

2019 Novel Intelligent and Leading Emerging Sciences Conference (NILES 2019)

**Giza, Egypt
28 – 30 October 2019**



**IEEE Catalog Number: CFP19V11-POD
ISBN: 978-1-7281-3174-0**

**Copyright © 2019 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:	CFP19V11-POD
ISBN (Print-On-Demand):	978-1-7281-3174-0
ISBN (Online):	978-1-7281-3173-3

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

CAD TOOL FOR TWO-DIGIT TERNARY FUNCTIONS DESIGN	1
<i>Nancy S. Soliman ; Mohammed E. Fouda ; Lobna A. Said ; Abdullah G. Alharbi ; Ahmed H. Madian ; Ahmed G. Radwan</i>	
ANALYSIS OF BEAM WANDER AND SCINTILLATION IN GROUND-TO-SATELLITE FSO SYSTEM WITH DPSK	5
<i>Nancy Alshaer ; Tawfik Ismail ; Hussein Selem ; Mohamed E. Nasr</i>	
SMART CLOUD PLATFORM FOR DATA MANAGEMENT IN THE AGE OF THE INTERNET OF VEHICLES	9
<i>Nader Alsharkawy ; Eyad Nawar ; Bassem Mokhtar</i>	
ANALYSIS OF MUSCULOSKELETAL DISORDERS IN PERSONAL CARE INDUSTRIES IN EGYPT	13
<i>Waleed Shawky ; Shady Seif-Elnasr ; Irene Samy</i>	
BLOWFISH-SECURED AUDIO STEGANOGRAPHY	17
<i>Farah Hemeida ; Wassim Alexan ; Salma Mamdouh</i>	
STUDY OF OPTICAL POWER VARIATIONS IN MULTI-LAYER HUMAN SKIN MODEL FOR MONITORING THE LIGHT DOSE	21
<i>Omnia Hamdy ; Tawfik Ismail</i>	
THE ECONOMIC POTENTIAL OF USING COTTON STALKS TO PRODUCE ALTERNATIVE WOODEN MATERIALS	25
<i>Hani Chbib ; Irene Samy ; Mona Azouz</i>	
COMPUTATIONAL INVESTIGATION OF DUCTED DUAL ROTOR WIND TURBINE	29
<i>Amr Mohamed ; Ahmed El-Baz ; Nabil Abd-Elaziz ; Ashraf Mostafa</i>	
AN ANFIS-BASED HUMAN ACTIVITY RECOGNITION USING IMU SENSOR FUSION	34
<i>Oladayo S. Ajani ; Haitham El-Hussieny</i>	
OTA-C IMPLEMENTATION OF FRACTIONAL-ORDER LEAD/LAG COMPENSATORS	38
<i>S. Kapoulea ; G. Tsirimokou ; C. Psychalinos ; A. S. Elwakil</i>	
FULLY ELECTRONICALLY TUNABLE INVERSE FRACTIONAL-ORDER FILTER DESIGNS	42
<i>P. Bertias ; G. Tsirimokou ; C. Psychalinos ; A. S. Elwakil</i>	
LOGISTICS 4.0: DEFINITION AND HISTORICAL BACKGROUND	46
<i>Mohamed Amr ; Mohamed Ezzat ; Sally Kassem</i>	
CONICAL AND CYLINDRICAL METALLIC NANOPARTICLES DESIGN FOR PLASMONIC PHOTOVOLTAICS ENHANCEMENT	50
<i>Heba M. Yassin ; Sara E. Mahran ; Yasser M. El-Batawy</i>	
A CMOS RF TRANSMITTER FOR LTE APPLICATIONS: IMPLEMENTATION AND SIMULATION	55
<i>Ebtsam Arafa ; Abdelhalim Zekry ; Heba Shawkey ; Mohamed Ali</i>	
ENHANCED ALOHA-BASED ANTI-COLLISION ALGORITHM FOR EFFICIENT RFID TAGS IDENTIFICATION	59
<i>E. G. Zahran ; A. A. Arafa ; H. I. Saleh ; M. I. Dessouky</i>	
ANALYSIS OF THE DEFORMATION IN RED BLOOD CELLS BASED ON THE TRANSMEMBRANE VOLTAGE POTENTIAL AND THE PORE DENSITY	63
<i>Sameh Sherif ; Yehya H. Ghallab ; Yehea Ismail</i>	
A UNIVERSAL FRACTIONAL-ORDER MEMELEMENT EMULATION CIRCUIT	67
<i>Nariman A. Khalil ; Mohammed E. Fouda ; Lobna A. Said ; Ahmed G. Radwan ; Ahmed M. Soliman</i>	
DESIGN AND NUMERICAL ANALYSIS OF AN OPEN-CIRCUIT LOW-SPEED WIND TUNNEL	71
<i>Ahmed Seddik ; Marawan Ahmed ; Mohamed Ayman ; Amr Guaily</i>	
TUNABLE FRACTIONAL-ORDER BAND-PASS FILTER OF ORDER 2α	76
<i>Ola I. Ahmed ; Heba M. Yassin ; Lobna A. Said ; Costas Psychalinos ; Ahmed G. Radwan</i>	
A UNIVERSAL FLOATING FRACTIONAL-ORDER ELEMENTS/MEMELEMENTS EMULATOR	80
<i>Nariman A. Khalil ; Lobna A. Said ; Ahmed G. Radwan ; Ahmed M. Soliman</i>	
FAULT-TOLERANT HIGH-RATE ETHERNET-BASED NETWORKED CONTROL SYSTEM	84
<i>Abdallah Gabara ; Ramez M. Daoud ; Hassanein H. Amer ; Dina G. Mahmoud ; Hany Elsayed</i>	
AUTOMATIC MRI BREAST TUMOR DETECTION USING DISCRETE WAVELET TRANSFORM AND SUPPORT VECTOR MACHINES	88
<i>Amira Mofreh Ibraheem ; Kamel Hussein Rahouma ; Hesham F. A. Hamed</i>	

THE ENHANCED PROBABILITY HYPOTHESIS DENSITY-BASED FILTER FOR MULTITARGET TRACKING AND COUNTING	92
<i>Nourhan T. A. Abdel Naiem ; Hossam M. A. Fahmy ; Anar Abdel Hady</i>	
EXPERIMENTAL STUDY OF UPPER LIMB EXOSKELETON CONTROL BASED ON IMUS SENSORY SYSTEM	98
<i>Mohamed G. B. Atia ; Khalil Ibrahim ; Omar Salah</i>	
TYPE-2 FUZZY TECHNIQUE FOR LTE HANDOVER OPTIMIZATION BASED ON COOPERATED MULTI-POINT	102
<i>M. Saeed Darweesh</i>	
PASSIVE FLOW SEPARATION CONTROL IN LINEAR COMPRESSOR CASCADE	106
<i>Mohamed El-Sheikh ; Hesham El-Batsh ; Attia Ali M. A. ; El-Sayed Zanoun</i>	
THE EFFECT OF THE GEOMETRIC AND THERMAL PARAMETERS ON THE THERMAL STRESSES DURING THE PASSIVE COOLING OF PRINTED CIRCUIT BOARDS	112
<i>Mohammed A. Boraey</i>	
DEVELOPMENT OF A NEW LONG STROKE NANOPositionING SYSTEM WITH MODULAR PANTOGRAPH COMPLIANT MECHANISM	116
<i>Yasser Sayed Shama ; Mahmoud Magdy ; Nader A. Mansour ; Ahmed El-Betar ; Ahmed M. El-Assal</i>	
SMART FPGA-BASED SYSTEM FOR ENHANCING EDUCATIONAL PROGRAMS	122
<i>Michael Hanna ; Habiba T. Abdelhamid ; Kirolos N. Sorour ; I. Elaraby ; Salma Mahfouz ; Yasmeeen S. Okasha ; Dina G. Mahmoud ; Gehad I. Alkady ; Ramez M. Daoud ; Hassanein H. Amer ; Hany Elsayed ; Ihab Adly</i>	
PRIVATE COMMUNICATIONS METHOD BASED ON CHUA'S CHAOTIC SYSTEM	126
<i>Mostafa Khaled Elboushi ; Mohamed Hesham Elgharably ; M. I. Wafa</i>	
BANANA RIPENING AND CORRESPONDING VARIATIONS IN BIO-IMPEDANCE AND GLUCOSE LEVELS	130
<i>Ahmed Abobakr ; Menna Mohsen ; Lobna A. Said ; Ahmed H. Madian ; Ahmed S. Elwakil ; Ahmed G. Radwan</i>	
A NOVEL CHAOTIC IMAGE STEGANOGRAPHY TECHNIQUE	134
<i>Abdelrahman M. Ghidan ; Samar M. Ismail</i>	
ANALYSIS OF COMPRESSIVE STRENGTH OF GLASS FIBER REINFORCED CONCRETE USING DESIGN OF EXPERIMENTS	138
<i>Mohamed A. Abdelal ; Ayman R. Mohammed ; Mohamed S. Afifi ; Sherif S. Abdelsalam</i>	
DESIGN OF FOPID CONTROLLER FOR A DC MOTOR USING APPROXIMATION TECHNIQUES	142
<i>Ahmed T. Mohamed ; Mahmoud F. Mahmoud ; Lobna A. Said ; Ahmed G. Radwan</i>	
MULTI-LEVEL MONTE CARLO SIMULATION ON PARTICLE FILTERS AND EXTENDED KALMAN FILTERS	146
<i>Shady. A. Nagy ; Mohamed A. El-Beltagy</i>	
HIERARCHICAL PROACTIVE CACHING FOR VEHICULAR AD HOC NETWORKS	150
<i>Mohamed E. Gad ; Sameh Hosny ; Bassem Mokhtar ; Amr A. El-Sherif</i>	
IOT SYSTEMS INTERNAL MAPPING USING RTT WITH THE INTEGRATION OF BLOCKCHAIN TECHNOLOGY	154
<i>Noha Magdy ; Mohammad Barakat ; Bassem Mokhtar</i>	
FLOATING-POINT FIR-BASED CONVOLUTION SUITABLE FOR DISCRETE WAVELET TRANSFORM IMPLEMENTATION ON FPGA	158
<i>Sarah H. Farghaly ; Samar M. Ismail</i>	
MULTIFUNCTION FRACTIONAL INVERSE FILTER BASED ON OTRA	162
<i>Nariman A. Khali ; Lobna A. Said ; Ahmed G. Radwan ; Ahmed M. Soliman</i>	
FLEXIBLE AND ADAPTIVE TESTBED FOR 5G EXPERIMENTATIONS	166
<i>Abdullah I. Salama ; Mahmoud M. Elmesalawy</i>	
EXPERIMENTAL OAI-BASED TESTBED FOR EVALUATING THE IMPACT OF DIFFERENT FUNCTIONAL SPLITS ON C-RAN PERFORMANCE	170
<i>Abdullah I. Salama ; Mahmoud M. Elmesalawy</i>	
HYDROTHERMAL PERFORMANCE OF PLATE-FIN HEAT SINKS FOR THE COOLING OF PORTABLE AND HAND-HELD ELECTRONIC DEVICES	174
<i>Mohammed A. Boraey</i>	
COLD FLOW NUMERICAL SIMULATION INSIDE LOCAL POTTERY FURNACE FOR DIFFERENT DESIGNS FOR THE AIR INLET	178
<i>Taher Moustafa ; Amir Azmy ; Alia El-Sakka ; Tamer Kasem ; Amr Guaily</i>	
NEURO-FUZZY SYSTEM FOR 3-DOF PARALLEL ROBOT MANIPULATOR	182
<i>Ahmad Taher Azar ; Ahmed Magd Aly ; Abdelrahman Sayed Sayed ; Mahmoud Elbakry Radwan ; Hossam Hassan Ammar</i>	

A DIGITAL HARDWARE IMPLEMENTATION FOR A NEW MIXED-ORDER NONLINEAR 3-D CHAOTIC SYSTEM.....	187
<i>Abdulaziz H. Elsafty ; Mohammed F. Tolba ; Lobna A. Said ; Ahmed H. Madian ; Ahmed G. Radwan</i>	
MODELLING OF CONTINUUM ROBOTIC ARM USING ARTIFICIAL NEURAL NETWORK (ANN).....	191
<i>Albert Ashraf Alphonse ; Ahmed Ashraf Abbas ; Amr Medhat Fathy ; Nada Saif Elsayed ; Hossam Hassan Ammar ; Mahmoud Mohamed Elsamanty</i>	
TWO-WHEELED SELF BALANCING ROBOT MODELING AND CONTROL USING ARTIFICIAL NEURAL NETWORKS (ANN)	196
<i>Hagar Marzouk Omar ; Amro Mohamed Elalawy ; Hossam Hassan Ammar</i>	
A NOVEL DOG-FMF PROFILE WITH SIX LP MODES AND LOW DIFFERENTIAL MODE DELAY	201
<i>Hussein Seleem ; Hani Adam ; Mohammed Nasr</i>	
IMPACT OF OUSTALOUP AND MATSUDA APPROXIMATIONS ON FRACTIONAL PID CONTROLLER OF PV PANEL.....	205
<i>Ahmed Ragab ; A. G. Radwan ; Ahmed Soltan</i>	
INTERFACIAL MODIFICATION OF PEROVSKITE SOLAR CELL USING ZNO ELECTRON INJECTION LAYER WITH PDMS AS ANTIREFLECTIVE COATING.	209
<i>Mohamed K. Othman ; Hazem A. Taha ; Mohamed K. Rawash ; Adel S. El-Zimety ; Shorouk Alalem ; Maryam El-Fdaly ; Yasser M. El-Batawy</i>	
BINARY CLASSIFICATION OF VISUAL SCENES USING CONVOLUTIONAL NEURAL NETWORK.....	214
<i>Aya M. Shaaban ; Walid Al-Atabany ; Nancy M. Salem</i>	
ANALYSIS AND DESIGN OF FRACTIONAL-ORDER LOW-PASS FILTER WITH THREE ELEMENTS OF INDEPENDENT ORDERS	218
<i>Ahmed M. Hassanein ; Ahmed Soltan ; Lobna A. Said ; Ahmed H. Madian ; Ahmed G. Radwan</i>	
A HYBRID BAT ALGORITHM TO SOLVE THE CAPACITATED VEHICLE ROUTING PROBLEM.....	222
<i>Sally Kassem ; Lamiaa Korayem ; Motaz Khorshid ; Assem Tharwat</i>	
ALL-DYNAMIC SYNCHRONIZATION OF ROTATING FRACTIONAL-ORDER CHAOTIC SYSTEMS	226
<i>Wafaa S. Sayed ; Ahmed G. Radwan ; Hossam A. H. Fahmy ; Abdellatif Elsedek</i>	
TCAIOSC: APPLICATION CODE CONVERSION.....	230
<i>Rameez B. Hamza ; David I. Salama ; Martina I. Kamel ; Ahmed H. Yousef</i>	
LVLNET: LIGHTWEIGHT LEFT VENTRICLE LOCALIZER USING ENCODER-DECODER NEURAL NETWORK	235
<i>Dina Abdelraouf ; Mina Essam ; Mustafa Elattar</i>	
EXPERIMENTAL ANALYSIS OF THE THERMOELECTRIC COOLER PERFORMANCE USING ARTIFICIAL NEURAL NETWORK	239
<i>M. Sh. Nassar ; A. A. Hegazi ; M. G. Mousa ; G. I. Sultan</i>	
SMART GESTURE-BASED CONTROL IN HUMAN COMPUTER INTERACTION APPLICATIONS FOR SPECIAL-NEED PEOPLE.....	244
<i>Mohamed A. Rady ; Sherin M. Youssef ; Salema F. Fayed</i>	
FUZZY-SUPERVISED PI FOR FLOW-CONTROL PROCESS, DESIGN AND EXPERIMENTAL VALIDATION	249
<i>Raafat Shalaby ; Mohamed Ibrahim ; Tarek Khalifa</i>	
Author Index	