

Table of Contents

Preface, Conference Committees

Chapter 1: Wireless Technologies

A Comparative Review of Mote Size and Communication Method for Wireless Sensor Network M.A. Akkaş	3
A New Hybrid Frequency Selective Surface Design in the 2.4GHz and 5.8GHz ISM Bands B. Döken and M. Kartal	9
A V2V System Module for Inter Vehicle Communication Ö. Özdemir, İ. Kılıç, A. Yazıcı and K. Özkan	16
Minimizing Energy Consumption in Wireless Sensor Networks by Partition W.Z. Zhu and F. Xu	23
Model Checking Formal Verification Methodology for Virtual Channel NoCs S. Agamy, A. Sayed and R. Guindi	30
Sensor Positioning on Digital Maps for Coverage Maximization by Using Genetic Algorithm N.C. Tenğerli and Y. Becerikli	38
Study on the Hierarchical Routing Protocols for Wireless Sensor Networks S. Moussa, G. Abdel Halim and S. Ramadan	43
Lock-Time Behavior of Charge Pump PLLs Employing Oscillators with Non-Linear Frequency Tuning Characteristics O. Demir, C.D. Ozturk, G.Y. Altun, A. Taskiran and G. Selcuk	52

Chapter 2: Microwave Engineering and Antenna Design

Automatic Control Technique for EMC Analysis Using the Scripting Language of HFSS D. Chen, J.P. Wan, F.Y. Yang, P.H. Yang and Y.J. Qin	63
Miniaturized Implantable Ultra-Wideband Antenna with Bio-Compatible Substrate Material M. Abu, N.H. Izahar, N.R. Mohamad, A. Othman, N.A.M. Aris, N.A. Aziz and T.H. Tan	71
Slot Radial Array Design on Hollow Pyramidal Microwave Absorber H. Abdullah@Idris, M.N. Taib, M.S.I. Nazaruddin, N.R. Ahmad, A. Ahmad, N.A. Ismail, L.M. Kasim, N.M. Kasim and N.M. Noor	77
Bendable Hexagonal Resonator Designs for Chipless Tag M. Abu, N.A.M. Asari, K.N.Z. Ariffin, N.N.M. Yusof and E.E. Hussin	82
Characteristic Evaluation of Multiple Layers Microwave Absorber Coated with Biomass Composite H. Abdullah, A. Zanal, M.H. Ahya Ilmudin, M.N. Taib, J. Md Sharif, M.K. Nizam Malek, R. Baharudin, I.R. Mohamed Noordin and A.R. Razali	88

Chapter 3: Transferring, Analysis and Processing of Signals

Crosstalk in Free Space Optical Interconnects that Use Micro-Lenses Arrays: Practical Consideration N. Al-Ababneh	95
Analysis of Quantum Dot Vertical Cavity Semiconductor Optical Amplifier with Saturable Absorber O. Qasaimeh	100
Capacity Analysis of OAM Multiplexing System Based on Various Detection Schemes L.A. Bian, P.G. Liu, Z.W. Zhuang, G. Ou, W.D. Hu and L.G. Li	105
Fault Classification in Transmission Line Using Wavelet Features and Fuzzy-KNN M.N. Mahmud, M.N. Ibrahim, M.K. Osman and Z. Hussain	112

Chapter 4: Image Processing and Application

A Motion Adaptive Wavelet-Denoising for Frame-Rate Up-Conversion S. Gorgulu and O.N. Gerek	121
Heterogenous Computing on Iris Matching with OpenCL B. Şimşek and N. Akçam	129
Multi-Featured Content-Based Image Retrieval Using Color and Texture Features M. Ayan, O.A. Erdem and H.Ş. Bilge	136
Mycielski Based 2d-Predictive Image Coding Algorithm M. Fidan and O.N. Gerek	144
Video Shot Boundary Detection in Sport Video Using the Scale Invariant Feature Transform Z. El Khattabi, Y. Tabii and A. Benkaddour	152

Chapter 5: Electronics and Electrical Engineering

Design and Implementation of a Solar Controller and PC Data Acquisition System for PV Energy Applications M. Dursun and S. Özden	161
Reducing Voltage Fluctuations in Wind Turbines by SVC Method A. Jahi and S.S. Tezcan	166
Investigation on the Output Signal of Rotational Speed Sensor for Different Flux Surfaces between Gear Wheel and Sensor U. Demir, P. Süle and M.C. Aküner	172