

# **Asia-Pacific Energy Equipment Engineering Research Conference (AP3ER 2015)**

**Advances in Engineering Research Volume 9**

**Zhuhai, China  
13-14 June 2015**

**ISBN: 978-1-5108-0310-7**

**Printed from e-media with permission by:**

Curran Associates, Inc.  
57 Morehouse Lane  
Red Hook, NY 12571



**Some format issues inherent in the e-media version may also appear in this print version.**

Copyright© (2015) by Atlantis Press  
All rights reserved.  
<http://www.atlantis-press.com/php/pub.php?publication=ap3er-15>

Printed by Curran Associates, Inc. (2015)

For permission requests, please contact Atlantis Press  
at the address below.

Atlantis Press  
29 avenue Laumière  
75019 Paris  
France

[contact@atlantispress.com](mailto:contact@atlantispress.com)

**Additional copies of this publication are available from:**

Curran Associates, Inc.  
57 Morehouse Lane  
Red Hook, NY 12571 USA  
Phone: 845-758-0400  
Fax: 845-758-2634  
Email: [curran@proceedings.com](mailto:curran@proceedings.com)  
Web: [www.proceedings.com](http://www.proceedings.com)

# TABLE OF CONTENTS

## MECHANICAL ENGINEERING AND MANUFACTURING SYSTEMS

<b>COMBUSTION ANALYSIS AND OPERATION ADJUSTMENT OF THERMAL POWER UNIT</b> .....	1
<i>Jun Li, Weiwei Li</i>	
<b>AXIAL FLOW PAF ACCIDENT ANALYSIS AND SOLUTIONS OF THERMAL POWER UNIT</b> .....	5
<i>Jun Li, Weiwei Li</i>	
<b>THE FEASIBILITY ANALYSIS OF LOW-TEMPERATURE WASTE HEAT THERMOELECTRIC POWER GENERATION, BASED ON FORCED OIL CIRCULATION COOLING TRANSFORMER</b> .....	9
<i>Jiayi Guo</i>	
<b>VNT AND EGR TECHNOLOGIES FOR A TURBOCHARGED DIESEL ENGINE</b> .....	13
<i>Junhua Wu, Fushan Zuo, Yonghui Zhang</i>	
<b>THE EXPERIMENTAL STUDY OF PERFORMANCE EJECTING DUST COLLECTOR IN MINE</b> .....	19
<i>Haizhan Li, Zhulian Wang, Hongyu Wang</i>	
<b>ENERGY MANAGEMENT OF ISOLATED MICRO-GRID WITH WIND TURBINES AND SEAWATER DESALINATION DEVICES</b> .....	23
<i>Qing Liu, Shitong Fan</i>	
<b>NUMERICAL SIMULATION ON INFLUENCE FACTORS OF AERODYNAMIC MISTUNING OF WIND TURBINE</b> .....	27
<i>Xiaoming Chen, Shun Kang</i>	
<b>INTRODUCTION TO ROTOR EDDY CURRENT LOSS OF PERMANENT MAGNET MOTOR FOR ELECTRIC VEHICLES</b> .....	31
<i>Shoujie Tang, Hairong Zou, Wan Liu, Peng Wang</i>	
<b>SMOOTHING CONTROL OF DOUBLY-FED INDUCTION GENERATOR WIND TURBINE UNDER DIFFERENT WIND CONDITIONS</b> .....	35
<i>Yuan Chang, Kunkun Fu</i>	
<b>RESEARCH ON AIRBORNE NEAR INFRARED SPECTROSCOPY EQUIPMENT</b> .....	39
<i>Chunyu Wang, Yang Li, Qingwei Dong, Yingjie Sun, Yunfeng Liang, Peng Tian</i>	
<b>THE CUTTING FORCE PREDICTION OF STANDARD TWIST DRILL</b> .....	43
<i>Pengpeng Zhang, HouJun Qi, Hui Yao, YiRong Zhang</i>	
<b>THE CHARACTERISTICS EVALUATION OF CO<sub>2</sub>-FOAM SYSTEM</b> .....	47
<i>Li Liu, Xue Wan, Yongcun Jia, Yanfu Pi</i>	
<b>TYPICAL PRESSURE DROP CALCULATION FORMULA FOR THE APPLICABILITY OF THE PRESSURE DROP OF GELLED CRUDE OIL HYDRAULIC SUSPENSION TRANSPORTATION</b> .....	51
<i>Fuzhang Li, Yang Liu, Jingfen Li, Rongru He, Xiaoyan Liu</i>	
<b>3D NUMERICAL SIMULATION OF GAS FLOW AND SELECTIVE CATALYTIC REDUCTION (SCR) OF NO IN THE HONEYCOMB REACTOR</b> .....	56
<i>Jongchol Om, Weihong Wu, Peidong Ji</i>	
<b>APPLICATION OF A FLUIDIC ACTUATOR TO HORIZONTAL DIRECTIONAL WELL DRILLING</b> .....	60
<i>Jiangfu He, Xiaodong Zhao, Kun Yin, Houping Liu</i>	
<b>STEADY-STATE MODELING OF THE REFRIGERATION UNIT FOR A MARINE REFRIGERATED CONTAINER</b> .....	64
<i>Jiajun Ren, Chaoyu Zheng, Wu Chen</i>	
<b>SIMULATION ANALYSIS SPRAY OF THE BUTANOL AND DIESEL FUEL MIXED WITH INJECTION PRESSURE AND AIR FLOW INTENSITY</b> .....	69
<i>Jian Wu, Weiwei Shang, Yibin Liu, Yang Hua, Bin Xu</i>	
<b>OPTIMAL OPERATION AND REAL-TIME MONITORING OF 300MW BOILER BASED ON EXCESS AIR COEFFICIENT</b> .....	75
<i>Mengshuo Jia</i>	
<b>STUDY ON LOAD DISTRIBUTION OF TEMPERATURE AND HUMIDITY INDEPENDENT CONTROL AIR-CONDITIONING SYSTEM</b> .....	79
<i>Qin Ouyang, Min Ouyang, Liping Xiang</i>	

## NEW MATERIALS AND ADVANCED MATERIALS

<b>MICROSTRUCTURE AND MECHANICAL PROPERTIES OF MG-5Y-3SM-0.8CA ALLOY</b> .....	83
<i>Qing Zhang, Quan-an Li, Jun Chen, Xing-yuan Zhang</i>	

<b>THE CORROSION BEHAVIOURS OF AZ61 MAGNESIUM ALLOY WITH THE CA ADDITION</b> .....	87
<i>Jun Chen, Quan-an Li, Qing Zhang, Xing-yuan Zhang</i>	
<b>APPLICATION OF SVM IN GAS SENSOR: QUANTITATIVE ANALYSIS OF CO<sub>2</sub></b> .....	91
<i>HongYan Chen, WenZhen Liu, Jian Qu, ZhiBin Li</i>	
<b>PREPARATION AND PROPERTIES OF A NOVEL POLYMERIC DAMPING MATERIAL</b> .....	95
<i>Chengbing Yu, Xi Yu, Saisai Chen, Fangfang Wu, Qi Wang, Wenteng Zhu</i>	
<b>EXPERIMENTAL INVESTIGATION ON PREPARATION AND STABILITY OF AL<sub>2</sub>O<sub>3</sub>/CUO-WATER NANOFLUIDS</b> .....	99
<i>Lu Liu, Mo Wang, Yanfeng Liu</i>	
<b>SYNTHESIS OF A DYE CONTAINING BENZOTHIADIAZOLE FOR HIGHLY EFFICIENT DYE-SENSITIZED SOLAR CELLS</b> .....	103
<i>Chao-Feng Du, Lei Jiang, Nian-Yu Huang, Lei Sun, Wei-Qiao Deng</i>	
<b>MN<sup>2+</sup>-, RU-COORDINATED COVALENT TRIAZINE FRAMEWORK AS CATALYSTS FOR EPOXIDATION OF CYCLOHEXENE</b> .....	107
<i>Xue Liu, Ling Zhang, Wei-Qiao Deng, Nian-Yu Huang</i>	
<b>APPLICATION OF DEPTH REGULATING AND DISPLACING TECHNOLOGY OF NANO-MICRON HYDROGEL MICROSPHERES IN OILFIELD</b> .....	111
<i>Tianyang Li, Sili Luo, Jianguo Li, Shenghua Li</i>	
<b>SPECTRAL ANALYSIS AND GROWTH OF ND:YLF CRYSTAL</b> .....	115
<i>Dongyang Zheng, Jialin Xu, Wang Liu, Ximeng Cheng, Weizhao Jin, Chun Li, Fanming Zeng, Hai Lin, Jinghe Liu</i>	
<b>REINFORCING POLYAMIDE 1212 WITH OXIDIZED CARBON NANOTUBES</b> .....	119
<i>Ziqing Cai, Xiaoyu Meng, Lishan Cui, Qiong Zhou</i>	
<b>SYNTHESIS OF HIERARCHICAL-STRUCTURED ZN/MO-HZSM-5 AND ITS APPLICATION IN DIMETHY ETHER AROMATIZATION</b> .....	123
<i>Yali Lu, Donglin Wang, Yibing Song, Qiuli Yang, Meili Fu, Daoke Yu, YiWen Fang</i>	
<b>SYNTHESIS AND CHARACTERIZATION OF POLYACRYLONITRILE COPOLYMERS CONTAINING AMINE GROUPS</b> .....	127
<i>Chengran Yang, Yumei Zhang, Biao Wang</i>	
<b>THE SKELETON CONSTRUCTION AND PHARMACEUTICAL ACTIVITY OF COUMARINS</b> .....	131
<i>Minrui Liu, Jiachun Liu, Zhanchao Zhao, Gensheng Yang, Wen Zhang</i>	
<b>THE STUDY ON BIOLOGICAL AND PHARMACOLOGICAL ACTIVITY OF COUMARINS</b> .....	135
<i>Ling Xu, Xiao-Yin Zhao, Yan-Ling Wu, Wen Zhang</i>	
<b>MECHANICAL PROPERTIES OF METHYL METHACRYLATE COPOLYMERS</b> .....	139
<i>Yanhong Zhang, Yan Wang, Xianchao Kong, Dongmei Zhao</i>	
<b>EXPERIMENTAL STUDY ON THE FRICTION PERFORMANCE OF NYLON - HIGH STRENGTH STEEL SLIDING FRICTION PAIRS</b> .....	143
<i>Xiao Yan Wang</i>	
<b>CORROSION BEHAVIOR OF NI-W-P COATING IN HYPERSALINE BRINE</b> .....	147
<i>Qianqian Shao, Xin Zhang, Zhaojie Cui, Xianfeng Tan</i>	
<b>STUDY ON SBS MODIFIED ASPHALT WATERPROOF BINGDING COURSE</b> .....	152
<i>Chenguang Wan, Aiqin Shen, Li Fan, Yuan Zhang</i>	
<b>MICROSTRUCTURE AND PERFORMANCE OF MG-SUBSTITUTED β-TCP POROUS CERAMICS</b> .....	156
<i>Yunhai Ma, Wenbo Shang, Xueying Fan, Zhihui Gao, Hubiao Wang, Xueman Luy</i>	
<b>OPTICAL TRANSMITTANCE THROUGH ULTRATHIN GOLD FILMS WITH SUBWAVELENGTH HOLE ARRAYS</b> .....	162
<i>Shanshan Wu, Yanqiang Bai, Jinfeng Zhu, Wenjie Chen, Yijun Cai, Na Liu, Qinghuo Liu</i>	
<b>RESEARCH ON THE EFFECT OF FLY ASH CONTENT ON THE TENSILE PROPERTIES OF PVA -ECC</b> .....	166
<i>Wan Li, Xiaoyong Zhou, Na Li</i>	
<b>RESEARCH ON THERMAL CONDUCTIVITY OF GROUTING MATERIAL FOR UNDERGROUND HEAT EXCHANGER OF GSHP SYSTEM</b> .....	173
<i>Lele Yu, Wanlu Huang</i>	
<b>ENHANCED COLORATION EFFICIENCY OF ELECTROCHROMIC THIN FILM BASED ON TiO<sub>2</sub> AND CHITOSAN</b> .....	177
<i>Shuping Liu, Wei Wang, Huanan Guan</i>	
<b>EFFECT OF CURING TEMPERATURE AND CURING DEGREE ON ELASTIC RECOVERY OF CONDUCTIVE PARTICLES</b> .....	182
<i>Min Gong, Dejian Zhou</i>	
<b>THE STUDY OF APPLICATION OF HIGH WATER MATERIAL IN FILLING MINING TECHNOLOGY</b> .....	186
<i>Zhongming Zhao, Yongliang Liu, Yi Li</i>	

<b>STUDY ON CELLAR RAINWATER TREATED BY DIFFERENT SIZE BAC IN VILLAGES AND TOWNS OF NORTHWESTERN CHINA</b> .....	190
<i>Yaohui Yang,, Guozhen Zhang, Hao Yang, Rui Dang</i>	
<b>THE COMPILATION OF MARINE ENVIRONMENTAL SPECTRUM FOR CARBON FIBER/POLYMER COMPOSITES</b> .....	194
<i>Xu Liu, Yueliang Chen, Wujun Huo, Dongdong Wang, Yuanling Lei</i>	
<b>RESEARCH ON PACKER MATERIAL STRESS ANALYSIS</b> .....	201
<i>Jianning Wang, Xinde Han, Juan Wang, Li Wang, Lixin Sui, Jianjie Ning, Yao Wang, Yan Jiang, Xiongyi Hu, Tao Sun</i>	
<b>STUDY ON DECREASING EFFECT OF ASCORBIC ACID ON ALGAE KILLING ABILITY OF UV</b> .....	206
<i>Jiang Jing</i>	
<b>ADSORPTION OF CR(VI) FROM AQUEOUS SOLUTION WITH DOUBLE LAYERS CALCIUM-IRON-ALGINATE GEL BEADS</b> .....	210
<i>Minhong Xu, Tuhua Zheng, Xuanru Li, Xiaonan Dong</i>	
<b>C, H, O, S, PB ISOTOPE GEOCHEMISTRY AND THE IMPLICATIONS OF QIXIASHAN PB-ZN-AG POLYMETALLIC DEPOSIT IN JIANGSU PROVINCE</b> .....	214
<i>Mingchao Zhang, Yongsheng Li, Xiaofei Yu, Wenbin Jia</i>	
<b>THE FACTOR ANALYSIS OF PM<sub>2.5</sub> CALCULATING AND SOURCE STRUCTURE IN JIANGSU PROVINCE</b> .....	219
<i>Guo-mao Wang, Wei Li, Zhi Li</i>	
<b>HYDROTHERMAL SYNTHESIS OF COPPER HYDROXYPHOSPHATE HIERARCHICAL SUPERSTRUCTURES AND ITS PHOTOCATALYSIS ACTIVITY IN UV LIGHT</b> .....	224
<i>Lei Ji, Ruimin Yu</i>	
<b>SYNTHESIS AND CHARACTERIZATION OF NANOPARTICULATE CEVO<sub>4</sub> BY ULTRASOUND METHOD AND ITS PHOTOCATALYTIC ACTIVITY</b> .....	229
<i>Yi Zheng, Jiqi Jiang, Qian Yang, Peisong Tang</i>	
<b>A MODIFIED GAUSS PLUME MODEL FOR DRAWING THE DISTRIBUTION OF PM<sub>2.5</sub></b> .....	233
<i>Mengshuo Jia</i>	
<b>THE MECHANICAL PROPERTIES AND WEARABILITY OF THE JACQUARD FABRICS WITH DIFFERENTIAL DENSITY FOR TENTS</b> .....	237
<i>Baoqing Yang, Yi Qin, Jinming Zhang, Zhihua Luo</i>	

## **ENERGY CHEMISTRY AND CHEMICAL TECHNOLOGY**

<b>RECOVERY OF ALUMINA FROM ELECTROSLAG-REMELTING OF TI-BEARING BLAST FURNACE SLAG</b> .....	241
<i>Songli Liu, Li Cao, Kuisong Zhu, Junyi Xiang, Pan Huang</i>	
<b>SURVEY OF ESTROGENIC ACTIVITY OF ORGANIC EXTRACTS FROM WATER BODY FROM JILIN CITY REACH OF THE SECOND SONGHUA RIVER</b> .....	245
<i>Hongyan Wang, Yanli Xi, Jing Zhang, Shuguang Jin</i>	
<b>OXIDATIVE DAMAGE AND REPRODUCTIVE TOXICITY OF ORGANIC EXTRACTS OF JILIN CITY REACH OF THE SECOND SONGHUA RIVER ON MALE RATS</b> .....	249
<i>Shuguang Jin, Yanli Xi, Weiqi Sun, Hongyan Wang</i>	
<b>EFFECT OF TORREFACTION TEMPERATURE ON BIOMASS PYROLYSIS USING TGA AND PY-GC/MS</b> .....	253
<i>Dengyu Chen, Hongru Zhang, Dong Liu, Yong Chen</i>	
<b>NEW BRØNSTED-ACIDIC IONIC LIQUIDS BASED ON 8-HYDROXYQUINOLINE CATION AS CATALYSTS FOR THE ESTERIFICATION REACTION OF N-HEXYLIC ACID</b> .....	257
<i>Lincai Peng, Lingxiang Pu, Chen Chen, Shun Yao, Tian Yao, Hang Song</i>	
<b>ADSORPTION OF IONIC LIQUIDS FROM CELLULOSIC HYDROLYSATE BY ION-EXCHANGE RESIN</b> .....	261
<i>Haoran Wu, Shun Yao, Yan Wang, Hang Song</i>	
<b>STUDY ON THE ISOMERIZATION REACTION OF TURPENTINE OIL CATALYZED BY THE ACID-TREATED HANGJIN 2# CLAY</b> .....	265
<i>Jie Zhang, Guanghua Shen, Wanzhuang Mai, Bing Liang, Xiangying Hao, Zhiwei Li, Shunhua Li, Ming Zhang</i>	
<b>PREPARATION AND MECHANICAL PROPERTIES OF PREVULCANIZED NATURAL RUBBER LATEX/CHITOSAN/POLY (3-HYDROXYBUTYRATE) BLENDS</b> .....	269
<i>Guang Lu, Heping Yu, Yongzhou Wang, Yongyue Luo, Zongqiang Zeng</i>	

<b>COMBINED EFFECT OF PLANTARICIN BM-1 AND REFRIGERATION STORAGE TO CONTROL LISTERIA MONOCYTOGENES INOCULATED IN BRINED COOKED HAM</b> .....	273
<i>Huimin Zhou, Yuanhong Xie., Hongxing Zhang, Huixia Duan, Shan Shi, Yue Sun, Hui Liu</i>	
<b>OPTIMIZATION AND APPLICATION OF FLUE GAS DENITRIFICATION CONTROL FOR THERMAL POWER UNITS BASED ON INTERNAL MODEL CONTROL</b> .....	277
<i>Song Gao, Bo Gao, Xiangkun Pang, Xiangrong Meng</i>	
<b>OVEREXPRESSION OF THE TRYPTOPHAN CLUSTER IN CORYNEBACTERIUM GLUTAMICUM</b> .....	281
<i>Hansong Yu, Xiaodi Liu, Jiahuan Liu., Yuhua Wang, Yaohui Hu</i>	
<b>A NOVEL ANALYZING METHOD TO COAL MINE IMAGE RESTORATION</b> .....	285
<i>Changchun Shang</i>	
<b>THE EXPERIMENTAL STUDY ON THERMAL STABILITY OF AQUEOUS SURFACTANT SOLUTION</b> .....	289
<i>Xinnan Song, Yu Wang</i>	
<b>PRETREATMENT OF RAPID DETECTION OF VETERINARY DRUG RESIDUE IN EGGS</b> .....	293
<i>Xin Wang, Qigen Tong</i>	
<b>APPLICATION PROSPECTS FOR HARMLESS TREATMENTS OF OILY SLUDGE IN CHANGQING OILFIELD</b> .....	297
<i>Chunmei Xu, Weiyu Bi, Xiaorong Li, Haien Yang, Fangfang Xue, Ping Yi</i>	
<b>STUDY ON THE ELECTROCHEMICAL OXIDATION TREATMENT OF COKING WASTEWATER BY DSA ANODE</b> .....	301
<i>Qiyuan Gu, Jin Zheng</i>	
<b>CHARACTERIZATION OF DAHP SYNTHASE L183Q MUTATION COMPARISON TO WILD ONE BY PROKARYOTIC EXPRESSION SYSTEM</b> .....	306
<i>Hansong Yu, Tian Hao, Yuhua Wang, Chunhong Piao, Junmei Liu, Yaohui Hu</i>	
<b>NUMERICAL AND EXPERIMENTAL STUDY ON THE MULTIPHASE FLOW IN GAS-CARRIED POWDER INJECTION DESULPHURIZATION PROCESSES</b> .....	310
<i>Shiyao Lin, Han Chen, De Xie</i>	
<b>CHIRAL SEPARATION OF R,S CLOPIDOGREL WITH MONOLITHIC MOLECULARLY IMPRINTED POLYMERS</b> .....	314
<i>Zhiwei Li, Yanling Gao, Jin Xia, Qingguo He</i>	
<b>EXPERIMENTAL RESEARCH FOR CHEMICAL FLOODING OF HEAVY OIL</b> .....	318
<i>Yanfu Pi, Quanzhi Li, Yingjie Liu, Xiaofang Yang</i>	
<b>OPTIMIZATION OF SLUG AND CONCENTRATION FOR POLYMER SURFACTANT</b> .....	322
<i>Yanfu Pi, Ya Gong, Quanzhi Li, Xiaofang Yang</i>	
<b>PHOTOSYNTHESIS AND PRODUCTIVITY OF CYPERUS ROTUNDUS AND SETARIA VIRIDIS IN THE THREE GORGES RESERVOIR AREA: AN EMPIRICAL STUDY</b> .....	326
<i>Jiang'en Shen, Fangqing Chen</i>	
<b>STUDY OF GROWTH RHYTHM OF NON-ENERGY-PLANT STEVIA REBAUDIANA HEMSL IN SEEDLING-GROWING STAGE IN HEXI REGION, GANSU PROVINCE</b> .....	330
<i>Hongyi Sun, Haitao Dong</i>	
<b>NUTRIENT REMOVAL FROM MODELING EFFLUENT OF SECONDARY TREATMENT PROCESS BY UNVEGETATED VERTICAL FLOW CONSTRUCTED WETLANDS</b> .....	335
<i>You Lv, Bin Zhou, Hong-jie Wang</i>	
<b>HG GEOCHEMICAL CHARACTER ON SOIL OF XIANLING OF MING DYNASTY</b> .....	341
<i>Li Guo, Chuxin Che, Changshun Ding, Jinbo Lv</i>	
<b>A REVIEW: PHARMACEUTICAL WASTEWATER TREATMENT TECHNOLOGY AND RESEARCH IN CHINA</b> .....	345
<i>Xin Li, Guoyi Li</i>	
<b>THE KEY PROBLEM AND SOLUTION OF MEDICAL WASTE HIGH-TEMPERATURE STEAM TREATMENT</b> .....	349
<i>Hongjun Teng, Zhenbo Bao, Dengchao Jin, Yang Li</i>	
<b>GANODERIC ACID ACCUMULATION AND BIOSYNTHETIC GENE EXPRESSION DURING FRUITING BODY DEVELOPMENT IN GANODERMA LUCIDUM</b> .....	354
<i>Zhao-Rui Feng, Huan-Jun Li, Jun-Wei Xu</i>	

## **ENERGY SCIENCE AND ENGINEERING**

<b>THE DEVELOPMENT AND OPERATION OF OFFSHORE WIND FARMS IN CHINA</b> .....	359
<i>Feng-hui Yang, Xiang-feng Zhang, Shu-ting Chen, Zhi-jie Wang</i>	

<b>RESEARCH AND APPLICATION OF CONTROL STRATEGY BASED ON LOW NITROGEN COMBUSTION .....</b>	<b>363</b>
<i>Jun Li, Weiwei Li</i>	
<b>ANALYSIS OF PLANS FOR RAINWATER REUSE IN A RESIDENTIAL AREA IN JIANGSU, CHINA.....</b>	<b>367</b>
<i>Shucong Zhen, Yong Xun, Simin Xu, Yougxin Zhou</i>	
<b>THE BIOLOGICAL PURIFICATION PROJECT PRACTICE OF THE SEWAGE TREATMENT STATION'S ODOR.....</b>	<b>371</b>
<i>Feng Yu, Hongqi Zhu, Yanjun Yin</i>	
<b>STUDY ON TWO-PHASE FLOW AND TEMPERATURE CHARACTERISTICS OF DIRECT METHANOL FUEL CELLS .....</b>	<b>375</b>
<i>Hongrong Xia, Wei Yuan, Zhaochun Zhang, Aoyu Wang</i>	
<b>TANGYIN RIFT TECTONIC EVOLUTION AND PALEOZOIC THERMAL STORAGE GENETIC MECHANISM .....</b>	<b>379</b>
<i>Yan Ge, Xin Du, Xianguo Wang, Wenjuan Wang</i>	
<b>DETAILING OF THE IGNEOUS ROCK LITHOLOGY IN WELLS – LOGGING DATA FROM THE CARBONIFEROUS, WEST JUNGGAR BASIN, CHINA.....</b>	<b>383</b>
<i>Kun Wang, Suyun Hu, Kui Ma, Cheng Qin</i>	
<b>HIGHWAY RECLAMATION USING NATIVE GRASS SOD FOR SEDIMENT CONTROL AND AESTHETIC ENHANCEMENT .....</b>	<b>387</b>
<i>Jing Gong, Zhipeng Li, Ming Huang, Ye Li</i>	
<b>GEOLOGICAL APPLICATION OF HYSPEX GROUND HYPERSPECTRAL REMOTE SENSING IN GOLD AND URANIUM ORE DEPOSITS.....</b>	<b>392</b>
<i>Yu Sun, Yingjun Zhao, Kai Qin, Jiangtao Nie, Haobo Li</i>	
<b>A STUDY ON IMPACTS OF DISTRIBUTED GENERATION VOLTAGE IN DISTRIBUTION NETWORK SYSTEM.....</b>	<b>396</b>
<i>Wei Song, Xiaolong Liu, Xinghua Zhou, Hongting Zhou</i>	
<b>THE DEVELOPMENT PLANNING SCHEME OF THE TRANSMISSION LINES BASED ON LCC .....</b>	<b>400</b>
<i>Yan Xu, Cheng Chi</i>	
<b>THE RESEARCH OF DISPLACEMENT EFFICIENCY FOR BINARY COMBINATION FLOODING IN OFFSHORE HETEROGENEOUS RESERVOIRS .....</b>	<b>404</b>
<i>Yingjie Liu, Yanfu Pi</i>	
<b>EXPERIMENTAL STUDY ON SATURATION DISTRIBUTION OF HETEROGENEOUS RESERVOIR .....</b>	<b>408</b>
<i>Yanfu Pi, Xiaosai Guo, Jing Wang, Yongcun Jia</i>	
<b>TEMPORAL VARIATION OF LEUCAENA LEUCOCEPHALA SEEDLINGS IN SOIL CONSERVATION AND SLOPE PROTECTION.....</b>	<b>413</b>
<i>Ling Bai, Fangqing Chen, Yu Huang</i>	
<b>EXPERIMENTAL CONTRAST OF THE EFFECTIVE VISCOSITY DETERMINATION METHODS OF BINARY FLOODING SYSTEM.....</b>	<b>417</b>
<i>Li Liu, Yanfu Pi, Nan Chen, Xue Wan</i>	
<b>THE EXPERIMENTAL CONCENTRATION OPTIMIZATION OF THE BINARY SYSTEM OF OIL DISPLACEMENT IN OFFSHORE OILFIELD .....</b>	<b>421</b>
<i>Li Liu, Xue Wan, Nan Chen, Yanfu Pi, Yu Wang</i>	
<b>SLIDING DISTANCE PREDICTION OF LOESS LANDSLIDE BASED ON THE DISCRETE ELEMENT METHOD.....</b>	<b>425</b>
<i>Yazhe Li, Wengui Tang</i>	
<b>A METHOD FOR THE DETERMINATION OF UTILITY HARMONIC RESPONSIBILITY USING IMPROVED LEAST SQUARES ESTIMATION .....</b>	<b>429</b>
<i>Na Yue, Xiufang Jia</i>	
<b>THE APPLICATION OF FFT ANALYSIS ON THE FEEDER CURRENT BASED ON THE SMOOTH FUNCTION IN MATLAB .....</b>	<b>433</b>
<i>Yujie Chang, Huawei Li, Songwei Huang, Jinghan He, Shaobing Yang, Qiang Wang</i>	
<b>THE WAVELET ANALYSIS IN THE APPLICATION OF THE TRACTION SUBSTATION FEEDER CURRENT ANALYSIS .....</b>	<b>437</b>
<i>Songwei Huang, Huawei Li, Yujie Chang, Mingli Wu, Jinghan He, Jianjun Xu</i>	
<b>RESEARCH ON THE ENERGY-EFFICIENT CACHING STRATEGY IN CONTENT-CENTRIC NETWORKING.....</b>	<b>442</b>
<i>Tiantian Shi, Li Zhang, Changbiao Xu</i>	

## **ADVANCED DESIGN TECHNOLOGY**

<b>APPLIED TECHNOLOGY IN 3D GEOLOGICAL MODELING OF OILFIELD BASED ON PROPERTIES OF GEOLOGICAL MATERIALS A REVIEW OF CRITICAL ISSUES3D</b> .....	446
<i>Xiaojun Liang, Jinxin He, Laijun Lu, Tianyu Zhang</i>	
<b>DESIGN OF AN ENERGY-EFFICIENT WIRELESS ROUTER SWITCH</b> .....	449
<i>Lulin Yuan, Jie Yang</i>	
<b>MEDICAL IMAGE SEGMENTATION BASED ON FRACTIONAL-ORDER DERIVATIVE</b> .....	453
<i>Dan Tian, Dapeng Li, Yingxin Zhang</i>	
<b>A FRACTIONAL-ORDER PRIMAL-DUAL DENOISING ALGORITHM</b> .....	457
<i>Dan Tian, Dapeng Li, Yingxin Zhang</i>	
<b>MECHANICS PERFORMANCE ANALYSIS OF NEW QUASI-HONEYCOMB SANDWICH STRUCTURE'S CORE</b> .....	461
<i>Huanghai Xie, Yixian Du, Xiang Li, Guan Tong, Jinxue Wang, Shuangqiao Yan</i>	
<b>MECHANICAL DESIGN OF SUBSTANDARD GLASS-BOTTLED BEER RECYCLING EQUIPMENT</b> .....	465
<i>Jiaxin You, Huanyu Yao, Suiran Yu</i>	
<b>OPTIMIZING THE DESIGN OF CLUSTER SPACING DURING VOLUME FRACTURING FOR TIGHT FORMATION</b> .....	469
<i>Jiao Peng, Desheng Zhou</i>	
<b>WATER SUPPLY SYSTEM DESIGN BASED ON SINGLE-CHIP MICROCOMPUTER</b> .....	472
<i>Tian-cheng Guan, Ming-shan Hou, Shen Cheng</i>	

## **ENERGY ECONOMY AND MANAGEMENT**

<b>IMPACT OF RURAL-HOUSEHOLD DIFFERENTIATION ON THE ACTION OF FARMLAND TRANSFER</b> .....	476
<i>Lishuang Wang, Chunping Wang, Zhanxiang Sun, Wei Ma</i>	
<b>INVESTIGATION AND EVALUATION OF GAMMA RADIATION IN DIFFERENT PLACES OF ONE UNIVERSITY IN JILIN CITY</b> .....	480
<i>Shuguang Jin, Yali Ren, Huan Li, Hongyan Wang</i>	
<b>THEORY AND PRACTICE OF SUSTAINABILITY IN HIGHER EDUCATION – FROM THE PERSPECTIVE OF GREEN UNIVERSITY</b> .....	484
<i>Ruimin Mu, Ping Liu, Yuntao Song, Dayong Cao, Liwei Zhan, Jian Zuo, Rujian Ma, Xuliang Yuan</i>	
<b>RESEARCH ON THE RELATIONSHIP BETWEEN LOGISTICS INDUSTRY ENERGY CONSUMPTION AND ECONOMIC DEVELOPMENT IN SHANGHAI</b> .....	488
<i>Wei Chen, Hehua Li</i>	
<b>BRIEF DISCUSSION ON AUDITING OF TENDER DOCUMENTS FOR CONSTRUCTION PROJECTS</b> .....	492
<i>Yunhua Liu</i>	
<b>PRELIMINARY DISCUSSION ON THE MANAGEMENT OF CONSTRUCTION CONTRACTS</b> .....	496
<i>Yunhua Liu</i>	
<b>STUDY ON THE INFLUENCE OF POWER BALANCE ON THE EFFECTIVENESS OF INTERNAL CONTROL IN THE LISTED COMPANY OF ENERGY INDUSTRY IN CHINA</b> .....	500
<i>Yunchen Wang, Yumei Chen, Xuan Yu</i>	
<b>INFLUENCE FACTOR OF RURAL-HOUSEHOLD DIFFERENTIATION BEHAVIOR IN MAJOR GRAIN-PRODUCING AREAS</b> .....	504
<i>Lishuang Wang, Chunping Wang, Zhanxiang Sun, Wei Ma</i>	
<b>ANALYSIS OF CHINESE STRATEGIC PETROLEUM RESERVE FROM THE NON-TRADITIONAL SECURITY PERSPECTIVE</b> .....	508
<i>Xiangyang Wan</i>	
<b>ANALYSIS OF THE INVESTMENT ECONOMIC BENEFIT ON RENQIU BURIED HILL RESERVOIR LIFT METHODS CONVERSION</b> .....	513
<i>Yan Gao, Yongxiang Yang, Yongning Yang, Xuexia Wei, Anqi Yang, Shian Lu, Lei Chen, Aiqin Liu, Baohui Zhang, Jing Wang</i>	
<b>CHINA CLEAN ENERGY DEVELOPMENT DIRECTION</b> .....	517
<i>Hongxia Shi, Fuli Liu, Shen Wei</i>	
<b>MEASURE THE LEVEL OF LOW CARBON ECONOMIC DEVELOPMENT AND ANALYSIS OF OBSTACLES FACTOR IN SHANDONG PROVINCE</b> .....	521
<i>Qiang Zhao, Xiumei Li, Qiaoling Guo</i>	



<b>CAN THE HIGH QUALITY OF INTERNAL CONTROL PROMOTE THE FULFILLMENT OF CORPORATE SOCIAL RESPONSIBILITY IN ENERGY ENTERPRISES?</b> .....	526
<i>Yunchen Wang, Manping Tang, Xuan Yu</i>	
<b>THE PRESENT SITUATION AND PROSPECTS OF SOLAR PHOTOVOLTAIC POWER GENERATION IN CHINA</b> .....	531
<i>Mali Chang</i>	
<b>ESTIMATION OF NON-POINT SOURCE POLLUTION LOAD OF THE LIVESTOCK AND POULTRY BREEDING IN SICHUAN PROVINCE, CHINA</b> .....	535
<i>Feng Wang, Pingjing Gui, Likou Zou, Liangqian Fan</i>	
<b>Author Index</b>	