



ICEOE 2011

2011 International Conference on Electronics and Optoelectronics

Dalian, Liaoning

July 29-31, 2011

Editor: Yin Zhixi



ICEOE 2011

2011 International Conference on
Electronics and Optoelectronics



IEEE Catalog Number: CFP1137N-PRT
ISBN: 978-1-61284-273-8



9 781612 842738

ICEOE 2011
2011 International Conference on
Electronics and Optoelectronics

29-31, July, 2011

Dalian, China

Volume 1

PROCEEDINGS

2011 International Conference on Electronics and Optoelectronics (ICEOE 2011)

Copyright and Reprint Permission: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923. For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Operations Center, 445 Hoes Lane, P.O. Box 1331, Piscataway, NJ 08855-1331.

Copyright ©2011 by the Institute of Electrical and Electronics Engineers. All rights reserved.

© 2011 IEEE. Personal use of this material is permitted. However, permission to reprint/republish this material for advertising or promotional purposes or for creating new collective works for resale or redistribution to servers or lists, or to reuse any copyrighted component of this work in other works must be obtained from the IEEE.

IEEE Catalog Number: CFP1137N-ART

ISBN: 978-1-61284-276-9

IEEE Catalog Number: CFP1137N-PRT

ISBN: 978-1-61284-273-8

IEEE Catalog Number: CFP1137N-DVD

ISBN: 978-1-61284-274-5

**Publisher: Institute of Electrical and Electronics Engineers, Inc.
Printed in Singapore**

PREFACE

Dear Distinguished Delegates and Guests,

On behalf of the Organizing Committee, I would like to welcome all of you to ICEOE 2011. This is a conference organized by Institute for Electrical and Electronic Engineers in U.S.A.(IEEE), co-sponsored and supported by other well known universities and organizations.

The theme of the ICEOE 2011 highlights Electronics and Optoelectronics in some areas such as Fundamentals, Sensors & Transducers, Measurements of Physical Quantities, Signal Processing , Control & Automation , Laser Technology & Applications , Optoelectronic Sensing & Imaging , Terahertz Wave Technologies & Applications , Optical Communication & Sensors , etc.. All the papers accepted by this conference are with high quality. Of course the most important component of a conference is its technical program, which results from the hard work of the authors and the reviewers, to whom I wish to express my sincere appreciation.

ICEOE 2011 will provide a remarkable opportunity for the academic and industrial community to address new challenges, share solutions, and discuss future research opportunities within the area mentioned above. This conference is also a platform for the new faces to become known and for the previous attendees to refresh their friendships. It is expected that the large number of attendees including well-known scientists and engineers will bring many benefits to the scientific and technological development for many countries and to the formation of new international cooperation and strengthening of established international collaborations.

I would like to express my sincere thanks to all the members of the Organizing Committee, International Program Committee, and volunteers for their great efforts in preparation and commitment to make this conference a success.

I hope that all participants and other interested readers benefit scientifically from the proceedings and also find it's stimulating in the process. Besides, I hope you enjoy all the wonderful experiences offered by the city of Dalian, which is one of the most important sightseeing cities in China with its many historic spots and beautiful sceneries.

With my warmest regards,

Prof. Junpeng Shao
General Chair of ICEOE 2011

CONTENTS

Preface	iii
Organizing Committees	xiii
ICEOE 2011Session 1	
Focal Properties of an Aberration-Free Fiber Micro-Lens <i>Jiang Meng, Shuping Li , Jingping Zhu and Yuzhou Sun</i>	V1-1
Monte Carlo Simulation for Fiber Hemispherical Micro-Lenses <i>Chengwei He and Shuping Li</i>	V1-5
Performance Analysis of Sequential Filter Based on Unbiased Converted Measurements with Doppler <i>Lan Gao, Jiangqiao Lan, Jing Jiang and Xionghua Fan</i>	V1-9
A Simple All-Normal-Dispersion Mode-Locking Laser Based on Large-Mode-Area Yb-Doped Photonic Crystal Fiber <i>Pingxue Li, Zhi Liu, Xuexia Zhang and Junjie Chi</i>	V1-14
Electron Optical System and Image Processing <i>Cai Wen</i>	V1-17
Laser-Induced Fluorescence of High-Purity Fused Silica Irradiated by ArF Excimer Laser <i>Haibo Zhang, Zhijun Yuan, Jun Zhou, Jingxing Dong, Yunrong Wei and Qihong Lou</i>	V1-21
High-Speed Polarization Coding in a Quantum Key Distribution System <i>Yadong Wei, Yunxia Wu, Zhilie Tang, Xiaobao Liu, Changjun Liao and Songhao Liu</i>	V1-25
Harmonic Analysis Method for Input Current of Traction System Applied in High-Speed Electric Multiple Unit <i>Duan Jingjing, Qian Zheng and Pei Chunxing</i>	V1-30
The Haar-CWT Analysis of Hyperspectral Reflectance Data to Evaluating Soil Carbon and Nitrogen <i>Qian Yurong and Yu Jiong</i>	V1-35
Development of Characteristic Test Systeem for Magneto-Dependent Sensor <i>Huang Shanshan, Qian Zheng, Ma Jing, Zhao Yuntao and Wang Peng</i>	V1-39
ICEOE 2011Session 2	
Image Reconstruction of Sparse Fan-beam Projections Using a Hybrid Algorithm <i>Moyan Xiao and Jianhua Luo</i>	V1-43
Fault Injection Methodology and Tools <i>Ningfang Song, Jiaomei Qin, Xiong Pan and Yan Deng</i>	V1-47
An Efficient Multi-Cue Fusion Based Sequential Monte Carlo Method for Image Sequence-Based Tracking <i>Guilan Feng</i>	V1-51

A Novel Hybrid Compressed Sensing Image Reconstruction Method <i>Shanshan Wang, Qiegen Liu, Jianhua Luo and Yuemin Zhu</i>	V1-56
The Experimental Criteria for Judging the Maximum Bubble Radius of Laser- Induced Bubble in Different Ambient Pressures <i>Bei-bei Li, Hong-chao Zhang, Jian Lu and Xiao-wu Ni</i>	V1-61
Design of Optical Integrated Access Network Based on EPON <i>Duo Peng and Peng Zhang</i>	V1-65
A Novel Switchable Dual-Wavelength Ring Erbium-Doped Fiber Laser Operating in Single-Longitudinal-Mode <i>Gongquan Liang, Tianshu Wang, Xuefang Zhou, Qiliang Li and Sheng Qian</i>	V1-69
Analysis of Zenith Pass Problem in a Roll-Pitch Optics Seeker <i>Huhai Jiang, Hongguang Jia and Qun Wei</i>	V1-72
The Design of RBF Neural Networks and Experimentation for Solving Overfitting Problem <i>Jifu Nong</i>	V1-75
Studies on Stepping Characteristics of Traveling-wave Ultrasonic Motor <i>Xiao Wu, Liang Hua, Yujian Qiang, Zhentao Zhou and Tang Tang</i>	V1-79
ICEOE 2011Session 3	
Optimal Switch for a Class of System <i>Fulai Yao and Hexu Sun</i>	V1-85
New Calibration Method of Fringe Projection Imaging System <i>Zonghua Zhang, Haiyan Ma, Shasha Meng, Sixiang Zhang, Tong Guo, Jinping Chen and Xiaotang Hu</i>	V1-88
A Novel High-Birefringence High Nonlinear Negative-Dispersion Crystal Fiber with Square Mesh Cladding <i>Zhang Ya-Ni</i>	V1-92
Effect of Strain in LaAlO ₃ /BaTiO ₃ Superlattice <i>Jin-Long Tang, Ying-Ying Xie and Jie Xiong</i>	V1-96
Surface-Enhanced Raman Scattering of 4-Dimethylaminoazobenzene on Copper Surface <i>Zhenlong Zhang and Baoquan Men</i>	V1-100
Numerical Simulation of Initiation of Metal/Explosive Structure under Laser Irradiation <i>JIAO Lu-guang and ZHAO Guo-ming</i>	V1-103
Application of Fuzzy Predictive Control in Adding Medicament of Water Treatment <i>Xinli Chi, Cunxu Wang Qingzhong Gao and Jianfei Sun</i>	V1-108
Influences of Sinusoidal Component on Typical Phase Masks Used to Realize Wave-front Coding Technique <i>Hui Zhao, Hongwei Yi and Yingcai Li</i>	V1-111
A Lip Reading Method Based on 3-D DCT and 3-D HMM	V1-115

Kim Yong Min and Li Hong Zuo

Multi-Sensor Data Fusion Based on Environment Database for Airport Surface Surveillance V1-120

Yu Lu, Changzhong Liu, Zhengning Wang and Zili Xu

ICEOE 2011Session 4

Er³⁺/Yb³⁺ Co-Doped Optical Fibers: Fabrication and Characteristics V1-124

Wang Jing, Zhang ChenFang, Zheng SiWen and Lin Zhen

Electron Field Emission Characteristics of Nano-Carbon Needle Films Fabricated by Microwave Plasma CVD V1-127

Guang-Rui Gu, Xin-Yu Hu and Ying-Ai Li

A New Method Of Mineral Particle Size Calculation V1-131

Xueyu Huang, Binghui Wei and Wenfang Xu

Switched Linear System Model and Simulation Analysis of the Electronic Ballast V1-134

Zhi-yu XU, Wei-lin ZHUANG, You-ling YU and Wei-sheng XU

The Measuring of Three Dimensional Dynamic Force During FSW V1-138

Zhongke Zhang and Xijing Wang

Experiment Investigation of Plasma Plume Deflection with MHD V1-142

SUN Baigang, LI Feng, YANG Hui, LIU Yongbo, LIU Xiangbin and LIN Jiuhui

Study on Relative Contents of Principal Components of Different Tea by Infrared Absorption Spectroscopy V1-146

Xiaohui Zhao, Lian-shui Zhang, Zhi-chu Nie, Rong-xiang Zhang and Xiao-wei Li

Numerical Study on the Mode and Dispersion Properties of Tapered Microstructure Optical Fibers V1-151

Shu-guang Li, Shuo Liu, Si-ying Liu and Yi Zheng

Study on the Wireless Transmission Performance of the Passive Pressure Sensor V1-155

Fang Yang, Ting Liang, Xujun Yang, Jijun Xiong and Tianhong Cui

A Research Into the Issues of Sports Film Production V1-159

Lu Huang

ICEOE 2011Session 5

Distribution of Macromolecule Chain's Conformation V1-164

Ming Xu

Output Data Study about Mathematical Model's Simulation V1-167

Baoquan Geng

Calculating Method of Small Enclosed Press Crank Axle Pressure V1-171

Danhong Li

Main Functions about Accounting Software V1-174

<i>Hongxia Zhong, Shanan Yi and Gangyi Shen</i>	
Conversion System of Wind Power Generator <i>Yiming He</i>	V1-178
Ejection and Pulverization of Vehicle Diesel Motor <i>Deliang Wang and Yugai Gao</i>	V1-181
Idling Speed Regulator of Automobile <i>Lei Xu</i>	V1-185
Channel Capacity and Source Encoding of Quantum Information Transmission <i>Zhonghan Zhou</i>	V1-189
Mechanical Fluid Coupler's Characteristics which Applied in Coal Mine <i>Xianyi Qian</i>	V1-193
Application of Intelligent Control Technology in Robot <i>Zhenmin Qiao</i>	V1-198
ICEOE 2011Session 6	
Servo Positioning Control System <i>Ying Peng</i>	V1-202
Study and Application of Magnetic Bubble Manufacturing Equipment <i>Weijun Yu</i>	V1-207
Permanent Magnetism Material's stability and its Application in Motor <i>YANG Guohai</i>	V1-211
Application of Virtual Instrumentation which Based on LabVIEW in Electronic Measurement Technology Course <i>Yujun Bao and Xiaoyan Jiang</i>	V1-215
Digital Signal Processing Teaching reform based on MATLAB <i>Xiaoyan Jiang and Yujun Bao</i>	V1-219
Study on Efficient Algorithm of Frequent Item-set Mining <i>Zhiyi Liu and Rui Chang</i>	V1-222
Scientific Answer about Human Nature <i>Changhe Ding and Qiushi Li</i>	V1-226
On the Aesthetic Teaching of Ancient Poems in Primary School <i>Xuemei Li</i>	V1-231
Classification and Application of Instructional Theory Teaching Cases in Chinese Course <i>Xia Li</i>	V1-236
Study of Entropy Flow Characteristics during the Evolution of Typhoon Morakot <i>HAN Xian-hua, ZHANG Yun, LI Ai-bing, HE Hong-rang, YANG Xiang-rong and ZHONG Jian</i>	V1-239

ICEOE 2011Session 7

- Numerical Simulation of Artificial Suppression of Heavy Rain in a Mei-yu Front V1-245
ZHANG Yun, HAN Xian-hua, ZHANG Li-feng and LI Yi
- The Discussion of Using An Analogy Way to Achieve Physical Teaching Effectively V1-250
Xiaolan Wang, Jianwu Yin, Xing Ming and Ruian Chen
- Test of Applying Bio-diesel in The Diesel Engine and Prospects Analysis V1-254
Lu Hua
- Implement of Private Enterprises' Flexible Absorbing Talent Strategy V1-259
Li Hong
- The language expression skills of technology cartoon soundtracks V1-263
Gao Kun
- The Application of the High Performance DWT in the Digital Image Saves V1-267
Ren Zhengyun
- GC-MS analysis of volatile oil content for brasenia schreberi V1-271
Zhang Chi and Chen Shaoliang
- The Analysis and Comparison of Nitrite Determinated Methodsin Meat Product V1-274
Zhao Junren , Duan Yingkai, Sun Suling and Wang Weixin
- Study on the content of active matter and inoxidizality of Polygonum Flaccidum Meisn V1-278
Liu Xinping, Yu Ainong and Yang Xiaohong
- Comparison Research for Attribution Reduction based on Information Entropy and Distribution Consistent Set V1-282
WU Wei-bing and XU Zhang-yan

ICEOE 2011Session 8

- The Evaluation of Matrix Rank Based on Determinant-operation V1-286
CHEN Renrong
- Constructing Evidence-Driven Model in Science Education V1-289
Zhao Dongwang and Mi Guangchun
- The Comparison of the Forms of Ecological Green Roof Based on The Full Life Cycle Theory V1-294
Li Hengwei and Ye Jianjun
- Quality Analysis of Class A Surface and Research on Smoothing Optimization Methods V1-297
Li He
- Intrapulse Modulation Recognition of Radar Signals Based on Statistical Tests of the Time-Frequency Curve V1-300
Jin Ming, Sheng xulong and Hu Guobing
- Synthesis of 2-butanone in Carbon Dioxide-enriched Near-critical Water V1-305

<i>Yan Yang, Li Yi Dai , Jin Shou Wang, Ai Nong Yu , Xin Yu Shi and Hong Yan Zhou</i>	
Study on Control Method of Single-phase Active Power Filters <i>Zhuang Hua and Xiao xianjian</i>	V1-309
Effect of Transition Metal Ion on Aroma Compounds Generation from Model Reaction of L- Ascorbic Acid and L-Cysteine <i>LIU Ying-Xuan and YU Ai-Nong</i>	V1-313
Research and Development of Automatic Screw -parameters Tester <i>Gong Yunxin</i>	V1-320
Design of Traffic Lights with Wireless Control System Based on STC89C51 and NRF905 Module <i>Wang Wei and Ma Jin-xiang</i>	V1-324
ICEOE 2011Session 9	
Synthesis and Crystal Structure of 9-(3-Oxo-1,3-bisarylpropyl) fluorene Derivatives Catalyzed by Alkaline ionic Liquid <i>Yunpan Li, Fu Feng, Xiangliang Nie and Weibing Hu</i>	V1-328
Applications of Boundary Value Problem and Impulsive Effects to Control Harmful Species <i>Zhongyi Xiang, Dan Long and Yuanmiao Zhang</i>	V1-331
Ensemble forecasting model for geomagnetic disturbance <i>Xie YanQiong, Zhang Jun, Han XianHua and Xie YanQiong</i>	V1-335
Research on transformer chromatographic peaks quantitative analysis based on wavelet filtering <i>Wei WANG</i>	V1-339
Experimental study on anesthetic effects of eugenol on carassius auratus <i>Yong PENG, Yunhui WU, Xiaoli LI, Qingwang LI, Zhe LIU, Bin JIANG, Yingjie LIU, Man SUN and Yanxia ZHANG</i>	V1-343
Attention Bias during Processing of Facial Expressions in Trait Anxiety:an Eye-Tracking Study <i>WANG Liu-sheng and Xie Yue</i>	V1-347
Effects of Selenium on the Antioxidation of root of Cardamine sp. from Enshi <i>Hong-ling LEI and Yong-yao WU</i>	V1-351
The Research of Clicker Application on College Physics Teaching <i>Zhixin Huang, Chuyu Sun, Lisha Chen and Dan Lei</i>	V1-356
Design of autonomous mobile robot navigation system <i>Wang Yan-ping and Ma Hui-quan</i>	V1-359
Synthesis and Crystal Structure of 10-(4-nitrophenylmethylidene)-9,10-dihydrofluorene <i>Fu Feng, Yunpan Li, Hongyan Zhou, Dating Tian and Weibing Hu</i>	V1-363

ICEOE 2011Session 10

- Impacts of carnosine on the formation of perfume compounds by ascorbic acidmethionine model reaction V1-367
Xiao-Hong Yang and Ai-Nong Yu
- The Decision Tree Classification and Its Application Research in Personnel Management V1-372
Peng Ye
- The Application of Spiral Model in Enterprise Risk Management V1-376
Zhongwen Chen
- The Display and Power Attenuation Control of Bi-directional Amplifier V1-380
LuYi, Zhang Jian Bin, JiangLe and LiuYong
- Energy Gap Responsible for the 1/3 Magnetization Plateau in Spin- 1/2 Trimerized Chain V1-384
Shao Hua QU
- Non-fragile Robust H^∞ Control for a Class of Switched Uncertain Singular Systems with Uncertainties V1-389
ZHANG Benfa
- Design of Intelligent Fire Alarm System Based on GSM Network V1-393
LIAN Chun-yuan
- The Combinational Application of LZSS and LZW Algorithms for Compression Based On Huffman V1-397
YuanJing
- Analysis and Design for VoIP Teleconferencing System Based on P2P-SIP Technique V1-400
XiaoLin Wan
- Effect of High-temperature Solder Void on Heat Dissipation Performance of Smart Power Module V1-404
Mingjing Zhai and Mengjie Guo

ICEOE 2011Session 11

- Integral Representation for the Partial Sum and Establishes Lerch' s formula V1-407
Qainli Yang and Jiaolian Zhao
- Preparation and adsorption properties for fluoride of kaolinite-magnetite association V1-410
Shiyong Wei, Xiaohong Yang and Wenjun Xiang
- Research on Network Security Based on IPv6 Architecture V1-415
Cheng Min
- Job Burnout, Social Support and Coping Style State in Prison Police and Their Correlation V1-418
Wang Lixin and Cun Xiaohong
- The Responsiveness of Intangible Cultural Heritage Tourism from the Perspective of Tourist Experience V1-428
CUI Juntao

The dynamical behaviors of the predator - prey model with stage structure and impulsive effects <i>Xiaoping Jian</i>	V1-432
On the Reform of the Approaches of Teaching Japanese Intensive Reading Aided with Multimedia Technology <i>Xu Lingzhi</i>	V1-436
Analysis on Development Trend of Electric Vehicle Charging Mode <i>Zheng Zhongqiao, Liu Tingting, Zhang Yanhong and Cheng Xu</i>	V1-440
Research on PID Controller Based on RBF Neural Network <i>Zhang Yanhong, Zhao Dean and Zhang Jiansheng</i>	V1-443
Neural-PID Visual Tracking of Moving Object <i>Shen Shi cheng</i>	V1-446
ICEOE Session 12	
Design and Implementation of Interleave Encoder based on FPGA <i>Minjin XIAO</i>	V1-453
Teaching Reform of “Signal and System” in Applied Institute <i>Zhao Hongyang</i>	V1-457
The designing of intelligent fan-induced ventilation control system based on nRF905 <i>Shengyao Hu</i>	V1-460
Novel algorithm for Frequency Estimation of continuous wave <i>ZHANG Gang-bing and QIAN Xian-yi</i>	V1-464
A Threshold Voltage Modeling for Ultra-Deep Sub-Micron MOSFETs <i>LI Qing-long</i>	V1-468
Reserch on the Newly-founded Undergraduate College Students' Psychological Healthe Assessment and Analysis <i>Xu Ya-ping, Li Wen-zhong, Yang Meng, XU Xian-fang, Deng Hong-mei and He Xian-ping</i>	V1-472
An Improved Apriori Algorithm <i>Rui Chang and Zhiyi Liu</i>	V1-476
Design of Power Quality Monitoring System Based on DSP and GPRS <i>Chunsheng Shao</i>	V1-479
Legislations and Management of Commercial Chambers in Western Developed Countries and the Enlightenment for China <i>Fuqi Peng and Jiangjiao Li</i>	V1-482
Research on the Practice Teaching of High Nursing professional in the Innovation and System Construction <i>LIU Xingming, LI Wenzhong and XU Yaping</i>	V1-487

ICEOE 2011Session 13

Application of intelligent control method in Magnetic Bearing <i>Zhang Jiansheng, Zhang Gan and Wang Xiping</i>	V1-491
A Wireless Sensor Network Environment Monitoring System Based on TinyOS <i>Rui Gao, Hong Zhou and Gang Su</i>	V1-497
Discussion on the Properties of Hilbert Space Adjoint Operator on the Orthogonal Complement <i>Liang Xiaoyi</i>	V1-502
Author Index	V1-505

Organizing Committees

General Chair

Prof. Shide Subash Kehavrao, Bharati Vidyapeeth College of Engineering, India

Prof. Junpeng Shao, Harbin University of Science And Technology, China

Prof. Chetto Maryline, University of Nantes, France

Technical Committees

Prof. Ma Rujian, University of Jinan, China

Prof. S.S. Dorle, G. H. Raisoni College of Engineering, India

Prof. Latha Parthiban, SSN College of Engineering, India

Prof. Rajeev Kumar Kanth, University of Turku, Computer System Laboratory, Finland

Prof. Yun Wang, Southern Illinois University Edwardsville, USA

Prof. Rongquan Feng, Peking University, China

Prof. Zhan Jiang, Renmin University of China, China

Dr. Zhenli Lu, Universidade de Aveiro, Portugal

Prof. Chanle Wu, Wuhan University, China

Prof. Liao X.W., Xi'an Jiaotong University, China

Prof. Liang Zhou, Institute of Media Technology, Germany

Prof. Zhengyi Jiang, University of Wollongong, Australia

Prof. Xiaobo Lu, Southeast University, China

Prof. Dong Yin, University of Science and Technology of China, China

Prof. Hui Zhou, Chinese Academy of Sciences, China

Prof. Zhang Guowei, North University of China, China

Prof. Hsiao-Hwa Chen, National Cheng Kung University, Taiwan

Prof. Zhengchao Dong, Columbia University, USA

Prof. Pang Shanchen, Tsinghua University, China

Dr. Chuanhua Chen, Dialogic Media Labs, USA

Prof. Zuo Shuguang, Tongji University, China

Prof. Wang Shengsheng, Jilin University, China

HOD, Prof. Kung Chih-hsien, Chang-Jung Christian University, Taiwan

Prof. Xie Lei, Nanjing University, China

Prof.Xujing Yang,Hunan University,China
Prof.Zihong Yin,Southwest Jiaotong University,China
Dr.Guo Lie,Dalian University of Technology,China
Prof. Zhang Ru,Beijing University of Posts and Telecommunications,China
Prof. Jinlong Wang, Qingdao Technological University, China
Prof. Yang Cheng,Zhejiang University,China
Dean, Prof. Taher Omran Ahmed Aljabal Algharby University, Libya
Prof. Qiang Li, Zhejiang University of Science and Technology, China
Dr. Bruce Moulton, University of Sydney Technology, Australia
Prof. Liu zhong,National University of Defense Technology,China
Prof.Yu Weiyu,South China University of Technology,China
Prof. Han Xiaotao,Huazhong University of Science and Technology, China
Prof. Seung-Soo Han, Myongji University, Korea
Prof. Adrian OLARU, University Polytechnic of Bucharest, Romania
Prof. Zheng Quan, University of Science and Technology of China, China
Prof. Nansheng Pang, North China Electric Power University, China
Prof. Hossein Hassanabadi, Azad University of Quchan, Iran
Prof. Shi Baojun,Shandong Jianzhu University,China