

Curriculum Vitae



Dr. Solomon Derese

PhD (University of Nairobi); MSc (University of Nairobi), BSc (Addis Ababa University)

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Research profile

Google Scholar

<https://scholar.google.com/citations?user=zChHJvAAAAAJ&hl=en>

Publons

<https://publons.com/researcher/H-5957-2016/>

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LinkedIn

<https://www.linkedin.com/in/sderese/>

ResearchGate

<https://www.researchgate.net/profile/Solomon-Derese-2>

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Personal data

Date of birth	19/01/1969
Nationality	Ethiopian
Marital status	Married

Education

2005	Ph.D. (Chemistry) University of Nairobi, Nairobi, Kenya
1998	M.Sc. (Chemistry) University of Nairobi, Nairobi, Kenya
1990	B.Sc. (Chemistry) Addis Ababa University, Ethiopia

Short Term Training

1. Completed online course on “Moodle Course for Instructors “conducted by Kenya Education Network, February 2022.
2. Completed online course on “Business Analytics with Excel” conducted by SkillUP (Simplilearn), issued on 17th December, 2021.
3. Completed online course on “Introduction to Data Analytics” conducted by SkillUP (Simplilearn), issued on 20th December, 2021.
4. Studied and gained skills in “Microsoft Excel 2019/365” online training Organized by Earn and EXCEL, issued on 28th November, 2021.
5. Pedagogy, Andragogy, and Mentorship Training, 29-31 January 2020 at UNES-Arziki Conference Centre Restaurant, Chiromo Campus, Organized by CEPA and SPHEIR, Nairobi, Kenya.
6. A University of South – Eastern Norway workshop on “Developing Research Supervision” 28th March 2019, Nairobi, Kenya.
7. Fundamentals of Information and literacy and access to Global Online Research in Agriculture (AGORA), 10 – 21 September 2018, Food and Agriculture Organizations of the United Nations (FAO).
8. PACN-INASP Training Workshop on Scientific Writing and Publishing, 20 – 21 November 2015, University of Nairobi, Kenya.
9. Trainers of Trainers (ToT) on Alcohol and Drug Abuse Management, 15-19 June 2015, University of Nairobi, Kenya.
10. Ninth European Workshop in Drug Design, Siena, Italy, May 19 - 25, 2013.
11. KDSA/DAAD Scientific Paper Writing Workshop, 24-27 July 2013, Kenyatta University, Nairobi Kenya.
12. The 2012 Seeding Labs Grant Writing, May – August 2012, Massachusetts, USA.
13. Research Fellowship (May – August 2012): Novartis Institute of Biomedical Research (NIBR), Organic Synthesis and Computer Aided Drug Design, Cambridge, Boston, United States of America.
14. Prepare – PhD Project – PhD Supervision Training workshop, 24-28 November 2012, University of Nairobi, Kenya.
15. “Pharmacogenetics of Drug Metabolism” organized by the African Institute of Biomedical Science and Technology, University of Nairobi, 22-26 June 2009.
16. Proposal writing for International Projects. Makerere University, Uganda, December 8-12, 2008.

17. "Good Laboratory Practice (GLP)" Organized by UNDP/World Bank/WHO-TDR, University of Nairobi, Kenya, 24-26 October, 2007.
18. University of Nairobi in house training workshop on "Pedagogical Skills", 1 – 3 October 2007, Nairobi, Kenya.
19. DAAD Higher Education Forum on Capacity Building and Development Research in Sub-Saharan Africa, October 3-6, 2005. Center for Development Research, Zentrum für entwicklungsforschung (ZEF), Bonn, Germany.
20. 11th NAPRECA pre - symposium on "Bioassay and NMR Techniques", IMRA, Antananarivo, Madagascar, 1-6 August 2005.
21. Summer School for African Networks in the field of Technology and Development (Engineering and Natural Sciences) is organized by the Faculty of Process and Systems Engineering, Otto-von-Guericke University of Magdeburg, Magdeburg, Germany. (September 25th - Oct 2nd 2005).
22. University of Potsdam, Institute of Chemistry, Potsdam, Germany (October 1st 2002-March 31st 2003).
23. DAAD Scholarship/Fellowship holders seminar on "Scholarly writing". Egerton University, Njoro, Kenya (23-25, January 2002).
24. 9th NAPRECA Pre-symposium Workshop on Structural Elucidation and Chromatography, Department of Chemistry, University of Nairobi, Nairobi, Kenya (22-27, August 2001).
25. DAAD Scholarship/Fellowship holder's seminar on scholarly writing, University of Nairobi, Nairobi, Kenya (19-21, January 2000).
26. Second IOCD International Symposium on Chemistry, Biological and Pharmacological Property of African Medicinal Plants and Pre-Symposium workshop on HPLC and Bioassay. Addis Ababa, Ethiopia (28/02 - 03/03 1999).
27. Third Theoretical Chemistry Workshop in Africa and East and Southern Africa Environmental Chemistry Workshop. University of Nairobi, Kenya. (1-6, November 1998).
28. Second Theoretical Chemistry Workshop in Africa. University of Nairobi, Kenya. (26-30, August 1996).
29. First Theoretical Chemistry Workshop in Africa. University of Nairobi, Kenya. (20-24, February 1995).
30. Workshop on "The Operation, Maintenance and Repair of UV/Visible Spectrophotometers and HPLC Equipment", Addis Ababa, Ethiopia. (5-27, May 1993).
31. Chromatography Workshop Organized by NAPRECA, Addis Ababa, Ethiopia. (9-13, December 1991).

Work Experience

Teaching

August 1999 – Present

Department of Chemistry
University of Nairobi

Undergraduate

1. Chemistry for Agricultural Science, 1st year course
2. Introduction to Organic Chemistry, Alkanes and Basic Stereochemistry, 1st year course
3. Alkyl Halides, Alcohols, Ethers, Alkenes, Alkynes and Aromatic Compounds, 2nd year course
4. Carbonyl Compounds, Amines and Phenols, 2nd year course
5. Heterocyclic Chemistry, 3rd year course
6. Chemistry of Secondary Biomolecules, 3rd and 4th year course
7. Petroleum Chemistry, 4th year course

Postgraduate (Masters)

	<ol style="list-style-type: none"> 1. Physical Organic Chemistry 2. Biosynthesis of Secondary Metabolites 3. Quantitative Structure Activity Relationship
Project Coordinator Department of Chemistry University of Nairobi	4 th Year research project
Research Assistant April 1998 – Aug. 1999 Natural Product Research Lab. Department of Chemistry University of Nairobi	Studied the chemistry and biological activity of Kenyan medicinal plants under Prof. J.O. Midiwo.
Laboratory Instructor Jan.-April, 1995; Mar.-June, 1996 Department of Chemistry University of Nairobi	These were three-hour laboratory sessions which began with an introduction of the theory behind the experiments to 1 st and 3 rd year chemistry students.
Research Assistant Oct. 1991-Oct. 1993 Chemistry Department Addis Ababa University Ethiopia	Researched on the Lathyrus/Lathyrism Project under Prof. Berhanu Abegaz . The project I was involved in was in the identification <i>Lathyrus sativus</i> cultivars with the lowest level of the neurotoxin β -oxalyl diaminopropionic acid (β -ODAP). I was in charge of developing chromatographic and spectroscopic systems for qualitative and quantitative analysis of the neurotoxin in grass pea. The techniques I employed include UV-Vis, HPLC, electrophoresis and ion chromatography.
High School Teacher Dec. 1990- July 1991 Chiro Secondary School, Ethiopia	Taught physics to grade 9 and 10 students.
Assistant Lab. Instructor Feb.-June, 1989 Chemistry Department Addis Ababa University Ethiopia	While I was a 4 th year student at Addis Ababa University, I was selected among my class mates to assist in a 3 rd year physical chemistry laboratory under Dr. Tim Forester.

Departmental/School/College Committees

- (1) Chair, Web champions, College of Biological and Physical Sciences, University of Nairobi
- (2) Member, Industry linkages, Faculty of Science and Technology, University of Nairobi
- (3) Member, Annual Report Committee, College of Biological and Physical Sciences, University of Nairobi
- (4) Member, Alcohol and Drug Abuse Committee, College of Biological and Physical Sciences, University of Nairobi
- (5) Member, Curriculum Review Committee, Faculty of Science and Technology, University of Nairobi
- (6) Member, Curriculum Review Committee, Department of Chemistry, University of Nairobi
- (7) Mentor, 4th year students, Department of Chemistry, University of Nairobi

Recognition

- (1) Third Prize Winner - West Asia and Africa Region: UNESCO-ICHEI - 2021 IIOE Online Courses Competition Courseware, Topic "ICT tools to support project-based learning (PBL) of Stereochemistry" , December 12, 2022.
- (2) Natural Products Research Network for Eastern and Central Africa's (NAPRECA) recognition for "Outstanding Efforts", during the 18th NAPRECA Symposium, December 2019, Cairo, Egypt.
- (3) Recognized for "Outstanding performance" during the University of Nairobi Staff Performance Appraisal period 2016/2017 financial year.

Teaching Materials Prepared

(1) PowerPoints

The following lecture notes and power points lectures are readily available for my students to download from the intranet, <http://www.uonbi.ac.ke/profiles/?id=185430>.

- (1) Chemistry for Agricultural Science, 1st year course
- (2) Introduction to Organic Chemistry, Alkanes and Basic Stereochemistry, 1st year course
- (3) Alkyl Halides, Alcohols, Ethers, Alkenes, Alkynes and Aromatic Compounds, 2nd year course
- (4) Carbonyl Compounds, Amines and Phenols, 2nd year course
- (5) Heterocyclic Chemistry, 3rd year course
- (6) Chemistry of Secondary Biomolecules, 3rd and 4th year course
- (7) Biosynthesis of Secondary Metabolites, MSc

These very well-prepared lectures notes are used not only by other lecturers teaching these courses but also by students from other universities

(2) Lecture videos to mitigate the effect Covid 19 for asynchronous learning

To mitigate the effect of Covid 19 in the usual face-to-face learning, I developed an audio-visual studio in my house and developed video lectures in the following topics

- 1) Why study chemistry for students of Agriculture
- 2) Atomic structure
- 3) Chemical equilibrium
- 4) Introduction to organic reaction mechanisms
- 5) Confirmation and stability of cycloalkanes
- 6) Overview of stereochemistry
- 7) Biosynthesis of monoterpenes
- 8) Biosynthesis of sesquiterpenes
- 9) Biosynthesis of diterpenes
- 10) Biosynthesis of triterpenes
- 11) Biosynthesis of fatty acids
- 12) Biosynthesis of polyketide derived secondary metabolites
- 13) Biosynthesis of phenylpropanoids
- 14) Biosynthesis of flavonoids

The videos were captured and edited using the [Camtasia Screen Recorder and Video Editor](#). I plan to use these materials even after the pandemic as asynchronous digital learning materials.

(3) [English/Kiswahili Periodic Table of the Elements](#)

I prepared a comprehensive English/Kiswahili Periodic Table of the Elements which in addition atomic number and atomic weights include electronegativity values and electronic configurations. I have prepared an updated version of this periodic table as part of the celebration of the [International Year of Basic Sciences for Sustainable Development \(IYBSSD2022\)](#).

Research Focus

- Phytochemical chemical investigation Kenyan medicinal plants
- Bioassay of secondary metabolites for anti-infective, anti-cancer and anti-inflammatory agents
- Ethnobotany
- Computer Aided Drug Design for the design and discovery of small molecules based on natural products scaffolds
- Nano-formulation of natural products for drug delivery

External Exam Moderator

- Karatina University (2016 - 2020)
- Masinde Muliro University of Science and Technology (2016 - present)
- University of Eldoret (2019 - present)

Postgraduate Supervision (PhD and MSc)

PhD students supervised to completion

Name (Nationality), Institution, year of graduation: Title of thesis

- (1) Richard Oriko (Ugandan), University of Nairobi, 2021: Phytochemical Analysis of Selected *Tephrosia* Species for Anti-Inflammatory Principles.
- (2) V.A. Nchiozem-Ngnitedem (Cameroonian), University of Nairobi, 2021: Phytochemical Study of Selected *Dracaena* Species for Anti-Inflammatory and Anticancer Principles.
- (3) Daniel Buyinza (Ugandan), University of Nairobi, 2020: Antiplasmodial and Anticancer Principles from *Millettia dura*, *Millettia leucantha* and *Millettia lasiantha* Species.
- (4) Moses Andima (Ugandan), University of Nairobi, 2020: Natural Product-loaded Nanoparticles for Cancer Therapy: Formulation, Characterization, *In Silico* and Cellular Studies.
- (5) Souaibou Yaouba (Cameroonian), University of Nairobi, 2018: Phytochemical Investigation of Selected Plants in the Families Anacardiaceae and Asteraceae for Bioactive Principles.
- (6) Lois Muiva Mwikali Mutisya (Kenyan), University of Nairobi, 2017: Phytochemical analysis of *Tephrosia* species found in Kenya for antimalarial and antioxidant principles.
- (7) Irene Chege (Kenyan), Jomo Kenyatta University of Science and Technology, 2017: Comparison of the Safety and Effectiveness of Anti-diabetic herbal preparations and allopathic medicines.
- (8) Tsegaye Deyou (Ethiopian), University of Nairobi, 2015: Phytochemical investigation of plants of the Ochnaceae and Leguminosae families for cancer chemoprevention.
- (9) Ivan Gumula (Ugandan), University of Nairobi, 2015: Phytochemical investigation of three Leguminosae plants for cancer chemopreventive agents.
- (10) Charles Muthaura (Kenyan), Jomo Kenyatta University of Science and Technology, 2015: Phytochemical studies and efficacy of anti-malarial remedies from some Kenyan medicinal plants.
- (11) Leonidah Kerubo Omosa (Kenyan), University of Nairobi, 2009: Phytochemical investigation of surface exudates of *Dodonaea angustifolia* and *Senecio roseiflorus* for bioactive principles.

Current PhD students

- (1) Chepkirui Carolyne Kenduiwo (Kenyan): Phytochemical Analyses of *Mundulea sericea*, *Tephrosia uniflora* and, *Strebulus usambarensis* for Anti-infective Principles.
- (2) Ermias Mergia Terefe (Ethiopian): *In vitro* and *in silico* pharmacologic evaluation of the antiretroviral activity of *Croton* species.
- (3) Awas Erick Okoth (Kenyan): Phytochemical evaluation of some anti-malarial plants of Kenya.
- (4) Wycliffe O. Omwansu (Kenyan): Amyloid- β aggregates and solvent interactions studied by molecular dynamics simulations.
- (5) Swaleh Abdillahi (Kenyan): Antifungal activity of 2-amino-4-chlorophenol derivatives against *Candida albicans*.

MSc students supervised to completion

Name (Nationality), Institution, Year of graduation: Title of thesis

- (1) Sebastian Oloo Otieno (Kenya), University of Nairobi, 2020: Solar-driven photocatalytic activity of porphyrin sensitized TiO₂ in methylene blue degradation and sacrificial hydrogen generation.
- (2) Jackie Khisa (Kenya), University of Nairobi, 2020: Synthesis, characterization and photophysical studies of novel porphyrin-based compounds for application in photodynamic antimicrobial chemotherapy (PACT).
- (3) Hilda Kyomuhimbo (Ugandan), University of Nairobi, 2019: Green Synthesis, Characterization and Antimicrobial Evaluation of Silver and Zinc Oxide Nanoparticles from Extracts of *Bidens pilosa*.
- (4) Openda Ikala (DR Congo), University of Nairobi, 2018: Phytochemical Evaluation of *Tephrosia hildebrandtii* for Antimicrobial Principles.
- (5) Abdillahi Swaleh (Kenya), University of Nairobi, 2018: Synthesis and antiglycemic activity of *in silico* designed analogues of allylpropyl disulphide.
- (6) Samuel Gachuhi (Kenyan), University of Nairobi, 2017: Synthesis of antimicrobial benzene-1,4-Diol analogues of a benzoquinone metabolite from the endophytic fungi *Xylaria* Sp. PBR 30.
- (7) James Oyim (Kenyan), University of Nairobi, 2016: Modeling and Synthesis of Antiplasmodial Naphthoquinones from Natural Products of Kenya.
- (8) Michael Rogo (Kenyan), University of Nairobi, 2016: Modeling and Synthesis of Antiplasmodial Benzoxazines from Natural Products of Kenya.
- (9) Scolastica Maynim (Kenyan), University of Nairobi, 2016: Modeling and Synthesis of Antiplasmodial Chromones, Chromanones and Chalcones based on Natural Products of Kenya.
- (10) Daisy Nyawira Njru (Kenyan), University of Nairobi, 2015: Phytochemical investigation of the stem and leaves of *Teclea simplicifolia* for analgesic activity.
- (11) Makungu Marco (Tanzanian), University of Nairobi, 2014: Phytochemical investigation of three Leguminosae plants for larvicidal activity against *Aedes aegypti*.
- (12) Denis Akampurira (Ugandan), University of Nairobi, 2014: Phytochemical investigation of *Zanthoxylum holstianum* for antiplasmodial, larvicidal and antinociceptive principles.
- (13) Daniel Buyinza (Ugandan), University of Nairobi, 2012: Phytochemical investigation of *Zanthoxylum holstianum* for antimicrobial principles.
- (14) Bernard Macharia (Kenyan), University of Nairobi, 2012: Phytochemical investigation of the roots of *Tephrosia vilosa* and aerial parts of *Tephrosia purpuria* for antiplasmodial and larvicidal principles.
- (15) Jocelyn Kamau (Kenyan), Jomo Kenyatta University of Agriculture and Technology, 2012: Phytochemistry and biological activity of the root extract of *Millettia oblata*.
- (16) Leonard Baraza (Kenyan), University of Nairobi, 2011: Phytochemical investigation of *Millettia oblata* for antiplasmodial and larvicidal principles.

- (17) Meron Gebru (Eritrean), University of Nairobi, 2010: Phytochemical and antiplasmodial investigation of *Rhamnus prinoides* and *Kniphofia foliosa*.
- (18) Immaculate Achieng (Kenyan), University of Nairobi, 2010: Antiplasmodial anthraquinones and benzaldehyde derivatives from the roots of *Kniphofia thomsonii*.
- (19) Muiva, L.M. (Kenyan), Jomo Kenyatta University of Science and Technology, 2009: Antiplasmodial and larvicidal flavonoids from the seedpods of *Tephrosia elata* and *Tephrosia aequilata*.
- (20) Kiplagat J. Tuwei (Kenyan), University of Nairobi, 2006: Larvicidal and antiplasmodial compounds from *Derris trifoliata*, *Lonchocarpus eryocalyx* and *Erythrina sacleuxii*.

Current MSc students

- (1) Wamwende David Ochieng (Kenyan): Phytochemical investigation of *Sphaeranthus africanus* for its antiplasmodial activities.
- (2) Wangai Kelvin Warui (Kenya): Synthesis and photophysical studies of porphyrins as photodynamic antimicrobial agent in water disinfection.
- (3) Kinuthia Patrick Dominic (Kenya): Synthesis of meso-tetrafurylporphyrins for water disinfection.

Publications in Peer Reviewed International Journals

2022

- (1) Akampurira, D., Akala, H. M., Derese, S., Heydenreich, M., & Yenesew, A. (2022). A new C–C linked benzophenanthridine–2-quinoline dimer, and the antiplasmodial activity of alkaloids from *Zanthoxylum holstzianum*. *Natural Product Research*, 0(0), 1–11. <https://doi.org/10.1080/14786419.2022.2034810>
- (2) Chepkirui, C., Bourgard, C., Gilissen, P. J., Ndakala, A., Derese, S., Gütlin, Y., Erdélyi, M., & Yenesew, A. (2022). A new β -hydroxydihydrochalcone from *Tephrosia uniflora*, and the revision of three β -hydroxydihydrochalcones to flavanones. *Fitoterapia*, 158, 105166. <https://doi.org/10.1016/j.fitote.2022.105166>
- (3) Nchiozem-Ngnitedem, V.-A., Omosa, L. K., Derese, S., Efferth, T., & Spiteller, M. (2022). Cytotoxic flavonoids from the seeds of *Dracaena steudneri* Engl against leukemia cancer cell lines. *Phytomedicine Plus*, 2(2), 100234. <https://doi.org/10.1016/j.phyplu.2022.100234>
- (4) Terefe, E. M., Okalebo, F. A., Derese, S., Batiha, G. E.-S., Youssef, A., Alorabi, M., & Muriuki, J. (2022). Cytotoxicity and anti-HIV activities of extracts of the twigs of *Croton dichogamus* Pax. *BMC Complementary Medicine and Therapies*, 22(1), 49. <https://doi.org/10.1186/s12906-022-03532-1>
- (5) Terefe, E. M., Okalebo, F. A., Derese, S., Muriuki, J., Amuhaya, E. K., Munyendo, L. W., Janapati, Y., Obila, J., & Mosweta, J. (2022). Cytotoxicity and antiretroviral activity of the leaf and stem bark extracts of *Croton macrostachyus*. *Pharmaceutical Journal of Kenya*, 26(1), 16–23.

2021

- (6) Andima, M., Ndakala, A., Derese, S., Biswajyoti, S., Hussain, A., Yang, L. J., Akoth, O. E., Coghi, P., Pal, C., Heydenreich, M., Wong, V. K.-W., & Yenesew, A. (2021). Antileishmanial and cytotoxic activity of secondary metabolites from *Tabernaemontana ventricosa* and two aloe species. *Natural Product Research*, 0(0), 1–5. <https://doi.org/10.1080/14786419.2021.1871906>
- (7) Buyinza, D., Derese, S., Ndakala, A., Heydenreich, M., Yenesew, A., Koch, A., & Oriko, R. (2021). A coumestan and a coumaronochromone from *Millettia lasiantha*. *Biochemical Systematics and Ecology*, 97, 104277. <https://doi.org/10.1016/j.bse.2021.104277>

- (8) Buyinza, D., Yang, L. J., Derese, S., Ndakala, A., Coghi, P., Heydenreich, M., Wong, V. K. W., Möller, H. M., & Yenesew, A. (2021). Cytotoxicity of isoflavones from *Millettia dura*. *Natural Product Research*, 35(16), 2744–2747. <https://doi.org/10.1080/14786419.2019.1660335>
- (9) Chepkirui, C., Ochieng, P. J., Sarkar, B., Hussain, A., Pal, C., Yang, L. J., Coghi, P., Akala, H. M., Derese, S., Ndakala, A., Heydenreich, M., Wong, V. K. W., Erdélyi, M., & Yenesew, A. (2021). Antiplasmodial and antileishmanial flavonoids from *Mundulea sericea*. *Fitoterapia*, 149, 104796. <https://doi.org/10.1016/j.fitote.2020.104796>
- (10) Khisa, J., Derese, S., Mack, J., Amuhaya, E., & Nyokong, T. (2021). Synthesis, photophysical properties and photodynamic antimicrobial activity of meso 5,10,15,20-tetra(pyren-1-yl)porphyrin and its indium(III) complex. *Journal of Porphyrins and Phthalocyanines*, 25(09), 794–799. <https://doi.org/10.1142/S1088424621500462>
- (11) Nchiozem-Ngnitedem, V.-A., Omosa, L. K., Bedane, K. G., Derese, S., & Spiteller, M. (2021). Inhibition of Proinflammatory Cytokine Release by Flavones and Flavanones from the Leaves of *Dracaena steudneri* Engl. *Planta Medica*, 87(03), 209–217. <https://doi.org/10.1055/a-1306-1368>
- (12) Otieno, S., Lanterna, A. E., Mack, J., Derese, S., Amuhaya, E. K., Nyokong, T., & Scaiano, J. C. (2021). Solar Driven Photocatalytic Activity of Porphyrin Sensitized TiO₂: Experimental and Computational Studies. *Molecules*, 26(11), 3131. <https://doi.org/10.3390/molecules26113131>
- (13) Owor, R. O., Bedane, K. G., Openda, Y. I., Zühlke, S., Derese, S., Ong'amo, G., Ndakala, A., & Spiteller, M. (2021). Synergistic anti-inflammatory activities of a new flavone and other flavonoids from *Tephrosia hildebrandtii* vatke. *Natural Product Research*, 35(22), 4486–4493. <https://doi.org/10.1080/14786419.2020.1736065>
- (14) Terefe, E. M., Okalebo, F. A., Derese, S., Muriuki, J., & Batiha, G. E.-S. (2021). In Vitro Cytotoxicity and Anti-HIV Activity of Crude Extracts of *Croton macrostachyus*, *Croton megalocarpus* and *Croton dichogamus*. *Journal of Experimental Pharmacology*, 13, 971–979. <https://doi.org/10.2147/JEP.S335104>

2020

- (15) Andima, M., Coghi, P., Yang, L. J., Wai Wong, V. K., Mutuku Ngule, C., Heydenreich, M., Ndakala, A. J., Yenesew, A., & Derese, S. (2020). Antiproliferative Activity of Secondary Metabolites from *Zanthoxylum zanthoxyloides* Lam: In vitro and in silico Studies. *Pharmacognosy Communications*, 10(1), 44–51. <https://doi.org/10.5530/pc.2020.1.8>
- (16) Buyinza, D., Chalo, D. M., Derese, S., Ndakala, A., & Yenesew, A. (2020). Flavonoids and Isoflavonoids of *Millettia dura* and *Millettia ferruginea*: Phytochemical review and chemotaxonomic values. *Biochemical Systematics and Ecology*, 91, 104053. <https://doi.org/10.1016/j.bse.2020.104053>
- (17) Nchiozem-Ngnitedem, V.-A., Omosa, L. K., Bedane, K. G., Derese, S., Brieger, L., Strohmman, C., & Spiteller, M. (2020). Anti-inflammatory steroidal saponins and a conjugated chalcone-stilbene from *Dracaena usambarensis* Engl. *Fitoterapia*, 146, 104717. <https://doi.org/10.1016/j.fitote.2020.104717>
- (18) Nchiozem-Ngnitedem, V.-A., Omosa, L. K., Derese, S., Tane, P., Heydenreich, M., Spiteller, M., Seo, E.-J., & Efferth, T. (2020). Two new flavonoids from *Dracaena usambarensis* Engl. *Phytochemistry Letters*, 36, 80–85. <https://doi.org/10.1016/j.phytol.2020.01.001>
- (19) Owor, R. O., Bedane, K. G., Openda, Y. I., Zühlke, S., Derese, S., Ong'amo, G., Ndakala, A., & Spiteller, M. (2020). Synergistic anti-inflammatory activities of a new flavone and other flavonoids from *Tephrosia hildebrandtii* vatke. *Natural Product Research*, 1–8. <https://doi.org/10.1080/14786419.2020.1736065>

- (20) Owor, R. O., Bedane, K. G., Zühlke, S., Derese, S., Ong'amo, G. O., Ndakala, A., & Spiteller, M. (2020). Anti-inflammatory Flavanones and Flavones from *Tephrosia linearis*. *Journal of Natural Products*, 83(4), 996–1004. <https://doi.org/10.1021/acs.jnatprod.9b00922>.
- (21) Owor, R. O., Derese, S., Bedane, K. G., Zühlke, S., Ndakala, A., & Spiteller, M. (2020). Isoflavones from the seedpods of *Tephrosia vogelii* and pyrazoisopongaflavone with anti-inflammatory effects. *Fitoterapia*, 146, 104695. <https://doi.org/10.1016/j.fitote.2020.104695>.

2019

- (22) Buyinza, D., Yang, L. J., Derese, S., Ndakala, A., Coghi, P., Heydenreich, M., Wong, V. K. W., Möller, H. M., & Yenesew, A. (2019). Cytotoxicity of isoflavones from *Millettia dura*. *Natural Product Research*, 1–4. <https://doi.org/10.1080/14786419.2019.1660335>.
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- 38) Solomon Derese, Abiy Yenesew, Beatrice Irungu, Jacob O. Midiwo, Mathias Heyendreich, Martin G. Peter. Radical scavenging activities of two pterocarpenes from the root bark of *Erythrina abyssinica*. 4th International meeting "Dietary antioxidants, trace elements, vitamins and polyphenols-functional and clinical aspects in humans". 16-20, April 2005, Monastir, Tunisia.

- 39) Anti-plasmodial flavonoids from the stem and root bark of *Erythrina abyssinica*. The 5th International conference of the Kenya Chemical Society, August 2005, Kenyatta University, Kenya.
- 40) Solomon Derese, Abiy Yenesew, Beatrice Irungu, Jacob O. Midiwo, Mathias Heyendreich, Martin G. Peter Anti-plasmodial rotenoids of *Millettia usaramensis*. August 2002, The Kenya chemical Society 4th International Conference, ARC Hotel, Egerton University, Njoro, Kenya.
- 41) Midiwo, J. O., Yenesew, Abiy, Juma, B. F., Derese, S., Ayoo, J. A., Aluoch, A.O., Guchu, S. Bioactive Compounds from Kenyan ethno-medicinal Plants. International Symposium of the Phytochemical Society of Europe. Lausanne, Switzerland. September, 2001.
- 42) J.O. Midiwo, A. Yenesew, B.F. Juma, Solomon Derese, J.A. Ayoo, A.O. Aluoch and S. Guchu (2001). Bioactive Compounds from Kenyan Ethnomedicinal Plants. Book of abstract of the “9th NAPRECA symposium on Natural Products” Nairobi, Kenya.
- 43) Solomon Derese, J.O. Midiwo and Abiy Yenesew (2001). Two isoflavones from *Millettia dura*. Book of abstract of the “9th NAPRECA symposium on Natural Products” Nairobi, Kenya.
- 44) J.O. Midiwo, A. Yenesew, B.F. Juma, Solomon Derese, J.A. Ayoo, A.O. Aluoch, Kerubo, L. and S. Guchu (2001). Phytochemical Studies on Popular Kenyan Medicinal Plants. Book of Abstract of the IOCD International Symposium, Bamako, Mali.
- 45) J.O. Midiwo, A. Yenesew, B.F. Juma, Solomon Derese and L.M. Arot (1999). Bioactive compounds from Kenyan Ethno-medicinal plants. Book of Abstract of the 3rd International Conference of the Kenya Chemical Society, JKUAT, Juja, Kenya.
- 46) Solomon Derese, A. Yenesew and J.O. Midiwo (1999). Flavonoids of the root and stem bark of *Erythrina burtii* and *Erythrina abyssinica*. Book of Abstract of the 3rd International Conference of the Kenya Chemical Society, JKUAT, Juja.
- 47) Yenesew, Solomon Derese, and J.O. Midiwo (1999). Flavonoids of the root and stem bark of *Erythrina burtii* and *Erythrina abyssinica*. Book of Abstract of the 8th NAPRECA Symposium on Natural Products, Gaborone, Botswana.
- 48) Solomon Derese, J.O. Midiwo (1999). Chemotaxonomy of some Kenyan *Hypericum* species. Book of abstract of the “Second International Symposium on Chemistry, Biological and Pharmacological Properties of African Medicinal Plants”. Addis Ababa, Ethiopia.

Conferences/Congress/Symposia Attended

Some of the Conferences/Symposia attended without presentation:

- (1) 2021 Grand Challenges Annual Meeting, Virtual, 8-11 November 2021.
- (2) 7th All African Congress of Basic and Clinical Pharmacology (ACP2021), Virtual Meeting, September 15-17, 2021.
- (3) Intersol 2021 – 4th EAI International Conference on Innovations and Interdisciplinary Solutions for Underserved Areas, under the theme “ Nature Based Solutions, Gender Equality and Interconnectivity for Climate Change in Africa”, 12 -13th April 2021, online.
- (4) Pan African Chemistry Network Congress 2019 under the theme “Riches of the natural world: Sustainable use of Africa’s natural products and materials, 5-7 November 2019, Addis Ababa, Ethiopia.
- (5) Pan African Chemistry Network Congress 2018: Managing resources through chemistry: Wealth not Waste, 6-8 November 2018, Nairobi, Kenya
- (6) 17th NAPRECA symposium under the theme “Harnessing Natural Products for the well being of African People” August 13 – 16, 2017, Addis Ababa, Ethiopia.
- (7) Pan African Chemistry Network Congress 2015: Healthcare: from discovery to delivery, 17-19 November 2015, Nairobi, Kenya

- (8) Second Conference of the International Year of Chemistry (IYC 2011) Celebrations, Theme “Popularizing Chemistry with Respect to Kenya’s Vision 2030”, 15 – 17 February 2012, Nairobi, Kenya

Research/Infrastructure Grants

1. Acquisition of LC/MS instrument at the Department of Chemistry
2. NRF KNMRC project for establishment of the “Kenya National NMR Centre”, KES 42,796,236 (\$ 553,658.64)
3. Dow Chemical grants for “Enhancing teaching, research, innovation and consultancy Capacity of the Department of Chemistry”. Four grants so far
 - a. \$ 14,000 (for purchase of ten (10) “Top Pan Balances”, four (4) “Analytical balances” and a muffle furnace), 2016.
 - b. \$20,000 (A project for modernization of three seminar rooms at the Department [three (3) “retractable electric screens”, five (5) LCD projectors and curtains] and purchase of “UV-Vis Spectrophotometer” and a “digital melting point apparatus”, 2017.
 - c. \$ 26,500 (A project to equip the new Physical Chemistry laboratory with modern equipment), 2018.
 - d. \$ 20,000 (Establishment of a digital studio for recording and editing of lectures), 2021
4. Grand Challenge Canada, Canada, \$ 100,000 for development a database of natural products of Kenya for the design of antiplasmodial compounds using CADD tools, 2012.
5. Novartis Institute of Biomedical Research, Massachusetts, USA, Equipment and Laboratory supplies worth \$ 10,000, 2013.
6. Royal Society of Chemistry (RSC), UK, £2,500.
7. International Science Foundation (IFS), Sweden, \$ 5,000

Editor of Symposium Book of Proceedings and Extended Abstracts

1. Derese S. (Editor). Natural Products from African Biodiversity. 14th NAPRECA symposium and AAMPS ethnoveterinary medicine symposium; 2011.
2. J.O. Midiwo, A. Yenesew and S. Derese. (Editors). Natural Products and Drug Discovery. Proceedings of the 11th NAPRECA Symposium on Natural Products (2007).
3. J.O. Midiwo, C. Langat, J.M. Onyari, I.O. Ndiege, A. Yenesew, S. Derese and T.O. Akenga (Editors): Unraveling of the Socio-Economic Potential of African Biodiversity through Natural Product Research: Proceedings of the 9th NAPRECA Symposium on Natural Products, Nairobi, Kenya, August, 2003.

Conferences/Symposia/Workshops Organized

I have organized the following Conferences/Symposia/Workshops alone or together with others:

- (1) Organized “Soft skills training workshop for PhD students”
Workshop facilitator: Mr. Frank Beumer, HORBACH Financial Services, Munster, Germany
Date: June 26 – 27, 2019
Module 1 - Strong Personal Profile and Development of own brand: 3 hours
Module 2 - Communication and Presentation: 3 hours
Module 3 - Negotiations and salary Negotiations: 2 hours
Module 4 - Financial Behavior: 2 hours
- (2) The University of Surrey (UK) and University of Nairobi’s Researchers link workshop on “Exploring Kenyan Biodiversity”, 10-14 September 2017, Great Rift Valley Lodge, Naivasha, Kenya. Funded by the Newton Fund.

- (3) An Introduction to Computational Chemistry and In-silico Visualization, An OpenLab Workshop for Sub-Saharan Africa Scientists, September 9- 11, 2015, Nairobi, Kenya.
- (4) The 15th symposium of the Natural Product Research Network for Eastern and Central Africa (NAPRECA), Khartoum, Sudan, December 7 – 11, 2013.
- (5) DAAD – Proposal writing workshops (Kenya)
April 2013
DAAD trains young scientists on their way to German research hubs in scientific proposal writing
- September 2011**
In my capacity as secretary of the Kenya DAAD Scholars Association organized seven simultaneous PhD proposal writing workshop supported by the DAAD and NCST (now NACOSTI) in universities across Kenya
- (6) The 14th symposium of the Natural Product Research Network for Eastern and Central Africa (NAPRECA), ICIPE, Nairobi, Kenya, August 8 – 12, 2011.
- (7) International Year of Chemistry (IYC 2011) Celebrations Launch, March 25th , 2011, University of Nairobi, Central Catering Unit, Nairobi.
- (8) The 13th symposium of the Natural Product Research Network for Eastern and Central Africa (NAPRECA), Kinshasa, DR Congo, August 10 – 14, 2009.
- (9) The 6th Kenya Chemical Society and East and Southern Africa Environmental Chemistry and 8th Theoretical Chemistry in Africa Conference, Mombasa, Kenya, October 5-10, 2009.
- (10) Pan Africa Chemistry Network (PACN) – Sustainable water conference and pre-conference workshop on green chemistry and sustainability. 25- 28 August 2009, Nairobi, Kenya.
- (11) The 12th symposium of the Natural Product Research Network for Eastern and Central Africa (NAPRECA), Hotel Africana, Kampala, Uganda, July 22 – 26, 2009.
- (12) The Impact of post-election crisis on Kenya Higher Education Institutions: Are the ivory towers part of the problem or can they provide direction. Chiromo campus, UoN, August 8th 2008.
- (13) The 11th symposium of the Natural Product Research Network for Eastern and Central Africa (NAPRECA), Hôtel Panorama, Antananarivo, Madagascar, August 9 – 12, 2005.
- (14) The 9th symposium of the Natural Product Research Network for Eastern and Central Africa (NAPRECA), Nairobi, Kenya, August 27 – 31, 2001.

Scholarship selection experience; Proposals for Scholarship; Hosting Scholars experience

- 2015 – Present - Member of the selection committee of [DAAD In country/In region \(German Academic Exchange Service\) postgraduate scholarships](#)
- 2014 – Present -Member of the selection committee for [Deans Committee research grant of the University of Nairobi, Nairobi, Kenya](#)
- 2017 – Present - Member of the selection committee of DAAD In country/In region (German Academic Exchange Service) postgraduate scholarships [at School of Graduate Studies, University of Nairobi](#)
- 2009 – 2015
As a Program officer of the Natural Products Research Network for Eastern and Central Africa (NAPRECA), I have processed and short-listed applicants for award of the DAAD/NAPRECA postgraduate scholarships
- 2015
Wrote the DAAD’s call for host institution proposal that awarded NAPRECA six postgraduate scholarship.

2014 – Present

Coordinator [Wandiga-Hull](#) Scholarship. This program enables the best chemistry graduate study for PhD at Binghamton University, New York, USA

2013 - Present

Facilitator – DAAD Proposal Training Workshop in Kenya, Sudan, Rwanda and Tanzania

September 2021

Chaired the Faculty of Science and Technology, University of Nairobi, committee writing a proposal in response to DAAD's call for Host institution for the 2023 – 2025 period.

Workshops Facilitated as a Resource Person

(1) Workshop on “Structure of Research Proposals in Natural Sciences”

I was invited by the DAAD South Africa office to conduct workshop on “Structure of Research Proposals in Natural Sciences” during their “10th DAAD South Africa Conference: International Research: Basic foundations for a fair cooperation” conference, online, 28 – 30 October 2021. The topics covered of my workshop were:

- I. How to identify a research problem
- II. Tools for research: Research4life, Open access and reference management
- III. Global goals (UN SDG)/Regional (AU Agenda 2063)/ National (SA 2030 NDP) as research agenda
- IV. Bold research/innovative ideas

(2) DAAD PhD Special Webinar Series Workshop on “My research proposal – the key to a successful DAAD PhD Scholarship Application”

Conducted this workshop online twice on 23rd June 2021 and 19th August 2021 for participants coming from the region.

(3) Workshop on “Computer Aided Drug Design in Natural Products Study”

A BMBF/DAAD “Phytochem project” three-Day Workshop on “Computer Aided Drug Design in Natural Products Study” attended by participants from different countries in Africa. 17 -19 April 2019 and April 23 – 25 August 2018, Egerton University, Kenya

(4) DAAD – “PhD Proposal Training Workshop“

I have conducted DAAD's “PhD Proposal Training Workshop“ workshop severally in Kenya, Tanzania, and Rwanda since 2012 to prepare potential PhD candidates for the PhD in Germany program. The task involved first selecting workshop participants based on their abstracts of abstracts for potential. The selected workshop participants will then be guided and instructed to write successful proposals for PhD funding from the DAAD. The topics covered are:

- Introduction to PhD proposal writing (DAAD perspective)
- Research Question and Objectives
- References, citation and reference management
- Writing the Introduction and literature review
- Writing your budget
- Putting it altogether

(5) E-library resources and management of citations and references electronically

I have conducted several seminars on “E-library resources and management of citations and references electronically” in Kenya (University of Nairobi, Moi University, Kabianga University, Maseno University, Taita Taveta University and Jaramogi Odinga University of Science and Technology (online)), Sudan, Rwanda and Tanzania.

(6) Workshop on [“How to prepare a scientific poster”](#)

Pan African Chemistry Network (PACN), Seminar Series, 16th February 2018, Nairobi, Kenya

(7) Workshop on “DPPH Antioxidant Assay”

14th NAPRECA Pre – Symposium workshop, University of Nairobi, Nairobi, Kenya, 1 –5 August. 2011, Nairobi, Kenya.

(8) Workshop on “Isolation and characterization of compounds from herbal extracts”.

A workshop on pharmaceuticals and herbal medicines organized by African Society for Drug metabolism and Development (ASDMD), 20-22 August, 2003. PanAfric Hotel, Nairobi, Kenya. The major topics of the workshop were Botanical identification of the plant, Literature search on the plant, Collection of plant materials, Drying and grinding, Extraction, Bioassay, Isolation/Separation, Structural elucidation, Derivatization/Structure modification.

(9) Training workshop on “Basic ¹H and ¹³C NMR for Structure Determination of Natural Products for non-chemists”

I conducted this workshop during the 15th (2013, Sudan) and 16th (2015, Tanzania) pre-symposium workshops of the Natural Products Research Network for Eastern and Central Africa (NAPRECA).

Professional Societies Membership

- I. [Natural Producers Research Network for Eastern and Central Africa \(NAPRECA\)](#)
- II. [Kenya Chemical Society \(KCS\)](#)
- III. [Royal Society of Chemistry \(RSC\)](#)
- IV. Kenya DAAD Scholars Association (KDSA)

Professional Societies Leadership

Secretary (May 2017 – Present)

The Pan African Chemistry Network (PACN), Kenyan – hub

Program officer (2009 – 2014)

The Natural Product Research Network for Eastern and Central Africa (NAPRECA)

Local Management Committee Member (2009 – May 2017)

The Pan African Chemistry Network (PACN)

National Secretary (2010 – 2014)

Kenya DAAD Scholars Association (KDSA)

Treasurer (2015 –2018)

Kenya Chemical Society, Nairobi Chapter

Hobbies

Hiking

Climbed [Mount Kenya](#) (2009) and [Mount Kilimanjaro](#) (2010) (the two highest peaks in Africa) with Killi Rovers, University of Nairobi

Marathon

Finished the Standard Half Marathon (2009, 2010 and 2014; the Kenya’s First lady Half Marathon (participated in two)

Community service

Motivational talk to high school students and charity

Reference

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I solemnly declare that all the information furnished in this document is free of errors to the best of my knowledge.

