

2020 International Conference on Electrical Engineering (ICEE 2020)

**Istanbul, Turkey
25-27 September 2020**



**IEEE Catalog Number: CFP2096B-POD
ISBN: 978-1-7281-8293-3**

**Copyright © 2020 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:	CFP2096B-POD
ISBN (Print-On-Demand):	978-1-7281-8293-3
ISBN (Online):	978-1-7281-8292-6
ISSN:	2150-3915

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

Table of contents

Preface

Organizing Committee

➤ Computer Engineering and Applications		
ID 2	An Efficient Partial Sort Algorithm for Real Time Applications	1
	David Dominique ; Faith Dominique	
ID 26	Traffic Sign Detection And Recognition Using Tensor Flow's Object Detection API With A New Benchmark Dataset	6
	Irfan Kilic ; Galip Aydin	
ID 43	Content Based Phishing Detection with Machine Learning	11
	Uğur Ozker ; Ozgur Koray Sahingoz	
ID 44	An Evolutionary Approach to Multiple Traveling Salesman Problem for Efficient Distribution of Pharmaceutical Products	17
	Emre Kocyigit ; Ozgur Koray Sahingoz ; Banu Diri	
ID 45	Genetic Algorithm Based Optimized Waste Collection in Smart Cities	24
	Mehmet Ozmen ; Hasan Sahin ; Ozgur Koray Sahingoz	
ID 47	Intelligent Ambulance Management System in Smart Cities	29
	Tugay Akca ; Ozgur Koray Sahingoz ; Emre Kocyigit ; Mucahid Tozal	
ID 67	Decision Tree based System on Chip for Forest Fires Prediction	36
	Faroudja Abid ; Nouma Izeboudjen	
ID 89	Heart Disease prediction using MLP and LSTM models	40
	Mohamed Djérioui ; Youcef Brik ; Mohamed Ladjal ; Bilal Attallah	
ID 93	Nonlinear Dynamical Systems Modelling and Identification Using Type-2 Fuzzy Logic: Metaheuristic Algorithms Based Approach	45
	Mohammed Assam OUALI ; Mohamed LADJAL	
ID 97	Optimization of SVM parameters with hybrid PCA-PSO methods for water quality monitoring	51
	Mohamed LADJAL ; Mohammed Assam OUALI ; Mohamed DJERIOUI	
➤ Telecommunications and Signal Processing		
ID 9	A New IoT Application for Dynamic WiFi based Wireless Sensor Network	57
	Fatih Ertam ; İlhan Fırat Kilincer ; Orhan Yaman ; Abdulkadir Sengur	
ID 10	Design of a Dual Polarized mmWave Horn Antenna Using Decoupled Microstrip Line Feeder	61
	Mustafa TEKBAŞ ; Abdurrahim TOKTAŞ ; Gonca ÇAKIR	
ID 15	Fast I_{ds}-V_{gs} Technique Implementation for NBTI Characterization	65
	Messaoud Dhia Elhak ; Abdelkader Zitouni ; Boualem Djezzar ; Abdelmadjid Benabdelmoumene	

ID 35	IoT technologies combining glucose control with physiological signal: comparative study Khadidja FELLAH ARBI ; Sofiane SOULIMANE ; Fayçal SAFFIH	71
ID 39	Accurate Depth-from-Focus Reconstruction using Local and Nonlocal Smoothness Priors Zhiqiang Ma ; Dongjoon Kim ; Yeong-Gil Shin	77
ID 50	Optimized cell structures for memristor-based content addressable memories Sadegh Rouhi ; Sattar Mirzakuchaki ; Mohsen Zeyrani	82
ID 51	Functionalizing of the scaling parameter to describe subthreshold leakage phenomenon in titanium dioxide memristor Sadegh Rouhi ; Sattar Mirzakuchaki	88
ID 52	Novel LabVIEW Implementation of FREAK Based Image Mosaicing and Object Tracking Algorithms Abdelhai LATI ; Haitham MEKHERMECHE ; Belkheir BENHELLAL	92
ID 56	A Cross-Layer Time Slotted Cognitive MAC Protocol Abdullah Masrub	98
ID 57	Energy Efficiency MAC Protocols for Wireless Sensor Networks: Slotted Protocols Approach Abdullah Masrub	104
ID 63	SIM Boxing Problem: ALMADAR ALJADID Case Study Abdullah Masrub ; Mohamed Alahemar	110
ID 73	PMU Reporting Rate Optimization for Data Transfer Enhancement in Wide Area Monitoring Systems Afaf Saoud ; Abdelmadjid Reciou	115
ID 82	Design and Performance Analysis of 90 wavelengths DWDM under MIMO-FSO channel Haroun Errachid Adardour ; Samir Kameche ; Mourad Hadjila ; Sidi Mohammed Hadj Irid ; Mohammed Hicham Hachemi ; Zakarya Kourdi	121
ID 83	Digital Energy Sensing Algorithm for Primary Signal Cognitive Radio Networks Mohammed Hicham Hachemi ; Sidi Mohammed Hadj Irid ; Mourad Hadjila ; Haroun Errachid Adardour	126
ID 88	Design of Microstrip Band Pass Filter on Right Hand/Left Hand Substrate Asma DJELLID ; Farid BOUTTOUT	131
ID 91	On Reducing the Encoding Complexity of Random Linear Network Coding Mohamed Amine Brahim ; Fatiha Merazka	136
ID 98	Kernel Function and Dimensionality Reduction Effects on Speaker Verification System Salah KHENNOUF; Halim SAYOUD	141
ID 103	Modeling of photonic band gap in 1D magnetophotonic crystals made by SiO₂/ZrO₂ or SiO₂/TiO₂ doped with magnetic nanoparticles Mounir Bouras ; Nassim Dermeche ; Ahmed Kahlouche ; Abdesselam HOCINI	145
➤ Power Engineering		
ID 3	HCI Degradation of LOCOS-based LDMOS Transistor fabricated by 1µm CMOS Process Ali Houadef ; Boualem Djezzar	149

ID 7	A Novel Multi-Verse Optimization for Optimal Configuration of Wind/Photovoltaic/Storage Grid- Connected Microgrid	155
	Wendong Tang ; Caixue Chen ; Cheng Deng ; Tuo Zheng ; Da Zhang ; Xuanhui Peng	
ID 8	Model predictive control of three-level bidirectional DC-DC converter based on super capacitor energy storage system	160
	Da Zhang ; Caixue Chen ; Yanggang Ou ; Tuo Zheng ; Wendong Tang	
ID 13	Comparative evaluation of PVDF based piezoelectric nanogenerator (PNG) under various resistive loads for energy harvesting applications	165
	Levent PARALI ; Muhterem KOÇ ; Ali SARI	
ID 16	Wave Energy Converter Technology and an Analysis of its Potential in Turkey	170
	Nurbanu Catalbas ; Mehmet Cem Catalbas	
ID 28	Wind Power Ramp Events Prediction Considering Time-frequency Characteristics	176
	Lijuan Li ; Zeyu Li ; Yiwei Zeng ; Yongdong Chen ; Yuan Li	
ID 32	Frequency-Adaptive Neural Network Based Virtual Flux Estimation for Sensorless Control of PWM Converters Under Unbalanced Conditions	182
	Adel Rahoui ; Koussaila Mesbah ; Boussad Boukais ; Tahar Otmane-Cherif	
ID 34	Adaptive Settings of Directional Overcurrent Relay	188
	Piyusha Ramesh Lidhade ; Anil. P. Vaidya	
ID 37	Evaluation of the Electromagnetic Forces in the Shunt Reactor by using Finite Element Analysis	192
	Kamran Dawood ; Guven Komurgoz ; Fatih Isik	
ID 41	Design of Speed Sensorless Control of Induction Motor Based on Dual-Nonlinear Control Technique	198
	Abdelkarim AMMAR ; Tarek Ameid ; Younes AZZOUG ; Aissa KHELDOUN ; Brahim METIDJI	
ID 46	Improve monitoring system of interconnected oscillation power system based on PMU technology	204
	Mohammed TSEBIA ; Hamid BENTARZI	
ID 48	Study of the energy scavenging by piezoelectric transducers on the knee during a gait	210
	Asma BOUZID ; Sofiane SOULIMANE ; Mohammed el Amine BRIXI-NIGASSA	
ID 68	An overview of renewable energy and challenges of integrating renewable energy in a smart grid system in Turkey	214
	Kamran Dawood	
ID 69	Development of Instrumentation Adapted by C.M.M.S. Dedicated to Poly-articulated Mechanisms (Computer-assisted Maintenance Management System)	220
	Abdelkader BENMISRA ; Abdelhalim BRAHIMI; Hadjira BELAIDI; Moufida IRKI	
ID 70	Hydraulic Model of a Lifting and Handling Manipulator	225
	Abdelkader BENMISRA; Hadjira BELAIDI	
ID 72	Neural Networks Based Frequency-Locked Loop for Grid Synchronization Under Unbalanced and Distorted Conditions	231
	Adel Rahoui ; Boussad Boukais ; Koussaila Mesbah ; Tahar Otmane-Cherif	

ID 74	An Investigation of Different PMU phasor estimation techniques Based on DFT Using MATLAB	236
	Meriem MAHBOUBI ; Hamid BENTARZI ; Abderrahmane OUADI	
ID 77	Comparative Study between Two Diagnostic Techniques Dedicated to the Mechanical Fault Detection in Induction Motors	242
	Remus Pusca ; Raphaël Romary ; Noureddine Bessous ; Salim Sbaa	
ID 78	Design and Simulation of Low Distortion Current Mode Control Power Factor Correction Converter	251
	Mouloud Bouaraki ; Fatma Zohra Dekhandji ; Abdelmadjid Reciou	
ID 81	Modeling and Analysis of Heavy-Duty Gas Turbine Based on Frequency Dependent Model	257
	D. Talah ; H. Bentarzi	
ID 87	System Reliability and Cost Optimization Under Various Scenarios Using NSGA-III	261
	Billal Nazim CHEBOUBA ; Mohamed Arezki MELLAL ; Smail ADJERID ; Djamel BENAZZOUZ	
ID 92	Improved Virtual Flux-Direct Power Control for PWM Rectifier Based on Second-Order Generalized Integrators	267
	Sarah DJABALI ; Melissa AIT HAMOU ALI ; Abdelkarim AMMAR	
ID 96	Genetic Algorithm for Improving Voltage Stability by Optimal Integration of Wind Source	273
	Raimon Bawazir ; Numan Çetin ; Mustafa Mosbah ; Karim Sebaa	
ID 99	Improvement of the Voltage Profile of the Distribution Network by Optimal Integration of PV based Decentralised Source	279
	Raimon Bawazir ; Numan Çetin ; Mustafa Mosbah ; Salem Arif	
ID 100	Fault location algorithms for high-voltage transmission lines	283
	Asma Talbi ; Abdelhafid Bayadi	
101	Variable Mode Hybrid Control Based on Half-bridge LLC Resonant Converter for Stabilize The Voltage	289
	Lingzhi Yi ; Huan Liao ; Peng Jiang ; Wang Li ; Junyong Sun	
ID 105	Power Transformer Differential Relay Reliability Assessment Using False Trip Root Cause Analysis	295
	Abdelkader Zitouni	

➤ **Control Engineering and Applications**

ID 5	Using Of Neural Network Controller And Fuzzy PID Control To Improve Electric Vehicle Stability Based On A14-DOF Model	300
	Abdussalam Ali Ahmed ; A.F. Saleh Alshandoli	
ID 6	On replacing a PID controller with Neural Networkcontroller for Segway Abdussalam Ali Ahmed ; A.F. Saleh Alshandoli	306
ID 11	FPGA based HIL simulation for direct current control of active power filter	311
	Habibe Bey ; Fateh Krim ; Billel Talbi ; Abdeslem Sahli	

ID 14	ANFIS Controller Design Using PSO Algorithm for MPPT of Solar PV System Powered Brushless DC Motor Based Wire Feeder Unit	315
	Noureddine Hamouda ; Badreddine Babes ; Antar Beddar	
ID 17	Evaluation of Safety Instrumented System in a petrochemical plant using HAZOP-LOPA-Fault Tree Methodology	321
	<i>Case Study: Naphta Stabilizer-A Reflux Drum (LPG separation) in RA1K</i>	
	Youcef ZENNIR ; Seif El Islam Bouasla ; El-arkam Mechhoud	
ID 24	Catch me if you can: A pursuit-evasion game with intelligent agents in the Unity 3D game environment	328
	İhsan Şahin ; Tufan Kumbasar	
ID 30	Coverage Path Planning Of Autonomous Marsupial Systems For Supporting Fruit Counting Process	334
	Adel MOKRANE ; Amal CHOUKCHOU-BRAHAM ; Brahim CHERKI	
ID 31	Model-free and Adaptive Control of a DC Motor: AComparative Study	340
	Sehili Laid ; Boubeker Boukhezzar	
ID 36	Uncertain Bicausal Bond Graph and Adaptive Fuzzy PID Controller for Fault-Tolerant Control	346
	Yacine Lounici ; Youcef Touati ; Smail Adjerid ; Belkacem Ould Bouamama ; Djamel Benazzouz	
ID 42	PI-MPC Switching Control for DC-DC Boost Converter using an Adaptive Sliding Mode Observer	352
	Billel Talbi ; Fateh Krim ; Abdelbaset Laib ; Abdeslem Sahli; Abdelbasset Krama	
ID 49	ADALINE Harmonics Extraction Algorithm of Three-Level Shunt Active Power Filter based on Predictive current control	357
	Khenfar Noureddine ; Semmah Abedlhafid	
ID 62	Performance Comparison of MFO and PSO for Optimal Tuning the fractional order fuzzy PID Controller for A DC-DC Boost Converter	364
	Ahmed BENNAOUI ; Slami SAADI ; Aissa AMEUR	
ID 64	A Comparative Study between the adaptive wavelet transform and DWT Methods Applied to a Outer Raceway Fault Detection in Induction Motors based on the Frequencies Analysis	369
	Wafa Bentrah ; Noureddine Bessous ; Salim Sbaa ; Remus Pusca ; Raphaël Romary	
ID 65	Mechanism optimization of Biomimetic Microrobot by Finite Element Modeling	376
	Ibrahim Kromba ; Fayçal Saffih ; Sofiane Soulimate	
ID 71	UAV Path Planning Based on Dynamic Programming Algorithm On Photogrammetric DEMs	382
	Adel MOKRANE ; Amal CHOUKCHOU BRAHAM ; Brahim CHERKI	
ID 80	AUTOMATIC VOLTAGE REGULATOR DESIGN USING PARTICLE SWARM OPTIMIZATION TECHNIQUE	387
	Fazia Ahcene ; Hamid Bentarzi	

ID 85	Risk Asseessment For LPG Storage Tanks Area In Skikda Refinery-ALGERIA Using D-Higraph And Hazop Methods & Simulation Of Dangerous Scenarios Using ALOHA Software	393
	Riad BENDIB ; El-arkam ; MECHHOUD ; Ilhem BENKHARAT ; Hayett AZZOUZ	
ID 86	A comparative study dedicated to rotor failure detection in induction motors using MCSA, DWT, and EMD techniques	398
	Salim Sbaa ; Noureddine Bessous ; Remus Pusca ; Raphael Romary	
ID 104	States observer design for slip mode control of three-phase induction motor	409
	Ahmed Bengrine ; Habib Hamdaoui ; Abdkadeur Mechernene	
	Author Index	414