

DANIEL OMONDI ONUNGA- CURRICULUM VITAE

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PERSONAL DETAILS

- Date of Birth : February 22nd 1978
- Marital status : Married
- Nationality : Kenyan
- Religion : Christian

OBJECTIVES

- To be a leading scholar as scientific researcher and educationist including teaching and supervision of students.
- To achieve the highest professional integrity and develop leadership capability in a challenging work environment.
- To participate in crucial management decisions that can turnaround the institution in a positive direction.

RESEARCH INTERESTS

- Kinetics and thermodynamic mechanisms of substitution reactions for organometallic as part of the protracted search of alternative anticancer drugs.
- Kinetics and degradation mechanisms of remediation of toxic environmental pollutants such as pesticides, PAH's, PCB's using microorganisms, nanocomposites, biochars among others.

ACADEMIC QUALIFICATIONS

Doctor of Philosophy, PhD (Physical Chemistry)	University of KwaZulu-Natal	Awarded on 8 th April, 2019
Master of Science (MSc. Chemistry)	Masinde Muliro University of Science and Technology	Awarded on 5 th December, 2014
Bachelor of Science (Chemistry and Mathematics)	Kenyatta University	Awarded on 31 st October, 2003 [2 nd Class Honors]
Kenya Certificate of Secondary Education (K.C.S.E)	Onjiko High School	Awarded in 1996 [Grade B- (minus)]
Kenya Certificate of primary education (KCPE)	Reru A.I.C Primary School	Awarded in 1992 [409/700 marks, 52 points out of 84]

WORK EXPERIENCE

Lecturer	<p>Maseno University <i>Responsible for teaching, evaluation, mentoring and supervision of postgraduate and Undergraduate students</i></p> <p>Duties:</p> <ul style="list-style-type: none"> • Developing course outline, lecture notes, teaching, testing and evaluation of students • Supervision of postgraduate students • Carrying out research 	27 th January 2021 to Date
Part-time Lecturer	<p>Maseno and Rongo Universities <i>Responsible for teaching and evaluation of Undergraduate students</i></p> <p>Duties:</p> <ul style="list-style-type: none"> • Developing course outline 	<p>August 2019 to April 2021 (Rongo University)</p> <p>August 2019 to January 2021 (Maseno University)</p>

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	<ul style="list-style-type: none"> • Preparation of lecture notes • Teaching • Testing and evaluation of students • Setting and marking examinations 	
Training Officer	<p>Trinity Fellowship Society, Kenya. <i>Responsible for offering teaching and training on living skills among the student communities in the universities, High schools and churches.</i></p> <p>Responsibilities</p> <ul style="list-style-type: none"> • Teaching, training and mentoring on practical life skills in High schools, colleges and universities. • Developing user friendly training materials and implementing by training and teaching. • Training religious leaders on leadership skills and community engagements. • Monthly and quarterly development of work plan as well as accurate and timely submission of written reports. 	<p>June 2003 to date</p> <p>(The terms and conditions have been voluntary)</p>
Tutor, Demonstrator and Ad hok teaching Staff	<p>University of KwaZulu-Natal <i>Responsible for teaching and evaluation of Undergraduate students</i></p> <p>Responsibilities:</p> <ul style="list-style-type: none"> • Lecturing and Tutoring • Testing and evaluation of students • Setting and marking examinations • Practical class preparation and demonstration • Marking of students' practical reports 	<p>July 2016 to December 2018</p>
Part-time Lecturer	<p>Rongo University ((Department of Physical Sciences) <i>Responsible for teaching and evaluation of Undergraduate students</i></p> <p>Duties:</p> <ul style="list-style-type: none"> • Developing course outline • Preparation of lecture notes • Teaching • Testing and evaluation of students • Setting and marking examinations 	<p>September 2015 to April 2016</p>
An Intern	<p>Masinde Muliro University of Science and Technology (pure and applied chemistry department)</p> <p>Duties:</p> <ul style="list-style-type: none"> • Teaching and giving tutorials to undergraduate students • Developing laboratory instruments' operation procedures and carrying out routine calibration and maintenance of 	<p>26th January 2015 to 15th February 2016</p>

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	laboratory instruments such as Ultra-violet (UV), High performance Liquid Chromatography (HPLC), Gas Chromatography (GC) spectrophotometers.	
Part-time lecturer	<p>Masinde Muliro University of Science and Technology <i>Responsible for teaching and evaluation of Undergraduate students</i></p> <p>Duties:</p> <ul style="list-style-type: none"> • Developing course outline • Preparation of lecture notes • Teaching • Testing and evaluation of students • Setting and marking examinations 	August 2015 to December 2015
Part-time Technician	<p>Masinde Muliro University of Science and Technology <i>Responsible for teaching and supervising undergraduate practical sessions</i></p> <p>Duties:</p> <ul style="list-style-type: none"> • Teaching undergraduate chemistry practical courses. • Supervising students during practical sessions. • Collecting the reports during practical sessions. • Marking students' practical reports. • Entering students marks in the mark sheet. 	January 2012 to December 2013

CONFERENCES ATTENDED

Oral presentations

Daniel O. Onunga, D. Jaganyi & Allen Mambanda. The 43rd SACI National Convention 2018 CSIR-ICC, Pretoria, South Africa, 2nd to 7th December 2018. *Controlling the reactivity of Pd(II) complexes through alkylation and benzannulation of 1,3-bis(2-arylimino)isoindoline ligands: Kinetics, mechanistic and computational study.*

Daniel O. Onunga, D. Jaganyi & Allen Mambanda. 2018 College Research Open Day held at UKZN-Westville Campus, Durban, KwaZulu-Natal South Africa, 25th October 2018. *Tuning the reactivity of Pd(II) complexes through alkylation and benzannulation of 1,3-bis(2-arylimino)isoindoline ligands.*

Daniel O. Onunga, D. Jaganyi. 2017 College Research Open Day held at UKZN-Westville Campus, Durban, KwaZulu-Natal South Africa, 26th October 2017. *Controlling the reactivity of Palladium(II) complexes using N-donor ligands: kinetics computational and crystal structures.*

Daniel O. Onunga, D. Jaganyi. The 9th international conference of the Kenya Chemical Society (KCS) held 9th - 12th May 2017 at United States International University (USIU) Nairobi, Kenya. *'Controlling the reactivity palladium(II) complexes using N-donor Ligands: Kinetics, Computational and Crystal structures'*.

Daniel O. Onunga, Anastasia N. Ngigi and Isaac O. K'owino. The 8th international conference of the Kenya Chemical Society (KCS) held 5th-8th May 2015 at Chiromo campus, University of Nairobi, Kenya. *'Biodegradation of Carbofuran: Hydrolysis and a Proposed Mechanism by Bacteria Isolated from the Soils within Nzoia River Drainage Basin, Kenya'*.

PUBLICATIONS

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2021	<ul style="list-style-type: none"> Meshack K. Sitati, Gershom Kyalo Mutua, Daniel O. Onunga, Deogratius Jaganyi & Allen Mambanda (2021): The effect of substituents on the reactivity of dichloridotriphenylphosphino-ruthenium(II) complexes: kinetic and mechanistic study. <i>Journal of Coordination Chemistry</i>, https://doi.org/10.1080/00958972.2021.1904234 Gershom Mutua, Daniel O. Onunga, Meshack Sitati, Deogratius Jaganyi and Allen Mambanda. (2021). The Influence of α,α'-diimine Bridging Ligand on the Reactivity of Binuclear Para-Cymene Ruthenium(II) Complexes. Kinetic, Mechanistic and Computational Study. <i>Journal of Inorganica Chimica Acta</i>, 514, 119972. https://doi.org/10.1016/j.ica.2020.119972.
2020	<ul style="list-style-type: none"> Daniel O. Onunga, Gershom K. Mutua, Meshack Sitati, Rajesh Bellam, Manickam D. BalaKumaran, Deogratius Jaganyi and Allen Mambanda.(2020). Controlling the reactivity of $[Pd^{(II)}(N^{\wedge}N^{\wedge}N)Cl]^+$ complexes using 2,6-bis(pyrazol-2-yl)pyridine ligands for biological application: A Substitution reactivity, CT-DNA interactions and <i>in vitro</i> cytotoxicity study. <i>Journal of Inorganic Biochemistry</i>, 213, 11261. https://doi.org/10.1016/j.jinorgbio.2020.111261 Daniel O. Onunga and Deogratius Jaganyi. (2020). CCDC 1829125: Experimental Crystal Structure Determination, [N1,N3-bis(4-methylpyridin-2-yl)-1H-isoindole-1,3(2H)-diiminato]-(chloro)-palladium, DOI: 10.5517/ccdc.csd.cc1zdc1s Daniel O. Onunga and Jaganyi Deogratius. (2020). CCDC 1829126: Experimental Crystal Structure Determination, {2,6-bis[(3,5-dimethyl-1H-pyrazol-1-yl)methyl]pyridine}-(chloro)-palladium tetrafluoroborate dichloromethane solvate, DOI: 10.5517/ccdc.csd.cc1zdc2t Daniel Onunga and Deogratius Jaganyi. (2020). CCDC 1872831: Experimental Crystal Structure Determination, chloro-{2-[4-(3,5-di-t-butylphenyl)-6-(isoquinolin-3-yl)pyridin-2-yl]phenyl}-palladium chloroform solvate, DOI: 10.5517/ccdc.csd.cc20vtxm Daniel Onunga and Deogratius Jaganyi. (2020). CCDC 1872832: Experimental Crystal Structure Determination, chloro-{3-[4-(3,5-di-t-butylphenyl)[2,2'-bipyridin]-6-yl]naphthalen-2-yl}-palladium, DOI: 10.5517/ccdc.csd.cc20vtyn
2019	<ul style="list-style-type: none"> Daniel O. Onunga, Deogratius Jaganyi & Allen Mambanda. (2019). The role of 8-quinolinyl moieties in tuning the reactivity of palladium(II) complexes: A kinetic and mechanistic study. <i>Journal of Coordination Chemistry</i>, 72: 3, 499 – 515, DOI: 10.1080/00958972.2019.1573994
2017	<ul style="list-style-type: none"> Daniel O. Onunga, Anastasiah N. Ngigi and Isaac O. K'owino. (2017). Kinetics of Carbofuran Biotransformation by <i>Bacillus sp.</i> and a proposed hydrolytic mechanism. <i>Indian Journal of Environmental Sciences; Green Earth Foundation</i>, 21: 2, 53 – 61. Daniel O. Onunga and Jaganyi Deogratius. (2017). CCDC 1587601: Experimental Crystal Structure Determination, chloro-(2,6-bis(1H-pyrazol-1-yl)pyridine)-palladium(ii) chloride dehydrate, DOI: 10.5517/ccdc.csd.cc1q90yz Daniel O. Onunga and Jaganyi Deogratius. (2017). CCDC 1587602: Experimental Crystal Structure Determination, (2,6-bis(3,5-dimethyl-1H-pyrazol-1-yl)pyridine)-chloro-palladium(ii) chloride methanol solvate, DOI: 10.5517/ccdc.csd.cc1q90z0
2015	<ul style="list-style-type: none"> Daniel O. Onunga, Isaac O. Kowino, Anastasiah N. Ngigi, Aggrey Osogo, Francis Orata, Zachary M. Getenga, and Hassan Were. (2015). Biodegradation of carbofuran in soils within Nzoia river basin, Kenya. <i>Journal of Environmental Science and Health, Part B; Pesticides, Food Contaminants, and Agricultural Wastes</i>, 50: 6, 387-397, DOI:10.1080/03601234.2015.1011965.

KEY SKILLS AND COMPETENCIES

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- Proficiency in synthesis of ligands and organometallic compounds
- Kinetics and mechanisms: Substitutions and thermodynamics as well as degradation.
- Proficiency in FTIR, NMR, UV-Vis, HPLC, GC-MS, MS, and XRD characterization techniques.
- Proficiency in use of ChemDraw®, ACD/ChemSketch, Mercury, originLab, Marvin computer software and computer skills
- Proficiency in Chemical computational studies through Density Function Theory (DFT)
- Report writing and presentation

PROFESSIONAL BODIES

Kenya Chemical Society (KCS)

REFEREES

Prof Deogratius Jaganyi,
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