INTERNATIONAL JOURNAL OF ELECTRICAL ENGINEERING AND APPLIED SCIENCES

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MESSAGE FROM THE EDITOR-IN-CHIEF

Assalamualaikum and Greetings to all,

As the chief editor of the International Journal of Electrical Engineering and Applied Science (IJEEAS), first of all, I would like to sincerely welcome both writers and readers to the International Journal of Electrical Engineering and Applied Science (IJEEAS), Volume 7, Issue 1. I would like to express my gratitude to the members of the Editorial Board for their tireless efforts and support in bringing about the 13th issue of volume 7 no. 1. I also want to express my heartfelt gratitude to the Editorial Advisory Board Member for their important experience and effort. Your feedback and persistent support have helped to significantly enhance the quality of our journal. We really appreciate your time and efforts in influencing our editorial process. Thank you for your excellent contributions.

Not to forget is our expert reviewers' outstanding work; we would not be able to publish a quality journal without their volunteer participation, which ensures high technical and editorial standard. I would also like to thank the authors for their contributions, whose faith in us allowed us to bring the journal forward from the outset. We hope to continue receiving high-quality research papers from scholars across the world. I welcome any suggestions you may have on how we may continue to enhance our journal.

This edition features eight interesting articles contributed by the authors from various countries and affiliations. The article from D. J. Reddy and I. J. Larzarus presents the Effects of Zn Doped TiO2 on the Performance of Perovskite Solar Cells (PSC). An optimum power conversion efficiency (PCE) of was achieved with appropriate dopant concentration. It is interesting to see in this article how the optimized ETL processing for the PSC affect the related parameters.

The research contribution from K. Love, C. Kriger and T. Nomzamois proposes the mathematical modelling of a DC motor and the development of a state feedback controller, aiming to simplify the modelling process with its associated controllers. The methods presented can be used on any DC motor with known parameters. Finally, the control system is tested using random set points to prove the resilience of the controller to input changes.

The challenge of determining the optimal placement and dimensions of a Distribution Static Compensator (D-STATCOM) within a radial distribution system is presented by A. F. S. Yussif, T. Seini, B. Ayasu and E. A. Nyantakyi. This article introduces the Pelican Optimization Algorithm (POA) as an innovative approach for the strategic deployment of Distribution Static Synchronous Compensators (D-STATCOM) in distribution systems.

L. S. Mgaga, M.E.S. Mnguni, and S. D. Lumina present a work on power flow analysis incorporating contingency analysis. The research piece aims to find the most essential component that is impacted by voltage violations and critical loading conditions. The contingency analysis results show how voltage on busbars can be significantly impacted when the power system experiences an unconditional phenomenon when the electrical network is operational.

The stability analysis of the characteristic equation for a synchronous generator's second-order system is presented in the N. S. F. M. Murad. et al. article. The results of the simulation indicate that the synchronising coefficient has an impact on both the system's stability and the location of the root.

The performance survey on the residual energy of nodes in a wireless sensor network (WSN) is presented in author O. J. Odeyinka's et.al research. The limited battery life of wireless sensor nodes limits their applications, hence resolving the energy management issue is crucial in extending the lifespan of a deployed network of wireless sensors. Sensor nodes

were uniformly dispersed around the entire network field's boundary in the employed strategy. Eighteen hierarchical, six hierarchical, and an exclusive cluster were created by evenly dividing the network field's border.

Nowadays, efficiency gains, energy recovery, and improved control systems are the main areas of study for hybrid braking for induction motors. It can be concluded that the braking system that was appropriate for this type of induction motor was designed and tested by H. M. Kristiana et al. by directly applying mechanical, dynamic, and hybrid brakes to the induction motor and measuring the time taken for the motor stop. The findings indicated that the hybrid brake system, which combined dynamic and mechanical braking in configuration had the quickest braking duration, requiring less than 0.25 seconds to stop the engine. Therefore, in a standard 3-phase induction motor, this hybrid braking system is the most appropriate.

Busbar protection scheme performance depends heavily on the communication system of intelligent electronic devices. Because of this, the objective of the article by L.S. Mgaga and M.E.S. Mnguni is to achieve interoperability between multi-vendor intelligent electronic devices (ABB and SEL) that are based on the IEC 61850 standard. This enhances operational reliability while simultaneously improving busbar protection scheme performance amongst devices from different vendors. A current differential busbar protection technique is used for the inquiry. Using a Real-Time Digital Simulator (RTDS), Hardware-In-the-Loop (HIL) testing is implemented for the investigation.

Finally, I sincerely hope that readers will enjoy the discoveries presented by articles in this issue. We appreciate your continued support on IJEEAS and continue to follow us in our future publication.

Ir. Dr. Maaspaliza Azri
Editor-in-Chief IJEEAS