

International Conference on Power Electronics and Energy Engineering 2015

(PEEE 2015)

Advances in Engineering Research Volume 20

**Hong Kong, China
19-20 April 2015**

Editor:

A. Leung

ISBN: 978-1-5108-0764-8

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=PEEE-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

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
Web: www.proceedings.com

TABLE OF CONTENTS

POWER ELECTRONICS TECHNOLOGY AND ENERGY ENGINEERING

SELF-CYCLING MODULARIZED SMART GRID APPLICATION INTEGRATION	1
<i>Y. P. Li, S. Liang, W. Xu, J. B. Xin</i>	
DROOP CONTROL OF PARALLEL DUAL-MODE INVERTERS USED IN MICRO GRID	3
<i>C. X. Wen, Z. Y. Liu, Z. X. Li</i>	
RESEARCH OF LOSS REDUCTION SCHEME FOR REGIONAL DISTRIBUTION GRIDS BASED ON G1-GRAs	7
<i>W. Zhang, Y. M. Liu, W. Q. Ma</i>	
THE ANALYSIS ON THE INFLUENCE FACTORS AND TENDENCY OF POWER REGULATION IN CHINA	12
<i>Q. Guo, T. Liu, G. W. Gao, Y. Xu</i>	
STABILITY CONSTRAINTS OF THE TRANSMISSION CAPACITY ABOUT VSC-HVDC SYSTEM SUPPLY TO THE PASSIVE NETWORK	14
<i>S. Chen, X. Tang, W. Q. Zhang</i>	
DEVELOPMENT OF VLF TEST SYSTEM FOR POWER CABLES	19
<i>C. X. Huang, C. B. Yang, H. J. Sun, H. J. Li, F. Huang, J. M. Guo</i>	
SELECTION OF DECOUPLING CAPACITORS FOR POWER DELIVERY NETWORKS WITH MULTIPLE POWER PORTS	23
<i>Q. D. Wang, Y. C. Wang, X. L. Li, Q. S. Liu</i>	
INTELLIGENT MANAGEMENT SYSTEM OF VEHICLE VIOLATION BASED ON ELECTRONIC LICENSE	27
<i>Y. Z. Cai, Y. R. Li, Z. Y. Cai</i>	
RESEARCH OF HTS APPLICATION ON TOKAMAK MAGNETS	30
<i>L. Ren, X. Z. Deng, Y. Xu, H. Liu, J. D. Li, J. Shi, Y. J. Tang</i>	
ANALYSIS OF LOSSES IN HIGH SPEED SLOTLESS PM SYNCHRONOUS MOTOR INTEGRATED THE ADDED LEAKAGE INDUCTANCE	36
<i>B. Q. Kou, H. C. Cao, W. L. Li</i>	
THE APPLICATION OF ELECTROCHEMICAL IMPEDANCE IN THE ENVIRONMENTALLY FRIENDLY SCALE AND CORROSION INHIBITOR POLYEPOXYSUCCINIC ACID	41
<i>H. Y. Tian, B. R. Zhang, F. T. Li</i>	
MICRO-PHASE SEPARATION STRUCTURE OF NONIONIC POLYETHER-POLYESTER POLYURETHANE BASED ON MDI	48
<i>H. Quan, L. Wan, G. F. Wan</i>	
A NOVEL HIGH WATER-RESISTANT AQUEOUS ACRYLATE EMULSION, PART 1: PREPARATION AND CHARACTERIZATION	51
<i>B. K. Ren, K. T. Hu, G. H. Li, A. B. Wu, J. J. Li</i>	
TIME-RESOLVED FLUORESCENCE ANISOTROPY STUDY ON INTRAMOLECULAR INTERACTIONS OF BRANCHED STYRYL DERIVATIVES BASED ON 1,3,5-TRIAZINE	55
<i>Y. C. Wang, G. Q. Wang, D. J. Liu, B. Li</i>	
THE DESIGN OF ELECTRODE OF COAL ROADWAY ADVANCED DETECTOR	58
<i>Y. Zhou, Y. M. Lv, J. T. Zhang, Z. M. Liu, X. G. Liu, M. Wu</i>	
RESEARCH OF WIND POWER PREDICTION BASED ON THE AUTO-REGRESSIVE MODEL	61
<i>L. Feng, C. H. Liang, H. Huang</i>	

MECHANICAL ENGINEERING AND MANUFACTURE

RESEARCH ON FUZZY RELIABILITY PREDICTION METHOD OF CNC MACHINE TOOLS	65
<i>G. B. Zhang, D. M. Luo, Y. Ran, W. Yu</i>	
FAILURE ANALYSIS AND DIAGNOSIS OF SPARK EROSION MACHINE TOOLS	69
<i>H. Meng, N. Xin, H. Guo, L. Zhang</i>	
DESIGN AND DEVELOPMENT OF MATERIAL MANAGEMENT SYSTEM BASED ON DIGITAL PULP PIPELINE	71
<i>H. W. Liu, Z. L. Yu, J. D. Wu</i>	

TRANSIENT ELASTOHYDRODYNAMIC LUBRICATION ANALYSIS OF SPUR GEAR RUNNING-IN CONSIDERING EFFECTS OF SOLID PARTICLES	74
<i>X. B. Huang, Y. Q. Wang, Q. Liu, N. Dong</i>	
ELECTRIC POWER STEERING SYSTEM FOR AGRICULTURAL TRUCK MATCHING DESIGN	79
<i>Z. G. Chen, W. Zhang, Q. Zhang, T. M. Zhou</i>	
RESEARCH ON PRECISION FORGING BLADE TENON PROCESSING TECHNOLOGY	83
<i>L. J. Huang, M. Kou, X. T. Tian, Z. Y. Wang</i>	
HIGH PRECISION WORK STATION RESEARCH	86
<i>X. M. Cheng, Y. Q. Chen, P. N. Zhang, H. C. Fan, Z. Zhao, C. Z. Li</i>	
MATCHING RESEARCH BETWEEN ENGINE AND TRANSMISSION OF VEHICLE BASED ON AVL-CRUISE	89
<i>F. Du, Z. W. Guan, C. H. Liu, Y. S. Wan</i>	
A KIND OF RESEARCH ON REGENERATIVE BRAKING ALGORITHM OF HYBRID ELECTRIC VEHICLE	93
<i>Z. L. Liao, Q. Gao, P. Fan, R. F. Hu</i>	
STUDY ON MODELING METHOD OF THE PRECISION MACHINED SURFACE GEOMETRY FORM ERROR BASED ON BI-CUBIC B-SPLINE	97
<i>Z. Q. Zhang, X. Jin, Z. J. Zhang</i>	
THE SUPPRESSION OF NARROW BAND JAMMERS ALGORITHM AND THE IMPLEMENTATION OF BEIDOU B3 SIGNAL	101
<i>C. M. Li, L. Huang, X. J. Wang</i>	
NUMERICAL STUDIES OF ABRASION WEAR ON THE GUIDE VANES IN A SUBMERSIBLE AXIAL FLOW PUMP	106
<i>H. M. Zhang, L. X. Zhang</i>	
THE DESIGN OF RICE DIRECT SEEDING MACHINE	109
<i>S. F. Ding, Q. X. Li, Q. Huang, S. F. Ding</i>	
DESIGNING A REFRIGERATION AND HEAT-REMOVAL SYSTEM FOR RAPID DETECTOR BASED ON FREEZING POINT	112
<i>X. T. Yu, J. Leng, X. B. Guo</i>	
INVESTIGATION OF NEGATIVE INFLUENCES ON RIDE COMFORT PERFORMANCE OF IN-WHEEL MOTOR VEHICLES WITH HIGH UNSPRUNG MASS	115
<i>T. Z. Shi, D. F. Wang, S. M. Chen</i>	
ELECTRICAL POWER MANAGEMENT FOR DISTRIBUTED AUTOMOTIVE SYSTEM	118
<i>X. F. Zhang, M. H. Luo, Y. Shen, J. D. Cao</i>	
NOVEL 0.1 HZ EXPONENTIAL WAVE GENERATOR BASED ON SEMICONDUCTOR SWITCH	122
<i>Z. Hou, C. B. Yang, H. J. Li, S. C. Ji, J. Li, X. Chen</i>	
DYNAMIC ANALYSIS OF AERIAL WORK PLATFORM WORKING DEVICE BASED ON VIRTUAL PROTOTYPE	126
<i>J. Q. Guo, D. W. Liu, J. G. Jia</i>	
TFT SUBSTRATE GLASS GEOMETRICAL PARAMETER MEASUREMENT AND DATA PROCESSING	129
<i>H. Guo</i>	
ELECTRICAL RETAIL TARIFF MODEL BASED ON THE LOAD CHARACTERISTICS	134
<i>J. J. Wu, H. T. Huang, C. Gao, F. Yu, J. Pan</i>	
ULTRASONIC LIVER IMAGE DENOISING BASED ON A HYBRID THRESHOLD METHOD	139
<i>H. J. Zhu, L. Rao</i>	

APPLIED MECHANICS

STUDY ON AERODYNAMIC PERFORMANCE OF OFFSHORE WIND TURBINE WITH FLOATING PLATFORM MOTION	143
<i>X. M. Ding, L. Zhang, Y. Ma</i>	
A VISUALIZATION EXPERIMENTAL STUDY OF ICING ON BLADE FOR VAWT BY WIND TUNNEL TEST	147
<i>Y. Li, J. Tang, Q. D. Liu, S. L. Wang, F. Feng</i>	
KINEMATICS ANALYSIS ON THE CROSS STEP SKILLS OF CHINESE FEMALE JAVELIN THROWER LV HUIHUI	151
<i>M. R. Zhou</i>	

MICROSTRUCTURE AND MECHANICAL PROPERTIES OF MICRO-ALLOYING MODIFIED AL-MG ALLOYS	153
<i>J. Zhang, J. J. Zhao, R. L. Zuo</i>	
COMPARATIVE STUDY ON MECHANICAL PROPERTIES OF V-SHAPED INSULATOR STRING UNDER FLUCTUATING AND CALM WIND	157
<i>J. J. Huang, X. M. Chen, Y. Xiong, C. L. Liu, Y. Wang</i>	
THE INTERNAL STRESS ANALYSIS METHOD OF CEMENT PASTE UNDER CORE RESTRICTED CONDITIONS	160
<i>Y. Li, X. F. Liu, W. L. Bai</i>	
RESEARCH AND DEVELOPMENT OF THE TENSION PAY-OFF EQUIPMENT FOR WIRE ROPE MAINTENANCE	163
<i>W. H. Cui, L. Tang, K. Q. Gong, C. Fu</i>	
CONVEX-CONCAVE PROPERTY FOR PARABOLA FITTING OF DR. BRIDGE	167
<i>J. Huang, S. X. Ding, H. G. Gan, S. F. Zhang</i>	

MATERIAL PERFORMANCE AND OPTIMIZATION

TEM INVESTIGATION ON CERAMIC STRENGTHENING NIAL-BASED COMPOSITE PREPARED BY THERMAL EXPLOSION AND HOT EXTRUSION	170
<i>L. Y. Sheng, C. Lai, T. F. Xi</i>	
FLEXURAL BEHAVIOR OF REINFORCED CONCRETE BEAMS STRENGTHENED WITH BFRP BARS	174
<i>G. N. Yang, B. R. Huo, M. X. Zheng</i>	
EXPERIMENTAL INVESTIGATING EFFECT OF REPROCESSING ON PROPERTIES OF COMPOSITES BASED ON RECYCLED POLYPROPYLENE	177
<i>F. Gu, P. Hall, N. J. Miles</i>	
PROPERTIES OF SNAGCU SOLDERS BEARING AL NANOPARTICLES	185
<i>L. Zhang, L. Sun, Y. H. Guo, Y. Min</i>	
A REVIEW: THE WETTABILITY AND OXIDATION RESISTANCE OF SN-ZN-X LEAD-FREE SOLDER JOINTS	188
<i>L. Sun, L. Zhang</i>	
TENSILE BEHAVIOR OF HIGH TEMPERATURE CU-CR-ZR ALLOY	191
<i>X. W. Zhang, Q. J. Wang, X. Zhou, B. Liang</i>	
POLYPYRROLE/SISAL FIBER COMPOSITES FOR ENERGY STORAGE	195
<i>H. D. Mo, L. M. Zang, C. Yang, C. Wei, F. A. Zhang, S. R. Lu, Z. Q. Wang, X. X. Huang</i>	
EFFECT OF ACCUMULATED STRAIN ON THE MICROSTRUCTURE AND PROPERTIES OF TC4 ALLOY PREPARED BY CONTINUOUS VARIOUS CROSS-SECTION RECYCLED EXTRUSION	198
<i>X. L. You, Y. Y. Liu, J. S. Hua, K. Wang, W. Yao</i>	
MOLECULAR SIMULATION RESEARCH ON DOMAIN MICRO-STRUCTURE OF TSP-POSS/PU HYBRID COMPOSITES	202
<i>R. Pan, L. L. Wang, Y. Liu</i>	
STUDY ON FIRE EXTINGUISHING PERFORMANCE OF SUPERFINE POWDER FIRE EXTINGUISHING AGENT IN A CUP BURNER	206
<i>T. Chen, X. C. Fu, J. J. Xia, L. S. Jing, C. Hu</i>	
LAGRANGE MULTIPLYING METHOD BASED CALCULATION OF MATERIAL FLAW THICKNESS EXPLOITING ULTRASONIC MULTIPATH DETECTION	211
<i>X. Z. Shen, S. J. Chen</i>	
SIMPLE SYNTHESIS FOR HIERARCHICAL SIO₂ TUBES WITH ADJUSTABLE MESOPOROUS	215
<i>Y. H. Zhang, Y. Deng, Y. H. Cai, W. Xiao, L. L. Sun</i>	
EFFECT OF SYNTHESIS CONDITIONS ON THE GROWTH OF ZNO NANORODS VIA THE SOLUTION DEPOSITION METHOD	219
<i>C. M. Zhang, T. Meng, S. Y. Yao, S. Huang, D. D. Wang</i>	
STUDY OF THE NUMERICAL PARAMETER OPTIMIZATION METHOD BASED ON NANO-INDENTATION PROCESS	222
<i>J. S. Ding, G. Q. Shi, G. F. Shi</i>	
GEFITINIB, AS A NEW STENT COATING MATERIAL, SPECIFICALLY INHIBITS SMOOTH MUSCLE CELLS PROLIFERATION THROUGH INHIBITION OF EGFR/AKT PATHWAY PHOSPHORYLATION	225
<i>F. Li, S. Y. Wang, J. Luo, Z. X. Wu, T. Xiao, O. Zeng, J. Yang, C. Chu</i>	

A METHOD FOR COMPOSITE WING BOX OPTIMIZATION WITH MANUFACTURING CONSTRAINTS	228
<i>X. P. Zhong, P. Jin, Q. Han</i>	
PREPARATION OF HA/TIO₂ BIOLOGICAL COATING ON TITANIUM ALLOY	231
<i>H. P. Shao, S. J. Wu, T. Lin, Z. M. Guo</i>	
PREPARATION OF SUB-MICRO SIO₂ PARTICLES BY SOL-GEL METHOD	234
<i>T. Lin, H. P. Shao, H. Zheng, L. Zhang</i>	

INTELLIGENT NETWORK APPLICATION AND COMPUTER SCIENCE

IMPACT OF COMPUTER MUSIC TECHNOLOGY ON THE EFFECT OF THE INFORMATION MEMORY OF AUDIENCES	237
<i>Y. Qin, D. J. Li, J. T. Yang</i>	
DESIGN AND REALIZATION OF TEMPERATURE MEASUREMENT SYSTEM BASED ON PROTEUS SOFTWARE	240
<i>C. L. Wang, P. Y. Chen, H. L. Hu</i>	
RESEARCH ON THE STRATEGY OF GROUP VEHICLE INTELLIGENT PERCEPTION AND TRAFFIC ROUTE GUIDANCE OF SEMANTIC CAR ROAD NETWORK	243
<i>L. J. Tai, R. F. Hu, C. W. Chen</i>	
FACE RECOGNITION BASED ON GABOR WAVELET TRANSFORM AND MODULAR 2DPCA	245
<i>H. Yan, P. Wang, W. D. Chen, J. Liu</i>	
STUDY OF WUHAN METRO VISUAL COMMUNICATION DESIGN UNDER THE BACKGROUND OF “JIANGCHENG CULTURE”	249
<i>X. Zhang</i>	
AN ENERGY CONSUMPTION MODEL OF MOBILE TERMINAL SOFTWARE BASED ON BP NEURAL NETWORK	252
<i>L. W. Liu, T. F. Zhan, Z. Y. Cai</i>	
THE CULTIVATION MODE ABOUT THE ABILITY OF SCIENTIFIC RESEARCH OF UNDERGRADUATE BASED ON THE DUAL-TUTORIAL SYSTEM	255
<i>X. D. Yuan, J. Li, G. L. Yuan</i>	
TRAINING MODE ON GRADUATION DESIGN OF ENGINEERING STUDENTS BASED ON THE DUAL-TUTOR SYSTEM	258
<i>X. D. Yuan, X. Liu, G. L. Yuan</i>	
THE CONNECTIVITY OF FAULTY FOLDED HYPERCUBE NETWORKS	261
<i>D. Yuan, H. M. Liu, M. Z. Tang</i>	
RESEARCH AND APPLICATION OF FUZZY CONTROL WITH MULTIPLE WEIGHTED FACTORS BY GENETIC ALGORITHM	266
<i>L. J. Dong</i>	
ROUTING PROBLEMS IN EMERGENCY LOGISTICS BASED ON IMPROVED DATA ENVELOPMENT ANALYSIS	270
<i>X. X. Zhu, S. Y. Wang</i>	
THE RESEARCH OF NUMERICAL SIMULATION ABOUT THE IMPROVED DENSE MEDIUM CYCLONE	273
<i>X. B. Li, Q. Q. Huang, X. Li</i>	
A STUDY ON SOLVING THE NONLINEAR SEEPAGE FLOW MODEL OF THREE-REGION COMPOSITE RESERVOIR	277
<i>Y. Wang, X. X. Dong, S. C. Li, H. E. Li, D. D. Gui</i>	
A STUDY ON SOLVING THE LINEAR SEEPAGE FLOW MODEL WITH RWE OF COMPOSITE RESERVOIR	281
<i>Y. Wang, X. X. Dong, S. C. Li, H. E. Li, D. D. Gui</i>	
A FUZZY TRUST EVALUATION MODEL IN MOBILE COMMERCE	285
<i>J. Chen, Z. Y. Cai, J. Peng</i>	
A NOVEL METHOD FOR 3D MORPHING BY DEFORMATION MATRIX WITH TRIANGLE MESHES	289
<i>C. L. Peng, T. W. Xing, Y. Yu, Y. Zhou, S. D. Du</i>	
A METHOD OF PUBLIC POLICY REFINEMENT BASED ON OWL AND LINEAR TEMPORAL LOGIC	294
<i>D. P. Lang, S. B. Huang, L. S. Shen, T. Zhang, H. Chen</i>	
STOCHASTIC ECONOMIC DISPATCH USING BACTERIAL SWARM ALGORITHM	298
<i>M. S. Li, Y. Hu, X. Zhang</i>	

STUDY ON THE COMPREHENSION DIFFERENCE BETWEEN MANAGERS AND FRONT-LINE EMPLOYEES	302
<i>W. Jiang, Z. M. Zhu, L. N. Li</i>	
ANALYSIS ON TECTONIC STYLE AND FORMING MECHANISM OF THE CAMBRIAN SYSTEM IN THE CENTRAL UPLIFT BELT, TARIM BASIN	306
<i>W. Yin, T. L. Fan</i>	
EFFECT OF THE PLAN FOR EDUCATING AND TRAINING EXCELLENT ENGINEERS ON THE EXPERIMENTAL TECHNICAL ABILITY OF UNDERGRADUATE.....	310
<i>X. D. Yuan, X. J. Yang, G. L. Yuan</i>	
STUDY ON THE EXPERIMENTAL TEACHING FOR UNDERGRADUATES IN REQUIREMENTS OF THE PLAN FOR EDUCATING AND TRAINING EXCELLENT ENGINEERS.....	313
<i>X. D. Yuan, X. J. Yang, G. L. Yuan</i>	
STUDY ON THE OPENING EXPERIMENT TEACHING FOR UNDERGRADUATES IN REQUIREMENTS OF THE CREDIT MANAGEMENT SYSTEM	316
<i>X. D. Yuan, X. J. Yang, G. L. Yuan</i>	
STUDY ON THE TALENT CULTIVATION MODE IN REQUIREMENTS OF THE CREDIT MANAGEMENT SYSTEM.....	319
<i>X. D. Yuan, X. J. Yang, G. L. Yuan</i>	
ANALYSIS ON THE CHARACTERISTICS OF PARTICLES SPECTRAL OF ICE CAUSED BY FREEZING RAIN IN NAN-YUE MOUNTAIN OF HUNAN PROVINCE	322
<i>L. C. Zhang, J. L. Yang, B. Liu, K. J. Zhu, X. Y. Li</i>	
CHANGES IN CONTENT AND COMPONENT OF PURPLE CORN (ZEA MAYS L.) ANTHOCYANIN DURING THE EXTRACTION AND PREPARATION	325
<i>D. Wang, Y. Ma, P. P. Liu, C. Zhang, X. Y. Zhao</i>	
STUDY AND PRACTICE ON TEACHING SYSTEM REFORM OF ENGINEERING GRAPHICS BASED ON TRAINING ENGINEERING CONSCIOUSNESS.....	328
<i>D. T. Xu, Y. J. Feng, J. L. Shi</i>	
Author Index	