

PAPER SESSION 1 – BLOCK A to BLOCK E & 6 Papers PER Block : 08<sup>th</sup> October 2024 Tuesday 15:00 to 16:30 hrs.

**Theme: Renewable Energy Technologies, Data Science/AI and Power System**

Paper ID	Title	Paper Session Number	Sub - Session
13	Overview Of Power Quality Improvement on Three Phase on Z Source Inverter	PAPER SESSION 1	PAPER SESSION 1 - BLOCK A
15	design of hybrid electrical energy storage for solar integration, case of Chad	PAPER SESSION 1	PAPER SESSION 1 - BLOCK A
17	Design of a Solar PV Powered Cold Storage for Fish in Sena and Mrongo Beaches in Mfangano Island, Kenya	PAPER SESSION 1	PAPER SESSION 1 - BLOCK A
38	State-Space Formulation and Analysis of Distributed Control for Voltage Restoration and Proportional Current Distribution in DC Microgrids	PAPER SESSION 1	PAPER SESSION 1 - BLOCK A
39	Small-Signal Stability Assessment of the Integration of Renewable Energy Sources to the Grid	PAPER SESSION 1	PAPER SESSION 1 - BLOCK A
258	A Review of green hydrogen as an upcoming energy storage technology	PAPER SESSION 1	PAPER SESSION 1 - BLOCK A
261	Economic analysis of a hybrid micro-grid with battery energy storage	PAPER SESSION 1	PAPER SESSION 1 - BLOCK B
19	System Disturbance Classification Model for a Low Voltage Distribution Network	PAPER SESSION 1	PAPER SESSION 1 - BLOCK B
36	Smart and Low-Cost Transceiver for Energy Sharing and Billing Towards Swarm Grid Implementation	PAPER SESSION 1	PAPER SESSION 1 - BLOCK B
37	Dynamic Restful API framework and deployment using Docker: Enhancing IoT deployment strategies	PAPER SESSION 1	PAPER SESSION 1 - BLOCK B
53	Examining Different Input Formulations for Load Prediction in Regional Power Grids During N-1 Contingencies Utilizing Machine Learning Techniques	PAPER SESSION 1	PAPER SESSION 1 - BLOCK B
58	Electric energy demand and Supply aggregation for ECOWAS interconnected network	PAPER SESSION 1	PAPER SESSION 1 - BLOCK B
242	Shifting Paradigms: Z-Source Inverters as a Viable Solution for Enhanced DC-Link Regulation and Renewable Energy Integration	PAPER SESSION 1	PAPER SESSION 1 - BLOCK C
6	The Technological Disruption Caused by the Composite Insulator Crossarm in the Electrical Energy Transmission Sector	PAPER SESSION 1	PAPER SESSION 1 - BLOCK C
24	Modernization of the South African Power Grid	PAPER SESSION 1	PAPER SESSION 1 - BLOCK C
30	Performance Simulation of a LoRa Low Power WAN CubeSat in Earth Observation Missions	PAPER SESSION 1	PAPER SESSION 1 - BLOCK C
106	Investigation into correlation between climate and lightning activity in South Africa and its potential impact on transmission infrastructure	PAPER SESSION 1	PAPER SESSION 1 - BLOCK C
166	Social Transformation through Innovative Solar-PV-Powered Cooking Interventions	PAPER SESSION 1	PAPER SESSION 1 - BLOCK C
1	Evaluation of Power Grid Voltage Instability Point using System Overloading Contingency in Real-time Simulation	PAPER SESSION 1	PAPER SESSION 1 - BLOCK D
5	HIL simulation and testing the automatic reconfiguration of the distribution network	PAPER SESSION 1	PAPER SESSION 1 - BLOCK D
28	Real-Time Dynamic Multi-User System for Monitoring And Assessment Of Distributed Energy Resources Compliance With Grid Codes – Grid.Compass	PAPER SESSION 1	PAPER SESSION 1 - BLOCK D
35	Limited-size BESS for mitigating the impact of RES volatility in grid-tied microgrids in developing countries: focus on Lacor Hospital	PAPER SESSION 1	PAPER SESSION 1 - BLOCK D
55	Electricity Outages in Uganda: Trends and Disparities	PAPER SESSION 1	PAPER SESSION 1 - BLOCK D

177	Effect of Energy Supply Industry (ESI) Structure on Power Quality Management	PAPER SESSION 1	PAPER SESSION 1 - BLOCK D
257	Effectiveness of Wind Energy Penetration in Power System for Mitigating Transmission Congestion	PAPER SESSION 1	PAPER SESSION 1 - BLOCK E
210	Optimizing Off Grid Renewables Using Data Driven Energy Storage and Management for Rural African Electrification	PAPER SESSION 1	PAPER SESSION 1 - BLOCK E
212	Design of an Electrification Scheme using a Stand-Alone Solar PV Technology: A Case Study for the Informal Settlement in South Africa	PAPER SESSION 1	PAPER SESSION 1 - BLOCK E
10	Techno-Economic Performance Optimisation of an Off-Grid Green Hydrogen Refueling Station	PAPER SESSION 1	PAPER SESSION 1 - BLOCK E
32	The impact of Load-Shedding on estimates of Depreciation for Diesel Backup Generators at Public Health Facilities in Gauteng	PAPER SESSION 1	PAPER SESSION 1 - BLOCK E
50	The Role of Ports as Green Energy Hubs: A Case for Lamu Port, Kenya	PAPER SESSION 1	PAPER SESSION 1 - BLOCK E

PAPER SESSION 2 – BLOCK A to BLOCK E & 6 Papers PER Block : **09<sup>th</sup> October 2024 Wednesday 11:30 to 13:00 hrs.**

**Theme: Distributed Energy Systems, Electric Vehicles & Control/Cyber Physical Systems**

Paper ID	Title	Paper Session Number	Sub - Session
173	Analysis of Power Transformer Maintenance for Improved Reliability and Cost Efficiency: A case-study in South Africa	PAPER SESSION 2	PAPER SESSION 2 - BLOCK A
21	Multi-Orbital Protection Schemes for Space-based Solar Power Systems	PAPER SESSION 2	PAPER SESSION 2 - BLOCK A
23	Spacecraft Electrical Power Management Systems – System Review	PAPER SESSION 2	PAPER SESSION 2 - BLOCK A
93	Lessons learned from quantifying IEC 61850 station bus performance	PAPER SESSION 2	PAPER SESSION 2 - BLOCK A
110	Mitigating Unit Trips: A Case Study of Condensation Management in Vacuum Transmitter Readings at Kriel Power Station	PAPER SESSION 2	PAPER SESSION 2 - BLOCK A
138	Intelligent-Based Techniques for Detection, Identification and Mitigation of Cyberattacks in Cyber-Physical Power Systems: A Review	PAPER SESSION 2	PAPER SESSION 2 - BLOCK A
255	Internet of Things-Based Smart Monitoring of a 400VA 220/110V Transformer	PAPER SESSION 2	PAPER SESSION 2 - BLOCK B
4	Design and Implementation of a Fuzzy-Based Microgrid Energy Management System	PAPER SESSION 2	PAPER SESSION 2 - BLOCK B
14	Economic and Energy Security Optimisation of a Hybrid Microgrid Using Machine Learning	PAPER SESSION 2	PAPER SESSION 2 - BLOCK B
16	Stochastic PV hosting capacity estimation using PEM based analysis	PAPER SESSION 2	PAPER SESSION 2 - BLOCK B
43	Review of Distributed Renewable Generation (DRG), Network Interconnection and Optimisation for the Global South.	PAPER SESSION 2	PAPER SESSION 2 - BLOCK B
57	An Analysis of Sudan's Solar Sector During The Ongoing Conflict, and The Impact of The Economic and Political Factors on Accelerating The Renewable Energy Transition	PAPER SESSION 2	PAPER SESSION 2 - BLOCK B
7	A High Speed Encoderless Field Oriented Control of Synchronous Reluctance Motor with Reduced Current Ripples	PAPER SESSION 2	PAPER SESSION 2 - BLOCK C
8	System Dynamics Modelling to Investigate the Impact of Electric Vehicle Charging in the Residential Sector	PAPER SESSION 2	PAPER SESSION 2 - BLOCK C
26	Electric Design of an Electrified High-Speed Railway System Linking Lusaka and Kitwe	PAPER SESSION 2	PAPER SESSION 2 - BLOCK C
27	Challenges and Opportunities of Electric Mobility in East Africa: Review and Recommendation	PAPER SESSION 2	PAPER SESSION 2 - BLOCK C

47	Integration of Electric Vehicles and Renewable Energy Distributed Generators into the Smart Grid	PAPER SESSION 2	PAPER SESSION 2 - BLOCK C
174	Simulating And Analyzing SA Distributed Solar Generating System In Transmission Line Expansion Network	PAPER SESSION 2	PAPER SESSION 2 - BLOCK C
87	Towards a Physics-Informed Neural Network Approach for Modeling and Prediction of Renewable Energy Production: Use Case of Solar Cells	PAPER SESSION 2	PAPER SESSION 2 - BLOCK D
88	Integrating Image Steganography Techniques into an Existing Efficient Image Recognition Artificial Neural Network for Optimal Performance	PAPER SESSION 2	PAPER SESSION 2 - BLOCK D
91	Review of literature on different algorithms of economic dispatch : A comprehensive examination of methods, applications and performance characteristics.	PAPER SESSION 2	PAPER SESSION 2 - BLOCK D
122	Data Driven Artificial Neural Network Fault Classification By Bayesian Optimazation	PAPER SESSION 2	PAPER SESSION 2 - BLOCK D
129	New Technique For Estimating Renewable Energy Potential Based on Meteorological Modeling and Historical Data Analysis.	PAPER SESSION 2	PAPER SESSION 2 - BLOCK D
9	Analysis of Electricity Access in South Sudan and Proposed Solutions for Securing Reliable and Affordable Energy	PAPER SESSION 2	PAPER SESSION 2 - BLOCK D
42	A Hybrid Islanding Detection Technique using Voltage Positive Feedback and Frequency Deviation in GFM based Microgrid	PAPER SESSION 2	PAPER SESSION 2 - BLOCK E
44	Impact Volt-Var and Volt-Watt Regulation Curves in the Accommodation of PV Generators to Distribution Systems	PAPER SESSION 2	PAPER SESSION 2 - BLOCK E
45	A Comprehensive Review of Harmonic Mitigation Strategies in Power Distribution Systems and Microgrids with Inverter-Based Generation	PAPER SESSION 2	PAPER SESSION 2 - BLOCK E
46	Unlocking Green Hydrogen: Optimal Sizing of a Hybrid Power Supply for a Green Hydrogen Production Plant Using Metaheuristic Algorithms	PAPER SESSION 2	PAPER SESSION 2 - BLOCK E
48	Practical Consideration for Harmonic Analysis of Large Wind Farms: A Moroccan Power Grid Perspective	PAPER SESSION 2	PAPER SESSION 2 - BLOCK E
181	Extraction of heat and electric energy from wastewater sludge through a gasification process: DWSIM simulator approach	PAPER SESSION 2	PAPER SESSION 2 - BLOCK E

PAPER SESSION 3 – BLOCK A to BLOCK E & 6 Papers PER Block : **09<sup>th</sup> October 2024 Wednesday 14:00 to 15:30 hrs.**

**Theme: Renewable Energy Conversion Technologies, AI & Other Topics in Energy Systems**

Paper ID	Title	Paper Session Number	Sub - Session
92	Comparison of Operational Yield Assessments to Pre-construction Energy Yield Assessments for Solar Photovoltaic plants	PAPER SESSION 3	PAPER SESSION 3 - BLOCK A
108	Design and Simulation of a Hybrid Banana Dryer that Uses Solar Thermal and Biogas	PAPER SESSION 3	PAPER SESSION 3 - BLOCK A
130	Optimal Sizing of Residential Photovoltaic (PV) - Battery Power System in an Off-grid Configuration	PAPER SESSION 3	PAPER SESSION 3 - BLOCK A
131	Robust Servomechanism Multivariable Control Scheme for Grid-Following Photovoltaic LCL- Voltage Source Converter	PAPER SESSION 3	PAPER SESSION 3 - BLOCK A
217	PV Parking System Design: A Bibliometric Analysis	PAPER SESSION 3	PAPER SESSION 3 - BLOCK A
221	IoT-based smart management of off-grid photovoltaic systems in rural and remote settings	PAPER SESSION 3	PAPER SESSION 3 - BLOCK A
77	OPTIMIZATION OF DSTATCOM IN DISTRIBUTION NETWORK FOR PERFORMANCE IMPROVEMENT	PAPER SESSION 3	PAPER SESSION 3 - BLOCK B
62	A Comprehensive exploration of renewable energy education landscape in Ethiopian public universities	PAPER SESSION 3	PAPER SESSION 3 - BLOCK B

172	Enhancing biogas production and use by remote data acquisition and analysis: Household use as case.	PAPER SESSION 3	PAPER SESSION 3 - BLOCK B
189	Assessing Economic Implications of a Sustainable Low-Carbon Energy Transition in Zambia.	PAPER SESSION 3	PAPER SESSION 3 - BLOCK B
51	Detection and Separation Technics of multiple Partial Discharges sources on Power Transformers – Case Study	PAPER SESSION 3	PAPER SESSION 3 - BLOCK B
52	Enhancing power quality and the corresponding expenses in distribution networks with high levels of harmonic loads.	PAPER SESSION 3	PAPER SESSION 3 - BLOCK B
140	Power Planning in Hydropower Plants Using Artificial Intelligence: A Case Study of Nigeria	PAPER SESSION 3	PAPER SESSION 3 - BLOCK C
143	Solar- and IoT-Based Smart Irrigation System using Fuzzy Logic for Sustainable Agriculture	PAPER SESSION 3	PAPER SESSION 3 - BLOCK C
149	Isolation Forest and Local Outlier Factor Based Anomaly Detection on an Induction Machine	PAPER SESSION 3	PAPER SESSION 3 - BLOCK C
151	Very Short-term Solar Irradiance Forecasting for Photovoltaic Power Integration with the Grid: Potentials and Challenges for Africa	PAPER SESSION 3	PAPER SESSION 3 - BLOCK C
250	GIS-Based Evaluation of Suitability and Implementation Prospects for Solar PV Energy in Africa	PAPER SESSION 3	PAPER SESSION 3 - BLOCK C
265	Trends in day-ahead electricity market prices in Southern Africa	PAPER SESSION 3	PAPER SESSION 3 - BLOCK C
246	Overview of Dual-Port Machines for Wind Power Generator Applications	PAPER SESSION 3	PAPER SESSION 3 - BLOCK D
67	Discussion of the application of IEEE Std 1459-2010 to Power Electronics	PAPER SESSION 3	PAPER SESSION 3 - BLOCK D
259	Wound Field Flux Switching Machine Performance Under Switched Field Excitation	PAPER SESSION 3	PAPER SESSION 3 - BLOCK D
256	Internet of Things-Based Transformer Winding Lumped Parameters Monitoring	PAPER SESSION 3	PAPER SESSION 3 - BLOCK D
78	Expert Analysis of Lightning Impulse Failure Modes in Oil-Filled Power Transformers Based on Experiential Data	PAPER SESSION 3	PAPER SESSION 3 - BLOCK D
118	Towards Regional Energy Security: Technical Risks, Constraints and Challenges Facing the EAPP	PAPER SESSION 3	PAPER SESSION 3 - BLOCK D
29	Failure Analysis of Pole-Mounted Distribution Transformers in Rural Areas: A Case Study of DGVCL an Indian DISCOM	PAPER SESSION 3	PAPER SESSION 3 - BLOCK E
161	Residential Electricity Consumption in Free State Townships: Unravelling the Pandemic Effect	PAPER SESSION 3	PAPER SESSION 3 - BLOCK E
195	Is AC or DC Distribution Line the Way Forward for Solar Swarm Grid Implementation?	PAPER SESSION 3	PAPER SESSION 3 - BLOCK E
180	Power Network Development Methodology: A Guide to Model LV Distribution Networks in Developing Countries	PAPER SESSION 3	PAPER SESSION 3 - BLOCK E
187	Optimisation of Capital Expenditure and Operational Expenditure of an Electrical Network: a Comparative study of optimisation problems to use	PAPER SESSION 3	PAPER SESSION 3 - BLOCK E
230	Implication of Dynamic Voltage Support of Large-scale PV plants on frequency stability in Senegalese Power System	PAPER SESSION 3	PAPER SESSION 3 - BLOCK E

PAPER SESSION 4 – BLOCK A to BLOCK E & 6 Papers PER Block : **09<sup>th</sup> October 2024 Wednesday 16:00 to 17:30 hrs.**

**Theme: Energy Storage Systems, Electric Vehicles & Micro-Grids Enabling Energy Access**

Paper ID	Title	Paper Session Number	Sub - Session
115	Photovoltaic power load-matching challenge in a reverse osmosis water desalination system	PAPER SESSION 4	PAPER SESSION 4 - BLOCK A
59	Impacts of AC Filter Tripping at Songo Rectifier Station in Southern Africa	PAPER SESSION 4	PAPER SESSION 4 - BLOCK A
69	Impact of Large-Scale Solar Photovoltaic Integration on Weak Power Grids	PAPER SESSION 4	PAPER SESSION 4 - BLOCK A
101	Optimal sizing of hybrid battery-supercapacitor energy storage system for improved vehicle starting performance	PAPER SESSION 4	PAPER SESSION 4 - BLOCK A
186	Location-based Sizing of Battery Energy Storage System for Voltage Regulation in LV Distribution Network	PAPER SESSION 4	PAPER SESSION 4 - BLOCK A
165	LoRaWAN for remote monitoring applications in the smart grid – A Utility perspective	PAPER SESSION 4	PAPER SESSION 4 - BLOCK A
64	Exploring the Anode Materials for Lithium-ion Batteries: A Review	PAPER SESSION 4	PAPER SESSION 4 - BLOCK B
114	Performance studies of electric and combustion engines: the case of a conventional vehicle in Benin	PAPER SESSION 4	PAPER SESSION 4 - BLOCK B
154	Smart Charging of Electric Vehicles on the Grid Based on Social Spider Swarm Intelligence Algorithm	PAPER SESSION 4	PAPER SESSION 4 - BLOCK B
201	Design and Simulation of an Unmanned Aerial System (drone) for Flight Inspection: Review	PAPER SESSION 4	PAPER SESSION 4 - BLOCK B
229	A Methodology for Estimating Allocation of Electric Vehicle Grid Interfaces in a Distribution System	PAPER SESSION 4	PAPER SESSION 4 - BLOCK B
247	Regenerative Braking in Electric-Bicycles with Supercapacitors for Sustainable Transport	PAPER SESSION 4	PAPER SESSION 4 - BLOCK B
254	Consideration of Mutual Torque in Sizing of Double Stator Wound-Field Flux Switching Machine for Heavy-Duty Traction Motors	PAPER SESSION 4	PAPER SESSION 4 - BLOCK B
61	Research Gaps and Directions on Mini-Grid Control Strategies for Isolated Communities in Developing Countries	PAPER SESSION 4	PAPER SESSION 4 - BLOCK C
65	Optimal Integration of Distributed Renewable Generation for Reliability Improvement in Distribution Network	PAPER SESSION 4	PAPER SESSION 4 - BLOCK C
70	Prioritization of evaluation indices for optimal planning of distribution system: Afuzzy-Best-Worst Approach	PAPER SESSION 4	PAPER SESSION 4 - BLOCK C
73	Managing Embedded Generation Integration: Challenges and Solutions for Distribution Substation Earthing	PAPER SESSION 4	PAPER SESSION 4 - BLOCK C
83	Smart Monitoring and Control Systems for Rural MicroGrids	PAPER SESSION 4	PAPER SESSION 4 - BLOCK C
141	An Assessment to Determine Energy Surplus in an Isolated Hybrid Energy System	PAPER SESSION 4	PAPER SESSION 4 - BLOCK C
103	Advanced Intelligent Traffic Management System(AITMS): A Generative AI-Enhanced Model	PAPER SESSION 4	PAPER SESSION 4 - BLOCK D
63	Short-Term Load Forecast in Power System Using Neural Network	PAPER SESSION 4	PAPER SESSION 4 - BLOCK D

234	Coordinated Voltage Regulator and Smart Inverter Settings with High Penetration of DERs: A Systematic Review and Bibliometric Analysis	PAPER SESSION 4	PAPER SESSION 4 - BLOCK D
178	A Numerical Study of the Load Frequency Control Scheme for a Steam Plant Integrated with an Islanded Microgrid	PAPER SESSION 4	PAPER SESSION 4 - BLOCK D
200	Continuity of Supply in Urban Areas of Sub-Sahara Africa: Opportunities with Grid Modernization	PAPER SESSION 4	PAPER SESSION 4 - BLOCK D
225	Parametric sensitivity analysis of the modified AMOCO model for an anaerobic digester	PAPER SESSION 4	PAPER SESSION 4 - BLOCK D
241	Review of potential cyber-attacks in smart microgrid	PAPER SESSION 4	PAPER SESSION 4 - BLOCK D
263	Reducing Carbon Footprint in Rural Communities: A Case Study of Omupo Solar Rice Mill	PAPER SESSION 4	PAPER SESSION 4 - BLOCK E
96	Cryptocurrency Mining Powered by Solar Energy using a DC-DC Connection with IoT Control	PAPER SESSION 4	PAPER SESSION 4 - BLOCK E
111	Application of Delphi Technique in Determining the Potential Criteria of Substation Site Selection	PAPER SESSION 4	PAPER SESSION 4 - BLOCK E
134	Voltage Impact of Roof-Top Solar Photovoltaic Systems on Low Voltage Distribution Network	PAPER SESSION 4	PAPER SESSION 4 - BLOCK E
163	Life-cycle cost analysis of electricity backup solutions: a South African case study	PAPER SESSION 4	PAPER SESSION 4 - BLOCK E
164	Machine learning-based anomaly detection in residential electricity usage patterns using meter data- Case study (Msunduzi Municipality)	PAPER SESSION 4	PAPER SESSION 4 - BLOCK E

PAPER SESSION 5 – BLOCK A to BLOCK E & 6 Papers PER Block: **10<sup>th</sup> October 2024 Thursday 09:30 to 11:00 hrs.**

**Theme: Renewable Energy, AI/Data Science & Power Distribution Systems**

Paper ID	Title	Paper Session Number	Sub - Session
54	Utilizing an Anti-Reflective Coating with Inverted Pyramid Texture to Enhance Solar Panel Efficiency	PAPER SESSION 5	PAPER SESSION 5 - BLOCK A
82	Implementation of a Unified Power Flow Controller for Two Interconnected Solar Mini-grids	PAPER SESSION 5	PAPER SESSION 5 - BLOCK A
153	Leveraging Solar-Powered Routers to Provide Internet Connectivity in Underserved Communities: Exploring Energy Harvesting, Power Electronics, and Off-Grid Systems.	PAPER SESSION 5	PAPER SESSION 5 - BLOCK A
202	Design of a Low-Cost Smart Solar-Powered Irrigation System	PAPER SESSION 5	PAPER SESSION 5 - BLOCK A
236	Space Vector Modulation Techniques Comparison for Capacitor Voltage Balancing of Five-Level Inverters	PAPER SESSION 5	PAPER SESSION 5 - BLOCK A
119	Analysis of DGA trends of an HVDC Converter Transformer with a Thermal Fault detected through the Duval Triangle method	PAPER SESSION 5	PAPER SESSION 5 - BLOCK A
248	IoT-enabled Inverter with Smart Battery Usage	PAPER SESSION 5	PAPER SESSION 5 - BLOCK B
71	Performance comparison of Machine Learning (ML) based fault detection scheme for a compensated transmission line.	PAPER SESSION 5	PAPER SESSION 5 - BLOCK B
76	Simplified, Robust Method for Cloud Predictions for Photovoltaic Estimations	PAPER SESSION 5	PAPER SESSION 5 - BLOCK B
79	Performance Evaluation of AI-Driven Photovoltaic Output Forecasting	PAPER SESSION 5	PAPER SESSION 5 - BLOCK B
81	Multiagent Deep Reinforcement Learning for Reactive Power Control in Distribution Grids	PAPER SESSION 5	PAPER SESSION 5 - BLOCK B
85	Generation of Artificial Datasets for Fault Detection in Induction Motors Using Extreme Learning Machine	PAPER SESSION 5	PAPER SESSION 5 - BLOCK B
182	Optimization and Performance Analysis of a Smart Grid at Times of Fault Outbreaks Using Artificial Intelligence Techniques	PAPER SESSION 5	PAPER SESSION 5 - BLOCK C

239	A bio-inspired framework for Hyperparameter Optimization of an XGBoost model in main bearing fault diagnostics	PAPER SESSION 5	PAPER SESSION 5 - BLOCK C
135	How can energy providers prioritize productive use in the off-grid market?	PAPER SESSION 5	PAPER SESSION 5 - BLOCK C
137	Development of a GSM Enabled Real-Time Electronic Display Board	PAPER SESSION 5	PAPER SESSION 5 - BLOCK C
214	Wireless Charging Coupler for Agricultural UAVs and Drones with T-Shaped Landing Gear	PAPER SESSION 5	PAPER SESSION 5 - BLOCK C
102	Determining the Pollution Performance Curves of HTV SR Insulators Tested under Natural Conditions in Severe Marine Pollution Environment	PAPER SESSION 5	PAPER SESSION 5 - BLOCK D
104	Active power reserve provision with large-scale WES and BESS	PAPER SESSION 5	PAPER SESSION 5 - BLOCK D
142	Degradation Classification of Low-Voltage Zinc Oxide Varistors using K-NN Algorithm	PAPER SESSION 5	PAPER SESSION 5 - BLOCK D
144	Voltage Profile Improvement Employing Synchronous Distributed Generator: A Case Study of Thailand's Distribution Network	PAPER SESSION 5	PAPER SESSION 5 - BLOCK D
146	Investigating Reactive Power Model for Constant Voltage Profile During Multiple Contingencies in Nairobi Load Centers Using Power World Simulation Tool.	PAPER SESSION 5	PAPER SESSION 5 - BLOCK D
244	An Energy Demand Analysis and Emission Reduction Potential of Electric Buses for Cities in Developing Economies: A Case Study of Nairobi, Kenya.	PAPER SESSION 5	PAPER SESSION 5 - BLOCK D
95	A high-resolution analysis of electricity demand for informed electrification planning	PAPER SESSION 5	PAPER SESSION 5 - BLOCK E
100	An Economic Performance Overview of Microgrids for Limpopo Province Rural Areas	PAPER SESSION 5	PAPER SESSION 5 - BLOCK E
109	Analysis of a Medium Voltage Direct Current Distribution System for Integration of an Electric Vehicle Ultrafast Charging Station: A case study	PAPER SESSION 5	PAPER SESSION 5 - BLOCK E
113	Investigating households and productive use electricity demand patterns in rural Mozambique	PAPER SESSION 5	PAPER SESSION 5 - BLOCK E
125	Will South Africa Achieve Sustainable Development Goal 7 By 2030?	PAPER SESSION 5	PAPER SESSION 5 - BLOCK E
150	Assessing Cable Sizing for PV Microgrids: Economic and Environmental Factors in Focus - A Case Study of Ethiopia and Rwanda	PAPER SESSION 5	PAPER SESSION 5 - BLOCK E

PAPER SESSION 6 – BLOCK A to BLOCK E & 6 Papers PER Block: **10<sup>th</sup> October 2024 Thursday 11:30 to 13:00 hrs.**

**Theme: Electric Power Systems & Renewable Energy**

Paper ID	Title	Paper Session Number	Sub - Session
235	Enhancing Energy Access in Africa through Artificial Intelligence: Opportunities and Challenges	PAPER SESSION 6	PAPER SESSION 6 - BLOCK A
238	Analysis Of Load Composition Impact On the Bankability Of Rural Mini-Grids.	PAPER SESSION 6	PAPER SESSION 6 - BLOCK A
152	Evaluating the different clean energy demand drivers: Case studies Operating Mini-grids on Lolwe Island and Bunjaako Island	PAPER SESSION 6	PAPER SESSION 6 - BLOCK A
66	Solar PV-Battery Sizing for SA Tourism: A Data and Simulation Backed Graphical Analysis Method	PAPER SESSION 6	PAPER SESSION 6 - BLOCK A
75	Performance Analysis of MIMO Channel Simulator with New Modified Parameterization Methods	PAPER SESSION 6	PAPER SESSION 6 - BLOCK A
262	SETTING ENERGY EFFICIENCY TARGETS TO MEET CORPORATE GOALS	PAPER SESSION 6	PAPER SESSION 6 - BLOCK A

205	ENSURING A PEOPLE CENTERED ENERGY TRANSITION TO POWER AFRICA	PAPER SESSION 6	PAPER SESSION 6 - BLOCK B
206	Solar PV Renewable Energy Sources: A Comprehensive Bibliometric Analysis	PAPER SESSION 6	PAPER SESSION 6 - BLOCK B
207	Literature Review: PV Parking System Design using Solar Tracking	PAPER SESSION 6	PAPER SESSION 6 - BLOCK B
209	Comparative assessment of hydrogen production from wind and solar resources for electricity generation in Sokoto, Nigeria	PAPER SESSION 6	PAPER SESSION 6 - BLOCK B
211	Techno-Economic Analysis of PV-Wind with Hybrid Storage for Voltage Profile Improvement and Power Loss Reduction	PAPER SESSION 6	PAPER SESSION 6 - BLOCK B
159	Empowering Mini-Grid Developers: Navigating the Rise of Prosumers with Smart Policy Strategies	PAPER SESSION 6	PAPER SESSION 6 - BLOCK B
194	Renewable Energy Site Assessment with Multi-Criteria Decision-Making	PAPER SESSION 6	PAPER SESSION 6 - BLOCK C
203	Autonomous Accident Detection and Alert System	PAPER SESSION 6	PAPER SESSION 6 - BLOCK C
213	Automatic Traffic Control Light using the IOT	PAPER SESSION 6	PAPER SESSION 6 - BLOCK C
219	Proposing a Methodology to Evaluate the Feasibility and Implementation Potential of Wind Energy in Africa Using GIS Data	PAPER SESSION 6	PAPER SESSION 6 - BLOCK C
228	Intermediate Stage Fault Classification for Wind Turbine Gearbox: A Comparative Analysis of Distance Metrics with k-NN Model	PAPER SESSION 6	PAPER SESSION 6 - BLOCK C
199	Precious Photons: A Geospatial Benchmarking of the Value of Sun Tracking in Solar PV Systems in Sub-Saharan Africa	PAPER SESSION 6	PAPER SESSION 6 - BLOCK C
240	Hybrid quantum convolutional neural network for defect detection in a wind turbine gearbox	PAPER SESSION 6	PAPER SESSION 6 - BLOCK D
148	Reliability and Maintainability Assessment of the Infrastructure Components in Electric Power Distribution Network: A Case Study of Lekki Injection Substation	PAPER SESSION 6	PAPER SESSION 6 - BLOCK D
158	Corona Ring Optimisation of 132kV Double Tension Strings	PAPER SESSION 6	PAPER SESSION 6 - BLOCK D
160	Development of hybrid Ultracapacitor and Lithium-Ion Battery Energy Storage System	PAPER SESSION 6	PAPER SESSION 6 - BLOCK D
171	Analysis of Zinc Oxide Grain Barrier under Slow-Front Overvoltages	PAPER SESSION 6	PAPER SESSION 6 - BLOCK D
60	Measured and Simulated PD Characteristics of Closely Coupled Air Cavities in Polymeric Insulation	PAPER SESSION 6	PAPER SESSION 6 - BLOCK D
188	OPTIMIZATION OF REACTIVE POWER DISPATCH FOR IMPROVEMENT OF VOLTAGE STABILITY USING HYBRID DIFFERENTIAL SQUIRREL SEARCH ALGORITHM	PAPER SESSION 6	PAPER SESSION 6 - BLOCK E
190	Implementing and Assessing a GIC Measurement Hardware Framework	PAPER SESSION 6	PAPER SESSION 6 - BLOCK E
218	Potential Criteria for Evaluating Maintenance Strategies in the Power System	PAPER SESSION 6	PAPER SESSION 6 - BLOCK E
226	Verification of PMU Optimal Placement in Power Distribution Networks Using Synchrophasor Measurements and Real-time Simulation	PAPER SESSION 6	PAPER SESSION 6 - BLOCK E
231	Impact of Wayside Energy Storage on the Power Quality of 3 kV DC Traction Power Systems	PAPER SESSION 6	PAPER SESSION 6 - BLOCK E
249	Double-Stator Electric Vehicle Motors: A-State-Of-The-Art Review	PAPER SESSION 6	PAPER SESSION 6 - BLOCK E

SPECIAL PAPER SESSION 1 – Postgraduate Session

**Theme: Electrical Engineering & Renewable Energy Systems**

Paper ID	Title	Paper Session Number	Sub - Session
56	Optimal Power flow on 132kV Line with Service Potential Transformer Substations: A case study of Juja-Rabai line.	SPECIAL PAPER SESSION	POSTGRADUATE FORUM



107	Two-Area Automatic Generation Control System with Economic Dispatch using Integral Controller .	SPECIAL PAPER SESSION	POSTGRADUATE FORUM
167	Modeling the solar irradiance by sunshine duration in the Democratic Republic of Congo	SPECIAL PAPER SESSION	POSTGRADUATE FORUM
168	Correlation between sunshine duration and climatic variables in the Democratic Republic of Congo	SPECIAL PAPER SESSION	POSTGRADUATE FORUM
245	IMPACT ANALYSIS OF OPTIMUM PHASOR MEASUREMENT UNIT PLACEMENT ON WESTERN KENYA POWER NETWORK	SPECIAL PAPER SESSION	POSTGRADUATE FORUM