

2024 21st International Multi-Conference on Systems, Signals & Devices (SSD 2024)

**Erbil, Iraq
22-25 April 2024**



**IEEE Catalog Number: CFP2422E-POD
ISBN: 979-8-3503-7414-8**

**Copyright © 2024 by the Institute of Electrical and Electronics Engineers, Inc.
All Rights Reserved**

Copyright and Reprint Permissions: Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

****** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP2422E-POD
ISBN (Print-On-Demand):	979-8-3503-7414-8
ISBN (Online):	979-8-3503-7413-1
ISSN:	2474-0438

Additional Copies of This Publication Are Available From:

Curran Associates, Inc
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: (845) 758-0400
Fax: (845) 758-2633
E-mail: curran@proceedings.com
Web: www.proceedings.com

CURRAN ASSOCIATES INC.
proceedings
.com

TABLE OF CONTENTS

Performance Analysis of Pilot-Symbol Aided Channel Estimation (PSACE) in FBMC-OQAM System.....	1
<i>Thamer M. Jamel, Ali Al-Shuwaili, Vian K. Saad</i>	
Semi-Static Cell Differentiation and Integration with Dynamic BBU-RRH Mapping in Open RAN Access Network.....	10
<i>Dheyaa M. Hussein, Basim K. J. Al-Shamari</i>	
Investigating Human Impediments to Indoor Visible Light Communications	19
<i>Hajir M. Mohsin, Thamer M. Jamel, Mustafa Dh. Hassib</i>	
Channel Coding Technologies in Next-Generation Wireless Systems	27
<i>Khawla A. Alnajjar, Sara Al Ali, Hawraa Albanna, Hamda Aljasm, Sara Almaazmi, Sara Alduhoori, Sam Ansari, Abir Hussain, Soliman Mahmoud</i>	
Sustainable Energy Provision in Wireless Sensor Networks: An Overview Leveraging Mobile Sink Strategies	33
<i>Hadeel Majid Lateef, Ali Kadhum M. Al-Qurabat</i>	
Detection Systems for Distributed Denial-Of-Service (DDoS) Attack Based on Time Series: A Review.....	43
<i>Ahmed Adil Nafea, Mustafa Maad Hamdi, Baraa Saad Abdulhakeem, Ahmed Thair Shakir, Mustafa S. Ibrahim Alsumaidaie, Ali Muwafaq Shaban</i>	
Review Of: Deep Learning (DL) for Beamforming Array (BFA) Antenna.....	49
<i>Ali A. Naji, Thamer M. Jamel, Hassan F. Khazaal</i>	
Detecting Routing Protocol Low Power and Lossy Network Attacks Using Machine Learning Techniques.....	57
<i>Aythem Khairi Kareem, Ali Muwafaq Shaban, Ahmed Adil Nafea, Mohammad Aljanabi, Salah A. S. Aliasawi, Mohammed Mal-Ani</i>	
Lung Cancer Detection Using Machine Learning and Deep Learning Models.....	63
<i>Khattab M. Ali Alheeti, Tabreer T. Al-Shouka, Saleem Hamad Majeed, Amjed Abbas Ahmed</i>	
Restaurant Demand Forecasting Using Dynamic Neural Network for Business Networking Application	70
<i>Ala' Khalifeh, Fatma Abubaker</i>	
Automatic Deep Learning-Based Myocardial Contours Segmentation from Cine MRI Images.....	76
<i>Narjes Benameur, Ramzi Mahmoudi, Mohamed Deriche, Amira Fayouka, Imene Masmoudi, Mohamed Hedi Jemaa, Nessrine Zoghlami</i>	
ANFIS Based MPPT Controller for DC Motor Drives Supplied by PV Power System.....	82
<i>Ansam B. El-Fawair, Kasim M. Al-Aubidy, Mustafa A. Al-Khawaldeh</i>	
A Deep Learning Approach for MPPT of PV System: Design and Comparison.....	87
<i>Mohammad Abulaila, Izziyah M. Alsudi, Kasim M. Al-Aubidy</i>	
Analysis of Perturb and Observe MPPT Under Varying PV Operating Climatic Conditions	92
<i>Abdirahim Addawe, Musaria K. Mahmood, Sulaiman M. Karim, Ahmad M. Nezam</i>	

Evaluation of Incremental Conductance MPPT Algorithm Under Varying Conditions	98
<i>Ahmad M. Nezam, Musaria K. Mahmood, Sulaiman M. Karim, Abdirahim Addawe</i>	
Design of a Cost-Effective Coaxial Magnetic Gearbox Associated with PMG for Wind Turbine Application	104
<i>Dorra Abdeljalil, Manel Krichen, Naourez Benhadj, Rafik Neji</i>	
Development of ANFIS Controller for Trajectory Tracking Control Using ROBO2L MATLAB Toolbox for KUKA Industrial Robot Via RSI	110
<i>Mohamed Mousa, Ahmad Al-Mahasneh, Mohammed Baniyounis, Rolf Biesenbach, Jan Falkenhain</i>	
Controlling the Movement Path of Leg Exoskeletons Through Fractional Order Sliding Mode Control.....	118
<i>Aicha Znidi, Fatma Abdelhedi, Ahmed Said Nouri, Nabil Derbel</i>	
Integrating Computer Vision and Language Model for Interactive AI - Robot.....	124
<i>Holan K. Omeed, Ahmed O. Alani, Ibrahim H. Rasul, Abubakar M. Ashir, Sava Ahmed Mohammed</i>	
Design and Implementation of Fluid Filling Line	132
<i>Safa Anmar Albarwary, Rand B. Mohammed, Ameer Salar Alkhaiat, Yousif Abdulkhaliq Abdualjabar</i>	
Event- Triggered Based Control of Robotic Arm Under Denial of Service	141
<i>Abdulrazaq Nafiu Abubakar, Jamilu Umar Yahaya, Muhammad Ma'Aruf, Muhammad Faizan Mysorewala, Abdul-Wahid A. Saif</i>	
Artwork Transport Tracking: Empowering Reliability Through Smart Packaging	148
<i>Carlo Trigona, Giuliano A. Salerno, Alireza Mehdi, Anna Maria Gueli, Giuseppe Politi</i>	
Aging Mechanism of Sealed Electric Heating Rods Based on the Description of the Failure Modes	153
<i>Paul Kollascheck, Niklas Dreyer, Faouzi Derbel, Andreas Pretschner</i>	
Improved WPT System Using a Conical Coil for Charging a Smart Device that Controls Patients with Alzheimer's Disease.....	158
<i>Yosra Ben Fadhel, Achraf Derbel, Hatem Garrab, Hadi Trabelsi, Mohamed Deriche, Nabil Derbel</i>	
Development of Permittivity Sensor for Advanced in Situ Testing and Evaluation of Building Material	164
<i>Duaa Telfah, Hashem Al-Mattarneh, Rabah Ismail, Adnan Rawashdeh, Marwa Aljamal, Mohammed Dahim</i>	
Performance Modeling of Safety Systems with Mutiphase Markov Chains	170
<i>Wahbi Rajhi, Walid Mechri, Mohamed Naceur Abdelkrim</i>	
Survey on Segmentation of Brain Abnormalities in MRI Scan Images	176
<i>Idrees Ibraheem Ahmed, Omar M. Hussien Al Okashi</i>	
Using Deep Learning Neural Networks to Recognize and Authenticate the Identity of the Speaker.....	185
<i>Seddiq Q. Abd Al-Rahman, Sameeh Abdulghafour Jassim</i>	
FPGA Implementation of a Convolutional Neural Network for Alzheimer's Disease Classification.....	193
<i>Souha Bel Hadj Salah, Marwa Chouchene, Fatma Ezahra Sayadi</i>	

Wearable Saudi Sign Language Recognition Device Based on Neural Network	199
<i>Shouq Algahtani, Rana Zuhairy, Olla Almarghalani, Mawadda Aljohani, Rania A. Elmanfaloty</i>	
Design of a Brain Controlled Robotic Arm: Initial Experimental Testing	209
<i>Lama Taha Aljedaani, Fatma Abdelhedi, Renad Abdullah Aldahasi, Amal Abdullah Batheeb</i>	
LoRa Network Enhancement of Oil Pipelines Leak Detection System Based on Artificial Intelligence	216
<i>Abbas Rushdi Kubba, Hafedh Trabelsi</i>	
Control and Energy Management Based on Decoupling Frequency of DC Microgrid	224
<i>Mohammed Abdulelah Al Basher, Youcef Soufi, Ouahid Bouchhida, Abderrezzak Cherifi</i>	
Efficient Energy Scheduling for Microgrids Under Uncertainty	230
<i>Yousif Ahmed Al-Wajih, Md Shafiullah, Mujahed M. Al-Dhaifallah, Ammar Sonbul</i>	
Voltage Profile Improvement Based on Optimal Allocation and Sizing Distributed Generation	239
<i>Mushtaq R Haddad, Mohammed Yahya Al-Suliman</i>	
A Comprehensive Study of Artificial Neural Networks in Power System Stability	245
<i>Shaimaa Shukri Abd. Alhalim, Wissem Bahloul, Mohamed Chtourou, Nabil Derbel</i>	
Detecting Secondary Arc Termination Time Based on Change in Total Harmonic Distortion Level.....	251
<i>Muayad Khalaf Ali, Mohammed Yahya Suliman, Ahmed Ateya Allu</i>	
An Effective Deep Learning Approach for the Estimation of Proton Energy by Using Artificial Neural Network	257
<i>Manar Al-Mahdawi, Aythem Khairi Kareem, Ahmed Adil Nafea, Ali Muwafaq Shaban, Salah A. S. Aliasawi, Mohammed M Al-Ani</i>	
Comparison of PID, Fuzzy Logic, ANFIS and Model Predictive Controllers for Cruise Control System	263
<i>Abdullah Fayez Al-Saoudi, Kasim Mousa Al-Aubidy, Ahmad Jobran Al-Mahasneh</i>	
Optimal Fractional Order PD Controller for MEMS Gyroscope.....	266
<i>Mohammad A. Faraj, Nabil Derbel, Boutheina Maalej</i>	
Adaptive PID Controller Using Neural Network for Pressure Drop in Nonlinear Fluid Systems.....	272
<i>Aiman F. Bawazir, Nezar M. Al-Yazidi, Ala S. Al-Dogail, Khaled S. Bin Gaufan, Abdul-Wahid A. Saif</i>	
Digital Twin-Based Decision-Making Technique for Diagnostic 2D Environment Line Following Error of Mobile Robot.....	278
<i>Sanaa S. Al-Samahi, Izzat A. Al-Darraji</i>	
Experimental Investigations on RF Filters in Wake-Up Receiver Circuits	286
<i>Sonia Hmidi, Robert Fromm, Rim Barrak, Faouzi Derbel</i>	
Castello Ursino Museum's Structural Monitoring Enhanced by Self-Energized Solutions.....	292
<i>Anna Maria Gueli, Sebastiano Imposa, Barbara Mancuso, Valter Pinto, Claudia Pirrotta, Giuseppe Politi, Giuliano A. Salerno, Carlo Trigona</i>	
St. Catherine's Church, Valletta, Malta: A Self-Powered Measurement System for Preventive Conservation.....	298
<i>Carlo Trigona, Serena Rapisarda, Sebastiano D'Amico, Alfred Micallef, Anna Maria Gueli</i>	

A Hybrid Filter for Accurate RSSI-Based LoRa Distance Estimation Systems in IoT Applications	304
<i>Sabrina Khrijji, Murali Kavali, Olfa Kanoun</i>	
Wireless Power Transfer System Using Helmholtz Coils for Powering Gastrointestinal Capsule Biomedical Implants.....	309
<i>Yosra Ben Fadhel, Kamal Ai-Haddad</i>	
Controlling Mobile Robot Navigation Equipped with Computer Vision Perception for Text Using OCR Technique	314
<i>Khansaa Dheyaa Ismael, Elaf A. Saeed</i>	
Generate and Evaluate Encryption Keys Obtained from Iris Biometric Data	321
<i>Alaa Amer Abdulraheem, Shahd Abdulrahman Hasso</i>	
A Novel Framework Based on a Hybrid Vision Transformer and Deep Neural Network for Deepfake Detection	329
<i>Mohammed Shahin, Mohamed Deriche</i>	
An Improved Time-Frequency Based Deep Learning Algorithm for Speech Emotion Recognition.....	334
<i>Mahra Al-Ali, Mohamed Deriche, Nabil Derbel</i>	
Real- Time Hand Gesture Recognition for Home Automation: A YOLOv8-Based Approach with Identity Verification and Low-Resource Hardware Implementation	340
<i>Shayda Khalid Hussein, Abdullah Salam Ahmed, Zeynep Kul, Abubakar M. Ashir</i>	
A Framework for Segmenting and Classification of Plastic Waste Using Deep Networks	349
<i>Abdur Rehman, Mohamed Deriche</i>	
Improved Hypergraph Clustering with Weighted GRA for Dynamic VANET Environment.....	354
<i>Mays Kareem Jabbar, Hafedh Trabelsi, Thaar. A. Kareem</i>	
Confident Security Relation for Edge Computing-Based IoT Applications	364
<i>Hameed Almubarak, Ahmed Jedidi</i>	
Public Key Infrastructure Approaches Based on Blockchain	369
<i>Dena S. Alani, Ali M Sagheer</i>	
Employing Invisible Unicode Characters for Preserving Privacy and Enhancing Communication Security.....	376
<i>Mahmoud A. Khalifa, Iman Almomani, Walid El-Shafai</i>	
Abusing iOS Permissions: A Security Perspective	384
<i>Fares Alanazy, Ramzi Saifan, Mousa Al-Akhras, Samer Atawneh, Adeb Alhomoud</i>	
TIoT: A Trust by Design Architecture for Secure and Private Internet of Things (IoT).....	391
<i>H. Alsheakh, Tareq Nasser Mahdi, Mustafa S. Kadhm, Abeer Al Shammari, Fatimah I. Abdulsahib, Hazeem B Taher, Waleed Algriree, Marwa Q. Alobaidi, Hayder Dhafer Mohammed</i>	
Review Mitigation Methods of Partial Shading Condition for PV System	401
<i>Ali Abedaljabar Al-Samawi, Ahmed Samawi Alkhafaji, Abbas Swayeh Atiyah, Hafedh Trabelsi</i>	
Energy Management in Multi-Source Power System Based on PV /Wind /Batteries / Diesel Generator Connected with the Grid.....	411
<i>Abdulwahab Ali Awad, Mohammed Yahya Suliman</i>	

Efficient Fuzzy Logic Energy Management in Stand-Alone Solar Systems	419
<i>Hasan Hammoodi Shakir, Fatma Ben Salem</i>	
Solar Energy with AC Voltage Load Based on Harmonic Reduction MLI.....	425
<i>Haitham Mosa, Ahmed J. Ali, Asef A. Saleh</i>	
Real Time PV Solar System Fault Detection for Serbasti Water Pumping System.....	430
<i>Marwah Qasim Al-Obaidi, Nabil Derbel, Wssan Adnan Hashim, Hussein Alsheakh</i>	
Actuator Fault Estimation Based on Sliding Mode Observer for Continuous-Time Switched Systems.....	437
<i>Mohamed Elouni, Habib Hamdi, Bouali Rabaoui, Mickael Rodrigues, Naceur Benhadj Braiek</i>	
Comprehensive Evaluation of Drone Control Systems - PID Vs. High-Speed Switching Controllers	444
<i>Ali Amer Ahmed Alrawi, Stevica Graovac, Yousif Al Mashhadany, Sameer Algburi</i>	
Application of a Coupled Nonlinear Observer and Control for a Semi-Continuous Chemical Reactor	451
<i>Amira Abdelkader, Moez Bousaada, Koffi Fiaty, Ahmed Said Nouri, Hassan Hammouri</i>	
Modeling of a Rail Vehicle's Active Suspension System to Reduce Vibrations Using an LQR.....	457
<i>Ahtisham Urooj, Abdul-Wahid A. Saif</i>	
Analysis of Robust Control Method for Single Link Flexible Manipulator	465
<i>Abdulbasit Hassan, Abdullah A. Al-Ahdal, Abdul-Wahid A. Saif, Jamilu U. Yahaya</i>	
Design and Implementation of Arduino Controlled Mecanum Wheel Robot Car.....	474
<i>Mahmood Yashar, Yasir Hashim</i>	
The Necessity of Comparators in Wake-Up Receiver Circuits.....	480
<i>Robert Fromm, Olfa Kanoun, Faouzi Derbel</i>	
Improved RSSI Distribution for Indoor Localization Application Based on Real Data Measurements.....	486
<i>Rihab Souissi, Ilef Ktata, Salwa Sahnoun, Ahmad Fakhfakh, Faouzi Derbel</i>	
Prediction Moisture Content and Strength of Wood Using Free-Space Microwave Transmission Line NDT	492
<i>Rabah Ismail, Hashem Al-Mattarneh, Ahmad B. Malkawi, Musab Abuaddous, Marwa Aljamal, Issam Trrad</i>	
Modeling of Microwave Label-Free Microfluidic Biosensors for Cell Analysis	500
<i>Marwa Rezeg, Hassen Zairi, Ammar Al-Hamry, Malak Talbi, Adiraju Anurag, Olfa Kanoun</i>	
Design and Optimization of the GaN HEMT Class-J Power Amplifier for 2.4GHz Applications	509
<i>Marwah Ezzulddin Merza, Khalid Khalil Mohamed</i>	
Advancing Educational Practices: A Study on Technology Integration in Mosul's Private Schools.....	519
<i>Mohammad Salim</i>	
Exploring the Usage Levels of Information and Communication Technology Among Upper-Class Students at Tishk International University	524
<i>Togzhan Nurtayeva, David Wafula Waswa, Mowafaq Muhammed Al-Kassab</i>	
What Drives it Students Toward ChatGPT? Analyzing the Factors Influencing Students' Intention to Use ChatGPT for Educational Purposes.....	533
<i>Hala Najwan Sabeh</i>	

Developing a Virtual TIU Campus Tour: Integrating 3D Visualization of University Facilities in VR	540
<i>Mohammad Salim, Savriddin Khalilov</i>	
Iraqi Legal GPT	545
<i>Mustafa Samir Mustafa, Mustafa Basim Abdulfatah, Husain Alaa Abdulkareem, Abubakar M. Ashir</i>	
Investigating the Effectiveness of Artificial Intelligence in Watermarking and Steganography for Digital Media Security	552
<i>Shadan M. J. A Abdalwahid, Wassan Adnan Hashim, Mohammed Ganim Saeed, Sarmad A. Altaie, Shahab Wahhab Kareem</i>	
Utilizing Support Vector Machine to Help with Social Robot Therapy for Autism Spectrum Disorder	562
<i>Hemin Ibrahim, Abdulbasit K. Al-Talabani, Chu Kiong Loo</i>	
Detection of Malware by Using YARA Rules	568
<i>Reyadh Hazim Mahdi, Hafedh Trabelsi</i>	
Big Data in Healthcare: A Review on Applications, Technologies, Benefits and Challenges	576
<i>Ala' Khalifeh, Raghda Bawaneh, Ala Jallad</i>	
Academic Evaluation System Using Adaptive Categorized and Authenticated Recommendation	583
<i>Haider Abdula Haddad, Abdulqadir Ismail Abdullah, Qaysar Salih Mahdy, Wasfi Kahwachi</i>	
Electromotive Force Spectrum Analysis of SPMSM Under Demagnetization Faults	588
<i>Naourez Ben Hadj, Manel Krichen, Rafik Neji</i>	
Investigating the Impact of Characteristics on Transient Power System Stability During Fault: A Case Study of Peerdawd Power Station.....	594
<i>Jawad Hamad Hameed, Wssan Adnan Hashim, Nabil Derbel, Shahab Wahhab Kareem, Shadan M. J. Abdalwahid</i>	
Artificial Neural Network for Tracking and Monitoring an Electric Vehicle's Speed	604
<i>Khessam Medidoub, Abdeldeibar Hazzab, Anis Njeh, Hafedh Trabelsi, Miloud Rezkallah, Ambrish Chandra</i>	
Design, Optimization and Performance Analysis of Two In-Wheel Motors Drive Electric Vehicles.....	608
<i>Lassaad Zaaraoui, Wafa Abdelly, Ali Mansouri</i>	
Fault Diagnosis Technique Applied to Pitch System Sensors of a Wind Turbine.....	614
<i>Abdelmoumen Saci, Lakhmissi Cherroun, Mohamed Nadour, Ahmed Hafaiifa, Abdellah Kouzou</i>	
Robust Fault Detection Based on Functional Interval Observers for Multivariable Systems.....	620
<i>Hanin Mizouri, Rihab Lamouchi, Messaoud Amairi</i>	
Q-Learning for Path Planning in Complex Environments: A YOLO and Vision-Based Approach.....	626
<i>Abduljabbar Khudhur Abduljabbar, Yousif Al Mashhadany, Sameer Algburi</i>	
Design and Implementation of a CNC Plotter Machine Using Arduino and CNC Shield.....	631
<i>Sara Serwer Youns, Lawand Jafaar Anwer, Malik Abdulbari Ramadhan</i>	
Establishing an Innovative User-Friendly Expert System for Design of Mixing Ratios of Self-Compacting Concrete	637
<i>Adnan Rawashdeh, Hashem Al-Mattarneh, Rabah Ismail, Hamsa Nimer, Mohanad Khodier, Bashar S. Mohammed</i>	

Cloning Image Features from Software Environment to a Hardware Media for Machine Vision Applications.....	645
<i>Mazin Rejab Khalil, Ezideen A Hasso, Qusay Hamid Ali</i>	
Enhancing Traffic Forecasting Accuracy with Fuzzy Data Fusion Learning	653
<i>Sahraoui Abdelatif, Derdour Makhlof, Kouzou Abdellah</i>	
Characterization and Comparison of Bacterial Cellulose/Choline Malonate/EMIM-BF4 Accelerometers.....	660
<i>Santhosh Kurukunda, Salvatore Cerruto, Salvatore Graziani, Carlo Trigona, Giovanna Di Pasquale, Antonino Pollicino, Kaija Pöhako-Esko, Alvo Aabloo</i>	
Colorimetric Bubble Sensors Tailored for Temperature Measurements.....	664
<i>Carlo Trigona, Sara Panebianco, Rosaria Gal Vagno, Anna Maria Gueli</i>	
Investigation of PDMS-CNT Nanocomposite for Flexible Interconnects.....	669
<i>Ahmed Attaoui, Dhivakar Rajendran, Jose Mauricio Rosolen, Olfa Kanoun</i>	
Assessing the Electrical Properties of DPLF/CNT/PDMS Biocomposite Using Impedance Measurements.....	676
<i>Jawhar Aloulou, Ayda Bouhamed, Chedly Bradai, Olfa Kanoun</i>	
Fuzzy Logic Empowerment for Thermoelectric Transducer Performance Optimization.....	681
<i>Achraf Derbel, Carlo Trigona, Noura Baccar</i>	
Universal Approximator Approach for Fuzzy Modeling in Thermoelectric Generator.....	688
<i>Achraf Derbel, Carlo Trigona, Noura Baccar, Nabil Derbel</i>	
New Rules for Calculating Decimal Number Residue on Primes	694
<i>Alaa Ghazi Abdulbaqi, Yasir Hashim</i>	
Exploring High-Dimensional Outlier Detection: A Comprehensive Study on Methods and Applications Using PCA and k-NN Algorithm.....	699
<i>Wasan Abd Majeed, Murtadha M. Hamad</i>	
A Birds Species Detection Utilizing an Effective Hybrid Model	705
<i>Sara Abbas Rafa, Zohaa Mubarak Al-Qfail, Ahmed Adil Nafea, Samia F. Abd-Hood, Mohammed M Al-Ani, Saeed Amer Alameri</i>	
Asymmetric Optical Injection Locking Model for Semiconductor Lasers	711
<i>Abdulsalam M. Tonin, Aser M. Matarneh, Omar R. Daoud, Saqer S. Alja'afreh, Hamzah Hmeidi, Mohammad Al Khawaldah</i>	
State-Of-The-Art Techniques for Energy Saving Enhancement in Cell Differentiation and Integration for Open RAN: A Review	716
<i>Dheyaa M. Hussein, Basim K. J. Al-Shammari</i>	
Supporting V2V Communications-Based Internet of Drones	721
<i>Omar R. Daoud, Qadri J. Hamarsheh, Ahlam A. Darnati, O. Qasem, M. Al-Khawaldah</i>	
Evaluating the Performance of 5G Modulation and Beyond: A Review Study.....	727
<i>Huda A. Fadel, Thamer M. Jamel</i>	
Implementing of 5G Authentication and Key Agreement Protocol: Practical Security Measures.....	735
<i>Rasha Hussein Joudah, Mehdi Ebady Manaa</i>	

PAPR Reduction Based on FrFT in OFDM Systems	745
<i>Fatma Ben Salah, Abdelhakim Khelifi, Marwa Rjili, Belgacem Chibani</i>	
A Dual-Port, and Single-Element Planar Inverted-F Antenna for Current 4G/5G Portable Applications.....	750
<i>Saqer S. Alja'afreh, Amjaad T. Altakhaineh, Mallak H. Al-Shamaileh, Aser M Matarneh, Omar R. Daoud, Mohammad Al-Khawaldah I</i>	
Gain Improvement for Single Band Ultra-Wideband Antenna by Slots Technique.....	755
<i>Ansam Q. Kamil, Hasan M. Kadhim, Riyam M. Alsammarraie</i>	
Static Synchronous Compensator (STATCOM) Based Neural Network to Reducing System Oscillations and Improving Dynamic System Performance.....	761
<i>Raghad Hameed Ahmed, Ahmed Said Nouri</i>	
Current State and Future Trends of Active Management in Distribution Networks.....	766
<i>Asmaa Kahdum Aliwy, Muhammad Al-Badri, Noor Qasim Ali, Hassan F. Khazaal Al-Khazaali, Dheyaa M. Hussein</i>	
Model-Based Testing of Instrument Transformers Utilizing Impulse Response Measurements	776
<i>Martin Glab, Faouzi Derbel</i>	
Performance Evaluation of a CHB-MLI with Multicarrier Techniques Controlled by FPGA	782
<i>Osamah Idrees Mohammed, Laith A. Mohammed, Ahmed M. T. Ibraheem</i>	
Power Management for Hybrid Micro Grids System.....	790
<i>Mohamed A. J. Al-Ani, Nabil Derbel</i>	
Simulation and Analysis Using Matlab and Simulink® of a Car Suspension System Model Under Different Road Conditions: A Project-Based Learning Approach	798
<i>Muna Alqam, Faical Mnif</i>	
Induction Furnace Virtual Temperature Sensor Based on Robust Adaptive Estimation.....	805
<i>Waladin K. Sa'Id, Marwa Fadhel Jassim, Safanah M. Raafat, Omar F. Jasim</i>	
Intelligent Flood Prediction and Support: Empowering Communication with AI, IOT, and UAV Technology	814
<i>Ashish Sharma, Mateen Naser Alaubaidy</i>	
A Flatness-Based Trajectory Tracking Control for Chemical Reactor	819
<i>Qasim Mahdi Hamad, Safanah M. Raafat</i>	
FPGA Implementation of High-Capacity SD Card Using VHDL Language	826
<i>Taha Basheer Taha, Ruzelita Ngadiran, Phaklen Ehkan</i>	
A Shapley Based XAI Approach for a Turbofan RUL Estimation	832
<i>Anouar Bourokba, Ridha El Hamdi, Mohamed Njah</i>	

Author Index