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# **Nigerian Journal of Technological Development**

**Volume 22, Issue 5, December 2025.**

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## ACKNOWLEDGEMENT(S)

Acknowledgment of the individuals, institutions, or research granting bodies who provided help during the research should be collated in a separate section at the end of the article before the references. It should, therefore, not be included on the title page as a footnote to the title or otherwise. *Henceforth, acknowledgment must be provided on all accepted articles before publication.*

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#### One Author

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### Three Authors

**Ogunlela, A. O.; M. Y. Kasali and I. E. Ahaneku. (2006).** Hydrologic Characterization of the National Centre for Agricultural Mechanization (NCAM) Watershed. *Journal of Science and Technology Research*, 5 (3): 69-73.

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**Ogunlela, A. O.; M. Y. Kasali; C. J. Ejieji and I. E. Ahaneku. (2006).** Hydrologic Characterization of the National Centre for Agricultural Mechanization (NCAM) Watershed. *Journal of Science and Technology Research*, 5 (3): 69-73.

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### **A DESCRIPTION OF VOL. 22, ISSUE 5, DECEMBER 2025**

VOL 22 ISSUE 5 DECEMBER 2025 presents a multidisciplinary exploration of cutting-edge research in engineering and applied sciences. The papers showcased innovative solutions to contemporary industrial, environmental, and societal challenges. The collection advances knowledge in robotics and automation, from a redundant SCARA robot using novel composite foams to optimised industrial motors and IoT control frameworks. Significant focus is given to sustainable materials and processes, featuring work on self-compacting concrete, nanoparticle biochars for water treatment, and a smart crop dryer. In this issue, energy systems are critically examined, with studies on grid protection, renewable energy integration, economic dispatch, and advanced MPPT techniques for photovoltaic systems. Environmental remediation and resource management are addressed through research on heavy-metal bioremediation via microbial fuel cells, ballast-water treatment, and marine corrosion inhibition using natural extracts. The issue also includes sophisticated numerical and simulation methodologies applied to mooring dynamics for offshore systems, projectile aerodynamics, and seismic stability of coastal structures.

Further contributions highlight quality and process improvement in manufacturing through Six Sigma and process intensification reviews, as well as specialized investigations into petrographic rock properties, humidity control modelling, and the tribology of food grinding discs. The scope extends to infrastructure and safety with a GIS-based assessment of campus lighting and crime and concludes with focused reviews on e-health implementation in the DRC and port construction in African bays, underscoring the journal's commitment to both technological innovation and regionally impactful research.

Collectively, these papers demonstrate a strong emphasis on computational modelling, experimental validation, and the development of sustainable, efficient, and intelligent systems across a broad spectrum of engineering disciplines.

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