

**2008 International Symposium on
Intelligent Signal Processing and
Communications Systems
(Postponed from December 2008)**

(ISPACS 2008)

**Bangkok, Thailand
8-10 February 2009**



IEEE Catalog Number: CFP08580-PRT
ISBN: 978-1-4244-2564-8

TABLE OF CONTENTS

Three-Channel Variable Filter-Bank for Digital Hearing Aids	1
<i>Tian-Bo Deng</i>	
Joint Temporal Error Control for H.264	5
<i>Jie Li, K. N. Ngan</i>	
A Versatile DC-DC Converter Designed by Using Switched-Capacitor Techniques	10
<i>Kei Eguchi, Takahiro Inoue</i>	
A Modified Partial Transmit Sequence with PAPR Reduction and Error Correction in 16-QAM OFDM Systems	14
<i>Hsinying Liang, Houshou Chen, Chao-Ming Wu</i>	
A Low Complexity PTS Technique for PAPR Reduction in OFDM Systems	18
<i>Po-Yen Chen, Houshou Chen, Jyun-Jie Wang</i>	
Transient and Steady-State Analysis of Adaptive Step-Size Least Mean Modulus Algorithm	22
<i>Shin'ichi Koike</i>	
A Robust Iterative Multiframe SRR based on Andrew's Sine Stochastic Estimation with Andrew's Sine-Tikhonov Regularization	26
<i>Vorapoj Patanavijit</i>	
Design Method of a 1-Bit Digital Filter Using a New 2-Degree-of-Freedom Control	30
<i>Y. Higaki, K. Higuchi, K. Nakano, T. Kajikawa, Kosin Chammongthai</i>	
Adaptive Algorithms for Active Noise Control of SaS Impulse Noise	34
<i>Muhammad Tahir Akhtar, Wataru Mitsuhashi</i>	
Simple and Efficient Lossless Coding for Continuous Tone Color Images	38
<i>Poonlap Lamsrichan</i>	
Universal Filter with One Input and Five Outputs Using DDCCs	42
<i>Wei-Yuan Chiu, Jiun-Wei Horng, Shih-Ting Cheng</i>	
Electronically Tunable Current-Mode Universal Biquadratic Filter Using CCCDBA's	46
<i>T. Tsukutani, Y. Sumi, N. Yabuki</i>	
Image Resizing and Rotation Based on the Consistent Resampling Theory	50
<i>Beilei Huang, Edmund M-K. Lai, A.P. Vinod</i>	
A High Frequency Current Mode Ladder Filter Using Multiple Output Lossless Integrator	54
<i>S. Sa-ad, D. Chaythong</i>	
Predictive Search Pattern Selection Based on Edge Alignment for Fast Motion Estimation	58
<i>Chi-Han Chuang, Chien-Hua Su, Shyi-Chyi Cheng</i>	
Content Aware Image Segmentation for Region-Based Object Retrieval	62
<i>Chi-Han Chuang, Chin-Chun Chang, Shyi-Chyi Cheng</i>	
A High-performance and Energy-efficient FFT Implementation on Super Parallel Processor (MX) for Mobile Multimedia Applications	66
<i>Takeaki Sugimura, Hiroyuki Yamasaki, Hideyuki Noda, Osamu Yamamoto, Yoshihiro Okuno, Kazutami Arimoto</i>	
Using GA-based Feature Selection for Emotion Recognition from Physiological Signals	70
<i>Y. Gu, S.L. Tan, K.J. Wong, M.H. R. Ho, L. Qu</i>	

OTA-Based High Frequency CMOS Multiplier and Squaring Circuit	74
<i>Risanuri Hidayat, Kobchai Dejhan, Phichet Moungnoul, Yoshikazu Miyanaga</i>	
Quantitative Evaluation Method of Visual Difference Caused by Image Decimation	78
<i>Satoshi Ueno, Masahiro Okuda</i>	
Multiple Channel Active Noise Control System Using Simultaneous Equations Method	82
<i>Yutaka Okamoto, Kensaku Fujii, Mitsuji Muneyasu</i>	
Novel Current-Mode Biquadratic Circuit Using Only Plus Type DO-DVCCCs	86
<i>Y. Sumi, T.Tsukutani, N.Yabuki</i>	
A new Approach towards Facial Recognition System using DCT & LVQ	90
<i>Shipra Sharma, Manish Raina, Devisha Shruti, Gorija Sehgal</i>	
Joint Bitstream Level Identification and Retrieval Method of JPEG 2000 Images for Digital Cinema	94
<i>Osamu Watanabe, Takahiro Fukuhara, Hitoshi Kiya</i>	
Tuned Degree-K Zerotree Wavelet Coding with Virtual Nodes	98
<i>Li Wern Chew, Wai Chong Chia, Li-Minn Ang, Kah Phooi Seng</i>	
Iterative Monaural Audio Source Separation for Subspace Grouping	102
<i>Martin Spiertz, Volker Gnann</i>	
Symmetric IIR Notch Filter Design using Pole Position Displacement	106
<i>Pichet Srisangngam, Paolo Mongkudvisut, Surapun Yimman, Kobchai Dejhan</i>	
Isolated Persian Digit Recognition Using a Hybrid HMM-SVM	110
<i>S. A. Hejazi, R. Kazemi, S. Ghaemmaghami</i>	
Computationally Efficient Implementation of Sparse-Tap FIR Adaptive Filters with Tap-Position Control on Intel IA-32 Processors	114
<i>Akihiro Hirano, Kenji Nakayama</i>	
Universal Filter and Its Oscillator Modification Employing Only Active Components	118
<i>Pipat Prommee, Montri Somdunyanok, Kobchai Dejhan</i>	
Noise Reduction System Using Signal and Noise Level Detectors in Frequency Domain	122
<i>Yuuki Minato, Isao Nakanishi</i>	
Radio Wave Propagation Loss Evaluation of Indoor Surface Building for UWB Impulse Radio	126
<i>Panich Sirisamphata, Sathaporn Promwong</i>	
Biometric Person Authentication Using New Spectral Features of Electroencephalogram (EEG)	130
<i>Chisei Miyamoto, Sadanao Baba, Isao Nakanishi</i>	
Finite Word Length Error Analysis based on Basic Formula of Rounding Operation	134
<i>Masahiro Iwahashi, Hitoshi Kiya</i>	
Extension of DCT Sign Phase Correlation to Subpixel Registration	138
<i>Izumi Ito, Atsushi Uemura, Hitoshi Kiya</i>	
A New Architecture of Digital Clock Synthesizers	142
<i>Yawgeng A. Chau, Chen-Feng Chen, Jiun-Jia Huang</i>	
Selection-and-Stay Diversity over Correlated Nakagami Fading Channels	146
<i>Yawgeng A. Chau, Karl Y. Huang</i>	
The Electronic Ballast Using Class-E Rectifier with Tapped Inductor for Power Factor Correction	150
<i>J.Sasiluk, J. Kamon</i>	

OTAs-Based Current-Mode Quadrature Oscillator	154
<i>Montree Kumngern, Kobchai Dejhan</i>	
Compact Slot Antenna with Rectangular-Ring Tuning Stub for Ultra-Wideband Application.....	158
<i>W. Kueathaweekun, N. Anantrasirichai, C. Benjangkprasert, T. Wakabayashi</i>	
Wide-band CPW- fed Slot Antenna with Tuning Stub and $\lambda/4$-Strip for WLAN/WiMAX Application.....	162
<i>W. Kueathaweekun, N. Anantrasirichai, C. Benjangkprasert, T. Wakabayashi, P. Jearapraditkul, O. Sangaroon</i>	
A Novel Design Approach for ROM-less Direct Digital Frequency Synthesizers Based on Polynomial Approximations.....	166
<i>Yawgeng A. Chau, Yao-Hua Chen</i>	
A Step Size Control Method Steadily Reducing Acoustic Echo Even During Double-talk	170
<i>Ryuichi Oka, Kensaku Fujii, Mitsuji Muneyasu</i>	
Design and Performance of Space-time Block Coded Hybrid ARQ Schemes for Multiple Antenna Transmission	174
<i>M. Gidlund</i>	
Improved K-best Sphere Decoder with a Look-ahead Technique for Multiple-Input Multiple-Output Systems.....	178
<i>Pei-Yun Tsai, Xing-Cheng Lin</i>	
Multiple Constraint Bit Allocation for Foveated Visual Coding.....	182
<i>Wuttipong Kumwilaisak</i>	
Pulse Shaping Based PAPR Reduction for OFDM Signals with Minimum Error Probability	186
<i>Miin-Jong Hao, Chiu-Hsiung Lai</i>	
The Subjective Minimum Number of Gray Levels for Natural Images Derived by OK-Quantization Theory	190
<i>Akira Taguchi, Manabu Tamiya</i>	
Bit-Length Expansion for Digital Images	194
<i>Akira Taguchi, Tomoaki Kimura</i>	
A Detection and Tracking Method Based on POC for Oncoming Cars.....	198
<i>Hitoshi Namba, Mitsuji Muneyasu</i>	
A Method for Data Embedding to Printed Images Based on Use of Original Images	202
<i>Takafumi Shono, Mitsuji Muneyasu, Koji Nakanishi</i>	
An Unsupervised Design Method for Weighted Median filters Based on Simulated Annealing	206
<i>Mitsuji Muneyasu, Kousuke Shiohama, Akira Asano</i>	
A Robust Audio Watermarking Based-on Multiwavelet Transform	210
<i>Prayoth Kumsawat, Kitti Attakitmongcol, Arthit Srikaew</i>	
A BCI Using MEGvision and Multilayer Neural Network - Channel Optimization and Main Lobe Contribution Analysis	214
<i>Kenji Nakayama, Yasuaki Kaneda, Akihiro Hirano, Yasuhiro Haruta</i>	
On the use of Multiple Subspace Multigrid Linear Equation Solvers for Improved Convergence of NLMS-Type Adaptive Filters	218
<i>John Hakon Husøy, Øyvind Lunde Rørtveit</i>	
Execution Time Measurement of a Vector Operation on LSC-based DSP	222
<i>Kazuki Niiyama, Kenji Ichijo, Akiko Narita, Yoshio Yoshioka</i>	

A Noise Spectral Estimation Method Based on VAD and Recursive Averaging Using New Adaptive Parameters for Non-Stationary Noise Environments	226
<i>Kenji Nakayama, Shoya Higashi, Akihiro Hirano</i>	
Grouping Method based on Feature Matching for Tracking and Recognition of Complex Objects	230
<i>Naomi Nagaoka, Keita Okazaki, Tatsuya Sugahara, Tetsushi Koide, Hans Jürgen Mattausch</i>	
Practical Implementation of CCTA Based on Commercial CCII and OTA	234
<i>Winai Jaikla, Phamorn Silapan, Chaiyan Chanapromma, Montree Siripruchyanun</i>	
Layered LDGM Codes for Scalable Video Streaming Over Packet Erasure Channels	238
<i>Yoshihide Tonomura, Daisuke Shirai, Takayuki Nakachi, Tatsuya Fujii, Hitoshi Kiya</i>	
Proposal of Amplitude only Logarithmic Radon Transform for Pattern Matching - Relation with Fourier-Mellin Transform -	242
<i>Makoto Hasegawa</i>	
Road Traffic Monitoring Using a Wireless Vehicle Sensor Network	246
<i>Eng-Han Ng, Su-Lim Tan, Jesús García Guzmán</i>	
Dynamic Distortion Measurement for Linearization of Loudspeaker Systems	250
<i>Shoichi Kitagawa, Yoshinobu Kajikawa</i>	
A Low Memory Degree-K Zerotree Coder	254
<i>Li Wern Chew, Li-Minn Ang, Kah Phooi Seng</i>	
General Observation Model for an Iterative Multiframe Regularized Super-Resolution Reconstruction for Video Enhancement	258
<i>Vorapoj Patanavijit, Somchai Jitapunkul</i>	
A Study of Adaptive Guard Interval with Estimation of Channel Impulse Response for OFDM system	262
<i>Hideaki Tanaka, Naoto Sasaoka, Takaharu Nakanishi, Yoshio Itoh</i>	
New Hybrid Technique for Traffic Sign Recognition	266
<i>K. H. Lim, Li-Minn Ang, Kah Phooi Seng</i>	
An Efficient Method to Reduce Computational Cost of Improved Super-resolution Method	270
<i>Yasuo Takehisa, Kiyoshi Tanaka</i>	
Improvement of Stegermele with Hybrid Recursive Matrix Encoding	274
<i>KokSheik Wong, Kiyoshi Tanaka</i>	
Feedback Cancellation Method based on the Convex Combination Algorithm for T-DMB Repeaters	278
<i>Young-Jun Lee, Kyoung-Won Song, Hyun-Chool Shin, Hyoung-Nam Kim</i>	
A Novel Filter Design for Spatially Interpolated Beamformer	282
<i>Lucy J. Gudino, S.N. Jagadeesha, Joseph X. Rodrigues</i>	
An Efficient Noise Reduction Algorithm Using Empirical Mode Decomposition and Correlation Measurement	286
<i>Tsung-Ying Sun, Chan-Cheng Liu, Jyun-Hong Jheng, Tsung-Ying Tsai</i>	
Image Enlargement Using Bi-directional Shifted Linear Interpolation	290
<i>Yuta Tamura, Kiyoshi Tanaka</i>	
A Low-Power High-Frequency All-Pass- Filter-Based Sinusoidal Quadrature Oscillator Using CMOS Current Mirrors	294
<i>A. Leelasantitham, B. Srisuchinwong</i>	

Performance Evaluation of Environment-Adaptive Agent System in OFDM Cognitive Radio	299
<i>Yuki Ogasawara, Shinya Odagiri, Shingo Yoshizawa, Yoshikazu Miyanaga</i>	
An ASIC Design for the Ethernet-ATM Bridge	303
<i>Guo-Ming Sung, Hsiang-Yuan Hsieh</i>	
Face Tracking System using H? Approach.....	307
<i>Siew Wen Chin, Li-Minn Ang, Kah Phooi Seng</i>	
Lips Detection for Audio-Visual Speech Recognition System	311
<i>Siew Wen Chin, Li-Minn Ang, Kah Phooi Seng</i>	
An ASIC design for decimation filter with canonic signed-digit representation	315
<i>Guo-Ming Sung, Hsiang-Yuan Hsieh</i>	
Low Power and Area Efficient Image Segmentation VLSI Architecture Using 2-Dimensional Pixel-Block Scanning	319
<i>Keita Okazaki, Naomi Nagaoka, Tatsuya Sugahara, Tetsushi Koide, Hans Jürgen Mattausch</i>	
An Electronically Controllable Instrumentation Amplifier Based on CCCCTAs	323
<i>Chaiyan Chanapromma, Chaiya Tanaphatsiri, Montree Siripruchyanun</i>	
Characterization of a Capacitorless Current-Mode Bandpass Biquad via an Artificial Neural Network	327
<i>Montira Moonngam, Roungsan Chaisricharoen</i>	
Reconfigurable Firewall Unit by Wave-Pipelined Operations	331
<i>Tomoaki Sato, Syuya Imaruoka, Masa-aki Fukase</i>	
Emerging Hardware Cryptography and VLSI Implementation	335
<i>Masa-aki Fukase, Kazunori Noda, Tomoaki Sato</i>	
Single-channel Speech Separation by Using a Sparse Decomposition with Periodic Structure	339
<i>Makoto Nakashizuka, Hiroyuki Okumura, Youji Iiguni</i>	
Scalability Issues in Fingerprinted Audio Searching	343
<i>C. Bellettini, G. Mazzini</i>	
Closed Boundary Face Detection in Grayscale Images using Watershed Segmentation and DSFPN.....	347
<i>Lee Seng Yeong, Li-Minn Ang, Kah Phooi Seng</i>	
A Wavelet-based Monte Carlo Simulation of Odds Ratio Contour in Genome-wide Association Study	351
<i>Santitham Prom-on, Asawin Meechai, Jonathan Chan</i>	
Techniques for a Low-voltage Low-power Linear MOS Transconductor	355
<i>Fujihiko Matsumoto, Toshio Miyazawa, Shintaro Nakamura, Yasuaki Noguchi</i>	
Region Adaptive Color Demosaicing Using Cross-channel Correlation	359
<i>Changwon Kim, Hyunmook Oh, Moongi Kang, Minkyu Park</i>	
Vector Quantization Decision Function for Gaussian Mixture Model Based Speaker Identification.....	363
<i>Abdul Manan Ahmad, Loh Mun Yee</i>	
A Novel Embedded Bandwidth-Aware Frame Compressor for Mobile Video Applications	367
<i>Yu-De Wu, Yao Li, Chen-Yi Lee</i>	
Ultra Wideband Propagation Channel on Two Path Model with Laptop Computers	371
<i>Narongsak Manositthichai, Sathaporn Promwong</i>	

Video Watermarking Retrievable from MPEG Data Without Specifying the Location of Embedding	375
<i>Tadashi Yoshikura, Kaoru Arakawa</i>	
New 3D Face Matching Technique for 3D Model Based Face Recognition	379
<i>Wei Jen Chew, Kah Phooi Seng, Heng Fui Liau, Li-Minn Ang</i>	
A Local-Feedback Transconductor with Improved Linearity for Low-Power Application	383
<i>Fujihiko Matsumoto, Toshio Miyazawa, Shintaro Nakamura, Yasuaki Noguchi</i>	
Semantic Representation of Text Captions to Aid Sport Image Retrieval	387
<i>Kraisak Kesorn, Stefan Poslad</i>	
Waveform Distortion Analysis on Transmission Gain and Group Delay of Ultra Wideband Impulse Radio	391
<i>Sathaporn Promwong</i>	
An Architecture of HMM-Based Isolated-Word Speech Recognition with Tone Detection Function	395
<i>Jirabhorn Chaiwongsai, Werapon Chiracharit, Kosin Chamnongthai, Yoshikazu Miyanaga</i>	
Free Space SNR Gain and Transmission Gain of Ultra Wideband Template Receiver for WPAN	399
<i>Sathaporn Promwong</i>	
Non-Coherent Fractionally Spaced Rake Reception in DS-UWB Wireless Communication Systems	403
<i>Yasutomo Kawashima, Shigenobu Sasaki, Hisakazu Kikuchi</i>	
Runoff Forecasting Using Fuzzy Support Vector Regression	407
<i>Sopon Wiriyarattanukul, Sansanee Auephanwiriyaikul, Nipon Theera-Umpon</i>	
A Minuscule Distances' Measurement Using K-band Doppler Technology	411
<i>Ryusuke Koide, Tomoyuki Nagase, Takashi Araki</i>	
Image Denoising Employing a Closed form solution of MMSE using Multivariate Radial-Exponential Priors with Approximate MAP Estimate for Statistical Parameter	415
<i>P. Kittisuwan, W. Asdornwised</i>	
An Application of Infrared Sensors for Electronic White Stick	419
<i>S. Innet, N. Ritnoom</i>	
Discrete Pascal Filter and Its Hardware Realization	423
<i>Ussanai Nithirochananont, Theetima Treepayak, Sorawat Chivapreecha, Tian-Bo Deng, Kobchai Dejhan</i>	
A Comparison of NN-Based and SVR-Based Power Prediction for Mobile DS/CDMA Systems	427
<i>Naret Suyaroj, Nipon Theera-Umpon, Sansanee Auephanwiriyaikul</i>	
Practical Utilization of the IEEE 802.11g Wireless Access Point in Download-Emphasizing Network	431
<i>Roungsan Chaisricharoen, Kantika Jantarattanavong, Matchimar Worrawattanaphat, Thongchai Yooyativong</i>	
Centralized Control System in Interdomain Routing Environments	435
<i>Mahamah Sebakor, Nipon Theera-Umpon, Sansanee Auephanwiriyaikul</i>	
New Capon-Like Blind MIMO-CDMA Receiver with LCCM-RLS Algorithm for Multipath Time-Varying Channels	439
<i>Shiunn-Jang Chern, Po-Sun Chao</i>	

Performance Analysis of Contention-Based Channel Reservation Schemes in Wireless Communication Systems.....	443
<i>Norrarat Wattanamongkhhol, Lunchakorn Wuttisittikulkij, Siwaruk Siwamogsatham, Pongsatorn Sedtheetorn</i>	
The Pixel-wise Adaptive Wiener filter Watermarking	448
<i>S. Tachaphetpiboon, T. Amornraksa</i>	
Low Power FFT Design for Wireless Communication Systems.....	452
<i>Mohd Shamian Zainal, Shingo Yoshizawa, Yoshikazu Miyanaga</i>	
Transient signal analysis of step temperature modulation in metal oxide sensor response.....	456
<i>R. Jaisutti, T. Osotchan</i>	
Online Optimization of the Poles Locations of Generalized Orthonormal IIR Adaptive Filters Using Particle Swarm Optimization	460
<i>Mohammad Asadi, Farbod Razzazi, Amir Masoud Rahmani</i>	
Evaluation of Transmission Loss with Indoor to Outdoor Environment in UWB Impulse Radio	465
<i>Phattharamon Juengkittigul, Payungsak Panthap, Sathaporn Promwong, Nikorn Sukutamatanti</i>	
A Low-voltage Low-power Wideband CMOS Variable Gain Amplifier Using Active Negative Feedback	469
<i>Siraporn Sakphrom, Apinunt Thanachayanont, Phanumas Khumsat</i>	
Dimensionality Reduction of SIFT using PCA for Object Categorization.....	473
<i>Nattachai Watcharapinchai, Supavadee Aramvith, Supakorn Siddhichai, Sanparith Marukatat</i>	
Author Index	