Table of Contents

Volume - 1

Preface - Volume 1 ...................................................................................................................................................xxiii
Organizing Committee - Volume 1 .........................................................................................................................xxiv
Reviewers - Volume 1 ...............................................................................................................................................xxvi

Volume 1

A 14-b 2MSPS Low Power Sigma-Delta ADC Using Feed-Forward Structure .........................................................3
   Wang Lei, Yan Taotao, Mo Tingting, and Mao Cui

A 62MHz~316MHz Phase-Locked Loop Based on Ring Oscillator for ADC Clock
Generator in 0.18m CMOS ........................................................................................................................................6
   Yunfeng Yan, Taotao Yan, Tingting Mo, and Dongpo Chen

A Calculating Method for the Movement Contrail in the Operation of Dressing
the Profile Shape of Grinding Wheel Used for Numerical Control Form Grinding
Helical Cylinder Gear .....................................................................................................................................................9
   Hongxia He

A Calculation for Smoothing the Axial Profile Shape of Grinding Wheel Based
on Numerical Control Form Grinding Cylinder Gear ..................................................................................................13
   Hongxia He

A Class of the Wireless Sensor Networks QoS Description and Evaluation .............................................................16
   Wang Xiaokai, Du Wenzhuo, and Zheng Dongmei

A Compression Approach of Power Quality Monitoring Data Based
on Two-dimension DCT ...............................................................................................................................................20
   An Qing, Zhang Hongtao, Hu Zhikun, and Chen Zhiwen

A Control Method of Dual Buck Half Bridge Inverter Based on the Phase of Voltage
Loop Output ..................................................................................................................................................................25
   Zhang Xianjin and Song Yongxian
A Curvature-based Automatic Registration Algorithm for the Scattered Points .................................................................28
Lin Zeming and He Bingwei

A Design of M-Channels Lifting Wavelet Filter in Signal Processing .................................................................................32
Lin Zhenxian and Xue Wen

A Design of Wireless Intelligent Control System for Service Robots ..................................................................................36
Jizhong Liu, Jingjing Yao, and Hua Zhang

A Dictionary-Based Approach for Thai Text to Speech (TTTS) ............................................................................................40
Chomtip Pornpanomchai, Nichakant Soontharanont, Charnchai Langla, and Narunat Wongsawat

A Discrete Particle Swarm Optimization Algorithm for Assembly Line Balancing Problem of Type 1 .................................................................44
Dou Jianping, Su Chun, and Li Jun

A Fault Diagnosis Method for Analog Circuit Based on GRBF Network and Frequency Spectrum Analysis ..................................................48
Liu Ying, Li Feng-yu, and Lu Gu-bing

A Fuzzy PID Cascade Control System of a Hydro-viscous Drive Speed Regulating Start .................................................................52
Meng Qing-rui and Hou You-fu

A Genetic Based Fuzzy Markov Game Flow Controller for High-speed Networks .................................................................58
Xin Li and Haibin Yu

A Gray-scale Image Edge Detection Algorithm Based on Mathematical Morphology .................................................................62
Hailong Huang, Hong Wang, Fan Guo, and Jinfeng Zhang

A High Speed Measuring System of Yarn Tension Based on Direct Memory Access .................................................................66
Gang Cao and Chong-qi Ma

A High-precision Method of Tension Measurement for Small-sized Fiber ................................................................................70
Wang Xiao-fang and Qiu Shubo

A Knowledge-based Approach for Segmenting Cerebral Vasculature in Neuroimages ..........................................................74
Suhuai Luo, Jesse J. Jin, and Jiaming Li

A Knowledge-based Message Filtering Algorithm in Scalable DVE Systems ........................................................................78
Hu Xiaomei, Xiong Feng, Chai Jianfei, and Long Hongye

A Laser Distance Tracking 3D Coordinate Vision Measuring System ....................................................................................83
Li Baozhang and Huang Fengshan

A Less Conservative H Fault-Tolerant Control for NCS Based on T-S Fuzzy Model .................................................................88
Wang Jun, Li Wei, and Li Zhanming

A Lossless and Visible Watermarking Algorithm .....................................................................................................................95
Luo Yong, Wang Jianxin, Li Shuxing, and Liu Xuchong

A Method for Designing and Studying Engine Intake System Based on CAD/CAE/CFD Integration .................................................99
Fu Jianqin, Liu Jingqin, Deng Banglin, Feng Kang, and Feng Renhua
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Method for Flame Flicker Frequency Calculation with the Empirical Mode</td>
<td>104</td>
</tr>
<tr>
<td><strong>Chi Tianyang, Zhang Huaibo, and Yu Qingfeng</strong></td>
<td></td>
</tr>
<tr>
<td>A Method for Rapid Preliminary Recognizing Chaotic Waveforms</td>
<td>107</td>
</tr>
<tr>
<td><strong>Hong Chen, Meizhou Gao, and Qun Ding</strong></td>
<td></td>
</tr>
<tr>
<td>A Method of Choosing Maintenance Policy Based on Set Pair Analysis</td>
<td>111</td>
</tr>
<tr>
<td><strong>Jia Yunfei and Li Feng</strong></td>
<td></td>
</tr>
<tr>
<td>A Method of Decreasing Power Output Fluctuation of Solar Chimney Power Generating Systems</td>
<td>114</td>
</tr>
<tr>
<td><strong>Meng Fanlong, Ming Tingzhen, and Pan Yuan</strong></td>
<td></td>
</tr>
<tr>
<td>A Method of Reinforcement Learning Based Automatic Traffic Signal Control</td>
<td>119</td>
</tr>
<tr>
<td><strong>Wang Yaping and Zhang Zheng</strong></td>
<td></td>
</tr>
<tr>
<td>A Method of Traffic Sign Detecting Based on Color Similarity</td>
<td>123</td>
</tr>
<tr>
<td><strong>Lin Chuan, Pan Shenghui, Zhang Fan, Li Menghe, and Ke Baozhong</strong></td>
<td></td>
</tr>
<tr>
<td>A Modified k-means Algorithm for Clustering Problem with Balancing Constraints</td>
<td>127</td>
</tr>
<tr>
<td><strong>Sun Yuepeng, Liu Min, and Wu Cheng</strong></td>
<td></td>
</tr>
<tr>
<td>A Monitoring System Based on Time-of-Flight Technology</td>
<td>131</td>
</tr>
<tr>
<td><strong>Minjie Chen, Günter Bärwolff, and Hartmut Schwandt</strong></td>
<td></td>
</tr>
<tr>
<td>A Multifunctional Test Instrument of Parameters of Planar Linkage</td>
<td>135</td>
</tr>
<tr>
<td><strong>Chen Jun, Zuo Yonggang, and Yang Jing</strong></td>
<td></td>
</tr>
<tr>
<td>A New Design Method of the One Order Electrical Load</td>
<td>138</td>
</tr>
<tr>
<td><strong>Yucheng Liu and Yubin Liu</strong></td>
<td></td>
</tr>
<tr>
<td>A New Design of Embedded Processor for Image Coding</td>
<td>142</td>
</tr>
<tr>
<td><strong>Wei Benjie, Zhang Xiaokun, Li Shan, and Teng Xuejian</strong></td>
<td></td>
</tr>
<tr>
<td>A New Dynamic Self-adaptive Diffuence Algorithm for VoIP Gateway of Intelligrid</td>
<td>147</td>
</tr>
<tr>
<td><strong>He Tienan, Ma Xiantu, and Li Mingjie</strong></td>
<td></td>
</tr>
<tr>
<td>A New EM Acceleration Algorithm for Multi-user Detection</td>
<td>150</td>
</tr>
<tr>
<td><strong>Xian Jinlong, Li Jianwu, and Yang Yang</strong></td>
<td></td>
</tr>
<tr>
<td>A New Extraction Algorithm for Mass-radius Product Signal</td>
<td>154</td>
</tr>
<tr>
<td><strong>Liu Liang, Zhai Yuyi, Luo Huaxcin, and Lu Wenjie</strong></td>
<td></td>
</tr>
<tr>
<td>A New Hardware Design Scheme of Symbol Synchronization for an Underwater Acoustic Receiver</td>
<td>158</td>
</tr>
<tr>
<td><strong>Li Ying, Benson Bridget, Kastner Ryan, and Chen Lan</strong></td>
<td></td>
</tr>
<tr>
<td>A New Injection Type Hybrid Active Power Filter and its Application</td>
<td>162</td>
</tr>
<tr>
<td><strong>Wei Zhao, Zhou Shangli, and An Luo</strong></td>
<td></td>
</tr>
<tr>
<td>A New Method for Partial Discharge Pattern Recognition of Electrical Transformers</td>
<td>166</td>
</tr>
<tr>
<td><strong>Wang Yu</strong></td>
<td></td>
</tr>
<tr>
<td>A New Method for Sorting Radar Signals Based on Coherency</td>
<td>170</td>
</tr>
<tr>
<td><strong>Zhao Bao-chang, Peng Shi-rui, Yu Chun-lai, and Sun Jing-jiao</strong></td>
<td></td>
</tr>
<tr>
<td>Title</td>
<td>Page</td>
</tr>
<tr>
<td>---------------------------------------------------------------------------------------------------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>A New Method of Fixed Single Observer Passive Location Based on Phase Difference Rate-of-Change</td>
<td>174</td>
</tr>
<tr>
<td>Xu Jing, He Ming-hao, Yu Chun-lai, and Chen Chang-xiao</td>
<td></td>
</tr>
<tr>
<td>A New Numerical Approximation CDD Method Based for Particle Filtering Research and Its Applications to TA System</td>
<td>178</td>
</tr>
<tr>
<td>Guoqiang Ding, Xiaoyu An, Weidong Zhou, and Guangzhao Cui</td>
<td></td>
</tr>
<tr>
<td>A Novel Anoxic-Oxic Hybrid Membrane Bioreator for Landfill Leachate Treatment</td>
<td>183</td>
</tr>
<tr>
<td>Yang Bai, Hei Wang, Jia Cui, Guang Li, Bing Han, and Jinwu Pi</td>
<td></td>
</tr>
<tr>
<td>A Novel Double-ended Tuning Fork Quartz Accelerometer</td>
<td>187</td>
</tr>
<tr>
<td>Chihang Zhao, Jie He, Libin Huang, Bailing Zhou, and Xin Zhong</td>
<td></td>
</tr>
<tr>
<td>A Novel Downlink Adaption Scheme for TDD Type-II Relay Systems</td>
<td>191</td>
</tr>
<tr>
<td>Zhu Yuanping, Lin Wenjia, and Yang Xin</td>
<td></td>
</tr>
<tr>
<td>A Novel Hybrid Clamped Dual PWM three-level Converter</td>
<td>195</td>
</tr>
<tr>
<td>Yue Yuntao, Lin Yan, and Wang Dawei</td>
<td></td>
</tr>
<tr>
<td>A Novel Knitted Fabric Structure with Thermal-wet Comfort Property</td>
<td>199</td>
</tr>
<tr>
<td>Ke Baozhu</td>
<td></td>
</tr>
<tr>
<td>A Novel Particle Filter Based on Propagation and Prediction</td>
<td>202</td>
</tr>
<tr>
<td>Bai Xiangfeng, Li Aihua, Li Jialei, and Liu Taiyang</td>
<td></td>
</tr>
<tr>
<td>A Novel Robust Watermarking Algorithm Based on Two_Levels DCT and Two_Levels SVD</td>
<td>206</td>
</tr>
<tr>
<td>Feng Liu and Yongtao Qian</td>
<td></td>
</tr>
<tr>
<td>A Novel SAR Signal Reconstruction Method from Non-uniform Sampling Associated with Fractional Fourier Transform</td>
<td>210</td>
</tr>
<tr>
<td>Shi Ruofan, Zhao Juan, and Tao Ran</td>
<td></td>
</tr>
<tr>
<td>A Novel SAW Humidity Sensor Based on Electrosprayed Polymerized Electrolyte Film</td>
<td>214</td>
</tr>
<tr>
<td>Lei Sheng, Chen Yuquan, and Li Yang</td>
<td></td>
</tr>
<tr>
<td>A Novel Scheme on Reality Preserving Image Encryption</td>
<td>218</td>
</tr>
<tr>
<td>Li Xuemei, Tong Xinhai, and Dai Lin</td>
<td></td>
</tr>
<tr>
<td>A Novel Shape from Shading Algorithm for Non-Lambertian Surfaces</td>
<td>222</td>
</tr>
<tr>
<td>Guohui Wang, Shangzheng Liu, Juqiang Han, and Xinman Zhang</td>
<td></td>
</tr>
<tr>
<td>A One-driver-multi-card High-accuracy Signal Acquisition System Based on PCI Bus</td>
<td>226</td>
</tr>
<tr>
<td>Wang Lipeng, Wang Junzheng, and Shen Wei</td>
<td></td>
</tr>
<tr>
<td>A Particle Swarm Optimization Approach for Optimal Design of PID Controller for Temperature Control in HVAC</td>
<td>230</td>
</tr>
<tr>
<td>Zhang Jun and Zhang Kanyu</td>
<td></td>
</tr>
<tr>
<td>A Post-processing Algorithm Based on UG/Postbuilder for 4AX-1300</td>
<td>234</td>
</tr>
<tr>
<td>Qu Xinhe, Lu Yuan, and Hu Ying</td>
<td></td>
</tr>
<tr>
<td>A Reduced-order Model for Microbeam-based Magnetic Actuators</td>
<td>238</td>
</tr>
<tr>
<td>Feng Yuming, Hu Rufu, and Li Pu</td>
<td></td>
</tr>
</tbody>
</table>
A Research of Maize Disease Image Recognition of Corn Based on BP Networks ..........................................................................................246
   Song Kai, Liu Zhikun, Su Hang, and Guo Chunhong

A Research on the Evaluation Framework of Carbon Footprint in Large-scale Public
Building ..................................................................................................................250
   Li Nianping, Wei Xiaqing, Ruan Fang, and Wang Lijie

A Scheme for the Application of Smart Message Language in a Wireless Meter
Reading System ..................................................................................................254
   Hou Weiyan, Wang Jiahui, and Zhang Fangchang

A Sensitive Benzene Gas Sensor Utilizing Thermal Desorption Coupled
with Cataluminescence ..........................................................................................258
   Zhou Kaowen, Yang Hongwei, Zhang Peng, and Chen Wei

A Single Neuron Self-Adaptive PID Controller of Brushless DC Motor ......................262
   Maoli Wang, Guanghe Cheng, and Xiangxin Kong

A Small Thickness Measurement System Based on PSD and FPGA ..................................267
   Guo Jingming, He Xin, Wei Zhonghui, and Wu Yanxiong

A Study of Automatic Defects Extraction of X-ray Weld Image Based on Computed
Radiography System .............................................................................................271
   Li Minxia and Zheng Meng

A Study of MPSO-based PID Controller on Boiler Drum Water Level ................................275
   Han Wenhua, Xu Jun, Sun Jianpeng, Yang Ping, and Ren Haixia

A Study on Image-Based On-line Detection of Folding Errors ........................................279
   Zhang Xiaogui and Gao Bo

A Study on Matching Pursuit Based on Genetic Algorithm .................................................283
   Gao Qiang, Duan Chendong, Fang Xiangbo, and Liu Benchao

A Study on Pyrolysis Characteristics of Low Quality Mixing Coal ........................................287
   Song Changzhong and Xin Hua

A Wavelet Transform to Detect the Fluid Separation with Flexible Micro-sensor Array ......291
   Kui Liu and Weizheng Yuan

Accurate and Rapid QRS Detection for Intelligent ECG Monitor ......................................298
   Gao Zhengzhong, Kong Fanxue, and Zhang Xu

Acoustic Characteristics Analysis of Chinese Vowels Produced by Tracheoesophageal
Speaker ....................................................................................................................302
   Gang Lv and Heming Zhao

Acoustic Evaluation of Different Types of External Windows in Severe Cold Areas
in China ...................................................................................................................306
   Jin Hong, Zhang Rui, and Kang Jian

Active Control with the Acceleration Feedback on a Parametrically Excited System ..................310
   Shang Huilin and Wen Yongpeng
Active Vibration Isolation of 6-RSS Parallel Mechanism Using Integrated Force Feedback Controller .................................................. 314
   Li Kunquan and Wen Rui

Actuator Fault Diagnosis for Dynamic Systems with Multiple Asynchronous Sensors Using the IMM Approach ........................................ 318
   Yanyan Hu and Donghua Zhou

Adaptive Backstepping Control for a Class of Nonlinear Systems ................................................................. 322
   He Naibao, Jiang Changsheng, and Gao Qian

Adaptive Back-stepping Control of Permanent Magnetic Synchronous Motor Based on Slide Mode Observer .................................. 326
   Li Yu-zhou and Zhao Ke-gang

Adaptive Controller Design for a Class of Nonlinear Systems ............................................................................. 331
   He Naibao and Gao Qian

Adaptive Fuzzy Sliding Mode Method-Based Position and Anti-swing Control for Overhead Cranes ......................... 335
   Lingzhi Cao and Lei Liu

Adaptive Robust Control of a Class of Nonlinear Uncertain System with Backlash-like ........................................ 339
   Cai Jianping and Shen Lujuan

Adsorption and Refrigeration Performance of Ammonia-Composite Adsorbent Working Pair ............................................. 343
   Wan Yi, Zheng Kai, Sheng Lili, Cui Qun, Chen Haijun, Wang Haiyan, and Yao Huqing

Adsorption of Nitrogen and Phosphorus on Natural Zeolite and its Influencing Factors ........................................ 347
   Tan Wanchun, Wang Qiuyun, Wang Yunbo, and Pan Zhengke

Adsorptive Removal of Strontium from Aqueous Solution by Utilizing Pseudomonas Alcaligenes Biomass as Biosorbent .... 351
   Yan-li Mao, Xiao-tao Wang, Shi-tian Luo, and Wei-feng Liu

Affect of Different Preprocessing Methods on Principal Component Analysis for Soil Classification ............................... 355
   Haiqing Yang, Boyan Kuang, and Abdul M. Mouazen

All-digital Real Time Demodulation System of Fiber Laser Hydrophone Using PGC Method ............................................... 359
   Li Yu, Huang Junbin, Gu Hongcan, Li Rizhong, Tan Bo, and Chen Liang

An Adaptive Method of Parameters Selection for SPWVD ............................................................................... 363
   Ning Ma and Jianxin Wang

An Algorithms for the Image Detecting about the Center of Orbicular Based on Digital Image ........................................ 367
   Fang XiuRong and Wang YuHui

An Analysis and Elimination of Zero Drift in Magnetic Gradient Tensor Exploration System ..................................... 371
   Sui Yangyi, Wang Shilong, Meng Hui, and Lin Jun
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>An Analytical Model on Unbalanced Energy Consumption in Large Scale Wireless Sensor Network</td>
<td>375</td>
</tr>
<tr>
<td>Jiuqiang Han, Wei Zhao, and Mao Zheng</td>
<td></td>
</tr>
<tr>
<td>An Anchor-Free Position Algorithm for Evenly Deployed Wireless Sensor Networks</td>
<td>379</td>
</tr>
<tr>
<td>Guibin Zhu, Haicheng Zhang, Jiazi Ye, and Peng Quan</td>
<td></td>
</tr>
<tr>
<td>An Annual Operating Cost Estimating Method of Heat-Pump HVAC System</td>
<td>383</td>
</tr>
<tr>
<td>Chenghu Zhang, Pan Yawen, and Sun Dexing</td>
<td></td>
</tr>
<tr>
<td>An Automatic Surface Extraction for Volume Visualization</td>
<td>387</td>
</tr>
<tr>
<td>Ma Yu, Zhang Yanning, Wang Xiyuan, Yao Rui, and Li Zhenxing</td>
<td></td>
</tr>
<tr>
<td>An Effective Method for Improving the Lifetime of Double Acting Vane Pump</td>
<td>391</td>
</tr>
<tr>
<td>Feiyuan Chen, Guoqing Hu, and Baibai Wu</td>
<td></td>
</tr>
<tr>
<td>An Embedded Laboratory Security Monitoring System</td>
<td>395</td>
</tr>
<tr>
<td>Guangyuan Zhao, Zhiwei Wang, Wei Li, and Ke Wang</td>
<td></td>
</tr>
<tr>
<td>An Empirical Study of Waste Heat Utilization in Sulfuric Acid Industry</td>
<td>399</td>
</tr>
<tr>
<td>Mao Jing, Ma Yuming, and Chen Weiya</td>
<td></td>
</tr>
<tr>
<td>An Engine Valvetrain Design Concept Based on CAD/CAE Integrated Simulation</td>
<td>403</td>
</tr>
<tr>
<td>Feng Renhua, Liu Jingping, Deng Banglin, Yang Jing, and Fu Jianqin</td>
<td></td>
</tr>
<tr>
<td>An Environment Friendly Energy Recovery Technology: Municipal Solid Waste Gasification</td>
<td>407</td>
</tr>
<tr>
<td>Lei Ma, Chuanshua Liao, Yuezhao Zhu, Haijun Chen, and Yanghuiqin Ding</td>
<td></td>
</tr>
<tr>
<td>An Extreme Simple Method for Digital FIR Filter Design</td>
<td>410</td>
</tr>
<tr>
<td>Wang Yunlong, Wang Shihu, and Ji Rendong</td>
<td></td>
</tr>
<tr>
<td>An Improved Flowchart for Gabor Order Tracking</td>
<td>414</td>
</tr>
<tr>
<td>Jin Yang and Hao Zhiyong</td>
<td></td>
</tr>
<tr>
<td>An Improved Median Filtering Algorithm Combined with Average Filtering</td>
<td>420</td>
</tr>
<tr>
<td>Zhu Youlian and Huang Cheng</td>
<td></td>
</tr>
<tr>
<td>An Improved Robust ISS-satisfying Control for Synchronization of FHN Neurons</td>
<td>424</td>
</tr>
<tr>
<td>Li Huiyan, Liu Yuliang, Han Chunxiao, and Wang Jiang</td>
<td></td>
</tr>
<tr>
<td>An Improved TDOA Algorithm Applied Person Localization System in Coal Mine</td>
<td>428</td>
</tr>
<tr>
<td>Wei Jiaxi, Chen Yan, and Sun Shuo</td>
<td></td>
</tr>
<tr>
<td>An Improved VFDT Algorithm for Identifying Power System Disturbance</td>
<td>432</td>
</tr>
<tr>
<td>Ma Xiantu, Li Mingjie, and Wang Shuyuan</td>
<td></td>
</tr>
<tr>
<td>An Improving Tabu Search Algorithm for Intrusion Detection</td>
<td>435</td>
</tr>
<tr>
<td>Wu Jian-guang, Tao Ran, and Li Zhi-Yong</td>
<td></td>
</tr>
<tr>
<td>An Intelligent Management System on Load Characteristic Identification and Power Supply Safety on Campus</td>
<td>440</td>
</tr>
<tr>
<td>Shi Yanhui, Gao Meng, Liu Ningning, and Di Jianhong</td>
<td></td>
</tr>
<tr>
<td>An Optical Fiber Displacement Sensor Based on RBF Neural Network</td>
<td>443</td>
</tr>
<tr>
<td>Cao Hui-min and Xie Qin-lan</td>
<td></td>
</tr>
</tbody>
</table>
An SVR-Based Online Fault Detection Method .................................................................447
Su Shengchao, Deng Na, and Hu Yi Gang

Analysis and Design of Three Loop Radar Servo System for Air Defense Missile ...................451
Fugui Li, Qunli Xia, and Zaikang Qi

Analysis and Optimization of the Power Cycle Based on the Cold Energy of Liquefied Natural Gas ..............................................................................................................................455
Lu Yuanwei, Yang Hongchang, and Ma Chongfang

Analysis of a Precision Inchworm-type Piezoelectric Actuator with Vertical Movement .................................................................................................................................459
Wang Lina, Liu Junbiao, Guo Shaopeng, and Han Li

Analysis of Electrical Contact Performance for Alternating Current Contactor ........................463
Haitao Wang, Jingqin Wang, Qishu Bao, and Zhizhou Bao

Analysis of Improvement of Anti-contact Fatigue for Bearing Steel by Ion Implantation .................................................................................................................................467
Wang Minghong

Analysis of Motion Control with Trajectory Planning for HP20 Manipulator ..........................471
Shan Junfeng, Zhang Shangxing, and Zhu Xuejun

Analysis of Non-stationary and Extraction of Chaotic Characteristics about Logging Signals .................................................................................................................................474
Nie Chunyan, Wang Zhuwen, and Zhang Ting

Analysis of Pass-by Noise in Protective Barrier Road ................................................................478
F.Y. Ma, Wu Weiwei, Y.S. Wang, Li Wei, and Cai Lijun

Analysis of Solidification Heat Transfer Process on Double-Convection Condition .................482
Zhang Chenghu, Sun Qiong, and Sun Dexing

Analysis on and Improvement Measures of Dust-Attachment Phenomenon in PCB Drillers .................................................................................................................................486
Ling He, Minli Tang, Hengyu Wu, Yali Lei, and Zhigang Wang

Analysis on Dynamic Eddy Loss of a Low-power Proportional Solenoid .................................490
Li Yong, Li Zhenzhe, Shen Yunde, and Ren Ming

Analysis on Grounding Resistance Affected by Heterogeneous Soil ........................................493
Peng Qian, Yao Xiao, Liu Ping, Liu Fan, and Su Jie

Analysis on the Steady Response Periodicity of the Stator Vibration of Radial Piston Pump .................................................................................................................................497
Zhou Tianyue

Analysis on the Topology and Security in a Peerto-Peer Network ............................................501
Yu Cunjiang and Zhang Liying

Anomaly Network Detection Model Based on Mobile Agent ..................................................504
Wang Yu, Cheng Xiaohui, and Wang Sheng
Application and Research of Monitor Pro7 Applied to Zhu Jiang Yuan Center for Performing Arts .......................................................... 508  
Xiaolin Feng, Haijie Mao, Ruozhu Chen, and Hui Chen

Application and Research of Rough Set in Computer Aided Concurrent Tolerance Design .................................................................................................. 512  
Zhu Huli and Yang Jie

Application in the Motion Planning of Underactuated Hexapod Robot Based on Genetic Algorithms and Particle Swarm Optimization .......................................................... 515  
Li Hong and Xiao Wenwen

Application of an Improved Collaborative Optimization Method for Speed Reducer Optimization .......................................................... 519  
Han Minghong

Application of CAD Techniques in Design of Automobile Body Welding Line .......................................................................................... 523  
Guiying Tong and Xiaomei Shao

Application of Chaos in Weak Signal Detection .................................................................................................. 528  
Nie Chunyan and Wang Zhuwen

Application of Damping-Boundary-based PSO to MFL Signal Inversion .................................................................................................. 532  
Han Wenhua, Yang Ping, and Ren Haixia

Application of Fractal Mathematics in Mode Recognition and Image Processing .......................................................................................... 536  
Haixia Zhao and Shoucheng Wang

Application of Image Mosaic Algorithm in Lateral Multi-lens Video Logging .......................................................................................... 539  
Hu Hong-tao, Lin Xia, and Li Zhou-li

Application of Membrane Biological Reactor on Purifying Wastewater from Corn Starch Processing .......................................................................................... 543  
Jun Zhao, Lihui Yu, and Jane Yuxia Qin

Application of Multi-sensor Data Fusion on Hydraulic Synthetic Test-bed .......................................................................................... 547  
Yuming Liang, Tian Zhang, Ruchun Wen, and Zhenli Zhang

Application of Multiwavelet Adaptive Threshold Denoising in the Fault Diagnosis of Gearbox .......................................................................................... 551  
Li Wenbin, Zhang Jianyu, Cui Lingli, Gao Lixin, and Zhang Feibin

Application of Neural Network to Diesel Engine SOA .......................................................................................... 555  
Tian Hongxiang, Liu Yuntao, and Wu Xiangjun

Application of Optimization in Image De-noising by Shrinkage of Wavelet Coefficients .......................................................................................... 559  
Cao Tianjie, Ding Fang, and Fei Chunguo

Application of PM Technology on Manufacturing of Automotive Parts .......................................................................................... 563  
Shang Feng, Qiao Bin, Li Huaqiang, He Yiqiang, Tang Xuefei, and Yang Jianming

Application of the Model Multi Based on Apriori Algorithm in Supporting System of Medical Decision .......................................................................................... 566  
Yan Yuguang, Wang Chunyan, and Li Min
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application of Virtual Design in Crane Design</td>
<td>570</td>
</tr>
<tr>
<td>Ling Sha and Wen Lu</td>
<td></td>
</tr>
<tr>
<td>Application Research of Vibration and Noise Test and Analysis System in High Speed Railway Passenger Car</td>
<td>573</td>
</tr>
<tr>
<td>Yan Liu, Bing Yang, XiaoPai Zhang, and ShuMei Xing</td>
<td></td>
</tr>
<tr>
<td>Applications of an Improved Wavelet Network in the Low Pressure Cylinder of Turbine Steam Exhaust Enthalpies Calculation</td>
<td>577</td>
</tr>
<tr>
<td>Zhang Liping, Sun Quanhong, and Xu Qi</td>
<td></td>
</tr>
<tr>
<td>Applying Observer Feedback in Motor Control</td>
<td>581</td>
</tr>
<tr>
<td>Huan Zhi-ying and Li Hong-wen</td>
<td></td>
</tr>
<tr>
<td>Arc-Fault Recognition Based on BP Neural Network</td>
<td>584</td>
</tr>
<tr>
<td>Shaohua Ma and Lina Guan</td>
<td></td>
</tr>
<tr>
<td>ARM9 Multi-task Data Acquisition System Intelligent Improvement</td>
<td>587</td>
</tr>
<tr>
<td>Tao Li, Qin Xu, and Zhao Ning</td>
<td></td>
</tr>
<tr>
<td>Automatic Fusion Algorithm Based on SDG for Fault Diagnosis of Petrochemical Process</td>
<td>591</td>
</tr>
<tr>
<td>Li Chuan-kun, Zhang Wei-hua, Wang Chun-li, and Wu Chong-guang</td>
<td></td>
</tr>
<tr>
<td>Automatic Test Data Generation for Path Testing Using Genetic Algorithms</td>
<td>596</td>
</tr>
<tr>
<td>Wang Xibo and Su Na</td>
<td></td>
</tr>
<tr>
<td>Automatic Ultrasonic Testing System for Forging Based on Virtual Instrument</td>
<td>600</td>
</tr>
<tr>
<td>Feng Zhihong, Miao Changyuan, Gao Qiang, and Feng Yongmiao</td>
<td></td>
</tr>
<tr>
<td>Automatization of Excavator and Study of its Autocontrol</td>
<td>604</td>
</tr>
<tr>
<td>Yan Jun, Li Bo, Tu Qunzhang, Guo Gang, and Zeng Yonghua</td>
<td></td>
</tr>
<tr>
<td>Autopilot Design for Unmanned Surface Vehicle Tracking Control</td>
<td>610</td>
</tr>
<tr>
<td>Sun Qiaomei, Ren Guang, Yue Jin, and Qi Xiaowei</td>
<td></td>
</tr>
<tr>
<td>Back Spin Braking Simulation Analysis for Direct-Driven Progressive Cavity Pump</td>
<td>614</td>
</tr>
<tr>
<td>Jiang Xintong, Li Yong, and Zhao Zhenkui</td>
<td></td>
</tr>
<tr>
<td>Based on CD4013’s Missile Recorder Hard Boot Design</td>
<td>618</td>
</tr>
<tr>
<td>Li Wenyan, Guo Tao, and Liu Pengfei</td>
<td></td>
</tr>
<tr>
<td>Based on Matlab Electrically Operated Windshield Wiper Systems Design Method Research</td>
<td>621</td>
</tr>
<tr>
<td>Zhao Xiaoyu, Xing Yanfeng, and Li Yengjie</td>
<td></td>
</tr>
<tr>
<td>Based on the Reliability of Life Cycle to Determine Optimal Testing Cycles of Aircraft</td>
<td>625</td>
</tr>
<tr>
<td>Zheng Li, Jingcheng Zhang, Long Chen, and Xiaoyan Tong</td>
<td></td>
</tr>
<tr>
<td>Basic Principle for Permanent Magnetic Toroidal Transmission</td>
<td>629</td>
</tr>
<tr>
<td>Yi Cai and Qiusheng Ma</td>
<td></td>
</tr>
<tr>
<td>Bearing Lubrication Optimization for Diesel Engine Based on Orthogonal Design Method</td>
<td>633</td>
</tr>
<tr>
<td>Xing Hui, Duan Shulin, and Wu Zhanhua</td>
<td></td>
</tr>
</tbody>
</table>
Characterization of a Novel Biopolymer by FT-IR Spectroscopy and its Use for Cobalt Removal ................................................................. 700
Tao Zhu, Shui-cheng Tan, Liao-bao Tong, Yao-qing Wang, and Rong-nian Wang

Characterization of Nanoparticle Based on the Power Spectrum Density of Dynamic Light Scattering .......................................................... 704
Liu Guobin, Yang Hui, Zheng Gang, Wang Yajing, and Yang Yifeng

Chemical and Morphological Properties of Particulate Matter Generated from Coal-fired Circulating Fluidized Bed Boiler .......................... 708
Hao Bai, Yan Ma, Xianbin Ai, Haiguang Li, Pu Liu, and Daqiang Cang

Closed-form Dynamic Equations of the 6-RSS Parallel Mechanism through the Newton-Euler Approach ...................................................... 712
Li Kunquan and Wen Rui

Cloud Computing: A New Business Paradigm for E-learning .................................................. 716
Xiao Laisheng and Wang Zhengxia

Combination of Data Mining and Ant Colony Algorithm for Reactive Power Optimization ........................................................................ 720
Gong Jinxia, Xie Da, Zhang Yanchi, and Jiang Chuanwen

Combustion and Heat Transfer Model Study on CFB Dense Zone under Oxygen-enriched Combustion .................................................. 725

Comparative Study on Control Strategy of Active Suspension System ........................................................................ 729
Jianmin Sun and Yi Sun

Comparative Study on the Thermal Properities of Paraffin Binary Mixtures and Fatty Acid Binary Mixtures .................................................................. 733
Li Lisha, Yan Quanying, Huo Ran, and Fang Yongwei

Comparison of BP and Gauss Code Base on Fountain Code ........................................................................ 737
Zhang Fan, Xu Lixin, and Pan Xi

Comparison of Control Strategy for Double-fed Induction Generator (DFIG) ........................................................................ 741
Liu Qizhong, Yu Lan, and Wu Guoxiang

Comparison of LMS and RLS Algorithm for Active Vibration Control of Smart Structures ........................................................................ 745
Huang Quanzhen, Gao Zhiyuan, Gao Shouwei, Shao Yong, and Zhu Xiaojin

Comparison of Sorption Coefficients of Triclosan in Different Activated Sludge and Application in Sewage Treatment System .................. 749
Lu Shi, Xuefei Zhou, Yalei Zhang, and Tao Jiang

Composite Process of Centreless Belt Grinding with Automatic Lapping for Lengthy Cylinder ........................................................................ 753
Yu Yan

Compound Fuzzy PID Level Control System Based on WinCC and MATLAB ........................................................................ 757
Qian Linlin, Li Ping, and Li Hongxing
Computer Aided for Parallel Robot Simulation Mechanism .......................................................... 761
    Zhu YunLi and Ren ShuTang

Construction of 3D Finite Element Model of Upper End of Tibia ................................................ 766
    Liu Peng, Ni Junfang, Zhang Yong, Zhang Wen, and Jiang Dinghua

Contact Finite Element Analysis of Anti-backlash Double-roller-Enveloping Hourglass Worm Gearing .......................................................... 770
    Li Wei, Zhang Junfu, Xiang Zhongfan, and Wang Jinge

Control and Protective Switching Device PCB Test System Based on Virtual Instrument .......................................................... 774
    Dai Mei, Xie Qi, Xu Wei, and Xu Huigang

Control System Design and Simulation of an Aerial Three-Axis ISP System Based on SimMechanics .......................................................... 778
    Li Jianping, Zhou Xiangyang, Mu Quanqi, and Du Lei

Control System of Linear Compressor Based on Bidirectional Triode Thyristor .......................................................... 782
    Zhao Peng, Li Zhihai, and Zheng Shuiying

Co-pyrolysis Polystyrene/Fir: Pyrolysis Characteristics and Pyrolysis Kinetic Studies .......................................................... 786
    Baozhong Zhu and Yunlan Sun

Co-simulation Study on EPS System Based on ADAMS and MATLAB .......................................................... 791
    Chen Anyu, Dai Xiliang, and Hu Shugen

Crankshaft Dynamic Strength Analysis for Marine Diesel Engine .......................................................... 795
    Yu Gongzhi, Yu Hongliang, and Duan Shulin

Crankshaft Dynamic Strength and Fatigue Life Calculation Based on Modal Superposition Analysis .......................................................... 800
    Liu Peng, Huang Yingyun, and Kang Guidong

Cutting Path Planning for Surface Impellers .......................................................... 804
    Pengmin Dong, Zhengrong Guan, and Wang Tianqi

Cycloidal Pump Parametric Design and Fluid Characteristics Analysis .......................................................... 808
    Gao Qiang, Li Jin-guo, and Wu Wei-wei

Damping Properties of Viscoelastic Laminated Plates with an Unconstrained Fiber-reinforced Layer .......................................................... 812
    Yang Shaohong, Wang Arwen, and Hu Mingyong

Data Flow Fuzzy Control Based on Linear Phase IIR Filter .......................................................... 815
    Na Deng, Qingxin Su, and Xiaolan Fan

DC Motor Speed Calculation Based on Armature Current Measurement .......................................................... 818
    Li Yifan

Decision Model for Optimization of Coagulation/Flocculation Process for Wastewater Treatment .......................................................... 821
    Zhu Guocheng, Zheng Huaili, Zhang Peng, Jiang Shaohie, Ma Jiangya, and Chen Wenyuan

Defects Detection of Cold-roll Steel Surface Based on MATLAB .......................................................... 827
    Zhang Yichi, Wu Lv, and Liu Xuedong
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Degradation of Microcystins by UV in the Presence of Low Frequency</td>
<td>831</td>
</tr>
<tr>
<td>and Power Ultrasonic Irradiation</td>
<td></td>
</tr>
<tr>
<td>Qiu Yejing, Yang Fei, Rong Fei, Long Hai, Li Jiangping, and Wu Wei</td>
<td></td>
</tr>
<tr>
<td>Delay Analysis for IEEE 802.15.4 CSMA/CA Scheme with Heterogeneous</td>
<td>835</td>
</tr>
<tr>
<td>Buffered Traffic</td>
<td></td>
</tr>
<tr>
<td>Jianping Zhu, Zhengsu Tao, and Chunfeng Lv</td>
<td></td>
</tr>
<tr>
<td>Delay-independence Stability Analysis of MIMO Networked Control</td>
<td>846</td>
</tr>
<tr>
<td>Systems with State Feedback</td>
<td></td>
</tr>
<tr>
<td>Liu Dianting and Li Mingtao</td>
<td></td>
</tr>
<tr>
<td>Deposit Dimension Control with Using Single Neuron Self-learning PSD</td>
<td>849</td>
</tr>
<tr>
<td>Controller During Spray Forming</td>
<td></td>
</tr>
<tr>
<td>Qu Ying-dong, Cui Cheng-song, Chen San-ben, and Ma Guang-hui</td>
<td></td>
</tr>
<tr>
<td>Deposition and Corrosion Problems of Biomass Fired Boiler</td>
<td>852</td>
</tr>
<tr>
<td>Xutao Wang, Xingtao Zhao, and Liangtiao Ma</td>
<td></td>
</tr>
<tr>
<td>Derivative and Integral Sliding Mode Control for Rotary Drilling</td>
<td>855</td>
</tr>
<tr>
<td>System</td>
<td></td>
</tr>
<tr>
<td>Fubin Shi, Lin Li, Qi-zhi Zhang, and Nurzat Rasol</td>
<td></td>
</tr>
<tr>
<td>Design and Analysis of Eccentric Gear Centrodess for Driving Systems</td>
<td>859</td>
</tr>
<tr>
<td>of Differential Velocity Vane Pump</td>
<td></td>
</tr>
<tr>
<td>Hu Ming, Zhang Miaomiao, Jin Yongping, Chen Wenhua, Chen Ming, and Qian Ping</td>
<td></td>
</tr>
<tr>
<td>Design and Configuration of a Hexapod Walking Robot</td>
<td>863</td>
</tr>
<tr>
<td>Jin Bo, Chen Cheng, Li Wei, and Li Xiangyun</td>
<td></td>
</tr>
<tr>
<td>Design and Effect Analysis of Auto Air Pressure Balance System for</td>
<td>867</td>
</tr>
<tr>
<td>Fire Control</td>
<td></td>
</tr>
<tr>
<td>Zhu Hongqing, Li Feng, Wang Heng, and Zhao Lixia</td>
<td></td>
</tr>
<tr>
<td>Design and Experimental Research on a Novel Optical Voltage</td>
<td>871</td>
</tr>
<tr>
<td>Transformer</td>
<td></td>
</tr>
<tr>
<td>Xiao Yue-yu and Yang Jian</td>
<td></td>
</tr>
<tr>
<td>Design and Implement to a Type of Flexible Interruptible Load Model</td>
<td>874</td>
</tr>
<tr>
<td>Pan Dong-bo, Zhu Pei-jun, Zhang Yu, and Liu Feng</td>
<td></td>
</tr>
<tr>
<td>Design and Implementation of Control System for High Temperature and</td>
<td>878</td>
</tr>
<tr>
<td>Pressure Dilatometer</td>
<td></td>
</tr>
<tr>
<td>Shen Ming, Cheng Kai, and Teng Shaowei</td>
<td></td>
</tr>
<tr>
<td>Design and Implementation of Fuzzy Logic Transmission Control Unit</td>
<td>881</td>
</tr>
<tr>
<td>for a Heavy Machine (Off-Highway Truck)</td>
<td></td>
</tr>
<tr>
<td>Hassan Sadjadian and Ali Farzaneh</td>
<td></td>
</tr>
<tr>
<td>Design and Implementation of Marine Environmental Information</td>
<td>885</td>
</tr>
<tr>
<td>Observation System Based on UUV</td>
<td></td>
</tr>
<tr>
<td>Zhang Xun, Tian Xiqian, Tang Zhaodong, and Yan Zheping</td>
<td></td>
</tr>
<tr>
<td>Design and Implementation of Tele-Calibration for Thermocouple and</td>
<td>889</td>
</tr>
<tr>
<td>Resistance Thermometer Based on Virtual Instrument</td>
<td></td>
</tr>
<tr>
<td>Song Yan, Gao Jian, Sun Jian, Zhang Xiaoli, and Zheng Enhui</td>
<td></td>
</tr>
</tbody>
</table>
Design and Manufacturing of Clutch in Tunnel Boring Machine .................................................................893
Hua Fu, Li Fu, Guang-lei Zhang, Guo-qiang Qin, and Rui-min Wang

Design and Optimization of Swing Bed with High Torque Dynamic Load ..........................................................897
Lu Dao-hua and Lu Hai-feng

Design and Realization of Reading Recognition System for Sound Level Meter ................................................901
Sun Qingsheng, Wang Xuejing, Zhong Bo, and Zhu Haijiang

Design and Realization of Temperature Control System for FOG POS Based on DSP .............................................906
Hao Jinyi and Liu Baiqi

Design and Research about Voice Communication System Based on Bluetooth Module .........................................................911
Wang Zhengyan, Yang Wei, Shao Xingling, and Zhai Hongqiang

Design and Research on EDM Fuzzy Control System Based on Mixed Programming of VC++ and MATLAB ..........................................................915
Geng Xuesong, Wang Yukui, Wang Zhenlong, and Shan Debin

Design and Simulation of High Frequency Tuned Amplifier ................................................................................919
Cui Wenhua and Yang Lina

Design and Simulation of the Evaporator for Cooling System of the Blade Server .................................................922
Chen Yu, Fu Yuzhun, and Ju Yonglin

Design Generalization of Urban Sewage Source Heat Pump Heating and Air Conditioning Engineering ............................926
Zhang Chenghu, Zhuang Zhaoyi, and Sun Dexing

Design Gust Alleviation Controller for Highly Flexible Solar UAV ......................................................................930
Wang Rui, Zhu Xiaoping, and Zhou Zhou

Design of a Two-spindle CNC Machine Tool Applications for Dental Restoration ..................................................934
Lei Xiao-bao, Liao Wen-he, and Zhang Lin

Design of an Orbit-holding Traveling Mechanism of Girth Weld Ultrasonic Scanner ..............................................938
Hong-Wen Ma, Li-Quan Wang, Kai Li, and Dong-Yan Chang

Design of and Research on Distributed OJ System Based on Linux ........................................................................942
Peng Ying and Wang Fang

Design of Compact Multiple Support Mechanism for Special Purpose Vehicles .......................................................946
Meng Xiangde, Zhang Junhong, and Li Lishun

Design of Comprehensive Performance Test System for Residual Current Fire Monitoring Detector Based on Virtual Instrument Technology ..................................................................................950
Xie Qi, Xu Wei, Gu Qimin, and Xu Huigang

Design of Control System for Brushless DC Motor Based on TMS320F28335 .......................................................954
Hai-tao Wang, Ze Zhang, and Xiang-yu Liu

Design of Dual-axis Inclinometer Based on MEMS Accelerometer ........................................................................959
Lin Da-wei and Guo Tao
Design of Fabric Pulling Mechanism of the Computerized Knitting Machine .................................................................962
   Guojun Hu, Peimin Wei, and Weiqiang Zhao

Design of Fuzzy Neural Network Control Method for Ramp Metering .................................................................966
   Chen Feng, Jia Yuanhua, Li Jian, Yi Huixin, and Niu Zhonghai

Design of Individuation PDC Bit and its Application in Santanghu Basin Vocanics .........................................................970
   Wei Zhongliang and Guo Lichun

Design of Landslide Warning System .........................................................................................................................974
   Zhang Wenlong, Guo Qing, and Liu Baoshan

Design of Low Power Consumption Cymometer Based on FPGA ............................................................................978
   Li Ye and Bao AiDa

Design of MEMS Low Range Accelerometer .............................................................................................................982
   Guo Tao, Xiang Ting, and Fei Qingguo

Design of Multi-channel and Distributed Wireless Communication Network Architecture for UUVs ........................................986
   Zhang Xun, Bian Xinqian, Tang Zhaodong, and Yan Zheping

Design of Optimization Filter Based on Novel Immune Algorithm ..............................................................................990
   Chen Peng, Ren Shibin, Li Wenhua, and Wang Haitao

Design of Programmable Threshold Value Discrimination for Compton Scattering System Based on FPGA .........................994
   Hao Kuihong, Li Yanjun, Bai Hao, and Wang Huaxiang

Design of STATCOM Novel Direct Power Controller .................................................................................................998
   Cao Taibin and Qian Bifu

Design of the Durability Test System for Motorcycle Wheel Speed Sensor .................................................................1002
   Tian Jinming, Gu Jianyin, Zong Rongfang, and Gong Chenglong

Design of Triple Swirler and Simulation of its Flow Field ..............................................................................................1006
   Wang Chengjun, Wu Zhengyu, Wang Dan-dan, and Zhang Qunjie

Design of Ultrasonic Obstacle Avoidance System of Fruit-Transportation Gyrocar Based on ARM ........................................1010
   Yang Kai, Zhang Junmei, Li Wenbin, Yang Liu, Gao Lin, and Xue Huixia

Design of Variable Structure Stability Control Loop for Anti-air Missile with Swing Nozzle Thrust Vector Control .................................................................1014
   Zhang Xiaofeng, Zhu Xiaoping, and Yang Jun

Design of Vertical Launch Control System for Antiaircraft Missile Using Optical Control .................................................1018
   Fan Yong-hua, Jiang Guang-zhou, and Fan Guo-long

Design Principle of Hydraulic and Continuous Filter Regeneration Equipment ...........................................................1022
   Zhang Chenghu, Wang Haiyan, and Sun Dexing

Detection Algorithm of Laser Radar Target Based on Wavelet Transform .................................................................1026
   Jianhua Sun, Pengge Ma, Ning Zheng, and Jinfa Shi
Development and Design of Top Rail Irregularity Detection System Based on LabVIEW .................................................................1029

Zhu Wenliang, He Yuelei, Ji Kun, Zeng Bin, and Yang Chen

Development for the Material Constitutive Model of the Polymer Ortho Fabric under the Hypervelocity Impact Condition .................................................................1033

Liu Bin-tao, Huang Hai, and Jia Guang-hui

Development of a Fast Response High Accuracy Virtual Air Flow Meter for Internal Combustion Engine Applications .................................................................1037

Liu Jingping, Xia Xiaolang, Wang Yong, and Yang Hanqian

Development of a Pure Electric Vacuum Sweeper .................................................................1042

Liang Xincheng, Zhang Jun, Sun Fengchun, and Li Siguang

Development of a System for Measuring the Variation of Friction Force on Reciprocating Wear Tester .................................................................1045

He Guanzhang, Yang Xiaojing, Chi Yilin, and Dai Jie

Development of Deepwater Riser Monitoring Systems .................................................................1050

Dai Wei and Bai Yong

Development of Multi-functional Virtual Oscilloscope Based on Soundcard .................................................................1056

Wang Lijun, Chen Changxin, Ma Lili, and Shen Jie

Development of Simulation Tests Platform of Metro Environment and Equipment Monitoring System Based on CIMS .................................................................1060

Guo Tongying, Han Ting, Qiu Jihong, and Wei Hongji

Development of Synthetic Evaluation for Distribution Network .................................................................1064

Zhang Dan and Yan Guang-tao

Development on Gas Leak Detection and Location System Based on Wireless Sensor Networks .................................................................1067

Ding Chengjun, Liu Ximao, and Duan Ping

Diagnosis Design Based on KWP2000 in Body Control Module .................................................................1071

Sun Bin, Hu Yue-li, and Wang Kun

Dielectrophoresis of Electroless Gold Plating Polystyrene Microspheres .................................................................1075

Ren Yukun, Ao Hongrui, Jiang Hongyuan, Tao Ye, and Li Shanshan

Diesel Engine Online Monitoring Based on Smart Order Tracking Sensor System .................................................................1079

Cheng Lijun, Zhang Yingtang, Li Zhining, Ren Guoquan, and Li Jianwei

Diesel Misfire Fault Diagnosis and Misfire Cylinder Ascertainment Based on Vibration Signal Explosion Peak Identification .................................................................1083

Liu Jianmin, Shi Yupeng, Qiao Xinyong, and Zhang Xiaoming

Differential Geometry Decoupling Control on Dual Cylinder Electro-Hydraulic Servo System .................................................................1087

Jing Ni, Lihui Peng, and Guojin Chen

Digital Model of Stochastic Road Irregularities to Vehicles in Time Domain .................................................................1092

Guo Weifeng, Zhang Yonglin, Hou Chuan Liang, and Hu Zhigang
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digital Modelling of Product Development Process Supporting Entire Life Cycle</td>
<td>1096</td>
</tr>
<tr>
<td>Gu Yingkui and Huang Kaiqi</td>
<td></td>
</tr>
<tr>
<td>Distribution and Environment Significance of Polycyclic Aromatic Hydrocarbons from Coal Pyrolysis</td>
<td>1100</td>
</tr>
<tr>
<td>Jie Dong, Fan Li, and Liping Chang</td>
<td></td>
</tr>
<tr>
<td>Dynamic Analysis of a Multi-link High-speed Press</td>
<td>1104</td>
</tr>
<tr>
<td>Lu Xinjian, Zhu Sihong, Ke Zunmang, He Guangjun, and Zhou Yongqing</td>
<td></td>
</tr>
<tr>
<td>Dynamic Analysis of Planar Parallel Robot Based on Multi-Agent</td>
<td>1108</td>
</tr>
<tr>
<td>Pang Jun, Li Zhen, and Wang Jianbin</td>
<td></td>
</tr>
<tr>
<td>Dynamic Analysis of Tall Slender Structures</td>
<td>1112</td>
</tr>
<tr>
<td>Zhang Xiaoyu, Shi Qiang, Li Zhoqiu, and Wang Yingjun</td>
<td></td>
</tr>
<tr>
<td>Dynamic Analysis of Unlocking Process of Vehicle Differential Lock Automatic Control System</td>
<td>1116</td>
</tr>
<tr>
<td>Zhu Xianmin, Li Mingxi, Li Lishun, and Zhan Junqing</td>
<td></td>
</tr>
<tr>
<td>Dynamic Characteristic of the Novel Piezoelectric Drilling Dynamometer Based on the Torsional Effect</td>
<td>1121</td>
</tr>
<tr>
<td>Changyin Gao and Zhao Cheng</td>
<td></td>
</tr>
<tr>
<td>Dynamic Modeling and Simulation Analysis of the Cushioning System of the Impact Roller Based on ADAMS</td>
<td>1125</td>
</tr>
<tr>
<td>Zhi Jinning, Zhang Hong, and Li Jie</td>
<td></td>
</tr>
<tr>
<td>Dynamic Simulation and Experimental Study of Slewing System on 80T Crane</td>
<td>1129</td>
</tr>
<tr>
<td>Chen Jinshi, Liu Xinhui, Zhang Cui, Dong Quan, and Zhao Feng</td>
<td></td>
</tr>
<tr>
<td>Dynamical Analysis of the Root Lock Mechanism of the Space Deployable Mast</td>
<td>1133</td>
</tr>
<tr>
<td>Luo Ani, Liu Heping, Li Yang, and Zhang Tongming</td>
<td></td>
</tr>
<tr>
<td>Dynamical Responses of a Nonlinear Vehicle-Road Coupled System</td>
<td>1137</td>
</tr>
<tr>
<td>Shaohua Li, Huaxiang Ma, and Haoyu Li</td>
<td></td>
</tr>
<tr>
<td>Dynamics of a Multi-support Shaft with Radial Load in a Slider-crank Mechanism</td>
<td>1141</td>
</tr>
<tr>
<td>Wang Lei, Jia Fang, and Wang Xingsong</td>
<td></td>
</tr>
<tr>
<td>Effect of Congo Red on Electrochemical Characteristics of the Bioanode of Microbial Fuel Cell Explored for Simultaneous Azo Dye-containing Wastewater Treatment and Electricity Generation</td>
<td>1145</td>
</tr>
<tr>
<td>Jian Sun, Bin Hou, Pingya Zhang, and Yong-you Hu</td>
<td></td>
</tr>
<tr>
<td>Effect of Fly Ash on Solidification and Heavy Metals Chemical Speciation of Sludge</td>
<td>1149</td>
</tr>
<tr>
<td>Yongjian Piao, Mingsong Wu, Xun Xu, Qingliang Zhao, Fugui Zhang, and Nanqi Ren</td>
<td></td>
</tr>
</tbody>
</table>
2011 Third International Conference on Measuring Technology and Mechatronics Automation

ICMTMA 2011

Table of Contents
Volume - 2

Preface - Volume 2

Organizing Committee - Volume 2

Reviewers - Volume 2

Session 2

Effect of Grinding Time on Microstructure of Porous Ceramics and Decolorizing Ability of Mmalachite Green
Ruqin Gao, Run Tao Zhang, and Lingfeng Zhu

Effect of MgO Dopant on Structure and Performance of Mesocarbon Microbead
Dong Tang, Rui-xue Duan, Yang Zhang, and Hong-jun Ni

Effects of Different Forms Inorganic Nitrogen on Aqueous Photolysis of Fipronil
Zhang Xiangdan, Liu Guoguang, Yao Kun, and Lu Wenyong

Electromagnetic Active Vehicle Suspension System
Deng Zhaoxiang and Lai Fei

Electromagnetic Compatibility Design of Intelligent Circuit Breaker
Chao Fu, Jungang Zhou, Xiaoyan Zhang, and Chunyan Cui

Electro-mechanical Impedance Modeling for Health Monitoring of a Damaged Thin Plate
Yuxiang Zhang, Fuhou Xu, Tongda Zhang, Liyi Ma, and Cuiqin Wu

Embedded Omni-vision Object Recognizing in Real-Time
Li Li, Cao Zuoliang, and Sun Qiyuan

EMI Filter Design for Power Supplies
Wen Xing Li, Chao Feng, Xing Liu, and Ping Li
Emulation and Experimental Study of Drum Dynamometer for Simulating the Vehicle’s Road Braking ................................................................. 37
Lv Yinding, He Wenhua, Hou Mingyang, Yao Jiansong, Qu Zhen-ai, Zhu Zhangcai, and Xiong Shusen

Energy Conservation and Emissions Reduction in Iron and Steel Industry ................................................................. 41
Li Huibin, Wang Hua, Qing Shan, Hu Jianhang, Li Youling, Hou Yali, Li Hu, and Li Liangqing

Energy from Microbial Fuel Cells Constructed of Algae from Lake Taihu ................................................................. 45
Yang Fei, Qiu Yejing, Wu Wei, Rong Fei, Liu Lin, and Wang Keshu

Energy Saving Analysis of Air-conditioning System of an Existing Office Buildings in Shanghai ................................................................. 48
Han Xing, Ma Kehua, and Zhang Beihong

Energy Simulation Analysis of Solar Wall Heating and Ventilation System in Severe Cold Region ................................................................. 52
Ma Zhongjiao, Yu Jin, and Song Jialin

Enhanced Power Density and Decolorization of Air-cathode Single-chamber Microbial Fuel Cells with Microfiltration Membranes ................................................................. 56
Bin Hou, Jian Sun, and Yong-You Hu

Error Compensation Research for Macro/Micro Dual-drive System ................................................................. 60
Wang Xiangjiang and Yang Yi

Estimation Method for Civil Aviation Management Information System Based on an EWAA Operator ................................................................. 64
Li Yongping and Kuang Jianghong

Evaluating Factors Influencing Agricultural Households Willingness to Participate in Environment Productions ................................................................. 68
Li Shushu and Chen Rui

Evaluation and Prediction of Driver Comfort Using Body Pressure Sensors ................................................................. 72
Xiaoping Jin, Bo Cheng, Bo Wang, Xin Tao, and Bin Shen

Evaluation and Programming Research for Sewage Heat Energy Reutilization ................................................................. 76
Zhang Chenghu, Liu Xiaoxin, and Sun Dexing

Evaluation Method for Effective Resolution of Measurement System Based on Sub-pixel ................................................................. 80
Yang Lina and Cui Wenhua

Evaluation of Importance Level of Public Transit Terminal Based on BA Scale-free Weighted Network ................................................................. 83
Zhou Xuemei, Ji Xiangfeng, and Yang Xiaoguang

Exergy Analysis of Ice Storage Air-condition System Operating Strategy ................................................................. 88
Jingde Zhao and Ni Liu

Experiment Data Processing by Introducing Integration Gray Regression Model and Its Application ................................................................. 92
Li Xiaofeng, Kong Lingshuang, and Wang Jianjun
Experiment Research and Finite Element Analysis of 30Cr2Ni4MoV Steel Porosity
Consolidating ..............................................................96
  An Hong-ping, Liu Jian-sheng, and Wu Jian-guo

Experiment Study on Vibration Elimination of MSMA Actuator ......................................................100
  Jun Lu and Chengwu Lin

Experimental Analysis of Acoustic Transmission Characteristics along the Periodic Simulated Drillstring ..............................................................104
  Li Cheng and Ding Tianhuai

Experimental Investigation of Airfoil Suction Side Flow Separation Control by Spanwise Nanosecond Actuation ..........................................................108
  Liang Hua, Cao Shangen, Zhang Shengzhi, and Bai Junxing

Experimental Investigation of the Loop Seal Operation Status and its Judgment in Circulating Fluidized Bed ..............................................................112
  Li Hai-guang, Zhao Zeng-wu, Yu Zhong-yi, Li Bao-wei, and Wu Wen-fei

Experimental Investigation of the Plasma Aerodynamic Actuation Generated by Nanosecond-pulse Sliding Discharge ....................................................116
  Song Huimin, Jia Min, Liang Hua, and Wu Yun

Experimental Investigations on Cavitation in Large Kaplan Turbines ..................................................120
  Huixuan Shi, Zhaohui Li, Xuezheng Chu, and Qingfu Sun

Experimental Studies of Droplet Evaporation in High-temperature Air and CO2 ........................................124
  Jin Guang, Tian Rui, Li Xiao-Chuan, and Wu Wen-wei

Experimental Studies on Carbon Dioxide Desorption from Carbonated Ammonia Solution in a Packed Column ..............................................................127
  Zeng Qing, Guo Yincheng, Niu Zhenqi, and Lin Wenyi

Experimental Study on a New High-Efficiency Aqueous Solvent Based on a Blend of N-MethyDiEthanolAmine and TriEthylene TetraMine for the CO2 Capture ..................................................131
  Li Na, He Lijuan, Han Yulong, and Wu Wenfei

Experimental Study on Energy Efficiency of Heat-source Tower Heat Pump Units in Winter Condition ...........................................................................135
  Li Nianping, Zhang Wenjie, Wang Lijie, Liu Qiuke, and Hu Jinhua

Experimental Study on Hot Pressing of Dry Lignite Powder without Additive .........................................139
  WeiKang Li and XinLe Yang

Experimental Study on Odor Source Localization System Based on Metal Oxide Gas Sensors .........................143
  Chen Liwei, Yang Jianhua, and Hafid Oussaadi

Experimental Study on Tar-free Gasification of Coal in a Fixed Bed ....................................................147
  Wang Lianyong and Cai Jiju

Experiments on Movements Characteristics of 3-way Modulating Control Valve for Refrigerant ......................152
  Han Xu, Li Yong, and Geng Shibin
Experiments on the Ultrasonic Testing of the Austenitic Dissimilar Welding Joint of Steel Type 22SiMn2TiB
Liu Guimin, Yong Qingsong, and Li Bin

Exponential Fast Terminal Sliding Mode Control
He Naibao, Jiang Changsheng, and Gao Qian

Failure Analysis of Alternating Current Contactor
Haitao Wang, Jingqin Wang, Qishu Bao, and Zhizhou Bao

Failure Rate Evaluation of CNC Machine Tools Based on G-R Curves Analysis
Yu Jie, Zhu Zhiwei, Shi Yaolin, and Sun Lida

Fast Subspace DOA Algorithm Based on Time-frequency Distributions without Eigen Decomposition
Liu Lutao, Si Xicai, and Wang Liguo

Fatigue Analysis of Composite Insulator under Aeolian Vibration
Xiao Qi and Cai Jingsu

Fatigue and Bearing Analysis of an Engine Connecting Rod Based on Multi-body Dynamics
Deng Banglin, Liu Jingping, Yang Jing, Feng Renhua, Fu Jianqin, and Chen Shanping

Fault Detection Devices of Rotating Machinery Based on SOPC
Hu Xi-qin and Kang Ge-wen

Fault Diagnosis of Aeroengine Sensor Based on Support Vector Machine
Shi Hong and Wang Jing

Fault Diagnosis of Banana Vibration Screen Based on Wavelet Packet Transform
Zhao Guorui, Xue Guanghui, Su Minghui, and Wu Miao

Fault Diagnosis of Electronic Controlled Engine by Using Oxygen Sensor
Ma Qi Hua, Zhang Chun Yan, Ren Hong Juan, and Zheng Xia Jun

Fault Diagnosis of Rolling Element Bearing Based on Vibration Frequency Analysis
Mao Kunli and Wu Yunxin

Fault Simulation of Aircraft AC Power System Based on Bi-enabling Petri Net
Liu Jiaxue, Qin Qingxia, Geng Hong, and Ma Xihua

Feasibility of Compressed Sensing in Signal Management of Drilling
Wei Ming-hui, Liu Jian-wei, and Luo Xiong-lin

Ferroelectric and Fatigue Behavior of Electroactive Poly (vinylidene fluoride trifluoroethylene) Copolymers
Zhang Xiuli, Xu Haisheng, and Ma Yipei

Finite Element Analysis and Structural Improvement of the FROMO Preloadnut of the SN Series
LIU Ying and Wang Lin

Finite Element Analysis of Biaxial Scanning Device Based on Integrated Simulation Technique
Sheng Minjian, Zhang Pengjun, and Qian Jing
Finite Element Analysis of the Contact Problem for a Wire Race Ball Bearing Used in a Rotating Platform .......................................................... 221
Zhou Xiangyang, Li Dapeng, and Yu Ruixia

Finite Element Analysis on Vibration of Lifting Pipeline .................................................. 225
Zhou Zhijin, Lu Hao, Wen Zefun, and Wang Zhao

Flexural Wave Propagation in Periodic Stiffened Plate Structures Using Finite Element Method .......................................................... 230
Wang Jianwei, Wang Gang, Wen Jihong, and Wen Xisen

Flow Resistance and Energy Analysis of Urban Sewage Delivery Heat Transfer System ............................................................................. 234
Zhang Chenghu, Wang Haiyan, and Sun Dexing

Flow Simulation and Analysis of IS80-65-160 Pump ............................................................................................................ 238
Sun Qi and Guo Renming

Flow Gas Turbine Condition Trend Prediction Based on Improved Echo State Network ........................................................................ 242
Wang Shaohong, Chen Tao, and Xu Xiaoli

Forming Force Calculation and Experimental Study on Hydro-Forming Process of Lined Steel Pipe ........................................................................ 246
Zeng Dezhi, Lin Yuanhua, Zhu Dajiang, Yang Bin, Zhu Hongjun, and Shi Taihe

Four Phase Switched Reluctance Motor Direct Torque Control .................................................................................. 251
Wang Mianhua

FPGA Implementation of Automotive Transmission Simulation .................................................................................. 255
S. Hassan Sadjadain and Abdolhamid Behjat Panah

Free Model Control for Semi-passive Biped Robot .................................................................................. 260
Zhang Zhihuan

FRF Frequency Characteristic Analysis about Damaged Crossbeam .................................................................................. 264
Zheng Yu, Xiong Xiaoyan, and Han Zhennan

FTIR/ATR Spectroscopy Applied to the Rapid Analysis for Hemoglobin in Human Soluble Blood Samples ................................................................... 268
Pan Tao, Peng Aihong, Huang Wenjie, Yin Hao, and Han Yun

Fuzzy Control for a Variable Speed Refrigeration System .................................................................................. 272
Hua Li and Jiyou Fei

Fuzzy Control of Automatic Loading Mechanism of Palletized Loading System .................................................................................. 276
Meng Xiangde, Zhang Junhong, and Li Lishun

Fuzzy Synthetic Evaluation of Water Quality of Hei River System .................................................................................. 280
Chen Dengfeng, Ji Qichun, and Zhang Hongcai

Gas Sensing Properties of Al-doped ZnO Thick Films Prepared by Sol-Gel Method .................................................................................. 284
Pan Guofeng, He Ping, Tian Ye, and Qi Jingai

General Scheme Research of Bridge Inspecting Vehicle Mechanical Parts .................................................................................. 288
Wen Lu and Ling Sha
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Giant Magnetoimpedance Sensor with Tortuous Shape Fabricated by MEMS</td>
<td>293</td>
</tr>
<tr>
<td>Ye Jianxiong</td>
<td></td>
</tr>
<tr>
<td>Global Optimized Multiscale Tobacco Leaves Inspection through Graph Cut</td>
<td>297</td>
</tr>
<tr>
<td>Yinhui Zhang, Yunsheng Zhang, and Zifen He</td>
<td></td>
</tr>
<tr>
<td>$\mathcal{H}_\infty$ Control Method Based on Static Acceleration Feedback to Uncertainty Structural System</td>
<td>300</td>
</tr>
<tr>
<td>Pan Ying</td>
<td></td>
</tr>
<tr>
<td>Hardware Design of River Flow Velocity Monitoring System</td>
<td>304</td>
</tr>
<tr>
<td>Hu Xiao-peng and Huang Xiao-liang</td>
<td></td>
</tr>
<tr>
<td>Hazardous Gas Detecting Method Applied in Coal Mine Detection Robot</td>
<td>308</td>
</tr>
<tr>
<td>Niu Zhigang and Wang Lu</td>
<td></td>
</tr>
<tr>
<td>Heat Transfer Forms and Efficiency Analysis of Urban Sewage Delivery Heat Transfer System</td>
<td>312</td>
</tr>
<tr>
<td>Zhang Chenghu, Wang Haiyan, and Sun Dexing</td>
<td></td>
</tr>
<tr>
<td>High Order Smooth Motion Command Generation for FFC-Digital Controller</td>
<td>316</td>
</tr>
<tr>
<td>Zhengyi John Zhao and Guang Neng Wang</td>
<td></td>
</tr>
<tr>
<td>High Reliable Partial Discharge Online Monitoring System of Hydro-generator</td>
<td>320</td>
</tr>
<tr>
<td>Wan Yuan, Gong Chuangli, Wei Zhipeng, Deng Pengcheng, and Li Yun</td>
<td></td>
</tr>
<tr>
<td>High Speed Switch Electromagnetic Valve Control for a Miniature Pneumatic Robot Locomotion</td>
<td>324</td>
</tr>
<tr>
<td>Yu Lianzhi, She Guojun, Hu Zhongying, and Cheng Jian</td>
<td></td>
</tr>
<tr>
<td>Highly Selective and Sensitive Colorimetric Sensor of Cyromazine Based on Gold Nanoparticles</td>
<td>328</td>
</tr>
<tr>
<td>Bai Lianyang, Chen Jun, Liu Runqiang, Zhou Xiaomao, and Zhang Yuping</td>
<td></td>
</tr>
<tr>
<td>High-power Pit (Well)-Ground Electromagnetic Automatic Sweep Frequency Transmitter Used for Exploration of Metal Mine</td>
<td>332</td>
</tr>
<tr>
<td>Wang Meng, Deng Ming, Jin Sheng, and Wu Kai</td>
<td></td>
</tr>
<tr>
<td>Hybrid Dynamic Modeling and MPPT Control for Photovoltaic Power Generation System</td>
<td>336</td>
</tr>
<tr>
<td>Chen Peng, Ren Shibin, Li Wenhua, and Wang Haitao</td>
<td></td>
</tr>
<tr>
<td>Hybrid Wireless Communication System Using ZigBee and WiFi Technology in the Coalmine Tunnels</td>
<td>340</td>
</tr>
<tr>
<td>Pan Tao and Liu Xiaoyang</td>
<td></td>
</tr>
<tr>
<td>Hydraulic Analysis of a Water Distribution System with a Break</td>
<td>344</td>
</tr>
<tr>
<td>Xiao Di, Zhao Xinhua, Liang Jianwen, and Zhou Guangyu</td>
<td></td>
</tr>
<tr>
<td>Identification and Classification of Relationships in Collaborative Virtual Assembly</td>
<td>348</td>
</tr>
<tr>
<td>Yao Liming, Hu Yibin, and Ni Fangzi</td>
<td></td>
</tr>
<tr>
<td>Title</td>
<td>Page</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>Identification of Metal Crack Signal of Deep Drawing Based on Wavelet</td>
<td>354</td>
</tr>
<tr>
<td>Packet and AR Spectrum Analysis</td>
<td></td>
</tr>
<tr>
<td>Luo Zhigao, Xu Aicheng, He Xin, and Chen Qiang</td>
<td></td>
</tr>
<tr>
<td>Image Denoising by Anisotropic Diffusion in Wavelet Domain</td>
<td>359</td>
</tr>
<tr>
<td>Wang Zhiming, Bao Hong, and Zhang Li</td>
<td></td>
</tr>
<tr>
<td>Imaging System Effects on the Measuring Accuracy of the Optical</td>
<td>363</td>
</tr>
<tr>
<td>Surface in Interferometer</td>
<td></td>
</tr>
<tr>
<td>Yang Wang, Liu Manlin, and Xu Weicai</td>
<td></td>
</tr>
<tr>
<td>Immune Evolutionary Algorithm of Wavelet Neural Network to Predict</td>
<td>366</td>
</tr>
<tr>
<td>the Performance in the Centrifugal Compressor and Research</td>
<td></td>
</tr>
<tr>
<td>Huang Liang-yong and Huang Sheng-zhong</td>
<td></td>
</tr>
<tr>
<td>Impact of Driving Behavior on the Traffic Safety of Highway</td>
<td>370</td>
</tr>
<tr>
<td>Intersection</td>
<td></td>
</tr>
<tr>
<td>Fan Xiaoqiu, Ji Jinzhang, and Zhang Guoqiang</td>
<td></td>
</tr>
<tr>
<td>Improved Algorithm of Dynamic Lateral Load Transfer for Tractor-Semi</td>
<td>374</td>
</tr>
<tr>
<td>trailer</td>
<td></td>
</tr>
<tr>
<td>Xu Hongguo, Peng Tao, Liu Hongfei, Xu Yan, and Ren Xia</td>
<td></td>
</tr>
<tr>
<td>Improved Method for Detecting Currents with Harmonics and Reactive</td>
<td>378</td>
</tr>
<tr>
<td>Power in the Injection Active Power Filter</td>
<td></td>
</tr>
<tr>
<td>Shui Qiang Liu and Shao Jie Wang</td>
<td></td>
</tr>
<tr>
<td>Improved Naive Bayesian Classifier Method and the Application in</td>
<td>382</td>
</tr>
<tr>
<td>Diesel Engine Valve Fault Diagnostic</td>
<td></td>
</tr>
<tr>
<td>Wang Xin, Yu Hongliang, Zhang Lin, Huang Chaoming, and Duan Jing</td>
<td></td>
</tr>
<tr>
<td>Improvement and Simulation of Temperature Parameter Identification</td>
<td>386</td>
</tr>
<tr>
<td>Wang Yu, Jiang Cunbo, and Wang Sheng</td>
<td></td>
</tr>
<tr>
<td>Increased Low-grade Heat Source Power Generation Capacity with Eject</td>
<td>390</td>
</tr>
<tr>
<td>or, Li Xinguo, Zhao Cuicui, and Jia Yanmin</td>
<td></td>
</tr>
<tr>
<td>Indoor Mildew Pollution in Building and Control Strategies</td>
<td>394</td>
</tr>
<tr>
<td>Li Nianping, Hu Jinhua, Li Binghua, and Wang Lijie</td>
<td></td>
</tr>
<tr>
<td>Industrial Robot Kinematics Analysis and Parameter Calculation</td>
<td>398</td>
</tr>
<tr>
<td>Zhang Lianzhong and Wang Li</td>
<td></td>
</tr>
<tr>
<td>Industrial Test of Energy Saving on Combustion of Watered Fuel Oil</td>
<td>402</td>
</tr>
<tr>
<td>Yimin Zhu, Tie Li, Xiaojia Tang, and Na Li</td>
<td></td>
</tr>
<tr>
<td>Inertial Platform System Parameters Drift Finite Element Modeling</td>
<td>405</td>
</tr>
<tr>
<td>Huang Xiaokai, Chen Yunxia, Xu Dan, and Kang Rui</td>
<td></td>
</tr>
<tr>
<td>Influence of Co-planting on Cd Accumulation in Oilseed Rape and</td>
<td>410</td>
</tr>
<tr>
<td>Pai-tsai Plants</td>
<td></td>
</tr>
<tr>
<td>Tang Chunfang, Li Kelin, Ye Fei, and Ling Dingxun</td>
<td></td>
</tr>
<tr>
<td>Influence of Outer Rubber Bushing Stiffness of the Under Control Arm</td>
<td>414</td>
</tr>
<tr>
<td>Independent Suspension Performance</td>
<td></td>
</tr>
<tr>
<td>Liu Xintian, Li Peiqi, Zhao Lihui, Wang Yansong, Huang Hu, Chen Hao,</td>
<td></td>
</tr>
<tr>
<td>and Guo Hui</td>
<td></td>
</tr>
</tbody>
</table>
Locomotive Diesel Engine Fault State Inspection Based on the Cylinder Vibration Analysis ..............................................................481
    Hu Qingsong, Wang Shiming, Cao Shouqi, and Li Jun

Low Slip Test Research on Vehicle ABS Control Performance ..................................................................................................485
    Guoye Wang, Yanli Feng, Juanli Zhang, and Fang Wang

Lung Ventilation Reconstruction by Electrical Impedance Tomography Based on Physical Information ..................................................489
    X.Y. Chen, H.X. Wang, and J.C. Newell

Manufacturing Data Collection and Management Based on Wireless Distributed Numerical Control (WDNC) ........................................493
    Liu Yan and Wang Zhenkai

Manufacturing Process Skill Systematization Based on Ontology Technology ..................................................................................496
    Zhou Jun

Mass Spectrometry in the Protein Sciences .................................................................................................................................500
    Wang Yuanyuan

Mathematical Model of the Generated Gear Tooth Surfaces for the Function-oriented Design of Point-contact Tooth Surfaces of Spiral Bevel and Hypoid Gears ........................................504
    Wu Xuncheng

Mathematics Model and Weight of Dominant Factors of Sensitive Index for Outburst Prediction ..........................................................509
    Cai Cheng-Gong and Guo Peng

Maximum Eigenvalue Method for Direction-Finding in Coherent Situation .........................................................................................514
    Ning Li, Yan Guo, Qihui Wu, Jinlong Wang, and Xueliang Liu

Measurement and Control System of Soil Moisture of Large Greenhouse Group Based on Double CAN Bus ........................................518
    Zhang Lihong, Sun Lei, Han Shufen, and Lu Weina

Measurement Method and Realization of Stress in the Surrounding Rocks of the Coal Mine ..................................................................522
    Xue Guanghui and Wu Miao

Measuring Diameter of Non-threaded Hex Bolts Based on Hough Transform ..................................................................................526
    Zhou Zhifeng

Measuring Technology of Rail Vehicle’s Offset Caused by Vibration ..............................................................................................529
    Lu Zhaijun, Tian Hongqi, and Liu Yinglong

Mechanical Research of Weld Shrinkage for Hull Block in Shipbuilding Based on Joint Module Loads .............................................534
    Chen Zhanglan and Xiong Yunfeng

Mechanism of Active-Power-PSS Low-frequency Oscillation Suppression and Characteristic of Anti-regulation .............................538
    Zha Wei-hua and Yuan Yue
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mechanism with Four Degrees of Freedom, Design and Construct with</td>
<td>542</td>
</tr>
<tr>
<td>Controller for Increasing the Power Output of Solar Cell</td>
<td></td>
</tr>
<tr>
<td>Ali Moradkhani, Kaveh Ahmadi, Shadieh Ghalambor, Ehsan Habibizadeh,</td>
<td></td>
</tr>
<tr>
<td>and Mahdi Yahyaei</td>
<td></td>
</tr>
<tr>
<td>Method in Determining Level of Repair for Variety of Spares</td>
<td>546</td>
</tr>
<tr>
<td>Li Yunfeng, Wang Ruilin, Liu Lin, and Li Peng</td>
<td></td>
</tr>
<tr>
<td>Method of Sensor Detection Based on Monitoring Image</td>
<td>549</td>
</tr>
<tr>
<td>Chen Jian-ming and Yang Yong-Xia</td>
<td></td>
</tr>
<tr>
<td>Microstructure and Properties of Al-Si-Mg-Li Alloys</td>
<td>553</td>
</tr>
<tr>
<td>Zhao Zhongkui, Qiao Chen, Sun Qingzhou, Zhang Puqing, Wang Xianzhong,</td>
<td></td>
</tr>
<tr>
<td>and Wang Guiqing</td>
<td></td>
</tr>
<tr>
<td>Microstructure Characterization of Titanium Alloy Sheet by Laser</td>
<td>556</td>
</tr>
<tr>
<td>Shocking Luo Xinmin, Zhao Guangzhi, Yuan Chunzhi, Zhang Yongkang, and</td>
<td></td>
</tr>
<tr>
<td>Chen Kangmin</td>
<td></td>
</tr>
<tr>
<td>Microwave Induced Pyrolysis of Bromine Contained Printed Circuit</td>
<td>560</td>
</tr>
<tr>
<td>Board Wastes Zhang Zhixiao, Chen Bin, and Zhao Xintian</td>
<td></td>
</tr>
<tr>
<td>Misjudgment Probability and Quality Control of Manufacture</td>
<td>564</td>
</tr>
<tr>
<td>Jifeng Chen and QingPing Hu</td>
<td></td>
</tr>
<tr>
<td>Mobile Robot Real-time Path Planning Based on Virtual Targets Method</td>
<td>568</td>
</tr>
<tr>
<td>Sun Lining, Lin Rui, Wang Weidong, and Du Zhijiang</td>
<td></td>
</tr>
<tr>
<td>Modal Parameter Identification of Bridge Using Data-driven</td>
<td>573</td>
</tr>
<tr>
<td>Stochastic Subspace Algorithm Deshan Shan, Min Xu, and Qiao Li</td>
<td></td>
</tr>
<tr>
<td>Model and Influencing Factors Analysis of Heat Transfer of Stream</td>
<td>577</td>
</tr>
<tr>
<td>Injection Qi Hanbing, Li Dongyuan, Wu Guozhong, and Li Dong</td>
<td></td>
</tr>
<tr>
<td>Model Based Fault Diagnosis of the Clamp Force Control System of</td>
<td>581</td>
</tr>
<tr>
<td>Continuously Variable Transmission Luo Yong, Sun Dongye, Qin Datong,</td>
<td></td>
</tr>
<tr>
<td>Hu Jianjun, and Hu Fengbin</td>
<td></td>
</tr>
<tr>
<td>Model Development of Automotive Air Spring Based on Experimental</td>
<td>585</td>
</tr>
<tr>
<td>Research Liu Hao and Lee Jaecheon</td>
<td></td>
</tr>
<tr>
<td>Model on Electromagnetic-mechanical Conversion of Magnetically</td>
<td>591</td>
</tr>
<tr>
<td>Controlled Shape Wanchun Qu and Jun Lu</td>
<td></td>
</tr>
<tr>
<td>Modeling and Co-simulation of Hydraulic Power Steering System</td>
<td>595</td>
</tr>
<tr>
<td>Ying Sun, Ping He, Yunqing Zhang, and Liping Chen</td>
<td></td>
</tr>
<tr>
<td>Modeling and Nonlinear Dynamics Analysis of a Flexible Rotating</td>
<td>601</td>
</tr>
<tr>
<td>Machinery System Zhang Zhengwang, Li Aiping, and Liu Xuemei</td>
<td></td>
</tr>
<tr>
<td>Modeling and Simulation for a Vibratory Tuning-fork MEMS Gyroscope</td>
<td>605</td>
</tr>
<tr>
<td>Wen Yongpeng and Shang Huilin</td>
<td></td>
</tr>
<tr>
<td>Modeling and Simulation of Axial Piston Hydraulic Pump</td>
<td>609</td>
</tr>
<tr>
<td>Chen Bo, Yang Guoping, Xing Dongshi, and Gao Junhao</td>
<td></td>
</tr>
</tbody>
</table>
Modeling and Simulation of the Agricultural Sprayer Boom Leveling System .................................................................613
   Jian Sun and Yubin Miao

Modeling of Grain Growth Evolution in Finishing Rolling of Thin Strip by Monte Carlo Method .................................................................619
   Zhou-De Qu, Shi-Hong Zhang, Zhong-Tang Wang, and Dian-Zhong Li

Modeling of Volumetric Error for CNC Gear Hobbing Machine Based on Multi-body System Theory .................................................................623
   Liu Runai, Lv Ming, and Zhang Genbao

Modified Conjugate Gradient Algorithm and its Convergence for Electromagnetic Tomography .................................................................627
   Li Liu and Shao Fuqun

Modified Infrared Images Contrast for Pulsed Thermography ..........................................................................................................................632
   Ma Shuohan and Ma Qishuang

Monorail Car’s Wireless Control System based on Smartphone Platform ........................................................................................................636
   Xue Huixia, Gao Lin, Wang Lu, Li Wenbin, and Yang Kai

Monthly Power Load Predicting by WT and LS-SVM .................................................................................................................................640
   Ji Xunsheng

Moving Target Detection Based on Gray Project Matching ..........................................................................................................................644
   Jiang Jie, Zhang Yuan, and Dong Jian

Multi Objective Multi Contradiction Production Task Selection Research .....................................................................................................648
   Yu Jianjun and Li Hong

Multi-objective Optimization of the Non-symmetrical Gear Bonding Strength Based on Integral Minimum Temperature of Gear Tooth Face ..................................................................................................................653
   Qian Xue-yi and Su Ming-lei

Multi-objective Rule Discovery Using the Improved Niched Pareto Genetic Algorithm ......................................................................................657
   Junli Lu, Fan Yang, Momo Li, and Lizhen Wang

Multiple Moving Objects Detection Based on Level Set and Shadow Information ..................................................................................................662
   Li Jing and Wang Junzheng

MWD Downhole Signal Transmission Boundary Condition Analysis and Wave Deconvolution ........................................................................667
   Hailong Bian, Yinuo Su, Lin Li, and Limin Sheng

MWPLS Method Applied to the Waveband Selection of NIR Spectroscopy Analysis for Brix Degree of Sugarcane Clarified Juice ..........................................................................................................................671
   Pan Tao, Shan Yu, Wu Zhentao, Chen Zenghai, and Li Pengzhao

Network Coding with Multilevel Modulation in Distributed Antenna Systems .................................................................................................675
   Zhanjun Jiang, Wen Pan, Dongming Wang, and Xiaohu You

New Idea to Prolong Period of Sequence .........................................................................................................................................................678
   Chen Shuai and Shu Renyi
New Model for Residual Value Prediction of the Used Car Based on BP Neural Network and Nonlinear Curve Fit .................................................................682
Shen Gongqi, Wang Yansong, and Zhu Qiang

New Sliding Mode Control for Pneumatic Muscle Actuator Joint Model Via Delta Operator Approach ......................................................................................686
Zhao Tong, Zhao Ling, and Wang Tao

New Technology and Applications on Microwave Sensors .................................................................690
Jin Li and Qi Hui

Novel Injection Type Hybrid Active Power Filter and its Energy Saving Application .........................................694
Wei Zhao, Zhou Shangli, and An Luo

Numerical Modeling Catalytic Combustion of Lean H2-CH4 Mixture In a Micro-tube ..............................................701
Ran Jingyu and Wu Sheng

Numerical Simulation and Die Compensation on Springback of Shrink Flanging in Rubber Forming ..................705
Chen Lei

Numerical Simulation of Droplet Formation in Contact Micro-Liquid Dispensing ..............................................709
Yufeng Yao, Shizhou Lu, and Yaxin Liu

Numerical Simulation of Gas Flow in a Gasoline Engine Under Different Valve Lifts ...........................................713
Ren Hongjuan, Ma Qihua, and Zheng Xiajun

Numerical Simulation of Natural Ventilation of a Folio Multi-Sash Mid-Pivoted Window with Vertical Deflectors in a Room ..............................................717
Ruan Fang, Li Nianping, and Wei Xiaoping

Numerical Simulation of the Thermal Performance of Solarwall ........................................................................721
Gao Lixin and Fang Xiumu

Numerical Simulation on Spouted Bed Feeding Activated Carbon Particles for Flue Gas Desulfurization .................................................................725
Xing Lichao, Zhu Weibing, Sun Qiaojun, and Zhu Runru

Numerical Stimulation and Optimization of Process Chain in High Pressure Sheet Metal Forming .................................................................729
Yang An

Numerical Study of Natural Ventilation in High-rise Building: A Case Study .................................................................732
Han Xing, Yang Jie, Zhang Xu, Wang Xiaohai, Zhu Chun, and Sui Xuemin

Numerical Study of the Heat Transfer of Strip Cooling Process Based on Cooler Structure Characteristics .................................................................736
Huang Jun, Zhang Yazhu, and Wu Wenfei

OBD System Oxygen Sensor Degradation Monitoring and Mechanism Analysis .........................................740
Wang Dongliang, Huang Kaisheng, Liu Wei, Lin Zhihua, and Wang Yinhui

Objective Quality Assessment of Noised Stereoscopic Images ........................................................................745
Yinghua Shen, Chaohui Li, Pin Xu, and Lili Xu
On Determining the Separability of Sources for Second-order Statistics Based Blind Source Separation .................................................................748
    Tiemin Mei and Alfred Mertins

On Selfish Behavior in Wireless Sensor Networks: A Game Theoretic Case Study ...............................................................752
    Mi Yan, Liang Xiao, Liang Du, and Lianfen Huang

On Solving JIT Production Problems for Small Batch Orders Based on E-Kanban Visualization ...............................................................757
    Jin Qing, Pan Xue-tao, and Zhang Zhong

Online PD Monitoring and Analysis for Step-up Transformers of Hydropower Plant ...............................................................762
    Wan Yuan, Gong Chuangli, Wei Zhipeng, and Deng Pengcheng

On-line Realization of SVM Kalman Filter for MEMS Gyro ...............................................................768
    Xiao Xuan, Feng Bo, and Wang Bo

Online UHF PD Monitoring for Step-up Transformers of Hydropower Plant ...............................................................771
    Wan Yuan, Gong Chuangli, Wei Zhipeng, Deng Pengcheng, and Li Yun

Operation Performance of Tow-Stage Pumps in Sewage Heat-Pump System ...............................................................775
    Zhang Chenghu, Zhuang Zhaoyi, and Sun Dexing

Optical Coherence Tomography-based Structural Vibration Sensor System ...............................................................779
    Shuncong Zhong, Xiaoxiang Yang, and Yaochun Shen

Optimal Design and Analysis of the Exhaust Turbine Air-intake Pipeline System on Vehicles ...............................................................783
    Zhang Xueyi, Li Jianwei, and Shi Liwei

Optimal Design of Differential Polarizing Relay ...............................................................787
    Liu Lingshun, Shi Xianjun, and Xiao Zhicai

Optimal Model Predictive Control for Path Tracking of Autonomous Vehicle ...............................................................791
    Lei Li, Zhurong Jia, Tingting Cheng, and Xinchun Jia

Optimal Sensor Placement for Long-span Railway Steel Truss Cable-stayed Bridge ...............................................................795
    Deshan Shan, Zhenhua Wan, and Li Qiao

Optimal Threshold Image Segmentation Method Based on Genetic Algorithm in Wheel Set Online Measurement ...............................................................799
    Wu Kaihua and Ban Tao

Optimization Design of PID Controller and its Application ...............................................................803
    Li Xiang Fei and Zou Li Hua

Optimization Design of Submersible Mixer Based on Simulation Study of Agitated Flow Field ...............................................................807
    Xu Weixing and Yuan Jianping

Optimization of Ageing Regime for 6063 Aluminium Alloys ...............................................................811
    Zuo Xiurong and Jing Yuanwei

Optimization of Substrate Materials and Preparation of ZrN Coated Tools ...............................................................815
    Liu Jianhua, Zhao Wenbo, Lv Yingbo, and Zhang Qingyu
Optimum Detectors of Line Spectrum Signals in Generalized Gaussian Noise .................................................. 819
   Xiuqing Yang, Min Li, and Xiaozhe Zhao

Optimum Path Planning for Multi-robot H-beam Cutting System ................................................................. 823
   Fan Mingyue, Xiao Juliang, and Wang Gang

Parameter Extraction Based on Second Order Statistics for PN Coded Fuze Signal ........................................... 827
   Zhang Shuning, Xiong Gang, Huang Guangming, and Zhao Huichang

Parameter Matching Design and Optimization of Electric Vehicle Based on Body Characteristic of Permanent Magnetic Synchronous Motor ............................................................. 831
   Li Kunyuan, Chu Liang, Wang Wei, and Guo Cong

Performance Analysis of Aerostatic Thrust Bearings with Inherently or Pocketed Orifice Restrictor .................... 836
   Li Yuntang and Ding Han

Performance Comparison and Feedback Controller Design of Network Controlled Systems with Continuous Loss of States ........................................................................................................... 841
   Weisong Tian, Chunjiang Qian, and Shouhuai Xu

Performance Study on Multilevel Hybrid Power System of Pneumatic-fuel Vehicle ........................................ 845

Performance Test of Interacting Multiple Model Particle Filter for Maneuvering Target Location ......................... 850
   Ning Yang, Bin Ding, and Jiaming Zhang

Performance Test of Steel Tube Enclosed Thermistors in Air Temperature Measurements ........................................ 854
   Chen Hua, Peng Ji, Yan Feng, Sui Yongxin, Yang Huaijiang, and Chen Hua

Petri Net Based Safety Evaluation Approach for Aircraft under the Threats of Traditional Weapons ................. 858
   Pei Yang, Dong Qiang, Guo Ting, and Song Bifeng

Pilot-scale Experiment on Remediation of Nitrate Contaminated Groundwater by Solid-phase Denitrification ................................................................. 862
   JIANG Tingliang, WANG Heli, LI Yuchen, and HAN Guishan

Plasma Edge Detection and Tracking in the EAST Superconducting Tokamak Discharge .................................... 865
   Xue Erbing, Luo Jiarong, Shu Shuangbao, and Sun Binxuan

Plateau Field Test of Diesel Engine Oils with Different Viscosity Grades ............................................................. 869
   Su Bin, Shi Yonggang, Gong Haiqin, Xu Jinlong, Wei Wei, and Mei Lin

Pose Errors Analysis of 6-PTPRT Parallel Robot .................................................................................................. 873
   Li Yunfeng, Li Changfeng, and Zou Ling

Positioning Control of Vibration Systems by Means of Simple Feedforward Control and Standard LQ Optimal Regulator ........................................................................................................ 877
   Susumu Hara
Power Scaling Method for Uplink Power Control with Carrier Aggregation ............................................... 883
   Huaming He, Yun Rui, Yinhui Luo, Yazhou Zhu, and Mingqi Li

Precise Measurement of Two Dimensional Work-pieces on the Low-resolution Vision Condition ................................................................. 887
   Hua Chunjian and Chen Ying

Precise-micro PECM System and Its Applications Combining Synchronizing Ultrasonical Vibration .................................................. 890
   Zhu Yongwei, Jia Lianjie, Diao Guohu, Miao Xinglei, and Zhang Chaofeng

Prediction of Chip Dimension of Separate Type Vibration Drilling .......................................................... 894
   MA Lijie, WANG Xibin, LIU Guanjun, and Feng Qigao

Prediction on Shanghai’s Energy Consumption Trend and Carbon Emission Peak ........................................ 898
   Rui Huang and Zheng Wang

Preliminary Study of Ground Water Infiltration in Shenzhen Drainage System ........................................... 902
   Daixiongqi, Zhaoxinhua, Liuxuhui, and INIAL Goulven

Preparation and Characterization of Anatase Mesoporous TiO2 Particles Using Ionic Liquids as Template Solvents for Photocatalysis .................................................. 906
   Shu Guo, Guoqing Zhang, and Zaifeng Shi

Preparation and Property Analysis of Hydrophobic Zinc Oxide Films .......................................................... 910
   Li Chen and Li Min

Pretreatment of Micro-polluted Raw Water by Using TiO2/PP Photocatalytic Oxidation and Biofilms Combination Process .................................................. 914
   Wang Liping, Lu Lei, Xue Chunyang, and Gao Naiyun

Probabilistic Network Coding with Priority over Wireless Networks .................................................. 918
   Rui Zhang and Quan Qian

Process Planning and Simulation Strategies for Perimeter Milling of Thin-walled Flexible Parts Held by Reconfigurable Fixturing System .................................................. 922
   Fuwen Hu and Dongsheng Li

Processing of Missing Values Using Gibbs Sampling .......................................................... 927
   Wang Yi and Zhou Li

Product Reconfiguration Based on Generalized Modular Design .......................................................... 931
   Zhong Weihong

Protection against Reactor Inter-Turn Fault with Shunt Capacitance Compensator Based on Voltage Ratio .................................................. 936
   Li Menghe, Pan Shenghui, Zhang Fan, and Lin Chuan

Psychoacoustical Evaluation for Vehicle Noise Based on Time-frequency Analysis .................................................. 939
   Wang Yansong, Qiu Zhi, and Yan Shouli

Raman Microscopy and Imaging in Pharmaceutical Applications .......................................................... 943
   Zhen Tian, Nai-Ci Bing, Li-li Xie, Li-Jun Wang, and Hao Yuan
Rapid Visual Detection of Calcium Ions Using Glutathione Functionalized Gold Nanoparticles .......................................................... 948
  Gong Wenjun, Bai Lianyang, Cui Chengxing, Zhang Yuping, and Zhou Xiaomao

Rapid, Sensitive and Selective Detection of Ametryn Using Gold Nanoparticles as Colorimetric Probes .......................................................... 952
  Bai Lianyang, Zhang Yuping, Chen Jun, Liu Runqiang, and Zhou Xiaomao

Realization of Spindle Prompt Normal Posture Alignment for Assembly HOLEmaking on Large Suspended Panel .......................................................... 956
  Shan Yicai, He Ning, Li Liang, and Yang Yinfei

Reasonable Construction of Sustainable Water Environment in Green Building .......................................................... 961
  Li Haiyan, Huang Yan, Li Xiaoxue, and Mei Huirui

Recent Progress in Research on the Adsorption of Lead in Soil .................................................................................................................. 966
  Huang Guanxing, Sun Jichao, Zhang Ying, Liu Jingtao, Zhang Yuxi, Jing Jihong, Wang Jincui,
  Cui Haiwei, Chen Xi, Xiang Xiaoping, Zhang Yuanjing, and Wen Jili

Reconstruction Algorithm of Band Pass Voicing Coefficients Based on Mode Transition and Codebook Mapping .......................................................... 970
  Li Ye, JIANG Jingsai, and GUO Qiang

Recycling Electrically-conductive Metal and Insulating Material from Cable Waste by Ultrasonic .......................................................... 973
  Li Yang, Luo Zhen, Tang Guilan, and Liu Ying

Refrigerant Phase-Change Stirling-Cycle Solar Power Towers .................................................................................................................. 977
  Dezhong Huang

Regression Analysis and Recognition of Weld Images Based on Texture Features .......................................................... 980
  Liu Xiaogang and Huang Qiang

Relative Position Control Based on \( H_{\infty} \) Robust Control for Spacecraft Rendezvous Final Approach .......................................................... 984
  Gao Shan and Han Yanhua

Reliability Analysis of Motor Spindle Bearing Based on Operating Condition .......................................................... 989

Reliability Analysis of the Bogie Frame Structure Based on Response Surface Stochastic Finite Element Method .......................................................... 993
  Wang Shefeng, Zhao Honglun, and Wang Wenbin

Reliability Research of Web Press High Speed Feeding Paper System .......................................................... 999
  Sun Yuqiu

Remote Supervisory System of Motor Control Protection Device Based on Virtual Instrument Technology .......................................................... 1003
  Chen Fei, Sun Qihe, Xie Qi, and Gu Qimin

Removal of Ammonia-nitrogen from Micro-polluted Raw Water by O3-Biological Zeolite .......................................................... 1007
  Tan Wanchun, Pan Zhengke, Wang Yunbo, and Wang Qiuyun
Removal of Nitrobenzene in Water by High Voltage Pulsed Discharge .................................................................1011
Linan Zhu, Yongjun Wang, and Ji Zhao

Research about Auto Measurement of Micro Pressure Differences Based on the Liquid Manometer .................................................................1015
Li Xiangjun, Ding Lina, Ma Zhanjun, and Pang Hongshuai

Research and Application of Monitoring System for High-speed Wire Running .....................................................1019
Wang Yan, Sun Liang, Gong Nengchun, Hu Baoqiang, Ye Hui, and Xu Yongguang

Research and Application of Three-Dimensional and Three-Phase Nonlinear Flow Numerical Simulator in Ultra-low Permeability Reservoir .........................................................1023
Yu Rongze, Bian Yanan, Yang Zhengming, Lei Qin, and Yang Qingli

Research and Application of Wavelet Neural Network Based on the Optimization of Genetic Algorithm in Centrifugal Compressor's Performance Prediction ............................................1027
Luo Fangqiong and Huang Shengzhong

Research and Development of Vehicle Intelligent Terminal System for Engineering Equipment .................................................................1031
Tu Qunzhang, Sun Min, Yan Jun, Sun Qiliang, Wang Guotao, and Wu Hai

Research and Device Development on Gap Adjustment Automatically for Key Parts of Offset Machine .................................................................1037
Gao Zhenqing, Wang Yiming, and Bai Jianjun

Research and Implementation for Key Technologies of Low Frequency Testers .................................................................1040
LI Xiao-min, Ma Zhi-yuan, and Xu Jian

Research Based on CAD/CAE/CFD for Collaborative Design of Automotive Engines .....................................................1044
Li Shuai, Yang Jing, Li Bin, and Li Bo

Research for the Crane Boom Length Coefficient Considering the Tower Head Flexibility in Rotary Plane .................................................................1048
Zhang Guangyun, Lan Peng, and Lu Nianli

Research for the Modeling of Cutter Information on Integrated Platform .................................................................1052
Zhai YinXing, Lu Yuan, and Hu Ying

Research of Active Vibration Control Algorithm Based on Online Control Channel Identification .................................................................1056
Huang Quanzhen, Gao Zhiyuan, Gao Shouwei, Shao Yong, and Zhu Xiaojin

Research of AUV Velocity Measurement Based on Geomagnetic Correlation .................................................................1060
Xie Rui-fang, Luo Shi-tu, Pan Meng-chun, Zhang Qi, and Pang Hong-feng

Research of Closed Brayton Cycle Solar Thermal Power System .................................................................1065
Dezhong Huang and Fuer Wu

Research of Data Acquisition and Analysis Software System for Leak Detection Machine .................................................................1068
Luyong Sun, Fei Chen, Kai Chen, and Hengheng Xie

Research of Dynamic Simulation of Machine Gun Considering Elastic Tripod Mount .................................................................1072
Chen Jinxi, Wang Ruilin, and Wu Haifeng
Research of Information Fusion and Evidence theory Applied in Structural Damage Detection

Wenhao Shen, Senwen Zhang, and Changyou Li

Research of Intelligent Grain Moisture Content Measuring System Based on Virtual Instruments Technology

Zhang Yaqiu, Wu Wenfu, Li Junxing, and Wu Guanghua

Research of Neural Network Control on Ignition Spark Angle of Vehicle Electronic-Control Gasoline Engine

Luo Suyun, Gong Yuanming, and Wu Changshui

Research of on-line Early Warning Software for Source Water Quality of Reclaimed Water Plant

Zhang Xinyang, Yu Jiaying, Shan Jinlin, and Xu Zongwu

Research of Refrigerant Phase-Change Stirling-Cycle Heat Engines

Dezhong Huang and Fuer Wu

Research of Wireless Sensor Networks Cross-layer Energy Optimization Based on Link Quality

Wang Jian, Yang Liusong, and Zhao Yafeng

Research on a Novel Interactive Immune Evolutionary Algorithm for Online Apparel Purchase Recommendation

Zhang Junling, Wu Jian, and Huang Haibin

Research on Absorption of Heavy Metal in River Sediment by Lolium Perenne

Li Hong-xia

Research on Acoustic Emission Signal of Three-dimensional Braided Composite Material

LI Yi, WAN Zhen-kai, and LI Jia-lu

Research on Algae Removal by Electro-flotation/Photo-catalytic Oxidization Combined Process

Wang Liping, Jiang Weijuan, and Gao Naiyun

Research on Brake Noise of Air Disc Brake

Li Jin, Xu Jianchang, and Luo Fang

Research on Bypass-valve and its Resistance Characteristic of Speed Regulating PIG in Gas Pipeline

Tan Guibin, Zhang Shimin, Zhu xiaoxiao, Shi Liyun, and Zhang Qingbao

Research on Calculating the Initial Pose of Human-Gun Model

Zhang Benjun, Wang Ruilin, Li Yongjian, and Yang Detian

Research on Calculation Software of Fuel Consumption for Heavy Trucks

Xiang Yang, Li Zhizhong, Chen Min-ye, and Jiang Xiao-min

Research on Characteristics of External Flow in Region of Passenger Car’s Wheels

Hu Xingjun
Research on Control of Micro Grid ..........................................................................................................................1129
   Zhou Xue-song, Cui Li-qiang, and Ma You-jie

Research on Design of a Wiki & Blog-based Knowledge-sharing Mechanism for Virtual Enterprise .................................................................1133
   Cheng Tao, Peng Xiaobo, Feng Ping, and Du Jianming

Research on Deteriorating Items Inventory Control Problems Based on Time in VMI Environment ..............................................................1138
   Cao Weiguo and Li Xue

Research on Dying Printing Wastewater Treatment in IC Reactor under Micro-aerobic .................................................................1142
   Zhu Lingfeng, Chen Jing, Gao Ruqin, Wang Zhe, Zhang Runtao, and Liu Lili

   Jiadong Dong, Lichen Gu, and Chunxiang Zheng

Research on Health Monitor for Three-dimensional Braided Composite Material .................................................................................1150
   LI Yi, WAN Zhenkai, and LI Jialu

Research on Integrated Automatic System of Pig Feeding Based on PLC and C++ Builder ........................................................................1154
   Xu Ming, Shen Guoqiang, and Ni Jing

Author Index - Volume 2
### Table of Contents

**Volume - 3**

**Preface - Volume 3**

**Organizing Committee - Volume 3**

**Reviewers - Volume 3**

---

#### Volume 3

- **Research on Intelligent Hydraulic Impactor**
  - Yang Guoping, Ding Chongchong, Liang Cuiping, and Wang Liang
  - Page 3

- **Research on Intelligent PID Control Strategy of Thermal Control Object**
  - Wentong Ye, Jin Xu, Yonghua Zhu, and Yong Chen
  - Page 7

- **Research on Inverted Pendulum Network Control Technology**
  - Bian Yongming, Jiang Jia, Xu Xinming, and Zhu Lijing
  - Page 11

- **Research on Key Techniques of Visual Simulation of Automobile Engine Based on Virtual Reality Technology**
  - Su Liang, Luo Xianguang, and Bi Yebin
  - Page 14

- **Research on Magnetic Signal Extracting and Filtering of Coal Mine Wire Rope Belt Converyer Defects**
  - Qinghua Mao, Hongwei Ma, Xuhui Zhang, and Dawei Zhang
  - Page 18

- **Research on Manufacturing Process Based Product-family Forming**
  - Qing Liu, Tiequn Huang, and Ying Xiao
  - Page 23

- **Research on Manufacturing Resources Optimization Deployment for Complicated Parts**
  - Peng Wen-li, Yang Ya-ping, and Zhang Wen-ni
  - Page 27

- **Research on Mechanical Condition Monitoring Technology for Portal Crane by Wireless Sensors**
  - Liu Zhiping, Jia Tengfei, Hu Qing, and Wan Dang
  - Page 31
Research on Methane-Electricity-Heatpump System Model in Cold Area .................................................................35
   Zhang Chenghu, Pan Yawen, Ma Fang, Sun Dexing, and Qiu Shan

Research on Method of Integrating CAD and CAPP Based on PDM .................................................................39
   Liu Sheng, Liu Shumei, and Tang Jueming

Research on Modeling Method for Static Strength FEA of Automobile Seat Recliner Assembly .................................................................43
   Zhao Lihui, Liu Xintian, Guo Hui, and Huang Hu

Research on Modulation Recognition of the Communication Signal Based on Statistical Model .................................................................46
   Cheng Yuanzeng, Zhang Hailong, and Wang Yu

Research on Monitoring Wear of Piston Ring Based on Magneto-Resistive Sensor for Marine Diesel Engine .................................................................51
   Zhang-ming Peng, Jian-guo Yang, Qiao-ying Huang, and Yong-hua Yu

Research on Numerical Simulation for Automotive Panel Forming and Spring-back Based on Dynaform .................................................................55
   Duan Lei, Miao Dehua, Cai Yujun, Qu Zhoude, and Li Zhen

Research on Optimization Allocation of Tolerance for Multi-Stage Manufacturing Process .................................................................59
   Zhao Jiali, Xue Pan, and Hu Chibing

Research on Quantitative Identification of Pipe Crack Based on Vibration ........................................................................63
   He Yumin, Ye Junjie, and He Zhengjia

Research on Rapid Testing Platform for TCU of Automated Manual Transmission .................................................................67
   Huang Quanan, Song Jian, and Li Lei

Research on Repeatability of Vehicle Mass Analysis System ........................................................................61
   Xiong Shu-sheng, Shi Wei, Jiang Yao-hua, Wu Xi-jiang, Li Wei, Ren Xiao-shuai, He Wen-hua, Qu Zhen-ai, and Lv Yin-ding

Research on Self-Healing and Self-Calibration for a New Intelligent Vehicle Detector .................................................................74
   Zhang Yuhua and Jia Limin

Research on Simulation of Aircraft Electro-Hydrostatic Actuator Anti-Skid Braking System .................................................................78
   Liang Bo, Li Yuren, and Zhang Zhihui

Research on Surface Plasmon Resonance Sensor Based on Wavelength Modulation by Using Theoretical Simulation .................................................................83
   Huang Yan, Gao Lai-xu, Li Song-quan, Su Wen-ling, and Ye Hong-an

Research on Technology of Color Space Conversion Based on DSP48E ........................................................................87
   Zheng Chun, Zhou Yongjun, Chen Xin, and Guo Xiaoguang

Research on the Application of Discrete Event System Based on Controlled Petri Net .................................................................91
   Pan Xinglong and He Guo
Research the Optimal Fuel Economy of 12m City Bus Based on MATLAB .................................................................157
Song Xinping, Huang Hu, and He YiZhou

Researches on the Fault Diagnosis of Circuit by Energy Based Information Entropy ......................................................161
Liu Wei, Xu Lei, and Han Yang

Robotic Global Path-Planning Based Modified Genetic Algorithm and A* Algorithm .......................................................167
Cen Zeng, Qiang Zhang, and Xiaopeng Wei

Robotic Liquid Handling System for Microdispensing of Highly Viscous Reagent .............................................................171
Liu Yaxin, Yao Yufeng, and Chen Ligu

Robust Adaptive Sliding Mode Attitude Tracking Control for Spacecraft Formation Flying ..................................................175
Zhang Weitai, Yuan Changqing, Cong Fuzhong, Zhou Hao, and Yang Guojun

Robust Fault-tolerant Control for Uncertain NCS Based on Dynamic Output Feedback ......................................................179
Li Wei, Cao Huichao, and Wang Jun

Robust H∞ Control for Inter-satellite Optical Communication Terminal Antenna ..............................................................187
Wang Yan, Zheng Yanhong, Chen Lian, and Chen Xinglin

Robust Stability for Nonlinear Discrete-time Systems with Interval Time-varying Delay .....................................................191
Wei Zhang, Housheng Su, and Zhengshi Han

Rotor Position Detection of Synchronous Motor Based on High-frequency Signal Injection into the Rotor .........................195
Xianming Deng, Lei Wang, Jiamin Zhang, and Zhixun Ma

Rural Distribution Network Fault Location Algorithm Based on Fault Complaint Information .................................................199
Li Yan, Li Jun, Li Wencai, and Zhang Dening

Rural Road Traffic Safety Improving Countermeasures .........................................................................................................203
Zhu Sheng-xue

SBMFLC Algorithm for Pre-estimation and Filtering of Human Tremor ............................................................................206
Gao Yongsheng, Zhao Jie, Li Junqiang, and Yang Bo

Scheme Design of Extended Configuration for in-Pipe Robot Adapting Mechanism ..........................................................210
Chen Jun, Chen Tao, and Deng Zongquan

Seizure Reliability Analysis of the Interior Weapon Cabin’s Door ......................................................................................213
Lin Ye, Song Bifeng, and Huang Likeng

Semi-Blind Channel Estimation for MIMO-OFDM Systems .................................................................................................217
Wen Xing Li, Ping Li, Xing Liu, and Chao Feng

Semiglobal Practical Stabilization of a Class of Nonlinear Systems with Parametric Uncertainty .............................................221
Yan Liang and Wei Zhang

Ship Power System Graphical Simulation Platform and Network Topology Analysis .........................................................225
Lan Hai, Zhang Rui, Xu Bin-hai, Luo Yong-feng, and Liu Hong-da
<table>
<thead>
<tr>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Signal Processing Technology of Circumferential Magnetic Flux Leakage Inspection in Pipeline</td>
<td>229</td>
</tr>
<tr>
<td>Zhang Guoguang and Li Penghui</td>
<td></td>
</tr>
<tr>
<td>Simple Analysis about the Environment Protection and Design of Nuclear Power Plant</td>
<td>233</td>
</tr>
<tr>
<td>Lin Yu-fan</td>
<td></td>
</tr>
<tr>
<td>Simulated Analysis on the Automobile Body Electrical Control System Based on CAN-LIN Bus</td>
<td>236</td>
</tr>
<tr>
<td>Peng Hehuan</td>
<td></td>
</tr>
<tr>
<td>Simulation Analysis of Hydrodynamic Ram Phenomenon in Composite Fuel Tank to Fragment Impact</td>
<td>241</td>
</tr>
<tr>
<td>Chen Liang, Song Bifeng, and Pei Yang</td>
<td></td>
</tr>
<tr>
<td>Simulation and Controller Design for an Agricultural Sprayer Boom Leveling System</td>
<td>245</td>
</tr>
<tr>
<td>Jian Sun and Yubin Miao</td>
<td></td>
</tr>
<tr>
<td>Simulation of Electrostatically Suspended Micro-gyroscope Based on LabVIEW</td>
<td>249</td>
</tr>
<tr>
<td>Kui Qin, Weiping Zhang, Wenyuan Chen, Wu Liu, Feng Cui, and Xiaosheng Wu</td>
<td></td>
</tr>
<tr>
<td>Simulation of Geomagnetic/Inertial Integrated Navigation System</td>
<td>253</td>
</tr>
<tr>
<td>Zhou Yingying, Zhang Yanshun, and Guo Lei</td>
<td></td>
</tr>
<tr>
<td>Simulation of Non-impact Cushioning and Soft Starting for Pallet Feed Cylinder</td>
<td>257</td>
</tr>
<tr>
<td>Yao Pingxi and Wang Wei</td>
<td></td>
</tr>
<tr>
<td>Simulation of Temperature Field on Massive Concrete</td>
<td>261</td>
</tr>
<tr>
<td>Jia Xiaoyun and Wang Baolong</td>
<td></td>
</tr>
<tr>
<td>Simulation of Vector Control Frequency Converter of Induction Motor Based on Matlab/Simulink</td>
<td>265</td>
</tr>
<tr>
<td>Wu Tao and Zhao Liang</td>
<td></td>
</tr>
<tr>
<td>Simulation on the Dash Currents of Paralleling Small Single Phase Synchronous Generators</td>
<td>269</td>
</tr>
<tr>
<td>Wang Weijun, Yang Jing, Luo Yi, Feng Ping, and Mao Longbo</td>
<td></td>
</tr>
<tr>
<td>Simulation Research on Vehicle Stability Control for 4WD Electric Vehicle</td>
<td>274</td>
</tr>
<tr>
<td>Bin Wang, Renguang Wang, Hanwen Sun, and Quanying Cai</td>
<td></td>
</tr>
<tr>
<td>Simulative Research on Solid-gas Two-phase Flow of the Ceramic Foam Filter</td>
<td>278</td>
</tr>
<tr>
<td>Chen Lingshan, Sun Chen, Tang Chenxu, and Hu Changsong</td>
<td></td>
</tr>
<tr>
<td>Sliding Mode Control for a Shunt Active Power Filter</td>
<td>282</td>
</tr>
<tr>
<td>Cheng Baohua, Wang Ping, and Zhang Zhibin</td>
<td></td>
</tr>
<tr>
<td>Sliding Mode Control Using Fast Output Sampling for a Mine Sweeping Plough</td>
<td>286</td>
</tr>
<tr>
<td>Sun Ping and Wang Weiming</td>
<td></td>
</tr>
<tr>
<td>Small Infrared Targets Recognition with New Evidence Combination Approach</td>
<td>290</td>
</tr>
<tr>
<td>Chen Liangzhou, Qu Dan, and Du Feng</td>
<td></td>
</tr>
<tr>
<td>Smart Scarecrow</td>
<td>294</td>
</tr>
<tr>
<td>Chomtip Pornpanomchchai, Malinee Homnan, Navarat Pramuksan, and Walika Rakyindee</td>
<td></td>
</tr>
<tr>
<td>Title</td>
<td>Page</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>Software Behavior Based Trusted Attestation</td>
<td>298</td>
</tr>
<tr>
<td>Chen Peiqiang, Jørgen Bøegh, and Yuan Yuyu</td>
<td></td>
</tr>
<tr>
<td>Software Development for Motion Analysis of Disc Cam Mechanism Based</td>
<td>302</td>
</tr>
<tr>
<td>on Precision Measurement</td>
<td></td>
</tr>
<tr>
<td>Jin Xiaoyi and Zhang Minliang</td>
<td></td>
</tr>
<tr>
<td>Solar Cells Parameter Extraction Using a Hybrid Genetic Algorithm</td>
<td>306</td>
</tr>
<tr>
<td>Xue Lingyun, Sun Lefei, Huang Wei, and Jiang Cong</td>
<td></td>
</tr>
<tr>
<td>Solving Mixed Vehicle Routing Problem with Backhauls by Adaptive Memory Programming Methodology</td>
<td>310</td>
</tr>
<tr>
<td>Li Lin and Liu Tao</td>
<td></td>
</tr>
<tr>
<td>Some Results on the Study of 3d Biped Robot</td>
<td>314</td>
</tr>
<tr>
<td>Zhenze Liu and Yantao Tian</td>
<td></td>
</tr>
<tr>
<td>Spatial Smoothing Based Permutation Deambiguity in Blind Separation of Coherent Mixtures for DOA Estimation</td>
<td>318</td>
</tr>
<tr>
<td>Maowei Yin, Lixue Ren, and Hong Jiang</td>
<td></td>
</tr>
<tr>
<td>Spiking Irregularities of Acupuncture Electrical Signals in Spinal Dorsal</td>
<td>322</td>
</tr>
<tr>
<td>Xue Ming, Wang Jiang, Li Huiyan, Han Chunxiao, Deng Bin, Wei Xile, and Men Cong</td>
<td></td>
</tr>
<tr>
<td>Sr(II) Removal from Aqueous Solution by Pseudomonas Fluorescens Biomass, Equilibrium and Kinetic Studies</td>
<td>326</td>
</tr>
<tr>
<td>Yuan-hong Wang, Hong-bo Zhang, Duan-li Guo, and Zhong-fang Pei</td>
<td></td>
</tr>
<tr>
<td>Stabilization of Angular Velocity of a Rigid Body</td>
<td>330</td>
</tr>
<tr>
<td>Xiju Zong and Xingong Cheng</td>
<td></td>
</tr>
<tr>
<td>State Variable Feedback Linearization Control of 3-phase Integrating Magnetic Voltage Regulator Model</td>
<td>334</td>
</tr>
<tr>
<td>Huang Chaozhi, Liu Hong, and Xiao Fayuan</td>
<td></td>
</tr>
<tr>
<td>Static Scheduling of Synchronous Data Flow onto Multiprocessors for Embedded DSP Systems</td>
<td>338</td>
</tr>
<tr>
<td>Guoxin Liu, Yeping He, Liang Guo, and Fang Qi</td>
<td></td>
</tr>
<tr>
<td>Steady State Temperature Distribution Study of Laminated Damping Apparatus with Nonuniform Heat Generation</td>
<td>342</td>
</tr>
<tr>
<td>Song Yong, Sun Dagang, Zhang Xin, and Yan Biju</td>
<td></td>
</tr>
<tr>
<td>Stereoscopic Video Object Segmentation Based on SVM and Mean-Shift</td>
<td>346</td>
</tr>
<tr>
<td>Yinghua Shen, Chaohui Li, and Yu Yang</td>
<td></td>
</tr>
<tr>
<td>Stopband Characteristics Prediction with Suspending Microstrip Line for Rectangular Spiral EBG Structure</td>
<td>350</td>
</tr>
<tr>
<td>Zhang Yan, Zhang Ning-ning, Shi Qing-ling, Li Shan-wei, and Zhang Jun</td>
<td></td>
</tr>
<tr>
<td>Straightness Measurement for Long-length Rails of Bridge Crane</td>
<td>354</td>
</tr>
<tr>
<td>Cheng Weiming, Zhang Weina, Song Wei, Liu Liang, and Sun Guiqing</td>
<td></td>
</tr>
<tr>
<td>Stream Ciphers on Wireless Sensor Networks</td>
<td>358</td>
</tr>
<tr>
<td>Yao Minglin and Ma Junshuang</td>
<td></td>
</tr>
</tbody>
</table>
Strength Analysis of Diesel Engine Crankshaft Based on PRO/E and ANSYS ........................................................362
Gu Yingkui and Zhou Zhibo

Stress Analysis and Evaluation of High Pressure Hub .................................................................365
Wang Liqian, An Shaojun, Zhao Yanan, and An Yongdong

Structure Design and Coating Performance of ZrN Coated Cutting Tools ..................................................369
Liu Jianhua, Luo Ying, Zhang Han, and Zhang Qingyu

Structure Optimal Design of Roll Gimbal for an Aerial Three-Axis ISP Based on FEM Modal Analysis ..............................................................373
Zhou Xiangyang, Yu Ruixia, Li Jianping, and Li Dapeng

Studies on Lateral Motion Control of Supercavitating Vehicle .................................................................377
Tao Bai and Xiaojun Bi

Study for Object-to-Image Conversion of Polar Seeker with Quaternion .......................................................381
Wang Junping, Wu Junbiao, and Li Jianjun

Study of 3-RRRU Parallel Manipulator for its Dynamics Based on Kane’s Method ........................................385
Wang Lihua, Zhao Xinhua, and Meng Guangzhu

Study of Algorithm for Heart Rate Detection Based on Bipolar Motion ECG ........................................389
Lei Sheng, Chen Wei, Guo Lihua, and Chen Yuquan

Study of Data Structure in Development of High-Speeded CNC Interpolators ........................................393
Wang Xingbo and Zeng Yu

Study of Dynamic Transient Stability of a 2-Link Wheeled-Suspended Mobile Flexible Manipulator ..............................................................397
Yang Yuwei, Zhao Xinhua, Zhang Minglu, Meng Guangzhu, and Wang Shoujun

Study of Monitoring Parameters Selection Based on AHP for Hydraulic System of Excavator .................401
Tu Qunzhang, Sun Qiliang, Yan Jun, Sun Min, and Wang Guotao

Study of Synchronous Automatic Speed Control System Based on the Motors Driving Conveyer .......................406
You Wenqiang, Zhang Guanying, and Yong Zhiqun

Study of Virtual Design Based on Reverse Engineering .................................................................410
Li Yuzhong and Zhou Li

Study of Waterproof Technology about the Operation of Shield Tunnel in Shanghai ......................................414
Shi Rong, He YueLei, and Yang Yan

Study on ACFM Crack Angle Detection with 1-D Array Probe ......................................................417
Li Wei, Chen Guo-ming, Liu Feng, and Li Zhun

Study on Aero-engine Wear Fault Diagnosis by Direct Reading Ferrograph ...........................................420
Jiang Xufeng, Wang Jianbo, Guo Changying, and Zhang Yuan

Study on Catalytic Experiments of Methanol Synthesis from Cornstalk Syngas ......................................423
Zhu Lingfeng, Gao Ruqin, Liu Lili, Wang Yan, and Wang Yangyang
Study on Chaotic Cryptosystem for Digital Image Encryption ................................................................. 426
   Jia Li and Li Gan

Study on Control Method to Improve the Performance of Dynamic Response
of Shaking Table for Earthquake Simulation ......................................................................................... 431
   Fan Shuncheng, Cui Weiqing, and Li Shijie

Study on Deceleration-time Curves in Projectile Penetrating Hard Targets ........................................ 437
   Wu Xiaoli

Study on Designing Ice-storage Ratio Based on the Operation Mode Method ..................................... 441
   Han Xing and Zhang Xu

Study on Displacement Control of the Pneumatic Muscle Actuator Basing
on Model-Free Adaptive Control with Nonlinear Feedback ................................................................. 445
   Liu Yu, Wang Tao, Zhao Tong, Fan Wei, and Liu Hao

Study on Engine Nominal System of Model Solution .......................................................................... 449
   Liu Zhilin, Chen Lingshan, and Tang Chenxu

Study on Evaluation Index System of Highway Ecosystem Health ....................................................... 453
   Peng Yeying, Liu Zhaohui, and Qin Zhibin

Study on Extended Kalman Filtering for Attitude Estimation of Micro Flight Vehicle ..................... 457
   Min Xu, Ningjun Fan, and Zhengjie Wang

Study on Ferromagnetic Resonance Over-voltage of Voltage Transformer ........................................ 461
   He Na, Zhao Zirong, and Deng Rong

Study on Fuzzy PID Control in Double Closed-Loop DC Speed Regulation System ......................... 465
   Huafen Yang, Dechun Dong, Youjun Ren, Jian Xu, and Siyuan Yang

Study on Generalized Evaluation of Product Quality Based on Integrated Neural Networks ................ 470
   Yuegang Luo, Bin Wu, Xiaopeng Li, and Bangchun Wen

Study on Grey Relation Analysis Based on Entropy Method in Evaluation of Logistics Center Location ...................................................................................................................... 474
   Lv Feng and Ren Yuan

Study on High Efficiency Separation Oil Mist Separator .................................................................... 478
   Song Ping, Hao Zhi-yong, Jing Guo-xi, Wang Yi, Li Sheng, and Yang Ji

Study on Improving Riding Comfort of Tipper .................................................................................... 483
   Jianmin Sun and Qingmei Yang

Study on Improving Time-domain Resolution on Detecting Concrete Structures .............................. 487
   Li Qifeng, Liao Yin, Zhao Min, Wu Qiong, and Dong Aimin

Study on Magneto-Optic Balance Type of Optical Fiber Current Transformer Used
in Extra-High Voltage Measurement .................................................................................................... 491
   Tang Ming-jie and Cao Jian-an

Study on Maintenance Decision-making Technology Based on Multi-Agent in PHM ....................... 495
   Liu Zhiyong, Jia Xisheng, and Rong Liqing
Study on Outsourcing Based Collaborative Production Planning within Supply Chain Environment .......................................................... Jin Guan and Qing Liu

Study on Pretreatment and Kinetics of Waste Klebsiella Pneumoniae by the Autothermal Thermophilic Aerobic Digestion Process .......................................................... Jingming Liu, Jian Lin, Yanyan Chen, Zhirong Zhu, and Ji Ma

Study on Probabilistic Model of Rear-end Based on BP Neural Network .................................................................................. Hou Zhixiang, Shi Haiyan, Wei Liang, and Wu Yihu

Study on Robust Control for Engine Idle Speed Based on Structured Singular Value Mu-Theory .......................................................... Chen Lingshan, Tang Chenxu, and Liu Zhilin

Study on Sort Instrument of Cigarette Draw Resistance Based on Zero-drive Chain .......................................................... Wang Xuguang, Guan Zhiguang, and Zhang Jiwei

Study on Static Recrystallization Softening Behavior of 316LN Steel .................................................................................. Duan Xingwang, Chen Mingming, Chen Huiqin, and Liu Jiansheng

Study on the Adaptive Method for the Carrier Frequency Shift in the Multi-carriers System .......................................................... Jing Qingfeng, Zhong Weizhi, and Kong Fanqiang

Study on the Catalyst of Methylcyclohexane Dehydrogenation Using Ionic Liquid .......................................................... Bohejin Tang, Aomin Tang, Jiachang Zhao, and Jingli Xu

Study on the De-Noising Technology Based on SVD with Application to Automobile Driving-Axle Fault Diagnosis .......................................................... Pang Mao

Study on the Design Techniques of Ultrasonic Cleaning Device of Motor Winding .......................................................... Zhang Haipeng, Sun Junzhong, and Gu Mingtao

Study on the Dewatering Characteristics and Efficiency of Thickening Low Concentration Excess Sludge by Cavitation Air Floatation (CAF) .......................................................... Ju De-jin, Hu Feng-ping, and Wang Lin-yuan

Study on the Dynamic Output Characteristics of Hydro-viscous Device Based on Virtual Prototype Technology .......................................................... Song Hua, Yu Meili, Fu Lihua, Ma Xin, and Liu Kaiping

Study on the EMD Processing Method of Cylinder with Multiple Diagonal Slits .......................................................... Zhang Yundian and Zhang Bing

Study on the Environmental Effects of the Jet on the Launching Tower .......................................................... Zhao Ganglian, Ma Yanli, Jiang Yi, Hao Jiguang, Wang Weichen, and Yu Shaozhen

Study on the Low Voltage Ride through Technology of Double-fed Wind Power

Kun Hu, Xianming Deng, and Mingke Xu

Study on the Mesopic Vision Theory Used in Road Tunnel Lighting Measurement

Yang Yong, Bao Zuojun, Zhu Chuanzheng, and Wang Lei

Study on the Optimization Design of Hydro-pneumatic Spring Based on Genetic Algorithm

Li Zhanfang and Tong Junling

Study on the Safety Design Method of Ultrasonic Cleaning for the Motor Winding

Zhang Haipeng, Sun Junzhong, and Gu Mingtao

Study on the Salinity Modeling Based on RBF Neural Network

Gao Guodong, Zhang Wenxiao, and Mu Guangyu

Study on the Servo System of NC Machine Turntable Based on PMSM

Bin Ji, Qingdong Yang, and Liang Tong

Study on the Spread Angle of the Sound Field of Ultrasonic Creeping Wave Probe

Men Ping, Lu Chao, Deng Dan, and Liang Guo-jie

Study on the Treatment of PTA Productive Wastewater Using Ultrasound Enhanced Ozonation

Fei Rong, Jia Liu, Yejing Qiu, and Wei Wu

Study on the Tribology of the Cylinder and Piston Ring of the Vehicle Diesel with Surface Roughness and Lubrication Oil

Wei Haijun

Study on Thermal Performance of Passive Evaporative Cooling Double-Skin Facade

Ye Tingqiao and Ke Xiufang

Study on Thermal Stress Removal Mechanisms of Hard and Brittle Materials During Ultrasonic Vibration Assisted EDM in Gas

Minggang Xu, Xueke Luo, and Jianhua Zhang

Study on Water Resources Feasibility Demonstration for Yi’an Bio-mass Power Cogeneration Plant in Cold Region

Dai Chang-lei, Sun Si-miao, Zhang Chun-yen, and Guo Cheng

Study on Wet FGD Limestone Quality

Lianqing Yin and Jingjuan Guo

Studying on the Parameters Matching of Air Suspension with Additional Chamber under the Steering Work Condition

Ma Ran and Zhu Sihong

Supply Chain System Modeling Based on Dynamic Alliance Enterprise

Jian Mao

Surface Testing and Parameter Identification of Vibration

Fan Hongchao, Yi Xinhua, and He Jinbao
<table>
<thead>
<tr>
<th>Page</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>621</td>
<td>Synthesis and Characterization of Zeolitic Pellets Manufactured from</td>
<td>Yu Hongxia, Wang Lianjun, Li Jiansheng,</td>
</tr>
<tr>
<td></td>
<td>Coal Fly Ash</td>
<td>Sun Xiuyun, Han Weiqing, and Shen Jinyou</td>
</tr>
<tr>
<td>625</td>
<td>System Detection Technology Based on Multi-sensor Information Fusion</td>
<td>Ma Li, Xu Cixiong, and He Zhengfeng</td>
</tr>
<tr>
<td>629</td>
<td>Taking Energy Conservation as the Central of Developing Circular</td>
<td>Tang Xiangyang and Lin Xiuqin</td>
</tr>
<tr>
<td></td>
<td>Economy</td>
<td></td>
</tr>
<tr>
<td>632</td>
<td>Technology of Emulsified Asphalt Cold Recycling Upper Base Used in</td>
<td>Jiang Tao, Sun Bin, Sun Lijun, and Liu Liping</td>
</tr>
<tr>
<td></td>
<td>Expressway</td>
<td></td>
</tr>
<tr>
<td>636</td>
<td>Temperature Field and Heat Transfer Analysis of Underground Buried</td>
<td>Zhang Chenghu, Wang Haiyan, Sun Qiong, and</td>
</tr>
<tr>
<td></td>
<td>Pipe</td>
<td>Sun Dexing</td>
</tr>
<tr>
<td>640</td>
<td>Temperature Gathering and Fuzzy Control System of Electric Furnace</td>
<td>Wang Suzhen and Shao Mingwei</td>
</tr>
<tr>
<td></td>
<td>Based on the ARM</td>
<td></td>
</tr>
<tr>
<td>644</td>
<td>Terminal Sliding Mode Control Based on Neural Network</td>
<td>Gao Qian and He Naibao</td>
</tr>
<tr>
<td>648</td>
<td>Test Research on the Construction of Dynamic Performance Detection</td>
<td>Xu Xiaoli and Ren Bin</td>
</tr>
<tr>
<td></td>
<td>Platform for High-Grade Numerical Control Machines</td>
<td></td>
</tr>
<tr>
<td>652</td>
<td>Test Standardization and Analyse Model of Mathematical Functions for</td>
<td>Chen Jianxun, Huang Yongzhong, Guo Shaozhong,</td>
</tr>
<tr>
<td></td>
<td>Precision</td>
<td>Chen Shimiao, and Wang Wei</td>
</tr>
<tr>
<td>656</td>
<td>Testing and Analysis for Rail in Service of Shanghai Metro</td>
<td>He YueLei, Shi Rong, and Zhang Bin</td>
</tr>
<tr>
<td>660</td>
<td>Testing and Safety Evaluation for Lifting Machine Structure Based on</td>
<td>Li Li, Li Xiujuan, and Zhao Meiyun</td>
</tr>
<tr>
<td></td>
<td>Acoustic Emission Technology</td>
<td></td>
</tr>
<tr>
<td>664</td>
<td>The Advanced Ant Colony Algorithm and its Application</td>
<td>Zhu Yonghua, Xu Jin, Ye Wentong, and Chen</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Yong</td>
</tr>
<tr>
<td>668</td>
<td>The Analysis and Innovation to Logistics Outsourcing of Manufacturing</td>
<td>Tang Zhenlong, Liu Na, and Li Wei</td>
</tr>
<tr>
<td></td>
<td>Enterprises</td>
<td></td>
</tr>
<tr>
<td>672</td>
<td>The Analysis of the Contact Stress of Hydraulic Excavator Slewing</td>
<td>He Jilin, Wei Danfeng, Jiang Raobao, Zhao Xin,</td>
</tr>
<tr>
<td></td>
<td>Bearing</td>
<td>and Yuan Zheng</td>
</tr>
<tr>
<td>677</td>
<td>The Analysis on Destruction Forms of Steering Knuckle</td>
<td>Fan Pingqing, Zhao Bo, and Qiu Long</td>
</tr>
<tr>
<td>680</td>
<td>The Application and Practice of Frequency Convertor with One</td>
<td>Yuan Shangzun and Nie Ling</td>
</tr>
<tr>
<td></td>
<td>Transducer and Multi Electric Pumps</td>
<td></td>
</tr>
<tr>
<td>683</td>
<td>The Application of Correlation Dimensions of Vibration Signals in</td>
<td>Wang Jing, Deng Jun, and Wang Bin</td>
</tr>
<tr>
<td></td>
<td>Analysis of the Technological State of Diesel Engines</td>
<td></td>
</tr>
</tbody>
</table>
The Application of Fuzzy Control in Pulp Washing Process ................................................................. 686
   Hu Lianhua, Li Xinping, Tang Wei, and Liu Qingli

The Application of Laser and Solar Power Hybrid in Optical-electronic Current Transformer ........................................................................................................................................................................ 689
   Cunmiao Sun, Yuanqing Huang, Zhenheng Lin, Yanping Chen, and Jinsheng Fang

The Application of New RBF Neural Network in Fault Diagnosis of Steam Passage Part of Steam Turbine ............................................................................................................................................... 692
   Wang Tiesheng, Zhang Liping, and Li Shanshan

The Application of Stolen Radioactive Source Tracking System Based on Internet of Things Technology ............................................................................................................................................. 696
   Zhang Liying, Wang Xianwei, Wang Chaoqun, and Gu Xuehui

The Application of the Theory on Self-tuning Predictive Compensating Control in the Automatic Measuring and Controlling Apparatus on Water-content in Material Pulp ............................................................................................................................................ 699
   Xia Guo-hong

The Application of Thin Film Sensing Technology in Passive Optical DC Current Sensor ............................................................................................................................................................................ 704
   Jia Danping, Wang Yingying, Zhang Yongxi, and San Hongli

   Guoqing Zhang and Zhongming Pan

The Auto-disturbance Rejection Simulation and Research of Double-Fed Wind Turbine ............................................................................................................................................................................ 712
   Zhao Hui, Li Bin, and Yue You-jun

The Challenges and Opportunities on Road Safety in China .................................................................................... 716
   Zhang Jianjun and Zhang Gaoqiang

   Zhang Chao, Dong Jiayun, Zhou Guanghui, and Miao Jiajiang

The Choice of the Optimal Dust Removal Scheme of Transfer Point in a Coal Preparation Plant ............................................................................................................................................................................ 725
   Ge Shaocheng and Bai Miao

The Cold Extrusion Forming Process Optimization about the Hexagonal Bowl Auto Part ............................................................................................................................................................................... 729
   Gong Hongying, Zhu Hui, Zhao Zhonghua, and Xu Xincheng

The Correction of Aberration on Measurement Based on Image .................................................................................... 733
   Liu Junqiang, Gao Jianming, and Shen Qingming

The Design and Application of the Water Temperature Control System for Large Aquaculture Pond ............................................................................................................................................................................ 737
   Chen Shuai, Zhong Ke, and Cai Yingling

xvi
The Design and Implementation of Helicopter Blades Pyramid Angle Measurement System ........................................................................................................740
  Gang Jia, Chengtao Cai, and Mai Jiang

The Design and Measurement of Pulsed Magnetic Field ........................................................................744
  Zhao Zhilong, Tao Jianlong, Su Jian, Ai Changhui, Liu Yan, and Wang Jianlong

The Design of a New Differential Inductance Type Level ........................................................................748
  Cai Chilan, Wang Xiaogang, Bai Yuewei, Xia Yanchun, and Liu Kai

The Design of NC Car Wax Brush Machine ..............................................................................................751
  Cai Ting and Li Hong

The Design of the Noise Detector Based on AT89C52 Microcontroller .......................................................755
  Cai Shasha and Fu Sheng

The Design of the Ultrasonic Liquid Density Measuring Instrument ..........................................................758
  Wang Haiqun, Cao Yi, Zhang Yugui, and Chen Zhikun

The Design of Tiered Pricing Meter Based on ZigBee Wireless Meter Reading System ...............................761
  Xiong Junhua, Wang Tingling, and Yun Chao

The Development and Application of User Domain Parts Library on Knowledge Based Engineering .................................................................765
  Tai Ligang and Yu Shenbo

The Development of a Test Bench for the Dynamic Strength and Durability of Auto Front Axle Rocker ..................................................................................769
  Zeng Shuai, Xu Zhaokun, and Jin Haisong

The Development of Instrument Transformer Comprehensive Characteristics Tester Based on the Principle of Low Frequency and Frequency Conversion ..........................................................773
  Wang Ren, Wen Hua, Liang Shibin, Li Jingqiang, Zheng Jianyun, and Liu Tao

The Development of Magnetic Rotary Encoder System Based on High Resistivity MR Film Sensor for Automobile Speed-measuring ..............................................................778
  Min Zijian, Chen Qingyong, and Zheng Wu

The Directional Solidification Process Optimization of Al-Ni-Co-Ti Alloys Based on the Numerical Simulation Technology ..................................................................................781
  Yang Zhili, Chen Dengming, Zhu Guangjun, and Lei Ya

The Discussion about the Optimization Model of the Investment and the Employment ............................785
  Jiang Hui, Hua Shuming, and Jiang Qingsong

The Effect of Oxygen to Methane Ratio on the Methane-wet Air Autothermal Reforming and Carbon Deposition in the Micro-chamber .......................................................................789
  Ran Jingyu and Tu Weifeng

The Effect of Sample Size on Smoldering and the Transition to Flaming Combustion ....................................793
  Lu Chang, Meng Die, Pan Rongkun, Pei Bei, and Yu Minggao

The Effects of Content of Zr(NO3)4 on Formation and Characteristics of Micro-arc Oxidation Coatings Formed on ZAI Si12Cu2Mg1 Surface ........................................................................798
  Ren Yanru, Liu Xiangdong, Ao Dongwei, Lu Kai, and Che Guangdong
The Experimental of Dephosphorus of Smelting High Phosphorus Iron Ore .................................................................803
Qing Shan, Wang Hua, Tang Cunjiang, Li Hu, Shi Zhe, Zhang Zhuming, Xu Jianxing,
Fan Guofeng, and Li Huibin

The Factors for Meshing Analysis of Point-Contact Tooth Surfaces Based on Active Design .................................................................807
Fang Liu, Xun Cheng Wu, and Qin Chao Zhang

The Fault Diagnosis Research on Nonlinear Feature Extraction with Kernel Technology ........................................................................................................811
Yuan Haiying

The Feature Extraction of Water Stress AE Signal on Seedlings Based on Wavelet Analysis ........................................................................................................815
Yang Liu, Zhang Junmei, Luo Xiaoli, Kan Jiangming, and Yang Kai

The Finite Element Numerical Simulation of Loose Densification Process .........................................................................................819
Wu Jianguo, An Hongping, and Xiang Wei

The Friction and Wear Behaviors of (quinazolin-4-ones)-3-methyl-butyl Borate as Additive in Liquid Paraffin .................................................................823
Ouyang Ping and Zhang Xianming

The Impact of High-Order Phase in Ballistic Missiles Detection .................................................................................................827
Hou Huiling and Pang Cunsuo

The Impacting Factors Discussions on the Thermal Environment and Energy Consumption of the Subway Tunnel and the Station Units .........................................................................................831
Wang Lihui, Qu Jiahuan, Song Jie, Li Zhiling, Du Xiaoming, Shen Li, and Tang Daofa

The Influence of Space Environment on Microscope Imaging System .................................................................................................835
Xia Weiqiang, Fan Shangchun, and Xing Weiwei

The Influencing Factor for CO2 Absorption of Li4SiO4 at High Temperature .................................................................................................839
Wang Yinjie and Liu Jiping

The Inhibitory Effect on the Crystallization of Calcium Oxalate of Taurine and Complex Magnesium Taurate .........................................................................................842
Zhang Chaoyan and Yang Jingya

The Intelligent Blood Collecting Apparatus Based on Internetworking .................................................................................................845
Zhao Dalin, Lu Yongjun, and Yi Xuejie

The Intelligent Embedded Control Warning System for Car Reversing .................................................................................................849
Hsi-Chuan Huang, Feng-Che Tsai, and Tsuo-Fei Mao

The Intelligent Soot-Blowing Programmable Control System which is Based on Improved Elman Neural Network .........................................................................................853
Yun-Hui Zhang, Xue-sen Pu, and Qing-feng Yang

The Mathematical Mode for Regenerative Rotary Furnace Temperature Control System .........................................................................................857
Su Fu-yong and Wen Zhi
The Measurement of Dynamic Pressure in Tank During the Compression Process ..................................................861  
Juan Fu, Xiaoqian Chen, and Yiyong Huang  

The Neural Network Direct Inverse Control of Four-wheel Steering System ...........................................................865  
Duan Xianglei, Zuo Shuguang, He Lvchang, and He Rong  

The Nonlinear Finite Element Analysis and Experimental Study of Rubber Bushing ......................................................870  
Shi Shaoliang, Wu Weimei, Huang Hu, and Liu Xintian  

The Online Measuring System for the Circular Pitch Error of Hob Chip Pocket ......................................................874  
Zhao Chunfeng, Wang Yanxin, Su Shengchao, and Fan Xiaolan  

The Open Architecture CNC System Based on 6-axis Flame Pipe Cutting Machine ....................................................878  
Qin Yuanfei, Xiao Juliang, and Wang Gang  

The Operation Mode and Energy Analyses on Solar-Ground Coupled Heat Pump with Energy Storage ......................................................882  
Li Xinguo, Hu Xiaochen, and Jia Yanmin  

The Optimization Study of Variable Blank Holder Force in the Process of Deep Drawing Cylinder Parts ......................................................887  
Wang Zhen, Zhu Wei, and Li Congxin  

The Overview of Active Front Steering System and the Principle of Changeable Transmission Ratio ...........................................................894  
Zhang Qinchao, Wu Xuncheng, and Liu Fang  

The Principle of Work and Essential Technology of Magnetic Suspended Spherical Motor ......................................................898  
Zeng Li and Wang Jun  

The Real-time Temperature Measuring System for the Jointless Rail .................................................................902  
Gao Huifang, Ma Kaisheng, and Zhang Wenchao  

The Remote Control of Mobile Robot Based on Embedded Technology .............................................................907  
Ding Chengjun, Yan Bingsen, and Duan Ping  

The Research and Implementation of SOA-based Multi-resolution Elevation Data Visualization .................................................................911  
Wang Lei, Hu Chunyang, and Ma Dianfu  

The Research of Beamforming in WiMAX System .................................................................915  
Wen Xing Li, Xing Liu, Chao Feng, and Ping Li  

The Research of Location about the Experimental Model of Ship Using the Least Square Method .................................................................918  
Ye Baoyu, Deng Jiuying, Xiong Jianbin, Yang Na, and Wang Qinruo  

The Research of Plants’ Water Stress Acoustic Emission Signal Processing Methods .................................................................922  
Yang Liu, Zhang Junmei, Luo Xiaoli, Kan Jiangming, and Yang Kai  

The Research of Wavelet Transformation Technology by Using Surface Acoustic Wave Devices .................................................................926  
Li Yuanyuan, Lu Wenke, and Gong Linjia
The Research on Actuality of Preparation Technology of Atomized Powder by PIM ..................................................930
Qiao Bin, Ding Mei, Shang Feng, and Li Huaqiang

The Research on Control System of Brushless Direct Current Motor Driving .........................................................934
Liu Shulian, Liu Zhenping, and Zheng Shuiying

The Security Mechanism of Network Database .........................................................................................................939
Tie Feng

The Signal Examination in Variable Polarity Plasmaarc Welding of Aluminum Alloy ..................................................941
Han Yongquan, Du Maohua, Yao Qinghu, Hong Haitao, and Wu Yongjian

The Simulation for Autonomous Navigation of Water-jet-propelled Unmanned Surface Vehicle ........................................945
Qi Xiaowei, Ren Guang, Yue Jin, and Zhang Aiping

The Simulation Study of Auto Disturbance Rejection Controller Based on S-Function .................................................949
Zhou Xue-song, Li Chao, Ma You-jie, Li Ji, and Yu Yang

The Static Bifurcation Analysis of STATCOM on Power System Voltage Stability .....................................................953
Ma You-jie, Liu Jin-hua, Zhou Xue-song, and Wen Hu-long

The Strip Steel Surface Defects Classification Method Based on Weak Classifier
Adaptive Enhancement ...............................................................................................................................................958
Yan Yunhui, Song Kechen, Xing Zhitao, and Feng Xuehui

The Structure and the Flow-field Mathematical Model of the Air-curtain Dust-controlling Fan ..................................................962
Ge Shaocheng and Huang Shuai

The Study of the Programming Error Effected by Argument on NC Machining ........................................................965
Chen Xiaohong

The Study on the Heat Transfer in Oxy-fired CFB ........................................................................................................970

The Study on the Performance of Backoff Algorithms in Multihop Power Line Communication Networks .........................974
Li Jian and Sun Qiang

The Synthesis of Organic Gas Sensitive Material Palladiumphthalocyanine Modified by Polyaniline and its Gas Sensitive Property .................................................................................................................978
Shi Yunfen, Li Xiaochao, Shi Yunbo, and Song Yuanping

The Theoretical Model and Simulation of Resonant Sensors .........................................................................................982
Xing Weiwei, Du Yan, and Fan Shangchun

The Varying Mechanism Analysis and FEM of DTG in Storage Conditions .................................................................986
Chen Yunxia, Liang Yuan, Li Min, and Kang Rui

The Vector Analysis of Doubly Fed Wind Generator’s Power-angle Characteristic .......................................................991
Cheng Wu Lin, Hao Zheng, Lianfu Zhi, and Hua Yan

The Vibration Frequencies of Wind Turbine Steel Tower by Transfer Matrix Method ..................................................995
Wang Meng and Wang Zhangqi
Theoretical Analysis of Isobutane as Refrigerant of Air Source Heat Pump ................................................................. 999
Huang Junwei, Wang Hua, Wang Huitao, and Ge Zhong

Theoretical Design and Experiment of a Plate Type Multi-degree-of-freedom Piezoelectric Motor ................................................................. 1004
Guo Kang, Cheng Guangming, and Zeng Ping

Theory Research on NC Instruction Interpretation for Trajectory Trace ................................................................. 1008
Song Fang, Hu Yigang, Hao Shuanghui, and Hao Minghui

Thiodisuccinic Acid Functionalized Silver Nanoparticles Used as a Colorimetric Sensor for Lead Ion ................................................................. 1013
Li Wei, Zhang Yuping, Cui Chengxing, Chen Wentao, Liu Runqiang, and Qu Lingbo

Thrust Ripples Test and Analysis of Permanent Magnet Linear Synchronous Motor ................................................................. 1017
Liu Ruozhu, Yang Qingdong, and Tong Liang

Time Series Modeling and Analysis of Cutter Wear in Milling Operation ................................................................. 1023
Yang Mingjin, Li Xiweng, Shi Tielin, and Yang Shuzi

Tomlinson-Harashima Precoding for Multiuser MIMO Downlink with Imperfect Channel State Information ................................................................. 1027
Du Juan and Li Shouliang

Topology Estimation of Uncertain General Complex Dynamical Networks from Noisy Time Series ................................................................. 1031
Yan-Qiu Che, Jiang Wang, Shi-Gang Cui, Li Zhao, Bin Deng, and Xi-Le Wei

Traffic Signal Synchronization of a Small Urban Network Using Cellular Automaton ................................................................. 1035
Yang Yingxiang, Yang Min, Sun Lei, Sun Jian, and Wang Yong

Training Data Selection for Short Term Load Forecasting ................................................................. 1040
Yang Yuhang, Lu Yingliang, Meng Yao, Xia Yingjie, and Yu Hao

Transfer Function Law and Diagnosis Method of Large Vibrating Screen Lower Beam with Crack Flaw ................................................................. 1044
Xue Guanghui, Zhao Guorui, and Wu Siyao

Transient Sound Visualization and Application to Analysis of Engine Acoustic Characteristics by Continuous Wavelet Transform ................................................................. 1048
Chen Anyu, Jia Jide, Dai Xiliang, and Zhu Zhongkai

Transient Thermal Finite Element Analysis of Accelerometers ................................................................. 1052
Tian Dongwei, Xu Dan, and Kang Rui

Triangular Mesh Generation for a Real-structure Scan Data in 3D Space ................................................................. 1056
Jin Sun, Xiaobo Chen, and Juntong Xi

T-S Singular Fuzzy Control for Mobile Manipulator ................................................................. 1060
Jiang Wenping and Fan Jianwen

Tubulence Combustion Modeling in the Gas Turbine Combustor ................................................................. 1064

Type Synthesis of a Fully Decoupled Parallel Wrist Manipulator ................................................................. 1068
Zhang Fan and Liu Yan
Underwater Broadband Signal Waveform Fast Prediction Method in Shallow Water
with a Thermocline .................................................................1072
    Tang Shuai, Da Lianglong, and Xie Jun

Using Correlation Dimension to Analyze the Signal of Microscale Crack Effect
Induced Self-Excited Torsional Vibration on the Experimental Platform ..........1076
    Wu Zhao and Dan Huang

Using Fuzzy Pattern Identification Classifying Electric-Detonator Sensitivity ..........1080
    Xiaowei Liao

Using Optimal Algorithm Combining Weight Information for Power Quality
Evaluation ..................................................................................1086
    Wei Chen and Xiaohong Hao

Using Two-mode Input Shaping to Repress the Residual Vibration of Cherry Pickers ....1091
    Jia Hongxia, Li Wanli, and William Singhose

Variable Parameters Model of Machine Tool Thermal Error ................................1095
    Zhang Ting, Ye Wenhua, Liang Ruijun, and Zhao Ruiyue

Variable-load Simulation of Energy Regulation Based Variable-speed
Electrohydraulic Drive System ................................................................1100
    Xu Ming, Ni Jing, and Chen Guojin

Varying-step Correlation Analysis Identification Algorithm Based on the Modified
Fibonacci Sequence ......................................................................1105
    Chen Jie

Velocity-tracking Control of the Variable-speed Controlled Hydraulic System: Using
Compound Algorithm of PD & Feedforward-feedback Control .........................1109
    Dongming Hu, Shoubao Ding, Huaiqiu Zhu, Bing Xu, and Huayong Yang

Vibration Analysis of Circle Truss of the Astromesh Deployable Antenna ..............1116
    Liu Heping, Luo Ani, Zhang Tongming, and Li Yang

Virtual Instrument Based Measurement System for Handle Properties Evaluation
of Textile Materials ........................................................................1120
    Bao-guo Yao and Yi Li

Virtual Prototype Modeling and Dynamics Analyses of a Wind Turbine’s Epicyclic
Gearbox .......................................................................................1124
    Tan Xin and Chen Dingfang

Virtual Prototype Realization and Simulation for Small-Caliber Deep Well Rescue
Robot ..........................................................................................1128
    Wang Chuanjiang, Sun Xiujuan, Zhang Zhixian, and Zou Jixiang

Virtual Sensor for Vehicle Sideslip Angle Based on Extended Kalman Filter ..........1131
    Pan Shenghui, Lin Chuan, Li Menghe, and Chen Lezhu

Voltage Regulator Architecture Used in Automotive Electronics .........................1135
    Hu Yueli, Yang Kai, and Jiang Yuxi
Wavelet Analysis for Electronic Signal of Submerged Arc Welding Process .........................................................1139
He Kuanfang, Wu Jigang, and Li Xuejun

Wear of Diamond-impregnated Bit in Drilling Engineering Ceramic .................................................................1142
Gao Chao, Yuan Juntang, Song Zhongquan, Jin Hao, and Zheng Lei

Weighing System of Fruit-Transportation Gyrocar Based on ARM .................................................................1146
Yang Kai, Zhang Junmei, Li Wenbin, Yang Liu, Gao Lin, and Xue Huixia

Welding Arc Signal Acquisition and Analysis System Based on VC++ and MATLAB Mixed Programming .................................................................1150
Xiao Bing

Whirlwind Milling Cnc Technique on Large Scale Helical Curved Surfaces in Petroleum PCP and PDM .................................................................1154
Yi Xianzhong, Li Shan, and Liu Haohong

Wireless Real-time Observation System for Water Level of Urban Drainage .................................................................1158
Yin Hailong, Xu Zuxin, Wang Juan, and Ren Yi

Wireless Sensor Network for Orchard Management .........................................................................................1162
Haiqing Yang, Boyan Kuang, and Abdul M. Mouazen

Author Index - Volume 3