Table of Contents

Preface and Conference Organization

Chapter 1: Development and Utilization of Solar Energy

System	
System D.D. Zhao, H.B. Hu, L.C. Wan and B.H. Zhang	3
Benefit Assessment of Solar Photovoltaic Industry in China Y. Chang, L.Q. Gao, F.G. Gao and F.Z. Li	11
Calculation and Experiment Research of Improving Generated Energy in Grid-Connected PV Power Station Based on Manual Adjustment of Angle	15
X.X. Li, Z.M. Zhao and Z.H. Ju	17
A Closed-Loop Temperature Control System for the Solar Energy Heat Collector M.Y. Li, Y.N. Zhong and J.B. Cheng	22
Influences of Solid Particles on Photo-Thermal Performance of Heat Conduction Oil under Solar Irradiation L.C. Gao, S.Q. Shen, Q.Y. Hao, C.X. Liu and F. Yue	27
The Simulation Research of the Five Level Photovoltaic Grid-Connected Inverter Based on Repetitive and PI Control J. Liu and S.Z. Yuan	34
The Research of Control Strategy for Three-Phase Photovoltaic Grid-Connected VSI Using Space Vector Pulse Width Modulation and P-Q Theory Q.M. Cheng, X.Q. Hu, K. Wu, Y.F. Bai and J.B. Zhao	38
A New Model for Computing Daily Global Radiation of Lanzhou, China X.J. Cheng, Y.N. Jiang and Y.H. Liu	42
Analysis of Current Situation and Countermeasure of Solar Energy Photovoltaic Power Generation in Beijing X.H. Zhang, X. Li and J.P. Liang	46
Forecast of China's PV Application System with GM (1, 1) Model Y.Q. Guan, Z.L. Li and W.Q. Zhu	51
Voltage Control Method Research of PV Power System Based on Small Signal Model L. Pan, D.L. Wang, B.B. Wang, W. Gong and G. Su	57
Research on Steric and Multilevel Concentrator for Photovoltaic Generation X.F. Yang, Z.L. Xu, C. Li and Z.M. Huang	65
A Solar Automatic Tracking System Design Based on FPGA J.F. Zhu, Y.W. Liu and W.B. Liu	70
A Study on the Solar-Thermal Performance in PV/T System Q.S. Zhou and Z.G. Zhang	74
Study on Relevant Policies of Solar Photovoltaic Technology in China S.X. Wang, Y.J. Ruan and H.W. Tan	82
Solar Cell MPPT Technique Based on PI Controller F. Yusivar and B. Tito	89
Direct Thermoelectric Microgeneration Using Residual Heat of Photovoltaic System J.R. Camargo, J. Machado da Silva, E. Godoy Junior, R.E. da Silva, L.E. Nicolini do Patrocínio Nunes and F. Silva Rezende	97
Photovoltaic Power Generation Transient Modeling and Identifiability Analysis T. Shi, S. Gao and L. Qu	114
The Review of Photovoltaic Power Generation Technology X.S. Zhou, X.B. Shen and Y.J. Ma	118
Practical Model Educed and Simulation of Photovoltaic Power System Q. Dong, Z.X. Wang and J. Xu	122
Application of BP Neural Network to Short-Term-Ahead Generating Power Forecasting for PV System H. Jiang and L. Hong	128

Study on the Power Generation Data of High-Power BIPV Grid-Connected PV Power Station	
D.J. Li and H. Fang	132
The Analysis of Chinese Photovoltaic Industry with SWOT Model and AHP Method L.Q. Gao, Y. Chang, B.Y. Li and F.Z. Li	137
Design and Calculation of Cooling System to Eliminate Non-Uniform Heat Transfer on Concentration PV System (CPV)	
Q.F. Li, T. Li, C.C. Pan, Z.T. Zhou and W.D. Sun	143
Global Utilization of Solar Energy and Development of Solar Cell Materials C. Ma, X.C. Zhang, G.Y. Zhang, W.P. Chen and S. Gu	151
The Design of Embedded PV Inverter Grid-Connected System E.R. Zheng and M.Y. Li	155
Study on Different Capacity of Photovoltaic Power Generation Project Compares K.B. Wang, R.J. Liang, Z.H. Xu and Z.Y. Ren	160
The Control Strategy and Simulation of Three-Phase Grid-Connected Photovoltaic System J.J. Su, M.Y. Hu, H.Y. Gong, H.T. Sun, Z.J. Hu, J.Y. Zheng, L.Z. Zhu and C.X. Zhang	164
Economic Analysis for Solar Hybrid Power of Ocean-Going Fishing Vessels towards Low Carbon	
L. Ren, Y.M. Diao and Q. Han	169
The Simulation Research of Maximum Power Point Tracking Based on Asymmetric Fuzzy-PI Control for Photovoltaic Grid-Connected System H.Z. Yang and Z.W. Zeng	173
Photovoltaic Arrays MPPT Based on Improved Incremental Conductance Method X. He, W.Y. Li, X. Li, L. Guo, Y. Wang and W.S. Lv	177
SWOT Analysis on Chinese Photovoltaic Industry C. Ma, J.Y. Zhang, Y.D. Hu and C.X. Dong	181
Performance Evaluation of a Dual-Function Solar Collector Integrated with Building in Water Heating Mode	
C.L. Luo, J.H. Xiong and M. Fan	185
Bionic Study on Structural Solar Absorption Materials Based on Microstructure Pattern of Butterfly Scales L.Y. Wu, Z.M. Qiu and Y.Q. Song	190
Model and Analysis of the Output Characteristics of Photovoltaic Module A.N. Wang, B. Wu, C.X. Zhang and Y.L. Song	195
Chapter 2: Development and Utilization of Biomass Energy	
Steam Gasification for Biomass Tar with Natural Ores of Limonite and Dolomite L.Y. Li, H. Kunii, M. Yamauchi, H.J. Kim and T. Shimizu	201
Solid- Alkali Catalyst of Mussel Shell Used in Producing Biodiesel Y.J. Zhang and S.Y. Liu	206
Thermodynamics Simulation of Ethanol Synthesis via Biomass Gasification C.Y. Yan, F. Pan, C.X. Li, Y.L. Li, Y.F. Wu and Y.Y. Zhu	210
Erosion in the Rectangular Biomass Circulating Fluidized Bed J.H. Song, T. Wang, J. Gao, X.B. Xiao, C.Q. Dong and X.Y. Hu	214
The Study on Comprehensive Utilization of Liquefied Natural Gas D.Z. Yang, X.F. Peng and Y. Xu	220
Research Progress in the Bio-Oil Hydrotreating Process C. Wang, G.Y. Chen and W.J. Lan	231
Effect of Temperature on Dry Anaerobic Fermentation of Animal Manure and Straw L.J. Shi, J.B. Li, W.Y. Zhang and H.F. Liu	236
Study on Combustion Adjustment Characteristics of 50MW CFB Biomass-Fired Boiler in Zhanjiang Biomass Power Plant	
J.T. Fang, J.H. Song, Z.G. Zhan and J. Li	242
Application of Bioenergy in Sweden and its Revelation to China D. Feng, S.D. Zhou and Y.Y. Miao	249

Logistics Cost Optimization for Straw Biomass Supply and its Application in Heilongjiang Province, China	
J.Z. Wu, L.H. Wang and L. Ma	254
Application Status and Development Strategies of Biomass Energy in China Y.B. Cao	261
Overview of Methods to Remove Solid Particles from Biomass Fast Pyrolysis Oils H.T. Liao, Q. Lu, Z.B. Zhang and C.Q. Dong	265
Influence of Micro-Emulsified Biodiesel on Combustion and Emission Characteristics of a Turbocharged Diesel Engine	260
Q.M. Wu, P. Sun, D.Q. Mei and Z. Chen Study on the Emission Properties of Biodiesel Fueled on Medium-Sized Diesel Engine under	269
Steady Working Conditions Y. Xue, H. Liu and W.Q. Liu	275
Fuel Ethanol Production from Lignocellulosic Biomass Using a Recombinant Yeast Strain M. Chen, G.R. Zu and C.Z. Zhang	281
Rational Use of Residential Digesters for Sewage Treatment with Carbon Credits E. Godoy Junior, J.R. Camargo, J.L. Mariano Da Silva, R.O. De Jesus, J.L. Silveira and J.R. Bertoncello Danieletto	286
Optimization of Dilute Acid Hydrolysis of Corn Stover for Separate Production of Xylose and Glucose by Response Surface Methodology	
S.L. Zhi, J. Yang, Y. Yao, S.T. Zhang and X.B. Lu	298
Hot Utilization of Fuel Gas in Fluidized Bed Biomass Gasification X.X. Fan, L.Z. Chu, G.Y. Ma and L.G. Yang	302
The Research on Influence of Intensive Straw-Gasifying on Household Energy Consumption in the Countryside Y.B. Wang and X. Ma	308
Establishment of a Suspension Cell System for Transformation of Jatropha curcas Using	
Nanoparticles Q. Wang, J.N. Chen, P. Zhan, L. Zhang and Q.Q. Kong	314
Non-Woven Operational Stability of Dynamic Membrane Bioreactor and its Fluence Factors	
F. Long, K.H. Liu, Q.F. Shi, Y.M. Yin, B. Yan, L.W. Wang and L. Chen	320
Estimation of Viscosity of Biodiesel-Diesel Blends with near Infrared Spectroscopy W.B. Zhang and M.M. Wu	324
Aqueous Extraction of Chinese Tallow Seeds Oil W. Ma, Y.H. Liu, P.R. Ruan, X.M. Jiang, Y.P. Wang, Y.Q. Wan, X.D. Wu and Y. Li	328
Optimization of Multi-Enzyme Hydrolysis Process for Efficient Corn Gluten Meal Hydrolysis	
Y.X. Wang, M.Y. Zheng, X.H. Yang, N.X. Sun and G.X. Zhang Development of Straw Briquette Boiler	333
P. Ma, H.L. Liu and S.Y. Liu	339
Producing Biogas with Two-Stage Fermentation Process of High Total Solids Content Kitchen Wastes	
X.J. Zhang and S.J. Li	344
The Effect of Support on the Catalytic Performance for Bio-Oil Upgrading Z.Y. Ma, L. Wei, W.D. Qu, J. Juson, Q.W. Zhu and X.Z. Wang	350
Economic Analysis Model for Biopower Plants Based on Biomass Logistics Networks and its Application in Heilongjiang Province, China	356
J.Z. Wu and L.H. Wang The Study of Heating Value and Rate of Return of Biogas Production in King Mongkut's	330
University of Technology North Bangkok (Prachinburi Campus) T. Somjai, A. Yingtawee, W. Chawanawet and S. Chaiyat	361
Textural Characteristics of Coconut Shell-Based Activated Carbons with Steam Activation X.Y. Wang, D.X. Li, B.M. Yang and W. Li	366
Steam Reforming of Biomass Tar Model Compounds over Monolithic Catalysts L. Chen, X.D. Zhang, B.F. Zhao, G.F. Meng, H.Y. Si and M. Xu	374
Preparation and Properties of Starch-Based Coal Gasification Catalyst Y. Niu, G.X. Cui, M.S. Lin, K. Huang and R.Z. Wang	379

Analysis of Char Specific Surface Area and Porosity from the Fast Pyrolysis of Biomass and Pulverized Coal	
J.Y. Luan, X.M. Wu, G.F. Wu and D.W. Shao	383
A Preliminary Study on DeNOx Technologies for Biomass Power Plant F. Shi, F.Q. Meng and B.M. Sun	388
The Experimental Study of the Influence of Mg-Based Additives on Wheat Ash Melting Point	
Y. Zhang, Y. Zhao, C.Q. Dong and J. Wei	392
Experimental Study on Potential of Biogas Fermentation with Lily Straw H. Yang, W.D. Zhang, X.L. Zhao, J. Liu, Y.B. Chen, S.Q. Liu, F. Yin and L. Xu	396
Syngas Production from Biomass: A Review W.J. Lan, G.Y. Chen, C. Wang and X.L. Zhu	402
Biodiesel Production from a Novel Raw Material Tung Oil J.J. Yang, W.S. Guai and M.Y. Yang	406
The Exploration and Practice of Using Additive to Inhibit the Heating Surface Deposition in Biomass-Fired Boiler F. Huang, C.J. Yu, Q.H. Wang, M.X. Fang and Z.Y. Luo	411
Anaerobic Fermentation of Cow Dung — Effect of Solid Concentration and Temperature on Biogas Quality	
D.D. Zhou, J.P. Li, C.L. Wang and Y. Liu	419
Catalysts in Biomass Pyrolysis: A Brief Review S. Tan, Z.J. Zhang, J.P. Sun and Q.W. Wang	428
Data Analysis and Temperature Compensation of Laser CH ₄ Detection System Y.F. Li, C. Wang, Y.B. Wei, Y.J. Zhao, T. Zhang and T.Y. Liu	433
Effect on Different Modes to Ethanol Fermentation of Energy Beet S.Z. Shi, D.Y. Cheng, C.H. Dai, Z.X. Lu and C.F. Luo	437
Existing Problems and Countermeasures in the Development of China's Biomass Energy Industry Y. Zhao and C.X. Suo	441
Recent Progress in Biomass Tar Catalytic Cracking Method Research J. Tao, Q. Lu, C.Q. Dong and X.Z. Du	448
Sapium Sebiferum(Chinese Tallow), a Promising Energy Plant for Green Diesel(hydrocarbon Fuel	452
W. Ma, Y.H. Liu, P.R. Ruan, X.M. Jiang, Y.P. Wang, Y.Q. Wan, X.D. Wu and Y. Li The Federational and Technological Analysis of Street Cognomation in Northcost China	453
The Economical and Technological Analysis of Straw Cogeneration in Northeast China L. Bai, X.H. Zhang and J.R. Chu	458
Chapter 3: Development and Utilization of Wind Energy	
A Review on the New Structure of Savonius Wind Turbines Z.P. Tang, Y.X. Yao, L. Zhou and B.W. Yu	467
The Method of Suppress the Output Power Fluctuations of Off-Grid Wind Power Systems X. Liu, Y. Jia and F. Zhao	479
Design of Direct-Driven Type Wind Power Generation Experimental Platform System L. Zhang, X.M. Wang and C. Li	483
Hybrid Energy Storage System to Stabilize the Power Fluctuation of Wind Power Z.X. Xing, G.F. Zhang, J.S. Liu and X.J. Yao	487
Comparison of the Frequency Control Strategy of Wind Turbines and its Optimization	
Scheme X.S. Tian, Y.H. Huang, X.Y. Xu and W.S. Wang	494
An Overview of Fire Risk and Fire Protection Solutions for Wind Turbines Y.X. Wang, H. Xing, Z.H. Wu and S.L. Duan	500
Effect of Coherence Function on Rotational Fourier Spectrum of Wind Turbine D. Tian, W. He and N.B. Wang	506
Analysis and Control of Maglev Flywheel Rotor in the Wind Generator H.C. Wu, X.J. Lv and G. Gong	513
Safety Design of Wind Turbine's Mobile Low Voltage Ride through Test Device J.P. Zhang, R.M. Wang, Q. Li, Y. Sun and C. Chen	517

Research on early Fault Prediction of Wind Turbine Gearbox H.S. Zhao, Y.S. Liu, X.T. Zhang and W. Guo	522
High Power Rate Wind Turbine Converter Technology Z.X. Lin and H.H. Xu	529
An Investigation of the Low Voltage Ride through Function of GE DFIG Wind Turbines for Electro-Mechanical Simulations Z.J. Meng	537
Study on Characteristics of Wind Power Output in Jing-Jin-Tang Grid Y.Z. Liang, S.Y. Li, Q.J. Li and W. Zhao	543
Study of Wind Power Forecasting Assessment Standard Based on Unit Commitment and Spinning Reserve Optimization Model C.J. Gao and P. Wang	547
Low Voltage Ride-through Analysis and Control for Doubly Fed Wind-Power Induction Generator Using Finite State Machine Method	
Y. Wang, W.M. Gong and X.B. Fu Research on Development of Wind Power Grid Integration in China W. Luo, F. Wang, Q.J. Li and H. Xie	553 560
Comparison of the Extreme Learning Machine with the BP Neural Network for Short-Term Prediction of Wind Power	300
Y.H. Zhang, H. Wang, Z.J. Hu, M.L. Zhang, X.L. Gong and C.X. Zhang	564
Analyses on Integration of Wind Power into Gansu Power Grid X.C. Zhou, F.C. Liu and J.J. Zheng	569
Study on Reactive Power Compensation of Single Wind Farm Y. Li and B.Z. Liu	573
Study on the Influence of DFIG Units with Additional Frequency Control on Power System Emergency Control Y.F. Hou, G.K. Li, J. Ding, J. Shen and S. Teng	579
Global Utilization and Development of Wind Energy X.C. Zhang, C. Ma, W.P. Chen and S. Gu	584
Research on Reliability Assessment of Power System with Wind Farms W. Jiang, Y.X. Cheng and Y.J. Cheng	588
Impact on Transient Angle Stability with DFIG-Based Wind Generation Connected to Power System	
Q. Yu, H.D. Sun and Y. Tang Small-Capacity Experimental Prototype of VSC-HVDC for Offshore Wind Farm	592
J. Wu, Z.X. Wang, C.H. Jiang and G.Q. Wang	601
Dynamic Evaluation of Wind Turbine Health Condition Based on Multi-Source Information Fusion Y.L. Dong, C.C. Wang and Q.Y. Pan	607
Analysis Model of Wind Power Cost Based on Two-Factor Learning Curve	
J.J. Kang, W. Duan and M.T. Yao Control Strategy of Wind Power Converter under Unbalanced Grid Voltage Condition	611
C.H. Jiang and Z.X. Wang The Crucial Issues in Low-Level Wind Predicton that Used for Wind Energy Forecasting	615
X.L. Liu, S.L. Jin and L. Wang	622
Wind Power Forecasting Using Wavelet Decomposition and Elman Neural Network X.L. Gong, Z.J. Hu, M.L. Zhang and H. Wang	628
High Voltage Ride through of PMSG-Based Wind Turbines L.L. Wang, S.J. Hu, F.L. Li and N.H. Li	633
Predictive Condition Monitoring and Fault Diagnosis Techniques for Offshore Wind Turbines	(20
X.X. Zheng, C.J. Ye, Y. Fu and D.D. Li Study on the Influence of Wind Power to the Power Supply Side with Consideration of CO ₂	638
Emission Reduction N. He, Z.F. Tan, C. Zhang and J.Q. An	644
Influence of Wind Turbine Aero-Elastic Load on Dynamic Response of Floating Platform F.S. Yan, H.W. Wang, J. Zhang and D.G. Zhang	649

Improvement of Transient Voltage Stability of the Wind Farm Using SVC Y.B. Zhao, J. Yang, Q.Y. Sun and X. Huang	653
Design of Icing Prober Configuration for Horizontal Axis Wind Turbine X. Yi, K. Chen, K.C. Wang and H.L. Ma	658
MPPT of Doubly-Fed Induction Generator in Wind Farm Using SPSA Algorithm H.H. Kuang, Z.Q. Wu and S.Q. Li	662
Overview on Key Technologies of Grid-Connected Wind Power Based on Energy Storage G.X. He, Z. Jiang, L.M. Jiang, H.G. Yan and X.B. Yang	668
A Review of Condition Monitoring and Fault Diagnosis of Wind Turbine Gearbox Using Signal Processing	(72
Z.Q. Xu, J.H. Zhang, J.F. Ji and X.J. Yu Very Short-Term Wind Speed Prediction of a Wind Farm Based on Artificial Neural Network	673
R. Ma, S.J. Hu and H.H. Xu	677
Using the Particle Swarm Optimization Model to Evaluate the Wind Power Enterprise Development Ability under Low-Carbon Economy Environment Z.B. Liu and R.P. Yang	683
The Low Voltage Ride through Simulation Analysis for Wind Turbines to Grid Z.X. Zhang and G.Q. Bao	687
Evaluation of Low-Level Winds from WRF Model that Driven by Different Background Field Data with Applications to Wind Energy Forecasting	
X.L. Liu, Z.M. Yang, S.L. Jing, Z.Q. Wang and S.G. Wang Aerodynamic Design and Finite Element Modelling of Mixed Aerofoil Wind Turbine Blades	692
X.Z. Tang, R.T. Peng and X.W. Liu	698
FLUENT-Based Numerical Simulation of Fan Blade of the Scenery Tower Power Generation Device	
W.M. Yang, W.J. Bai and S.J. Li	704
Research on Wind Power Industry Development in Xinjiang Z.J. Wang, H. Lang and J. Cao	709
A Dynamic Growth Model of Wind Power Optimal Investment Paths W.H. Zhao, H. Wang and J.Y. Ge	713
The Influence of Rotor Arrester on Low Voltage Ride through Behavior of Doubly-Fed Induction Generator C. Chen, R.M. Wang and J.P. Zhang	719
An Optimal Operation Scheduling for Wind Farm with Storage and Forecasting J.C. Liu, Y.G. Lv and J.R. Ma	723
A Novel Emergency Power Supply Unit in MW Wind Turbine Electric Pitch System C.C. Ye	730
MPPT of Wind Energy Conversion System Based on Fuzzy Control K. Fang, Y.J. Su and X.D. Liu	734
Research of Embedded Control System of DFIG Wind Generation J. Liu	738
Reliability Assessment of Wind Power System Considering Multi-Objective Models C.H. Zhao, L.G. Liu, Z.F. Liu and Y. Chen	742
Dynamic Modeling and Simulation of Doubly-Fed VSCF Wind Generator Based on PSCAD/EMTDC	740
K.Y. Li, C. Lu, X.Z. Zhang and M. Yu Chosen of Strength Criterion for Different Region of Blade	748
D. Tian, Q. Li, J.M. Zhang, X.D. Zhang and N.B. Wang	755
Modeling and Simulation of the Impact of Wind Power Integration on Power Market Based on System Dynamics C. Li, L.S. Zhou and M. Zeng	759
Short-Term Wind Speed Combination Prediction Model of Neural Network and Time	
Series H. Zheng, J.Y. Tian, F. Wang and J. Li	764
Research on Single Neuron Adaptive PID Control for MPPT of Wind Power System Using Switched Reluctance Generator	770
H.H. Wang and C.L. Wang	770

Analysis of Aerodynamic Performance for Wind Turbine Based on Amended Calculation of BEM Theory	
D. Tian, S.M. Dai, S. Liu and N.B. Wang	775
Summary and Analysis on the Low Voltage Ride through Reformation of the Wind Power Turbine	
G.X. Hou, Q.H. Liu, F. Yu and Y. Li	781
A Novel Fuzzy Self-Adaption PI Control Method of the Var Compensation of Wind Generator	
X.M. Zou, J. Yang, H. Zhang and Y. Zhu	785
Adequacy Evaluation of Wind-PV-ES Hybrid Power System D. Lei, L. Qin, P. Tianjiao and Z. Haiming	790
Study on the Active Power Output Control of Wind Energy for Power Balance M. Song and Y. Su	796
Practical Calculation Method of Downburst Wind Profiles for Engineering Applications H.X. Dang, F.L. Yang and J.B. Yang	803
Design and Implementation of Wind-Solar Hybrid Street Light Management System Based on ZigBee	
C. Zhang, X.G. Wu and C.J. Zhang	808
Short-Term Wind Speed and Power Prediction Using Fuzzy Information Granulation- Support Vector Machine X. Fu and D.X. Jiang	814
Analysis on Operation Characteristics of Wind Source Heat Pump System	017
Y.Z. Zhang and J. Gu	818
Chapter 4: Nuclear Energy and Nuclear Engineering	
Assesment of Quality Classification of Green Pellets for Nuclear Power Plants Using	
Improved Levenberg-Marquardt Algorithm B. Kusumoputro, R. Prarizky, W. Wahab, D. Sutarya and L. Na	825
Design on Optimization Database of Radiation Protection for Nuclear Facilities	
Maintenance C.Y. Liu and H.T. Zhou	835
Parallel Particle-Grid Hybrid Method for Nuclear Power System Accident Analysis	
Y. Guo The MSIV Cleaves Direct Seven Transient Analysis of Lyngman ADVD Using	839
The MSIV Closure Direct Scram Transient Analysis of Lungmen ABWR Using TRACE/PARCS	
J.R. Wang, H.T. Lin, H.C. Chen and C.K. Shih	844
The Human Reliability Analysis in Level 2 PSA Using SPAR-H Method Y. Wang	848
Chapter 5: Hydrogen, Fuel Cell and Related Technologies	
Synthesis and Properties of Self-Crosslinking Anion Exchange Membranes Based on	
Quaternary Poly(arylene Ether Sulfone)s S.C. Fang, H. Zhang, F. Wang, H.P. Bi, Z.X. Hu and S.W. Chen	857
Studies on the Crosslinked Multiblock Sulfonated Poly(arylene Ether Sulfone) Membranes for Fuel Cell Applications	
Y. Ling, Y. Wu, S.G. Fan, F. Wei, M.J. Zhao, H.P. Bi, Z.X. Hu and S.W. Chen	861
The Study of Surface Modification 304 Stainless Steel in Simulated PEMFC Environments J.L. Wang and H.Y. Shi	865
Preparation and Electro-Catalytic Performance of Pt-Ag/C as Electro-Reduction Catalysts for H ₂ O ₂	
Z.F. Guo and D. Zheng	870
Parameters Optimization of Two-Phase United Anaerobic Fermentation Hydrogen-	
Methane Production Y.Y. Wang and Y.L. Zhang	875

Manufacture New Catalyst PtCuCeO _x for Fuel Cells by IBS and Modified by Post-Processing	
X.Y. Hao, B. Yang, M.Z. Shen and N. Huang	880
Effect of PH on the Performance of the Anode in Microbial Fuel Cells E.R. Zhang, L. Liu and Y.Y. Cui	884
Study on the Progress of the Foreign Security Fuel X. Li and X.J. Wang	889
The Effect of Appending of I ⁻ Fe ²⁺ and MnO ₄ ⁻ to the Electro-Oxidation of Methanol on Platinum Electrode	004
H.T. Wang, Z. Jin and Y.C. Qin Design and Simulation on Polymer Electrolyte Membrane Fuel Cell Bipolar Plates with	894
Hilbert Patterns M.L. Wu, Z.J. Gu and S.F. Cao	898
Advanced Hydrogen Storage Technique to Improve the Run Time of the "Chip Integrated Micro PEM Fuel Cell System"	004
A. Balakrishnan, J. Becker, C. Mueller and H. Reinecke Preparation and Performance of La _{0.7} Sr _{0.15} Ca _{0.15} Co _{1-x} Fe _x O _{3-δ} as the Cathode Material for	904
SOFC	
J.B. Liu, W.Y. Gao, Q.H. Han, Y.Y. Jing, H.W. Yang, Z. Hu and Y.Y. Jiang	913
Microstructures and Electrochemical Properties of La _{0.7} Ce _{0.3} Ni _{3.7} Co _{0.7} . $_{x}$ Al _{0.2} Mn _{0.4} (Fe _{0.43} B _{0.57}) $_{x}$ ($x = 0$ -0.4) Hydrogen Storage Alloys Y. Zhou, Y.P. Fan, X.Y. Peng and B.Z. Liu	917
Synthesis and Properties of Anion Exchange Membranes Derived from Quaternary	, , ,
Poly(ether Sulfone)s H. Yang, W.F. Tang, H.P. Bi, Z.X. Hu and S.W. Chen	921
Chapter 5: Hydrogen, Fuel Cell and Related Technologies	
Enhanced Electrocatalytic Activity of Ni-B-Graphene Electrode for Direct Methanol Fuel Cell Applications Y. Cai, Y.J. Hou and J. Guo	929
Experimental Research on Combustion and Emission Performance for Micro Combustor of MTPV System with Stratified Porous Media J. Wu, B. Li, B. Xu and J.X. Miao	934
Preparation and Properties of Ni-Doped Ce _{0.85} Sm _{0.15} O _{1.925} Ceramics for Use as Electrolytes	
in IT-SOFCs D. Xu and S.F. Xu	941
Electrooxidation of Methanol on Ru/Pt Film Bimetallic Electrode as Probed by <i>In Situ</i> ATR-SEIRAs Study	741
Q.X. Li, H.M. Mao, M.S. Liu and Q.J. Xu	945
Cost Comparison of Three Hydrogen Production Processes in HFCVs Infrastructure Based on H2A Model	
T. Ma, M.Q. Chen, X.H. Jia, X. Zhang and P. Ma	950
Determining PEMFC Model Parameters with IPSO Algorithm X.D. Wang, M.Y. Ye and Y.S. Xu	955
Chapter 6: Heat Pumps Technology	
Energy Saving and Emission Reduction in Power Generation Sector for China's Heat Pump Heating	
X. Chen, L. Wang, L.G. Tong, S.F. Sun, X.F. Yue, S.W. Yin and L.F. Zheng	961
Application Research on Power Plant Heat Pump Regenerative Thermal System X.Q. Zhang and G. Zhang	965
Experimental Study on the Multiple Energy Assisted Heat Pump D. Zhang, X.D. Zhou, L.J. Wang, Q.T. Zhao and T.M. Wei	969
Analysis of Energy and Environmental Benefits about Ground-Source Heat Pump under	
Heating Conditions in Wuhan Region X.F. Hu, Y.Y. Li, Y. Ma, G.H. Hu and Q. Tang	974

The Numerical Simulation of Ground Source Heat Pump J. Zhang and L. Wang	979
Design and Operation Prediction of Groundwater Heat Pump X.Q. Deng	983
Study on Performance of Air Source Heat Pump Water Heater R. Duan	987
Groundwater Source Heat Pump Technology Use for Heating and Air-Conditioning of a Commercial Building H. Li, L. Yang and H.Q. Dong	994
Chapter 7: Storage Battery	
A Simulated System of Battery Management System Based on SAE J1939 Protocol X.L. Li, L. Sang, J.C. Ye and X. Zhang	1001
Study Progress of Li-Ni-Co-Mn-O System as Cathode Material for Li-Ion Battery L.Z. Zhou, Q.J. Xu, X. Yang, M.S. Liu and X. Jin	1006
Study on Kinetics Behavior of the Lead Negative Electrode in the Lead Acid Flow Battery X.D. Liu, X.G. Bi, W. Niu, X. Guan and Y.N. Dong	1012
The Study on the Properties of Zinc-Nickel Battery S.Z. Lin, X.Q. Zhou and R.K. Jia	1017
Electric Vehicle Charging Battery Swap Station Harmonic Generation and Hazard Control J. Jin, R.Y. Niu, D.L. Gong and Y. Jin	1022
Application Analysis and Capacity Configuration of Battery Energy Storage in Renewable Generation System J.L. Ye, J.H. Xue, F.B. Wu and B. Yang	1028
Investigation on the Stability of Electrolyte in Vanadium Flow Batteries Y.H. Wen, Y. Xu, J. Cheng, H.M. Liu and G.P. Cao	1034
Design and Implementation of Distributed Battery Management System H.L. Zhu, Z.B. Wu, D.L. Wang and J.Y. Sun	1039
Chapter 8: Energy Storage Technologies	
Experimental Study on Heat Storage and Release of the Phase Change Thermal Energy Storage Unit with Bushings between Double Flow F. Xu, Y. Sun, H.C. Tian and Y.J. Shi	1045
Preparation and Properties of Paraffin/Activated Carbon Composites as Phase Change Materials for Thermal Energy Storage L. Zhao, X.C. Fang, G. Wang and H. Xu	1049
Application of Cascade H-Bridge Inverter in Super-Capacitor Energy Storage System G.J. Zhang, R. Cai, L. Qi, Y. Chen, R.R. Yu and J.P. Pan	1054
The Analysis of the Transient Characteristics of the PV System with Hybrid Energy Storage System	1050
X. Wang, J.H. Zheng and S.Z. Zhu The Application of Super Capacitor in Scenery Generator Energy Storage System	1058
Y.B. Guo and D.C. Feng The Battery Management System Applied in Smart Grid Energy Storage System	1062
B. Li, M.X. Zheng, B.J. Qi, X.W. Du and Q.S. Yang	1066
Graphene and Metal Oxide Composites for Supercapacitors Y.F. Liu, Z.H. Jiang and G.H. Yuan	1074
Research on Maglev Flywheel Energy Storage System for Electric Vehicle H. Gao, C.G. Zhai, L.L. Chen and H.L. Li	1078
A Compensation Method of Dynamic Voltage Sag Based on SMES Z.P. Mao and G.Q. Bao	1086
The Capacitive Behavior of Ni _{0.76} Co _{0.24} O _x Xerogels in KOH Solution J. Cheng, X.J. Tian, Y.H. Wen, Y. Xu, H.M. Liu, G.P. Cao and Y.S. Yang	1092

Application Analysis of Chilled Water Storage Technology in the Transformation of Central Air Conditioning System	
K.J. Liu, Q.L. Zhang and D.Y. Li	1097
Capacitive Study of Ni(OH) ₂ Xerogels in KOH Solution X.J. Tian, J. Cheng, Y.H. Wen, G.P. Cao and H.M. Liu	1106
Research on Electric Energy Conversion of Maglev Flywheel Battery X.J. Lv, H.C. Wu, G. Gong and Y.F. Hu	1111
Capacity Optimization of Energy Storage Unit in Distributed Generation System C.Y. Guo and H.B. Wu	1116
Research and Develop on Static Frequency Converter of Pumped Storage Power Plant D.S. Wang, B. Yang and L.T. Ji	1120
Control of Battery Energy Storage Power Station for Power Balance Y.J. Meng, X.J. Zhang, J.W. Chen and Y.G. Zhu	1127
The Experimental Study of Water Storage Performance on Small Heat-Pump Energy	
Storage Air-Conditioner F. Wang, J.Y. Wang, M. Liu and Z.Y. Zhang	1133
Chapter 9: Energy-Saving Technology	
Measurement and Verification of Injection Molding Machine Energy-Saving Reformation Effect	
H. Wang, X.F. Zhang, R.M. Tong, T.Y. Li and M.J. Shi	1139
Target Values of Combustion Optimization in Coal Fire Boiler Based on Data Mining W.H. Wang, W.G. Pan, M.F. He, B.C. Pan, Y.Q. Pan and G.X. Hu	1143
A New Type Phase Change Energy-Saving Device for Building Field Y.Q. Xie, P.T. Chi, J.Z. Yu and J. Song	1147
Energy-Saving Analysis for Power System Reactive Power Compensation X.H. Yuan and X.B. Dai	1151
Feasibility of CCHP System in Certain Large-Scale Public Building C. Yang, Y.J. Ruan, W.G. Zhou, J. Wang and Z.L. Zhang	1156
Grey Prediction of WSN Feedback Value in Greenhouse W.F. Cheng, X.L. Yang and L.R. Wang	1166
Experimental Study on Heat Pipe Heat Recovery Type of Fresh Air Ventilator L.Y. Sun, L.T. Xiao and Y.T. Li	1172
Energy-Saving Application of Heat Pipe GGH in Wet Flue Gas Desulfurization System H.M. Liang, J. Zhang and Y.Y. Cai	1177
Structural Optimization Design for Metal Honeycomb Used in Continuous Waste Heat Recovery	
L. Ren, Y. Hu and D.H. Xia	1181
Investigation on the Condensation Heat Transfer Augmentation by Large Porosity Tube Inserts	1107
J.L. Yang Analysis of the Influence of Heater Terminal Temperature Difference on the Cycle Thermal	1186
Y. Li and X. Yin	1190
Study on the Behavior Energy-Saving of the Heat Users of Central Heating System H. Yang, B.H. Yan, C. Sun and G.Q. Xia	1194
Indirect Evaporative Cooling – An Energy Efficient Way for Air Conditioning M.L. Chen, X.L. Liu and E. Hu	1198
Experimental Study on the Air-Circle Temperature-Rising Technology with the Heat Exchanger	1004
Z.C. An and L.G. Jin Energy Efficiency Analysis of Beijing Using the DEA-Tobit Two Stage Method	1204
Y. Wang, Y. Li and F.Y. Kong	1210
Energy Consumption Analysis of Beer Brewing Process Based on Data Envelopment Analysis T.C. Pu and J. Bai	1215

The Simulation Study of Hybrid Compression Garbage Trucks Q. Sun, G.X. Li, S.Z. Bai and C.C. Ma	1220
Optimal Sizing for the CCHP System Based on Software LINGO Y. Yuan, Y.J. Ruan, Q.R. Liu, J. Wang and Z.L. Zhang	1225
A Study on Waste Heat Recovery in Drain Water with Water-to-Water Heat Exchanger in Barbershops F.T. Sun, N. Wang, X.G. Gong, Y.Z. Fan and D.Y. Li	1231
Control Automotive Exhausts and Fuel-Saving by Introducing Improved Detergent Additives	1231
F.S. Luo	1236
Research on the Heating Plan of Recovering Condensing Heat of Power Plant by Water Source Heat Pump Unit W. Qiu, L. Zhang and Q.R. liu	1241
Research on Energy Consumption for Heating from Implementing "50% Energy-Saving Standard" and "65% Energy-Saving Standard" L. Bai, Z. Chen and J.R. Chu	1246
Prediction of Airport Energy Consumption Using a Hybrid Grey Neural Network Model J.J. Chen, C. Xiao and W.G. Qian	1252
Experimental Investigation on Ignition of Low-Volatile Pulverized Coal in a Tiny-Oil Burner in Oxygen-Enriched Conditions D.Q. Xu, F. Fang, H.G. Zhou, H.J. Wang, H.B. Min and X.L. Yan	1257
Optimized Operation of 2×660 MW Piping-Main Scheme Circulating Water System	1237
Y. Li and J.B. Li	1262
Analysis of the Auxiliary Steam Header's Source Selection Y. Li, S.M. Xu, R.J. Li and S.F. Cai	1266
The Analysis of Energy Saving in the Process of Producing Mineral Wool: a Case Study in Shanxi Province Y.Y. Zhang and F.Q. Cheng	1271
Development of a Compact Two-Stage Transmission Line Transformer C.Y. Jiang and S.G. Xia	1276
Energy Saving Methods by Using Ground Source Heat Pump in Buildings J.T. Liu, J.X. Ren, X.C. Ma, K.K. You, F.Q. Li and Y.W. Yang	1281
Study on the Evaluation Method for Energy Saving and Emission Reduction Effect of Power Plant Y. Li and J.X. Wang	1285
A Significant Impact Parameter Extraction Method Based on Rough Set Attribution for Reduction Fuel Consumption Estimation	
J.J. Chen and Y.H. Zou	1289
Mathematical Model of the Generated Energy Based on "Ordering Power by Heat" Y. Li and T.J. Jia	1294
Analysis of the Impact of Boiler Slag's Physical Sensible Heat Recovery on the Thermal Economy of Thermal Power Plant	1200
Y. Li, S.M. Xu, S.W. Huang and W.Y. Du	1298
Chapter 10: Energy Materials and Technology	
A High Light Response of Silicon P-I-N Detector by an AR Thin Film S.L. Chen and S.P. Lee	1305
A Design Method of Supersonic Separator Used in Natural Gas Liquefaction Process Z.C. Li, H. Sun, B.L. Guo and F. Liu	1309
Effect of Annealing Temperature on Electrical Properties of ZnTe Layers Grown by Thermal Evaporation C.H. Hsu, C.F. Tseng, Y.T. Yu, P.C. Yang, C.H. Lai, J.S. Lin and H.W. Yang	1314
Preparation and Properties of PEDOT/PSS Conductive Polymer Blended with	1314
Graphene/PVDF C.J. Lee and I.S. Tsai	1318

Study on Composite of Porous Si and Disordered Carbon as Anode Materials for Lithium Ion Batteries	
J. Wang, J. Li, F. Wu and S. Chen	1327
Excess Heat Triggered by Electrical Current in a D/Pd Gas-Loading System H.Y. Wang, J. Tian and X. Lu	1331
Preparation of Silicalite-1 Membranes on α-Al ₂ O ₃ Tubes and its Concentration Performance of Low Ethanol/water Mixtures H.L. Chen, J.S. Yang, Y. Wang, H.Y. Li, X.X. Li and W.S. Yang	1337
Effect of Synthesis Process of Polyaniline for the Zn-PANi Secondary Batteries J.J. Han, J.N. Cheng, F.W. Pan, X.K. Liu and F. Zhang	1342
Impact of Substitution of M (M=Mn, Cu) for Ni on Hydriding and Dehydriding Kinetics of as-Spun Nanocrystalline and Amorphous Mg ₂ Ni-Type Alloys Y.H. Zhang, H.P. Ren, B.W. Li, Z.H. Hou, G.F. Zhang and D.L. Zhao	1347
Preparation of PET/PT Composite Film and Study of its Moisture Barrier Properties W.M. Ren, P.F. Cheng and X.F. Liu	1351
Luminescent Layer by Layer Thin Films Based on Polyoxometalate and Poly(amidoamine) Dendrimer	
X.F. Zhang, X.L. He, Q.F. Huang and S. Lin	1354
Preparation of Conductive Response Polyaniline/Polyurethane Orderde Array Thin Film S.Z. Lin, F. Gao and R.K. Jia	1359
Effects of Annealing in N ₂ and Air after CdCl ₂ Treatment on the Properties of CdS Thin Films	
Y.Y. Zhu, R. Xu and Z.B. Fang	1363
Chapter 11: Energy Chemical Engineering and Processes	
Offshore Adaptability of the CO ₂ Pre-Cooling Dual Nitrogen Expander Natural Gas Liquefaction Process	
J.L. Zhu, Y.X. Li, W.C. Wang, H.H. Sheng, Y.H. Liu, B. Xie and X.C. Yu	1369
Simulation on Coal Devolatilization Combined a Multi-Step Kinetic Model with Chemkin Software	1255
R. Zhang, Q.H. Wang, Z.Y. Luo and M.X. Fang	1375
Preparation of Ni–Cu Bimetallic Catalyst and its Properties for the Direct Synthesis of Acetic Acid from Methanol and Carbon Monoxide J.F. Wen and X. Liu	1383
The Influence of Chemical Dispersants on the Properties of Crude Oil J. Sun, D.F. Zhao, J. Sun and C.C. Zhao	1387
Low Temperature Bleaching of Cotton with a Novel Cationic Activator	
Y.L. Li, Z.D. Liu and X.N. Wang	1391
Synthesis and Analysis of Ethylene Glycol Methyl Ethyl Ether Y.J. Wang and M. Zhang	1395
Hydrothermal Oxidation of Industrial Alkali Lignin for Producing Small Molecular Organic Acids G.Y. Zhang, J.W. Zhang, J. Yu and Y. Wang	1399
Preparation of Y Zeolite-Based Catalysts and their Catalytic Cracking Performances of	1377
Venezuelan Heavy Oil P.H. Zeng, B.J. Shen, S.F. Ji, Y. Liang and X.H. Meng	1407
XAS Study on Calcination Effect of Silica Supported Cobalt Catalysts for Fischer-Tropsch Synthesis	1.410
S. Chotiwan, W. Bungmek, S. Prangsri-Aroon and P. Viravathana	1413
Integrated Study on Syngas-to-Synthetic Natural Gas (SNG) Process G.H. Song, Q.Y. Song, L.H. Shen and J. Xiao	1419
Heavy Oil Gathering Process Test Research J. Meng, L.C. Ren, Y. Zhang and Y.L. Chen	1424
The Researches on Upgrading of Heavy Crude Oil by Catalytic Aquathermolysis Treatment Using a New Oil-Soluble Catalyst W.L. Qin and Z.L. Xiao	1428

The Synthesis of Cross-Linked Poly Aspartic Acid and Study on Control of the Calcium	
Carbonate Crystal Morphology R.K. Jia, L.Z. Fang and S.Z. Lin	1433
Determining the Engine Oil's TBN by Semi-Derivative Voltammetry Y.G. Shi, S. Wang, Z.C. Li, L. Mei and P. Sun	1437
The Effect of Pressure Disturbance on the Formation Process of Propane Hydrate X.M. Zhang, J.P. Li, L.J. Wang and L. Jiao	1441
Modeling Analysis of Shell, Texaco Gasification Technology's Effects on Water Gas Shift for Fischer-Tropsch Process	1.446
G.W. Yu, Y.M. Wang and Y.Y. Xu Research Impact on Temperature of Polyethylene Gas Pipeline Characteristic	1446
H.J. Ren, D.Z. Liu, D.Y. Wang and J.F. Wang Modeling of an Oil Shale Low Temperature Retorting Process by Using Aspen Plus	1454
J.R. Bai, Z. Bai, S.H. Li and Q. Wang The Investigation of Preparing the Beta Zeolite Membrane by the Way of Secondary	1459
Growth G.L. Shao, C.L. Yu, Y.H. Fu, H.Y. Dai and L.P. Zhang	1463
Simulation of Fluidized Bed Oxygen Permeable Membrane Reactors for Hydrogen Production from Natural Gas	
J.W. Ye, D.L. Xie, Z.H. Yang and Z.Y. Cao	1467
New Dimensionless Model for CO ₂ Miscible Flooding in Five-Point Scheme Z.Y. Guo, X.D. Wang and H.L. Liu	1472
Catalytic Activity of Dehydrogenation of Methanol to MF over Cu/SBA-15 and Cu-ZnO/SBA-15 Prepared by Grinding and Impregnation M.J. Huang, G. Li and G.R. Li	1476
Chapter 12: Energy Security and Clean Use	
Risk Assessment on Coal and Gas Outburst Based on TOPSIS Model Y.Z. Yang and L.Y. Wu	1483
Regional Energy Security Evaluation in China Based on Fuzzy Integral Method J. Hu, J.H. Sun, J.M. Yan, Z. Liu and Y.R. Shi	1487
The Study of Insulation Monitoring Method for Power Battery Pack M.X. Zheng, Q.S. Yang, B.J. Qi, S.Y. Chen and B. Li	1492
The Model of Load Curtailment Optimization in Power Energy Security Evaluation L.M. Jiang, H.G. Yan and G.X. He	1501
Geographic Concentration of Korean Oil Imports and the Implications P. Ma, H. Jiang and Y. Hong	1506
Study on the Dynamic Inspection for Decreasing the Losses and Costs Caused by Accidents of Fixed Equipment in Petrochemical Plants	
G.P. Cong, J.J. Gao, B. Hou, J. Zhu and B.W. Zhang	1511
Chapter 13: New Energy Vehicles and Electric Vehicles	
Wavelet-Based Identification Method of Li-Ion Battery Model for Electric Vehicles D.Z. Mu and J.C. Jiang	1529
Energy Management of Battery Switch Station of Electric Vehicles in Two Settlement Electricity Market V. L. in. C. W. Figns and J.S. Shan	1522
Y.J. Liu, C.W. Jiang and J.S. Shen NVH Prediction of Electric Vehicle Driving Motor Base on Radial Electromagnetic Force	1533
Analysis P. Yu, T. Zhang and P.H. Liu	1537
Design and Simulation of Pure Electric Vehicle Power System S.G. Song, X.P. Li and Z.C. Sun	1541
RFID Technology Application in Electric Vehicle's Battery Charging Stations D.L. Gong, R.Y. Niu, J. Jin and H. Geng	1545

Comparative Study on Electric Vehicle Charging Standards at Home and Abroad W.W. Tang, Y.M. Wu and J. Qin	1553
The Internet of Things for Electric Vehicles: Wide Area Charging-Swap Information Perception, Transmission and Application	
D.Q. Gao, Y.Y. Zhang and X.Z. Li	1560
Study on the Influence of Large-Scale Electric Vehicles on Power Grid W. Yang, C.G. Zhai and X.S. Huang	1566
Study on Various Types of Cooling Techniques Applied to Power Battery Thermal Management Systems	
Z.J. Tang, Q.Z. Zhu, J.W. Lu and M.Y. Wu	1571
Study on State of Health Estimation Algorithm for Lithium Power Battery Used on Pure Electric Vehicle H.W. Liu, W.J. Xu and C. Guo	1577
Impact of Electric Vehicle Charging Mode on Load Characteristic in the Shandong Electric	15//
Power Grid	
J. Wang, K.H. Wu, F. Wang, K.Z. Wu and Z.Z. Liu	1582
Design on Large Power Traction Battery Formation Testing System of Electric Vehicle Z.G. Li, Q. Zhang and K. Zhang	1587
Simulation Analysis of the Heat Temperature Field of Lithium-Ion Battery Pack for Pure Electric Vehicle	
H.W. Liu, J. Zhang and N.L. Xin	1594
The Application of Extended CIM in Electric-Vehicle's Charging-Discharging System Y.H. Wang, M.Y. Zhao, Y. He and G. Wang	1600
Factors Affecting Future Scenarios for Alternative Vehicles Market	
F.E. Ciarapica, D.T. Matt, M. Luccarelli, M. Rossini and P. Russo Spena	1607
Study on the Reuse of Electric Vehicle Batteries in Energy Storage System Y.M. Wu, M.Y. Zhao and Z.Y. Lu	1613
Energy Model of Electric Vehicle Filling Station R.T. Zhang and T.F. Yao	1618
The Influence Research of Complementarities of Electric Vehicles and Distributed Energy on Grid Spinning Reserve Capacity and Peak Regulation Z.H. Xu, R. Ma and S.K. Li	1623
State of Energy Estimation Based on AUKF for Lithium Battery Used on Pure Electric	
Vehicle	1627
H.W. Liu, H.F. Wang and C. Guo Design of Interactive Terminal for Interaction between Electric Vehicles and Grid	1027
Y. Chu and M.Y. Zhao	1631
V2G Reserve Power Supply Coordination Based on CVaR Model	1627
Y.J. Liao and L.F. Shi Parameter Sizing of Hybrid Energy Storage System for Hybrid Electric Vehicle	1637
H.F. Yu, W. Wang and Z.Q. Liu	1643
Design of Electric Vehicle's Operation Management Platform Based on Cloud Computing	
and Internet of Vehicle Z.Y. Lu, Y. He, M.Y. Zhao and Y. Chu	1647
NVH Characteristic Prediction of an Electric Vehicle Reducer	
P. Yu, T. Zhang and P.H. Liu	1656
Coordination Controlling of Micro-Grid with EVs X. Xu and G.Q. Bao	1660
The V2G Technique and its Application in Distributed Generation C. Liu and J. Qin	1665
Chapter 14: Green Building Materials and Energy-Saving Buildings	
Analysis of the Solar Wall Heat Transfer and Energy Saving of Residential Ventilation Y.R. Wang, W. Qi and N. Wu	1673
Geotechnical Approach to Use Paper in Soil A. Chegenizadeh and H. Nikraz	1677

A Summer Case Study on Applying Ventilated Double-Skin Facade to a Building in Cold Zone of China	
H. Yang, Q.Z. Wan, B. Yang, C. Sun, G.Q. Xia and J. Wang	1682
Study and Practice on the Whole Process Evaluation Strategies of Green Building K.Y. He, Y.C. Wang and F. Wang	1686
Development and Application of the Light Ceramsite Foam Concrete Insulation Block H.Z. Wang	1690
Improving Sustainability of Housing in Ghana through Energy Efficient Climate Control Strategies	
A.M. Dauda and H. Gao	1698
Research and Analysis on Energy Efficiency of Typical Residential Building in Super Cold Area H.X. Li, W. Wang, B.N. Li and W. Xiao	1705
Research and Investigation on Present Energy Conservation in Northen Rural Houses G. Li, Z. Li, G.H. Feng, Q. Liu and Q. Wang	1709
Energy Consumption Analysis of a New Rural Green Building J.P. Li, R.D. Diao, S.C. Ma, X.C. Leng and C.L. Wang	1716
The Economic View of Green Building Based on the Humanistic Concept Y.N. Xue, C.P. Wang and X. Li	1724
Flexural and Impact Properties of Bamboo-Aluminum Sandwich Composites S. Osman and M. Ahmad	1728
Assessment of Energy Use Performance of the St. James Parish Council (STJPC) and the Montego Bay Inland Revenue Department in Jamaica T. Ntakirutimana, K.D. Marcene Lyn, J.S. Guo, B.Z. Li and X. Gao	1732
Heat Storage Composite Wall, Ventilation Application J.B. Zhao	1737
Paper Reinforcement and Soil A. Chegenizadeh and H. Nikraz	1741
Experimental Investigation of PCM-LWA Composite for Building Wallboard X. Shi and H.Z. Cui	1746
Analytical Optimization of Key Design Parameters of Phase Change Materials Used in Passive Building Envelopes	
R. Cheng, X. Wang and Y.P. Zhang	1751
Experimental Study on the Compression Rebound Modulus of Coal Gangue Mixture X.H. Xu, Y.P. Zhang, Z.F. Zhang and J.J. Zhang	1759
Research of Ductility and Crack of Square Steel Tube Regeneration Block Mixed Short Columns	
Y.H. Li, P. Zhang and B.S. Li	1764
Implementation of Mathematical Modeling for Wire Rope Strands X.Y. Wang, X.B. Meng, J.X. Wang and K. Gao	1769
Research on Green Building Material Assessment Factors and Eco-Efficiency Issue T.T. Hsieh, C.M. Chiang, M.C. Ho and K.P. Lai	1773
Energy Conservation Analysis on Self-Thermal Insulation Walls Structural System in Cold Areas	
L. Bai, Y.R. Zhang and J.R. Chu Applications of Rigid Polyurethane Foam Insulation Materials in Architectural Energy	1778
Conservation X.Y. Zhang, G.H. Wang, D. Liu and Y. Wang	1783
Study of the Density Control of the Low Density Sulphate Aluminium Cement (SAC) Foam	1/03
Concrete X.G. Yu, H.K. Huang, L. Lin, H.C. Xu and D. Wu	1786
Effect Analysis of a Passive Solar House in Tibet W. Liu, D. Liu, B.Y. Li and M. Zheng	1790
The Engineering Properties of Kaolinitic Clay and Burning Shell Activated by Alkali Solution	1505
B. Vardhanabhuti, P. Kamhangrittirong and K. Amornworawit	1795
Research on the Overlying Strata and Grouting Range Structural Mechanics Model of Abscission Layer Grouting W.Y. Lv and Z.H. Zhang	1801

Sysmatic Analyses for Green Building Engineering Based on Value Evaluation X.P. Yu and X.Z. Fu	1805
Study on Chemical Grout Permeation Mechanism Based on Experiment of Mud and Sand Medium	
D. Tian, H.Y. Shi and E.J. Fu	1809