# Curriculum Vitae

Numfor Linda Bih

+237680629093

https://orcid.org/0000-0002-6572-3539

lilexbih@yahoo.com/numforl22@gmail.com

## Objective

To make a pilot test and commercialization of novel clay aggregate for industrial wastewater (heavy metals) treatment and fluoride adsorption from drinking water. I am energetic, goal oriented, and a collaborative team member.

## Education

### Ph.D. (Material Science and Engineering)

- *The Nelson Mandela African University of Science and Technology (NM-AIST) Arusha, Tanzania.* PhD completed, December 2024 (**Wastewater treatment, biochar and clay aggregates**).
- Recipient of PASET- Regional Scholarship and Innovation Fund, PhD scholarship.

**Supervisors: Prof. Mwemezi Johaiven Rwiza**[a]

**Prof. Machunda Lazaro Revocatus**[a]

**Prof. Choi Joon Weon**[b]

[a]The Nelson Mandela African University of Science and Technology (NM-AIST) Arusha, Tanzania.

[b]Graduate School of International Agricultural Technology, Seoul National University, Pyeongchang Campus.

### Master of Science (Material Science and Engineering)

- *African University of Science and Technology (AUST) Abuja Nigeria.* December 2017, **(Ceramics and geopolymer ceramics for sustainable building materials)**.

❖ Recipient of African Development Bank (AfDB), African Capacity Building Foundation (ACBF) and Pan African Materials Institute (PAMI) scholarship.

**Supervisors: Dr. Emmanuel Boakye[a,b]**

**Prof. Azikiwe Peter Onwaulu[a]**

[a,b]Air Force Research Laboratory, Materials and Manufacturing Directorate, Wright-Patterson Air Force Base, Dayton, Ohio.

[b]African University of Science and Technology (AUST) Abuja Nigeria.

**Bachelor of Science (Chemistry and Minor in Material Science and Technology)**

❖ *University of Buea, Cameroon.* October 2006- March 2010.

**National Diploma: Community Development and Project Management**

❖ *CAMCODA Yaounde, Cameroon, 2014*

**Skills/Research Experience**

❖ **Technical & Laboratory Skills:**

- Mechanical and fracture testing, impact, torsion and fracture analysis.
- Materials characterization and analysis (x-ray diffraction (XRD), scanning electron microscopy (SEM), Fourier-transform infrared spectroscopy (FTIR), Brunauer-Emmett-Teller (BET), Thermogravimetric analysis (TGA), Atomic Absorption Spectrometry (AAS), Inductively Coupled Plasma- Mass Spectrometry/ Optical Emission Spectrometry (ICP-MS/OE)S, and UV/Vis spectroscopy, etc).
- Knowledge in carbonization of biomass to activated carbon.
- Knowledge in water/wastewater treatment (adsorption).
- Knowledge in Ceramics and geopolymer ceramics.
- Knowledge in cement and concrete.

- **Software:**
  - OriginPro lab, Design Expert, Minitab, Microsoft Office 365 (Word, PowerPoint, Excel).
- **Languages:**
  - Fluent in English (spoken and written) and French (basic spoken and written).

**Work/ Volunteer/ Outreach Experience**

- **AUST-Abuja, Nigeria**
  - Volunteer on "Cash them Young in Science" and "Empowering the Girl Child", 2015- 2020.
  - Assistance to Associate Director of operations to ensure the smooth operation and running of AUST's facilities, 2019-2020
- **Douala Cameroon**
  - Manager at Destiny Rhema Home (orphanage), 2011-2012. Documentation with Social warfare Cameroon, managing the orphanage and less privilege children.
- **University of Buea**
  - Health Club, 2006-2009. Outreach on sensitization of Malaria and HIV within the student community and national university games.
- **Research and Development Co-operation at** Graduate School of International Agricultural Technology (*GSIAT-SNU)*, *South Korea*, 2022-2023.
  - Research team member in charge of activated carbon production from biomass residues at biomass and bioenergy lab.
- **Youth volunteer**
  - Women Supporting Women in Science (WS2) Lab Kit Manual preparation for primary and secondary schools in East-Africa. First lab kit prepared in 2022 on heat energy transfer and second lab kit in 2025 on quantum entanglement.
  - *5th Sustainability in the Extractive Industry (SITEI) conference and workshop*

*Abuja Nigeria.* Secretariat and registration of participants, June 2016

- *Arusha Tengeru.* STEM outreach, guide to primary schools and secondary school students to love and study science, 2021 – 2022.
- Youth community clean-up, 2003-*2009 Bamenda Cameroon.*

**Seminar/Workshop/Oral and Postal presentation**

- NM-AIST International Conference on "Tropical Horizons: Advancing Sustainability in Agriculture, Environment, and Technology" Arusha, Tanzania, from the 17th - 19th July 2024.
- Best presenter at 50 years anniversary and 3rd International Maji Scientific Conference, 3rd January – 2nd February 2024
- Poster Presentation at the Korean Wood Chemistry, Microbiology, Energy, Paper and Technology Conference, Poster-66 (Adsorption of Aqueous Cadmium Ion *Moringa oleifera* biochar. 5th April 2023 South Korea.
- East Africa Conference (EAC) Regional Science , Technology, and Innovation (STI) conference, Rwanda 2022. Oral virtual presentation "Preparation and characterization of chemic activated carbon from *Polyalthia longifolia* seeds"
- African Material Research Society (AMRS) conferences and Society of Petroleum Student conferences and memberships 2019.
- Solar Decathlon Africa Morocco 2019 competition, Team Oculus. Built a touristic house power with solar energy in three weeks and presented to the jury.
- The 4th and 5th Sustainability in the Extractive Industry (SITEI) conference and workshop Abuja Nigeria, October 2015 and 2016.
- Pan African School of Materials (PASMAT): PASMAT Multifunctional Materials, Plastic Recycling, Water filtration, 7th November 2015 and PASMAT Biomaterials Workshop Cancer drug production and drug release, 15th July 2016.
- Society of Petroleum Engineers (SPE) Lectures at Prescobe Hilton Hotel Maitama Nigeria 2015, 2016 and 2018 lectures.
- Kidney Disease Awareness: Prevention, Nutrition and Managing Dialysis, North-west Region (Cameroon), 30th December 2015.

**Professional Memberships**

- AMRS (Material Research Society) Nigeria and Tanzania Chapter, 2014-present
- Organization for Women in Science for the Developing World (OWSD), 2009-present.

**Publications**

1. Patent publication and certification. Application Number: TZ/P/2024/000148. https://ors.brela.go.tz/ors/searchjournalpublic, page 67.
2. **Bih, N. L**.; , Rwiza, M. J., Ripanda, A. S., Mahamat, A. A., Machunda, R. L., & Choi, J. W. (2025). Adsorption of phenol and methylene blue contaminants onto high-performance catalytic activated carbon from biomass residues. Heliyon, 11(1). https://doi.org/10.1016/j.heliyon.2024.e41150
3. Mahamat, A. A., Boukar, M. M., Leklou, N., Celino, A., Obianyo, I. I., **Bih, N. L**., ... & Savastanos Jr, H. (2024). Decision Tree Regression vs. Gradient Boosting Regressor Models for the Prediction of Hygroscopic Properties of Borassus Fruit Fiber. *Applied Sciences*, *14*(17), 7540. https://doi.org/10.3390/app14177540
4. Mahamat, A. A., Boukar, M. M., Leklou, N., Obianyo, I. I., Stanislas, T. T., **Bih, N. L**., ... & Savastano Jr, H. (2024). A Machine Learning Led Investigation Predicting the Thermos-mechanical Properties of Novel Waste-based Composite in Construction. *Waste and Biomass Valorization*, *15*(9), 5445-5461. https://doi.org/10.1007/s12649-024-02538-9
5. Mahamat, A. A., Leklou, N., Obianyo, I. I., Stanislas, T. T., Ayeni, O., & **Bih, N. L**. (2024). Evaluation of the microstructural and physico-mechanical characteristics of cement-stabilized termite hill soil for construction application. Discover Civil Engineering, 1(1), 54. https://doi.org/10.1007/s44290-024-00058-y
6. Ripanda, A. S., Rwiza, M. J., Nyanza, E. C., Miraji, H., **Bih, N. L**., Mzula, A., ... & Machunda, R. L. (2023). Antibiotic-resistant microbial populations in urban receiving waters and wastewaters from Tanzania. *Environmental Chemistry and Ecotoxicology*, *5*, 1-8. https://doi.org/10.1016/j.enceco.2022.10.003

7. **Bih, N. L**.; Mahamat, A. A.; Chinweze, C.; Ayeni, O.; Bidossèssi, H. J.; Onwualu, P. A.; Boakye, E. E., The effect of bone ash on the physio-chemical and mechanical properties of clay ceramic bricks. *Buildings* **2022,** *12* (3), 336. **https://doi.org/10.3390/buildings12030336**

8. **Linda Bih, N**.; Aboubakar Mahamat, A.; Hounkpè Bidossèssi, J.; Azikiwe Onwualu, P.; Boakye, E. E. J. A. S., The Effect of Polymer Waste Addition on the Compressive Strength and Water Absorption of Geopolymer Ceramics. **2021,** *11* (8), 3540. **https://doi.org/10.3390/app11083540**

9. Mahamat, A. A.; Leklou, N.; Obianyo, I. I.; Poullain, P.; Stanislas, T. T.; Ayeni, O.; **Bih, N. L**.; Savastano Jr, H., Assessment of hygrothermal and mechanical performance of alkali activated Borassus fiber reinforced earth-based bio-composite. *Journal of Building Engineering* **2022**, 105411. https://doi.org/10.1016/j.jobe.2022.105411

10. Ayeni, O.; Mahamat, A. A.; **Bih, N. L**.; Stanislas, T. T.; Isah, I.; Savastano Junior, H.; Boakye, E.; Onwualu, A. P., Effect of Coir Fiber Reinforcement on Properties of MetakaolinBased Geopolymer Composite. *Applied Sciences* **2022,** *12* (11), 5478. https://doi.org/10.3390/app12115478

11. Mahamat, A. A.; Dayyabu, A.; Sanusi, A.; Ado, M.; Obianyo, I. I.; Stanislas, T. T.; **Bih, N. L**. J. H., Dimensionnal stability and strength appraisal of termite hill soil stabilisation using hybrid bio-waste and cement for eco-friendly housing. **2022,** *8* (5). https://doi.org/10.1016/j.heliyon.2022.e09406

12. Mahamat, A. A.; Obianyo, I. I.; Ngayakamo, B.; **Bih, N. L**.; Ayeni, O.; Azeko, S. T.; Savastano, H. J. H., Alkali activation of compacted termite mound soil for eco-friendly construction materials. **2021,** *7* (3). https://doi.org/10.1016/j.heliyon.2021.e06597

13. Mahamat, A. A.; **Bih, N. L**.; Jr., H. S.; Soboyejo, a. W. O., Development of Sustainable and Eco-Friendly Materials from Termite Hill Soil Stabilized with Cement for Low-Cost Housing in Chad. *Buildings 2021, 11, 86* **2021**. https://doi.org/10.3390/buildings11030086

14. Mahamat, A. A.; Boukar, M. M.; Ibrahim, N. M.; Stanislas, T. T.; **Linda Bih, N**.; Obianyo, I. I.; Savastano Jr, H., Machine learning approaches for prediction of the compressive strength of alkali activated termite mound soil. *Applied Sciences* **2021,** *11* (11), 4754. https://doi.org/10.3390/app11114754

15. Mahamat, A. A.; **Bih, N. L**.; Savastano, H. In Optimization of termite mound soil through alkali activation and cement stabilisation for sustainable and eco-friendly construction materials,

2021 1st International Conference on Multidisciplinary Engineering and Applied Science (ICMEAS), IEEE: 2021; pp 1-5.

**Referees**

- Dr. Emmanuel Boakye. Air Force Research Laboratory, Materials and Manufacturing Directorate, Wright-Patterson Air Force Base, Dayton, Ohio 45433. Email: kudor7@aol.com. +1 (937) 610-8671.
- Prof. Azikiwe Peter Onwaulu. Head of Department, Material Science and Engineering. AUST Abuja. E-mail: aonwualu@aust.edu.ng +2348037432497.
- Prof. Mwemezi Johaiven Rwiza. PASET-RSIF Coordinator at NM-AST Arusha Tanzania. mwemezi.rwiza@nm-aist.ac.tz +25576938202.

**Signature**