


Academic Staff Profile

Personal Profile

Personal Details

<p>Name: Hudson Nyambaka, FRSC Title/Qualification: Prof./PhD Department: Chemistry Designation/Position: Associate Professor Email: nyambaka.hudson@ku.ac.ke Contact Address: Department of Chemistry Area of Specialization: - Analytical chemistry techniques - Food chemistry - Environmental monitoring Research Interests: -Analytical Chemistry: chromatographic procedures for micronutrient analysis, electrochemical and spectrometric procedures for trace metal analysis -Food Chemistry: analysis of micro- and macro-nutrients; processing procedures and their effects on nutritional and sensory values; bioavailability and bioconversion of micronutrients; food formulations and their impact on vulnerable groups such as people living with HIV and AIDS and children in harsh conditions -Environmental monitoring: impact of heavy metals; organics and pesticide degradation Google Scholar: ORCID ID:</p>	
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Academic & Professional Qualifications

- Ph. D in Food Chemistry, University of Leeds, Leeds, UK (1996)
- MSc (Chemistry) Kenyatta University, Nairobi, Kenya (1988)
- B.Ed. (Science), University of Nairobi, Nairobi Kenya (1985)
- Masters of Arts in Leadership (MAL), Pan African Christian University (PACU), Nairobi, Kenya (2010)
- 2014: Teaching Methodology course offered by Centre for Teaching Excellence and Evaluation, Kenyatta University
- 2012: Workshops in Clinical Pharmacology, Vaccines and Natural Products organized by Novartis Institute for Biomedical Research in Accra, Ghana

- 2011: WIPO Training on Patent Search Strategies and Techniques, organized by World Intellectual Property Organization (WIPO) and Ministry of Industrialization of Kenya in Nairobi, Kenya
- 2010: Attended courses between June and August in: Intellectual Property/Patents, Data Quality, Initial Chemical Hygiene and Safety Training, and Initial Biosafety & Blood Borne Pathogens organized by Novartis Institute for Biomedical Research in Cambridge, USA
- 2009 Training on Performance Management conducted by Public Sector Reform & Performance Contracting at Utalii College, Nairobi between 2nd and 4th April 2009
- 2001: Training in Proposal Writing for Policy Research organized by 2020 Vision Network for East Africa and the International Food Policy Research Institute, at the University of Nairobi

Employment History

- Associate Professor, Analytical Chemistry, Department of Chemistry, Kenyatta University (2010-
- Senior Lecturer, Department of Chemistry, Kenyatta University (2001-2010)
- Lecturer, Department of Chemistry, Kenyatta University (1991 – 2001)
- Graduate Assistant, Department of Chemistry, Kenyatta University (1988 – 1991)
- Graduate Teacher, Gesusu High School, Kisii (1985 – 1986)

Achievements

Development of Teaching/Academic Programmes

Initiated, developed and implemented the following academic Programmes:-

- BSc (Industrial Chemistry) – First intake September, 2005
- BSc (Analytical Chemistry) – First intake September, 2005
- MSc (Applied Analytical Chemistry) – First intake September, 2006
- BSc (Industrial Chemistry and Management) – First intake September, 2011
- BSc (Analytical Chemistry and Management) – First intake September, 2011

Start of Consultant Unit (2018)

Through accreditation with Pest Control Products Board (PCPB) on study of Physical and Chemical Analysis of pest control products in the Department of Chemistry, initiated the creation of the consultancy unit; Chemical Analysis and Research Unit (CARCU)

Award of Utility Model (2014)

Awarded Certificate of Utility Model No. 52 for the invention titled: ***“Food Supplements Formulated from Local Vegetables and Fruits for Boosting Immunity of Individuals with HIV and AIDS (PLWHA)”***

Equipment in Chemistry Lab

- Through nomination by Seeding Labs – Novartis Institute of Biomedical Research (NIBR) for Training and Research Fellowship Program at Cambridge USA from June to August 2010, I received two LC-MS equipment for use in chemical analysis
- Other equipment include Fourier Transform Infrared spectroscopy (FTIR) and Gas Chromatography (GC)

Publications

Referred Journals

1. John Wakhanu , Hudson Nyambaka , Judith Kimiywe , Mildred Nawiri and Wilson M. Thagana (2019). Consumption of African Indigenous Vegetables Improves Children's body Fat Free Mass in Machakos County, Kenya. *Journal of Food Science and Engineering* 9 (2019) 305-317. doi: [10.17265/2159-5828/2019.08.002](https://doi.org/10.17265/2159-5828/2019.08.002)
2. Echessa AC, Nyambaka Hudson, Changamu Evans (2019). Ameliorating Sisal Leaf Wastes in Purveying Plant Macronutrients. *International Journal of Research and analytical Reviews*, 6 (4), 87-93.
3. N George, N Mildred, N Hudson (2019). [Health Risk Assessment on Selected Essential and Non-Essential Elements in Food Crops Grown in Kibera Slum, Nairobi-Kenya](#). *Food and Nutrition Sciences* 10 (6), 635-647
4. A.A Akumu, H Nyambaka, S.P Kuate, B Torto (2018). [Characterization of flavonoids from candidate striga grass in controlling diet legumes *Cicer arietinum* and *Vigna radiata*](#) Biofarmasi Journal of Natural Product Biochemistry 16 (2), 83-98
5. Nderitu, S.M., Nawiri, M.P. and Nyambaka, H.N. (2018) [Fortification of sunflower and palm oils using beta carotene extracted from *Asystasia mysorensis* and *Solanum nigrum*](#). *Food Research* 2 (5), 437 - 442
6. Nyaitondi OD, Wanjau R, Nyambaka H, Hassanali A (2018). Anti-bacterial properties and GC-MS analysis of extracts and essential oils of selected plant product. *Biofarmasi J Nat Prod Biochem* 16: 44-58.
7. JK Basweti, MP Nawiri and HN Nyambaka (2018). Physico-chemical parameters and levels of polycyclic aromatic hydrocarbons in water, sediments and soil in River Nzoia, Kakamega county-Kenya. *Environ. Monit. Assess*, 190:518
8. Mungai ZM, Nawiri MP and Nyambaka HN (2017). Retention levels of vegetable extractable beta-carotene preserved in virgin coconut oil and unadulterated honey. *Food Research* 1 (5): 170 – 175.
9. Obumba MO, Nawiri MP and Nyambaka HN (2017). Effect of storage on lutein levels of smooth cayenne (*Ananas comosus*) grown in different counties of Kenya. *African Journal of Food Science*, 11 (6), 178-182
10. Nawiri MP, Nyambaka HN and Mobegi E ((2017). Levels fo Polycyclic Aromatic Hydrocarbons in Water from Nairobi River, Nairobi County-Kenya. *The International Journal of Science & Technoledge*, 5(5), 14-18.
11. Shisia K Silvanus, Naumih N, Nyambaka H, Andala DM (2016). Efficiency of Fabricated CNT-IPSF/Fe₃O₄ Nanocomposites in Removal of Phenanthrenes from Contaminated Water. *International Journal of Scientific & Technology Research*, 5 (9), 83-92
12. Mobegi Erick K, Nyambaka Hudson N and Nawiri Mildred P (2016). Physico-chemical Characteristics and Levels of Polycyclic Aromatic Hydrocarbons in Untreated Water from Ngong River, Kenya. *Journal of Pollution Effects & Control* 4(2), 1-4, DOI:10.4172/2375-4397.1000163
13. JY Jr Hena, DM Andala, HN Nyambaka and MP Nawiri (2016). Carotenoid Levels, Total Phenolic Content and Antioxidant Activity Variations in Varieties of Citrullus lanatus under Storage at Room Temperature. *International Journal of Biochemistry Research & Review* 9(3)
14. Wakhanu A John, Kimiywe Judith, Nyambaka Hudson (2016). Oxalate Levels in Selected African Indigenous Vegetable Recipes from the Lake Victoria Basin, Kenya. *International Journal of Agriculture and Environmental Research*, 1(2) 88-105
15. Kamau T, Nyambaka HN and Nawiri MP (2015). Understanding Geophagic Practice as a Source of Mineral Nutrients and Toxicants. *International Journal of Modern Chemistry and Applied Science* 2(4), 208-210

16. Peter Chege, Elizabeth Kuria, Judith Kimiywe, Hudson Nyambaka (2014). Retention of B-Carotene, Iron and Zinc in Solar Dried Amaranth Leaves in Kajiado County, Kenya *International Journal of Sciences: Basic and Applied Research (IJSBAR)*, 13 (2), 329-338
17. Peter Chege, Elizabeth Kuria, Judith Kimiywe, Hudson Nyambaka (2014). Changes in nutrition content for β -carotene, iron and zinc in solar Dried and stored *Amaranthus cruentus* vegetables. *International journal of Agriculture Innovations and Research* 3(3), 880-882.
18. EN Ngorwe, Hudson Nyambaka and Jane Murungi, T Ongera (2014). Effects of Physico-chemical properties on uptake of lead and cadmium in tobacco grown in medially polluted soils. *The International Journal of Science and Technoledge* 2(8) 146-153.
19. Peter Chege, Elizabeth Kuria, Judith Kimiywe, Hudson Nyambaka (2014). Retention of β -carotene, iron and zinc in solar Dried and stored Amaranth Leaves n Kajiado County, Kenya. *International Journal of Sciences: Basic and Applied Research* 13(2) 329-338.
20. Evans N Ngorwe, Hudson Nyambaka and Jane I Murungi (2014). Use of low cost soil amendments reduces uptake of cadmium and lead by tobacco (*Nictiana tabacum*) grown in medially polluted soils. *Journal of Environment and Human* 1(2) 104-112.
21. Mwangi IW, Muthakia GK, Onindo CO, Nyambaka H, Ngila JC (2014). Determination of copper levels in Kamiti river along coffee farms in Kiambu, Kenya. *Journal of Agriculture, Science and Technology* 16(2).
22. Echessa AC Peter, Nyambaka Hudson, Ondigi N Alice, Omuterema Stanley, Toili William, Afihini SM Ijani, Sande Anne (2013). Evaluation of micronutrients in seeds of pumpkin varieties grown by smallholder farmers in the Lake Victoria Basin. *African Journal of Food Science and Technology* 4(10) 221-228.
23. KS Shisia, V Ngunre, H Nyambaka, and FDO Oduor (2013). Effect of pH and forage species on mineral concentrations in cattle breeds in major grazing areas of Uasin Gishu County, Kenya. *International Journal of Current Microbiology and Applied Sciences*, 2(12), 247-254.
24. Echessa AC Peter, Nyambaka Hudson, Ondigi N Alice, Omuterema Stanley, Toili William and Sande Anne (2013). Variation of micronutrients in pumpkin fruit varieties grown within the Lake Victoria Basin. *Food Science and Quality Management*, 17, 71-81
25. Lusi P, Nyambaka H, Mbakaya CF, Maseta E, Bwete V and Murungi J (2013). Bioavailability studies of trace elements in a potential food formulation for use in the management of HIV and AIDS. *International Journal of Pure and Applied Chemistry*, 8(1): 47-53.
26. Richard Mogwasi, Benuel Nyagaka, Enock Okiambe, Hudson Nyambaka, Jane Murungi, Zachary Getenga, Enock Amboga, Evans Onyancha, Samuel Abuga, Evans Kenanda (2013). Effect of Occupation on the Levels of Lead in Human Blood in Kenya; *Chemistry and Material Research*, 3 (4), 1-6.
27. Richard Mogwasi, Zachary Getenga, Hudson Nyambaka, Ruth wanjau, Jane Murungi, Enock Okiambe, Evans Onyancha (2013). Comparison of Lead Levels with Calcium, Zinc and Phosphorus Levels in Human Blood; *Global Journal of Pure and Applied Chemistry Research*, 1 (1), 44-59.
28. Nawiri MP, Nyambaka HN and Murungi JI (2013). Sundried cowpeas and amaranthus leaves recipe improves beta-carotene and retinol in serum and hemoglobin concentration among preschool children. *European Journal of Nutrition*, 52 (2), 582-589
29. Aywa K, Nawiri MP and Nyambaka HN (2013). Nutrient variation in coloured varieties of Ipomea batatas grown in vihiga county, western Kenya. *International food research journal*, 20(2), 819-825.
30. Muiruri JM, Nyambaka HN and Nawiri MP (2013). Heavy metals in water and tilapia fish from Athi-Galana-Sabaki tributaries, Kenya. *International food research journal*, 20 (2), 891-896.
31. Richard Mogwasi, Hudson Nyambaka, Jane Murungi, Zachary Getenga, Lydia Kimoro, Enock Okiambe, Benuel Nyagaka (2012). Effect of Environmental Exposure on the Lead Levels in Human Blood in Kenya; *Journal of Environment and Earth Science*, 2, (10), 53-63.

32. Nyambaka HN, Nderitu J, Nawiri MP and Murungi JI (2012). Use of kitchen steel wool as oxygen absorber improves storage retention of beta-carotene in solar-dried vegetables. *Mediterranean Journal of Chemistry*, 1 (6) 326-333.
33. KS Shisia¹, H Nyambaka, IO Jumba, FDO Oduor and V Ngure (2012). Minerals deficiency diagnosis in grazing cattle of Uasin Gishu District, Kenya, *Journal of Environmental Chemistry and Ecotoxicology*, 4(13), 229-233.
34. Shisia KS, Murungi J, Nyambaka H, Jumba IO, Oduor FDO, Ngure V (2011). Soil-plant composition in relation to mineral requirements for grazing cattle in Uasin Gishu district, *Journal of Technology & Socio – Economic Development Volume 1(1)*, 126-130.
35. Mbakaya CFL, Nyambaka H, Waudo J, Ndiege IO (2011). Might the Time be Ripe to Re-define the Cause of AIDS in the Light of Emerging Evidence? *J. Agri. Sci. Technol.* 13 (1), 1-6.
36. Paul Mireji, Joseph Keating, Ahmed Hassanali, Daniel Impoinvil, Charles M. Mbogo, Martha Njeri, Hudson Nyambaka, Eucheria Kenya, John I. Githure, John C Beier (2010). Expression of Metallothionein and α -Tubulin in Heavy Metal-tolerant *Anopheles gambiae* sensu stricto (Diptera:Culicidae). *Ecotoxicology and Environmental Safety*, 73(1) 46-50.
37. Paul Mireji, Joseph Keating, Ahmed Hassanali, Charles M. Mbogo, Hudson Nyambaka, Samwel Kahindi, and John C. Beier (2008). Heavy metals in Mosquito Larval Habitats in Urban Kisumu and Malindi, Kenya, and their Impact. *J. Ecological and Environmental Safety*, 70, 147-153.
38. Paul Odhiambo Mireji, Joseph Keating, Eucheria Kenya, Charles M Mbogo, Hudson Nyambaka, Ellie Osir, John Githure and John C Beier. (2006). Differential Induction of Proteins in *Anopheles gambiae* sensu stricto (Diptera:culicidae) larvae in Response to Heavy Metal Selection. *Intern. J. Trop. Insect. Sci.* 26 (4), pp 214-226.
39. KS Shisia, J Murungi, H Nyambaka, IO Jumba, FDO Oduor (2006). Trace Element Nutritional Disorder Diagnosis in Grazing Cattle of Uasin Gishu District: Soil-Plant-Animal Approach. *J. Kenya Chemical Society*
40. Mbakaya CFL, Orenge PA, Jumba I, Bulimo W, Kisingu W, Nyambaka H, Waudo J, Ndemwa P, and Omondi J (2004). Micronutrient Zinc Deficiency as a Possible Co-factor in the Transmission and Progression of HIV/AIDS in Kenya. *Afric. J. Fd. Agric. Develop.* 4 (2), 1-13.
41. Nyambaka HN and Ryley J (2004). Multivariate Analysis of the Sensory Changes in the Dehydrated Cowpea Leaves. *Talanta*, 64, 23-29
42. Nyambaka HN and Ryley J (2001). Degradative Pro-vitamin A Active Compounds of all-trans- β -Carotene in Dehydrated Dark Leafy Vegetables. *Bull. Chem. Soc. Ethiopia*. 15 (1), 57-64.
43. Nyambaka HN and Ryley J (2000). An Isocratic Reversed-Phase HPLC Separation of β -Carotene Epoxides in Dehydrated Dark Green Leafy Vegetables. *Intern. J. Biochemphysics* 10, 42-46.
44. Nyambaka HN and Ryley J (1996). An Isocratic Reversed-Phase HPLC Separation of the Stereoisomers of the Provitamin A Carotenoids (β - and α -Carotene) in the Dark Green Vegetables. *Food Chem.* 55 (1), 63-73.
45. Nyambaka HN and Nyagah G (1991). Determination of β -Carotene and α -Tocopherol in Vegetable Foods by High-Performance Liquid Chromatography. *Intern. J. Biochemphysics* 1 (2), 38-41.

Books and Books Chapters

-Books Chapters

- Hudson Nyambaka and Mildred Nawiri (2013). Indigenous Vegetables: An Excellent Source of Vitamin A, In: L. De Smet and M. Claes (eds.), *Vitamin A and Vitamin E: Daily Requirements, Dietary Sources and Symptoms of Deficiency*. Nova Science Publishers Inc., New York, pp. 105-122. (eBook)

- KU Modules

- Hudson Nyambaka and Mildred Nawiri (2012). Instrumental Methods. Module for the Institute of Open Learning, Kenyatta University
- Hudson Nyambaka, Jane Murungi and Mildred Nawiri (2002) Introduction to Classical Analysis and Statistical Analysis; Module for the Institute of Open Learning, Kenyatta University.
- **Book Editor**
- Omari Jibich Abayo (1999). The Power Base Behind Under-Development in Post Independent Africa

Conference/Workshops/Seminar Papers

Conference Papers

- Nawiri MP, Aywa K and Nyambaka HN (2013). The micronutrient content in coloured varieties of sweet potatoes (*Ipomea batatas*) grown in Vihiga County, Kenya. In: Trends and opportunities in the production, processing and consumption of staple food crops in Kenya. Edited by Onyango, C., Unbehend, G., and Lindhauer M. Deutsche Nationalbibliothek Publisher, Germany.95-105.
- Nyambaka, et al. (2011). “The Role of Nutritional Formulations in Enhancing Immunity among People Living With HIV AND AIDS in the Lake Victoria Region: Some Baseline Characteristics”. In: Ethnobotany and Health; Proceeding of Cluster Workshop, 4th – 7th September 2012, Entebbe Uganda. Edited by J.A. Orwa, C. Mbakaya, J. Obua and S. Okoth. Inter-University Council for East Africa, Lake Victoria Research Initiative (VicRes).Pp 141-152.

Papers Presented in Conferences/workshops/seminars

1. **Nyambaka HN**, Obumba MO and Nawiri MP Effect of storage on lutein levels in smooth cayenne (*Ananas comosus*) grown in Kenya. Pan Africa Chemistry Network Congress 2017, held on 7-9th November 2017 in Accra Ghana
2. **Muturi SN**, Nawiri, MP and Nyambaka, HN Retention of extractable beta carotene from indigenous vegetables *Asystasia mysorensis* and *Solanum nigrum* in sunflower and palm oils 10th Kenya Chemical Society International Conference held on 9th -12th May 2017 at the United States International University (USIU)-Africa. (Awarded Royal Society of Chemists (RSC) poster winners’ prize)
3. **Basweti KJ**, Nawiri, MP and Nyambaka, HN levels of polycyclic aromatic hydrocarbons in water, sediment and soil from a section of River Nzoia, Kakamega County-Kenya, 10th Kenya Chemical Society International Conference held on 9th -12th May 2017 at the United States International University (USIU)-Africa. (Awarded RSC poster winners’ prize)
4. **Nyambaka H**, Mbakaya CFL, Bwete V, Maseta E, Waudu J and Nambafu R (2016): “Use of Indigenous Food Formulation in the Management of HIV and AIDS Patients in Kenya”, 5th European Nutrition and Dietetics Conference held on June 16-18, 2016 in Rome Italy.
5. **Nawiri, MP**, Hena JY Jr, Andala, DM and Nyambaka HN (2016): “Carotenoid levels, Total Phenolic Content and Antioxidant Activity Variations in Varieties of *Citrullus lanatus* Under Storage at Room Temperature”, Humboldt “Kolleg” 2016 Held in Naivasha, Kenya April 6 – 8, 2016.
6. **Nawiri M.P**, Hena, J., Andala, D.M and Nyambaka, H.N “Storing fruits of *solanum lycopersicum* at room temperature affects carotenoid levels, total phenolic content and antioxidant activity. NIMR 30th Annual Joint Scientific Conference 4th-6th October, 2016 Julius Nyerere International Convection, Tanzania.

7. **Nawiri MP**, Hena JY Jr, Andala DM and Nyambaka HN (2016): "Storage Effects on Levels of Carotenoids, Total Phenolics and Antioxidant Activity in *Lycopersicon esculentum* And *Citrullus lanatus* Grown in Mwea, Kenya", 4th African Food and Nutrition Forum in Ethiopia
8. **Nyambaka Hudson** (2015). "Environmental Exposure and Feeding Habits Affects Lead Levels in Human Blood in Kenya" Presented at the 8th International Kenya Chemical Society Conference held on May 5-8, 2015 at the University of Nairobi, Kenya
9. **Nawiri, MP**, Nyambaka HN and Aywa K "The nutrient content in colored varieties of *Ipomea batatas* grown in Vihiga, Kenya. Conference on Trends and opportunities in the production, processing and consumption of staple food crops in Kenya, held at the Intercontinental Hotel, Nairobi on 25th-26th April **2013**.
10. **Nawiri MP**, Nyambaka, H and Aywa, K "Nutrient content in colored varieties of ipomeabatatas". Kenya DAAD Scholar's Association Conference held at Egerton University on 15th-16th November **2012**.
11. **Nyambaka H**, Mbakaya CFL, Bwete V, Maseta E, Mbonne V, Lusi P and Nambafu R. (2012): "Impact Assessment of Using Nutritional Supplements in the Management of HIV and AIDS in Western Kenya". 5th Annual Ghana Biomedical Convention held on 30th July to 1st August, 2012, Noguchi Memorial Institute for Medical Research, University of Ghana-Legon, Accra Ghana
12. **Nyambaka H**, Mbakaya CFL, Maseta E, Bwete V, Nambafu R, Lusi P, Mbonne V and Sauda S.(2011): "The Potential use of Indigenous Vegetables in Enhancing Immunity Boasting Vitamins among People Living with HIV AND AIDS in the Lake Victoria Region: Bioavailability Studies". 1st PACN Congress on Agricultural Productivity: How Chemical Sciences can Help to Feed the World, Accra International Convention Centre, 21-23rd November 2011
13. **Nyambaka H**, Mbakaya CFL, Bwete V, Maseta E, Mbonne V, Lusi P and Nambafu R. (2011): "Assessment of Indigenous Nutritional Foods Supplements in the Management of HIV and AIDS Patients in the Lake Victoria Region: Results of Baseline Studies". *VicRes Biennial Forum* held on 9th to 13th October, 2011, Munyonyo Resort Club, Munyonyo Uganda
14. **Nyambaka H**, Mbakaya CFL, Bwete V, Maseta E, Mbonne V, Lusi P and Nambafu R. (2011): "The Role of Nutritional Formulations in Enhancing Immunity among People Living With HIV AND AIDS in the Lake Victoria Region: Some Baseline Characteristics". *VicRes Principal Investigators Workshop* held on 4th to 7th September, 2011, Botanical Resort, Entebbe Uganda
15. **Nyambaka H**, Mbakaya CFL, Bwete V, Maseta E, Mbonne V, Lusi P, Nambafu R and Nawiri M. (2010) "The Consumption and Nutritive Value of Indigenous Foods in the Lake Victoria Region". 1st Pan African Nutritional Epidemiology Conference, 4th – 6th October 2010, Safari Park Hotel, Nairobi.
16. **Nyambaka HN** (2010): "Studies in Environmental Pollution Monitoring and Nutrition Intervention to Vulnerable Groups in Kenya", *Scientist/Harvard University Chemistry Researchers Seminar*, 23th July 2010, School of Chemistry and Biological Sciences, Cambridge, USA
17. **Nyambaka HN** (2010): "Nutrition Intervention with Vulnerable Groups and Environmental Pollution Monitoring Studies". *Novartis Institute of Biomedical Research Seminar*, 19 August 2010, Cambridge USA
18. **Kimani G**, Nyambaka H, Gichuki, S Amata, R, Okomo, M and Kasina, M (2010). "Determination of insecticidal activity of Kenyan Bt isolates against the spotted stem borer, *Chilo partellus*". 12th KARI Biennial Scientific Conference, Nairobi, 8th – 12th November 2010.

19. **Mildred P Nawiri**, H Nyambaka and J Murungi (2010). "Effect of Dehydration of Dark-Green, Leafy Vegetables on Bioavailability of Beta-Carotene among Preschool Children". *Africa Women in Science and Engineering Conference*, Nairobi. July, 2010
20. Nyambaka H, **Nawiri M** (2010). The nutritive value of indigenous vegetables in the Lake Victoria basin in relation to HIV/AIDS management. 4th Africa Nutritional Epidemiology Conference held at Safari Park Hotel, Nairobi, Kenya on 4th -8th October 2010.
21. **Nawiri MP**, Nyambaka H and Murungi JI (2010). Effect of dehydration of dark green leafy vegetables on bioavailability of serum retinol among preschool children. 1st East African Regional Scientific Conference of Pure and Applied Sciences held at Kenyatta University Students Business Centre on 10th-14th August, **2010**.
22. **Nyambaka HN** (2005). Spectrophotometric Determination of Vitamin A in indigenous Dark Leafy Vegetables. *The Kenya Chemical Society 5th International Conference*, 22nd – 26th August 2005, Kenyatta University
23. **Mildred P Nawiri**, H Nyambaka and J Murungi (2005). Beta-carotene from DGLV: It's Effect on Anemia and Parasitic Infestation in Preschool Children. *The Kenya Chemical Society 5th International Conference*, 22nd – 26th August 2005
24. **Charles L. Mbakaya**, H Nyambaka, J Waudu, E Amukoye, PO Orenge, W Kisingu, DL Mwaniki, D Koech, I Ndiege, S Mpoke, B Omondi, P Wanzala, and E Muniu (2005). Repletion Dynamics of Serum Zinc, Retinol and Immunity of HIV-seropositive Adults Supplemented with Mega Doses of Micronutrients in Kenya. *The Kenya Chemical Society 5th International Conference*, 22nd – 26th August 2005
25. **Mbakaya CFL**, Nyambaka H, Waudu J, Amukoye E, Orege PA, Kisingu W, Mwaniki DL, Koech D, Ndiege I, Mpoke S, Omondi B, Wanzala P, and Muniu E (2005). An experience with using innovative triple antioxidant therapy (ITAT) to manage HIV/AIDS patients in Kenya. Proceedings of the *Inaugural National Nutrition Congress (INNC) on Food and Nutrition Security for Health and Development* held on 21-23 February 2005, Nairobi Kenya.
26. **Mbakaya CFL**, Nyambaka H, Waudu J, Amukoye E, Orege PA, Kisingu W, Mwaniki DL, Koech D, Ndiege I, Mpoke S, Omondi B, Wanzala P, and Muniu E (2005). Repletion dynamics of serum zinc, retinol and immunity of HIV-seropositive adults supplemented with mega doses of micronutrients in Western Kenya. Proceedings of *the 26th African Health Sciences Congress* held on 28th November to 1st December 2005, Cairo - Egypt.
27. **Isaac W Mwangi**, GK Muthakia, CO Onindo, H Nyambaka, JC Ngila (2005). Determination and Copper Speciation in Kamiti River along Coffee Farms in Kiambu, Kenya. *The Kenya Chemical Society 5th International Conference*, 22nd – 26th August 2005
28. **Nyambaka, HN** (2003). Multivariate Analysis of the Sensory Changes in the Dehydrated Cowpea Leaves. *SEANAC Inaugural Scientific Conference*, Botswana, 7th – 10th July 2003
29. **Nyambaka, HN** (2000). The Process of Autooxidation of β -Carotene in Dehydrated Vegetables. Seminar Paper, *The Kenya Chemical Society*, UoN, 22nd Sep. 2000
30. **Nyambaka HN** (1996). The Stability of Pro-vitamin A Carotenoids in Dehydrated Dark Green Leafy Vegetables. Seminar Paper, Dept. of Chemistry, KU 13th November 1996

Research

- **2013**: Awarded Kshs. 1,499,970 Vice Chancellor grant, Kenyatta University
- **2006**: Won US\$ 150,000 from the Lake Victoria Research (VicRes) research grant
- **2006**: Awarded US\$ 3,000 by Southern and Eastern Africa Network of Analytical Chemists (SEANAC) to support research of two Masters students
- **2005**: Awarded US\$ 2,000 by Southern and Eastern Africa Network of Analytical Chemists (SEANAC) to support research of a Masters student
- **2005**: Awarded US\$ 3,000 by Sigma Xi Scientific Research Society research grants of each to support research of three students

Funded Projects

- 2013 - 2018: Principal Investigator for a research project funded by the Vice Chancellor Grant entitled: Nutrition-sensitive Intervention with African Leafy Vegetables to Improve Nutrition Status of School Going Children in Kenya
- 2006 -2010: Principal Investigator (PI) for a research projects funded Lake Victoria Research (VicRes) entitled: "Assessment of Indigenous Nutritional Food Supplement in the Management of HIV and AIDS Patients in the Lake Victoria Basin"-

Conferenced/Workshops/Seminars Attended

1. 2016: Attended a Pan Africa Chemistry Network Congress 2016 – Sustainable Water Resources for Africa held on 30th November – 2nd December 2016 at the University of Nairobi, Nairobi, Kenya
2. 2016: Attended Global Challenge Research Fund grant proposal Workshop held on 2nd November 2016 at the University of Nottingham, UK
3. 2016: Attended Merck Africa Luminary Meeting held on 18-19 October 2016 in Abidjan, Ivory Coast
4. 2018: Attended Pan Africa Chemistry Network Congress 2018 – “Managing Resources Through Chemistry: Wealth not Waste” held on 6th to 8th November 2016 in Nairobi Kenya
5. 2016: Attended Pan Africa Chemistry Network Congress 2016 – Sustainable Water Resources for Africa held on 30th November to 2nd December 2016 in Nairobi Kenya
6. 2015: Attended Merck Africa Luminary Meeting held on 16-17 November 2015 at the Intercontinental Hotel, Nairobi
7. 2012: Attended East Africa Higher Education Forum 2012: Linking Universities to Industry for Building Knowledge Based Economies and Regional Integration in East Africa, held on 24–26th October 2012, Arusha, Tanzania. Exhibited research innovations from VicRes Project
8. 2011: Attended 1st PACN Congress on Agricultural Productivity: How Chemical Sciences can Help to Feed the World, Accra International Convention Centre, 21-23rd Nov. 2011
9. 2011: Attended International Deans Course Africa 2011/2012 Regional Workshop (Part II) held on 9th November, 2011 at Kenyatta University Conference Centre
10. 2011: Attended Lake Victoria Research Initiative Biennial Forum held on 9th to 13th October, 2011, Munyonyo Resort Club, Munyonyo, Uganda
11. 2011: Attended Lake Victoria Research Initiative Principal Investigators Workshop held on 4th to 7th September, 2011, Botanical Resort, Entebbe, Uganda
12. 2010: Attended 4th Africa Nutritional Epidemiology Conference, held on 4th -8th October, 2010 at Safari Park Hotel, Nairobi
13. 2010: Attended Training Seminars held between 25th June and 20th July 2010 at Novartis Institute of Biomedical Research, Cambridge, USA
14. 2010: Attended Visiting Scientist/Harvard University Chemistry Researchers Seminar held on 23th July 2010, School of Chemistry and Biological Sciences, Cambridge, USA
15. 2009: Attended Lake Victoria Research Initiative Principal Investigators Workshop held on 26th April to 29th April, 2009, Nile Resort, Jinja, Uganda
16. 2009: Attended Training Seminar on Performance Management held on 2nd to 4th April, 2009, Utalii Hotel, Nairobi, Kenya
17. 2008: Attended Lake Victoria Research Initiative Principal Investigators Workshop held on 9th to 13th March, 2008, Nile Resort, Jinja, Uganda
18. 2007: Attended Lake Victoria Research Initiative Annual Forum Workshop held on 19th to 26th May 2007, Nile Resort, Jinja, Uganda
19. 2006: Attended Lake Victoria Research Initiative Training Workshop held on 23 to 26th November 2006, Nile Resort, Jinja, Uganda

20. 2006: Attended Lake Victoria Research Initiative Proposal Writing Workshop held on 27th, April to 1st May 2006, AICAD, JKUAT, Nairobi, Kenya
21. 2005: Attended the Kenya Chemical Society International Conference held on 22 to 26th August 2005, Science Complex Hall, Kenyatta University, Nairobi, Kenya
22. 2004: Workshop on Science and Technology Policy for Sustainable Development in Kenya held on 11th and 12th November, 2004, Milimani Hotel, Nairobi, Kenya
23. 2003: Attended SEANAC Inaugural Scientific Conference held on 7th – 10th July 2003, Gaborne, Botswana
24. 2003: Attended scientific seminar on Current Perspectives in Atomic Spectroscopic Instrumentation held on 23rd July, 2003, Silver Springs Hotel, Nairobi, Kenya
25. 2002: Attended a symposium on Food Safety and Quality Management in Africa, held on 20th July, 2002 Grand Regency Hotel, Nairobi, Kenya
26. 2001: Attended workshop on Professional Skills for Scientists and Conference of Society for Neuroscientists of Africa held on 21-22 April, 2001, Safari Park Hotel, Nairobi, Kenya

Supervision of Postgraduate Students

Masters

- **-2019:**
 Nderitu Samuel Muturi (I56/CE/26184/2011): Stability of Extractable Beta-Carotene from Underutilized Indigenous Vegetables Stored in Edible Oils

 Richard W. Mutembete (I56/CE/11217/2007): Assessment of Some Essential Micronutrients in Selected Indigenous Fruits in Kakamega County, Kenya

 Elias K. Karanja (I56/CE/26143/2011): Investigation of Dithiocarbamate Gungicides and Ethylenethiourea metabolite Residues in Some vegetables from Kirinyaga and Nairobi Counties
- **2018:**
 Basweti Judy Kwamboka (I56/CE/ 14209/2009): Levels of Polycyclic Aromatic Hydrocarbons in Water, Soil and Sediments From River Nzoia, Kakamega County-Kenya
- **2017:**
 William. Kailo Munyoki (I56/CE/22237/2010): Assessment of Diacetylmorphine and Selected Adulterants and Impurities of Heroin in Nairobi, Kenya

 Maurice Muteti Muli (I56/CE/10636/2008): Effects of Soil Texture, pH and Distance on levels of Heavy Metals in Plants and Soils Along a Section of Nairobi-Nakuru Highway
- **2016:**
 Zipporah M. Mungai (I56/22808/2011): Retention of Extractable Beta-carotene from *Amarathus* spp Preserved in Coconut Oil and Honey

 Tabitha.W. Kamau (I56/15434/2009): Quantification of Selected Essential and Toxic Minerals in Geophatic Materials in Kiambu County, Kenya
- **2015:**
 Evans C. Choi (I56/CE/15655/2005): Levels of Selected Macronutrient in Varieties of Pumpkin *Curcubita* spp) Grown in Four Selected Districts Lake Victoria Basin

Maxwell O. Obumba (I56/25158/2011): Variation of Carotenoids, Total Phenolic and Antioxidant Activity in *Ananas comosus* from Different Counties in Kenya with Duration of Storage

John Y. Hena (I56F/22521/2012): Effect of Temperature Storage on the Levels of Carotenoids, Total Phenolic Content and Antioxidant Activity *Lycopersicon esculenium* and *Citrullus lanatus*

Beatrice Anyango (I56/CE/22224/2010): Levels of Beta-carotene and Microbial Load in Solar Dried Dark Green Leafy Vegetables of Different Moisture Content with Storage

Grace K. Abere (I56/CE/22232/2010): Assessment of Levels of Active Skin Lightening Compounds in Some Facial Creams and Soaps in Kenya

Erick K. Mobegi (I56/CE/23359/2010): Levels of Physico-chemical Parameters and Polycyclic Aromatic Hydrocarbons in water from Ngong and Nairobi Rivers, Nairobi County Kenya

- **2014** Sabina W. Ngigi (I56/CE/10377/2007): Evaluation of Selected Nutrients in Mulberry (*Morus alba* L) Varieties Grown at KARI Station Thika, Kiambu County
- **2013** Dinah N. Ombuna (I56/10365/2007): Anti-bacterial Properties and GC-MS Analysis of Extracts and Essential Oils of Selected Plant Products

Evans N. Ngorwe (I56/): Effects of Soil Amendments and Soil Physico-chemical Properties on Cadmium and Lead Uptake in Tobacco Grown in Migori County, Kenya

Eric M. Silano (I56/CE/11204/2007): Assessment of Heavy Metal Pollution in Soils and Water of Samburu County, Kenya

Ann A. Akumu (I56/CE/11947/2008): Characterization of Flavanoids from Candidate Striga Weed Controlling Food Legumes *Cicer arietinum* L. and *Vigna radiate* L.

John M. Mwangi (I56/CE/14205/2009): Determination of Concentration of Selected Heavy Metals in Tilapia Fish, Sediments and Water from Mbagathi and Ruiru River Tributaries, Kenya

Elizabeth S. Amoke (H60/7474/2002): Factors Affecting Performance in Food And Beverage Craft Course Examinations in Technical Training Institutions in Nyanza Province, Kenya

- **2012** Kennedy A. Aywa (I56/): Assessment of Extent of Consumption of And Levels of Selected Nutrients in *Ipomea Batatas* Grown in Vihiga County, Kenya

Benjamin N. Muthui (I56/6120/2003): Physico-chemical Properties of Honey from Mwingi and Selected Urban Areas in Kenya, Effect of Adulterants and Some Community Awareness of Levels of Honey Adulteration

Peter G. Kimani (I56/6302/2003): Screening and Partial Characterization of δ -Endotoxins from Some Local *Bacillus Thuringiensis* Isolates for Insecticidal Activity Against the Spotted Stem Borer

- **2011** Peter A.C. Echessa (I56/CE/15663/2005): Evaluation of the Pumpkin Varieties and Determination of their Micronutrients in the Lake Victoria Basin

Peter O. Lusi (I56/12473/2004): Study of Bioavailability of Trace Elements in Selected Indigenous Foods and their Potential Use on Management on People Living with HIV/AIDS in Butula, Busia Kenya

Rachael W. Nambafu (I56/CE/12515/2004): Bioavailability of Antioxidants Vitamins in Selected Indigenous Vegetables and their Potential Use in Management of HIV and AIDS

B. K. Cheruyot (I56/): Determination of Levels of Beta-carotene Thiamin, Riboflavin, Ascorbic acid, and Alpha-tocopherol in Grain Amaranth from Selected Regions, Kenya

- **2010** D.Z. Kadima (I56/): Determination of Essential Trace Elements in Selected Medicinal Plants and their Concoctions
- **2009** M. Muruiki (I56/): Determination and Effect of Immune Boosting Trace Elements in Indigenous Foods and their Products Used By People Living with HIV and AIDS

Richard Mogwasi (I56/CE/10159/2004): Effects of Diet and Environmental Exposure of in Human Blood

Samuel Mugambi (I56/CE/10155/2004): Effect of Using Fungicides on Tomato Farms on Copper Levels in the Environment within Subukia, Kenya

S. Njoroge (I56): Effect of Storage Conditions on Levels Of Pesticides Residues in Post-Harvest Maize and their Health Risks

- **2008** Nancy W. Wachira (I56/): Assessment of the use of Immune Boosting Vitamins Rich Food Supplement on People Living with HIV and AIDS

2006 James W. Ndiritu (I56/): The Influence of Storage Conditions on the Stability of Beta-Carotene in Solar Dehydrated Dark Green Leafy Vegetables

S.K. Shisia (I56/): Soil-Plant Mineral Composition in Relation to the Requirements for Grazing Cattle in Uasin Gishu District

P.N. Mwangi (I56/): Determination of Heavy Metals in Black Tea, Tea Infusions and the Effects of Citric Acid

Isaac W. Mwangi (I56/): Environmental Impact Assessment on the Use of Copper Based Fungicide in Coffee Farms Along Kamiti River

Judith Munga (H60/7276/2001): An Investigation of Glycemic Index of Local Foods and Use in Management of Diabetes Mellitus: A Study in Kisii and Homa-Bay District Hospitals

2003 Winnie Manuche (H60/) Analysis of Vitamin A Content in the Traditionally Preserved Indigenous Vegetables: A Case Study of Koru Location Nyando District

Ph. D

-2017

- Silvanus Kuboka Shisia (I84/11265/2006): Fabrication and Characterization of Magnetoresponse Carbon Nanotube-infused Polysulfone (CNT-IPSF) Nanocomposites for Water Purification

2016

- Meshack Orina Onyambu (P97/22568/2012): Chromatographic Fingerprinting and Quality Evaluation for *Warbugia Ugandensis* Herbal Materials

2015

- Judith Munga (H87/13219/2009): Efficacy of Chromium supplementation in the Management of Type 2 Diabetes Among patients Attending Diabetes care Clinic, Nairobi Kenya
- 2012**
- Chege Peter Maina (H84/) Efficacy of Dried Amaranth Leaves on Vitamin A and Iron Status of Children Under Five Years in Kajiado District, Kenya
- 2011**
- Charles.F.L. Mbakaya (I84/) The Effect of Mega Dose Micronutrient Supplementation on Nutritional and Immunological Status of Subjects Diagnosed with HIV in VCT Centers in western Kenya
 - Winfred M. Nyamota (H87/15189/2005) Nutrient Composition of *Hypochondriacus* Amaranth Grain and Contribution to Nutritional Status of HIV/AIDS Infected Children Attending Thika District Hospital
- 2010**
- Robert Bichanga (I84/15308/2005) Characterization of Kenyan Honey and Design Model for the Processing Equipment
- 2008**
- Mildred Nawiri (I84/) Effect of Dehydrated Dark Green Leafy Vegetables on the Bioavailability and Bioconversion of Beta-Carotene in Preschool Children
- 2007**
- Paul O. Mireji (I84/28405/2003) Response of Mosquitoes to Heavy Metals

Professional/ Consultancy (Editor/ Peer review in journals, Networks/ Collaborations, External Examiner, Patents)

Networking

- Through MoU with Nottingham University, in October 2016, Participated in the development of grant proposal to Grand Challenge Research Fund (GCRF) of the Great Britain Government.
- Through Seeding Labs Fellowship of 2010, Novartis Institute of Biomedical Research (NIBR) donated two LC-MS instruments used in the Department of Chemistry.

External Examiner in other Universities

- 2014: External Examiner/Assessor of promotion of academic staff of Kwame Nkrumah University of Science and Technology
- 2010 – 2015: M.Sc. and PhD theses, ITROMID at Jomo Kenyatta University of Agriculture and Technology (JKUAT)
- 2013: Examined MSc Thesis, Egerton University

External Examiner in other Universities

- 2014: External Examiner/Assessor of promotion of academic staff of Kwame Nkrumah University of Science and Technology
- 2010 – 2015: M.Sc. and PhD theses, ITROMID at Jomo Kenyatta University of Agriculture and Technology (JKUAT)
- 2013: Examined MSc Thesis, Egerton University

Editor/Review of Professional Periodicals

- 2015: Reviewer *Human and Ecological Risk Assessment : An International Journal*
- 2014: Reviewer, *Journal of the Kenya Chemical Society, Kenya*
- 2014: Reviewer, *Journal of Food Processing and Preservation, Washington State University, US*

- 2013: Review and grading of Mentored Seed Project Proposals, Postgraduate School
- 2013: Reviewer, *East Africa Journal of Science*
- 2012: Peer Reviewer, *Laikipia Journal of Science and Technology (JOST)*

Consultancy

- 2016 to date: Study Director, Chemical Analysis and Research Consulting Unit (CARCU), Department of Chemistry, Kenyatta University

Appointment to Boards

- 2012: Appointed Member of the School Management Board, Providence Academy, Ruaraka
- 2008: Appointed Member, Board of Directors, Potter's Clay Africa (NGO)
- 2006: Appointed Member of Independent External Experts in the National Performance Contracts, Office of the President

Community Service and Other Engagements

- 2012 to date: Member, School Board, Providence Academy, Ruaraka Baptist Church, Nairobi Kenya
- 2016 to date: Study Director, Pest Control Products Board (PCPB) Accredited study of Physical and Chemical Analysis of pest control products for PCPB accreditation.
- 2004 - 2009: Moderator (Chairman) the Church Council, Ruaraka Baptist Church, Nairobi Kenya
- 2002 – 2004: Secretary of the Church Council, Ruaraka Baptist Church, Nairobi Kenya
- Member of Pastoral Team (Pulpit) at Ruaraka Baptist Church (RBC)
- Member of School Board, Providence Academy, Ruaraka Baptist Church, Nairobi Kenya
- Normally give motivational speeches on the principles of transformational leadership and discipleship to leaders in churches.

Affiliation of Professional Bodies

- Royal Society of Chemistry, UK
- Kenya Chemical Society, Kenya

National and International awards and Recognitions

- 2017: Awarded Fellow of the Royal Society of Chemistry (FRSC), UK
- 2014: Awarded Certificate of Utility Model No. 52 for the invention titled: "Food Supplements Formulated from Local Vegetables and Fruits for Boosting Immunity of Individuals with HIV and AIDS (PLWHA)"
- 2013: Awarded Vice-Chancellor's Research Award
- 1993: Awarded British Council Scholarship to study PhD in University of Leeds, UK

Administrative Positions Held

Recognized university administrative positions

- August 2012 – August 2016: Chairman, Department of Chemistry
Renewal of Appointment was in August 2014

Other administrative positions Held

- 2016 to date: Study Director, Pest Control Products Analysis, Department of Chemistry, KU
- 2006 – 2012: Chairman, Social Welfare Committee, Department of Chemistry