

2008 2nd International Conference on Anti-Counterfeiting, Security and Identification

**Guiyang, China
20-23 August 2008**



**IEEE Catalog Number: CFP0820C-PRT
ISBN: 978-1-4244-2584-6**

TABLE OF CONTENTS

Session 01: Anti-counterfeiting and Identification

| | |
|---|-----------|
| A Watermarking Energy Estimating Model in Wavelet Domain..... | 1 |
| <i>Yi Xiao,L.M. Cheng,L.L. Cheng</i> | |
| kd-tree Based Fingerprint Identification System | 5 |
| <i>Vandana Dixit K., Deepti Singh, Parul Raj, M. Swathi, P. Gupta</i> | |
| SecureSMSPay: Secure SMS Mobile Payment Model | 11 |
| <i>Hany Harb, Hassan Farahat, and Mohamed Ezz</i> | |
| Cable Tension Prediction of Hongfeng Lake Cablestayed Bridge Using BP Neural Network | 18 |
| <i>Xiaoyao Xie, Xinping Yan</i> | |
| Adaptive Fragile Watermark for Image Authentication with Tampering Localization | 22 |
| <i>Chuanmu Li,Lianxi Hong</i> | |
| Comparison of Discriminant Analysis Methods Applied to Diffractive Optically Variable Image..... | 26 |
| <i>Rukun Hu, Youji Feng,Ping Guo</i> | |
| The Research And Application of Security Requirements Analysis Methodology of Information Systems..... | 30 |
| <i>Jingsong Cui, Da Zhang</i> | |
| Authentication Based on Euclidean Geometry Properties | 37 |
| <i>Lina Ge,Shaohua Tang</i> | |
| Pattern Matching of Time Series and its Application to Trend Prediction..... | 41 |
| <i>Heshan Guan,Qingshan Jiang</i> | |
| Anti-fake Label and Security Identification System Based on Multiple Luminescent Quantum Dots | 45 |
| <i>Xuelian Bai, Jiyuan Du, Jie Zeng, XudongYu</i> | |
| Study of Signal of Roll Eccentricity Based on Wavelet Thresholding De-Noising | 48 |
| <i>Jianrui Zhang</i> | |
| DWT and DCT Combined Robust Watermarking Algorithm Based on Vector Quantization with Labeled Codewords | 51 |
| <i>Jixin Liu,Zheming Lu</i> | |
| A Novel Discrete Wavelet Transform Based Digital Watermarking Scheme | 55 |
| <i>Yonggang Fu,Huirong Wang</i> | |

| | |
|---|------------|
| Anti-Counterfeiting Using Phosphor PUF | 59 |
| <i>Dan Jiang ,Cheun Ngen Chong</i> | |
| A Path-Oriented Test Data Generation Approach for Automatic Software Testing..... | 63 |
| <i>Xiaofeng Xu,Yan Chen,Xiaochao Li,Donghui Guo</i> | |
| The Research of a New Software Testing Model | 67 |
| <i>Yunming Pu, Fanming Hong</i> | |
| A Practical Publicly Verifiable Secret Sharing Scheme Based on Bilinear Pairing | 71 |
| <i>Youliang Tian,Changgen Peng,Renping Zhang,Yuling Chen</i> | |
| Pattern recognition based on the measurements of low-frequency electromagnetic radiation | 76 |
| <i>Liwei Zhao, Wenda Huang</i> | |
| The Infrared Dynamic Image Identification Based on the MOS Resistance Arrays..... | 79 |
| <i>Xin Wang,Dongzhu Feng</i> | |
| Auto-focusing System for Microscope Based on Computational Verb Controllers | 84 |
| <i>Weibin Tang, Yinghao Liao, Zhicong Chen, Lihuan Cai, Tao Yang, Donghui Guo</i> | |
| An Approach of Malicious Executables Detection on Black & Gray Based on AdaBoost Algorithm | 88 |
| <i>Lei Liu,Kun Shao</i> | |
| Self-reference based Semi-fragile Image Watermarking Scheme for Authentication..... | 93 |
| <i>Yonggang Fu,Huirong Wang</i> | |
| Application of OLAP to the Analysis of the Curriculum Chosen by Students | 97 |
| <i>Hualong Zhao</i> | |
| Session 02: Wireless Communication and Network Security | |
| Performance Analysis of Underwater Acoustic FH-CDMA Network | 101 |
| <i>En Cheng, Ziming Zhuang, Kanghuang Zheng, Yuan Qi, Jie Deng</i> | |
| Security Analysis and Design of an Online Score System | 105 |
| <i>Xiaoyao Xie,Yang Xu,Zhijie Liu,Yizai Yang,Anyu Zhang</i> | |
| MES Wireless Communication Networking Technology Based on 433MHZ | 110 |
| <i>Qingyun Dai, Yihong Liu, Zhenyong Jiang, Zexi Liu, Ke Zhou, Jin Wang</i> | |
| Optimal Polocies Based on QoS for Adaptive Communication System with Markov Decision Process | 114 |
| <i>Yongxiang Wu, Shengbo Hu</i> | |

| | |
|--|------------|
| Research Challenges Involving Cross-layered Communication Protocol Design for Underground WSNS | 120 |
| <i>Zhiping Zheng, Shengbo Hu</i> | |
| Classification and Key Management Approaches for Space Networks Security | 124 |
| <i>Shengbo Hu, Xin Meng</i> | |
| Two-hop Architecture of Wireless Mesh Network..... | 128 |
| <i>Shafiullah Khan, Kok-Keong Loo, Tahir Naeem, Mohammad Abrar Khan</i> | |
| Research and Solution of Existing Security Problems in Current Internet Website System | 132 |
| <i>Gaoqi Wei, Xiaoyao Xie</i> | |
| Seamless Handoff Scheme for Real-time Application in the Wireless IPv6 Networking | 136 |
| <i>Yong Li, Wentao Chen, Depeng Jin, Lieguang Zeng</i> | |
| Security Improvement on An Efficient Key Distribution Mechanism for Large-scale Wireless Sensor Network | 140 |
| <i>Kaiping Xue, Peilin Hong, Hancheng Lu, Bin Zhu, Le Li</i> | |
| T-NATPT - A Novel Proposal for NAT-PT/IPSec Traversing | 144 |
| <i>Yin Lu, Jin Shi, Qifeng Yu, Li Xie</i> | |
| Adaptive Relay Nodes Set Selecting Mechanism based on Available Bandwidth Estimating..... | 148 |
| <i>Dapeng Wu, Muping Wu, Yan Zhen, Xiaoye Li</i> | |
| Key Links Forecast with Dynamic Weight Algorithm for RAW in Optical Networks | 152 |
| <i>Guangjun Shan, Tianlin Dong, Guangxi Zhu</i> | |
| Design of RF Transceiver with CC1100 Chip for Wireless Data Acquisition..... | 158 |
| <i>Wei Chen, Yan Chen, Xiao Hu, Donghui Guo</i> | |
| Research on GPRS Interface Based on DM6446 for H.264 Standard Stream Media Files..... | 163 |
| <i>Xin Zhang, Yun Wu</i> | |
| Optimization of UART Communication Based on LEON2 Hardware Debug Support Unit | 167 |
| <i>Mintao Liu, Jianyang Zhou</i> | |
| TDD based Bandwidth Requesting and Allocating Analysis in WiMAX PMP Network | 171 |
| <i>Wenfeng Du, Zhen Ji, Zhiqiang Wang</i> | |

OFDM Transform-domain Channel Estimation Based on MMSE for Underwater Acoustic Channels.....177
Yonghuai Zhang, Haixin Sun, Fang Xu, Deqing Wang

Study on Precision Agriculture Monitoring Framework Based on WSN182
Xuemei Li, Yuyan Deng, Lixing Ding

Multipath Routing Based Adaptive Multi-Channel MAC Protocol for Wireless Mesh Networks.....186
Zhiyuan Shi, Jianan Lin, Xueyuan Jiang, Lianfen Huang, Bin Yu

LDLB: A Light Intrusion Prevention System in Data Link Layer.....190
Kuo Zhao, Fei Ren, Nurbol, Liang Hu

Dynamic Data Path Strategy Base on Fuzzy Logic Control for Mobile Wimax194
Yuliang Tang, Fan Yang, Yan Yao

A Matching Algorithm of Netfilter Connection Tracking Based on IP flow.....199
Ke Zhang, Juan Wang, Da-sen Ren

Multi-Channel MAC Protocol for Cognitive Wireless Mesh Network203
Minghao Yu, Lianfen Huang, Huihuang Chen

Study of the Solution to SCILAB Accessing Database.....207
Fangxing Lv, Yang Xu, Tianying Yang, Xiaowen Xing, Xiaoyao Xie

Session 03: Cryptographical Algorithm and Realization

On the Security of a Constant-Size Group Signature Scheme212
Jianhong Zhang, Jiancheng Zou

Security Analysis and Configuration of SSL Protocol216
Niansheng Liu, Guohao Yang, Yu Wang, Donghui Guo

Organization-task Based Access Control for OAS220
Yongze Fang, Zidong Zhang

A Novel Color Image Encryption Approach Based on Multi-chaotic System223
Lianxi Hong, Chuanmu Li

Condition-based Maintenance of Transformer on Basis of RBF227
Huizhi Huo

A Hierarchical Threshold Multi-secret Sharing Scheme231
Runhua Shi, Hong Zhong

A Proposal for Enhancing The Security System of Short Message Service in GSM235
Md. Asif Hossain¹, Sarwar Jahan, M. M. Hussain, S. H. Shah Newaz

| | |
|--|------------|
| A Method of Separating Target from Cluster by Polarization in Unknown and Time-varying circumstance | 241 |
| <i>Xianhe Shao, Aizhi Li, Fabao Yan, Xiaolin Qiao</i> | |
| Combining a Spread Spectrum Technique with Error-Correction Code to Design an Immune Stegosystem | 245 |
| <i>Rami S. Youail, Venus W. Samawi, Abdul- Karim A-R. Kadhim</i> | |
| A Novel Filter Based on the Grey Modeling | 249 |
| <i>Dongzhu Feng, Xin Wang, Bin Zhang</i> | |
| VNIDS: A Virtual Machine-based Network Intrusion Detection System | 254 |
| <i>Feng Zhao, Weiping Yang, Hai Jin, Song Wu</i> | |
| Detection of Shot Boundary Based Singular Value Decomposition | 260 |
| <i>Shulei Wu, Huandong Chen, Zhanji Gui, Xianchuan Yu, Luo Ye</i> | |
| Analysis and Checking of Controllable Property Transition System Based on TLA+..... | 264 |
| <i>Liang Wan, Xiang Li</i> | |
| A Heuristically Weighting K-Means Algorithm for Subspace Clustering..... | 268 |
| <i>Boyang Li, Qingshan Jiang, Lifei Chen</i> | |
| Using Back-propagation Neural Networks for Functional Software Testing | 272 |
| <i>Lilan Wu, Bo Liu, Yi Jin, Xiaoyao Xie</i> | |
| Associative Classification and Post-processing Techniques Used for Malware Detection | 276 |
| <i>Yanfang Ye, Qingshan Jiang, Weiwei Zhuang</i> | |
| Describing and Verifying Cryptographic Protocol Using PI-Calculus..... | 280 |
| <i>Xiaopei Zhang, Wenjun Luo, Xiang Li</i> | |
| Improvement on Rules Matching Algorithm of Snort Based on Dynamic Adjustment..... | 285 |
| <i>Kuo Zhao, Jianfeng Chu, Xilong Che, Lin Lin, Liang Hu</i> | |
| A New Concurrent Signature Scheme Based on the FAPKC3's Signature Scheme | 288 |
| <i>Hongji Wang, Gang Yao, Xiaoxi Han</i> | |
| Formal Multi-threading Method of Object-Oriented | 293 |
| <i>Anyu Zhang, Xiaoyao Xie</i> | |
| Dynamic Key management in a User Hierarchy | 298 |
| <i>ZhongHua He, Yongsheng Li</i> | |
| Research on a Chaotic Block Cryptosystem by Searching through Chaotic State Space..... | 301 |
| <i>Yunfeng Wang, Jianhua Guo, Dan Zhang, Donghui Guo</i> | |
| Forecasting System Based on Wavelet Transform and PSO-SVM..... | 305 |
| <i>Qisong Chen, Yun Wu, Xin Zhang, Xiaowei Chen</i> | |

Session 04: IC Design and System Integration

ICMP Processing Module Embedded in NP Based Firewall310
Yuli Fu, Xiaohong Wang

WCA with Size and Space Distribution of Real Defects for 65-90nm Processes313
Junping Wang, Yue Hao, Junming Zang, Guangliang Ren, Hao Ni

Research of the ASIC Used for EEG Signal Detecting316
Chaodong Ling, Miaoyi Luo

**Low-Noise and Power Dynamic Logic Circuit Design
Based on Semi-Dynamic Buffer.....320**
Fang Tang, Ke Zhu, Quan Gan, JianGuo Tang

**Performance Tradeoff and Optimization of Circuit
Design using Distance Method324**
Mingkun Gao, Yunfeng Wang, Donghui Guo

**Fractional-Pel Motion Compensation Interpolation Architecture
Based on Parallel FIR Systolic Arrays for H.264/AVC328**
Liang Ma, GaoMing Du, DuoLi Zhang, YuKun Song, LuoFeng Geng, MingLun Gao

**Auto-zeroed High Speed Comparator for the Column Level Readout Circuit
of a CMOS Active Pixel Sensor Based Detector332**
Yan Li, Yavuz Değerli, Zhen Ji

Application of Constant-current Diodes in Optical Fiber Communication336
Daiqiang Wang, Qiao Liu, Zhao Ding, Liangrong Li, Yi Wang

Design of Scheduling Storage for Realtime Control System340
Jinhe Wang, Nan Zhang

A Novel Multiboot Framework for Embedded System.....344
Jianwen Zheng, Xiaochao Li, Donghui Guo

FPGA Prototype Design of Network on Chips.....348
GaoMing Du, DuoLi Zhang, YongSheng Yin, Liang Ma, LuoFeng Geng, YuKung Song, MingLun Gao

**An Implementation of Random Single Input Change Technique
for Low-Power Test.....352**
Yi Wang, Xinhua Fu, Daiqiang Wang

A RISC CPU IP Core356
Pizhou Ye, Chaodong Ling

**The Selective Growth of a Single Phase Calcium Silicide Film
in the Ca-Si system by R.F. Magnetron Sputtering360**
Yinye Yang, Quan Xie

**Current Switch Driver and Current Source Designs
for High-speed Current-steering DAC364**
Fangjie Luo, Yongsheng Yin, Shangquan Liang, Mingkun Gao

| | |
|--|------------|
| Design and Implementation of A Debugging System for OpenRISC Processor | 368 |
| <i>Lihong Lian, Xiaochao Li, Fen Xiao, Donghui Guo</i> | |
| Design of High Power LD Soft-switching Linear Drive Power Supply and Temperature Controller | 372 |
| <i>Min Zhou, Aiwen Zhang, Zhiping Cai, Huiying Xu, Yang Liu, Manli Li</i> | |
| Design Method for Parameterized IP Generator using Structural and Creational Design Patterns..... | 378 |
| <i>Meng Zhou, Minglun Gao, Xiaosong Hao</i> | |
| AVS video decoder system modeling and design based on SystemC | 382 |
| <i>Meifen Chen, Jianyang Zhou, Xiaowei Liu</i> | |
| Behavioral Modeling of Discrete Domain Sigma-Delta Modulators | 387 |
| <i>Miaoyi Luo, Chaodong Ling</i> | |
| An Implementation of Filterbank for MPEG-2 AAC on FPGA | 391 |
| <i>Fuhui Du, Gaoming Du, Yukun Song, Duoli Zhang, Minglun Gao</i> | |
| An Integrated Expansion USB Bridge for ISA Data Acquisition Card | 395 |
| <i>Zuorong Ni, Xiang Zhou</i> | |
| Research and Improvement on Embedded System Application of DTW-based Speech Recognition | 401 |
| <i>Chun Wan , Lili Liu</i> | |
| Session 05: RFID, Antenna and Application: | |
| Investigation of Power Allocation of Transmit Antennas Selected for Limited Power Communication Systems | 405 |
| <i>Mingjie Zhuang, Rushan Chen, Jiaqing Lin</i> | |
| OSGi-based Reconfigurable RFID Middleware | 410 |
| <i>Fagui Liu, Liu Han, Yucheng Li, Kai Lin</i> | |
| An Enhanced Security Authentication Protocol Based on Hash-Lock for Low-cost RFID | 416 |
| <i>Changqing Ouyang, Jixiong Wu, Zhengyan Li, Shengye Huang</i> | |
| RFID Data Management in Manufactory..... | 420 |
| <i>Hongying Liu, Junhuai Li, Jing Zhang, Haisheng Deng</i> | |
| Integrated System of Industrial Data Acquisition and Monitor with CDMA 1x Technology | 424 |
| <i>Dong Guo, Yan Chen, Wei Chen, Donghui Guo</i> | |
| Decoupling of the Received Signals and Performance Analysis for Pre-coding Orthogonal STBC Systems | 428 |
| <i>Mingjie Zhuang, Rushan Chen, Jiaqing Lin</i> | |
| A New Kind Compact Omnidirectional Antenna for Wireless Communication System | 433 |
| <i>Ting Fu, Bo Hu</i> | |

| | |
|---|------------|
| System Design for Dielectric Parameters' Measurement of Microwave Ceramic Materials | 436 |
| <i>Xiaoying Dong, Fen Xiao, Jianhua Guo, Donghui Guo</i> | |
| RFID Based Smart Home Architecture for Improving Lives | 440 |
| <i>Xuemei Li, Gang Xu, Li Li</i> | |
| The Dynamic Anti-collision Algorithm Based on the Similar Binary in RFID System..... | 444 |
| <i>Fabao Yan, Xianhe Shao, Qian Sun</i> | |
| Extending Rubin Logic for Electronic Commerce Protocols | 448 |
| <i>Yang Xu,Xiaoyao Xie</i> | |
| Modeling of Roll Eccentricity Based on Modified FFT | 452 |
| <i>JiRong Liu</i> | |
| Sales Data Management System of Chain Enterprises Based on NFC Technology | 455 |
| <i>Yiqun Xu, Zhenzhen Huang, Longjun Wan</i> | |
| A Protocol Based on Dynamic Secret-key for RFID in accordance with EPC C1G2 Standard | 459 |
| <i>Fang Li, Shengye Huang</i> | |
| The Design and Application Based on the Embedded RFID Controller | 463 |
| <i>Guohao Yang, Longjun Wan, Jiajian Guo</i> | |
| Security Architecture for RFID Application in Home Environment | 467 |
| <i>Xuemei Li, Gang Xu, Degui Yu</i> | |
| Public Data Server Management System Based on the Electronic Signature Technology | 471 |
| <i>Longjun Wan, Zhenzhen Huang, Gongli Wen</i> | |
| Design and Implementation of DMES Based on RFID | 475 |
| <i>Runyang Zhong, Qingyun Dai, Ke Zhou, Xinbo Dai</i> | |
| The Capability Test of Electronic Tag | 478 |
| <i>Yiqun Xu, Longjun Wan, Dujiang Chen</i> | |
| High Temperature Small Class Calorimetry Dynamic Shake Table Temperature Expert PID Control..... | 481 |
| <i>Yi Li,Xiaoyao Xie</i> | |