## 2011 6th International Conference on Broadband and Biomedical Communications

(IB2Com 2011)

Melbourne, Australia 21 – 24 November 2011



**IEEE Catalog Number: ISBN:** 

CFP1180J-PRT 978-1-4673-0768-0

## Table of Contents IB2COM 2011

Papers Application Architectures for Machine to Machine Communications	Page Number
	,
Vehicle Tyre Parameterisation using Binary Search	6
Performance Analysis of Random Multiple Access Protocols used in Wireless Communicati	ion 12
Context-Awareness for Mobility Management: A Systems Survey for Healthcare Monitoring	18
Evolution of the SuperDARN antenna: Twin Terminated Folded Dipole Antenna for HF syste	ms 24
Performance Improvement of a Power Line Communication System Using OFDM Under the Impulsive Noise with Diversity Reception	Effect of Fading and 30
Molecular Cloning of ERG 2 Gene to Effect Knockdown in Chaetomium cupreum	35
Grayscale MRI Image Compression Using Feedforward Neural Networks	39
BER Analysis for SC-FDMA over Rayleigh fading channels	43
A method for providing seamless on-demand application service using DPI in IP network	48
The QoS Aware Mechanism of an Optical Packet Switch Architecture for Multimedia Applica	ations 53
Multiple Access System Capacity with M-ary Orthogonal Modulation	58
Sub-Carrier Allocation for Downlink Multi-User OFDM Cooperative Cellular Networks	63
Diagnosing Client Faults Using SVM-based Intelligent Inference from TCP Packet Traces	68
Voltage and phase calibration for a quad-channel FPGA controlled EIT modular system	74
Fingerprint Template Protection: Development and Open Concerns	80
Neighborhood Components Analysis in sEMG Signal Dimensionality Reduction for Gait Pha	ase Pattern Recognition 86
SC-FDMA Performance over Ricean Channel	91
Designing PNS (Pupils Network System) for Ethic Education of Mobile Phone Literacy	97
Strengthening association between driver drowsiness and its physiological predictors by comeasures of body movement	ombining EEG with 103
Application of Computer Vision Algorithm in Surgical Skill Assessment	108
A High Capacity Near-Field Inductive Coupled MISO Communication System for Internet of	Thinas 112

An algorithm to improve the robustness of imperceptible watermarks against JPEG compression	118
Semi-Automated Segmentation of Accurate Quantisation of PET and Low-Dose CT Phantom Images	122
IR-UWB Tag and Reader for RTLS	126
On Security Vulnerabilities and Mitigation in the Cognition Cycle of Distributed Cognitive Radio Networks	132
Assessing a potential electroencephalography based algorithm during a monotonous train driving task	139
Fall Detection using a Gaussian Distribution of Clustered Knowledge, Augmented Radial Basis	145
Design and Implementation of FPGA based Local Cyclic Code Encoder Decoder	151
Biometrics, Device Metrics and Pseudo Metrics in a Multifactor Authentication with Artificial Intelligence	157
Power Management in LTE Networks by Applying Intelligent Networks	163
All-optical Signal Processing Circuits Using Silicon Waveguides	167
An FPGA-based Implementation for Repeated Square-and-Multiply Polynomials	173
Comparing accuracy of two algorithms for detecting driver drowsiness - single source	179
On Delivering Broadband Telecommunication Services to Rural and Remote Areas	185
Brief Proof of the Upper Bounds for the Number of Modes in Transponder-Limited SS-TDMA	190
Packet Scheduling and Bandwidth Allocation Based on Channel Quality in WiMax	194
A Nature Inspired Anomaly Detection System Using Multiple Detection Engines	200
Trends in home-based safety and health alert support systems for older people	206
OFA Opportunistic Forwarding and Acknowledgement for Vehicular Ad Hoc Networks	213
A Flexible FPGA and SBC Based Electric Vehicle Telemetry System	219
Noise immunity enhancement for a distributed clock system in digital HF radar	227
Design Considerations for Low-Power ADC for Retinal Prosthesis Applications	232
Design of Low-Power Bandgap Reference Voltage Circuit for Epi-Retinal Prosthesis	236
Spectral Re-growth due to High Power Amplifier Nonlinearities in MIMO-OFDM Relaying Channels	240
Measurement of correlation coefficient for dynamic WBAN channels in sleep apnoea monitoring system	246
Brief overview of Technology and Applications in Railway Operator Safety	252
Variable-length Quadratic Envelope Pulse Shaping and Automatic Gain Control for HF radars	260
Design and Implementation of Multimodal Digital Identity Management System Using Fingerprint Matching and Face Recognition	d 272
Unmanned Vehicle-Aided Automated Meter Reading	289
Development of Software with Cloud Computing in 3TZ Collaborative Team Environment	294