

CURRICULUM VITAE

NAME:

OYARO NATHAN
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DATE OF BIRTH: 23 December 1965

PLACE OF BIRTH: Ogango in Nyamira District, Kenya

MARITAL STATUS: Married

NATIONALITY: Kenyan

• **ACADEMIC BACKGROUND:**

- Graduated with a Ph.D. in Atmospheric Chemistry from **University of Oslo, Norway**, 2004
- Graduated with Masters of science from **Kenyatta University**, 2001
- Graduated with a bachelor of Science from Kenyatta University, 1993
- Sat for KACE at **Cardinal Otunga** high school in 1988
- Sat for KCSE at **Mang'u** high School 1986

• **WORKING EXPERIENCE:** -

- Associate professor in chemistry at Narok University College, October, 2011 to date
- Senior lecturer at Narok University College, 2009 to September, 2011
- Lecturer at Jomo Kenyatta University of Agriculture & Technology 2004 to 2009
- Tutorial fellow at Jomo Kenyatta University (2001-2004).
- Teaching Assistant in Jomo Kenyatta University (1996 - 2001)
- Teacher at Bonyunyu secondary school (1993-1996)

RESPONSIBILITY:

- Dean School of Science at Maasai Mara University 2014 to date
- Academic Board Representative to Maasai Mara Council, 2011 to 2012
- Co-Chairman to Ethics & Anti-corruption at Narok University College, 2010 to 2012

- Dean School of Science at Narok University College, 2009 to 2014
- Acting Dean School of Information Sciences from 2009 to Date
- Acting Chairman, Physical Sciences from 2011 to date
- Departmental procurement officer 2007 to 2012
- Examination officer Chemistry department (JKUAT) 2005 - 2009

- Deputy head teacher at Bonyunyu secondary school

- Head of science department at Bonyunyu secondary school

PAPERS PUBLISHED

1. Mineral composition, Antioxidants and Antimicrobial activities of freshwater algae (*spirogyra* genus) from *Jomo Kenyatta University of Agriculture and Technology (JKUAT)*, Rutikanga Adrien, Leonard Mwangi Gitu, Nathan Oyaro(2014). *World Rural Observ.* ISSN: 1944-6551;6(2):86-91.
2. Diversity of Algae and Potentially Toxic Cyanobacteria in a River Receiving Treated Sewage Effluent: A case of Notwane River (Gaborone, Botswana), Kirumba W.M., Shushu D.D., Masundire H. and Oyaro N.(2014). *International Research Journal of Environment Sciences* ISSN 2319–1414: 3 (11), 79-86.
3. Biosorption of selected heavy metals by the biomass of the green alga *spirogyra* sp. George m. Matei, Jackson K. Kiptoo, Nathan Oyaro, Anam O.Onditi (2014), *Facta Universitatis Series:Physics, Chemistry and Technology*,12, (1) 1 – 18, DOI: 10.2298/FUPCT1401001M
4. Determination of the Levels of selected Heavy Metals in Medicinal plants from Narok County, Kenya and variations in their levels due to hot water Infusion, Nathan Oyaro, Bethpurity Makena, Mosima A. Osano and W. Nyaigoti Omwoyo

(2014), *International Research Journal of Environment Sciences*, ISSN 2319–1414,3(12), 5-10.

5. *Determination of concentration of nutrients limiting wheat production in Olollunga in Narok County, Kenya*, Mesoppirr L., Oyaró, N., Okongó, E., Kiptoo, J., Magoma, G., 2014 p 22-26, ISSN 2321-2527
6. *Assessment of the physicochemical properties of selected commercial soaps manufactured and sold in Kenya*, Onyango P. Vivian, Oyaró Nathan, Aloys Osano, Linda Mesoppirr, Wesley Nyaigoti Omwoyo, 2014 p.v. 4p 432 – 440.DOI.104236/OJAPPS.2014.48040.
7. *A study of heterogeneous dilute indigenous carbonate salt hydrolysis of non-woody lingo-cellulosic plant samples*, Osano Aloys Mosima, Okong’o Erick Ragong’ondi, Oyaró Nathan, and Kiptoo Jackson, *international journal of scientific and engineering research*, vol. 4 issue 6, june-2013p333-338
8. *The potential of Zea Mays, Commelina bengelensis, Helianthus annus and Amaranthus hubridus for the pyto remediation of water water*, Oyaró Nathan, Kemenyu Phylis, Okong’o Eric Rang’ondi, Chacha Joseph Sarima, *Revista Ambiente & Aqua-interdisciplinary Journal of applied Science:v 7 n. 3, 2012p.1-8*
9. *Determination of the levels of Nitrogen and phosphorous in Dandora Domestic water treatment Plant in Nairobi: The current Status*, Sewe, H., Njenga, J., Oyaró, Nathan, Mailutha, J. T., Makayoto, M.,(2013), ***Journal of chemical society: 7, (1),28-39***

10. *The Efficiency of Dandora Domestic and Industrial waste treatment plant*
Nairobi, Sewe, H., Njenga, J., Oyaro, Nathan, Mailutha, J. T., Makayoto, M.,
Journal of chemical society Vol. 7, N. 1 January, 2013p40-49.
11. *Composition and Structural characterization of indigenous salts in Kenya: A case study of para, magadi and lebek crystalline salts*, Osano, Aloys m., Okong'o Eric R., Oyaro Nathan and Kiptoo Jackson, **International journal of Biochemphysics v. 20. January, 2013.**
12. *Analysis of Kenya Honey for Determination of Essential and Heavy metals by Atomic Spectroscopy*, 2010, Mbiri, A., Onditi, A. O., Oyaro, N., and Murago, E.,
International Journal of Physical Science volume 2, No. 3,87-91
13. *Determination of Heavy Metals and Nutrients in water samples of rivers Naka and Irigu, Chuka Meru-South District-Kenya using Atomic Absorption Spectroscopy and UV/Visible Spectrophotometry*, 2010, Onditi, O. A., Mutembei, J. K., Chacha, J. S., and Oyaro, N., *International Journal of Pure and Applied Science, Volume 3, No. 4, 1-7*
14. *Determination of selected metals in Honey by Atomic Absorption and Atomic emission Spectroscopy*, 2009, Mbiri A., Onditi, A. and Oyaro, N. *2nd Scientific Conference part II Volume 2, number 2, 29-33, ISSN 9966923780*
15. *Determination of quality of the Active ingredient in painkillers using GC-MS*, 2009, Murago, E.N, Oyaro, N., Gachanja, A. N Anaam, O.O.,Mwawili, F., *Lancaster, 2nd Scientific Conference part II Volume 2, number 2, 29-33, ISSN 9966923780*
16. *The potential of commelina bengelensis, amaranthus, hybridus, zea mays for*

- phytoremediation of heavy metals from contaminated soils, *Oyaro Nathan, Kemenyu Phylis, Chacha Joseph Sarima, Sains Malaysiana 38(1), 2009(61-68)*
17. The content of Pb, Cu, Zn and Cd in meat in Nairobi, Kenya, *Oyaro, N., Ogendi, J., Gitonga, E, Journal of food, Agriculture and Technology, 5(3&4), 2007(119-121)*
18. Heavy metals in soils in Nairobi city, Kenya: *Oyaro Nathan, Jane I. Murungi, Joseph S. Chacha, Journal of the Kenya Chemical Society, 3(1),2006*
19. Atmospheric chemistry of hydrofluoroethers: Reaction of a series of hydrofluoroethers with OH radicals and Cl atoms, atmospheric lifetimes, and global warming potentials: *Nathan Oyaro, Stig R. Sellevåg and Claus J. Nielsen Journal of physical chemistry A 2005, 109, 337-346,:*
20. Study of OH and Cl-initiated oxidation, IR absorption Cross-section, Radiative forcing and global warming potential of C₄- hydrofluoroethers, *Nathan Oyaro, Stig R. Sellevåg and Claus J. Nielsen: Environmental science and technology 2004, 38,(21), 5567-5576*
21. Kinetic Study of the OH Reaction with the Hydrofluoroethers C₄F₉-O-CH₃ and C₄F₉-O-CH₂CH₃ by the Relative Rate Method, *oyaro, N.; Nielsen, C. J. Asian Chemistry letters 2003, 7, 119-122.*
22. A study of the reactions of chloroethenes with Cl in air at atmospheric pressure, *Morozov, I.; Oyaro, Nathan; Morozova, O.; Vasiliev, E. & Nielsen, Claus Jørgen (2007). Asian Chemistry Letters. ISSN 0971-9822. 11, s 145- 151*

Papers presented

23. May 29, 2013 presented a paper at Eldoret polytechnic 'effects of heartwood extractive of *Terminalia spinosa* on wood degradation by fungi
24. August, 1999 presented a paper at Kenya Chemical Society International Conference at Jomo Kenyatta University entitled "Heavy metal content in soil as an indicator of pollution in the city of Nairobi"
25. November, 2009, presented A paper at SETAC Africa meeting, Uganda entitled "Determination of NO_x and SO_x levels in Nairobi City using passive and active samplers
26. September, 2010, presented a paper at 6th annual international conference, Moi University entitled "Genetically modified crops will not be the solution to alleviation of food shortages in Kenya"
27. May, 2011, presented a paper at National Council For Science and Technology at KICC entitled "Growth and analysis of algae species as a source of biodiesel"
28. May, 2011, presented A paper at SETAC Europe, Milan, Italy, entitled "FT-IR as a promising method for rapid determination of adulteration of gasoline with kerosene.
29. AUGUST, 2008 presented a paper at 5th SETAC Congress in Sydney, Australia entitled 'The potential of *C. bengelensis*, *A hybridus*, and *Z. mays* for phytoemediation of heavy metals from contaminated soils.
30. December, 2007 presented a paper at East and Southern Africa Environmental Chemistry conference (ESAECC) at Victoria Falls in Zimbabwe, entitled "Phytoremediation of heavy metals from contaminated soils"
31. December, 2007 presented a paper at East and Southern Africa Environmental Chemistry conference (ESAECC) at Victoria Falls in Zimbabwe, entitled

‘Determination of the quantity of the active ingredients in pain killers using GC-MS’

32. October, 2006 attended International Conference on Pesticide Use in Developing Countries: Environmental Fate, Effects and Public Health Implications in Arusha Tanzania and presented a paper on ‘*Study of the atmospheric Degradation of pesticides mimics*’ Authors: Oyaro, N. (pp. 34.)
33. August, 2005 presented a paper at the 5th International conference of Kenya chemical society at Kenyatta University. Title ‘the fate of pesticides in the environment at Kenya’ Authors: Oyaro, N. and Gitu, L. (pp. 30).
34. June, 2006 presented a paper at the first annual conference Faculty of Science vol. 1, 2006, proceedings pp 10-21, ‘Phytoremediation of wastewater’ at Jomo Kenyatta University.

Talks:

- **May, 2009**, GMO Savior or Killer? at Kenya Chemical society workshop at Nairobi University
- **August, 2008** Ozone formation, use and Depletion at Kenya Chemical society workshop at Kenyatta University
- **August, 2006**, A talk on ‘what is this thing called science’ at Jomo Kenyatta university of Agriculture and technology
- **August, 2005**, the fate of pesticides in the environment at Kenya Chemical society conference at Kenyatta University.
- **June, 2004**, the fate of pesticides in the environment at Oslo University, Norway
- **June, 2003** ‘Alternatives to CFCs’ at Copenhagen Denmark
- **June, 2003** ‘The status of pollution in Kenya’ at Oslo University, Norway

Reviewer

- Journal of atmospheric environment- Elsevier
- Journal of Kenya Chemical Society
- The chemical society of Ethiopia

BOOKS PUBLISHED

Foundation Physical Chemistry For 'A' Level, Colleges And Universities
Published By Jomo Kenyatta Foundation Educational Publishers In 2012, By *Dr. Okong'o, E. And Prof Oyaro, N*

Posters

- Assessment of gasoline and diesel adulteration in Kenya, at 5th SETAC Congress in Sydney, Australia
- *Study of the atmospheric Degradation of pesticides mimics, Eurotrac-2 Symposium 2002, Germany.*
- *Environmental Impact of Chlorofluoroethenes from Industrial and Combustion Sources: Morozov, Igor; Nielsen, Claus Jørgen; Vasiliev, Evgenii; Oyaro, Nathan, The Fifth Informal Conference on Reaction Kinetics and Atmospheric Chemistry; 11.06.2004 - 13.06.2004*

STUDIES UNDERWAY:

- Phytoremediation potential of plants for heavy metals in Kenya
- Determination of heavy metal content in the liver and kidney of cattle
- Measurement of Nitrogen dioxide and sulphur dioxide in Nairobi City, Using passive and active samplers
- Determination of the quantity of acetaminophen, caffeine and aspirin in pain-killers
- Preparation of active charcoal from coconut shells
- Screening of the purity of petrol and Diesel sold in Kenya

- Screening the soils to see which soil has the bacteria which can degrade the pesticides easily
- Screening the quality of quinine and amodiaquine used to control malaria parasites in Kenya
- Assessment of gasoline and diesel adulteration in Kenya
- Bio-sorption of heavy metals by blue algae
- Biodiesel from algae
- Bioactive compounds isolated from algae

RESEARCH INTEREST:

My research interest is basically on analytical/environmental chemistry and is mainly on environmental pollution, Ozone depletion, global warming, phytoremediation, and innovation on methods to deal with pollution, quality control, Biodegradation of pesticides in the soil, degradation of compounds in air by OH radicals and research on renewable energy, biofuel from algae.

Trainings attended:

April, 2011, ISO-Training at NUC

March, 2008, Research into use at ICRAFT Compus, Gilgil, Nairobi

20 October, 2006 in Arusha, Tanzania, the title of the course was 'pesticide use, occupational health risks, and environmental risk

assessment procedures to protect surface waters with emphasis on extrapolation between temperate and tropical systems'

Membership to international scientific organizations:

- Member to 'The Society of Environmental Toxicology and Chemistry (SETAC) *Europe*'
- Member to 'The Society of Environmental Toxicology and Chemistry (SETAC) *AFRICA*'
- Member to *Kenya chemical society*
- **Supervision projects**
 - Ph.D. students
 - Masters students
 - Undergraduate students
- **Examination of Thesis**
 - Several Masters Students

AWARDS:

- South-Kenya co-operation, grants, 1.5million.
- Grant from NCST for ST&I grant (1.2 million) for biodiesel production from algae
- Grant from NCST for ST&I grant (5 million) for Socio-economic impact of wheat rust, Kenya
- Grant from NCST for Atomic Absorption Spectrometer (AAS)
- Sourced for 214 chemistry books from Royal Society of Chemistry through Pan African chemistry Networks
- HIV funds from Commission of High Education(0.5 million)
- Quota program, from the government of Norway for PhD course awarded funds from CEC Environment and Climate program contract NO.VK2-99-00099
- Award JKUAT award for MSc course

INNOVATIONS

- Detergents (cleaning)
- Disinfectants
- Lotion

RECOGNATIONS

- Marquis who's who in the world, 2011 edition
- 2000 Outstanding intellectuals of the 21st century
- Staff performance appraisal exercise rated as excellent, JKUAT, 2010
- Marquis who's who in the world, 2009 edition

REFEREES:

- Prof Mabel Imbuga, Jomo Kenyatta University of Agriculture and Technology, Box 62000-00200, Nairobi, Kenya, Tel. 0733730531
- Prof Claus Nielsen Jorgen, , Department of Chemistry, University of Oslo, 1033 Blindern, N-0315 Oslo, Norway, tel. +47-22855680: email: c.j.nielsen@kjemi.uio.no
- H.E Prof. Festus Kaberia,
Vice- Chancellor, Multi-Media University of Kenya
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