

2013 International Conference on Computing, Electrical and Electronics Engineering

(ICCEEE 2013)

**Khartoum, Sudan
26 – 28 August 2013**



**IEEE Catalog Number: CFP13III-POD
ISBN: 978-1-4673-6230-6**

TABLE OF CONTENTS

	Page
Sponsors Page	iii
Conference Background, Publication and Copyright	iv
Remark from General Chair of ICCEEE Organizing Committee	iv
Remark from Technical Programme Committee Chair	v
Organizing Committee	vi
List of Reviewers	ix
Table of Contents	xii
1 - Eltahir, Saeed. <i>An Enhanced Hybrid Wireless Mesh Protocol (E-HWMP) Protocol for Multihop Vehicular Communications</i>	1
3 - Ali Hamed, Musa, Bashir. <i>Near-Fields of an Array of Circular-Loop Antennas</i>	9
6 - Hag El Amin, Fath Elrahman. <i>On the Steady-State Error Covariance Matrix of Kalman Filtering with Intermittent Observations in the Presence of Correlated Noises at the Same Time</i>	15
8 - Al-Ahdal, Mohammad. <i>Performance of Standardized Routing Protocols in ad-hoc Networks</i>	23
11 - Javed, Bin Mahmood, Bt. Sulaiman. <i>Benefit Cost Analysis in Appraisal and Planning Projects of Higher Learning Institutions</i>	31
15 - Daffalla. <i>Adaptive Multifunction Filter for Radar Signal Processing</i>	35
16 - O. Khalifa. <i>Human Posture recognition and Classification</i>	40
25 - Mirghani. <i>Design and Analysis of Low Baudrate Modem Using Microcontrollers</i>	44
28 - Marende. <i>Optimization of Nuclear Energy Generation</i>	N/A
29 - Abdelrahman, Abdallah. <i>K-Nearest Neighbor classifier for Signature Verification System</i>	59
33 - A. Yassin, A. Saeed. <i>Reconfigurable Dual Band Antenna for 2.4 and 3.5GHz using Single PIN Diode</i>	64
35 - Elhag, Osman, Yassin, Ahmed. <i>Angle of arrival estimation in smart antenna by using MUSIC method for wideband wireless communications</i>	68
36 - Hamdan, Suliman, Elfaki. <i>Carbon Nanotubes: Challenges and Opportunities</i>	73
38 - J. George, Mustafa Adalla. <i>Bandwidth Adaptation for Joint Call Admission Control to Support QoS in Heterogeneous Networks</i>	81
42 - Osman, Nabi, El-Azhary. <i>The Potential of Establishing Computer_Aided_Design (CAD) Industry in Africa – Sudan Case-Study</i>	86
43 - Elhassan, Yang, Yi. <i>A Novel Control Method of Grid Connected Doubly Fed Induction Generator under Variable Wind Speed</i>	91
46 - Elamin, Al-Elyani, Shuaib. <i>Power Quality Indices: A Saudi Steel Mills Case Study</i>	98
47 - Adam. <i>Accurate Modeling of PMSM for Differential Mode current and Differential Torque Calculation</i>	102

50 - Gaafar. <i>Energy Aware Routing Protocol for Low Energy Sensor Sensor Networks</i>	109
51 - Mohamad, Osman. <i>Adaptive Median Filter Background Subtraction Technique using Fuzzy Logic</i>	115
52 - Mohamad, Ibrahim. <i>Driving a Novel Phasors Formula for a Digital MHO Relay Algorithm for High Voltage Transmission Line Based on Neural Networks</i>	121
53 - Alwahbani, Bashier. <i>Speech Scrambling Based on Chaotic Maps and One Time Pad</i>	128
57 - Altigani, Barry. <i>A Hybrid Approach to Secure Transmitted Messages Using Advanced Encryption Standard (AES) and Word Shift Coding Protocol</i>	134
59 - Omara. <i>Efficient Design of Dual Digital Up Converter for WCDMA and CDMA2000 Using System Generator</i>	140
61 - Khalifa, Abdelhafiz, Zerguine. <i>Sparse Channel Estimation Using Adaptive Filtering and Compressed Sampling</i>	144
64 - Idris, Satti, Imam, Mirghani. <i>Development of Computer Aided Tools for UAV Flight Control</i>	148
67 - Abdalla Zakaria, A. Saeed. <i>A Review in Interference Analysis and Management between Hierarchical and Flat Architectures Communications</i>	153
74 - Alnimir, Abushama. <i>Popular Agile Approaches in Software Development: Review and Analysis</i>	160
77 - Elhadi Elsideeg Ahmed, Ahmed M. Hassan, Omer Abdallah Alzubaidi, Mahmod M. Ibraheem, G. Hadi Khamisi. <i>Design and Test of a USB/Bluetooth/IP Self-adaptive Connector for Sensor Network Application</i>	167
78 - Elnour, Kannan. <i>PID and Fuzzy Logic in Temperature Control System</i>	171
79 - Mounir, Hamid, Karrar. <i>Development of Lightning Risk Assessment Software in Accordance with IEC 62305-2</i>	177
80 - Nawari, Abdalrahman. <i>Crossing Over Under the Root of a Certification Authority</i>	182
82 - Yousif, Fathalrahman. <i>Neuro-Fuzzy Inference System based Controller in 6 DoF in Puma 560</i>	186
84 - Abbas. <i>Binary LU Encryption</i>	193
85 - Hasan, Ismail, Hashim, Abdullah, Saeed, Ramli, Islam. <i>Inter-cell Interference Coordination in LTE-A HetNets: A Survey on self organizing approaches</i>	197
86 - Yousuf, Mohammed. <i>A Parallel Computer System for the Detection and Classification of Breast Masses</i>	203
88 - Zayid, Akay. <i>Reliable Attributes Selection Technique for Predicting the Performance Measures of a DSM Multiprocessor Architecture</i>	209
91 - Abdalsalam, Osman, Abd-Alhadi, Alshmaa. <i>Design of Simple Noninvasive Glucose Measuring Device</i>	216
95 - Musa, Ahmed. <i>A multi-layer of multi factors authentication model for online banking services</i>	220
98 - Yahya. <i>Specifying Abstract Data Types: A Behavioral Model, an Axiomatic Representation</i>	225
101 - Ahmed, A.Saeed, Hasan. <i>Lightweight Inter-cluster Synchronization Scheme for Femtocell Network</i>	229
102 - Elhaj, Suliman, Hamrawi. <i>A Multi-Layer Network Defense System Using Artificial Immune System</i>	235

103 - Kamil Ibrahim, Abraham. <i>Modeling Consumer Loan Default Prediction Using Neural Netware</i>	240
105 - Abuobieda, Salim, Binwahlan, H. Osman. <i>Differential Evolution Cluster-based Text Summarization Methods</i>	245
108 - Elsadig Mohamed Ahmed Elsheik. <i>Hybrid Conceptual Framework for Artificial Immune System</i>	250
112 - Ahmed, Osman, Ibrahim, Amien. <i>MRI Brain Image Classification Using Neural Networks</i>	254
115 - Ahmed, Taha, Alim. <i>Synchronization Wireless Algorithm Based on Message Digest (SWAMD) for Mobile Database</i>	260
118 - Abdulgader, Awad Elshaikh, Mohamed. <i>Problems and Future Trends of Software Process Improvement in Some Sudanese Software Organizations</i>	264
119 - Eldewahi, Bashier. <i>Authenticated Key Agreement protocol for Virtual Private Network based on Certificateless Cryptography</i>	270
125 - Osman, Osman. <i>Attributes for the Quality in Use of Mobile Government Systems</i>	275
135 - Elhusssein, Elobaid. <i>Smart Phones as System Integration Development Tools (Android SCL Simulation Environment as Prototype)</i>	281
136 - Abdelraheem, Lang, Ahmed Elsayed. <i>Jatropha Curcas: A Viable Alternative Source of Clean Energy to Meet Sudan's Growing Energy Demand</i>	288
137 - Murtada. <i>Measuring the Cybersecurity of Cloud Computing</i>	295
141 - Ali Hamed, Bashir. <i>New Fields Expressions of a Traveling Wave Circular Loop Antenna</i>	301
145 - Abd Alshafy, Mustafa. <i>Characters' Boundaries based Segmentation for Online Arabic Handwriting</i>	307
148 - Abdalla, Babiker, Habbani. <i>Mechanism for Charge Sharing Suppression in Single Photon Processing Pixel Array</i>	312
149 - Bilal, Khider, Abdelnabi. <i>Performance Evaluation of DS-WCDMA</i>	317
152 - Zobly, Kadah. <i>Multiple Measurements Vectors Compressed Sensing for Doppler Ultrasound Signal Reconstruction</i>	320
154 - Sabeel, Che Harun, Sabeel. <i>Detection Of Volatile Compounds in Urine using An Electronic Nose Instrument</i>	324
156 - Mansor, Wan-Kadir, Anwar. <i>Policy Cycle Analysis to Avoid Policy Conflict in Policy-based Management Systems</i>	N/A
160 - Eltyeb, Salim. <i>Mining Lexico-syntactic Patterns to Extract Chemical Entities with their Associated Properties</i>	332
162 - J.George, Mohammed Saeed Mohammed. <i>Heart Disease Diagnostic Graphical User Interface Using Fractal Dimension</i>	336
165 - Atia, Ibrahim, Mohamed, Hassan. <i>Modeling of electrostatically actuated temperature sensor</i>	341
167 - Salih, Suliman, Mohamed, Al-Refai. <i>Implementation of Adaptive Modulation for Broadband Wireless Access Networks using Cognitive Radio Approaches</i>	345

168 - Salih, Suliman, Mohamed. <i>A Novel Spectrum Sensing Scheduler Algorithm for Cognitive Radio Networks</i>	350
169- Mohammed Nabri, Ahmed Hassan and Tasneem Mahmoud <i>Designing Low Cost Digital Dose Reminder System</i>	357
171 - Gomha, T. Shalaby, M. El-Rabaie. Optimizing the Performance of Branch-line Couplers Using Open Ended Stubs	363
176 - O. Khalifa, Khorshed Alam, Abdulla. <i>An evaluation on Offline Signature Verification using Artificial Neural Network Approach</i>	368
177 - Baloul, Williams. <i>Fuzzy Academic Advising System for on Probation Students in Colleges of Applied Sciences - Sultanate of Oman</i>	372
180 - Kambal, Osman, Mohammed, Mohammed, Taha. <i>Credit Scoring Using Data Mining Techniques</i>	378
181 - Baloul, Abdullah, Babikir. <i>ETAOSD: Static Dictionary-Based Transformation Method for Text Compression</i>	386
182 - Siddig, Yousif, Awaad. <i>Motion Estimation in Ultrasound Image Using Dynamic Multi-Shape Search</i>	392
186 - Islam, Hashim, Habaebi, Hasan, Latif, Saeed. <i>Multihoming Based Mobility Management Scheme in NEMO: A Qualitative and Quantitative Analysis</i>	396
187 - Awaad, Yousif, Siddig. <i>Detecting and Tracking ASD using New Block Flow in Ultrasound</i>	400
192 - Eltayeb, Colomb, Hamed. <i>A Method for Mapping State Machine Behavior Models in MDA Issues and Challenges</i>	406
195 - Musa, Usman, Adamu. <i>Improvement of Voltage Stability Index Using Distributed Generation for Northern Nigeria Sub-Transmission Region</i>	412
199 - Eltahir, Dafa-Alla. <i>Extracting knowledge from web server logs using classification technique</i>	415
200 - Mahmoud, Hamed. <i>Discrimination of Four Classes in Brain-Computer Interface Based on Motor Imagery</i>	420
202 - Adam, A Saeed. <i>Multicasting in Network mobility using Multicast Anchor Agent</i>	425
204 - Yousri Salama Mohammed. <i>Semantic Web services for Nubian language</i>	431
207 - Abdalziz, Tariq, Basher, Ahmed. <i>Measurement of Weight Distribution in The Foot</i>	436
208 - Osman, Mansour, Khalifa, Kuacgor Mathang, Adllan. <i>Abinitio Method Study of Ionic Conductor CaF₂</i>	439
210 - Abdullah Hag Eltom, Abdelsatir. <i>Extreme Programming Applied in a Large-Scale Distributed System</i>	443
213 - Osman. <i>Segmentation Algorithm for Arabic Handwritten Text</i>	449
214 - Mohamed, Colomb. <i>Service Discovery using Perdurant Ontology</i>	455
215 - Hamdoun, Mangeni, Dwivedi. <i>Insights into Sustainable Energy-Capacity Trends towards Bridging the Digital Divide</i>	461
217 - Yassin, Abd Elmageed, Hamad, Osman. <i>The Unscented Kalman Filter Applied to Satellite Orbit Determination</i>	466
218 - Omer, Bashir. <i>Enhancement model for PKI certificate validation in the Mobile Banking</i>	472
220 - Hassan, Aziz, Nisar. <i>On the Cache Performance of the Information Centric Network</i>	479

221 - Islam, Hasan, Saha. <i>Mathematical Modeling of Growth Conditions and Interpretation of Phase Diagram for InxGa1-xN Epitaxial Layer</i>	484
222 - Nasir, Hamad, Eisa. <i>An Agent-based Proxy Cache Cleanup Model using Fuzzy Logic2</i>	488
226 - Babiker, H. Abdalla, El-Azhary. <i>Investigation of Nested Nemo Schemes in Mobile Network Environment</i>	494
227 - Taha, Alhaj, Moktar, Salim, Abdullah. <i>On Password Strength Measurements: Password Entropy and Password Quality</i>	499
229 - Abdalla, Abdelaziz, Babiker. <i>Architecture and Circuit Design Balance between Integrated and Photon counting mode for X-Ray Pixel Array Detector Read-out Electronics</i>	504
232 - Bedri, Harwin. <i>Enhancing Haptic Representation for 2D Objects</i>	508
233 - Shabour, Mirghani, Sharif. <i>Performance Enhancement of the CAN Protocol Using Reed-Solomon Codes</i>	514
235 - Fadlalla Elhag, Haj Ali Ahmed. <i>Intelligent System for Selecting Optimum Instructional style(s) Based on Fuzzy Logic to Develop a Courseware (ISSIDC)</i>	520
238 - Elfahal, Elhafiz. <i>Acoustic-Support Vector Machines Approach to Detect Spoken Arabic Language</i>	527
239 - Elawad, Hagadam, Hamed, Hussein. <i>Design and Implementation of Robotic System to Transport Disabled People</i>	532
240 - Abdalrhman Ahmed, Hamed. <i>Enabling Use Case Function point on Service-oriented Architecture</i>	537
244 - Hassan, Gaib Alla, Sarour, Alfadny. <i>Design of Digital Apodization Technique for Medical Ultrasound Imaging</i>	543
245 - Ahmed, Abdalla, El-Azhary. <i>Gateway placement approaches in Wireless Mesh Network: Study Survey</i>	547
249 - Mudathir Elfadil. <i>Localization for Wireless Sensor Networks</i>	550
252 - Mudathir Elfadil. <i>Navigation Algorithm for Mobile Robots using WSNs</i>	556
257 - Srivastava, Singh. <i>Compensation Technique and Power Quality Improvement in Multiphase Distribution System</i>	562
258 - Eljack, Ahmed. <i>Effect of the Interior Gateway Routing Protocols in the Multiprotocol Label Switching Networks</i>	567
262 - Osman, Salim, Ahmed E. Elhadi. <i>A Tree-based Conceptual Matching for Plagiarism Detection</i>	573
263 - Osman. <i>Comparison between Gold Nanoparticles and Conductive Polymer Nanoparticles Used in Photothermal Therapy</i>	582
268 - Abuelyaman. <i>Quasi Fields Based S-Box Implementation</i>	586
269 - Jadoon, Khan, Khan, Shah, O. Khalifa. <i>Network Coding for hybrid Satellite-terrestrial Networks over non-identical Fading Channels</i>	591
270 - Abusham, Basheir. <i>Face Recognition Using Local Graph Theory (LGT)</i>	595
278 - Mohamed Kannan Mahmoud, A. Al-Ghamdi. <i>Solving Problems of Computer Networks' Planning Using Elastic Networks Method</i>	599
280 - Jaya Kumar, Salim, Abuobieda, Tawfik. <i>Multi Document Summarization Based On Cross-Document Relation Using Voting Technique</i>	606

281 - Musa, Bashir, Ali Hamed. <i>Analysis of Aerodynamic Torques Affecting Dust Particle Orientation as Input To Microwave Cross Polarization</i>	612
282 - Abdelrahman, Hamid. <i>Evaluation of linear filter kernel developed from Ultrasound phantom image</i>	617
285 - Gad, Barry. <i>Developing a Security Model to Protect Websites from Cross-site Scripting Attacks</i>	621
286 - Ahmed, Ahmed Eltaeb Elhadi, Ibrahim, Elmisbah. <i>Feature Selection and Similarity Coefficient Based Method for Email Spam Filtering</i>	627
287 - Ahmed Ali. <i>Verifying Abstract Data Types: A Hybrid Approach</i>	631
288 - Osman, Salim. <i>An Improved Semantic Plagiarism Detection Scheme Based on Chi-squared Automatic Interaction Detection</i>	637
289 - Yousif, Sharif. <i>Sudan and South Sudan HF Model based on University of Khartoum Ionospheric Shells and their Mathematical Derivations</i>	645
291 - Masud, Latif, Anwar, Alam, Abdalla. <i>An Analysis of Resource Sharing Scheme in Heterogeneous Wireless Campus Network</i>	650
293 - Eltigani, Ramadan, Zakaria. <i>Implementation of Transient Stability Assessment using Artificial Neural Networks</i>	656
294 - Zakaria, Ramadan, Eltigani. <i>Method of Computing Maximum Loadability using Continuation Power Flow: Case Study Sudan National Grid</i>	660
295 - Ramadan, Zakaria, Eltigani. <i>Prepaid Energy Meter Network via Power System Communication</i>	665
298 - Gabralla, Jammazi, Abraham. <i>Oil Price Prediction Using Ensemble Machine Learning</i>	671
301 - Firdhous, Ghazali, Hassan. <i>Cloud Computing for Rural ICT Development: Opportunities and Challenges</i>	677
305 - Khaled Talha, I. A. Barry. <i>Evaluating the Impact of AES Encryption Algorithm on Voice over Internet Protocol (VoIP) Systems</i>	683
309 - Mahdi, Sharif, Ashur. <i>Enhancement of Hardware Modular Multiplier Radix-4 Algorithm for Fast RSA Cryptosystem</i>	689
311 - Elagib, Osman. <i>Design and Implementation of Dual Axis Solar Tracker based on Solar Maps</i>	694
313 - Basheir, Khidir, Adlan. <i>Neural Networks Forecasting Architectures for Rainfall in the Rain-fed Sectors in Sudan</i>	797
314 – Hamid. <i>Upgrading distributed agile development</i>	705
315 - Abdelrahman, Yasser, Mahir, Mohammed. <i>Human Skin Color Recognition (identification): A case study</i>	711
317 - Kamil Ibrahim, Abraham. <i>Modeling Consumer Loan Default Prediction Using Ensemble Neural Networks</i>	716
319 - Eltayeb, Almubarak, Attia. <i>A GPS Based Traffic Light Pre-emption Control System for Emergency Vehicles</i>	722
320 - Hasan, Ibn Ibrahimy, Motakabber. <i>Performance Analysis of Different Techniques for Brain Computer Interfacing</i>	728
321 - Motakabber, Ibn Ibrahimy, Zahirul. <i>Development of a Position Detection Technique for Chipless RFID Tagged Object</i>	733