

Curriculum Vitae

OWOLABI AYOWOLE AWWAL

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PROFESSIONAL SUMMARY

Analytical chemist with extensive expertise in advanced instrumentation, including GC, HPLC, and LC–MS/MS for the quantification of cyanide, chemical warfare agents, environmental pollutants, and pharmaceuticals in biological and environmental matrices. Strong background in method development, validation, and cross-disciplinary research integrating analytical chemistry, materials science, and applied environmental/forensic studies.

EDUCATION

2025 – 2030 Ph.D Analytical Chemistry

South Dakota State University, United States

Advisor: Professor Brian Logue

2023 – 2025 M.Sc Analytical Chemistry

Western Illinois University, United States

Thesis Supervisor: Associate Professor Liguang Song

2017 – 2019 M.Sc Analytical Chemistry

Ahmadu Bello University, Nigeria

Supervisor: Professor. Omoniyi, K.I

2011 – 2015 BSc. Pure and Applied Chemistry

University of Ilorin, Nigeria

Supervisor: Professor. Dr. Eke Uche

WORK EXPERIENCE

Graduate Teaching Assistant

South Dakota State University (Brookings)

Aug 2025 – May 2024

- Organize and prepare laboratory sessions by setting up instruments, chemicals, and safety materials, while overseeing undergraduate students during General Labs.
- Provide hands-on guidance to students, troubleshooting experimental or technical issues during laboratory work to enhance learning outcomes.
- Assist the professor with classroom responsibilities, including leading student review discussions, monitoring attendance, and ensuring access to lecture resources and supplementary materials.
- Promote an effective and safe learning environment by reinforcing lab safety procedures, supporting academic engagement, and facilitating smooth laboratory operations.

Graduate Support Assistant (Professor Jin Jin: Organic Classes & Lab)

Western Illinois University (Spring 2024)

Jan 2025 – May 2025

- Prepare laboratory practical sessions by setting up a laboratory and supervising undergraduate students during laboratory sessions for Organic 331 Laboratory sessions.
- Assist the Professor with support in organic classes focusing on organic laboratory techniques on a microscale approach which includes carbon compounds, alkanes and cycloalkanes, stereochemistry, ionic reaction, NMR spectroscopy, and Radical chain reactions.
- Assist undergraduate students with technical difficulties during laboratory sessions.
- Assist the Professor during organic chemistry class sessions which include review sessions for students, taking attendance during class sessions, and ensuring that students get access to lecture materials.

Graduate Teaching Assistant (Dr. Ligu Song: Forensic Lab)

Western Illinois University (Spring 2024)

Jan 2024 – May 2024

- Prepare laboratory sessions and supervise undergraduate students during laboratory sessions for CHEM 251.
- Introduce the concept of forensic evidence such as pattern evidence, trace evidence, chemical evidence, and biochemical evidence to students.
- Prepare laboratory sessions for microscopy, spectroscopy, and slab gel electrophoresis to identify crime laboratories, toxicology, serology, and DNA typing.

Graduate Support Assistant (Professor Jin Jin: Organic Classes and Lab)

Western Illinois University (Fall 2023)

Aug 2023 – Jan 2024

- Prepare laboratory practical sessions by setting up a laboratory and supervising undergraduate students during laboratory sessions for Organic 332 Laboratory sessions.
- Assist the Professor with support in organic classes focusing on organic laboratory techniques on a microscale approach which includes carbon compounds, alkanes and cycloalkanes, stereochemistry, ionic reaction, NMR spectroscopy, and Radical chain reactions.
- Assist undergraduate students with technical difficulties during laboratory sessions.
- Assist the Professor during organic chemistry class sessions which include review sessions for students, taking attendance during class sessions, and ensuring that students get access to lecture materials.

Graduate Teaching Support Assistant (Dr Mai lee: General Chemistry)

Western Illinois University (Fall 2023)

Aug 2023 – Jan 2024

- Responsible for setting up the general laboratory session for Density and Specific gravity, Atoms and elements, electronic configuration, and periodic properties which include describing the color flame and interpreting the trends in atomic radii within a period or group.
- Responsible for supervising students in general laboratory sessions on Temperature and specific heat, Electrolytes and concentration, Testing for cations and anions, and Acid-Base titration.

Branch Manager and Quality Manager (SW Operations) Mar 2021-Aug 2023

Dabol Nigeria Limited (Sagamu)

- Managed a #12 billion Turnover southwest grains production facility with 50,000 Mt annual production target.
- Managed cross functional team from Factory Manager, Accounting, Procurement, Logistics and Warehousing team to achieve their daily goals and targets.
- Liase with key customers from Nigerian Breweries (Heinekens), Nestle, Guinness Diageo and World food programs on critical production matters.
- Represent company Chairman and Managing Directors in key functions and meetings with clients.
- Responsible for managing the Quality Department for both the Northern Headquarter and Zaria HQ and

Sagamu Southwest Factory in ensuring the Quality Management System and Food Safety Management system are set up, managed, enforced, and consistently applied throughout the organization.

Quality Chemist Manager

Feb 2017 – Mar 2021

Dabol Nigeria Limited • Zaria

- Overall Responsibility for Quality & Food Safety and ensuring the Quality Management System and Food Safety Management system are set up, managed, enforced, and consistently applied throughout the organization.
- Responsible for Implementing and Management of defect Reduction Projects using standard problem-solving tools to build Customer and Consumer Trust.
- Developing and maintaining competencies required for Quality awareness.
- Ensuring a close survey of regulations as well as issues in relevant fields of activities and establishing monitoring programs for raw and packaging materials as well as finished products.
- Measuring and analyzing compliance against regulatory norms and internal standards.
- Compliance and Quality Reporting for top management information and decision-making.
- Responsible for Total Product Quality as well as Hygiene and Good manufacturing practices in the production plants.

Research Analytical Chemist

Apr 2017- Aug 2018

Ahmadu Bello University, Nigeria

- Processes organizes, and summarizes data, reporting experiment results using a variety of scientific (ChemDraw), word processing, spreadsheet, or statistical software applications.
- Demonstrate chemical experiments, tests, and analyses to students using techniques such as chromatography, spectroscopy, physical and chemical separation techniques, or microscopy.
- Assist professors in the development and implementation of experiments.
- Maintain detailed, accurate records of all experiments performed.
- Develop and perform analytical tests for new organic intermediates by using analytical instruments such as HPLC, GC, etc.

Quality Assurance Specialist

Coca-Cola HBC

Jul 2015 - Oct 2015 (4 months)

Laboratory Chemist

Jul 2014 - Oct 2014

Heineken, Nigerian Breweries • Ibadan

RESEARCH VISIT

University of Edinburgh, United Kingdom

June 2024-August 2024

(3 Months Research Grant funded by the Royal Society of Chemistry).

- ❖ **Research Title:** Structural Characterization of Biofuel Produced from Hydrothermal Liquefaction and Fast Pyrolysis of Lignin sugarcane spent coffee grains and rice husk.
 - ❖ Supervisor: Professor Pulham Colins (Chair of High-Pressure Chemistry)

AWARDS AND HONOURS

Tony Elumelu Entrepreneurship Grant Award 10 th Cohort (\$5000)	2024
Royal Society of Chemistry Technician Award Grant (£5512)	2022
Royal Society of Chemistry Developing Scholarship Grant (£4900)	2021
Green Rise Innovation Hub Virtual Accelerator (\$2000)	2020

ATTENDED WORKSHOPS/EVENTS/CONFERENCES (ONSITE/VIRTUAL)

- National Organization of Professional Black Chemistry Annual Conference Atlanta, Georgia 2025
- High Performance Computing Workshop San Diego State University California 2025
- Small Business Expo, University of Chicago 2024
- LC-DAD with Optional ESI/MS: An Emerging Gold Standard for Hemp Compliance Testing National Institute of Justice USA 2024
- Wayne State University Annual Chemistry Graduate Research Symposium 2023
- 10th International Bioeconomy Conference (DBFZ)

MEMBERSHIPS

- Material Science and Technological Society of Nigeria, Member
- Algae Biomass Organization, Member
- Illinois State Academy of Science (ISAS), Member
- American Chemical Society, Member
- Royal Society of Chemistry UK, Member
- Mycotoxicological Society of Nigeria, Member
- Chemical Society of Nigeria, Member
- Institute of Chartered Chemist of Nigeria, Member

PROFESSIONAL COURSES

- Introduction to Molecular Spectroscopy: University of Manchester, UK. 2024
- Organic Solar Cells-Theory and Practice: Technical University of Denmark, Denmark. 2024
- Teaching in University Science Laboratories (Developing Best Practice): University of Amsterdam, Netherlands. 2024
- LCMS Validation course: University of Tartu, Estonia 2023
- Aspen Plus-Intermediate Process Modeling 2021.

➤ RELEVANT SKILLS HIGHLIGHT

High-performance liquid Chromatography (HPLC Shimadzu), Gas Chromatography (Agilent), LCMS/MS (Agilent), Aspen Plus (Unifac Activity Model, Peng Robinson-EOS Model, NRTL Activity Model, Txy diagrams, P-xy diagrams) ♦ DWSIM Chemical simulator
Scilab (Universal quasi-chemical activity coefficients).

SELECTED PUBLICATIONS

1. Owolabi, A.; Ogunsola, O.; Joens, E.; Kotler, M.; Song, L. A Systematic Study of Liquid Chromatography in Search of the Best Separation of Cannabinoids for Potency Testing of Hemp-Based Products. *Molecules* **2025**, *30*, 758. <https://doi.org/10.3390/molecules30040758>
2. Joseph, O. T.; **Owolabi, A. A.**; Omoniyi, K. I.; Nkwocha, S. T.; Adebayo, A. A.; Osuolale, E. A. Optimization of Leaching Recovery of Zinc, Iron, and Manganese from Selected Solid Waste Ashes in Zaria, Kaduna State, Nigeria. *Asian J. Chem. Sci.* **2024**, *14* (5), 1-17.
3. Joseph, O. T.; **Owolabi, A.A.**; Omoniyi, K. I.; Nkwocha, S. T.; Medubi, K.; Adebayo, A. A. Solvent Extraction of Zinc from Burnt Tyre Ash Using Tri Butyl Phosphate. *Chem. Sci. Int. J.* **2024**, *33* (5), 11-21.
4. Mustapha, M.; Omoniyi, K. I.; Nasiru, G. Z.; Lawal, A. M.; Abdullah, F.; Suleiman, M. S.; **Awwal, O. A.**; Naziru, I.; Oyibo, A. A. Solvent Extraction of Zinc and Copper from Zarara Hill Sulphide Ore Leach Liquor by Bis(2,4,4-trimethylpentyl)phosphinic Acid (Cyanex 272). *Science Focus.* **2024**, *27*, 13-21.
5. Yunusa, H, Omoniyi K. I, Stephen E. A, Aroh A. O, **Owolabi A. A** and Imam, N. “Green Synthesis of Titanium Oxide (TiO₂) Nanoparticles Using Phyllanthus Niruri and Assessment of Its Antibacterial Activity in Wastewater Treatment” Communication in Physical Sciences,

2023, 10(1): 85-99

6. Mukthar, M, Omoniyi, K. I., Garba, Z. Omoniyi K.I., Garba, Z. N., Lawal, M.A., Faizuan, A., Oyinbo, A.A. and **Owolabi, A.A.** “Quantitative Leaching of Zinc and Copper using HCl from polymetallic sulphide ore obtained from Zarara Hill, Nigeria” *Ethiopian Journal of Environmental Studies & Management* 16(4): 530 – 543, 2023 ISSN:1998-0507 doi: <https://ejesm.org/doi/v16i4.10>
7. Omoniyi, K. I, Zaharaddeen, N. G, Mustapha, Y. H, Baba A. A, Aroh, A. O and **Owolabi, A.** A Dissolution Kinetics of the Hydrometallurgical Extraction of Tin from a Nigerian Cassiterite Ore obtained from Jibia Local Government Katsina State. *Communication in Physical Sciences*, 2023, 9(4): 510-520. Published 04 September 2023.
8. **Owolabi Ayowole Awwal**, Omoniyi Kehinde Israel and Zakka Yashim (2019) “Physicochemical, calorific and emission performance of Briquettes produced from Maize cob, sugarcane bagasse and polythene composites” *Avicenna Journal of Environmental Health Engineering*, Iran. Vol. 6, No. 1 (2019) 60-65.
9. Omoniyi KI, Zakka IY, **Owolabi A.A.** The Effect of Binder Type on the Physico-Chemical and Calorific Compositions of Fuel Briquette Produced from Maize Cob, Sugarcane Bagasse and Discarded Polythene Composite. *Trop J Nat Prod Res.* 2018; 2(9):418-421.
10. **Owolabi, A.A.**, Omoniyi, K.I., and Zakka, I.Y. (2018). “Production and proximate analysis of fuel briquette produced from Maize cob, Sugarcane bagasse and polythene composite”: *Chemical Society of Nigeria (CSN) 41st Annual International Conference*, 2018, Ibadan, Nigeria.
11. **Owolabi, A.A.**, and Omoniyi, K.I., (2018). “Analysis of the functional groups and concentrations of Cu, Cd, and Pb in Lawsonia Inermis leaves obtained from Funtua, Daura and Katsina in Nigeria”: *Chemical Society of Nigeria (CSN) 41st Annual International Conference*, 2018, Ibadan, Nigeria.
12. **Owolabi, A.A.**, Omoniyi, K.I., Abechi, S.E., and Idowu, E.O., (2018). “Determination of the Adsorptive Characteristics of Some Selected Heavy Metals onto Farmland Soil”: *Chemical Society of Nigeria (CSN) 41st Annual International Conference*, 2018, Ibadan, Nigeria.

CONFERENCE POSTER PRESENTATIONS

1. **Ayowole Owolabi (Chemistry)**, A Systematic Study of Liquid Chromatography in Search of the Best Separation of Cannabinoids for Potency Testing of Hemp-Based Products. 22nd September 2025
2. **Ayowole Owolabi (Chemistry)**, “Quantification of Δ^9 -Tetrahydrocannabinol (THC) Among Nineteen Cannabinoids in Lucky Leaf Hemp Cigarettes by Liquid Chromatography Ultraviolet Detection. Graduate Research Conference, WIU Macomb Illinois. 29th March 2024.
3. **Ayowole Owolabi (Chemistry)**, “Quantification of Δ^9 -Tetrahydrocannabinol (THC) Among Nineteen Cannabinoids in Lucky Leaf Hemp Cigarettes by Liquid Chromatography Ultraviolet Detection. Natural Science Research Symposium (NSRD) Conference, WIU Macomb Illinois. 5th April 2024
4. **Ayowole Owolabi (Chemistry)**, “Quantification of Δ^9 -Tetrahydrocannabinol (THC) Among Nineteen Cannabinoids in Lucky Leaf Hemp Cigarettes by Liquid Chromatography Ultraviolet Detection. Illinois State Academy of Science Conference (ISAS) Millikin University, Illinois. 13th April 2024.

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