

CURRICULUM VITAE

PERSONAL DETAILS

Name: Dr. George S. Nyamato

Current Address: Department of Physical Sciences,
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Research interests: Main research interests include Organometallic Chemistry (development of homogeneous and heterogeneous catalytic systems) and syntheses of chelating agents and their investigations as extracts of heavy metals from water.

EDUCATIONAL BACKGROUND

2013-2016: PhD (Inorganic Chemistry)-**University of KwaZulu-Natal**, South Africa
Thesis: Nitrogen-donor late transition metal complexes as ethylene oligomerization catalysts.

2008-2012: MSc. (Inorganic Chemistry)-**Maseno University**, Kenya
Thesis: Coordination chemistry and liquid-liquid extraction of zinc(II), cadmium(II) and lead(II) cations with (pyrazol-1-ylmethyl)-pyridine ligands.

2006- 2007: Post-graduate diploma in education (PGDE)-**Maseno University**, Kenya

2000- 2003: BSc. Hons. -**Kenyatta University**, Kenya

1995- 1998: K.C.S.E-Lenana School, Kenya

WORK EXPERIENCE

- 2017-To date:** Lecturer, University of Embu
- 2016:** Part-time lecturer (Jaramogi Oginga Odinga University of Science and Technology, Bondo and Kisii University)
- May 2003 - Aug. 2008:** Chemistry and Mathematics teacher (Apostolic Carmel Girls' secondary School, Nairobi)

PUBLICATIONS

18. Wekesa A. K; **Nyamato, S. G**; Kowenje, C; Ojwach, S. O. Coordination behavior and binding properties of 2,6-pyridinedimethanol with Cu(II), Zn(II), and Cd(II) cations. *Inorganica Chimica Acta*, **2022**. <https://doi.org/10.1016/j.ica.2022.121042>
17. **Nyamato, S. G**; Wambugu, K; Kiratu, J; Ojwach, S. O. Liquid-liquid extraction of copper(II), zinc(II), cadmium(II), and lead(II) from aqueous solution and sewage effluent using phenoxy-amino ligands. *Water Science & Technology*, **2022**. <https://doi.org/10.2166/wst.2022.164>
16. Wambugu, K; **Nyamato, S. G**; Ogunah, J; Ojwach, S. O. Phenoxy-imino ligands: coordination chemistry and binding properties with copper(II) cations. *Journal of Coordination Chemistry*, **2021**. <https://doi.org/10.1080/00958972.2021.2015581>
15. Mokaya, T. K; Omosa, L. K; Ogunah, J; **Nyamato, S. G**. Isolation and Characterization of Secondary Metabolites from Cola minor Stem Extracts. *Tropical Journal of Natural Product Research*, **2021**. <http://www.doi.org/10.26538/tjnpr/v5i4.5>
14. Sayo, S.; Kiratu, J.; **Nyamato, S. G**. Heavy metal concentrations in soil and vegetables irrigated with sewage effluent: A case study of Embu sewage treatment plant, Kenya. *Scientific African*, **2020**. <https://doi.org/10.1016/j.sciaf.2020.e00337>
13. Zethu, Z; **Nyamato, S. G**; Thandeka, A. T; Ojwach, S. O. Palladium(II) complexes of (pyridyl)imine ligands as catalysts for the methoxycarbonylation of olefins. *Inorganica Chimica Acta*, **2020**. <https://doi.org/10.1016/j.ica.2019.119270>
12. Jayamani, A; **Nyamato, S. G**; Ojwach, S. O. Ethylene oligomerization reactions catalyzed by homogeneous and silica immobilized N^o Fe(II) and Co(II) complexes. *Journal of Organometallic Chemistry*, **2019**, 903 120987.

- <https://doi.org/10.1016/j.jorganchem.2019.120987>
11. Ngcobo, M.; **Nyamato, G. S.**; Ojwach, S. O. Structural elucidation of N[^]O (ethyliminomethyl)phenol Fe(II) and Co(II) complexes and their applications in ethylene oligomerization catalysis. *Molecular Catalysis*, **2019**, 478, 110590.
<https://doi.org/10.1016/j.mcat.2019.110590>
 10. Magubane, M. N.; **Nyamato, G. S.**; Ojwach, S. O.; Munro, O. Q. Structural, kinetic, and DFT studies of the transfer hydrogenation of ketones mediated by (pyrazole)pyridine iron(II) and nickel(II) complexes. *RSC Adv.*, **2016**, 6, 65205–65221.
<https://doi.org/10.1039/C6RA12788F>
 9. **Nyamato, G. S.**; Ojwach, S. O.; Akerman, M. P. Ethylene oligomerization studies by nickel(II) complexes chelated by (amino)pyridine ligands: experimental and density functional theory studies. *Dalton Trans.*, **2016**, 45, 3407-3416.
<https://doi.org/10.1039/C5DT04667J>
 8. **Nyamato, G. S.**; Alam, M. G., Ojwach, S. O.; Akerman, M. P. Nickel(II) complexes bearing pyrazolylpyridines: synthesis, structures and ethylene oligomerization reactions. *Appl. Organometal. Chem.*, **2016**, 30, 89-94. <https://doi.org/10.1002/aoc.3402>
 7. **Nyamato, G. S.**; Ojwach, S. O.; Akerman, M. P. Potential hemilabile (imino)pyridine palladium(II) complexes as selective ethylene dimerization catalysts: An experimental and theoretical approach. *Organometallics* **2015**, 34, 5647-5657.
<https://doi.org/10.1021/acs.organomet.5b00860>
 6. **Nyamato, G. S.**; Alam, M. G.; Ojwach, S. O.; Akerman, M. P. (Pyrazolyl)-(phosphinoyl)pyridine iron(II), cobalt(II) and nickel(II) complexes: Synthesis, characterization and ethylene oligomerization studies. *Journal of Organometallic Chemistry* **2015**, 783, 64-72. <https://doi.org/10.1016/j.jorganchem.2015.02.015>
 5. **Nyamato, G. S.**; Ojwach, S. O.; Akerman, M. P. Unsymmetrical (pyrazolylmethyl)-pyridine metal complexes as catalysts for ethylene oligomerization reactions: Role of solvent and co-catalyst in product distribution. *Journal of Molecular Catalysis A: Chemical* **2014**, 394, 274–282. <https://doi.org/10.1016/j.molcata.2014.07.018>
 4. **Nyamato, G. S.**; Ojwach, S. O.; Akerman, M. P. Packing forces in dichloridobis(3,5-diphenyl-1*H*-pyrazole-*k*N²)cobalt(II) dichloromethane hemisolvate. *Acta Cryst.* **2014**, C70, 780-783. <https://doi.org/10.1107/S2053229614015411>

3. Njoroge, M. W.; Ojwach, S. O.; **Nyamato, G. S.**; Omondi, B.; Darkwa, J. Coordination behavior and binding properties of (3,5-dimethyl-1*H*-pyrazol-1-yl)ethanol with Cu(II), Zn(II), Cd(II), and Pb(II) metals. *Journal of Coordination Chemistry* **2013**, 66:9, 1626-1634. <https://doi.org/10.1080/00958972.2013.784904>
2. Ojwach, S. O.; **Nyamato, G. S.**; Omondi, B.; Darkwa, J.; Okoth, A. O. Multidentatebis(pyrazolylmethyl)pyridine ligands: coordination chemistry and binding properties with zinc(II) and cadmium(II) cations. *Journal of Coordination Chemistry* **2012**, 65:2, 298-307. <https://doi.org/10.1016/j.ica.2012.07.005>
1. Ojwach, S. O.; **Nyamato, G. S.**; Omondi, B.; Darkwa, J.; Okoth, A. O. Chelating (pyrazolylmethyl)pyridine ligands: Coordination chemistry and binding properties with zinc(II) and cadmium(II) cations. *Inorganica Chimica Acta* **2012**, 392, 141–147. <https://doi.org/10.1016/j.ica.2012.07.005>

REVIEWED CONFERENCE PAPER

1. **Nyamato, S. G.**; Ojwach, S. O. Solvent extraction of zinc(II), cadmium(II) and lead(II) cations from wastewater using synthetic chelating ligands. In *Modern and Traditional Methods of Water Resource Management in Africa* by M. Muhadir (Ed). Pp 151-163, ISBN: 9783736970410 (Print) 9783736960411 (online) Cuvillier.de

SCHOLARLY PRESENTATIONS AT CONFERENCES/ WORKSHOP

6. George S. Nyamato and Stephen O. Ojwach, The 31st Catalysis Society of South Africa Conference, **7th-10th November 2021**, *Nickel(II) complexes as catalysts for ethylene oligomerization reactions.*
5. George S. Nyamato, School of Pure and Applied Sciences Conference, University of Embu, **2nd June-3rd June 2021**, *Extraction of heavy metals from water using chelating ligands.*
4. George S. Nyamato and Stephen O. Ojwach, Durban, South Africa, **5th May-9th May 2019**, *Solvent extraction of zinc(II), cadmium(II) and lead(II) cations from wastewater using synthetic chelating ligands.*

3. George S. Nyamato and Stephen O. Ojwach, 43rd SACI National Convention 2018, CSIR-ICC in Pretoria, South Africa, **2nd-7th December 2018**, *Ethylene oligomerization studies by nickel(II) complexes chelated by (amino)pyridine ligands*.
2. George S. Nyamato, Stephen O. Ojwach and Matthew P. Akerman, 9th International KCS conference, United States International University-Africa, Nairobi, **9th May-12th May 2017**, *Iminopyridine Palladium(II) Complexes: Synthesis, Characterization, DFT Studies and Precursors for Ethylene Oligomerization*.
1. George S. Nyamato, Stephen O. Ojwach and Matthew P. Akerman, SACI INORG 2015, Rhodes University, South Africa, **28th June-2nd July 2015**, *(Imino)pyridine palladium(II) complexes: Experimental, theoretical studies and as ethylene oligomerization catalysts*.

REASERCH/POSTGRADUATE SUPERVISION

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| 1. Sussy Sayo, (2020), M.Sc. B523/1142/2017 | Heavy metal contamination in soil and vegetables irrigated using sewage effluent: A case study of Embu sewerage treatment plant, Kenya |
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Ongoing:

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| 1. Kelvin Wambugu, M.Sc. B523/1301/2019 | Removal of zinc(II), cadmium(II), copper(II) and lead(II) cations from wastewater using synthetic chelating ligands |
| 2. Isaiah Mbogo Nyaga, M.Sc. B525/1102/2016 | Synthesis of barium aluminate phosphor for persistent white light production |
| 3. Samwel Mugambi, Ph.D. B830/268/2020 | <i>In vivo</i> and <i>in vitro</i> chemotherapeutic effects of zinc and selenium from plant extracts of <i>prunus africana</i> on prostate cancer |

REFEREES

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