The Institution of Electronics and Telecommunication Engineers

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

28

IETE Journal of Research

Volume 69 • No. 3 • March 2023

Heritage Institute of Technology
CENTRAL LIBRARY
Kolkata

SB 15/5/23

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 3 March 2023

CONTENTS

Editorial

1167 Scanning the Issue
Arun Kumar, Shiban K Koul and Ranjan K Mallik

Articles

1175 Simulation and Synchronous Generation of Radar Signals at Geographically Distributed Sensors for Testing Emitter Location Systems
Sudha Rani Suram, Niranjan Prasad and Sasibhushana Rao Gottapu

1190 A Novel Design of Epidermal Flexible Antenna on Supraorbital Nerve to Correlate Diabetes and Anemia
Kannagi V, A Jawahar and Vijay Nath

1200 Electroencephalograph based Human Emotion Recognition Using Artificial Neural Network and Principal Component Analysis
Satyanarayana Naga V. Kanuboyina, Shankar T and Rama Raju Venkata Penmetsa

1210 A Smart and Secured Approach for Children's Health Monitoring Using Machine Learning Techniques Enhancing Data Privacy
K. P. Revathi and T. Manikandan

1222 Impact of High-K and Gate-to-Drain Spacing in InGaAs/InAs/InGaAs-based DG-MOS-HEMT for Low-leakage and High-frequency Applications
S. Baskaran, R. Saravana Kumar, V. Saminathan, R. Poornachandran, N. Mohan Kumar and V. Janakiraman

1233 Performance Analysis of Maple-Shaped Monopole Multiband Antenna on Various Substrate Materials
A. Praveena, G. Umamaheswari and V. A. Sankar Ponnapalli

1241 Gain Enhancement of Patch Antenna Using High Refractive Index Metamaterial-based Bi-convex Lens for Base Station Applications
G. Bharath Reddy and D. Sriram Kumar

1249 Realization of Memristive State Machine for Smart Edge Detector Applications
Priyanka B. Ganganaik, G. Abhijith, P. Michael Preetam Raj, H. Renuka, B. V. V. S. N. Prabhakar Rao and Souvik Kundu

1260 A 0.7 pJ/bit, 1.5 Gbps Energy-Efficient Image-Based True Random Number Generator
Dhirendra Kumar, Lakshmi Likhitha Mankali, Prasanna Kumar Misra and Manish Goswami

1271 CMOS Schmitt – Inverter-Based Internal Reference Comparator Array for High Temperature Flash ADC
George M. Joseph and T. A. Shahul Hameed

1283 A Novel Eye-shaped Monopole Antenna for Wideband and 5G Applications
Hiwa Taha Sediq, Javad Nourinia, Changiz Ghobadi and Bahman Mohammadi

1294 Permutation Entropy Thresholding: A Non-Linear Signal Processing Method for Islanding Detection
Sindhura Rose Thomas, Bindu M. Krishna and Usha Nair

1309 Metamaterial Loaded Antenna with Improved Efficiency and Gain for Wideband Application
KM Neeshu and Anjini Kumar Tiwary

1317 Proportional-Resonant and Unipolar Switching Control of Single-Stage Solar Photovoltaic Grid Interfaced System
Nidhi Mishra, Piyush Kant and Bhim Singh

1328 Novel Circuit Model of Multi-walled CNT Bundle Interconnects Using Multi-valued Ternary Logic
V. Sulochana, C. Venkataiah, Sunil Agrawal and Balwinder Singh

1341 Exotic IMPATT Oscillator for Terahertz Thermography: Feasibility Studies in Hepatic Tumor Detection
Saikat Adhikari, Debraj Chakraborty, Abhijit Kundu and Moumita Mukherjee

1356 New Design of Reconfigurable Stop-band in UWB Band-pass Filter based on Resonator-loaded Slot-line
Mohamed Lamine Seddiki, Mourad Nedil and Farid Ghanem

1363 Optimized Fuzzy-Based Wavelet Neural Network Controller for a Non-Linear Process Control System
S.N. Deepa and N. Yogambal Jayalakshmi

Heritage Institute of Technology
CENTRAL LIBRARY
Kolkata
15/5/23

Review Article

1373 HsClone Genetic Algorithm Implementation on a Combinational Circuit
S. Suhas, Gayatri Malhotra and V. H. Rajini

Articles

1382 A Compact Textile Antenna with A Defected Ground Structure for S, C, X and Ku Band Applications
Thanga Pandi S and T. Jayasree

1393 Comparative Assessment of Regression Techniques for Wind Power Forecasting
Rachna Pathak, Arnav Wadhwa, Poras Khetarpal and Neeraj Kumar

1403 Non-linear Control of Grid Tied Solar Photovoltaic System Considering Uncertainties
Priyanka Chaudhary and M. Rizwan

1419 A Dielectrically Modulated GaN/AlN/AlGaN MOSHEMT with a Nanogap Embedded Cavity for Biosensing Applications
Aasif Mohammad Bhat, Arathy Varghese, Nawaz Shafi and C. Periasamy

1429 Density Gradient Study on Junctionless Stack Nano-Sheet with Stack Gate Oxide for Low Power Application
M. Prasad and U. B. Mahadevaswamy

1437 Computed Torque Control Method for Two-Axis Planar Serial Robotic Arm
G. Perumalsamy, Deepak Kumar, Joel Jose, S. Joseph Winston and S. Murugan

1446 A Conformal Metamaterial with Wide DNG Region for C and X Microwave Bands
Deepa Negi, Rajesh Khanna and Jaswinder Kaur

1460 DC Characterization and High-Frequency Performance Analysis of a GaN/AlGaN HET on a β-Ga_2O_3 Substrate
Anju S., Biji Jacob, Geenu Paul and V. Suresh Babu

1466 A Novel Compact Multiband Reconfigurable WLAN MIMO Antenna
A. Bharathi and Ravi Shankar Reddy Gosula

1475 Test Architecture Optimization for Post-bond Test and Pre-bond Tests of 3D SoCs Using TAM Reuse
Surajit Kumar Roy and Chandan Giri

1486 FACTS-based 3DOF-PID Controller for LFC of Renewable Power System Under Deregulation Using GOA
Soumen Biswas, Provas Kumar Roy and Kalyan Chatterjee

1500 Neural Network Controlled Space Vector PWM for a High Power Factor Converter Under Perturbed Conditions
Deepak Sharma and A. H. Bhat

1509 Computation Offloading for Smart Devices in Fog-Cloud Queuing System
Farhan Sufyan and Amit Banerjee

1522 Effects of Total Dose Radiation on Single Event Effect of the Uniaxial Strained Si Nano NMOSFET
Minru Hao, Yan Zhang, Min Shao, Guoxiang Chen and Bin Wang

1529 Wideband Frequency Agile and Polarization Reconfigurable Antenna for Wireless Applications
Suresh Kumar Muthuvel and Yogesh Kumar Choukiker

1539 Efficient Ternary Compressor Design Using Capacitive Threshold Logic in CNTFET Technology
Trapti Sharma and Laxmi Kumre

1550 Circularly Polarized Dual Band Dual Slot Antenna for WLAN, Wi-MAX and Wi-Fi Applications
Penchala Reddy Sura and M. Sekhar

Review Article

1556 A Novel Modified T Slot to Realize Wideband Circularly Polarized Patch Antenna for Low-Cost Planar 2.4 GHz Wireless LAN, Bluetooth, GPS Applications
Hashibul Alam and Muhammad Yasir Jamal

Articles

1562 Variable Step-size Adaptive Maximum Power Point Tracking Algorithm for Solar Cell Under Partial Shading Conditions
Ankit Kumar Soni, Kartick Chandra Jana and Deepak Kumar Gupta

1578 A Right Hand Circularly Polarized Dual-Band Microstrip Antenna Array
A. Bharathi and G. Ravi Shankar Reddy

1588 Analysis of Ethernet Control Network
Joby Antony and Tanmoy Maity

1597 Evaluation of Accuracy of an Indigenous Cost-Effective and User-Friendly Alarm System for Monitoring of Intravenous Infusion- *IV ALERT*
Goverdhan Dutt Puri, Tanvir Samra, Arvind Jindal, Harshit Singla and Sushant Konar

1604 Low-profile Magneto-electric Dipole Antenna
Rekha Ketham, Ayman Abdulhadi Althuwayb and Arvind Kumar

1613 A Pi-Shaped Slot Antenna for 5.2 GHz WLANMIMO Application
Vinay Sharma, Ananya Goel, Madhur Deo Upadhayay and Atul Vir Singh

1626 Compact Pattern Diversity Antenna with 3-D Printed All-dielectric Superstrate for WLAN Access Points
S. Swapna, G. S. Karthikeya, Shiban K. Koul and Ananjan Basu

Review Article

1640 Review on IMC-based PID Controller Design Approach with Experimental Validations
Ujjwal Manikya Nath, Chanchal Dey and Rajani K. Mudi

Articles

1661 Two New Third-Order Quadrature Sinusoidal Oscillators
Ajishek Raj, Data Ram Bhaskar and Pragati Kumar

1675 Wideband Reflectarray Antennas Using Concentric Ring-Based Elements for Ku-Band Applications
Lingasamy Veluchamy, Krishnasamy T. Selvan, Rajeev Jyoti and Sagi Sravan Kumar

1686 Gated Clock and Revised Keeper (GCRK) Domino Logic Design in 16 nm CMOS Technology
Smita Singhal and Anu Mehra

1694 Design, Optimization and Experimental Verification of a Low Cost Two-Microcontroller Based Single-Phase STATCOM
Hamed Atyia Soodi and Ahmet Mete Vural

1705 Interconnection of Rural Microgrids and its Control
Vinit Kumar Singh, Ashu Verma and T. S. Bhatti

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