

Call for Papers



It is with great pleasure that we announce the 30th Southern African Universities Power Engineering Conference (SAUPEC 2022). This flagship Southern Africa regional conference will be hosted by Department of Electrical Power Engineering, Durban University of Technology in conjunction with the South African Institute of Electrical Engineers (SAIEE). SAUPEC brings together experts from the industry, academics and students in engineering, computer science and information technology to present research papers, network, and expand the fraternity that has been built as part of the SAUPEC legacy. The conference will incorporate the Eskom Tertiary Education Support Programme (TESP) report-back meeting

TECHNICAL TOPICS

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| <ul style="list-style-type: none"> • Power Generation, Large-scale Power Projects and Financing • Super-Grid, Power Pools, Smart Grids, Microgrids and Nanogrids • Electromagnetic Compatibility (EMC) and Electromagnetic Interference (EMI) • Geomagnetically Induced Currents and Space Phenomena on Power Systems • Power System Control, Stability, Modeling, Computation, and Optimization • Artificial Intelligence Applications in Power System • Industrial Automation, Mechatronics and Robotics • Energy Storage, Devices and Systems • Distributed and Embedded Generation • Advanced Metering Infrastructure and Control Center Applications • Cyber-physical Systems, Cyber-security and Power System Security | <ul style="list-style-type: none"> • Advanced Electrical Materials and Nanotechnology • Transmission, Distribution and Reticulation Networks • HVDC and High Voltage Engineering • Protection, Relaying and System Automation • Quality of Supply, Reliability and Condition Monitoring • Load Modelling and Demand Side Management • Electrical Machines and Drives • High Power Electronics • Distributed and Embedded Generation • Power Systems Communication • Energy Harvesting, Management, Conversion, Consumption and Efficiency • Renewable Energy Systems • Energy Storage, Devices and Systems • Energy Markets, Economics, Tariffs, Grid Codes and Policies • Power Engineering Education, Super Learning, Distance Learning, On-line Learning. |
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IMPORTANT DATES

16 August 2021 01 November 2021 9 December 2021 15 December 2021 27 January 2022 25-27 January 2022	1 st Call for papers Paper submission closes Notification of acceptance Camera-ready papers due and registration opens TESP report-back meeting Main conference
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Research

Book Chapter

- [1] **Innocent E. Davidson** and **Rodney Reddy**, Battery Energy Storage Systems and Rooftop Solar-Photovoltaics in Electric Power Distribution Networks [Online First]. In: Energy Storage Devices. 27 Aug 2021, IntechOpen, DOI: 10.5772/intechopen.99248. Available from: <https://www.intechopen.com/online-first/78294>

Journal Papers

- [1] **Patrobers Simiyu, I.E Davidson**, "MVDC Railway Traction Power Systems; State-of-the Art, Opportunities, and Challenges", *Energies*-1233187, July 2021, 14, 4156. <https://doi.org/10.3390/en14144156>
- [2] Habib, H. U. R., Waqar, A., Junejo, A. K., Elmorshedy, M. F., Wang, S., Buker, M. S., **Akideji K.T**; Kang, J. & Kim, Y.-S. (2021). Optimal Planning and EMS Design of PV Based Standalone Rural Microgrids. *IEEE ACCESS*, 9, 32908-32930. doi:10.1109/ACCESS.2021.3060031

Peer-Reviewed Conferece Papers

- [1] **Anyanime Umoette**, Ogbonnaya Okoro and **Innocent Davidson**, "Performance Analysis of a 10hp Three phase Induction Motor Using Classical and Finite-Elements for Varying Load Conditions". In *Proceedings 2021 IEEE PES/IAS Power Africa Virtual Conference*, 23 – 27 August 2021.
- [2] **Sindisiwe Malanda** and **Innocent Davidson**, "DC Pole-to-Ground Fault Analysis in a 4-Point VSC Multi-Terminal HVDC Transmission System". Accepted and to appear, In *Proceedings 2021 IEEE PES/IAS Power Africa Virtual Conference*, 23 – 27 August 2021.
- [3] **Emmanuel Abunike**, Ogbonnaya Okoro and **Innocent Davidson**, "Design Considerations and Performance Prediction of an External Rotor 6/10 Switched Reluctance Motor for Electric Vehicle Applications". In *Proceedings 2021 IEEE PES/IAS Power Africa Virtual Conference*, 23 – 27 August 2021.
- [4] **Emmanuel Abunike**, Ogbonnaya Okoro and **Innocent Davidson**, "Thermal Analysis of an Optimized Switched Reluctance Motor for Enhanced Performance". Accepted and to appear, In *Proceedings 2021 IEEE PES/IAS Power Africa Virtual Conference*, 23 – 27 August 2021
- [5] **Patrobers Simiyu** and **Innocent Davidson**, "Modeling and Simulation of MVDC Traction Power System for High-Speed Rail Transportation". In *Proceedings 2021 IEEE PES/IAS Power Africa Virtual Conference*, 23 – 27 August 2021.
- [6] Njoke L Mbanda, **Patrobers Simiyu**, Zhongqun Wu and **Innocent Davidson**, "Tracking the Progress of Universal Access to Electricity in Africa: Status quo, Challenges and Opportunities". In *Proceedings 2021 IEEE PES/IAS Power Africa Virtual Conference*, 23 – 27 August 2021.
- [7] **Nicky Mbaimbai** and **Innocent Davidson**, "Feasibility of Offshore Wind Power for Namibia". In *Proceedings 2021 IEEE PES/IAS Power Africa Virtual Conference*, 23 – 27 August 2021.
- [8] **Elutunji Buraimoh** and **Innocent Davidson**, "Simplified LCL Filter State Space Modeling and Small Signal Stability Analysis of Inverter Based Microgrid". In *Proceedings 2021 IEEE PES/IAS Power Africa Virtual Conference*, 23 – 27 August 2021.
- [9] **Surprise Bongani Mthiyane**, **Elutunji Buraimoh** and **Innocent. E Davidson**, "Investigation of Fault Ride Through Capabilities of DFIG and PMSG Wind System". In *Proceedings 2021 IEEE PES/IAS Power Africa Virtual Conference*, 23 – 27 August 2021.

- [10] Adeniyi Onaolapo, Rudiren Pillay Carpanen, David George Dorrell and **Evans Eshiemogie Ojo**, "Forecasting Electricity Outage in KZN, South Africa using Trend Projection and Artificial Neural Networks Techniques". In *Proceedings 2021 IEEE PES/IAS Power Africa Virtual Conference*, 23 – 27 August 2021.
- [11] Anuoluwapo Aluko, Rudiren Pillay Carpanen, David Dorrell and **Evans Eshiemogie Ojo**, "Real-Time Dynamic Disturbance Estimation of Stand-Alone Microgrids Based on Unknown Input Observer for Frequency Regulation. In *Proceedings 2021 IEEE PES/IAS Power Africa Virtual Conference*, 23 – 27 August 2021.
- [12] **Musawenkosi Lethumcebo Thanduxolo Zulu, Evans Eshiemogie Ojo** and Ajibola Akinrinde, "The Modelling and Simulation Of Power Flow and Fault Analysis For A Hybrid DC Microgrid". In *Proceedings 2021 IEEE PES/IAS Power Africa Virtual Conference*, 23 – 27 August 2021.
- [13] Avinash Panwar, Vinesh Agarwal and **Gulshan Sharma**," Frequency Control Studies of Hydro System Using AI Applications". *icABCD Conference*, Durban, Aug 2021
- [14] Avinash Panwar, Vinesh Agarwal and **Gulshan Sharma**," Studies on Frequency Regulation of Hydro System via New JAYA Optimised LQR Design. *icABCD Conference*, Durban, Aug 2021

Events and Announcements	Upcoming Conferences
Departmental Research Committee (DRC) 03 September 2021 01 October 2021 Faculty Research Committee (FRC) 20 September 2021 18 October 2021	NEIS Conference, 13 – 14 September 2021, Hamburg-Schmidt-University, Germany IEEE AFRICON 2021, 13 – 15 September 2021, Arusha, Tanzania. 3 rd International Multidisciplinary Information Technology and Engineering Conference (IMITEC) 2021 <i>(15 – 23 November 2021)</i>

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