	
Concrete L.J. Niu, J.H. Li and N. Cui	1417

Coupling Analysis	
S.G. Zhang, L. Chen and H.Y. Jia	1421
Experimental Research and Simulation Analysis of Self-Repair of Cracks in Concrete Beams	
H.M. Li, J. Wu and Y.J. Zhang	1425
Research on Performance of SAP Warm Mix Asphalt Additive J.X. Zhang, K. Mu and W.T. Wang	1429
Study on Mechanical Property and Structure of Water Erosion Triple Base Propellants J.W. Sun, F.Y. Zhang and P. Du	1436
Experimental Study on Shear Strength of Expansive Soil Improved by Lime - Weathered Sand	
M.Y. Huang, J.L. Xiong, J.B. Tang and C. Long	1441
Instability Analysis of Coupling Seepage and Stress Field in Unsaturated Soil J.W. Li, H.B. Wang and L. Zhang	1448
The Seismic Appraisal and Analysis of Steel Structure Strengthening of a Frame Structure C. Chen, L. Hu and J.Y. Li	1456
Effect of Width-to-Thickness Ratio on Large Deformation in Shear Panel Hysteresis Damper Using Low Yield Point Steel	
D.Y. Abebe, J.H. Choi and S.J. Jeong	1460
Roadway Stability and Determination of the Critical Value of Roof Abscission Layer J.Q. Tang and X.Y. Qi	1466
Numerical Analysis on the Seismic Resistance of Steel Tube Columns Filled with Recycled Aggregate Concrete	
X.X. Wang, F. Liu, W.X. Feng and L. Zeng	1472
The Successful Application of Shelf® Rotating Liner Cementing Technology in Chengbei Oil Field	
J.L. Zhang, X.H. Liu, W.D. Zhang and L. Chang	1477
Chapter 12: Environmental Engineering	
Removal and Degradation of Phenanthrene and Pyrene from Soil by Coupling Surfactant Washing with Photocatalysis	
X.P. Yang, L.X. Xie, J. Tang and J. Lin	1485
Probabilistic Analysis of Municipal Solid Waste Landfill Slope S. Vongchavalitkul	1490
S. Vongchavalitkul Research on Vegetation Restoration of Waitoushan Iron Mine Wasteland of Benxi Steel	1490
S. Vongchavalitkul	1490 1494
S. Vongchavalitkul Research on Vegetation Restoration of Waitoushan Iron Mine Wasteland of Benxi Steel Group Corporation H.J. Deng and Y.Z. Li Energy-Saving Design for a Composite Heating Water System from Kitchen Waste Heat and Solar Energy	1494
S. Vongchavalitkul Research on Vegetation Restoration of Waitoushan Iron Mine Wasteland of Benxi Steel Group Corporation H.J. Deng and Y.Z. Li Energy-Saving Design for a Composite Heating Water System from Kitchen Waste Heat and Solar Energy Z.D. Liu, F. Wang, Y.L. Chen, H. Wu, C. Lu and J.H. Zhang	
S. Vongchavalitkul Research on Vegetation Restoration of Waitoushan Iron Mine Wasteland of Benxi Steel Group Corporation H.J. Deng and Y.Z. Li Energy-Saving Design for a Composite Heating Water System from Kitchen Waste Heat and Solar Energy	1494
S. Vongchavalitkul Research on Vegetation Restoration of Waitoushan Iron Mine Wasteland of Benxi Steel Group Corporation H.J. Deng and Y.Z. Li Energy-Saving Design for a Composite Heating Water System from Kitchen Waste Heat and Solar Energy Z.D. Liu, F. Wang, Y.L. Chen, H. Wu, C. Lu and J.H. Zhang Degradation of Textile Wastewater Using Solar Photocatalysis and SBR	1494 1498
S. Vongchavalitkul Research on Vegetation Restoration of Waitoushan Iron Mine Wasteland of Benxi Steel Group Corporation H.J. Deng and Y.Z. Li Energy-Saving Design for a Composite Heating Water System from Kitchen Waste Heat and Solar Energy Z.D. Liu, F. Wang, Y.L. Chen, H. Wu, C. Lu and J.H. Zhang Degradation of Textile Wastewater Using Solar Photocatalysis and SBR Y.S. Yuan, F.Y. Ji, X. Xu, Z.H. Fan and N. Jiang Rice Husk Ash for Oil Spill Cleanup	1494 1498 1502
S. Vongchavalitkul Research on Vegetation Restoration of Waitoushan Iron Mine Wasteland of Benxi Steel Group Corporation H.J. Deng and Y.Z. Li Energy-Saving Design for a Composite Heating Water System from Kitchen Waste Heat and Solar Energy Z.D. Liu, F. Wang, Y.L. Chen, H. Wu, C. Lu and J.H. Zhang Degradation of Textile Wastewater Using Solar Photocatalysis and SBR Y.S. Yuan, F.Y. Ji, X. Xu, Z.H. Fan and N. Jiang Rice Husk Ash for Oil Spill Cleanup K. Kudaibergenov, Y. Ongarbayev, M. Zulkhair, M. Tulepov and Y. Tileuberdi Ways of Using Rubber Crumb from Worn Tires Y. Tileuberdi, Y.K. Ongarbayev, Z.A. Mansurov, K.K. Kudaibergenov and Y.O. Doszhanov An Sample Analysis of Heavy Metal Pollution to Urban Surface Soil Based on Transfer Function Theory	1494 1498 1502 1508 1512
S. Vongchavalitkul Research on Vegetation Restoration of Waitoushan Iron Mine Wasteland of Benxi Steel Group Corporation H.J. Deng and Y.Z. Li Energy-Saving Design for a Composite Heating Water System from Kitchen Waste Heat and Solar Energy Z.D. Liu, F. Wang, Y.L. Chen, H. Wu, C. Lu and J.H. Zhang Degradation of Textile Wastewater Using Solar Photocatalysis and SBR Y.S. Yuan, F.Y. Ji, X. Xu, Z.H. Fan and N. Jiang Rice Husk Ash for Oil Spill Cleanup K. Kudaibergenov, Y. Ongarbayev, M. Zulkhair, M. Tulepov and Y. Tileuberdi Ways of Using Rubber Crumb from Worn Tires Y. Tileuberdi, Y.K. Ongarbayev, Z.A. Mansurov, K.K. Kudaibergenov and Y.O. Doszhanov An Sample Analysis of Heavy Metal Pollution to Urban Surface Soil Based on Transfer Function Theory Y. Shu and H. Shu	1494 1498 1502 1508
S. Vongchavalitkul Research on Vegetation Restoration of Waitoushan Iron Mine Wasteland of Benxi Steel Group Corporation H.J. Deng and Y.Z. Li Energy-Saving Design for a Composite Heating Water System from Kitchen Waste Heat and Solar Energy Z.D. Liu, F. Wang, Y.L. Chen, H. Wu, C. Lu and J.H. Zhang Degradation of Textile Wastewater Using Solar Photocatalysis and SBR Y.S. Yuan, F.Y. Ji, X. Xu, Z.H. Fan and N. Jiang Rice Husk Ash for Oil Spill Cleanup K. Kudaibergenov, Y. Ongarbayev, M. Zulkhair, M. Tulepov and Y. Tileuberdi Ways of Using Rubber Crumb from Worn Tires Y. Tileuberdi, Y.K. Ongarbayev, Z.A. Mansurov, K.K. Kudaibergenov and Y.O. Doszhanov An Sample Analysis of Heavy Metal Pollution to Urban Surface Soil Based on Transfer Function Theory Y. Shu and H. Shu Effects of Acid Catalyst Types and Concentrations on Free Fatty Acid Reduction in Mixed Crude Palm Oil Using Continuous Static Mixer	1494 1498 1502 1508 1512
S. Vongchavalitkul Research on Vegetation Restoration of Waitoushan Iron Mine Wasteland of Benxi Steel Group Corporation H.J. Deng and Y.Z. Li Energy-Saving Design for a Composite Heating Water System from Kitchen Waste Heat and Solar Energy Z.D. Liu, F. Wang, Y.L. Chen, H. Wu, C. Lu and J.H. Zhang Degradation of Textile Wastewater Using Solar Photocatalysis and SBR Y.S. Yuan, F.Y. Ji, X. Xu, Z.H. Fan and N. Jiang Rice Husk Ash for Oil Spill Cleanup K. Kudaibergenov, Y. Ongarbayev, M. Zulkhair, M. Tulepov and Y. Tileuberdi Ways of Using Rubber Crumb from Worn Tires Y. Tileuberdi, Y.K. Ongarbayev, Z.A. Mansurov, K.K. Kudaibergenov and Y.O. Doszhanov An Sample Analysis of Heavy Metal Pollution to Urban Surface Soil Based on Transfer Function Theory Y. Shu and H. Shu Effects of Acid Catalyst Types and Concentrations on Free Fatty Acid Reduction in Mixed Crude Palm Oil Using Continuous Static Mixer K. Somnuk and G. Prateepchaikul	1494 1498 1502 1508 1512
S. Vongchavalitkul Research on Vegetation Restoration of Waitoushan Iron Mine Wasteland of Benxi Steel Group Corporation H.J. Deng and Y.Z. Li Energy-Saving Design for a Composite Heating Water System from Kitchen Waste Heat and Solar Energy Z.D. Liu, F. Wang, Y.L. Chen, H. Wu, C. Lu and J.H. Zhang Degradation of Textile Wastewater Using Solar Photocatalysis and SBR Y.S. Yuan, F.Y. Ji, X. Xu, Z.H. Fan and N. Jiang Rice Husk Ash for Oil Spill Cleanup K. Kudaibergenov, Y. Ongarbayev, M. Zulkhair, M. Tulepov and Y. Tileuberdi Ways of Using Rubber Crumb from Worn Tires Y. Tileuberdi, Y.K. Ongarbayev, Z.A. Mansurov, K.K. Kudaibergenov and Y.O. Doszhanov An Sample Analysis of Heavy Metal Pollution to Urban Surface Soil Based on Transfer Function Theory Y. Shu and H. Shu Effects of Acid Catalyst Types and Concentrations on Free Fatty Acid Reduction in Mixed Crude Palm Oil Using Continuous Static Mixer	1494 1498 1502 1508 1512

The Application of Particle Swarm Optimization Algorithm on Absorbent Materials H.Q. Feng, B.H. Wu, Y.Y. Liu, Y. Liao, H. Gu and X. Yu	1541
Computational Study on Estimating the Surface Heat Transfer Coefficient of Absorber Tube in Solar Parabolic Trough Collector	
H. Saxena, A. Santoki, N. Awalgaonkar, A. Jivani, G. Gowtham, P. Padmanathan and M. Natarajan	1546
Study of Residential Energy-Saving Green Technology W. Cheng	1552
Ductility and Strength of Modified Recycled Aggregates Columns with Silica Fume and Hybrid Fiber T. Li, Y.F. Du, S.L. Wang and T. Yang	1558
Hardness of Laminated Composite for Different Angle Cured Positions under Influence of Gravity Effects	
T.T.T. Jennise, M.Y. bin Yaakob, H. Sihombing, N. Mohamad, S.H. Yahaya and M.Y.A. Zalkis Cellulose-Based Biodegradable Cushioning Packaging Material	1566
J.W. Wang	1570
Chapter 13: Information Technologies and Networks	
Maximum Clique Approach in Network Coding Based Multicast Broadcast Services L.F. Jiang, L. Gou, H.P. Zhu and G.X. Zhang	1577
An Ontology-Based Automatic Semantic Annotation Approach for Patent Document Retrieval in Product Innovation Design F. Wang, L.F. Lin and Z. Yang	1581
Range-Free Localization Algorithm in Wireless Sensor Networks with Asymmetric Links H.G. Zhao, H.S. Shi and Y.H. Zhao	1591
P2P Networks Considering Sybil-Proof with the Reputation of Social Link Z.Y. Guo, C. Madrazo and K. Koyanag	1596
Analysis on the Accuracy of a Network Real Time Kinematic GPS Using the Steel Tape and Triangulation E.S. Lee, S.H. Cho and D.Y. Um	1601
The Routing Protocols for Wireless Sensor Networks X. Chen, J.P. Luo, Y. Liu and C.Z. Long	1606
Research on the Strategy of Nodes Cooperative Transmission in Wireless Sensor Networks J.L. Li, J.P. Luo, Y.H. Wang and C.Z. Long	1612
The Research of Frame-Relay Multipoint Interface Network Based on OSPF J.T. Cui and L.J. Deng	1617
Numerical Simulation on Vortex Evolution in the Realistic Human Upper Respiratory Tract	
D. Sun, Z.H. Guo, L.M. Tang, G.D. Wang and X.X. Xu	1621
Game Theory and Information Security X.H. Meng and X.L. Wang	1625
Comparative Analysis of Visio Based and Programming Language Based CIM/SVG Graphics-Module Power Platform Developing Technology Y.Z. Chen, Y.Z. Sun, H.F. Xie, Y.N. Zhang and L.L. Wu	1631
CIM/SVG Based Graphics-Module Integration Power Platform with Secondary Development of Visio	
Y.Z. Chen, Y.Z. Sun, L.L. Wu, D. Feng, Q. Zhou and H.F. Xie	1636
A Novel Satellite Telephone Communication System Based on SIGSO Satellite J.X. Cui and H.L. Shi	1642
Maintenance Tools Category Integration Method Based on Case Analysis Y.B. Wang, Z.H. Fu, Y. Tian and L.Q. Rong	1647
Improved Computational Efficiency of Nearest-Nodes Finite Element Method (NN-FEM) Y.H. Luo	1652