

6th International Conference on Information Engineering for Mechanics and Materials (ICIMM 2016)

Advances in Engineering Research Volume 97

Huhhot, China
30-31 July 2016

Editors:

Feng Zhang

Xiangnan Lin

ISBN: 978-1-5108-3095-0

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© (2016) by Atlantis Press
All rights reserved.
<http://www.atlantis-press.com/php/pub.php?publication=icimm-16>

Printed by Curran Associates, Inc. (2016)

For permission requests, please contact the publisher:

Atlantis Press
Amsterdam / Paris

Email: contact@atlantis-press.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: 845-758-2633
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

Research and Implementation of the UDS Diagnostic System	1
<i>Lingfeng Xie, Feng Luo</i>	
Model of Grey Mean Generating Function and Its Application Pesticide Quantity Prediction	6
<i>Xiuhong Zhang, Yong Lin</i>	
The Research of Advanced Evasion Attack Method Based On Metasploit And Fragroute	10
<i>Hong Xia, Yajuan Xi, Qianqian Pei</i>	
The Analysis and Research of Freak Attack Based on OpenSSL	15
<i>Hong Xia, Qianqian Pei, Yajuan Xi</i>	
DHT-based IM/DD Optical OFDM System for Power Data Transmission	20
<i>Honghao Zhao, Jun Liu, Kai Liang, Yanping Zhang, Dan Yi, Changqing Zhong, Shuang Liu</i>	
A Novel Access Integrated System for Electric Power Telecommunication	25
<i>Kai Liang, Fanbo Meng, Yanping Zhang, Jun Liu, Dan Yi, Xuexu You, Yu Zou</i>	
Wireless LED Dimming Control Based on WiFi	30
<i>Jianguo Bao, Shan Zhang</i>	
A FP-Tree Based Algorithm for Mining Knowledge Point Association	34
<i>Bingtao Hu, Xiaoming Ju</i>	
The Structural Design and Relevant Calculations of 4000 Asphalt Recycler	42
<i>Feng Gao, Na Wang</i>	
Numerical Analysis of Separate Vortex in the Diffuser	48
<i>Yong-Rui Sun, Chuan-Lei Yang, He-Chun Wang, Xiang-Huan Zu</i>	
Negative Shear Lag Effect of Simply Supported Curved Box Girder	52
<i>Hai Lin Lu, Zheng Tang, Heng Cai, Xiao Long Zhou</i>	
A Fast Geometry Test for Machine Tool Based on Laser	57
<i>Yun Zhang, Gang Liao</i>	
Target Tracking Control of Mobile Robot Based on Ultrasonic Sensor	60
<i>Zhenwen Tan, Shusheng Bi, Hao Wang, Zhibiao Wang</i>	
Study at Non-destructive Testing Technology Based on Vibration Characteristics of the Steel Rod with Crack	65
<i>Hongchun Sun, Lina Wang, Yize Liu</i>	
Application of the Storage System on Variable Rate Fertilizer Applicator	70
<i>Zhan Yang</i>	
A Design of Direct Current Supply System for X-ray Flaw Detector Controller	74
<i>Yuguo Yue</i>	
The Feasible Research of Electric Vehicle by Using Two-gear Transmission	77
<i>Guanlong Yang, Ling Su, Zhonghua Li, Jie Liu, Xueyong Tian</i>	
Chaos Synchronization and Parameter Identification of a New Fractional System	81
<i>Hong-Gang Dang</i>	
Research on Acquisition and Feature Analysis of GMA Status Signal Based on Grating Sensors	86
<i>Ping Han, Kaichong Ma</i>	
Anti-bias Passive Localization for Fixed Target Using Bearings-only	91
<i>Shun Sun, Chen Guo</i>	
Design of Maintenance Training of Some Equipment Hydraulic System in Semi-physical Simulation	96
<i>Weian Gao, Xiaohu Chen, Chunjiang Yao</i>	
Design of Intelligent Flame Detection System	104
<i>Hongjun Gu, Ji Li, Shijun Li, He Gong, Jian Li, Li-Xin Hou</i>	
Low-power Design of Digital Integrated Circuit Based on UPF Standard	108
<i>Yuncheng Lu</i>	
Research on the Digital Sensor Based on STM32 for Leakage Current	113
<i>Kai-Hong Yuan</i>	
Research on the Charging System of Electric Vehicle Photovoltaic Cells	117
<i>Jun Huang</i>	
Combined Integrating Control for High Order System with Time-delay	122
<i>Angang Chen, Zhengyun Ren</i>	
Research of Deformation Law by Speed in Temperature Field of Carding Machine Cylinder	128
<i>Yongyan Wang, Lei Yang, Chunle Zeng</i>	

Theoretical and experimental study on cavitation bubble dynamics induced by underwater shock wave focusing	134
<i>Zhenfu Zhang, Xiaopeng Kong</i>	
The Design and Analysis on Intensity of Anti-roll Bar on 100% Low-floor Light Rail Vehicle	138
<i>Kuangyan Zhang, Zhenggang Lu</i>	
A Method of Speed Estimation with Stator Resistance Online Identification Based on MRAS	143
<i>Jun Tong, Lei Sun, Haoxiang Cao</i>	
Research and Design of High Torque Soft Starter Based on Discrete Frequency.....	150
<i>Jun Tong, Yao Lu, Xiahui Wang</i>	
Research on Access Control Model Based on User Action in Cloud Computing	157
<i>Huanbin Wang, Ma Tao, Xiaobin Hui</i>	
Research on Face Recognition Method Based on PCA.....	161
<i>Tingting Chen, Riuan Liu, Lirong Diao</i>	
Semi-Hertzian Theory and its Application in Wheel Wear Calculation	165
<i>Qiyue Yin, Zhenggang Lu</i>	
A Framework of Graduate Employment Recommendation System and Key Technologies	169
<i>Shengbo Shi, Hexin Lv</i>	
Research on the Preparation and Characterization of Magnetic Nanoparticles (MNPs) By Chemical Co-precipitation	175
<i>Guizhong Zhou, Shuo Xu, Wenqian Li, Qian Yao, Dayi Zhang</i>	
Structure Design and Movement Simulation Research of Bionic Artificial Leg	181
<i>Hualong Xie, Zheng Jia, Deming Zhao</i>	
EV Charging Station Placement Considering Traffic Flow	186
<i>Tianqi Lu, Qiang Ma, Zheng Gu</i>	
Automatic Detection of Reference Region in Label Images	193
<i>Yuheng Wang, Chune Zhang</i>	
A Pilot Protection Scheme for Active Distribution Networks Considering	200
<i>Hongwei Li, Zhiyuan Pan, Jing Wang, Xiao Liu, Xinyue Si</i>	
Investigation on the Embedded Training of Submarine Emergency Manipulation	206
<i>Ying Zhou, Dabin Hu, Xiangyang Zhou, Jianbo Xiao</i>	
Comparative Analysis of KTA19-C525 and QSX15-C525 Engine	215
<i>Jianchun Gong, Xiyue Wang, Jianhong Tang</i>	
Adaptive Adjustment of Feature Weight Coefficients Based on Genetic Algorithm in Image Retrieval.....	221
<i>Zhihui Wang, Xiaoli Ge, Jinlin Li, Qila Sa, Wenbo Xu, Yuejiao Fan, Yiqun Zhao</i>	
Design and Application of Cloud-based Operation and Maintenance Platform for Industry 4.0.....	228
<i>Jiqing Cao, Shuhai Zhang</i>	
Research on the Gait Planning of Artificial Leg Based on Central Pattern Generator	236
<i>Hualong Xie, Deming Zhao, Zheng Jia, Yuying Yang</i>	
Kinematics Analysis and Simulation of KUKA KR5-arc Welding Robot based on MATLAB	242
<i>Sailong Wu, Qiang Lin, Peng Wang</i>	
PLC Control System Study of Coaxial Self-vibration and Variable-frequency Centrifuge of Tube&mould for New Type Well Pipe.....	246
<i>Jiangtao Liu, Jinggang Yi, Shanshan Li, Yazhou Xing, Haiyong Jiang</i>	
Review on Simulation Methods of Cyber-physical Complicated Distribution System	250
<i>He Li, Hong Zhang, Dapeng Li, Gang Huang</i>	
A Lucid and Fast Algorithm for N-k Contingencies Based on Low-Rank Update	256
<i>Aihua Jiang, Hua Wei</i>	
Research on Key Technologies of Communication and Computing in Smart Grid.....	262
<i>Qinghai Ou, Qingsu He, Shiliang Xu, Lingkan Zeng, Xiao Liao</i>	
The Influence of Solution Treatment on Structure and Performance of AZ91 Magnesium Alloy	271
<i>Zhijun Pu, Hening Liu, Kui Zhang, Xinggang Li</i>	
Improved SLIC Superpixel Segmentation Based on HSV Non-uniform Quantization	277
<i>Dongping Li, Changliang Liu</i>	
Experimental Study on the Influences of Fly-ash and Slag on the Plastic Shrinkage of Concrete	282
<i>Xiaoxia Wu, Hongying Li, Qingfu Li, Zhen Wan</i>	
PID Neural Network Decoupling Control of Multi-variable System and its Application.....	288
<i>Dongjiang Yu, Weizhi Long, Jiabing He</i>	
Modeling and Simulation of 1000MW Double Reheat Ultra-supercritical Unit based on Particle Swarm Optimization	294
<i>Lixin Chen, Xueping Zhou, Hao Zhao</i>	
The Design of a Novel Measurement System for the Characterization of Gas Sensing Materials.....	300
<i>Xijin Leng, Bangning Sun, Guolong Liu, Hui Suo</i>	

Live Migration of Virtual Machines in Multiple Datacenters	306
<i>Luyang Tang, Dongcheng Zhao, Zhi Tan, Gang Sun, Dan Liao</i>	
Adaptive Beamforming Algorithms for Smart Antenna System	312
<i>Shun Na, Mengdi Guo, Yang Liu, Yinghui Zhang</i>	
An Improved Spectral Subtraction Algorithm for Speech Enhancement System	318
<i>Shun Na, Weixing Li, Yang Liu</i>	
Multi-label Image Ranking based on Deep Convolutional Features	324
<i>Guanghui Song, Xiaogang Jin, Genlang Chen, Yan Nie</i>	
Investigation on the Nonlinear Effect of a Gb/s Visible Light Communication System Utilizing DFT-S OFDM Modulation	330
<i>Can Wang, Meng Shi, Yiguang Wang, Nan Chi</i>	
Diving Video-assisted Analysis Research	334
<i>Mingquan Long</i>	
SDN-enabled Platform for Energy-efficient Relay Protection Optical Port in Internet of Energy	339
<i>Yanping Zhang, Honghao Zhao, Dan Yi, Kai Liang, Jun Liu, Xiumin Leng, Ying Cao, Xu Zhang</i>	
The Design of 2DOF Enhance Coordination Unit of Ammunition	343
<i>Guobao Ding, He Cui, Xiuwen Hu</i>	
Research on the Agro-technique Information Service Cloud Platform of Orchard Based on the Internet of Things(IOT)	349
<i>Xiang Sun, Huarui Wu, Qingxue Li, Peng Hao</i>	
Partial Parameters of Random Network Models for Internet of Things	356
<i>Jing Su, Fei Ma, Bing Yao, Hui Sun, Xiaohui Zhang, Ming Yao</i>	
Design and Implementation of the Thesis Evaluation System Based on Web Technology	364
<i>Bo Li</i>	
A Newly Improved Canny Algorithm of Image Edge Detection	369
<i>Xiang Wu, Weibo Yu, Xiaotong Liu, Keping Liu</i>	
A New Mathematical Model and its Solvability Test on Computer	375
<i>Sheng Zhang, Chi Tian</i>	
Exp-Function Method with Computerized Symbolic Computation for New Exact Solution of Burger's Equation	380
<i>Sheng Zhang, Qun Gao</i>	
A Study on the Evaluation of ICT Development Level in University Administrative Departments in China	384
<i>Min Chen, Chao Fan, Di Wu</i>	
Study on Micromilling Processes for Polymethyl Methacrylate	394
<i>Fanjie Meng, Xiang Cheng, Qiulian Sun, Rufeng Xu, Xianhai Yang</i>	
Study on the Miniaturized Machine Tool for Combined Machining	401
<i>Xiaoxiao Liu, Xiang Cheng, Fei Wang, Guangming Zheng, Xianhai Yang</i>	
An ELM-Based Traffic Flow Prediction Method Adapted to Different Data Types	407
<i>Xingchao Wang, Jianming Hu, Yi Zhang, Zhenyu Wang</i>	
Modeling and Simulation of Parasitic NPN ESD	413
<i>Haishi Wang, Feiyue Zhou, Hanfei Yang, Huaitian Liang</i>	
Power Loss Analysis of Zigbee Propagation Models on the Landslide of Heifang Platform	419
<i>Mingming Liang, Caihong Li, Juan Wang, Lian Li</i>	
Communication Network Dynamic Role Analysis Based on Weighted Directed Topological Potential	428
<i>Wan-Yu Li, Guang-Quan Cheng, Jin-Cai Huang</i>	
Reliability Analysis on CEDI Water Treatment System based on GO Methodology	434
<i>Xin Guo, Ning Zhao, Chunyuan Jing, Jin Li, Min Bai</i>	
Simulation on the Weak Links of Certain Liquid Chlorine Tank	439
<i>Xin Guo, Chunyuan Jing, Lizi Chen, Peiliang Gao</i>	
Application of Hospital Information Security Intrusion Detection System Based on the New NPRIM Algorithm	445
<i>Xingshan Li, Min Xu</i>	
Research On Local Mesh Refine Method Based On Absolute Nodal Coordinate Formulation	450
<i>Ruifeng Liu, Gang He, Jiawei Xu, Kang Gao, Hong Zhu</i>	
The Design and Implementation for the Embedded Data Terminal of Chemical Defense Equipment	456
<i>Xuezheng Zhu, Ding Wang, Yuguang Wang, Jin Gu, Zhirong Luo</i>	
A Novel Analytical Solution to the Problem of Thin-walled Hollow Pier and Water Interaction in a Three-dimensional Flow	462
<i>Anjie Wu</i>	

Aroma Characterization of Two Melon Cultivars Using Headspace-solid Phase Microextraction Combined with Gas Chromatography-mass Spectrometry	466
<i>Mi Tang, Jian Ren, Weishun Cheng, Ye Liu, Na Zhang, Hongxia Zeng, Yuhua Li, Yuhong Sun</i>	
Analysis of the Influence of the Beaded Karst on the Pile Additional Settlement	470
<i>Zhangjun Dai, Shanxiang Chen, Xichang Xu, Fei Yu</i>	
Numerical Study on the Stress of Pile Foundation Influenced by the Beaded Karst	475
<i>Shanxiang Chen, Xichang Xu, Zhangjun Dai, Haibin Xu</i>	
Fault Location Method Research of Leaky Coaxial Cable Based on the Linear Frequency Modulation Pulse Compression	480
<i>Jinxi Guo, Yang Liu, Mingxing He</i>	
Study of Plastic Sand Starting Velocity	484
<i>Yanhua Wang, Guosen Li</i>	
Analysis of Longitudinal Deposition in Reservoir Confluence	488
<i>Tao Yan, Hui Huang</i>	
Research on the Acoustic Insulation Properties of PVC	493
<i>Liping Zhang</i>	
Numerical Simulation and Experiment for Thermal-mechanical Coupling of Disc Brake	497
<i>Jian Zhang, Jiajun Du, Yongmei Zhu, Xuelong Tan</i>	
Influencing Factors and Evaluation Indexes of the Stress of Bridge Pile Foundation in Karst Area	503
<i>Jian Xing, Xichang Xu, Lingfa Jiang</i>	
Forming Property of Magnesium Alloy Sheet in Radial Pressure Deep Drawing	508
<i>Xianchang Mao, Haiyan Lin</i>	
Ecological Technology for Decreasing Agricultural Non-point Source Pollution from Drainage Ditch	514
<i>Lihuan Liu, Wenping Wang, Juan Liu</i>	
Research on Tourism Information System Based on webGIS Technology -- Taking Hangzhou as an Example	520
<i>Xifeng Li, Xuemei Ma, Qingshuang Zhao</i>	
Research on Denoising Method of Ice Thickness Model of Transmission Line Based on Gauss Distribution Model	524
<i>Weiwei Yang, Xuemin An, Min Zhang, Huiping Zheng, Qi Yang</i>	
A Design of SVPWM Algorithm for Inverter Based on Pan-Boolean Algebra	529
<i>Jin Chen, Xin Zhou, Mengjia Dai</i>	
Research on the Purchase Model of Equipment Reserves	535
<i>Shunhua Liu, Xuezheng Zhu, Zhizhen Zhu, Kunlin Nie</i>	
Design and Implementation of Automatic Intelligent Tracking Car Based on CCD	544
<i>Zhaoran Dong, Mingwei Li, Ying Xiao</i>	
Data Assignment Method Based on Probability Analysis in Peer-to-Peer Computing System	549
<i>Ying Yang, Geng Bao</i>	
The Rice Impurity Vision Inspection Method Based OpenCV	553
<i>Ying Hou, Guicai Wang, Zhengyi Cui</i>	
A Method for Searching Emotional Tendencies by Expressions Based on Convolutional Neural Networks	559
<i>Yujia Xie</i>	
The Study of Receiver Baseband Algorithm in Space Borne ADS-B (1090ES)	565
<i>Huan Li, Dengmao Zhang, Weizhen Chen, Yubai Li</i>	
Design of Intelligent Detecting System Based on PLC for Protecting Control Box of Certain Special Vehicle	574
<i>Jiwan Hu, Zhenqin Fan, Qiang Peng, Jianjian Li</i>	
Mongolian Handwriting Character Recognition Based On Convolutional Neural Network(CNN)	580
<i>Narankhuu Natsagdorj</i>	
Digital Image Forgery Detection Based on Characteristics of Background Noise	585
<i>Jiming Zheng, Guoyu Zhou, Jinling Geng, Qinghua Zhang</i>	
Research on Cross Platform Development Model Based on Quick QT	592
<i>Xiaohua Zhang, Bo Huang</i>	
New Fire Control System Design for Fire Fighting and Rescue Equipment	598
<i>Jianguo Luo, Zehao Bu</i>	
Structure Design and Simulation of a New Fire Rescue Equipment	604
<i>Jianguo Luo, Zehao Bu</i>	
Structure Optimization of Embedded Scalable Fire Rescue Equipment	610
<i>Jianguo Luo, Zehao Bu</i>	

Strategies on Fostering English Autonomous Learning Ability under the Influence of Mobile Multimedia	616
<i>Huanhuan Ren, Chi Ma</i>	
Research on the Static Analysis Method of the Localization Embedded Platform Software Code	621
<i>Zhijie Gao, Ling Lu, Wen Jiao</i>	
Study on Geomorphic Stage of Mt. Sanqingshan Geopark	627
<i>Zhanghuang Ye, Anjian Wang, Qiang Yan</i>	
Study on Vehicle Rollover Prevention and Ride Comfort Based on AARB	634
<i>Song Chen, Changgao Xia, Shengyong Li, Xu Sun</i>	
A Novel Firefly Algorithm of Solving Feature Selection of Infrared Spectrum	643
<i>Zhonghong Xi</i>	
A Heuristic Adaptive Discrete Differential Evolution Algorithm for Cooperative Interference Decision	649
<i>Zhenhua Zhang</i>	
The Study on Power Cable Fault Location Based on Wavelet Transform	654
<i>De Ming Yu, Jing Yang, Yi Lu, Shu Yuan Wang, Xin Li</i>	
Landscape Planning and Design of Modern Urban Eco-sightseeing Agricultural Garden	659
<i>Li Du</i>	
Research on the Key Technologies of Corpus Preprocessing in Mongolian-Chinese SMT	665
<i>Jin-Ting Li, Hong-Xu Hou, Jing Wu, Hong-Bin Wang, Wen-Ting Fan</i>	
Fabric Defect Detection based on GLCM Approach	673
<i>Xiaowei Zhang, Xiujuan Fan</i>	
Data Preprocessing Based on Partially Supervised Learning	678
<i>Na Liu, Guanglai Gao, Guiping Liu</i>	
The Location Technology Research on Single Pulse Active Location Cooperate with Passive Location	684
<i>Bing Sun, Jingqing Luo, Shilong Wu, Youjun Liu</i>	
Design of Compensated Thermal Neutron Detector Based on He-3 Tube of SiC Micro-structure	691
<i>Jianlu Wu, Hui Guo, Xiaoyan Tang, Yimen Zhang, Yimeng Zhang, Yuming Zhang</i>	
Application of Network Technology in Sci-tech Journal Editing and Publishing Process	696
<i>Lihua Zhao</i>	
Research on the Rule and Algorithm of the Transitive Judgment of Binary Relation in a Finite Set	700
<i>Yingchun Li, Junfeng Li</i>	
A Computational Method of Radar Jamming Cover Area for Aerial Platform Radar Countermeasures	704
<i>Honghao Zuo</i>	
The Application of NFC Verification System in Warehouse Management System	710
<i>Fagui Liu, Zheng Qin, Yigong Zhang, Xiao Hou</i>	
Research on EFL Teaching Mechanism for College Learner Autonomy via Mobile Multimedia in Chinese Context	717
<i>Huanhuan Ren, Chi Ma</i>	
Frequency Salient Based Fiber Detection	722
<i>Yang Liu, Duo Zhang, Chunlei Li, Zhenduo Guo, Chaodie Liu</i>	
Research on User Preference Acquisition Method Based on Decision Matrix	728
<i>Huiran Zhao, Lei Shi, Weijie Yao, Yuexing Zhong</i>	
Service Oriented Architecture (SOA) Design of Electric Power Marketing Information System	733
<i>Zheyuan Wang, Zhou Lei, Xiangbo Meng, Feng Yin</i>	
Improvement and Optimization of OFDM System Performance	738
<i>Xiaoyan Huang, Rong Zhou</i>	
Study on the Influence Factors of Students Consumer Network Clothing Behavior	742
<i>Yuemei Gao</i>	
Study on Accounting Management Under Big Data Era	745
<i>Biao Liu</i>	
Design of Books Arranging Robot Control System in Library	748
<i>Biao Jiang, Guang-You Yang, Song Shen, Jun Ma</i>	
A High Performance Information System for College Graduation Management Cloud	755
<i>Liumei Zhang, Zhongyuan Hu</i>	
Game Based DDoS Attack Strategies in Cloud of Things	759
<i>Yichuan Wang, Yefei Zhang, Liumei Zhang, Lei Zhu, Yanxiao Liu</i>	
Research on Homomorphic Encryption Clustering Algorithm for Smart Grid Privacy Preserving	763
<i>Yun Yang, Xiaoyong Zhang, Zhu Zhu, Juan Lei</i>	
Research of Marketing Big Data Security Storage in Smart Grid Based on Spark	768
<i>Juan Lei, Zhu Zhu, Yun Yang, Sen Zhang</i>	

The Forecasting of Evolutionary Multi-Source Data limits	773
<i>Guoqi Chen, Fang Yu</i>	
New Boundary Point Detection Algorithm NPRIM in Hospital Information Security Intrusion Detection System	778
<i>Xingshan Li, Xiangyang Shao</i>	
Author Index	