

CURRICULUM VITAE

- I. (a) Name: Babatunde Oluwole Ogunsile
(b) Date of Birth: 20 March, 1968
(c) Department: Chemistry
(d) Faculty: Science
- II (a) Address: Department of Chemistry
University of Ibadan,
Ibadan.
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bo.ogunsile@mail.ui.edu.ng
- III. (a) First Academic Appointment: Assistant Lecturer
(15 January, 1997)
(b) Present Position: Professor (2017) - Date
- IV. University Education (with dates):
University of Lagos, Lagos 1988-1992
University of Ibadan, Ibadan 1994-1995
University of Ibadan, Ibadan 1997-2005
- V. Academic Qualifications (with dates and granting bodies):
B.Sc. Industrial Chemistry (Lagos) 1992
M.Sc. Industrial Chemistry (Ibadan) 1995
Ph.D. Industrial Chemistry (Ibadan) 2005
- VI. Honours, Distinctions and Membership of Learned Societies:
(i) Member, Chemical Society of Nigeria (CSN) 1995 - Date
(ii) Member, Science Association of Nigeria (SAN) 2000 - Date
(iii) Member, Institute of Chartered Chemists
of Nigeria (ICCN) 2006 – Date
(iv) Research Visitor, Pontificia Bolivariana
University, Colombia 2010
(v) Research Visitor, India Institute of
Technology, Rookee (IITR), Saharanpur 2013.

VII. Details of Teaching/Work Experience:

(a) Work Experience:

- | | |
|---|-------------|
| (i) Assistant Lecturer: Department of Chemistry,
University of Ibadan, Ibadan. | 1997 - 1999 |
| (ii) Lecturer II: Department of Chemistry,
University of Ibadan, Ibadan. | 1999 - 2006 |
| (iii) Lecturer I: Department of Chemistry,
University of Ibadan, Ibadan. | 2006 - 2010 |
| (iv) Senior Lecturer | 2010 - 2014 |
| (v) Reader | 2014 - 2017 |
| (vi) Professor | 2017 - Date |

(b) Teaching Experience:

(i) Courses taught

Undergraduate courses:

CHE 195 - Practical Chemistry
ICH 267 - Chemical Raw Materials II
ICH 327 - Heavy Inorganic Chemicals and Utilization of Wastes
ICH 447 - Unit Operation II
ICH 467 - Process Chemistry
CH 481- Seminar

Postgraduate courses:

ICH 727 - Heterogeneous and Homogenous Catalysis
ICH 767 - Oil Refining

(ii) Other Courses previously taught:

Undergraduate courses:

CHE 195 - Practical Chemistry
ICH 227 - Chemical Raw Materials I
ICH 247 – Large Scale Chemistry
ICH 367 - Petrochemicals and Utilization of Wastes with Practical
CHE 377 - Heterocyclics, Carbocyclics and Reaction Mechanism
ICH 481 - Special Topics in Industrial Chemistry

Postgraduate courses:

ECH 787 - Compliance, Monitoring and Enforcement

(iii) Project Supervision

Completed

M.Sc. - 26
M.Phil./Ph.D. - 2

On-going

B.Sc.	- 5
M.Sc.	- 4
Ph.D.	- 4

VIII. Administrative Duties / Experiences

- * Teaching, research, and the development curriculum for the Industrial Chemistry programme of the Department of Chemical Sciences Department, Redeemer's University, Mowe, Ogun state. (Sabbatical and accumulated leave, 2007-2009).
- * Member, University of Ibadan Senate (2007-2010: 2017 – Date).
- * Senate Representative on Staff School Board, University of Ibadan 2007-2009.
- * Senate Representative on the Board of Distant Learning, University of Ibadan. (2008-2010).
- * Time Table Officer, Department of Chemistry, University of Ibadan 2010 to 2017.
- * Member, Department of Chemistry Post Graduate Committee on Master's programme, 2011-2013
- * Faculty of Science Appointment and Promotion Committee, 2012-2017, 2021
- * Representative of the Department of Chemistry, University of Ibadan on Quality Assurance within the Department, 2012 till now.
- * Member, Curriculum Review Committee, Chemistry Department, University of Ibadan, April-May, 2013.
- * Member, Department Post Graduate Committee, on M.Phil/PhD and Ph.D. matters, 2014-2017.
- * Department of Chemistry Undergraduate Tutorial Coordinator, 2014.
- * Internal/External Examiner, Department of Forest Resources Management, University of Ibadan, 2015.
- * Member, Department of Chemistry Student Adviser Committee, 2015-2017.
- * Member, Faculty of Science Website Management Committee, 2015-2016.
- * Chairman, Faculty of Science Website Management Committee, 2016-Date.

- * Senate Member on ICT Committee, 2016/2017.
- * Chairman, Department Diesel Committee, 2017.
- * LOC Member, Workshop on Mentorship and CV Writing in the Faculty, 2016.
- * LOC Member, Workshop on Abstract Writing for PG Teachers and Students, 2016.
- * Acting Sub-Dean, Undergraduate, Faculty of Science, 2016.
- * Internal/External Examiner, Department of Teacher Education, University of Ibadan, 2016.
- * HOD, Department of Chemical Sciences, Anchor University, Lagos, 2018-2019.
- * Internal/External Examiner, Pan African University for Life and Earth Sciences Institutes (PAULESI), 2021.
- * External Examiner, M.Sc., Ph.D., Department of Chemistry, University of Agriculture, Abeokuta, 2021
- * External Assessor, Department of Chemistry, University of Lagos, Lagos. 2021.
- * External Examiner, B.Sc., Department of Chemical Sciences, KolaDaisi University, Ibadan, 2020-2022.
- * External Examiner, M.Sc., Ph.D., Department of Chemistry, Federal University of Technology, Akure, 2023.
- * External Assessor, Department of Chemical Sciences, Olusegun Agagu University of Science and Technology, Okitipupa. Ondo State. 2023.
- * Head, Industrial Chemistry Unit, University of Ibadan, Ibadan. 2021-to-date

IX. Research

(a) Completed:

- (i) Chemical pulping potentialities of *Musa* species, *Cyperus articulatus*, *Carpolobia lutea*, *Bambusa vulgaris* and *Nypa fruiticans*.
- (ii) Cost effective biosorption studies and decontamination of dyes and metals in the environment using modified plant wastes and lignin.
- (iii) Synthesis of natural fibre reinforced polyethylene and cement composites.

(b) In progress:

(i) Modelling of Chemical Pulping Processes

The research work started in 2006 in search of an alternative raw material for pulp and paper production in Nigeria. Reactions of some non-woods under soda, soda-ethanol and aceto-solvent pulping processes are being considered. The selection of suitable delignification conditions and optimization of process variables is crucial to the successful operation of the chemical pulping process. Therefore, the developments of empirical models for the various independent variables in order to identify patterns of variation in the dependent variables of various pulping processes are in progress. Also, the use of neural fuzzy system which gives more reliable prediction models that overcomes the complexity, non – linearity and time varying characteristic of the pulping operation is on going. The fuzzy logic performs an inference mechanism under cognitive uncertainty while the computational neural networks offer exciting advantages, such as learning, adaptation, fault-tolerance, parallelism and generalization. The next stage of the work is focused on the outlets of large amount of lignin in the waste liquor. Lignin has great potentials as adsorbents, natural binder, adhesives and as precursors in the manufacture of some basic aromatic compounds.

(ii) Bioremediation of Dyes and Metals from Aqueous Solution

The research work was initiated in 2009 and is still in progress till now. The disposal of dyes in precious water resources has generated various treatment technologies of which adsorption appear to be one the most prominent because of its simplicity, efficiency, wide and social acceptability, economic and technical feasibilities. Low cost adsorbents from various agricultural residues are abundantly available in Nigeria and are being exploited through carbonization and chemical modification in order to enhance their adsorption properties. In addition to minimizing the mass of adsorbent required, the next stage of the work is focused on the reduction of contact time, plant size and optimization of the process variables for plant design and industrial applications. This research has the potential of providing insight into the development of portable water filters locally, for use at homes.

(iii) Fibre Reinforced Polymer and Cement Composites

The study was initiated after the research visit to India in 2013. High performance conventional agro-composites are being developed from chemically modified or reinforced fibres for various applications. This arises from the renewed interest in technologies that are considered to be environmentally friendly and products that are biodegradable and recyclable. Towards this end, a single screw extruder machine was fabricated in our laboratory for melt mixing of hydrophilic natural fibres with hydrophobic polymers. Natural fibre re-inforced polyethylene composites are being developed presently for the replacement of conventional materials such as steel, concrete infrastructure system for use in civil engineering applications. The use of other polymer such as polypropylene, polyvinyl chloride, polystyrene, etc is the next line of action. The research has the potentials of using polymer wastes that litters around the Nigerian environment into useful composite products.

(iv) Green Chemistry and Nanotechnology

This is an emerging area of nanotechnology where naturally occurring reagents such as plant extracts are used as reductants and capping agent in the greener synthesis of nanoparticles. The work started recently in 2016 and has led to the synthesis of metallic silver nanoparticles from leaf extracts of *Parquetina nigrescens* and *Synedrella nodiflora*. The nanoparticles exhibited antibacterial activity against broad range of Gram positive and Gram negative bacteria and thus would be effective in their treatments. Silver nanoparticles are being synthesized from other plants (*Tetrapleura tetraptera*, *Senna podocarpa*, *Zanthoxylum zanthoxyloides* and *Anogeissus leiocarpus*). The research work has the potential of replacing conventional catalytic systems with nanoparticles. The next line of research will therefore focused on the catalytic applications of these nanoparticles in some reduction reactions.

(c) Projects, Dissertation and Thesis:

- (i) Ogunsile, B. O. (1995). Extraction and characterization of essential oils of *Hyptis suaveolens*. M.Sc.Project, University of Ibadan. 92 pp.
- (ii) Ogunsile, B. O. (2005). Chemical analyses, morphological indices, soda and soda- ethanol pulping of some Nigeria grown *Musa species*. Ph.D. Thesis, University of Ibadan. 234 pp.

X. List of Publications

(a) Chapters in Books Already Published:

1. Quintana, G. Henao, E., Velásquez, J. and **Ogunsile, B.O.** (2014). Utilización Del Vástago De Banano Y Tusa De Alma Africana Para La Obtención De Tableros De Fibras Sin Aditivos (i.e. Utilization of Banana Stem and African Palm for the Production of Fibre board without Additives). In: Pineros-Castro, Y. (Ed.) *Aprovechamiento de biomasa lignocelulosica, algunas experiencias de investigacion en Colombia (i.e. Research Experiences on the use of Lignocellulosic Biomass in Colombia)* Bogota: Utadeo. 277-298pp. ISBN 978-958-725-152-4.

(b) Articles that have Already Appeared in Refereed Conference Proceedings:

2. Omotoso, M.A. and **Ogunsile, B.O.** (2000). Preliminary Evaluation of the Pulp and Paper Potential of *Musa paradisiaca*. In Owa, S. O. (Ed.). *Bulletin of the Science Association of Nigeria: Proceedings of the 38 Annual Conference of Science Association of Nigeria (SAN)*. OOU: Ago-Iwoye. 10-14 December, 2000. Vol. 23: 207-211pp.
3. Babarinde, N.A.A., Babalola, J.O., **Ogunsile, B.O.**, Onyekachi, I.E., Ajibade, O.O., Adeogun, M.Y., Jetawo, O.F. and Gideon, P.O. (2009). Kinetic, Equilibrium and Thermodynamic Studies of the Biosorption of Cd (II) and Pb (II) from solutions using Bamboo Leaf (*Bambusa vulgaris*). In Australian Institute of High Energetic Materials (Eds.). *Proceeding of the Interdisciplinary Conference on Chemical, Mechanical and Materials Engineering (2009 ICCMME)*. 7-20 December, 2009. Melbourne: Australia. 1-18pp. .
4. **Ogunsile, B.O.**, Fadare, D.A. and Omotoso, M.A. (2014). Application of Artificial Neural Networks in Modeling of Process Variables in Soda Pulping of *Musa paradisiaca* mid-rib. In Velásquez, J.A. And Quintana, G.C. (Eds.). *Pulp and Paper Research: Proceedings of the VIII IberoAmerican Congress on Pulp and Paper Research*. 26-28 November, 2014. Medellin: Colombia. 539-550pp.

(c) Articles that have Already Appeared in Learned Journals:

5. **Ogunsile, B.O.**, Omotoso, M.A. and Onilude, M.A. (2006). Comparative Soda Pulps from the Mid-Rib, Pseudostem and Stalk of *Musa paradisiaca*. *Journal of Biological Sciences* Vol. 6. No. 6: 1047-1052.
6. **Ogunsile, B.O.**, Omotoso, M.A. and Onilude, M.A. (2006). Influence of Operating Variables on the Soda Pulping of *Musa paradisiaca* Mid-Rib. *Journal of Applied Sciences* Vol. 6. No.14: 2922-2926.
7. **Ogunsile, B.O.**, Rasaq, I.A. and Anifowose, O.M. (2007). Fibre Morphology and Soda Pulp from *Cyperus articulatus*. *International Journal of Chemistry* Vol. 17. No. 1: 1 - 6.

8. **Ogunsile, B.O.**, Omotoso, M.A. and Onilude, M.A. (2008). Pulp and Paper Potentials of Plantain Pseudostem. *Journal of Science and Technology* Vol. 28. No. 3: 159-165.
9. **Ogunsile, B.O.** and Omotoso, M.A. (2008). Modeling of the Optimized Pulp Yields from Soda – Isopropanol Treated *Carpolobia lutea*. *Nigerian Journal of Science* Vol. 42: 25-29.
10. Omotoso, M.A. and **Ogunsile, B.O.**, (2009). Fibre and Chemical Properties of some Nigerian Grown *Musa* Species for Pulp Production. *Asian Journal of Material Science* Vol. 1. No. 1: 14-21.
11. **Ogunsile, B.O.** and Uwajeh, C.F. (2009). Evaluation of the Pulp and Paper Potentials of a Nigerian Grown *Bambusa vulgaris*. *World Applied Science Journal* Vol. 6. No. 4: 536-541.
12. **Ogunsile, B.O.** and Uwajeh, C.F. (2009). Soda Pulping of *Bambusa vulgaris*: Effects of Operational Variables on Pulp Yields and Delignification. *Nigerian Journal of Industrial and Systems Studies* Vol. 8. No. 3: 27-34.
13. **Ogunsile, B.O.** (2010). Effects of Operational Variables on the Pulp Yield and Lignin Dissolution of *Cyperus articulatus*. *Journal of Science and Technology* Vol. 30. No. 1: 95-101.
14. **Ogunsile, B.O.** and Quintana, G.C. (2010). Modeling of Soda – Ethanol Pulps from *Carpolobia lutea*. *Bioresources* Vol. 5. No. 4: 2417-2430.
15. Adegoke, J.A. **Ogunsile, B.O.** and Adetoro, A.O. (2010). Variation in Thermophysical Properties of Clay with Adsorption Optimization. *The Pacific Journal of Science and Technology* Vol. 11. No. 2: 639-648.
16. Akpakpan, A.E., Akpabio, U.D., **Ogunsile, B.O.** and Eduok, U.M. (2011). Influence of Cooking Variables on the Soda and Soda-Ethanol Pulping of *Nypa fruticans* Petioles. *Australian Journal of Basic and Applied Sciences* Vol. 5. No. 12: 1202-1208.
17. Nwokocha, L.M. and **Ogunsile, B.O.** (2012). Chemical Composition and Paste Characteristics of White and Yellow Plantain (*Musa paradisiaca* Nomalis) Flours. *Journal of Science Research* Vol. 11. No. 1: 26-30.
18. **Ogunsile, B.O.** and Uba, F.I. (2012). Optimization of Process Variables for the Soda Pulping of *Carpolobia lutea* (Polygalaceae) G.Don. *Journal of the Korean Chemical Society* Vol. 56. No. 2: 257-263.
19. Akpakpan, A.E., **Ogunsile, B.O.** Akpabio, U.D. and Eduok, U. M. (2012). Comparative Study on the Soda-Ethanol and Soda-Butanol Pulping of *Nypa fruticans* Petioles. *International Journal of Advanced Scientific and Technical Research* Vol. 1, No.2: 313-324.

20. Palsule, S., **Ogunsile, B.O.**, Priyanka and Singh, A.A. (2013). Natural Hardwood Fibre Reinforced Chemically Functionalized Polyethylene Composites with In-Situ Fibre/Matrix Interfacial Adhesion. *Applied Polymer Composites* Vol. 1. No. 1: 57-73.
21. **Ogunsile, B.O.** and Babarinde, O.A. (2013). The Biosorption of Cadmium and Lead Ions from Aqueous Solution using *Musa paradisiaca* Stalk. *Ife Journal of Science* Vol. 15. No. 3: 463-476.
22. **Ogunsile, B.O.** and Palsule, S. (2013). Influence of the amount of MAPE Compatibiliser on Tensile Properties of Hardwood Fibre Reinforced High Density Polyethylene Composite. *Applied Polymer Composites* Vol. 1. No.1: 225-228.
23. **Ogunsile, B.O.** and Effiong, C.G. (2013). Removal of Methylene Blue and Congo Red Dyes from Aqueous Solutions using Palm-Fruit Bunch Fibre and *Massularia acuminata*. *Nigerian Journal of Science* Vol. 47: 39-50.
24. Mejia, E.H., Quintana, G.C. and **Ogunsile, B.O.** (2014). Development of Binderless Fibreboard from Steam-Exploded and Oxidized Oil Palm Waste. *Bioresources* Vol. 9. No. 2: 2922 - 2936.
25. **Ogunsile, B.O.**, Babarinde, A. and Akinlolu, K. (2014). Adsorption of Malachite Green from Aqueous Solution using Plantain Stalk (*Musa Paradisiaca*). *Pacific Journal of Science and Technology* Vol. 15. No.1: 223 – 231.
26. **Ogunsile, B.O.** and Saheed, R. (2014). Recycled Polyethylene Bonded Particle Board from Pulped and Unpulped *Gmelina arborea* Saw Dust Wastes. *Journal of Advances in Chemistry* Vol. 10. No. 3: 2457 – 2467.
27. **Ogunsile, B.O.** and Abayomi, A.A. (2014). Adsorption of Chromium (VI) and Cadmium (II) from Aqueous Solution by Soda Lignin obtained from Nypa Palm Leaves (*Nypa fruitcans*). *Ozean Journal of Applied Sciences* Vol. 7, No. 2: 43-56.
28. **Ogunsile, B.O.**, Odesola, I.F., Oluwole, O. and Labulo, A.H. (2014). Production and Characterization of Activated Carbon from Chemically Treated Agricultural Wastes. *Journal of Applied Sciences Research* Vol. 10, No. 12: 29-35.
29. **Ogunsile, B.O.** and Adepegba, J.A. (2015). Cement bonded Particle Board from *Musa paradisiaca* Stalk. *The Pacific Journal of Science and Technology* Vol.16, No.1: 12-20.
30. **Ogunsile, B.O.** and Oladeji, T.G. (2016). Utilization of Banana Stalk Fibre as Reinforcement in Low Density Polyethylene Composite. *Revista Materia* Vol. 21, No. 4: 953-963.
31. **Ogunsile, B.O.**, Labulo, A.H. and Fajemilehin, A.M. (2016). Green Synthesis of Silver Nanoparticles from Leaf Extracts of *Parquetina nigrescens* and *Synedrella nodiflora* and their Anti-microbial Activity. *Ife Journal of Science* Vol. 18, No. 1: 245-254.

32. **Ogunsile, B.O.** and Mafolasire, A. A. (2016). Production and Characterization of *Nypa fruticarpa* Reinforced Low Density Polyethylene Composites. *Journal of Science Research* Vol. 15: 23-30.
33. **Ogunsile, B.O.** and Omotoso, M.A. (2017). Modeling of Acetosolv Pulp Yields from Plantain Stalk. *Journal of Science and Technology* Vol. 37, No. 1: 100-110.
34. **Ogunsile, B.O.** and Bamgboye, M.O. (2017). Biosorption of Lead (II) onto Soda Lignin Gels Extracted from *Nypa fruticarpa*. *Journal of Environmental Chemical Engineering* Vol 5: 2708–2717.
35. **Ogunsile, B.O.** and Bamgboye, M.O. (2017). Sorption characteristics of methylene blue onto *Nypa fruticarpa* lignin. *Ife Journal of Science* vol. 19 (2): 201-215.
36. Oloyede, G. K., **Ogunsile, B.O.** , Ali, M.S. and Ngounpe, W.A. (2019). Antioxidant activity of Lignin -Mannich bases synthesised by amination reactions. *J. Chem. Soc. Nigeria*, Vol. 44(7): 1276 -1282.
37. **Ogunsile, B. O.**, Seyinde, D. O. and Salako, B. A. (2020). Green synthesis of silver nanoparticles from leaf extract of *Tetrapleura tetraptera* and its anti-microbial activity. IOP Conference Series: Material Science and Engineering 805 012032. doi:10.1088/1757-899X/805/1/012032.
38. **Ogunsile, B. O.** and Ayorinde, G. O. (2020). Fiber properties of some non-woods as possible reinforcement in composite making. *International Journal of Research and Innovation in Applied Science*, Vol. 5 (12): 13-22.
39. **Ogunsile B.O.** and Popoola O.E. (2022): Comparative soda pulps from corn husks and plantain stalks. Proceedings of the 31st Accra Bespoke Multidisciplinary Innovations Conference. University of Ghana/Academic City University College, Ghana. 1st – 3rd June, 2022. Pp 85-94.
www.isteam.net/ghanabespoke2022. [dx.doi.org/10.22624/AIMS/ABMIC2022P10](https://doi.org/10.22624/AIMS/ABMIC2022P10).
40. Egbewole, B. I., **Ogunsile, B. O.** Adeola, A. O.,Olawade, D. B., · Adekunle, Y. A. and Nomngongo, P.N. (2022). Mallotus oppositifolius-mediated biosynthesis of bimetallic nanoparticles of silver and nickel: antimicrobial activity and plausible mechanism(s) of action. *Biomass Conversion and Biorefinery*. (Online publication) *Biomass Conversion and Biorefinery*. <https://doi.org/10.1007/s13399-022-03463-4>
41. **Ogunsile, B.O.**, Okoh, O.S., Ejidike, I.P. and Omolaja, O.R. (2023). Biosynthesis and Optimization of AgNPs Yield from Chromolaena Odorata Leaf Extract Using Response Surface Methodology (RSM). *Physical Chemistry Research*, Vol. 12 (1): 21-31. DOI: 10.22036/pcr.2023.366212.2226

42. Ige, A. O., **Ogunsile, B. O.**, Ore, O. T., Olawade, D. B. (2024) Adsorption of congo red from aqueous solution using rice husk, calcined kaolin clay, and microwaved rice husk clay hybrid. *Discover Chemistry*, Vol. 1 (9): 2024. <https://doi.org/10.1007/s44371-024-00010-0>

XI. Summary of Academic Metrics:

Web Page: <https://sci.ui.edu.ng/content/boogunsile>

Google Scholar: <https://scholar.google.com/citations?user=IP-TIPAAAAAJ&hl=en&oi=sra>

ORCID: <https://orcid.org/0000-0002-7751-710X>

Scopus: <https://www.scopus.com/authid/detail.uri?authorId=15754052400>

XII. Selected Scientific Conferences / Workshops Attended with Papers Read (in the last 10 years):

1. 5th International Conference on Scientific Research in Nigeria, Faculty of Science, University of Ibadan, Ibadan, Nigeria, held between May 2-5, 2023.
Paper Read: **Ogunsile, B.O.**, Fadare, D. A., Ayodele, M.O. (2023). Effects of Operational Variables on the Green Synthesis of Silver Nanoparticles from Leaf Extracts of *Tetrapleura tetraptera* and *Anogeissus leiocarpus*.
2. International Webinar on Recent Innovation in Chemical Sciences (RICS-2020). Department of Chemistry, AKS University, Satna, India; in association with Government PG College, Chunar, Mirzapur, UP, India. 18-20 July, 2020.
Paper Read: Ogunsile, B.O. Functionalization of Natural Fibers for Industrial Applications. (Link: <https://t.me/RICS2020>)
3. 3rd Workshop/Conference on Nanotechnology (LAUTECH NANO 2019) with the theme: Nanotechnology Applications in Africa: Opportunities and Constraints. Ladoke Akintola University, Ogbomoso, Oyo State, Nigeria, 22-24 October, 2019.
Paper Read: **Ogunsile, B. O.**, Seyinde, D. O. and Salako, B. A. (2020). Green synthesis of silver nanoparticles from leaf extract of *Tetrapleura tetraptera* and its anti-microbial activity.
4. 3rd International conference on Scientific Research in Nigeria. Faculty of Science, University of Ibadan, Ibadan, Nigeria. 16-19 May 2017.
Paper Read: **Ogunsile, B.O.** and Adebimpe, A. B. (2017). Production of LDPE, Cement and Styrofoam-Bonded Particle Boards from *Nypa fruticans*.
5. 2nd International conference on Science and Sustainable Development in Nigeria. Faculty of Science, University of Ibadan, Ibadan, Nigeria. 13-17, May 2015.
Paper Read: **Ogunsile, B.O.** and Mafolasire, A. A. (2015). Production and Characterisation of *Nypa fruticans* Reinforced Low Density Polyethylene Composites.

6. Covenant University Chemistry International Conference (CUCIC – 2014), Turning the Knowledge of Science into Development. Covenant University, Ota, Ogun State. 8-11 July, 2014.
Paper Read: **Ogunsile, B.O.** and Adepegba, J.A. (2014). Cement Bonded Particle Board from *Musa paradisiaca* Stalk.
7. The VIII IberoAmerican Congress on Pulp and Paper Research, VIII CIADICYC, (2014) at Pontificia Bolivariana Universidad, Medellin, Colombia 26-28 , November, 2014.
Paper Read: **Ogunsile, B.O.**, Fadare, D.A. and Omotoso, M.A. (2014) Application of Artificial Neural Networks in Modeling of Process Variables in Soda Pulping of *Musa paradisiaca* Mid-rid.
8. International conference on Science and Sustainable Development in Nigeria. Faculty of Science, University of Ibadan, Ibadan, Nigeria. 13-17 May, 2013.
Paper Read: **Ogunsile, B.O.** and Babarinde, O.A. (2013). The Biosorption of Cadmium and Lead Ions from Aqueous Solution using *Musa paradisiaca* Stalk.
9. **Ogunsile, B.O.** (2010). Pulp and paper potentials of Nigerian non woods (2010). A paper deliver as a Research Visitor at the Pulp and Paper Group, Faculty of Chemical engineering, Pontificia Bolivariana Universidad, Medellin, Colombia. May 14, 2010.
10. World Conference Series with Virtual Participation. 2009 Interdisciplinary Conference on Chemical, Mechanical and Materials Engineering (2009 ICCMME). Hosted by Australian Institute of High Energetic Materials in Melbourne, Australia 07-20 December, 2009.
Paper presented: Babarinde, N.A.A., Babalola, J.O., **Ogunsile, B.O.**, Onyekachi, I.E., Ajibade, O.O., Adeogun, M.Y., Jetawo, O.F. and Gideon, P.O. (2009). Kinetic, Equilibrium and Thermodynamic studies of the biosorption of Cd(II) and Pb(II) from solutions using Bamboo Leaf (*Bambusa vulgaris*).

XIII. Research Focus and Teaching Experience

(a) Research Focus

My research interest centers on Industrial and Material Chemistry with emphasis on the utilization of tropical biomass for pulp and paper making, effluent detoxification, re-enforcement of cement and polymer composites, and synthesis of metallic nanoparticles.

Nigerian paper mills utilize a mixture of short and long fibre pulp wood. The long fibre pulp is not available locally; it is imported. It therefore becomes imperative to search for sources of long fibre pulp in order to reduce or totally eliminate the dependency of the paper mills on imported long fibre pulp. I have carried out studies involving fibre characteristics, morphological indices, chemical composition, experimental design, pulping modeling and optimization of soda and soda organo-solvent processes of some unexploited but relatively abundant indigenous non woods as sources of long fibre pulp. Despite the limited facilities in the Department, the pulp wood digester used for the pulp and paper research was designed and fabricated in our laboratory. As a result of my studies, the pulp and paper potentialities of Nigerian grown *Musa species*, *Cyperus articulatus*, *Bambusa vulgaris*, *Carpolobia lutea* and *Nypa fruticans* were exploited as highlighted in my research publications. The characterization of the lignin produced in the waste liquor is being considered in Mannich related reactions and possible incorporation into the matrices of polymer, geopolymer and cement composites.

In effluent detoxification, I have developed cost-effective remediation techniques for the decontamination of dyes and metals in the environment using modified biosorbents from non wood, lignin, pulp samples and various agricultural materials. The adsorption characteristics of these materials and their effectiveness in immobilizing metals and dyes from aqueous solution have been established with respect to minimum adsorbent dose. Studies on reduction of plant size and contact time, as well as optimization of process variables with respect to these biosorbents are on-going.

Natural fibres can serve as viable and abundant substitute for the expensive and non-renewable synthetic fibres as reinforcement in thermoplastic composites. My research visit to India introduces me to the utilization of natural fibres as reinforcement in polymer composite with *in situ* fibre adhesion polymer matrix. Already a single screw extruder was fabricated in the department to facilitate the mixing of the hydrophilic fibre with the hydrophobic polymer. Some high performance polymer and cement composites have been produced from chemically modified fibres in our laboratory.

I was recently involved in the synthesis and characterization of metallic silver nanoparticles from aqueous extracts of some indigenous plant species. This has become necessary as a suitable alternative to the resultant challenges of high costs and potential hazards associated with the physical and chemical methods. The need to exploit the rich and abundant Nigeria flora becomes inevitable, leading to the synthesis of silver nanoparticles from *Parquetina nigrescens* and *Synedrella nodiflora* plants with broad

range of antimicrobial activities. Application of the nanoparticles as catalysts in some reduction reaction is being investigated.

(b) Teaching Experience / Philosophy

I have been engaged in the teaching of Chemistry at the university level for the past 25 years. My philosophy of teaching is based on the “royal law”, that is, teach others as you would want to be taught. The subjects covered as outlined in the curriculum vitae ranged from general chemistry to industrial and organic chemistry. I tried as much as possible to inspire my students to discover their potentials. I also inculcate into them the sense of self establishment especially on a variety of pilot scale projects and businesses requiring the application of chemistry. My role then is to help students learn to address issues carefully from opinions and ideas, and analyze solutions to scientific problems. My practical classes are highly interesting making students very dexterous on the laboratory bench. I do more of teaching than lecturing.

Over the years, I have discovered that general chemistry as a subject is anchored on five major areas upon which further studies are based:

- (i) Basic concepts in Chemistry, including atoms, elements and their symbols, compounds, electron, protons, etc
- (ii) Balanced equations and reaction stoichiometry
- (iii) Basic calculations including the mole concepts
- (iv) Chemical reactions and their driving force
- (v) Back-up practical and laboratory experiences

I therefore ensured that students in the general Chemistry are well grounded in these fundamental areas for them to undertake further or advanced studies in the subject.

Beyond this, I made the subject of chemistry very interesting and exciting, applying life situation to explain the concept of chemical reactivity and the driving force behind major reactions. Getting students interested in Chemistry through interaction, instruction and involvement is one of my major goals. I approached my lectures with dignified tactfulness and relevant examples. I also explore the information and communication technology to disseminate information, assignment and knowledge, through social networking, google meet, what'sap, mails, etc. Above all, I demonstrate unquestionable character of life before the students and the University community.

At the end of my lectures, my students develop positive attitude to move on in spite of initial difficulties and challenges, maintaining a good attitude to reach a magnificent altitude. Indeed students are encouraged to love chemistry, developed content mastery, individual fulfillment, critical thinking, team work and problem solving attitudes after attending my lectures.

XIV. Referees

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Prof. B. O. Ogunsile

15 September, 2024

Date