

2023 PROMOTIONS
CURRICULUM VITAE

- I. (a) Name: Abisola Opeyemi Egbedina (nee Adeyemo)
(b) Date of Birth: 26 October, 1987
(c) Department: Chemistry
(d) Faculty: Science
- II (a) First Academic Appointment: Assistant Lecturer (3 November, 2016)
(b) Present Post (with dates): Lecturer I (1 October, 2023)
(c) Date of Last Promotion: 1 October, 2023
(d) Date Last Considered (in cases where promotion was not through): Not Applicable
- III. University Education (with dates):
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| (a) Bowen University, Iwo | 2005 - 2009 |
| (b) University of Ibadan, Ibadan | 2011 - 2012 |
| (c) University of Ibadan, Ibadan | 2016 - 2023 |
- IV Academic Qualifications (with dates and granting bodies):
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| (a) BSc. (Industrial Chemistry) Iwo | 2009 |
| (b) MSc. (Industrial Chemistry) Ibadan | 2012 |
| (c) PhD (Industrial Chemistry) Ibadan | 2023 |
- V Professional Qualifications and Diplomas (with dates): Nil
- VI Scholarships, Fellowships and Prizes (with dates) in respect of Undergraduate and Postgraduate work only: Nil
- VII Honours, Distinctions and Member of Learned Societies:
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| (a) Associate member, Royal Society of Chemistry | 2019 |
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VIII Details of Teaching/Work Experience:

(a) Work Experience

Assistant Lecturer, Southwestern University, Nigeria	2013 - 2015
Assistant Lecturer, University of Ibadan, Nigeria	2016 - 2020
Lecturer II, University of Ibadan, Nigeria	2020 – 2023
Lecturer I, University of Ibadan, Nigeria	2023 – Date

(b) Teaching Experience

(i) Undergraduate

CHE 191 -Practical Chemistry	2017-Date	(taught by 9 lecturers)
ICH 226 - Chemical Raw Materials I	2017-2022	(taught by 3 lecturers)
ICH 266 - Chemical Raw Materials II	2017-2021	(taught by 3 lecturers)
ICH 326 – Heavy Industrial Inorganic Chemistry	2023-Date	(taught by 3 lecturers)
ICH 347 - Unit Operations I	2017-Date	(taught by 2 lecturers)
ICH 366 - Petrochemicals and Utilization of wastes	2017-Date	(taught by 3 lecturers)
ICH 447 - Unit Operations II	2017-Date	(taught by 2 lecturers)
ICH 299 - Industrial Attachment I	2017-Date	(taught by 40 lecturers)
ICH 399 - Industrial Attachment II	2017-Date	(taught by 40 lecturers)
ICH 495 - Project	2017-Date	(taught by 1 lecturer)
ICH 387 - Colour Chemistry	2022- Date	(taught by 2 lecturers)

(ii) Postgraduate:

- (i) Ongoing
- MSc. - 1

(iii) Research Supervision

- (i) Completed:
- BSc. - 13
- (ii) On-going
- BSc. - 6

(c) Administrative Responsibilities

- (i) Member, Departmental Examination Committee 2018-Date
- (ii) Member, Departmental Maintenance Committee 2022-Date
- (iii) Departmental Course level adviser (200 level) 2022-Date
- (iv) Departmental Industrial Training (IT) Coordinator 2022-Date

IX RESEARCH

(a) Completed

- (i) Adsorption of pharmaceutical contaminants from hospital and wastewater treatment plant effluents.

(b) In progress

- (i) Adsorption of heavy metals and dyes on layered double hydroxides (LDH): The search for low-cost and environmentally friendly alternatives to activated carbon as adsorbents has led to the emergence of LDHs as promising materials for the removal of pollutants. In addition to their tuneable charge densities and large chemical versatility, there exists a wide range of M^{2+}/M^{3+} as well as intercalating anions that can be substituted to enhance the removal of these pollutants. This research which began in 2022 is ongoing. Several LDHs with different ratios of M^{2+}/M^{3+} metal ions as well as metal ion types have been synthesized and characterized. Next, these adsorbents will be employed in the removal of dyes and heavy metals to reduce their concentrations to within acceptable limits.
- (ii) Photocatalytic degradation of crude oil using visible light photocatalysts: Globally, environmental pollution caused by oil spills is a major threat to climate, agricultural sustainability and human health and there is an impending food shortage crisis if oil spill on land and water body is not quickly addressed. This work focuses on the degradation of crude oil in water using indigenous photocatalysts prepared from agricultural waste materials in visible light. The photocatalysts have been prepared and are currently being examined for their visible light activities. Once this is established, studies will be carried out under sunlight to investigate their degradation activities mineralization potentials and under different experimental conditions.

(c) Project, Dissertation and Thesis

- (i) **Adeyemo, A. O.** (2012). Adsorption of Heavy Metals on Pine cones: Equilibrium and Kinetics studies. MSc Project, University of Ibadan, Ibadan. 101 pp.
- (ii) **Egbedina, A. O.** (2023). Porous Carbonaceous Materials from Agrowaste as Adsorbents for the Removal of Emerging Contaminants. PhD thesis, University of Ibadan, Ibadan. 320 pp.

X PUBLICATIONS

- (a) Books already published: Nil
- (b) Chapters in Books already published:
1. Ewuzie, U., Bolade, O. P. and Egbedina, A. O. (2022). Application of deep learning and machine learning methods in water quality modelling and prediction: a review. In Marques, G. and Ighalo, J. O. (Eds.) *Advances in Computer-Aided Intelligent Environmental Data Engineering*. London: Elsevier. 185-218pp. ISBN 78-0-323-85597-6 (United Kingdom) (Contribution: 30%).
 2. Aromolaran, O., Saibu, S., Egbedina, A. O., Aromolaran, O. K., Falodun, O. I., Alfred, M. O., Olukanni, O. D. and Unuabonah, E. I. (2024). The health of our environment and Sustainable Development Goal 3. In Frazer-Williams, R., Ogundiran, M. B. and Unuabonah, E. I. (Eds.) *Environmental Pollution and Public Health- Case Studies on Air, Water and Soil from an Interdisciplinary Perspective*. London: Elsevier. 29- 46pp. ISBN 978-0-323-95967-4 (United Kingdom) (Contribution: 30%).
- (c) Articles that have already appeared in Referred Conference Proceedings: Nil
- (d) Patents and Copyrights: Nil
- (e) Articles that have already appeared in Learned Journals:
3. Awodugba A. O, Olawoyin, A. A, Ilyas, A. O., Oni, E. A., **Adeyemo, A. O.** (2013). Defining Structural and Optical feature investigation in ZnO Nanoparticles synthesized from Zinc Chloride (ZnCl₂) and Zinc Sulphate (ZnSO₄). *Nigerian Journal of Physics* Vol. 24: 102-106. (Nigeria).
 4. **Adeyemo, A. O.**, Egbedina, A. A., Adebowale, K. O. and Olu-Owolabi, B. I. (2014). Removal of cadmium (II) from aqueous solution by pinecone biochar. *Research Journal of Chemical and Environmental Science* Vol. 2: 98-102. (India).
 5. **Adeyemo, A. O.**, Adebowale, K. O., Olu-Owolabi, B. I (2014). Adsorption of Copper by Biochar. *International Research Journal of Pure and Applied Chemistry* Vol. 4. No. 6: 727-736. (India).
 6. **Adeyemo, A. O.**, Adebowale, K. O., Olu-Owolabi, B. I. (2014). Adsorption of Copper by raw Pinecone. *American Chemical Journal of Science* Vol. 3. No. 5: 625-633. (Turkey).
 7. Adebowale, K. O., **Egbedina, A. O.**, Shonde, B. T. (2020). Adsorption of lead ions on magnetically separable Fe₃O₄ watermelon composite. *Applied Water Science* Vol. 10. No. 225: 1-8. (Switzerland).

8. **Egbedina, A. O.**, Adebowale, K. O., Olu-Owolabi, B. I., Unuabonah, E. I., Adesina, M. O. (2021). Green Synthesis of ZnO coated hybrid biochar for the synchronous removal of ciprofloxacin and tetracycline in wastewater. *Royal Society of Chemistry Advances* Vol. 11. No. 30: 18483-18492. (United Kingdom).
9. Semenuik, M., Sarshar, Z., Gezahegn, S., Li, Z., **Egbedina, A. O.**, Tjong, J., Oksmanm K., Chin (Cathy), Y-H. and Sain, M. (2021). Catalytically transformed low energy intensive 2D-layered and single crystal-graphitic renewable carbon cathode conductors. *Carbon* Vol. 183: 243-250. (United Kingdom).
10. Adebowale, K. O. and **Egbedina, A. O.** (2022). Facile green synthesis of bio-carbon material from eggshells and its application for the removal of bisphenol A and 2,4,6-trichlorophenol from water. *Environmental Nanotechnology, Monitoring and Management* Vol. 17. No. 30: 100-107. (Netherlands).
11. **Egbedina, A. O.**, Bolade, O. P., Ewuzie, U. and Lima, E. C. (2022). Emerging trends in the application of carbon-based materials: a review. *Journal of Environmental Chemical Engineering* Vol. 10. No. 2: 107-125. (Netherlands).
12. **Egbedina, A. O.**, Adebowale, K. O., Olu-Owolabi, B. I., Unuabonah, E. I., Adeyemo, M. A. (2022). Microwave-synthesized carbon materials as low-cost and efficient adsorbents for the removal of antibiotics in single and binary systems. *Arabian Journal of Science and Engineering* Vol. 47: 5755-5765. (Switzerland).
13. **Egbedina, O. A.**, Ibhafidon, S., Akinbile, B. J., Ambushe, A. A., Olu-Owolabi, B. I. and Adebowale, K. O. Catalytic transformation of coconut husk into single-crystal graphite and its application for the removal of antibiotics from wastewater. *Chemical Engineering Research and Design* Vol. 188: 96-104. (Netherlands).
14. **Egbedina, A. O.** and Sulaimon, H. D. (2022). Adsorption of frequently used antibiotics from contaminated water using peanut shells. *Journal of Materials and Environmental Sustainability Research* Vol. 2. No. 3: 37-50. (Nigeria).
15. **Egbedina, A. O.**, Olu-Owolabi, B. I. and Adebowale, K. O. (2023). Batch and Continuous fixed-bed adsorption of antibiotics from aqueous solution using stearic acid-activated composite. *Energy, Ecology and Environment* Vol. 8: 129-140. (Switzerland).
16. **Egbedina, A. O.**, Ugwuja, C. G., Dare, P. A., Sulaiman, H. D., Olu-Owolabi, B. I. and Adebowale, K. O. (2023). CTAB-activated carbon from peanut husks for the removal of antibiotics and antibiotic-resistant bacteria from water. *Environmental Processes* Vol. 10. No. 2: 18483-18492. (Switzerland).
17. **Egbedina, A. O.**, Olu-Owolabi, B. I. and Adebowale, K. O. (2023). Porous Bentonite-Coconut Husk Composite for the Enhanced Adsorption of Selected

Emerging Contaminants from Aqueous Solution. *Environmental Science: Advances* Vol 2. No. 5: 1554-1565. (United Kingdom).

18. Bayode, A. A., Emmanuel, S. S., Osti, A., Olorunnisola, C. G., **Egbedina, A. O.**, Koko, D. T., Adedipe, D. T., Helmreich, B., Omoregie, M. O. (2024). Applications of perovskite oxides for the cleanup and mechanism of action of emerging contaminants/steroid hormones in water. *Journal of Water Process Engineering* Vol. 58 No. 10: 104753.

- (f) Books, Chapters in Books and Articles already accepted for publication: Nil
- (g) Technical Reports and Monographs: Nil

(XI) Major Conferences/Workshops Attended with Papers Read (in the last 5 years)

- (i) The Association of Commonwealth Universities ‘Developing the Next Generation of Researchers Workshop’, University of Ibadan, Nigeria, 2 - 4 April, 2019, Ibadan, Nigeria.
- (ii) 1st IUPAC for Africa Postgraduate Summer School on Green Chemistry, University of Dar es Salaam, 12 - 19 May, 2019, Dar es Salaam, Tanzania.

Paper read: Egbedina, A. O., Adebowale, K. O., Olu-Owolabi, B. I., Unuabonah, E. I., Adesina, M. O.: Hydrophobic adsorbents for the removal of contaminants of pharmaceutical origin.

- (iii) American Chemical Society (ACS) Green Chemistry 24th Annual Green Chemistry and Engineering Conference (Virtual) 15 - 19 June, 2020.
- (iv) 13th IUPAC Postgraduate Summer School on Green Chemistry, Venice, Italy (Virtual) 4 - 9 July, 2021.

Paper read: Egbedina, A. O., Adebowale, K. O., Olu-Owolabi, B. I., Unuabonah, E. I., Adesina, M. O.: Green Synthesis of ZnO coated hybrid biochar for the synchronous removal of ciprofloxacin and tetracycline in wastewater.

- (v) 1st Elsevier Conference on Advances in Surfaces, Interfaces and Interphases 2022.
Paper read: KOH-activated biochar-CTAB composite for the removal of antibiotics and antibiotic-resistant bacteria from water
15 – 18 May, 2022 (Virtual).

- (vi) 5th International Conference on Scientific Research in Nigeria ‘Strengthening Scientific Research for National Development’, University of Ibadan, Nigeria, 2 – 5 May, 2023, Ibadan, Nigeria.
Paper read: Eco-friendly starch composites for the removal of cationic and anionic dyes.