# **2011 6th International Forum on Strategic Technology**

(IFOST 2011)

## Harbin, Heilongjiang, China 22 – 24 August 2011

Volume 1 Pages 1-636



IEEE Catalog Number: ISBN: CFP11786-PRT 978-1-4577-0398-0

### Contents

### Volume 1

#### Oral Session I Metal Materials

AMM-244	Formation and Structure of Vortex Zones in Explosive Welding of Carbon Steel I.A. Bataev, A. A. Bataev, E.A. Prikhodko, V.I. Mali, M.A. Esikov	1
AMM-002	<b>Fundamental Studies on High Power Fiber Laser Cutting Performance of 30 mm Thick</b> <b>Carbon Steel Plate</b> <i>Hu Lan, Wei Wang, Yuanyuan Shangguan, Shangyang Lin</i>	6
AMM-644	<b>Characterisation of Ni-Mn-Ga magnetic parameters based on indirect measurements</b> <b>and mathematical modeling of the experimental setup</b> <i>N. Gorbatenko, V. Grechikhin, A. Kolomiets, A. Kucherova, N. Narakidze</i>	12
AMM-176	Finite Element Simulation of Fatigue Crack Growth Seok Jae Chu, Conghao Liu	15
AMM-617	<b>The Mechanism of Nitride Phases Formation at Burning of Metal Powders in Air</b> Y.S. Kwon, A.P. Ilyin, L.O. Root, D.V. Tikhonov, E.S. Zvjagintseva, E.V Shinkevitch	20
	Oral Session II	
	<b>Advanced Polymers and Its Composites</b>	
APC-371	<b>Experimental and Finite Element Creep Analyses of Plastics Used in Automotive Instrument Panel</b> <i>Erdenebat Tumur-Ochir, Chi-Hoon Jeon, Young-Jin Yum, Young Sam Kim</i>	24
APC-532	<b>Preparation and Characterization of Polymer -Copper Composites by Electrical</b> <b>Explosion of Wire</b> <i>Aijie Liu, Luong Huu Bac, Jin-Chun Kim, Lizhu Liu</i>	29
APC-474	<b>The Effects of Coupling Agents on the Properties of Polyimide/Nano-Al<sub>2</sub>O<sub>3</sub> Composite Films</b> Hui Shi, Lizhu Liu, Ling Weng, Jun Ding, Weiwei Cui	33
APC-508	Study on Preparation and Electrical Properties of Polyimide/Multi-walled Carbon nano-tubes Films Zhang Mingyan, Wang Wenjia, Li Xiaodong, Chen Haixia, Ma Yuliang, Fan Yong	37
APC-288	Investigation on the Morphology and Dielectric Properties of PI/BaTiO <sub>3</sub> Composite Films Ling Weng , Lizhu Liu, Weiwei Cui, Xingsong Zhu, Hui Shi, Xiaohui Gao	41
	Oral Session III Nano Materials	
NM-280	X-ray diffraction studies of crystal structures and phase transitions in K <sub>1-x</sub> (NH <sub>4</sub> ) <sub>x</sub> Cl mixed salts G.Batdemberel, H.Fuess, P.Munkhbaatar, Sh.Chadraabal	45
NM-230	Scientific Research on Nanopowders Diagnostics G.V. Shuvalov, I.V. Klekovkin, A.P. Ilyin, L.O. Root, A.V. Korshunov, O.B. Nazarenko, D.V. Tikhonov	49
NM-097	Characterization of Nanopowders Produced by Electrical Explosion of Titanium Wires	52

	Young-Soon Kwon, A lexander P. Il yin, O lga B. N azarenko, L yudmila O .Root, D mitry V. Tikhonov, Elena V. Startseva	
NM-415	<b>Preparation of Fe<sub>2</sub>O<sub>3</sub> coated aluminum borate whiskers by a sol-gel method</b> <i>H.Y.Yue, E.J.Guo, L.P.Wang, S. Huang</i>	55
NM-281	TOF neutron scattering investigations of crystal structures in K1-x(NH4)xCl (x=0.2, 0.8)mixed crystalsG.Batdemberel, Sh.Chadraabal, D.Sangaa, A.I.Beskrovny, A.Skomorokhov, L.S.Smirnov	58
	Oral Session IV	
	Advanced Materials	
ACC-562	<b>Crystal structure study of Perovskite-type LaCoO<sub>3</sub> electro-catalyst synthesized by</b> <b>Pechini method</b> <i>E.Nyamdavaa, P .Altantsog, E.U yanga, B.Bumaa, T .Y.Chen, C .H. Lee, G .Sevjidsuren,</i> <i>D.Sangaa</i>	61
ACC-228	Content of Intermediate Air Combustion Products of Aluminum Nanopowder with Addition of Chromium Powder Y.S. Kwon, A.P. Ilyin, L.O. Root, O.B. Nazarenko, E.S. Zviagintseva, K.S. Smorygina	65
EPMR-524	<b>Dynamic behaviors of barrier discharge in air-dielectric at atmospheric pressure</b> Dianchun Zheng, Chuntian Chen, Lianxing Zhang, Zhonglin Zhang	69
EPMR-407	<b>Influence of Ag, Cu and Additive Bi Elements on the Thermal Property of Low-Ag</b> <b>SAC Solder Alloys</b> <i>Liu Yang, Sun Fenglian, Zhang Hongwu, Wang Yang</i>	72
	Oral Session V Advanced Materials/Nano Materials	
NM-527	InvestigationonPropertyofElectricalTreeinCrosslinkedPolyethylene/Montmorillonite CompositesJunguo Gao, Lili Li, Ning Guo, Wei Wang, Xiaohong Zhang	76
NM-362	<b>The Impact Of Air Relative Humidity On Corona-resistant Polyimide Film</b> Fan Yong, Yang Rui-xiao, Chen Hao, Zhang Hong-liang	80
LAM-110	<b>Modeling of Solidification of ZM5 Shell and Optimization of Casting Parameters</b> <i>Erjun Guo, Sicong Zhao, Liping Wang</i>	84
AMM-118	<b>Simulation Analysis of the Evolution of 4004 Aluminum Alloy Rolling Stomatal Defect</b> <i>Yanling Zhao, Pengao Xu, Chaojun Zhang, Kai Zhou, Yin Shu</i>	89
	Poster Session I Advanced Materials/Nano Materials	
A-164	<b>Pyroelectric 0.7BaO•0.3SrO•0.5Nb</b> <sub>2</sub> <b>O</b> <sub>5</sub> <b>•0.5TiO</b> <sub>2</sub> <b>composite ceramics by Powder-Sol</b> <b>method</b> <i>Shan L ianwei, Wang Fe ngchun, Wang Cheng, Wu Ze, D ong Lim in, H an Zh idong, Zha ng</i> <i>Xianyou</i>	93
A-434	<b>Crack-healing Behavior of Al<sub>2</sub>O<sub>3</sub>/SiC Composite</b> Yingkui Guo, Rui Chen, Xiulan He, Junjie Qi, Dayong Li	97
A-504	Preparation of TiB powders by mechanical alloying	101

	Guojian Cao, Erjun Guo, Liping Wang, Hongyu Xu	
A-201	<b>Effects of Hydraulic Pressure Loading Paths on the Forming of Automobile Panels by</b> <b>Hydro–Mechanical Deep Drawing Based On Numerical Simulation</b> <i>Liu Xiaojing, Wang Cong, Li Feng, Liu Penghui , Wang Fei</i>	104
A-212	<b>Current Situation and Development of Thermal Analysis Technology and Sample Cup</b> Li Chen, Li Dayong, Shi Dequan, Lu Boshi	108
A-350	<b>Fatigue crack detection in aluminum alloy plate by nonlinear time reversal method</b> <i>Gao Guili, Shi Dequan, Dong Jingwei, Li Dayong</i>	112
A-469	<b>Investigation on mechanical properties of Y doped Ni</b> <sub>50</sub> Mn <sub>37</sub> Sn <sub>13</sub> shape memory alloys <i>Ailian Liu, Tianji Gao, Jiawen Xu, Yufeng Zheng</i>	115
A-515	Microstructure and wear resistance of in-situ ZrC/Ni composite coating by argon arc cladding Zhenting Wang, Gang Liang, Guogang Zhao	119
A-111	<b>Bending behaviors of electroresponsive PVA/PAA SIPN hydrogels under electric field</b> <i>Wei-wei Cui, Li-zhu Liu, Xing-song Zhu</i>	122
A-203	<b>Preparation and study on properties of epoxy resin modified by poly(ether sulfone)</b> <i>Chen Yufei, Yuan Guangxue, Xiao Yiyue, Bai Mengyao, Li Shixia, Zhang Xu, Li Fangliang</i>	126
A-024	<b>The Impact of Corona Pretreatment on Corona-resistant Polyimide Films</b> <i>Chen Hao, Fan Yong, Zhou Hong, Li Yan-ru, Yang Rui-xiao, Yuan Zheng</i>	130
A-385	<b>Research on Application of Nonlinear Insulation Composites in Cable Termination</b> <i>Wenmin Guo, Yang Wang, Rong Zhang, Zhonghua Li</i>	133
A-672	Synthesis and photoluminescence of Ce <sup>3+</sup> and Tb <sup>3+</sup> doped double phosphates KMLaPO <sub>4</sub> (M = Mg, Ca, Sr) Limin Dong, Zhidong Han,Xianyou Zhang	137
A-673	<b>Preparation of Graphene Nanosheets by In-Situ Oxidation-Exfoliation Method</b> <i>Zhidong Han, Wenzhe Dong, Da Xu</i>	140
A-402	<b>Investigation on Poly(acrylate-co-acrylamide) Hydrogel Polymer Electrolyte with</b> <b>Liquidlike Ionic Conductivity</b> <i>Xiaojun Sun, Yi Liu, Hong Wang , Yujie Feng</i>	143
A-511	Study on Preparation and performance of Epoxy/ Multi-walled carbon Nanotube Composites Zhang Mingyan, Dong Chunlei, Sun Rui, Ren Zhaokun	148
A-671	<b>The Molecular Smiulation of Geometry Structure and Optical Poperties</b> Jiaqi Lin, Jing Leng, Qingguo Chi	152
A-605	<b>Preparation and Study on the Electrical Properties of Polyimide/TiO<sub>2</sub> hybrid Films</b> <i>Minghua Chen, Jinghua Yin, Yu Feng, Xiaoxu Liu, Guang Li</i>	155
A-400	Preparation of Zeolitic Compounds From High Calcium Fly Ash	159

	Jadambaa Temuujin	
A-420	<b>Dynamic Behaviours on Discharge Process of SF<sub>6</sub>-N<sub>2</sub> Mixtures in Short Gap with Parallel-plane electrodes</b> Dianchun Zheng, Shihua Zhu, Zhong-lin Zhang, Shuming Lv, Dawei Zhao	162
A-517	<b>Experimental Research on Endurance Behaviors of the SF<sub>6</sub>/N<sub>2</sub> Mixtures under Impulse Voltage</b> Dianchun Zheng, Chuntian Chen, Shuming LV, Xiuquan Zhai, Dawei Zhao	166
A-210	Nanoindentation for measuring mechanical properties of Sn-Ag-Cu-RE BGA solders joints Lifeng Wang, Meina Liu, Yang Liu, Fenglian Sun	169
A-320	Effect of Solder Volume on Reliability in Shape-designed CuCGA Interconnect Chongjun Tian, Zhili Zhao, Lifeng Wang, Meina Liu	173
A-373	<b>Effects of Bi and Ni addition on shear strength of low-Ag lead-free solder joints</b> Sun Fenglian, Zou Pengfei, Liu Yang	177
A-208	Numerical Simulation of Aluminum Alloy Conical Cup Forming by Hydro-mechanical Deep Drawing Xiaojing Liu, Weiyan Liu, Cong Wang, Qingjuan Zhao	181
A-282	Gas blow forming of AZ31 magnesium alloy sheet in a heart-shaped closed die Yandong Yu, Peng Jiang, Caixia Li, Changping Chen	186
A-364	<b>Superplastic forming of AZ31 magnesium alloy using resistance heating</b> <i>Chao Li, Yangdong Yu, Kaifeng Zhang</i>	190
A-643	<b>Electromagnetic induction system for testing ferromagnetic shape memory alloys</b> N Gorbatenko, M Lankin, D Shaykhutdinov, K Gazarov, A Kolomiets	194
A-648	Study on Ag Bio-coatings on Titanium Alloy by Ultrasonic Auxiliary Micro-arc Oxidation Muqin Li, Dechao Li, Lijie Qu, Aiqin Zhang, Erlin Zhang	197
A-660	Structure and Properties of ceramic Coatings formed on 7N01 alloys by Microarc Oxidation Wanhui Liu, Wenbin Liu, Ailian Bao	202
A-154	Plasma Chemical Etching of Silicon in Chlorine to Containing Plasma, Used in Nanoelectronics B. K. Bogomolov	205
A-206	Effect on SiO <sub>2</sub> gel for optical fiber preform by Hydrochloric acid and Formamide in Sol-Gel Method Shan-shan Hao, Hui Tang, Wei-li Gao	211
A-211	Magnesium Adhesive Material——Research Paper based on Mongolia Battsagaan Balchinjav, Dorligsuren Choirog, Anarzul Dorligsuren	215
A-231	Effect of protonation on the formation of nanocomposition structure in crystals	218

	Yuri B orodin	
A-241	<b>Microstructure and Wearability of Nano-ZrO<sub>2</sub> Ferrule for Optical Fiber Connector</b> <i>Jipeng Zhang, Hui Tang, Fengchun Wang</i>	222
A-502	<b>Dielectric properties of PI/BaTiO<sub>3</sub> with disparate inorganic content</b> Yu Feng, Jinghua Yin, Minghua Chen, Xiaoxu Liu, Guang Li	226
A-503	<b>Effect of content on microstructure of PI/TiO<sub>2</sub> hybrid Films</b> Xiaoxu Liu, Wu Yan, Jinghua Yin, Minghua Chen, Yu Feng, Guang Li	230
A-513	<b>New Fabrication Technology of SiO<sub>2</sub> Optical Fiber Preform</b> <i>Yuan Zhao, Hui Tang, Feng Gu</i>	233
	Oral Session VI E-vehicle/Green Car	
E-139	<b>Study on Factors affecting to diesel PM emissions</b> Bayarsuren Badarch, Myagmarjav Jigjjav, Eredenebat Batzorigt, Tsogtjargal Ganbold	237
E-458	<b>Parameters Optimization and Performance Simulation for Parallel Hybrid Electric</b> <b>Vehicle</b> <i>Meilan Zhou, Hao Zhang, Zhaoming Gao</i>	242
E-072	Affecting Factors and Numerical Value Calculation Relating to Vacuumizing Time in Evacuated Tube Transportation Yaoping Zhang, Jianyue Yu, Maoxing Shen, Daryl OSTER, Chen Chen	246
E-078	<b>Fault Diagnosis of Engine Misfire Based on Genetic Optimized Support Vector Machine</b> Di Lu, Wenjuan Dou	250
E-171	<b>Energy storage mass and size parameters reduction by the regulation of traction drive flux in breaking mode</b> <i>Egor Spiridonov, Alexander Stang</i>	254
BTMS-561	<b>Exergy analysis of NEXA<sup>TM</sup> PEM fuel cell module</b> E. Uyanga, G. Sevjidsuren, B. Bumaa, D.Sangaa, P. Altantsog	256
BTMS-049	<b>Study on Correlation with SOH and EIS Model of Li-ion Battery</b> Wang Haiying, He Long, Sun Jianhua, Liu Shuanquan, Wu Feng	261
BTMS-134	<b>Development of Lithium-ion Battery Pack Balanced Controller Based on Fuzzy Control</b> Jia De Li, Zhang Tian Yong, Zhang Feng Hui, Xu Peng	265
EH-017	<b>Design of Vehicle Controller for ISG Hybrid Electric Car Based on Fuzzy Control</b> Xiaogang Wu, Xudong Wang, Wennan Ma, Wenjuan Li, Tengwei Yu, Yunfei Qi	269
	Poster Session II E-vehicle/Green Car	
E-220	The Current Tracing Control for BSG Motor Field Current Based on Sliding Mode Current Observer Tengwei Yu, Xudong Wang, Bin Zhang	273

F 200		070
E-298	<b>Study of a Novel Dead-Time Compensation Method for SVPWM</b> Liangliang Mao, Xu dong Wang, Risha Na, Yu Cao	278
E-125	Hardware Design on Electric Vehicle LCD Display System Based on CAN Bus Yu Zhilong, Li Dongsheng, He Long, Wang Haiying	283
E-300	<b>Study of Battery State-of-charge Estimation for Hybrid Electric Vehicles</b> Zhou Yongqin, Zhang Yanming, Zhao Pengshu, Han Chunli	287
E-048	<b>Study on Key Technologies of Lithium Battery for Electric Vehicle</b> Wang Haiying, Wu Feng, Fu Ying, Li Ran, Zhang Qian	291
E-259	Sliding Mode Based MTPA Control System of IPMSM for Hybrid Electrical Vehicles Xudong Wang, Ningzhi Jin, Hanying Gao, Hesong Cui	295
E-028	<b>Research on Regenerative Braking Control Strategy of Hybrid Electric Vehicle</b> <i>Meilan Zhou, Zhaoming Gao, Hao Zhang</i>	300
E-005	<b>Optimization of power system regime under Fuzzy (ambiguous) objective circumstances</b> D.Sodnomdorj, M.Narantuya, S.Uuganbayar	304
E-065	<b>Potential of Fuel Stratification for Reducing Pressure Rise Rate in HCCI Engines fueled</b> <b>with DME/n-Butane</b> <i>Ocktaeck Lim, Narankhuu Jamsran, Kyuyeol Park</i>	307
	Oral Session VII Robotics and Motion Control	
RMC-550	A Robust Detection and Isolation scheme for Incipient and Abrupt Faults in Robot Manipulator Using Neural Network Van Mien, Hee-Jun Kang, Young-Shick Ro	313
RMC-192	A drive-control system for 3D piezoelectric stick-slip positioner Weibin Rong, Shizhong Zhang, Xingxing Liu, Miao Yu	317
RMC-045	<b>Two-Dimension Guidance Control and Simulation of a Colonoscopic Robot</b> <i>Hu Haiyan, Li Weida, Li Juan, Li Mantian, Sun Lining</i>	323
RMC-204	<b>Analysis and experiment of Stick-Slip Motion Principle in a Legged Microrobot</b> <i>Weida Li, Juan Li, Haiyan Hu, Mantian Li, Lining Sun</i>	328
RMC-661	Motion-Control-Based Analytical Model for Wheel-Soil Interaction mechanics of Lunar Rover Kerui Xia, Liang Ding, Haibo Gao, Zongquan Deng	333
	Oral Session VIII Mechatronics	
ACS-566	<b>Electromyography Signals Acquisition and Real-time Classification</b> Ling Huang, Lina Zhou, Guoqiang Xu, Wenyuan Yang	339
ACS-551	<b>Design and Implementation of Smart Pressure and Temperature Sensor</b> Jing Ma, Zhiguo Jing, Nan Xiang, Tao Cai	344

M-025	<b>Forming the subterranean space by means of a new tool (geohod)</b> <i>Efremenkov A.B.</i>	348
RMC-453	<b>An Adaptive Variable Structure Controller for Robotic Manipulators</b> <i>Jing Zhang, Xin Gao, En Li</i>	351
	Poster Session III Mechatronics	
M-286	<b>Piezoelectric-Stack Pump for Micro-Reagents Dispense</b> Kong Xiang-bing, Chen Li-guo, Shao Chao, Liu De-1i Qu Dong-sheng	356
M-589	<b>Design of Multi-function Blade Clean-Polishing Machine Based on TRIZ Theory</b> <i>Baogang Wang, Guangchi Xu, Qihui Song, Pengshu Xu</i>	361
M-597	<b>A Study of a Gear Profile Measuring Method Using Gear Measurement Center</b> <i>Yang Ling, Sun Huilin, Yuan Huijuan</i>	366
M-639	Design of the Key Parameters for the Motor/Generator of the Flywheel Energy Storage System Yu yali, Wang yuanxi, Sun feng	370
M-243	<b>Velocity Magnitude Control of Maneuverable Reentry Warhead</b> <i>Kaifeng Liu, Xinxue Liu, Fang Wang, Jian Wu</i>	374
M-472	<b>The Intelligent PID Control of Filature Production Line Slack-Loop System</b> <i>Yu-heng Yin</i>	378
M-568	Automatic Control System of Grinding Process Li Penghui, Wang Jianmin	382
M-602	<b>The Development of Numerical Control System of Gear Measuring Center Based on</b> <b>Turbo PMAC2</b> <i>Yun Huijuan, Sun Zhenkun, Yang Ling, Han Limei, Liu Wei</i>	386
M-612	Design of Frequency Stabilization Control System Based on F-P Cavity for Semiconductor Laser Liu Bo, Liang Wei, Sun huilin, Li jianxia	390
M-213	<b>Positioning for Array Micro-holes Punching</b> Yanwu Liu, Dongsheng Qu, Xing Wu	394
M-349	<b>Analysis of Electromagnetic behavior of a Switched Reluctance Motor</b> <i>Ding Shuye, Liu Haoran, Lv Xiangping</i>	399
M-088	<b>The Malfunction Diagnosis and Monitoring of Power Transformer</b> <i>Yufu Liu</i>	403
M-013	Balance Control of Two-Wheeled Self-Balancing Mobile Robot Based on TS Fuzzy Model Qin Yong, Liu Yanlong, Zang Xizhe, Liu Ji	406
M-341	Multi-objective Performance Optimization of Redundant Robots Using Differential	410

	Oral Session IX Renewable Energy/Smart Grid	
R-484	Hydrostatic Transmission Development for Wave Energy Converters Hoang Huu Tien, Dinh Quang Truong, Kyoung Kwan Ahn	415
R-115	Shortwave Radiation Estimation from Modis-terra Data over Semi-arid Region in Mongolia N.Tugjsuren, J. Batbayar	421
R-123	A Fuzzy and Decoupled d-q Based Inverter Control Strategy for Microgrid in Islanding Operation Tingzhi Nie, Qi Wei, Duo Shao	425
R-124	A Multi-Agent control Strategy in Microgrid island mode Duo Shao, Qi Wei, Tingzhi Nie	429
<b>R-572</b>	<b>Brittleness Entropy of Complex System Based Protection of Microgrid</b> <i>Guang Huo, Qi Wei, Panxiang Rong, Delin Jia</i>	433
	Oral Session X Wind, Solar, Tidal Energy and Smart Grid	
W-510	The use of wind farms and virtual power plants for emergency control in the future smart super grids Anna Arestova, Yury Sidorkin	437
W-543	<b>ANN Based Pitch Angle Controller For Variable Speed Variable Pitch Wind Turbine</b> <b>Generation System</b> <i>Wang Jialong, Hyun Seung Ho</i>	443
W-501	<b>Tidal Current Power Generation System with Matrix Converter</b> Jeong-Min Kwon, Hong-Hee Lee	448
W-247	<b>Research On Solar Energy Technologies For The Ecological Architecture</b> <i>Wu Zhao, Yan Ma</i>	452
	Oral Session XI Power Transmission and Generation	
PTG-313	<b>Study on Adaptive PI Controller of Distribution Static Synchronous Compensator</b> <i>Ji Liu, Zaide Xu, Ling Huang</i>	456
PTG-258	<b>Calculation of 3D electric field at the end insulation of transformer</b> Shan Tao, Zhang Peihong	460
PTG-223	Analysis and Calculation of Electromagnetic Force under Two-phase Short-circuit Fault of High Voltage Asynchronous Motor Liang Yan-ping, Yao Qing-shuang, Liu Jin-peng	464

PTG-548	<b>A New Fault Location Method for Distribution System under Smart Grid Environment</b> Wang Luxin, Hyue Seung Ho	469
PTG-599	<b>Brittleness Analysis of Microgrid</b> Delin Jia, Qi Wei, Lixin Song, Guang Huo	473
	Oral Session XII Renewable Energy/Smart Grid	
AEE-351	<b>Effect of Temperature on Nitrogen Removal and Microbial Community Composition in Nitrifying Biofilm Reactors</b> Jongseol Kim, Bora Lee	476
PTG-538	<b>Evolutionary Multi-objective optimization of Inspection Frequencies for Substation</b> <b>Condition based Maintenance</b> <i>Haitao Sang, Guoquan Wang, Zhen Zhou</i>	480
PTG-122	<b>EASI Algorithm Based Load Profile Estimation for Microgrid</b> <i>Qi Wei, Xintao Liang, Changyuan Liu, Duo Shao, Tingzhi Nie</i>	487
PTG-209	AdministrationFunctioningPowerGenerationCompaniesbyCriterionofMaximizationProfitU.A. Sekretarev, T.V. Chekalina, B.V.Malosemov	491
	Poster Session IV Renewable Energy/Smart Grid	
R-114	<b>The Study On Ambient Air Quality In The Some Cities of Mongolia</b> D.Bolor-Erdene, D.Ganbaatar, D.Shagjjamba, N.Tugjsuren	495
R-270	Heat-Insulated Floor Construction In Independent Resource-Saving Houses For Countries With Frigid Climates Zakharov A.A., Udalov S.N, Malych V.V.	499
R-382	<b>Effects of distributed generation interconnections on voltage of distribution system</b> <i>Min Fu, Yuxin Xue, Cang Ge</i>	503
R-425	<b>Research Method of Wind Energy Control based on Vertical Axis Wind Turbine</b> <i>Min Fu, Cang Ge, Yuxin Xue, Tao Shan, Ji Wang</i>	508
R-495	<b>Using the criterion of technical efficiency for set-up of line distance relay protection</b> <i>Tran Hoang Quang Minh, A.V.Shmoilov</i>	512
R-274	High power LED thermal performance test analysis and its research methods Hong min Wang, Haibo Li, Hua Chen, Yu Cao	517
R-308	<b>Simulation study of soil direct cooling air-conditioning system</b> <i>Yuejun Liu, Fang Wang, Ruiqian Guo, Hui Dong, Lianjing Niu</i>	521
R-224	Calculation of Rotor Temperature Field for Huge Hydro-generator Lv Cheng-yuan, Liang Yan-ping, Chen Jing	524
R-225	Simulation Analysis for Asynchronous Operation Capacity of Turbogenerator under Excitation-Loss	529

	Hu Jin-yao, Liang Yan-ping, Chen Jing, Huang Hao	
R-227	<b>The Electromagnetic Force Calculation of Damping Windings under Three-phase</b> <b>Sudden Short-circuit Fault of Large Hydro-generator</b> <i>Chen Jing, Liang Yan-ping, Yao Qing-shuang</i>	533
R-276	Numerical Calculation of Q and D Axis Reactance for Permanent Magnet Generator Based on Coupled Field Wen Jiabin, Ren Yanping	537
R-290	<b>Application and Simulation of SVPWM in three phase inverter</b> <i>Jia Yingying, Wang Xudong, Mao Liangliang, Yang Shucai, Zhang Haixing</i>	541
R-291	<b>Research of Six-pole Permanent Magnet Submersible Motor Design</b> Wen Jiabin, Pan Yabin	545
R-292	Research of Starting Characteristics for High-voltage Motors Based on Numerical Method Yunyan Xia, Dawei Meng, Yanping Ren	549
R-344	A Novel Approach to Analyze Over-Voltages Due to PWM Switching Patterns in Long Cable PWM Drive Yuejun Liu, Yanshu Jiang, Lulu Qi, Rui Zhang	553
R-361	<b>An Improved Design of SVPWM System</b> Wu Li-hua, Guo Shu-feng, Yang Yang, Deng Shi-jian	559
R-374	Simulation Study on a DTC System of PMSM Chen Ming, Gao Hanying, Song Hongming	564
R-403	<b>The APFC System Based on an Improved Duty Cycle Control Algorithm</b> <i>Wu Li-hua, Gao Hui-zhi, Ma Huai-jian, Liang Hong</i>	570
R-514	<b>Comparision of Two Repetitive Control Strategies of UPS Inverter on Saber</b> <i>Min Li, Wenjuan Li, Cheng Liu, Jingwei Wei, Tao Chen</i>	575
R-522	Simulation of Active Power Filter with One-Cycle Control Under Unipolar Operation by PSCAD/EMTDC Wei Zhang, Wenjuan Li, Mengying Zhao, Xujiang Liu	580
R-552	<b>Thermal Field Calculation for the Rotor of Large Turbo-generator</b> <i>Yang Yan-jun, Liang Yan-ping, Chen Jing</i>	584
R-567	Influence of oil-flow to the breakdown characteristics of oil-pressboard insulation in converter transformer under compound electrical field <i>Chi Minghe, Chen Qingguo, Gao Yuan, Wei Xinlao, Wang Yonghong</i>	589
R-573	Design of Permanent Magnet Motor/Generator Using Halbach Magnetized Structure for the Flywheel Energy Storage System Yu Yali, Wang Yuanxi, Sun Feng	593
R-058	The Identification of the Actual Matrix of Self and Mutual Admittances on basis of the Overdetermined Generator Power Equations System	598

	D.V. Tutundaeva, A.G. Fishov	
R-583	<b>The Effect of DC Field on Streaming Electrification in Converter Transformer</b> <i>Gao Yuan, Chen Qingguo, Chi Minghe, Wei Xinlao, Wang Yonghong</i>	604
R-594	Modeling Of Balancing Market For Competitive Wholesale Electricity Market Bayasgalan Zagdkhorol, Bayasgalan Tsetsgee	609
R-068	<b>A PWM-Based Scheme for Power Factor Correction</b> Md. Rifat Shahriar, Nyma Alamgir, Kabju Hwang, Uipil Chong	614
R-113	<b>Calculation and Analysis of Fluid Flow and Heat Transfer for Large Doubly-Fed Wind Generator</b> Ding Shuye, Sun Zhaoqiong, Deng Lei	619
R-129	<b>Research on the Control Strategy of Wind Turbine with a Doubly-fed Generator and its</b> <b>Simulation</b> <i>Yanshu Jiang, Qian Zhang</i>	624
R-431	Numerical Simulation and Performance Analysis of Windproof Net in Direct Air Cooling Unit Haiping Chen, Shengli Wu, Zhongping Wang	628
R-636	Research on Environmental PerformanceEvaluation Index System of PowerGeneration EnterpriseCaiqing Zhang, Ping Xie, Mengmeng Cao	632

# **2011 6th International Forum on Strategic Technology**

(IFOST 2011)

## Harbin, Heilongjiang, China 22 – 24 August 2011

Volume 2 Pages 637-1337



IEEE Catalog Number: ISBN: CFP11786-PRT 978-1-4577-0398-0

## Contents

## Volume 2

	Oral Session XIV Information Technology	
I-004	On a Gate Sizing of Multiple-Paths Circuit For Optimizing Power-Delay Seung Ho Lee, Jong Kwon Chang	637
I-422	<b>The Design of Streaming Media Proxy Server Based on Patching First Algorithm</b> <i>Peng Li, Wei Zheng, Kaihui Zhang</i>	643
I-606	A Study on a New Bank Card Operation Model—"Dual-account Card" Xin Yi, Guan Lili, Pan Yan	648
I-132	<b>New Principle of the Shaping the Nonline Illumination in Optical Measuring Systems</b> Vladimir Guzhov, Sergey Ilinykh, Alexander Vagizov, Roman Kuznetsov	652
I-489	<b>Design and Implementation of CAN-Bus Experimental System</b> Yunxia Jiang, Bingru Liang, Xianghua Ren	655
	Oral Session XV Information Technology	
I-468	<b>Optimal Multi-core Processors for Fast Discrete Cosine Transform</b> Yongmin Kim, Myeongsu Kang, Cheolhong Kim, Jong-Myon Kim	660
I-518	<b>Evaluation of Imaging Quality of CCD Camera by Measuring MTFs at Different</b> <b>Contrasts</b> <i>Wenjuan Li, Fenglin Chen, Chuan Liang, Min Fu, Maohua Yang</i>	664
I-526	<b>Calculation and Accuracy Analysis of Center of Gravity of Payload Rack</b> Yu Cao, Aihua Shen, Jiazhong Xu, Ming Qiao, Yuantao Wang	669
I-533	<b>Development of Computer Sign Language Translation Technology for Deaf People</b> <i>Mikhail G. Grif, Yelena A. Demyanenko, Olga O. Korolkova, Yevgeny B. Tsoy</i>	674
	Oral Session XVI Control Theory and Applications	
CTA-155	<b>Reserch on a Improved PMSM Vector Control System</b> Yu Cao, Xudong Wang, Risha Na, Liangliang Mao	678
CTA-148	Adaptive Input-Output Feedback Linearization Control for IPMSM Using Maximum Torque Per Ampere Strategy Risha Na, Xudong Wang, Yu Cao, Liangliang Mao	684
СТА-303	<b>The Research of Low-Power Design Method Based on SOC Test Controller</b> Jing Gu, Han Guibo, Yu Xiaoyang	690
СТА-090	A Switching-Inverter Power Controller Based on Fuzzy Adaptive PID	695

	Oral Session XVII Control Theory and Applications	
CTA-368	An OPC UA Client Development for Monitoring and Control Applications Mai Son, Vu Van Tan, Myeong-Jae Yi	700
СТА-603	<b>Fuzzy PID Control for AC Servo System Based on Stribeck Friction Model</b> Jiazhong Xu, Ming Qiao, Wei Wang, Yanan Miao	706
CTA-647	Application Research for Resilient Control of the Welding Process Systems with Pole Constraints Shigang Wang, Junfeng Wu, Liying Fan	712
СТА-430	<b>Improved Algorithm of Model Reduction of Large-scale Internal System</b> Yan Zhe, Pengfei Bi, Zhiqiang Zhang, Liwei Niu	716
	Oral Session XVIII Computer Vision and Graphics	
CVG-546	<b>Brickpath Region Detection Using Color and Shape Pattern Information</b> <i>Byung-Seok Woo, Sung-Min Yang, Andrey Vavilin, Kang-Hyun Jo</i>	720
CVG-444	A Regularized Image Restoration Algorithm Based on Improved Hybrid Particle Swarm Optimization Zhenhe Sun, En Li, Jing Zhang, Xin Gao	725
CVG-570	<b>Vehicle Detection Using Tail Light Segmentation</b> <i>Qing Ming, Kang-Hyun Jo</i>	729
CVG-621	<b>A New Method for Realizing LOG Filter in Image Edge Detection</b> <i>Xu Jingbo, Liu Bo, Lin Haijun, Li Jianxin</i>	733
CVG-575	<b>3D Reconstruction and Measurement of Indoor Object Using Stereo Camera</b> <i>Wei-wei Ma, My-Ha Le, Kang-Hyun Jo</i>	738
	Oral Session XIX Information Technology	
CVG-641	<b>Optical Recognition of Vehicle License Plates</b> Kaushik Deb, Md. Ibrahim Khan, Md. Ra fiqul Alam, Kang-Hyun Jo	743
CVG-301	<b>Monitoring Image-Based Obstacle Information Extraction for Telerobot System</b> Dongjie Li, Wanzhe Xiao, Jinyu Wang	749
I-581	A Blind Recovery Algorithm for Spectrum-Sparse Signals Sub-Nyquist Sampling Jianxin Gai, Ziquan Tong, Shuang Cheng, Junjie Wang, Xu Liu	754
I-161	A New Approach to Gasoline Octane Modeling Smyshlyaeva Julia Alexandrovna, Duong Chi Tuyen	758
	Oral Session XX Information Technology	
IN-305	A Practical Design of Multi-channel MAC for Cluster-Tree WSN Hong Zhang, Shuyu Li	761

IN-555	<b>Application Protocols Identification Using Non-parametric Estimation Method</b> <i>Guang-lu Sun, Fei Lang, Mingming Yang, Jing Hua</i>	765
IN-580	<b>Text Categorization in Selecting Authentic Materials on Tertiary Level</b> Fei Lang, Guang-Lu Sun, Yuewu Shen	769
CS-233	<b>Research on Wireless Communications Radiation Monitoring System</b> Wang Xiaoyu, Wang Zhaoguo, Xu Liyuan, Chen Deyun, Zhan Yanpeng	773
CS-507	An Improved PTS Algorithm with Pseudorandom Sequence and Grouped Phase Control Mingzhu Liu, Shitao Xu, Qi Yu	777
	Oral Session XXI Interaction and Simulation	
IS-544	The Co-evolution of Knowledge-based Resource Capability and Transaction Cost: Explaining the Industry Dynamics Yearnmin Kim	781
IS-149	<b>Prospects of RANS Models with Effects Multiparameter at Modeling of Complex</b> <b>Non-isothermal Flows of Viscous Media in Devices with Any Configuration of Surface</b> <i>Kharlamov S.N, Kim V.Yu., Alginov R. A., Silvestrov S.I, Pavlov S.A.</i>	787
IS-545	<b>Data Warehouse: Environment and Infectious Diseases</b> Yun S., Alsova O., Chistyakov N., Gubarev V., Shvaykova I., Loktev V.	792
IS-539	A Hybrid System Integrating a Piecewise Linear Representation and a Neural Network for Stock Prediction Yung-Keun Kwon, Hui-Di Sun	796
IS-166	<b>Design of Natural Environment Modeling Management System Based on Meta-model</b> Sun Guobing, Xiang Quan, Huang Jinjie, Cheng Guangming	800
	Oral Session XXII	
	Sensors and Signal Processing	
SSP-142	<b>Information Technology in Geophysical Monitoring</b> M.S. Khairetdinov, S.A. Avrorov	804
SSP-277	Quasi-distributed Temperature Measurement for Stator Bars in Large Generator via Use of Fiber Bragg Gratings Peng Wang, Jie Liu, Fangchao Song, Hong Zhao	810
SSP-622	Approximation Implementation Approach for Gaussian Filtering in Roundness Measurement Xu Jingbo, Liu Bo, Lin Haijun, Li Jianxin	814
SSP-433	<b>Design of Signal Conditioning Circuits for Impedance Detection of Milk Bacteria</b> Zhen Zhou, Jie Wang, Yong Qin	818
SSP-395	<b>Realization of Digital Image Watermarking Encryption Algorithm Using Fractional</b> <b>Fourier Transform</b> <i>Wu Bo, Xiaoming Cui, Chao Zhang</i>	822
	Oral Session XXIII	
	Sensors and Signal Processing	

SSP-553	A Comparative Study of Capacitive Microelectromechanical Electrical Energy Recuperators V.P. Dragunov, D.I. Ostertak	826
SSP-445	<b>The Fabrication of Array Wind Speed and Direction Sensor Based on Pt Film</b> <i>Feng Qiaohua, Shi Yunbo, Sun Lining</i>	832
SSP-460	Industrial X-ray Image Enhancement Algorithm Based on Adaptive Histogram and Wavelet Li Jin, Wang Yanwei, Wang Lei, Wei jie, Wang Dada	836
SSP-534	Multiplexing Fiber Bragg Grating Sensor System Based on Heterodyne Method	840
	Yanling Xiong, Yang Chen, Wenlong Yang, Qinye Xie, Ying Wang	
	Oral Session XXIV Sensors and Signal Processing	
SSP-418	An Adaptive Procedure of Smoke and Background Discrimination in the Early Fire Detection Video System Vasiliy Vasyukov, Ekaterina Kalennikova	844
SSP-056	Motion Estimation of Blood Fow in Microvasculature Luo Zhongming, Li Dayong, Lv Wenjing, Liu Zhuofu	848
SSP-669	<b>The Design of Three-phase Power-Frequency Signal Source Based on Pulse Transform</b> <i>Ziquan Tong, Haitao Yu, Lan Chen</i>	852
SSP-479	<b>Novel Designs for Quartz Tuning Fork Temperature Sensor</b> <i>Jing Ma, Yanxia Yang</i>	856
	Poster session V	
	Information Technology	
I-157	Research of Evaluation Information Processing of Inventory Optimization Based on	860
	<b>Grey Clustering and Fuzzy Evaluation Method</b> <i>Lina Yang, Junle Yu</i>	000
I-158		864
I-158 I-309	Lina Yang, Junle Yu A Semantic Annotation Approach for Calcifications in Mammogram Using Bayesian Network Model	
	Lina Yang, Junle Yu A Semantic Annotation Approach for Calcifications in Mammogram Using Bayesian Network Model Song Lixin, Zhao Kexin, Zhang Chunli, Wang Li The Analysis of Measurement Methods for High Power LED Thermal Resistance	864
I-309	Lina Yang, Junle Yu A Semantic Annotation Approach for Calcifications in Mammogram Using Bayesian Network Model Song Lixin, Zhao Kexin, Zhang Chunli, Wang Li The Analysis of Measurement Methods for High Power LED Thermal Resistance Hongmin Wang, Jing Dong, Zhili Liu, Bingru Liang Echo Cancellation Research of Channel Estimation Based on PN Sequence	864 867
I-309 I-315	Lina Yang, Junle Yu         A Semantic Annotation Approach for Calcifications in Mammogram Using Bayesian Network Model         Song Lixin, Zhao Kexin, Zhang Chunli, Wang Li         The Analysis of Measurement Methods for High Power LED Thermal Resistance         Hongmin Wang, Jing Dong, Zhili Liu, Bingru Liang         Echo Cancellation Research of Channel Estimation Based on PN Sequence         Yongqin Zhou, Ming Ge, Shuzhi Ji, Guojun Shi         An Improved Algorithm For Calculating the Compressibility Factor of Natural Gases	864 867 871
I-309 I-315 I-359	Lina Yang, Junle YuA Semantic Annotation Approach for Calcifications in Mammogram Using Bayesian Network Model Song Lixin, Zhao Kexin, Zhang Chunli, Wang LiThe Analysis of Measurement Methods for High Power LED Thermal Resistance Hongmin Wang, Jing Dong, Zhili Liu, Bingru LiangEcho Cancellation Research of Channel Estimation Based on PN Sequence Yongqin Zhou, Ming Ge, Shuzhi Ji, Guojun ShiAn Improved Algorithm For Calculating the Compressibility Factor of Natural Gases Jinjie Huang, Ningning Huang, Chunli YangThe Design of the Network Video Terminals Based on Embedded QT	864 867 871 876

	Kaihui Zhang, Lei Li, Peng Li, Wenda Teng	
I-475	<b>The Algorithm and Realization for the Optimization Layout of Irregular Parts</b> <i>Wenlan Guo, Tong Zhang</i>	
I-654	<b>The Research of a Novel Matching Demodulation System Based on PZT</b> Liu Bo, Li Jianxia, Liu Na, Liang Wei	
I-278	<b>The Research of OFDM Modulation and Demodulation Technology Based on Wavelet</b> <b>Packet</b> <i>Chuntao Man, Wei Wang, Yantao Chi, Shun Wang</i>	
I-457	<b>The Optimization of Speech Endpoint Confirmation Research</b> <i>Chen Baoyuan, Liu Ying, Yu Haibin, Zhou Yongjian</i>	
I-535	Channel Estimation Based on Improved LMS for OFDM System over Low Voltage Power Line Zhang Rui, Sai Yingfu, Xie Zhengsheng, Wang Shun	
I-471	<b>The Simulation of Model Tracking for Second-order Dynamical Systems</b> <i>Huang L., Yu C. B., Zhang T. J.</i>	
I-145	Incomplete Differential PID Neural Network Temprature Controller for Thermal Process Weibing Wang, Xudong Wang, Wei Wang, Dongju Liu	
I-246	A Study of Chattering Suppression in Sliding Mode-Based Missile Guidance Law Yuan Liying, Wu Junfeng, Yu Lianyong, Cui Jiashan, Sun Lili	
I-324	Research on the Main Steam Pressure Control System of Boilers Based on Fuzzy PI Control Rong Panxiang, Han Leng, Li Chao	
I-333	The Design of Guaranteed Cost Controller of Discrete-Time Uncertain Multiple Time-Delay Systems Bing Xia, Shenggang Luan	
I-360	Function Projective Lag Synchronization in a Class of Chaotic Systems with Unknown Parameters Hongyue Du, Jinjie Huang, Libin Gong	
I-390	A Study of the Wind-Solar Hybrid Power Controller with the Function of Wireless Communication Shang Qinghua, Yang kun, Ding Chenggong, Liu Ping	
I-392	<b>Design of Intelligent Switching Power Supply Based on DSC Control</b> <i>Qinghua Shang, Tiansheng Li, Boya Hou, Peng Cheng</i>	
I-394	<b>Study on Soft-Sensing of Mill Material Level Based on Data Fusion in Neural Network</b> <i>Ai Hong, Yang Yi, Wang Jian</i>	
I-404	<b>The Design of Single Loop Adjuster Based on the Wireless Network</b> <i>Qinghua Shang, Zhanyong Yin, Jinjia Li, Chenggong Ding</i>	
I-435	<b>Improvement of Direct Torque Control by Using Double-Fuzzy Logic Technique</b> <i>Min Fu, Ji Wang, Cang Ge, Yuxin Xue</i>	

I-442	<b>The Application of Complex Wavelet Transform in Voltage Fluctuations Detection</b> <i>Zhang Rui, Liu Nan, Ma Huijun</i>	963
I-448	<b>The Fuzzy PID Control System for Superheated Steam Temperature of Boiler</b> <i>Chuntao Man, Jia Li, Lanying Wang, Yantao Chi</i>	967
I-449	Subgrade Settlement Prediction Based on Support Vector Machine Chuntao Man, Shun Wang, Wei Wang, Juanjuan Zhao	971
I-459	Prediction of Coal Mining Gas Emission Based on Clustering Algorithm and Fuzzy Neural Network Xiaoyue Liu, Yiwen Liu, Zhenyou Zhang, Lin Zhang	975
I-488	<b>The Research on the Draught Fan System of the Power Plant Boiler Based on Fuzzy</b> <b>Adaptive PID Control</b> <i>Rong Panxiang, Li Chao, Han Leng</i>	979
I-500	<b>Robust H</b> <sup>\pi</sup> Control of the Discrete-Time Uncertain Systems with Time-Delay Based on LMI Bing Xia	983
I-525	<b>ARIMA and Neural Network Prediction of Foreign Exchange Reserves</b> <i>Chunhua Shi, Huimin Wang, Fancheng Yin, Zhengliang Ru</i>	986
I-528	<b>Fuzzy RBF Neural Network in the Application of Magnetic Levitation System</b> Jing Zhang, Sai Dai, Jiamin Li, Ning Wang	990
I-530	<b>The Analysis and Simulation of the Brittleness of Electric Power System Based on Chart</b> <b>Theory</b> <i>Panxiang Rong, Meirong Zhang, Jianpeng Sun</i>	995
I-540	<b>Wavelet Neural Network Based on Improved Particle Swarm Algorithm</b> <i>Qingkun Song, Lina Liu</i>	1000
I-578	<b>Nonlinear Robust Controller Design for Speed Regulating System of Propulsion in the</b> <b>Full Range</b> <i>Xu Donghao, Rong Panxiang</i>	1005
I-579	<b>Research of Intelligent Control Based on Support Vector Machines for Power Plant</b> <b>Boiler</b> <i>Xu Donghao, Rong Panxiang</i>	1009
I-592	<b>Parallel Evolutionary Design of Active Filter</b> Yao Li, Xuehua Zhang, Shumin Dong	1013
I-595	<b>Research on Hybrid Circuit Breaker Based on IGCT &amp; Current Detection of Neural</b> <b>Network</b> <i>Zhao Yang, Feng Yue</i>	1018
I-596	<b>T-S Adaptive Neural Network Fuzzy Control Applied in Two-Wheeled Self-balancing</b> <b>Robot</b> <i>Junfeng Wu, Shengwei Jia</i>	1023
I-610	Study on Fiber Diameter of Melt Blowing Nonwovens Produced by Dual Slot Inset Blunt Die via Artificial Intelligent Approaches and Statistical Methods Zhao Bo	1027
I-615	A Robust Control Method of Two-Wheeled Self-balancing Robot Junfeng Wu, Yuxin Liang, Zhe Wang	1031

I-630	Robust Stability of Linear Sampled-Data Control Systems with Time-varying Delay	1036
L (22	Bing Li, Junfeng Wu	10.10
I-633	<b>Design of Master Controller of 100kW Micro Gas Turbine Generator Sets Based on</b> <b>Fuzzy-PID Algorithm</b> <i>Lin Haijun, Qin Kai</i>	1040
I-640	<b>Guaranteed Cost Sampled-Data Control: An Input Delay Approach</b> Liying Fan, Junfeng Wu, Jixiang Li, Shigang Wang, Hongliang Liu	1045
I-130	<b>Study of Segmentation Method Based on Infrared Images and Visible-Light Images</b> <i>Changzheng Liu, Guiyun Ye, Hui Wang</i>	1049
1-325	<b>Theoretical Calculation and Numerical Simulation of Spherical Lung Cancer Cells'</b> <b>Refractive Index</b> <i>Lu Liu, Xiangyun Bai, Zhongbo Zhang, Bin Zhang</i>	1053
I-335	A Distortion Correction Approach on Natural Scene Text Image Yin Fang, Chen Deyun, Wu Rui	1058
I-336	<b>Text Feature Extraction of Natural Scenes Using Gabor Wavelet Transformation Based on Scale Overlapping</b> <i>Yin Fang, Chen Deyun, Wu Rui</i>	1062
I-034	Fast Color Image Enhancement Based on Fuzzy Multiple-Scale Retinex Chao An, Mei Yu	1065
I-483	<b>Implementation of Image Processing and Augmented Reality Programs for Smart</b> <b>Mobile Device</b> <i>Jaeyoung Kim, Heesung Jun</i>	1070
I-490	<b>Preprocessing for Stereo Vision Based on LOG Filter</b> Yu Shuchun, Yu Xiaoyang, Hu Lijuan, Wang Jue	1074
	N	
I-598	<b>Numeral Recognition Based on Projective Invariants</b> Yang Ling, Sun Huilin, Liangwei, Yuan Huijuan, Li Jianxia	1078
I-598 I-601		1078 1082
	Yang Ling, Sun Huilin, Liangwei, Yuan Huijuan, Li Jianxia Study on 3D Measurement and Merge Technology Based on Color Stripes Permutation Encoding	
I-601	Yang Ling, Sun Huilin, Liangwei, Yuan Huijuan, Li JianxiaStudy on 3D Measurement and Merge Technology Based on Color Stripes PermutationEncodingYuan Hui Juan, Liu Chun Qiu, Yu Jia, Yang Ling, Yin ShuangFace Measuring Based on Active & Passive Vision Fusion	1082
I-601 I-614	Yang Ling, Sun Huilin, Liangwei, Yuan Huijuan, Li JianxiaStudy on 3D Measurement and Merge Technology Based on Color Stripes Permutation Encoding Yuan Hui Juan, Liu Chun Qiu, Yu Jia, Yang Ling, Yin ShuangFace Measuring Based on Active & Passive Vision Fusion Yang Wang, Lei Zhao, Xiao Yang Yu, Yu SunExploration on Exemplar-Based Encoding Image Inpainting of Coded Structured Light System	1082
I-601 I-614 I-629	<ul> <li>Yang Ling, Sun Huilin, Liangwei, Yuan Huijuan, Li Jianxia</li> <li>Study on 3D Measurement and Merge Technology Based on Color Stripes Permutation Encoding Yuan Hui Juan, Liu Chun Qiu, Yu Jia, Yang Ling, Yin Shuang</li> <li>Face Measuring Based on Active &amp; Passive Vision Fusion Yang Wang, Lei Zhao, XiaoYang Yu, Yu Sun</li> <li>Exploration on Exemplar-Based Encoding Image Inpainting of Coded Structured Light System Haibin Wu, Liquan Wang, Xiaoyang Yu, Hao Bai, Di Wu</li> <li>Research of Image Encryption Algorithm Base on Chaos Theory</li> </ul>	1082 1086 1092
I-601 I-614 I-629 I-631	<ul> <li>Yang Ling, Sun Huilin, Liangwei, Yuan Huijuan, Li Jianxia</li> <li>Study on 3D Measurement and Merge Technology Based on Color Stripes Permutation Encoding Yuan Hui Juan, Liu Chun Qiu, Yu Jia, Yang Ling, Yin Shuang</li> <li>Face Measuring Based on Active &amp; Passive Vision Fusion Yang Wang, Lei Zhao, XiaoYang Yu, Yu Sun</li> <li>Exploration on Exemplar-Based Encoding Image Inpainting of Coded Structured Light System Haibin Wu, Liquan Wang, Xiaoyang Yu, Hao Bai, Di Wu</li> <li>Research of Image Encryption Algorithm Base on Chaos Theory Liu Bo, Liu Na, Li Jianxia, Liang Wei</li> <li>Classification of Rice Kernels Using Wavelet Packet Transform and Support Vector Machine</li> </ul>	1082 1086 1092 1096
I-601 I-614 I-629 I-631 I-077	<ul> <li>Yang Ling, Sun Huilin, Liangwei, Yuan Huijuan, Li Jianxia</li> <li>Study on 3D Measurement and Merge Technology Based on Color Stripes Permutation Encoding Yuan Hui Juan, Liu Chun Qiu, Yu Jia, Yang Ling, Yin Shuang</li> <li>Face Measuring Based on Active &amp; Passive Vision Fusion Yang Wang, Lei Zhao, Xiao Yang Yu, Yu Sun</li> <li>Exploration on Exemplar-Based Encoding Image Inpainting of Coded Structured Light System Haibin Wu, Liquan Wang, Xiaoyang Yu, Hao Bai, Di Wu</li> <li>Research of Image Encryption Algorithm Base on Chaos Theory Liu Bo, Liu Na, Li Jianxia, Liang Wei</li> <li>Classification of Rice Kernels Using Wavelet Packet Transform and Support Vector Machine Weifeng Zhong, Chengji Liu, Yanli Zhang, Liguo Wu</li> <li>Information Clustering Method in Social Network</li> </ul>	1082 1086 1092 1096 1099

	Long Kam-Kim, Hanh Dang-Ngoc, Tuan Do-Hong	
I-437	<b>Research and Implementation of RSA Algorithm for Encryption and Decryption</b> <i>Xin Zhou, Xiaofei Tang</i>	1118
I-051	Semantic Multi-layer Metadata for Image Annotation Hyoung-Geun An, Jae-Jin Koh	1122
I-619	<b>Research of the Scheduling Method for Fieldbus Network Real-time Information</b> <i>Yuping Zhang, Chen Li</i>	1125
I-620	The Influence of PROFIBUS Message Block Time on Transmission Delay Time Property Yuping Zhang, Chen Li	1129
I-063	<b>Researh on Network Intrusion Prevention System Based on Snort</b> Jiqiang Zhai, Yining Xie	1133
I-116	Algorithm on Rule Extraction Based on Rough Set and Neural Network Theory Zhang Shao Bing, Ji Yan Fu	1137
I-218	Raising the Efficiency of Linear Alkylbenzenes Production Using the Computer Modeling System Rostislav Romanovskiy, Igor Dolganov, Maria Kirgina, Eugenia Frantsina, Elena Ivashkina, Emilia Ivanchina, Anatoliy Kravtsov	1141
I-221	Analysis and Simulation of Common-Mode Conducted Interference Source in Separately Excited DC Motor Jinfeng Liu, Xudong Wang, Rui Gong	1145
I-423	<b>Research on Unburned Combustible Forecast in Fly Ash of the Coal-fired Boiler Based on Genetic Algorithm and Artificial Neural Network</b> <i>Meng Zhaoxin, Zhang Chaomei, Lei Xiaogang, Sun Yingfei</i>	1149
I-497	<b>Research on the Simulation Algorithm of Simulation Trainer Control System Model</b> Meng Qingsong, Yang Guodong, Liu Meiqi, Liu Hui, Zuo Yang, Wang Na, Liang Guotao	1153
I-531	Simplorer Simulation and Comparison of Three Detection Methods for Reactive Current in STATCOM Yong Yu, Wenjuan Li, Yang Liu, Ziquan Tong, Yuzhi Wang	1157
I-613	The Visualization Simulation Platform Design of Low-voltage Power Line Carrier Communication System Zhang Xuhui, Zhao Yingjie, Jia Junfeng, Zhang Bin, Liu Ja	1162
I-141	A Novel Multiple-Electrodes Excitation Method for Electrical Capacitance Tomography System Li Lanying, Gao Ming, Chen Deyun	1167
I-168	<b>The Fixed-point Optimization of Mel Frequency Cepstrum Coefficients for Speech</b> <b>Recognition</b> <i>Ge Zhang, Jinghua Yin, Qian Liu, Chao Yang</i>	1172
I-193	<b>Comparison of Neural Network Algorithms Based on Gas Qualitative Analysis</b> Yu Mingyan, Shi Yunbo, Zhao Wenjie, Feng Qiaohua, WangXuan, Sun Lining	1176
I-195	A Method to Research Software and Hardware Compensation for High Altitude Humidity Acquisition	1181

	Luo Yi, Shi Yunbo, Zhao Wenjie, Xiu Debin, Qiu Yang, Sun Qi	
I-269	A ROM-Less Direct Digital Frequency Synthesizer Based on a Scaling-Free CORDIC Algorithm Yi-Jiang Cao, Yang Wang, Tze-Yun Sung	1186
I-283	An Image Reconstruction Algorithm Based on Artificial Fish-Swarm for Electrical Capacitance Tomography System Chen Deyun, Shao Lei, Zhang Zhen, Yu Xiaoyang	1190
I-284	<b>The Research on Surface Electromyography Signal Effective Feature Extraction</b> <i>Hanqing Zhao, Guoqiang Xu</i>	1195
I-318	A Physiological Status and Environmental Conditions Monitoring System for Aged-People Living-Alone Xuliang Wei, Liang Hua, Juping Gu, Yanfeng Wang	1199
I-331	Face Recognition Based on Relevance Vector Machine Changyuan Liu, Yan Li, Xiaojun Bi	1202
I-345	FBG Demodulation Method Based on DFB Laser Jie Liu, Hong Zhao, Peng Wang, Liang Jiang, Chao Huang	1207
1-366	<b>The Design of Forest Fire Monitoring System Based on Wireless Sensor Network</b> <i>Guangxue Yang, Zheng Liu</i>	1211
I-379	<b>Research on Image Processing Algorithm of Intelligent Car with Visual Navigation</b> <i>Lv Ning, Niu Shuyan, Li Xinran</i>	1215
I-405	Research on Relationship between Cantilever Roadheader Cross Section Control Accuracy and Sensor Accuracy Hanqing Zhao, Changjiang Su, Haiyan Li, Jiansuo Zang	1221
I-414	<b>The Research of Defect Detection Test System Based on Magnetic Flux Leakage</b> Junshan Gao, Guihong Du, Hongling Wei	1225
I-455	Radial Basis Function Network Wind Tunnel Wind Speed Detection Algorithm Based on PSO Chen Baoyuan, Sun Chenlin, Wu Qian, Lin Xirong	1230
I-480	<b>Research on Signal Subdivision of Grating Sensor</b> Liu Bo, Li Jinyan	1235
1-560	Monthly Rainfall Forecasting Model With Hidden Periodicities Chunhua Shi, Huimin Wang, Fancheng Yin	1239
I-623	Simulation and Spectral Estimation of Sea Wave Based on Shaping Filter Xu Jing-bo, Bian Xin-qian, Fu Ming-yu	1243
I-628	Research on Uninformative Variable Elimination Method for Spectral Data Analysis of Milk Wang Lijie, Guo Jianying, Ding Xibo, Zhou Zhen, Bai Yamei, Qin Yong	1247
I-637	A NEW Real-time ECG R-Wave Detection Algorithm Cui Xiaomeng	1252
I-638	Wavenumber Domain Algorithm for Squint FMCW SAR	1256

	Xintao liang, Qi Wei	
I-658	Research on the Adaptive Fuzzy Sliding Mode Control Method of Inverted Pendulum System Junfeng Wu, Zhenyi Jin	1261
I-659	<b>Design of Fuzzy Logic Controller for Two-Wheeled Self-balancing Robot</b> Junfeng Wu, Wanying Zhang	1266
I-662	High-Integrated Structured Light 3-D Measurement System Based on ARM Xiaoyang Yu, Yang Wang, Ying Wang, Haibin Wu, Shuchun Yu, Deyun Chen	1271
I-071	A Background Subtraction Method Using Color Information in the Frame Averaging Process Anuva Chowdhury, Sang-jin Cho, Ui-Pil Chong	1275
I-299	A Fuzzy Logic Vertical Handoff Algorithm with Motion Trend Decision Tao Yang, Peng Rong	1280
	Poster session VI	
	Others	
O-102	<b>An Algorithm of Keyword Queries over XML Streams</b> Jing Feng, Jianqiao Yu, Xuejiao Li	1284
O-285	<b>Lower Confidence Limits of Reliability for General Complex System</b> <i>Yin Shu, Guozhi Zhang, Zhenhai Yang, Xian Li</i>	1289
O-035	<b>Research on Consolidation of Frozen Soils upon Thawing</b> Dalai Dashjamts, Jamts Altantsetseg	1295
O-411	The Main Results of Study of Light-Climates Earth's Surface on the Mongolian Territory Dorjsuren.B	1301
<b>O-421</b>	<b>Chaos Evolution of Short-Gap Discharge under Dielectric-Covered Electrodes</b> Zheng Dian-chun, Zhang Zhong-lin, Zhu Shi-hua, Zhai Xiu-quan, Zhao Da-wei	1305
O-432	Performance Measurement Systems for E-business Zeng Kaisheng, Luo Xiaohui	1310
O-443	<b>Research of Posibility to Reduce Congestion for Intersection "Zuun Dorvon Zam"</b> J.Myagmarjav, S.Udval, Ts.Tsevegjav, B. Bayarsuren, I.Bazarragchaa, N.Munkhzul	1314
<b>O-461</b>	<b>Analysis and Design of Personnel Management System Based on UML</b> Xiaofei Tang, Xin Zhou	1318
<b>O-047</b>	Analysis of Stiffener Bonded Composite Laminate with Multiple Site Damages Jung-Ho Kwon, Vladimir N. Pavchok	1321
O-496	<b>The Distribution and Characterization of Expansive Soils in Mongolia</b> Odgerel Enkhtur, Dashjamts Dalai	1327
O-618	<b>The Free Software Demonstration Platform</b> <i>Kratov S.V.</i>	1331
O-635	Study on Comprehensive Evaluation Method of Product Level Based on Entropy Weight Yu Chun-yu, Guo Jian-ying	1334