The Institution of Electronics and Telecommunication Engineers

ISSN 0377-2063 (Print)
E-ISSN 0974-780X (Online)

28

IETE Journal of Research

Volume 69 • No. 1 • January 2023

Heritage Institute of Technology * Kolkata *
CENTRAL LIBRARY

JB 26/4/2023

http://mc.manuscriptcentral.com/tijr

Taylor & Francis
Taylor & Francis Group

Subscriber Copy : Not for Resale
Cost per copy Rs 406 for Paid Subscribers

IETE Journal of Research
Volume 69 Number 1 January 2023

CONTENTS

v **A Welcome Note**

Editorial

1 Scanning the Issue
Shiban K Koul, Arun Kumar and Ranjan K Mallik

Articles

9 Feature Selection for Alzheimer's Gene Expression Data Using Modified Binary Particle Swarm Optimization
Ramya Ramaswamy, Premalatha Kandhasamy and Swathypriyadharsini Palaniswamy

21 Design and Experimental Validation of PID Controller for Buck Converter: A Multi-Objective Evolutionary Algorithms Based Approach
M. P. E. Rajamani, R. Rajesh and M. Willjuice Iruthayarajan

33 Walsh Scalar Miyaguchi Preneel Cryptography for Secure Image Compression and Storage in WANET
V. Vidhya and M. Madheswaran

46 Human Interaction Recognition in Videos with Body Pose Traversal Analysis and Pairwise Interaction Framework
Amit Verma, Toshanlal Meenpal and Bibhudendra Acharya

59 Advanced Framework for Effective Denoising the Enhanced Thermal Breast Image
A. Arul Edwin Raj, M. Sundaram and T. Jaya

73 An Effective Brain Tumor Detection System Using Extended Linear Boosting (ELB) Classification Algorithm
R. Carol Praveen and G. Mohan Babu

83 Feature Extraction-based Medical Image Watermarking Using Fuzzy-based Median Filter
K. Balasamy and D. Shamia

92 Improved Classification Accuracy for Diagnosing the Early Stage of Parkinson's Disease Using Alpha Stable Distribution
S. Anita

104 New G_m-C All-pass and Amplitude-Equalizer Biquad
Dattaguru. V. Kamat and Mary Ann George

118 OTA-C Realization of An Optimized FOPID Controller for BLDC Motor Speed Control
Mary Ann George, Dattaguru V. Kamat and Thirunavukkarasu Indiran

137 Automatic Skin Tumour Segmentation Using Prioritized Patch Based Region – A Novel Comparative Technique
A. Ashwini and S. Murugan

149 Critical Analysis of Optimization Techniques for a MRPID Thermal System Controller
Abhas Kanungo, Monika Mittal and Lillie Dewan

165 Improved Direction of Arrival Estimation under Grazing Incidence Conditions using 2D-Uniform Linear Array
Veerendra Dakulagi

Review Article

173 Inline Integrated Ceramic Waveguide Bandpass Filter with N+1 Finite Transmission Zeros
Muhammad Y. Sandhu, Zubair Ahmed, Safeer Hyder and Sharjeel Afridi

Articles

180 Design of a Terahertz Alcohol Sensor Using a Steering-Wheel Microstructured Photonic Crystal Fiber
S. Nivedha and K. Senthilnathan

189 A Flexible Multiband Antenna for Biomedical Telemetry
Abdullah Al-Sehemi, Ahmed Al-Ghamdi, Nikolay Dishovsky, Gabriela Atanasova and Nikolay Atanasov

203 Analysis of Staggered-Via Loss in Substrate Integrated Waveguide
Sheelu Kumari, Vibha Rani Gupta and Shweta Srivastava

209 Severity Analysis of Mitral Regurgitation Using Discrete Wavelet Transform
Arun Balodi, R. S. Anand, M. L. Dewal and Anurag Rawat

Heritage Institute of Technology CENTRAL LIBRARY Kolkata

220 Visualization of Cardiac Vectors using Electrocardiography and Magnetocardiography
Vikas R. Bhat, S. Sengottuvel, Pragyna P. Swain, H. Anitha and K. Gireesan

232 A New Fast Approach for an EEG-based Motor Imagery BCI Classification
Mohammad Ali Amirabadi and Mohammad Hossein Kahaei

242 Novel Test Set Up for GTEM Cell Characterization
Hetal M. Pathak and Shweta N. Shah

249 Diagnosis of Multiple Rotor Bar Faults of Squirrel Cage Induction Motor (SCIM) Using Rational Dilation Wavelet Transforms
Madhusudhana Reddy Barusu and Meganathan Deivasigamani

264 Study on Design Optimization of a Symmetry Two-Axis Tilt Angle Capacitive Sensor
Hai Nguyen Dac, Ha Tran Thi Thuy, Tuan Vu Quoc, Thai Le Van, Trinh Chu Duc, Tung Thanh Bui and An Nguyen Ngoc

272 Comprehensive Analysis of PAPR Reduction in OFDM, UFMC and Signal Scrambling UFMC Technique using Shuffled Frog Leaping Algorithm
K. Krishna Kishore and P. Rajesh Kumar

284 Design and Analysis of Dual Band-Notched UWB Antenna Using a Slot in Feed and Asymmetrical Parasitic stub
V. N. Koteswara Rao Devana and A. Maheswara Rao

295 Analysis of Cascaded Multilevel Inverter with a Reduced Number of Switches for Reduction of Total Harmonic Distortion
Kola Muralikumar and P. Ponnambalam

309 Quantum-dot Cellular Automata Latches for Reversible Logic Using Wave Clocking Scheme
Debajyoty Banik and Hafizur Rahaman

325 Elliptical Shape Flexible MIMO Antenna with High Isolation for Breast Cancer Detection Application
Praveen Kumar Rao and Rajan Mishra

334 The Making Process of Tapered Connector and Its Coupling Characteristics in Vibrating Circumstance
Hu Qinggui and Long Wenguang

340 Improving the Designs of Nearest Neighbour Quantum Circuits for 1D and 2D Architectures
Chandan Bandyopadhyay, Anirban Bhattacharjee, Robert Wille, Rolf Drechsler and Hafizur Rahaman

354 Wind-Hydro Combined Bidding Approach for Congestion Management Under Secured Bilateral Transactions in Hybrid Power System
Aditi Gupta, Yajvender P. Verma and Amit Chauhan

368 A Transmit Antenna Selection based Energy-Harvesting MIMO Cooperative Communication System
A. Taneja and N. Saluja

Review Article

378 Solar Energy Fundamental Methodologies and its Economics: A Review
Neetan Sharma and Vinod Puri

Articles

404 Investigation of Dual Metal Gate Schottky Barrier MOSFET for Suppression of Ambipolar Current
Sumit Kale

410 Optimizing Dimensions of Cassegrain Antenna System with Large Magnification Factor
Alireza Sharifi

420 Design and Evaluation of State and Disturbance Observers for a Multivariable Magnetic Levitation System
Yu-Sheng Lu and Peter Berkelman

438 A Novel Conformable Fractional-Order Terminal Sliding Mode Controller for a Class of Uncertain Nonlinear Systems
Sara Haghighatnia

447 A Design of Bandwidth-Enhanced Conformal Antenna for Aircraft Applications
J. Monica and P. Jothilakshmi

460 Compact Corner Truncated Fractal Slot Antenna for Cognitive Radio Sensor Network
P. K. Goswami and G. Goswami

472 Current-Mode MOS Only Precision Full-Wave Rectifier
Atul Kumar and Bhartendu Chaturvedi

Review Article

482 Electric Vehicle Control and Driving Safety Systems: A Review
K. Indu and M. Aswatha Kumar

Articles

499 A Hybrid Isolation in Two-Element Directive UWB MIMO Antenna
Ahmed Abdelraheem, Hesham Elregaily, A. A. Mitkees and Mahmoud Abdalla

509 High-Performance 3D Mesh-Based NOC Architecture Using Node-Layer Clustering
Navid Habibi, M. Reza Salehnamadi and Ahmad Khademzadeh

525 Control of Multi-cell AC/DC and Cascaded H-bridge DC/AC-based AC/DC/AC Converter
Rajesh Gupta and Amit Kumar

535 Quantum Dot Cellular Automata-Based Scan Flip-Flop and Boundary Scan Register
Nehru Kandasamy, Firdous Ahmad, D. Ajitha, Balwinder Raj and Nagarjuna Telagam

549 Worldwide Daily Optimum Tilt Angle Model to Obtain Maximum Solar Energy
Javad Modarresi and Hamed Hosseinnia

558 An Efficient Quantum-Dot Cellular Automata Full Adder Based on a New Convertible 7-Input Majority-Not Gate
Hossein Mohammadi, Keivan Navi and Mehdi Hosseinzadeh

567 Design and Analysis of Dual Output Three Level Inverter with Reduced Switch Count Topology
A. Kokila and V. Senthil Kumar

584 Fault Resistant Coplanar QCA Full Adder-Subtractor Using Clock Zone-Based Crossover
R. Marshal and G. Lakshminarayanan

592 Assessment of Impact of Beamwidth of Directional Antennas on Successful Transmissions in mmWave Adhoc 5G Networks
Garima Shukla, Mirza Tariq Beg and Brejesh Lall

Note: The Institution of Electronics and Telecommunication Engineers assumes no responsibility for the statements and opinions expressed by individual authors.