

2023 International Conference on Advances in Electronics, Control and Communication Systems (ICAECCS 2023)

**Blida, Algeria
6 – 7 March 2023**



**IEEE Catalog Number: CFP23CW0-POD
ISBN: 978-1-6654-6311-9**

**Copyright © 2023 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:	CFP23CW0-POD
ISBN (Print-On-Demand):	978-1-6654-6311-9
ISBN (Online):	978-1-6654-6310-2

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

Ideal Behavior of Vernier and Flash TDCs Implemented in a Spartan-6 FPGA	1
<i>Wafia Chouial, Mountassar Maamoun</i>	
Improved Efficiency and Performance of the Energy Storage System for an EV	6
<i>R. Moumni, I. Benlaloui, K. Laroussi</i>	
Energy Harvesting Based on SLIPT in I2V-VLC System	11
<i>Souad Refas, Dalila Acheli, Selma Yahia, Yassine Meraihi</i>	
Dynamic Modeling and Control of Continuum Robots Using an Optimized PID Control	16
<i>Abdelhamid Ghoul, Selman Djeffal, Kamel Kara, Abdelhadi Aouaichia</i>	
A Digital Signature Based on PKI To Authentication and Secure Exchanging data used in water boreholes intelligent Decision Support System	22
<i>Kahina Semar-Bitah, Fatma Zohra Bouderbala, Yasmina Ghebghoub</i>	
Low-Cost ECG Monitoring System with Classification Using Deep Learning	27
<i>H. Saadi, M. Ferroukhi, Y. L. Elghandja, F. Lahmari</i>	
Efficiency Comparison of Silicon and Silicon Carbide MOSFETs in a PV System Application	33
<i>Elaid Bouchetob, Bouchra Nadji, Ismahan Mahdi</i>	
Fuzzy Fast Terminal SMC for Underactuated Mechanical Systems	39
<i>Ali Bendenidina, Kamel Guesmi, Aissa Rebai</i>	
Two-Stage Converter Based on Droop Control and IDA-PBC in Islanded Mode.....	45
<i>Charfi Zakaria, Bentouati Smain, Tlemçani Abdelhalim</i>	
Local Directional Patterns for Plant Leaf Disease Detection	50
<i>Amine Mezenner, Hassiba Nemmour, Youcef Chibani, Adel Hafiane</i>	
A Compact Size FSS Unit Cell Design for UWB Filtering and Shielding Applications	55
<i>Seyf El Islem Daira, Mohamed Lashab, Mounir Belattar</i>	
Reconfigurable Wide Band Antenna with Gain Enhancement using Metamaterial Superstrate for Ku Band Applications.....	59
<i>Kedjar Abdelhak, Djebari Mustapha</i>	
Efficient Probabilistic Counter-Based Broadcast for Low-Power & Lossy Networks	64
<i>Djahida Ali Fedila, Mohamed Ould Khaoua</i>	
FSO and MmWave Technologies for 5G Mobile Networks: A Survey	70
<i>Samra Derouiche, Samir Kameche, Haroun Errachid Adardour</i>	
Characterization of an Ultrasound Reception Chain Based of a PVDF Membrane Hydrophone	76
<i>Wahiba Djerir, Rafik Halimi, Aicha Allag, Tarek Boutkedjirt</i>	
Gossip-Based Interest Forwarding in NDN over MANETs	82
<i>Adel Salah Ould Khaoua, Fella Bey, Abdelmadjid Boukra</i>	

Statistical Examination of Wind Energy’s Contribution to Carbon Dioxide Emissions Reduction - Study: Adrar, located in Southern Algeria	88
<i>Miloud Benmedjahed, Abdeldjalil Dahbi, Abderrahmnane Khelfaoui, Abdelkader Hadidi, Samir Mouhadjer, Omar Djaafri</i>	
Analysis of a Novel 4D Chaotic Oscillator for Communication Systems Up to 6 GHz.....	93
<i>Bendaoud Mohammed, Kameche Samir, Ouslimani Achour</i>	
Enhancement of the AR-MED Deconvolution Process using Ensemble Empirical Mode Decomposition in Bearing Fault Detection	97
<i>Yasser Damine, Noureddine Bessous, Ahmed Chaouki Megherbi, Salim Sbaa, Abdurrahman Ünsal</i>	
Running Convolutional Neural Network on Tiny Devices.....	102
<i>Sara Daoudi, Mohamed El-Amine Bellebna, Mohamed Elbahri, Sara Mazari, Nail Alaoui</i>	
Performance Evaluation of SDN-WISE in Mobile Wireless Sensors Networks	107
<i>Amine Tcherak, Mohamed Ould Khaoua, Samia Loucif</i>	
FPGA Implementation using Novel Co-Design Approach of Real-Time Speech Chaos based Crypto-Watermarking Prototype	113
<i>Mohamed Salah Azzaz, Redouane Kaibou, Abdeldjalil Smahi</i>	
Direct Vector Control for Doubly Fed Induction Generator-Based Wind Turbine using Sliding Mode Controller Tested using RT-LAB OP5600.....	119
<i>Siham Khelifa, Abdelhafid Semmah, Seyfeddine Bechekir, Ibrahim Yaichi</i>	
Optimized FLPID using TLBO Algorithm: Applied to Quadrotor (UAV) System	126
<i>Stiti Chafea, Kara Kamel, Benrabah Mohamed</i>	
Single-Phase Electric Meter Exhibiting Wireless Connectivity	132
<i>Ali O. Gliwan, Mohamed E. Aifa, Mohamed B. Abobaker</i>	
Decision Feedback Equalizer based Affine Projection and Normalized Least Mean Square Algorithms.....	138
<i>Fatima Lounoughi, Mohamed Djendi</i>	
Decision-Directed Channel Equalizer Scheme Based on the Recursive Non Quadratic Adaptive Algorithm	144
<i>Fatima Lounoughi, Mohamed Djendi</i>	
Study of Atmospheric Attenuation on Image Quality Assessment in FSO Transmission Operating at 850, 1064 and 1550 nm Wavelengths.....	149
<i>Amina Djir, Fatiha Meskine, Mohamed Larbi Tayebi</i>	
FPGA Implementation of Secure Video Network Communication using Chaotic Cryptosystem.....	155
<i>Bachir Madani, Mohamed Salah Azzaz, Sadoudi Sadoudi, Redouane Kaibou</i>	
An Optimized Fuzzy Computed Torque Control for the Robot Manipulator PUMA 560.....	161
<i>Abdelhadi Aouaichia, Kamel Kara, Abdelhamid Ghoul</i>	
Compact Super Wideband Two-Element MIMO Antenna for 5G Millimeter-Wave Applications.....	168
<i>Yahia Benghanem, Ali Mansoul, Lila Mouffok</i>	

Modeling and Design of Primary Control's Inner Loops for Droop-Controlled Three-Phase Inverters within a Microgrid System	173
<i>Camelia Ait Hammouda, Rafik Bradai, Rachid Boukenoui, Abdelhammid Kherbachi, Ahmed Bendib</i>	
Meteorological Sensor Network Based on ESP8266	179
<i>Sara Belkisse Merrah, Amar Adane</i>	
Fractional Order PID Tuned using Symbiotic Organism Search Algorithm for Field Oriented Control of The Permanent Magnet Synchronous Motor.....	185
<i>Tahar Nouaoui, Abdelhakim Dendouga, Abdelmalik Bendaikha</i>	
N-policy Priority Queueing Model for Energy and Delay Minimization in Wireless Sensor Networks Using Markov Chains	190
<i>Bachira Boutoumi, Nawel Gharbi</i>	
Blockchain-based Resource Registration in Constrained IoT Environments	196
<i>Kheireddine Zaghouni, Badis Djamaa, Ali Yachir</i>	
Image Forest Fire Segmentation Using Dirichlet Process Mixture Model	202
<i>Mohammed Khorchef, Naim Ramou, Yamina Boutiche, Abderrezak Guessoum, Nabil Chetih</i>	
Improvement of PMSM Performances Using Nonlinear Model Predictive Control and Space Vector Modulation	207
<i>Amel Kasri, Kamel Ouari</i>	
Set-Membership Parial Update SMFTF Algorithm for Acoustic Echo Cancellation	213
<i>Mohamed Amine Ramdane, Ahmed Benallal, Tedjani Ayoub</i>	
An Intelligent Monitoring System of Greenhouse: A Belief Functions Theory-Based Approach	218
<i>Karima Chemoun, Sarah Oubabas, Tassadit Sadoun, Rachida Aoudjit, Marc Gilg</i>	
Toward Building Another Arabic Voice Command Dataset for Multiple Speech Processing Tasks	224
<i>Mohamed Lichouri, Khaled Lounnas, Adil Bakri</i>	
Design and Analysis of Welding Power Supply with Active Current Injection PFC System	229
<i>Badreddine Babes, Noureddine Hamouda, Sami Kahla, Abdelmalek Reddaf, Oualid Aissa, Antar Beddar</i>	
Deep Learning- and Transfer Learning-based Models for COVID-19 Detection using Radiography Images	234
<i>Ahmed Cherif Mazari, Hamza Kheddar</i>	
Transfer Learning with Image Data Augmentation for Parking Occupancy Detection	238
<i>Ali Khalfi, Mohamed Guerroumi</i>	
Low-cost BLE based Intravenous Monitoring and Control Infusion System.....	242
<i>Saad Abdullah, Kehkashan Kanwal, Abdelakram Hafid, Sabrina Difallah</i>	
Adoption and Application of Blockchain Technology in IoT: Survey and Open Issues.....	247
<i>Kheireddine Zaghouni, Ali Yachir, Badis Djamaa, Abbes Boutouba</i>	
Iterative Method Based Optimization of Wireless Power Transfer for Biomedical Implants.....	253
<i>Bennia Fatima, Boudouda Aimad, Nafaa Fares</i>	
ECG Data Visualization: Combining the power of Grafana and InfluxDB.....	259
<i>Aicha Aggoune, Zineb Benratem</i>	

Improvement of the 2.4 GHz SDR Radar-Range using optimised Cantennas.....	265
<i>Amar Adane, Sofia Himene, Djamila Cherfi</i>	
Investigation of an Octagonal AMC Reflector Backed Wideband Antenna for Gain Stabilization.....	271
<i>Safia Chenaoui, Lila Mouffok, Sami Hebib</i>	
Design of a Thermal Stabilizer based on USB Data Acquisition and Control using LabVIEW and PIC Microcontroller.....	276
<i>Hocine Hamil, Mohamed Salah Azzaz, Samir Sakhi, Redouane Kaibou, Ali Hamil</i>	
Effect of FSS Structures on Radiation Properties of a Monopole Antenna with Anisotropic Substrate	282
<i>Feriel Guidoum, Mohamed Lamine Tounsi, Mustapha C.E. Yagoub</i>	
Chaos based Fingerprint Image Encryption in the Wavelet Domain	288
<i>Mohamed Lamine Benseddik, Khalil Zebbiche, Mohamed Salah Azzaz, Said Sadoudi, Khaled Loukhaoukha</i>	
Finite Control Set-Model Predictive Control for Grid connected Shunt Active Power Filter	294
<i>Djallal Eddine Zabia, Okba Kraa, Hamza Afghoul, Taha Lamdjed Belahcene, Salah Anis Krim, Feriel Abdelmalek</i>	
Blockchain for Medical Security Data: A Review and Perspectives	299
<i>Hakima Rym Rahal, Sihem Slatnia, Okba Kazar, Ezedin Barka</i>	
Smart Weather Station Using Development Boards for Environmental Applications.....	305
<i>Amar Adane, Ichrak Amani Haicheur, Amani Rezzag Lebza</i>	
ECG Signal Denoising Based on Wavelet Transform and Genetic Algorithm	310
<i>Azzouz Abdallah, Bengherbia Billel, Alaoui Nail, Souahlia Abdelkerim</i>	
A Review on Early Forest Fire Detection Using IoT-Enabled WSN.....	316
<i>Amira Sairi, Said Labed, Badreddine Miles, Akram Kout</i>	
Stochastic Otimization Algorithms for Parameter Identification of Three Phase Induction Motors with Experimental Verification.....	322
<i>Rabiaa Houili, Mohamed Yacine Hammoudi, Abir Betka, Abdenacer Titaouine</i>	
RF Performance Analysis of Conventional and Recessed Gate AlGaN/GaN MOSHEMT using β -Ga ₂ O ₃ as Dielectric Layer.....	328
<i>Noual Amina, Messai Zitouni, Touati Zineeddine</i>	
Comparative Study Between Sensorless Vector Control of PMSM Drives based on MRAS, SMO and EKF Observers.....	334
<i>Bachir Bendjedia, Saad Chouireb</i>	
Intelligent system for detecting faults in the industrial area.....	340
<i>Abderrahim Benmohamed, Adil Bouguerra</i>	
Dealing with extremely Unbalanced Data and Detecting Insider Threats with Deep Neural Networks	346
<i>Samiha Besnaci, Mohamed Hafidi, Mahnane Lamia</i>	
Active Disturbance Rejection Control of Unconventional Quadrotor based on Grey Wolf Optimization Algorithm.....	352
<i>Kamel Kadri, Farès Boudjema, Yasser Bouzid, Mohamed Ghazali, Hichem Sahouli</i>	

Toward a New Multirotor Design with Spatial Configuration and Tilted Rotors	359
<i>Mohamed Ghazali, Yasser Bouzid, Mahmoud Belhocine, Saddam Hocine Derrouaoui</i>	
Semantic Role Labeling of Arabic Emotional Text in Tweets	365
<i>Ferial Senator, Hanane Boutouta, Abdelaziz Lakhfif, Chahrazed Mediani</i>	
DC/DC buck Converter Prototype for Educational Nanosatellite Power Sub-System	371
<i>Bentoutou Houari, Boutte Aissa, Limam Lakhdar, Belaidi El Yazid</i>	
Chaos-based Key Generator using Artificial Neural Networks Models	377
<i>Amina Kadir, Mohamed Salah Azzaz, Redouane Kaibou</i>	
A Comprehensive Study on Multimedia DeepFakes	382
<i>Amal Boutadjine, Fouzi Harrag, Khaled Shaalan, Sabrina Karboua</i>	
A New RDID Anti-Collision Technique Based On Time-Hopping Sub Slots Early Estimation	388
<i>Frahtia Abderrahmene, Benssalah Mustapha, Kifouche Abdenour</i>	
A Combined Emission/Economic Dispatch Problem Considering NPPs Power Ramp Constraint	395
<i>Rabah Benabid, Salim Chennai, Adnane Messai, Dallah Kemikem</i>	
One-Dimensional Gaussian Density Function Segmentation Based on Piecewise Linear Approximation.....	401
<i>Nasrallah Tahir, Malika Boudraa, El-Sedik Lamini, Ahmed Amine El Ouchdi</i>	
Adaptive Fractional PI Controller for Speed Control of Asynchronous Motor	407
<i>Besma Nemouchi, Salah Eddine Rezgui, Hocine Benalla, Khalil Nebti</i>	
AMR Navigation Based on Dynamic Control Sampling Space	412
<i>Sara Bouraine, Idriss Hasani, Alla Djoudi, Ahmed Gourine, Boualem Kazed</i>	
An Optimal Coordination of Directional Overcurrent Relays using a Gorilla Troops Optimizer	417
<i>Merabet Oussama, Bouchahdane Mohamed, Belmadani Hamza, Kheldoun Aissa, Eltom Ahmed, Bradai Rafik</i>	
Performance Analysis of Various Rectifier Topologies for 2.45 GHz RF Energy Harvesting Applications.....	422
<i>Djihem Bouchair, Faycal Boukerroum</i>	
An Overview of the Rectenna System to Power Implantable Biomedical Devices.....	428
<i>Mounia Benhabiles, Faycal Boukerroum</i>	
Simulation of a pentagon-shaped wideband miniature antenna for 5G mobile networks	434
<i>Fatima Zahra Moussa, Yamina Belhade, Souheyla Ferouani</i>	
Deep Learning with EfficientNetB1 for detecting brain tumors in MRI images.....	440
<i>Soumia Benkrama, Nour El Houda Hemdani</i>	
Design of Miniaturized Multiple Slots Bi-Band PIFA Antenna for 915 and 2450 MHz ISM Telemetry Using Multilayer Human Body Model.....	446
<i>Amina Abbas, Farid Bouttout, Asma Djellid</i>	
Development and Testing of Low-Cost Multi-Electronic Load Prototype for Nanosatellites	451
<i>Limam Lakhdar, Boutte Aissa, Bentoutou Houari, Belaidi El Yazid</i>	
Upgraded-ABC Algorithm for Antenna Selection in Energy Efficient Massive MIMO System	457
<i>Fz Bouchibane, H Tayakout, N Ziane, F Siahmed, S Hebib</i>	

A New Enhanced Chaotic Key-Based Medical Image Cryptosystem	462
<i>Yousra Sadou, Samira Dib, Morad Grimes</i>	
Comparison between MPPTs for PV systems using P&O and Grey Wolf controllers	468
<i>Feriel Abdelmalek, Hamza Afghoul, Fateh Krim, Djallal Eddine Zabia, Taha Lamdjed Belahcene, Salah Anis Krim</i>	
Vision-Based Indoor Lighting Assessment Approach for Daylight Harvesting	473
<i>Seniguer Abderraouf, Aouache Mustapha, Iratni Abdelhamid, Mekhermeche Haithem</i>	
A Sensitivity Based Methodology for Power Loss and Voltage Deviation in Radial Distribution Network.....	479
<i>Abdallah Chanane, Messaoud Belazzoug</i>	
High Selective Single Mode Plasmonic Filters based on MIM Coupled with Pill Resonator	482
<i>Imam Abderrahmane, Badaoui Hadjira, Abri Mehadj, Hocine Bensalah, Rahmi Bachir</i>	
Image Watermarking Technique Using Convolutional Autoencoder.....	487
<i>Elchaimae Rebahi, Mustapha Hemis, Bachir Boudraa</i>	
A Practical Approach for Energy Management, in the Agro-Food Sector Industry in Algeria.....	493
<i>Omar Kebour, Djamila Kebour</i>	
A Parametric Study of the Thermal Solar Collector Coupled with Vacuum Membrane Distillation.....	499
<i>Sara Irki, Nachida Kasbadji-Merzouk, Salah Hanini, Djamel Ghernaout</i>	
New Characteristic Impedance Expression for Rigorous Study of Isotropic Waveguide.....	505
<i>A. Khodja, M.C.E. Yagoub, R. Touhami</i>	
Sliding Mode Control of a Double Star Asynchronous Machine	511
<i>Benabdallah Sereir Boumediene, Bouhadi Manel, Belabbes Ikhlas</i>	
Features Extraction and Concatenation of Transfer Learning Models for Early Diagnosis of Diabetic Retinopathy	515
<i>Omar Boukadoum, Nadja Benblidia</i>	
MFO Approach based Nonlinear MPC Scheme	520
<i>Messaoudi Abdelkrim, Kara Kamel, AitSahed Oussama, Benrabah Mohamed</i>	
Relay-Based Multiuser Cooperative UAV Networks over Rician Channels	526
<i>Ghania Khraimech, Fatiha Merazka</i>	
Structural, Optical and Electrical Properties of Pure and Ag, Mn co doped ZnO Thin Films for Photovoltaic Applications.....	532
<i>Fouaz Lekoui, Salim Hassani, Driss Dergham, Elyes Garoudja, Walid Filali, Rachid Amrani, Slimane Oussalah</i>	
Anonymous Traffic Detection and Identification	536
<i>Warda Amalou, Merouane Mehdi</i>	
Multi-Input BiLSTM Deep Learning Model for Social Bot Detection	541
<i>Aya Messai, Zineb Ferhat Hamida, Ahlem Drif, Silvia Giordano</i>	
Exploring the Cross-Section Dimension and Related Characteristics in the Design of New Rectangular SI-GAA Junction-less.....	547
<i>Faiza Merad, Ahmed-Ali Kanoun, Ahlam Guen-Bouazza</i>	

Semantic Segmentation of CT Images for the Detection of Coronavirus Lesions: The case of Algeria.....	551
<i>Kabli Fatima, Mekibes Abdelkader Walid, Belgacem Ouahiba, Azza Mohammed</i>	
Application of New Artificial Magnetic Conductor with a Planar Antenna	557
<i>Belmessaoud Djaouida, Boukerma Sabrina</i>	
An Adaptive ABC Variant for Numerical Optimization	560
<i>Ait Sahed Oussama, Kara Kamel, Benrabah Mohamed, Fas Mohamed Lamine</i>	
Double Talk Detectors with Non-Stationary and Noisy Signals.....	566
<i>Imen Gueraini, Ahmed Benallal, Ayoub Tedjani</i>	

Author Index