

2016 Conference of Basic Sciences and Engineering Studies (SGCAC 2016)

**Khartoum, Sudan
20-23 February 2016**



**IEEE Catalog Number: CFP16E59-POD
ISBN: 978-1-5090-1813-0**

**Copyright © 2016 by the Institute of Electrical and Electronic 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 publication is a representation of what appears in the IEEE Digital Libraries. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP16E59-POD
ISBN (Print-On-Demand):	978-1-5090-1813-0
ISBN (Online):	978-1-5090-1812-3

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

Title Page	I
Conference Committees	iii
Random Multiple Layouts, Keylogger Prevention Technique Tasabeeh O. M. Ali, Omer S. A. Awadelseed, Abeer E. W. Eldewahi	1
090_SGCAC_Hamid_Makkawi.pdf Performance Evaluation of 1X2 Patch Antenna Array Based on Power Divider Characteristiccs <i>Hamid Mubarak Mustafa Makkawi</i>	6
Design and Implementation of Discrete Cosine Transform Algorithm on FPGA Device Elmubarak Imam, Mohamed Elhafiz Mohamed Ahmed, Ghassan Abdalla	13
A Vision-Based Teleoperation Method for a Robotic Arm with 4 Degrees of Freedom <i>Mohamed O. Alamin, EssamEldin M. Khadir and Sharief F. Babiker</i>	19
Comparative Study on the Speed of DC Motor using PID and FLC Walaa Gubara Mohamed Elnaim & Sharief F Babiker	24
A Practical Power System Stabilizer Tuning for Garri Power Station Abdalla Elnor and Mohamed Elimam	30
Modeling of Human Hand Fingers States Using Electromyography and Logistic Regression Eyas Awadelkarim Hamid Ali and Ahmed Yousif Shamad Mohamed	38
A Framework for Modelling Mobile Radio Access Networks for Intelligent Fault Management Marwan Awad and Hassan Hamdoun	43
E-readiness Assessment for E-government in Sudan Razaz Elamin and Hisham Abushama	50
An Efficient Implementation of a Fully Combinational Pipelined S-Box on FPGA Mayada E. Mohamed and Sharief F. Babiker	57
The Establishment of Electricity Market Structure in East African Countries Ashraf M. A Khadam, Kamal Ramadan and El Amin Hamouda	64
Photon Upconversion Materials for Photovoltaic Efficiency Enhancement:Energy Gap Optimization Samah Mohamed Hashim and Sharief F Babiker	70
Self healing in Long Term Evolution (LTE) (Development of a cell outage compensation algorithm) Ehsan Hussain Bashier Bramah and Hamid.A.Ali	75
Development and Characterization of Parabolic Trough for Generating 50MW Concentrating Solar Power Plant Ahmed Mohamed and Ahmed Yahiya	80
Arabic Text Stemming: Comparative Analysis. Rasha Mamoun and Mahmoud Ahmed	88
State estimation on correlated noise and unit time-delay systems Khalid Abd El Mageed Hag Elamin	94
A NOVEL NEUROSCIENCE- INSPIRED ARCHITECTURE FOR COMPUTER VISION APPLICATIONS Marwa Yousif Hassan, Othman O. Khalifa, Azhar Bin Abu Talib, Rashidah F. Olanrewaju and Aisha Hassan Abdalla	101
Bond Graph Models for Human Behavior Abdelrhman Mahamadi and Shivakumar Sastry	110
Controlling the CNC Machine using Microcontroller to Manufacture PCB Mohammed Abdalla.A. Ali, Ahmed Mohamed.A. ELShaikh and Sharief F. Babiker	116

5G Transceiver Filters Mohammed Abdalla Abdelrahim Ali	121
Implementation of Matched Filters Using Microcontrollers Moutaman Mirghani	128
196_SGCAC_Ahmed_Ramadan.pdf Computer Aided System for Seismic Surveying Process Using UAVs Ahmed O. G. Ramadan and Sami El Ferik	133
The Impact of Increase Infiltration of Converter Control-Based Generators on Power System Oscillation Modes Ammar Mishal Abdelrasool and M.A. Abido	138
Performance Evaluation of TCP Congestion Control Mechanisms Using NS-2 Nosiba Ibrahim Alfadil Altahir & Hamid Abbas Ali	146
Design and Implementation of Low-Cost SMS Based Monitoring System of Distribution Transformers Mohamed Ahmed Eltayeb Ahmed Elmustafa Hayati and Sherief F. Babiker	152
Internet Traffic Classification using Machine Learning Approach: Datasets Validation Issues Hamza Awad Hamza Ibrahim, Omer Radhi Aqeel AL Zuobi, Marwan A.Al-Namari, Gaafer MohamedAli and Ali Ahmed Alfaki Abdalla	158
Fast Failure Detection and Recovery Mechanism for Dynamic Networks Using Software-Defined Networking Rufaida Ahmed, Ethar Alfaki and Mustafa Nawari	167
Software Defined Radio on FPGA Mai Abdelmoniem Ali Osman, Mayada Yousif Mustafa and Gassan Mohamed Taha	171
Design of RST Controllers Based on Intelligent Optimization Algorithms Aman Jacknoon, Mohamed Hassan and Sami El Ferik	177
Bayesian Optimization for Molecular Communication Channel Capacity Lubna Elsaid and Abdelrhman Mahamadi	183
Design and Development of a Low Cost Semi-Automated Poultry Vaccination Machine A.F. Kheiralla, Hussain Yousif, Hassan Galal Hassan , Hafiza Abdelmoniem Khiery and Marwa Ghanim	187
Design and Development of On-the-Go Soil pH Mapping System for Precision Agriculture A .F. Kheiralla, Waddah Tilal El-Fatih, Muhammed Khidir Abdellatief and Zeinab Mohammed El-Talib	192
Comparative Study of Wireless LAN using OPNET and NS-2 Islam Abdelmuti Suliman and Ghassan Mohammed Taha Abdalla	196
Multi-owner satellite operations:concept, operations scheduling and recommendations Rayan Imam and Yang Gao	201
Augmentation of Vertical Accuracy of Digital Elevation Models Using Gaussian Linear Convolution Filter Ahmed Abdalla and Anwar-Elsadat Elmahal	206
Quran question and answer corpus for data mining with WEKA Bothaina Hamoud and Eric Atwell	211