

**African Journal of Advances in Engineering and Technology
(AJAET)**

E-ISSN 2978-3224 (Online); ISSN 2978-3216 (Print)

Indexed by SABINET and EBSCO

Volume 1, Number 1, June 2025

Pp 5-7

Editorial Note

DOI: <https://doi.org/10.31920/2978-3224/2025/v1n1a0>

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Editor-in-Chief

African Journal of Advances in Engineering and Technology (AJAET)

It is with great pleasure that I present this maiden issue of the *African Journal of Advances in Engineering and Technology (AJAET)*. The papers in this edition reflect the journal's commitment to advancing interdisciplinary research in engineering, applied sciences, and technology-driven solutions tailored to the African and global contexts. Each contribution offers evidence-based insights into real-world problems, bridging theory and practice while pushing the boundaries of innovation.

This maiden issue arrives at a time when engineering and technology are evolving rapidly, shaped by the twin imperatives of sustainable development and digital transformation. The diversity of topics in the volume underscores the journal's mission to provide a platform for rigorous research that addresses pressing challenges in energy, environment, education, artificial intelligence, and industrial operations.

The issue opens with "Technological Integration and Educational Administration: Addressing the Contemporary Societal Needs in West Africa" by *Celestina Ekene Chukwudi*. The paper highlights the transformative potential of digital tools in educational administration, especially in bridging rural-urban divides and fostering equitable access to quality learning. It provides practical recommendations for policy and capacity-building to enable technology-driven governance in education.

From education, the focus shifts to life sciences and artificial intelligence with *Omowaye Olaniji Stephen* and colleagues' paper, "The

Roles and Efficiency of Artificial Intelligence in Bioinformatics and Biological Sciences.” The authors explore how machine learning and deep learning techniques are reshaping genomics, proteomics and systems biology. The paper underscores AI’s role in accelerating discovery while raising critical questions on algorithm transparency and data ethics.

AI applications are taken further into engineering and security in “Real-Time Deep Learning-Based Object Detection and Tracking System for Quadcopter-Based Surveillance” by *Okhiria Kenneth* and co-authors. Leveraging the YOLOv3 framework, the study demonstrates high-precision and real-time object detection for UAV-based surveillance. It highlights the intersection of computer vision with automation and safety-critical operations, offering a foundation for future drone-based monitoring systems.

Industrial operations take center stage in “Field Development Planning: Insights from Technical Analysis of Decline Curve and Advanced Computational Models for Accurate Reserves Estimation” by *Adango Fred Hart*. This technical study revisits hydrocarbon reserves estimation using decline curve analysis, material balance solutions and artificial neural networks. The case studies of two reservoirs illustrate the value of integrating traditional and AI-driven models for reliable resource planning and sustainable energy management.

Environmental engineering and industrial optimization are addressed in “Frontiers in Operation and Maintenance of Waste Treatment Facility Assets: Case of Large-Scale Hazardous Solid Waste Incinerators” by *Sammuel Victor Manyele*. Using data-driven O&M analysis of different incinerator scales, the study offers insights into asset reliability, cost structures and energy recovery. It emphasizes the critical role of predictive maintenance and process monitoring in waste-to-energy operations.

Together, the papers in this issue reflect the journal’s vision: to promote high-quality applied research that informs policy, supports industrial innovation, and drives sustainable solutions across diverse sectors. They also exemplify the growing integration of artificial intelligence, data-driven modeling and operational optimization in engineering and technology.

I extend sincere appreciation to all the authors for their dedication to advancing knowledge, to the reviewers for their rigorous evaluations and to the editorial team for ensuring the quality of this publication. We also

thank our readers and contributors, whose continued engagement strengthens the journal's impact.

We invite future submissions that continue to push boundaries, integrate interdisciplinary insights, and contribute to the body of applied engineering and technology research. Constructive feedback is always welcome as we strive to maintain AJAET as a trusted platform for scholarly excellence.