

Joseck Olukusi Alwala.

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Professional Summary

Joseck Olukusi Alwala received his Higher Diploma and Diploma in Analytical Chemistry at the Kenya Polytechnic, currently Technical University of Kenya, in 2003 and 2006 respectively. Currently, he is pursuing Masters of science degree in Analytical Chemistry. He has 15 years of teaching and working experience in university and research chemistry laboratories. He went to Associated Battery Manufacturers East Africa limited (ABM) in 2004 and worked in the quality control laboratory. In 2006, he worked at the International Centre of Insect Physiology and Ecology (ICIPE) at its Behavioral and Chemical Ecology Department (BCED). In 2007, he worked in the Department of chemistry at the ministry of Roads Materials branch. Between 2008 and 2015, he worked as a senior technologist in the department of Chemistry, Maseno University. Currently, he is a senior technologist II, in the Department of Chemistry, Kibabii university. His research activities focus on the use of chemistry principles to solve various environmental problems such as pollution, clean energy, and project sustainability. He has published several peer reviewed research articles in top journals including *Environment Systems and Decisions*, *American Journal of Nutrition and Food Science* etc. In addition, he has published a university level book and two book chapters concerning sugarcane and maize farming. He is also organizing secretary of Kenya Chemical Society western chapter.

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Kibabii University
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Personal information:

Civil Status; Married

Date of Birth; September, 7, 1978

Alwala Joseck Olukusi; +254 721 159 224 or +254 711 584 063.

Interests; Scientific research in the laboratory and field, leadership roles, listening and composing music, reading, teaching & watching nature.

Current Job: September 2015 to date; Senior Technologist II in the Department of Chemistry, Kibabii University

Duties: Laboratory administration and management, preparation of laboratory manuals for undergraduate students, supervision of other technical staffs, preparation of chemicals and reagents for undergraduate classes, presenting practical's to students, supervision of undergraduate students during laboratory session, extraction of various categories of chemical substances from various plants for analysis.

In between the semester I have hands on experience on day to day laboratory practical's in the department of chemistry and also the technologist in charge of ordering, storing and dispensing of chemicals in the department.

Peer reviewed publications

1. Wanzala, W., Osundwa,E.M., Gakuubi, M. M., **Alwala, J.O.(2016)**. Chemical composition of essential oil of *Tithonia diversifolia* (Hemsl.) A. Gray from the Southern slopes of Mount Elgon in Western Kenya" Indian Journal of Ethno-PhytoPharmaceuticals
2. Wanzala, W., Syombua, M., **Alwala,J.O. (2015)**.A survey of the applications and use of Ethnomedicinal plants and plant products for healthcare from Ukambani in eastern Kenya.*Journal of ethnobotany, research and applications*.
3. **Alwala, J.O.**, Kiema, F.M., Wanzala, W.O. (2014). Determination of tannins in African indigenous vegetables, grains and cassava roots from Emuhaya district, western Kenya. *American Journal of Nutrition and Food Science*.
4. Solomon Omwoma, W. Nyaigoti Omwoyo, **Joseck. O. Alwala**, David M. K. Onger, Lagat C. Sylus & Joseph O.Lalah (2012). Nutrient reduction in runoff water from sugarcane farms by sedimentation method. *The Environmentalist*, ISSN 0251-1088, Volume 32, no. 4 (494-502).
5. **Alwala,J.O.**,Wanzala,W.,Inyambukho,R.A.,Osundwa,E.M.,Ndiege,I.O. (2009).Characterization and Evaluation of Repellent Effect of Essential Oil of *Mangifera indica* L. from Kenya. *Journal of essential oil bearing plants*, ISSN 0972-060X. vol. 13 no. 1.

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6. **Alwala, J.O.**, (2003). Quantitative determination of Nitrogen, Potassium and Phosphorus in leaves of banana, maize and beans and their suitability as compost manure in Kasarani division, Nairobi, Kenya. A project presented to the Kenya National Examination Council for partial fulfillment of Diploma in Analytical Chemistry

Papers submitted (Under Review)

1. **Alwala, J.O.**, Chepkui, R.K., Lusweti, J.K. (2018). Determination of Selected Heavy Metals in Two commercial Cigarettes brands and Tobacco Leaves Marketed in Emuhaya District, Western Kenya. *Journal of Science (JOS)*
2. **Alwala, J. O.**, Kiema, F., Buyela, D.K., Wanzala, W. (2018). Antimicrobial activity of *Persea Americana* leaves extract against *staphylococcus mutans* from Emuhaya, Western Kenya. *Eur J Plant Pathol*.
3. **Alwala, J. O.**, Kiema, F., Buyela, D.K., Wanzala, W. (2018). Antibacterial activity of leave extracts of *Warburgia ugandensis* against *staphylococcus aureus* and *Escherichia coli* from Kenya. *Journal of Coastal Life Medicine*

Conference presentations and Public Speeches

1. **Alwala, J.O.**, Buyela, D.K., Shikanga, E. (2016). Assessment of Selected Heavy Metals Levels In Two Commercial Cigarettes Brands and Tobacco Cultivated In Emuhaya District, Western Kenya: *Kibabii University first International conference*, June 2016; Affiliation: Kibabii University, DOI: 10.13140/RG.2.1.1032.6645
2. **Alwala, J.O.**, Buyela, D.K., Shikanga, E. (2016). Antimicrobial Activity of Persian Americana Leaf Extract Against *Staphylococcus Mutans*, At: Kibabii University, Kenya, Conference: *Kibabii University first International conference*, Affiliation: Kibabii University, Kenya, DOI: 10.13140/RG.2.1.2032.0884
3. **Alwala, J.O.**, Kiema, F.M., Wanzala, W.O. (2014). Determination of tannins in African indigenous vegetables, grains and cassava roots from Emuhaya district, western Kenya. *The 8th International Kenya Chemical Society Conference; 'Applied Chemistry and Technology in Industry' from 5th – 8th May 2015*; University of Nairobi, College of Biological and Physical sciences.
4. Lusweti, J. K., **Alwala, J.O.** (2013). Sorption and availability of potassium in selected soils from western Kenya; *First Interdisciplinary International Conference from 3rd to 5th September, 2013*; University of Eldoret.

5. **Alwala, J.O.**, Wanzala, W. (2012). Characterization and Evaluation of Repellent Effect of Essential Oil of *Mangifera indica* L. *The 7th International Conference of the Kenya Chemical Society (KCS): Chemical Sciences as a Vehicle for achieving Kenya's Vision 2030*, 15th to 18th 2012; Maseno University, Kenya.
 6. Omuoma, S., Onger, D.M.K., **Alwala, J.O.**, Nyaigoti, W.O., Owour, J.J., Lalah, J.O (2011). Nutrient Reduction in Runoff water from sugarcane farms within lake Victoria basin by sedimentation method; *Proceedings of 2011 JKUAT Scientific Technological and Industrialization Conference: Science, technology and innovation for industrialization and sustainable development, 16-18 November 2011*, Jomo Kenyatta University of Agriculture and Science technology, Kenya
 7. Omuoma, S., Onger, D.M.K., **Alwala, J.O.**, Nyaigoti, W.O., Owour, J.J., Lalah, J.O (2011). Nutrient Reduction in Runoff water from sugarcane farms within lake Victoria basin by sedimentation method, At **1st PACN Congress on Agricultural Productivity: How chemical sciences can help to feed the world, 21- 23 November 2011, Accra Ghana.**
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Books, Dissertations, and Book Chapters

Alwala, J. (2013). Sorption and Availability of Potassium in Selected Soils from Kenya: Effects of organic matter and pH on concentration of adsorbed potassium in sugarcane and maize growing zones, Lap Lambert Academic Publishing, ISBN-10: 3659416770.

Training Workshops.

1. Mass Spectrometry Workshop by bruker daltonics held 12th July, 2016 at the EKA HOTEL along Mombasa Road, Nairobi.
2. Agilent East Africa Instrument seminar on GC-GC/MS and LC-LC/MS from 22-23 October 2012 at sarova panfric hotel, Nairobi, Kenya.
3. Shimadzu Middle East and Africa seminar on Operation and Maintenance User Training of *GC/GC-MS-QP2010 ultra* held at the Kenya bureau of standards, Nairobi Kenya; on 28th-29th August 2012.
4. Ministry of State for Youth Affairs, National Youth Dissemination Workshop held on: 25th June 2007 at KICC in Nairobi, Kenya.

5. The New Partnership for African Development (NEPAD): Africa Peer Review Mechanism (APRM) Sectorial Forums on the 15th June 2007 at KICC, Nairobi, Kenya

Previous Appointment:

August 2008 to September 2016; Senior Technologist in the Department of Chemistry, Maseno University

Duties: Laboratory administration and management, preparation of laboratory manuals for undergraduate students, supervision of other technical staffs, preparation of chemicals and reagents for undergraduate classes, presenting practical's to students, supervision of undergraduate students during laboratory session, extraction of various categories of chemical substances from various plants for post graduate students, Sample purification and analysis using:- *flame photometer, UV-Vis, TLC, HPLC, GC and GC_MS.*

In between the semester I had hands on experience on day to day laboratory practical's in the department of chemistry and also the technologist in charge of ordering, storing and dispensing of chemicals in the department.

July 25th- September 25th 2012: Ag. Chief technologist, Department of chemistry, Maseno University

August 2006 - August 2008: worked in the Department of chemistry at the ministry of roads Materials branch

Duties included: chemical analysis of materials, engineering and both raw and finished industrial products to ascertain the required parameters. Routine hands on experience on common analysis include the following:

Water analysis: common tests included; P^h determination, conductivity, total acidity and alkalinity, hardness, chlorides, sulphates, total residue, dissolved solids and suspended solids and determination of heavy metals using A.A.S.

Soil analysis: common tests included; P^h determination, conductivity, total sulphates, water soluble salts, cement in cement stabilized soil, chlorides, organic matter, and analysis of aggregates.

Oil analysis: Common tests included; determination of water content, flash point, ash content, sediments, kinematic viscosity at various temperatures and specific gravity and insoluble salts.

Cement analysis: Common tests included; determination of silica, calcium, magnesium, iron, sulphates, chlorides and insoluble salts.

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May 2006– August 2006: Attached to Chemistry Section of Livestock Tick Ethno veterinary Project at the School of Biological Sciences (SBS), University of Nairobi (UoN)

Laboratory work / activities:-

- Laboratory administration and management
 - Industrial extraction of various categories of chemical substances from various plants.
 - Separation and Purification of the extracted plant materials
 - Drying the materials under reduced pressure in a rotor vapor to allow for long term storage in the laboratory.
 - Packaging of the finished extracted plant materials.
 - Proper storage and labeling for future identification in the laboratory.
 - Laboratory bioassay analysis so as to evaluate the bioactivity of the extracted plant materials
 - Determination of the nature of the active ingredients of extracts for further bioassays at I.C.I.P.E.
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January 2006–April 2006: Short term training at the International Centre of Insect Physiology and Ecology (ICIPE) at its Behavioral and Chemical Ecology Department (BCED)

Duties included:

- Laboratory practice and management
- Sample extraction including:- *Steam distillation, Water extraction, Sequential extraction.*
- Volatile collection
- Sample concentration
- Bioassays using *Anopheles gambiae* mosquitoes and *Rhipicephalus appendiculatus*
- Sample purification and analysis using: - ***TLC, HPLC, GC, GC_MS.***
- Data analysis
- Data management including:- ***Introduction to Microsoft office (MS word and MS excel) and internet search engine ,SAS and SPSS***
- Report writing

In between the topics I had hands on experience on day to day activities at ICIPE

January 2004–March 2004: Industrial attachment at Associated Battery Manufacturers East Africa limited (ABM);

Attached in the quality control laboratory where I worked in the general laboratory analysis, preparation of laboratory reagents and electrical battery testing. I was put through a familiarization process of the factory where I learned all processes involved in the manufacturing of solar and automobile batteries including their sampling techniques.

Professional Membership

Organizing secretary Kenya Chemical society (KCS), Western Chapter

Leadership Roles

1. Member and vice chairman , Academic Committee of the Board of management, Ebukhaya Secondary School
 2. Secretary, Kenya Universities Staff Union, (KUSU) Kibabii University Branch
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Education

Pursuing MSC, ANALYTICAL CHEMISTRY AT MOI UNIVERSITY

Professional academic background

Period	Institution and location	Field of study	Certificate
2004 – 2006	The Kenya polytechnic	Analytical Chemistry	Higher Diploma
2000– 2003	The Kenya Polytechnic	Analytical chemistry	Diploma

School Academic Background

Period	Institution and location	Field Of Study	certificate
2009–2013	University of Eldoret, Kenya	University Education	Bsc, chemistry
1993–1996	L. Nakuru High School, Nakuru, Nakuru county, Kenya	Secondary education	Kenya certificate of secondary education (K.C.S.E).
1985–1992	Ebukhaya primary school, Vihiga County, Kenya	Primary education	Kenya certificate primary school. (K.C.P.E).
1984–1985	Ebukhaya nursery school, Vihiga, County Kenya	Nursery education	Nursery certificate.

References

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