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PROFESSIONAL PROFILE

Chemical Engineer and researcher specializing in electrochemical water treatment, capacitive deionization, electrocatalysis, electrochemical nitrate reduction, nanomaterials, and energy storage technologies. Research focuses on the design and engineering of advanced functional materials for desalination, environmental remediation, supercapacitors, batteries, and sustainable energy systems. Author of more than 25 scholarly publications in high-impact journals including *Advanced Functional Materials*, *Advanced Energy Materials*, *Chemical Engineering Journal*, *Water Research*, *Desalination*, *Chemical Engineering Science*, and *Journal of Materials Science & Technology*.

RESEARCH INTERESTS

Capacitive deionization, electrochemical water treatment, electrochemical nitrate reduction, electrocatalysis, Prussian blue analogues, nanomaterials, supercapacitors, batteries and energy storage systems, electrochemical energy conversion, renewable energy systems, process simulation and optimization, computational fluid dynamics, reaction kinetics, carbon utilization technologies, environmental remediation, and water-energy nexus technologies.

EDUCATION

Yanshan University, Qinhuangdao, China

PhD, Chemical Engineering and Technology, 2021–2026

University of Sheffield, United Kingdom

MSc (Eng), Environmental and Energy Engineering (Distinction), 2013

Ladoke Akintola University of Technology, Ogbomoso, Nigeria

B.Tech, Chemical Engineering (First Class Honours), 2008

ACADEMIC APPOINTMENTS

Yaba College of Technology, Lagos, Nigeria
Lecturer, Department of Chemical Engineering
October 2014 – Present

SCHOLARSHIPS, AWARDS AND HONOURS

- Federal Scholarship Board (FSB) – China Scholarship Council (CSC) PhD Scholarship, 2021
 - Petroleum Technology Development Fund (PTDF) Overseas MSc Scholarship, United Kingdom, 2012–2013
 - Best Academic Student, Department of Chemical Engineering, LAUTECH, 2007
 - Certificate of Merit, Best Student in Strength of Materials, LAUTECH, 2006
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PROFESSIONAL MEMBERSHIPS

- Registered Engineer, COREN
 - Corporate Member, Nigerian Society of Engineers
 - Corporate Member, Nigerian Society of Chemical Engineers
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PUBLICATIONS

Journal Articles

1. Meng, X., Tan, X., Xu, L., **Obisanya, A.A.**, Wang, J., Xiao, Z., Zhang, C., Song, A., et al. Al-F bond-dominated water dissociation promotes high-efficiency nitrate electroreduction to ammonia. *Chemical Engineering Science*, 124278 (2026).
2. **Obisanya, A.A.**, Ren, Z., Li, S., Peng, H., Li, X., Tan, X., Song, D., Gao, F., Wang, J. Interfacial-engineered graphene–nanosized Prussian blue analogue heterostructures enabling mirror-symmetric redox chemistry for energy-efficient capacitive desalination. *Desalination*, 120114 (2026).
3. Wang, X., **Obisanya, A.A.**, Hou, L., Tao, X., Gao, Y., Jin, J., Sun, K., Wang, Y., Gao, F. Regulating intermediates adsorption/desorption behavior in multilayered 2D MoS₂-(Ni,Fe)Sx/rGO heterostructure via built-in electric field-driven electron transfer for water splitting. *Journal of Materials Science & Technology* (2025).

4. Ren, Z., Liu, J., **Obisanya, A.A.**, Ma, Y., Tan, X., Gao, F., Wang, J. A coupled capacitive desalination (C-CDI) for enhanced desalination performance at ultralow voltage. *Water Research*, 283, 123854 (2025).
5. Wang, J., Zhang, X., Liu, J., **Obisanya, A.A.**, Ma, Y., Li, X., Ren, Z., Yang, T., Tan, X., et al. Decoupling charge transfer of sodium ions in birnessite towards enhanced capacitive deionization. *Chemical Engineering Journal*, 166435 (2025).
6. Wang, J., Yang, T., **Obisanya, A.A.**, Ma, Y., Ren, Z., Tan, X., Lei, W., Song, A., Gao, F. Force-Field Regulation Engineered Heterogeneous Graphene Micro-Aerogels as Versatile Platforms for High-Mass-Loading Energy Storage. *Advanced Energy Materials*, 2500992 (2025).
7. Meng, X., Tan, X., Ma, Y., **Obisanya, A.A.**, Wang, J., Xiao, Z., Wang, D. Recent Progress in Cobalt-Based Electrocatalysts for Efficient Electrochemical Nitrate Reduction Reaction. *Advanced Functional Materials*, 35(14), 2418492 (2025).
8. Fadayini, O.M., Adeyemo, F., Bello, E.V., Bolaji, O.T., Madu, A.O., Oso, C., **Obisanya, A.A.**, et al. Technoeconomic Feasibility of Producing 100,000 Metric Tonnes of Biodiesel from Neem Oil via Transesterification. *Journal of the Nigerian Society of Chemical Engineers*, 39(3), 23–29 (2024).
9. **Obisanya, A.A.**, Ma, L., Liu, J., Yang, T., Ren, Z., Tan, X., Gao, F., Wang, J. Multiscale Scrutinizing Ion Storage Kinetics in Hollow Ni-Mn Prussian Blue Analogues for Enhanced Capacitive Deionization. *Advanced Functional Materials*, 34(44), 2404591 (2024).
10. Fadayini, O., Omoko, I.D., Adenekan, I.O., Akinmoladun, O.M., **Obisanya, A.A.**, et al. The Dynamical Investigation of Heat Transfer and Temperature Changes of the Shell and Tube Heat Exchanger Using the Lyapunov Methods. *Journal of Mechanics of Continua and Mathematical Sciences*, 19(9), 77–92 (2024).
11. Liu, J.K., Yang, T.S., Ren, Z.B., **Obisanya, A.A.**, Tan, X.Y., Rao, Y.D., Zhou, J.S., Gao, F.M., Wang, J.R. Multiscale Control of MnO₂ Growth via [WO₆]-Perturbed [MnO₆] Assembly toward a Favorable Balance between Capacitance and Rate Performance. *Rare Metals*, 43(4), 1658–1671 (2024).
12. Wei, K., Song, Y., **Obisanya, A.A.**, Li, H., Li, H. Ru-Mn Pair-Site Triggers Key Oxygen Intermediate for Enhanced Acidic Oxygen Evolution Reaction Kinetics. *Chemical Engineering Journal*, 497, 154724 (2024).
13. Olopade, S.O., Adeboje, A.O., Olutaiwo, A.O., **Obisanya, A.A.** Comparative Evaluation of the Engineering Properties of Asphaltic Concrete from Selected Asphalt Plants in Southwestern Nigeria for Road Construction. *International Journal of Sustainable Construction Engineering and Technology* (2023).

14. **Obisanya, A.A.**, Ajiboye, G.O., Ajiboshin, I.O., Ogunyemi, O.I. Drying Kinetics and Thin Layer Modelling of Clerodendrum Volubile (Marugbo) Leaves. *International Journal of Chemical Engineering and Applications*, 13(4) (2022).
15. Toriola-Coker, L.O., Omokungbe, O.O., Alaka, H., Adebayo, O.C., **Obisanya, A.A.** Public Private Partnership (PPP) as an Aid to Tertiary Institution Support for Internally Generated Revenue (IGR): A Case Study of Yaba College of Technology. *Engineering and Applied Sciences*, 7(3), 36–45 (2022).
16. Toriola-Coker, L.O., Omokungbe, O., **Obisanya, A.A.**, Yekini, N.A., Alaka, H., Ayodele-Oja, S. Public Transportation and Energy Utilisation During Covid-19 Pandemic in Nigeria. *South Florida Journal of Development*, 3(2), 3031–3043 (2022).
17. Adeyanju, O.A., Adeosun, T.A., **Obisanya, A.A.** Experimental Investigation of Wax Deposition in Subsea Pipelines Using a Cold Finger Apparatus. *Journal of Nature Science and Sustainable Technology*, 15(4), 237–245 (2021).
18. Toriola-Coker, L.O., Ajimo, A.O., **Obisanya, A.A.** Effect of Saline Water on the Compressive Strength of Concrete. *Journal of Science & Engineering Research*, 5(1), 15–23 (2021).
19. Fadayini, O.M., **Obisanya, A.A.**, Ajiboye, G.O., Oso, A.O., Adagiri, G.A., Folami, N.A., Ajayi, S.J., Edafeshebure, O. Thermal Pyrolysis of Waste Polyolefins to Generate Alternative Liquid Fuel. *Unibuja Journal of Engineering and Technology*, 1(1), 59–75 (2020).
20. Ogunyemi, I.O., Okeke, U.A., Ladeji, N.A., **Obisanya, A.A.**, Ajiboye, G.O. Conversion of Waste Polyethylene Terephthalate (PET) into Hydrocarbons by Pyrolysis Using Local Materials as Catalysts. *Journal of Applied Science*, 5(12), 15–31 (2019).
21. Waheed, M.A., Aiyedun, P.O., Adedeji, W.O., **Obisanya, A.A.**, Amosun, S.T., Adesina, A.O. Energy-Exergy Analysis and Carbon (IV) Oxide Emission of an Aluminium Extrusion Plant in Nigeria. *Engineering*, 9, 1048–1059 (2017).
22. Waheed, M.A., Aiyedun, P.O., Adedeji, W.O., **Obisanya, A.A.**, Amosun, S.T., Adesina, A.O. Efficiency of Energy Utilisation in a Nigeria Sausage Producing Factory. *Journal of Power and Energy Engineering*, 5, 100–108 (2017).
23. Adeyanju, O.A., Adeosun, T.A., **Obisanya, A.A.** Experimental Study of Viscosity as a Criterion for Determination of Onset of Asphaltene Flocculation in Nigeria's Crude. *Petroleum & Coal*, 57(6) (2015).

24. Osuolale, F.N., Anozie, A.N., **Obisanya, A.A.** Energy and Exergy Analyses of a 220 MW Steam Power Plant. *LAUTECH Journal of Engineering and Technology*, 5(1), 1–6 (2009).
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Book Chapters

25. Fadayini, O.M., **Obisanya, A.A.**, Ajiboye, G.O., Madu, C., Ipaye, T.O., Rabi, T.O., et al. Simulation and Optimization of an Integrated Process Flow Sheet for Cement Production. In: *Cement Industry: Optimization, Characterization and Sustainable Application* (2021).
26. Fadayini, O.M., Madu, C., Oshin, T.T., **Obisanya, A.A.**, Ajiboye, G.O., Ipaye, T.O., et al. Energy and Economic Comparison of Different Fuels in Cement Production. In: *Cement Industry: Optimization, Characterization and Sustainable Application* (2021).