

SRIC PORTFOLIO

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1. Education

Put only higher education qualifications (PhD, MSc and BSc) with dates, topic of the thesis, awarding University.

<i>Year (from – to)</i>	<i>Degree/Certificate, Institution, Thesis Topics</i>
2021 to 2024	Doctor of Philosophy in Chemistry, Maasai Mara University, Bioadsorption of pesticide residues and polycyclic aromatic hydrocarbons (PAHs) from surface waters in Narok and Bomet Counties using cowdung and sugarcane bagasse biochar
2018 to 2020	Masters of Science in Chemistry, Maasai Mara University, Investigating the effects of indigenous catalytic additives on quantity and quality of biogas and bio-slurry using kitchen wastes
2012 to 2016	Bachelors of Science in Chemistry, Maasai Mara University, Removal of Carbonyl-Containing Effluents by Photodegradation Using β -Carotene Embedded onto Zinc Oxide Particles

2. Professional experience

Dates, position, institution (please, start with the current position)

<i>Year (from – to)</i>	<i>Position, /Institution/</i>
2025 -	Lecturer, School of Pure & Applied Sciences, Maasai Mara University
2021- 2025	Senior Technologist, Research and Innovation, Dir. of Research & Innovation, Maasai Mara University
2020-2021	Casual Officer, Directorate of Research & Innovation, Maasai Mara University
2017 - 2020	Volunteer Research Assistant, Directorate of Research & Innovation, Maasai Mara University

3. Relevant skills and experience

Put some key courses that you teach (or work with) that are in relation to your area of research.

<i>Year (from – to)</i>	<i>Certificate, Institution</i>
2020 - Date	Analytical Chemistry I, II, III, IV, Advanced Analytical Chemistry I, II & Special Methods in Advanced Analytical Chemistry
2021 - Date	Seminar Topics in Research
2021 - Date	Grants writing, NRF Kenya
2021 - Date	Innovations development, Patenting & Technology Transfer, KeNIA
2022 - Date	Nuclear Magnetic Resonance, High Performance Liquid Chromatography – Mass Spec in tandem (HPLC-MS/MS) and Gas Chromatography – Mass Spec (GC-MS), by Royal Society of Chemistry
2023 - Date	Research Ethics, NACOSTI and KNATCOM
2023 - Date	Big Data Analytics, RisqPro
2024 - Date	Research Writing Skills, Stellenbosch University
2024 – Date	Innovations Commercialization, KeNIA & Victoria Ventures
2025 - Date	Advanced Machine Learning, EASY-ML

4. Research Interests

Here put all the research you are interested in

<i>Research Priority areas</i>
Environmental Analytical Chemistry with a bias towards water and biomass pollutants

5. Professional affiliations

Here include all your affiliated organizations in your area of research.

Affiliated organizations in your area of research

1. Royal Society of Chemistry - Membership ID: 736400
2. British Ecological Society - Membership no. CON-1977218
3. The Society of Environmental Toxicology and Chemistry (SETAC) – Membership No. MEM07141

6. List of publications (for the last 5 years)

1. Renei Shopoko, Osano Aloys, **Chaka Bakari** (2020). Characterization of Malaria Preventive Extracts from *Myrsine africana* Seeds. *International Journal of Tropical Diseases and Health Sciences*. 40(4): 1-11, 2019; Article no. IJTDH.54545. doi: 10.9734/IJTDH/2019/v40i430233
2. Aloys Osano, Justin Maghanga, Chiedza Munyeza, **Chaka Bakari**, Wyclife Olal, Patricia Forbes, (2020). Insights into household energy use in Kenyan communities, *Journal of Sustainable Cities and Society (Elsevier)*. 55 (2020). 102039. <https://doi.org/10.1016/j.scs.2020.102039>
3. **Chaka Bakari**, Olal Wyclife, Osano Aloys, Suter Kiplagat, Magu Martin, Abdallah Marjan, Kehongo Moses, Mwendwa Geoffrey. (2020). The Influence of Bomet Red Rock on composite organic fertilizers prepared from *Tithonia diversifolia* leaves and *Musa acuminata* (banana) stalks. *Journal of Plant nutrition*. <https://doi.org/10.1080/01904167.2020.1793178>
4. **Bakari A. Chaka**, Aloys M. Osano, Justin M. Maghanga & Martin M. Magu (2020). Optimization of bio-slurry available plant nutrients using *Terminalia b.* and *Acanthaceae spp.* bio-catalysts, *Journal of Advances in Agriculture (Hindawi)*. Vol. 2020, pp. 1-12. <https://doi.org/10.1155/2020/4526485>
5. Wachira Susan, Kirui Stella, **Bakari Chaka** (2021). Isolation and Characterization of Probiotic Lactic Acid Producing Bacteria in Kenyan Traditionally Fermented Milk, (*Open Journal of Biogeneric Sciences*). *Op Acc J Bio Sci & Res* 6(2)-2020. DOI: 10.46718/JBGSR.2020.06.000143
6. Nduni Mercy Njeri, Osano Aloys, **Bakari Chaka**. (2020). Synthesis and Characterization of Aluminium Oxide Nanoparticles from Waste Aluminium Foil and Potential Application in Aluminium-Ion Cell. (*Journal of Clean Production, Elsevier*), Vol 3; 100108, <https://doi.org/10.1016/j.clet.2021.100108>
7. **Chaka, B.**, Kiplagat, S., Wyclife, O., Aloys, O., Martin, M., Abdallah, M., Moses, K., Mwendwa, G., Omondi, F. (2021). Time-course analysis of chemical and physical properties of organic fertilizer from *Tithonia diversifolia* leaves. *International journal of recycling organic waste in agriculture*, 10(3), 257-264. doi: 10.30486/ijrowa.2021.1902872.1090
8. Abdallah Marjan, Osano Aloys, **Chaka Bakari** (2021). Purification of Bio-slurry Waste Using an Electrolytic Biomass Solar Cell with Co-generation of Bio-hydrogen Gas, *International Research Journal of Environmental Sciences*. Vol. 10(1), 38-44. ISSN 2319-1414.
9. Thiong'o Boniface, Osano Aloys, **Bakari Chaka** (2020). Investigating the Ohmic Behavior of mediator-less Microbial Fuel Cells using Sewerage Water as the Bio-Anode. *Cogent Engineering, Taylor & Francis*, 9:1, 2079222, doi:10.1080/23311916.2022.2079222
10. Patricia Forbes, Aloys Osano, Justin Maghanga, Chiedza Munyeza, **Bakari Chaka**, Adedapo Adeola and Sifiso Nsibande, "Polycyclic aromatic hydrocarbon emissions arising from domestic combustion: A Kenyan case study", 2022 Conference of the National Association for Clean Air, 5-7 October 2022, Kempton Park, South Africa. Conference proceedings ISBN:978-0-6397-1934-4
11. **Chaka, B.**, Osano, A.M., Forbes, P.B.C. Seasonal variation in pesticide residue occurrences in surface waters found in Narok and Bomet Counties, Kenya. *Environ Monit Assess* 195, 1050 (2023). <https://doi.org/10.1007/s10661-023-11629-4>
12. Wamumwe John, Kiragu Denis, & **Bakari Chaka** (2024). Phytochemical screening, FTIR and GCMS analysis of Cucurbita pepo seeds cultivated in Kiambu county, Kenya, *Heliyon* 10 (2024) e30237; <https://doi.org/10.1016/j.heliyon.2024.e30237>

13. **Chaka B**, Osano AM, Nyaigoti OW, Forbes PB.C. (2024). Investigations into the occurrence of polycyclic aromatic hydrocarbons in surface waters of the Narok and Bomet counties of Kenya. *Royal Society Open Science*. 11: 240019. <https://doi.org/10.1098/rsos.240019>
14. **Chaka B**, Osano AM, Nyaigoti OW, Forbes PB.C. (2024). Preparation and Application of Cow Dung Biochar Adsorbent in Removal of Pesticide Residues and Polycyclic Aromatic Hydrocarbons (PAHs) From Water. *Chemistry Africa*, <https://doi.org/10.1007/s42250-025-01186-3>