

Academic Staff Profile

Personal Profile

Personal Details

Name: **Dr. Eric Masika MRSC**
Department: **Chemistry**
Designation/Position: **Lecturer/Researcher**
Email: masika.eric@ku.ac.ke

Area of Specialization:

New types of nanostructured inorganic and carbonaceous porous solids for gas adsorption (for environmental remediation) and water purification and Biosensors.

Research Interests:

- Probing porous nanomaterials and applications in electro biosensors, Solar dyes, water purification and sanitation.
- Application of Supercritical fluids/ Green Chemistry synthesis methods in synthetic routes.
- Thermal analysis and gas storage/ sequestration
- Proficiency in Microscopy and spectroscopic analytical techniques

Google Scholar:

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

ORCID ID: <https://orcid.org/0000-0003-2397-5882>



Dr. Eric Masika MRSC
Lecturer/Researcher –
Physical Chemistry/
Nanotechnology

Career Profile

Lecturer/Researcher/Consultant/Coordinator at Kenyatta University with research interests on new types of nanostructured inorganic and carbonaceous porous solids for gas adsorption (for environmental remediation) and water purification. Currently, I am working on efficacy of microencapsulated active ingredients for downstream tsetse fly repellence. Also with a view of integration of Nanoscience and Nanotechnology in Kenya's educational curriculum coupled with fostering Industrial partnership for potential scale up. Coordinated successful pilot project on Labster virtual simulations lab for sciences in the School of Pure and Applied Sciences published by [Commonwealth of Learning news](#). In addition, I spearheaded the signing of a MoU between the University of Nottingham and Kenyatta University that developed collaborative Nottingham-Kenya SPHEIR project on Transformation of Chemistry and Pharmacy Programmes. I have published close to twenty articles (three in progress) with 440 citations and h-index of 9 (Google Scholar).

My teaching/training areas at University level include modules in Physical Chemistry and Nanoscience/Nanotechnology (spearheading curriculum development). My current research focus is on application of nanomaterials in water remediation as well as novel feedstocks for nanomaterial fabrication. Currently supervising four PhD and ten Masters Students.

A certified recipient of Technology Enhanced Learning Continuing Professional Development Award by Staff Education Development Association (SEDA) of UK in Supporting Technology Enhanced Learning (STEL) pathway & Developing People and Enhancing Practice (DPEP) tutor under Strategic Partnerships for Higher Education (SPHEIR) with passion and commitment to lead in technology enhanced teaching and learning. This equipped me with relevant skills for supporting capacity development of e-moderators in higher institutions of learning.

As a member of the KU Digital School training team we trained over 1000 academic staff members on blended learning with focus on the development of interactive modules coupled with online facilitation and online setting as well as moderation of CATS/Assignments.

Currently privileged to serve as the Deputy Director Student Affairs has afforded me a great opportunity to plan/initiate and implement students' activities aimed at enhancing the overall student experience and satisfaction.

Academic & Professional Qualifications

- ❖ **2008-2012 PhD Chemistry**; Fabrication of nanostructured porous inorganic and carbon materials for catalysis and gas storage applications at The University of Nottingham; Supervisor:-**Prof. Robert Mokaya FRSC.**
During a multidisciplinary project I studied a novel class of porous nanostructured materials with tunable porosity for catalysis and gas storage applications. In particular, inorganic and carbonaceous materials at nanometre (10^{-9}) scale were prepared, fully characterized using a set of complementary analytical techniques.
- ❖ **2007-2008 MSc. Nanoscience (Merit)**: from the University of Nottingham. Nanoscience is a highly interdisciplinary course which combines modules and experiments from the schools of chemistry, physics, pharmacy and engineering. MSc Project supervised by **Sir Prof. Martyn. Poliakoff CBE, FRS.**
- ❖ **1998-1999 Post Graduate Diploma in Education (Credit)**; Moi University; Supervisor:- Project work supervised by **Dr. John Agak.**
- ❖ **1990-1995 Bachelor of Science, (Chemistry major) – 2:1**; Jomo Kenyatta University of Agriculture & Technology (JKUAT).

Employment History

✚ **Lecturer/Researcher : Kenyatta University, December 2013 - To Date**

Currently teaching Physical Chemistry Modules in the Department of Chemistry: - Applied Electrochemistry, Chemical Thermodynamics, Introduction to Physical Chemistry I, Advanced Electroanalytical Techniques, Heterogeneous Kinetics & Equilibria, Advanced Chemical Kinetics and Advanced Electrochemistry. I am also, involved in the supervision of Postgraduate students. I am currently, spearheading the development and integration Materials Science & Nanoscience and Nanotechnology in the University curriculum at undergraduate level by next academic year. In addition, being a committee member for the departmental consultancy unit, we partner up with Pest Control Products Board to carry out physicochemical and chemical analysis.

✚ **Postdoctoral Research Associate: The University of Nottingham, November 2012 – November 2013**

Developing protocols for optimized porosity modulation in nanostructured porous materials for multi-spectral magnetic resonance imaging (MRI) contrast agents, gas storage and catalysis applications. Administrative duties include group website management, ensuring that equipment's are safe and serviceable. Finally, teaching duties include contribution to the induction, supervision and support of PhD, MSc and fourth year project students.

- **2009 To 2013:- Students' mentor**; where I was responsible teaching literature and scientific communication skills to small groups of students.
 - **2008 To 2012:- Undergraduate Laboratory Demonstrator**; where I supervised first year students in laboratory skills, giving pre-lab talks, marking scripts and providing feed-back to students on their work.
 - **2008 To 2013:- Student Ambassador**; where I worked independently and/or teams by leading groups of prospective students on campus tours during open days, UCAS and onsite visits. I also, would regularly be asked to help train new ambassadors when they are recruited.
- ✚ **Graduate Teacher 1; Teachers' Service Commission; February 1997 To September 2007:-** my duties and responsibilities as Head of department (science) included coordination of science

curriculum implementation. I also prepared annual budget proposals for science department. My teaching subjects were chemistry and mathematics. In addition, I was contracted by Kenya National Examination Council (KNEC) as a national examiner in chemistry paper 2. I

- ✚ **Pharmacy Assistant; Yaya Chemists Ltd; 1995 To 1997:-** where my duties and responsibilities involved dispensing medication as well as liaising with pharmaceutical companies on new lines of medicines.

Achievements

- Engaged in localising and tutoring six modules in the Extend Africa (EXT-AFR) programme offered by the Commonwealth of Learning in partnership with Digital School of Virtual and Opening Learning, Kenyatta University.
- Developed two refereed learning modules based on the University Blended Learning policy.
- A member of Digital School training team equipped over 1000 academic staff in Kenyatta University and Ashesi University in Ghana with appropriate skills for the development of interactive online modules as well as e-moderation. In addition over 1190 interactive modules were developed and uploaded onto the LMS.
- Founding Coordinator for restructured Continuing Education Programme under Blended Learning mode of delivery streamlining its programme delivery.
- Committee member that organised and accomplished successful virtual orientation for first year students.
- Mentored two innovations successfully to start-up levels at Chandaria Business Innovation Incubation Centre - Kenyatta University.

Publications

Referred Journals

- i) M. Ndikau, N. Noah, D. M. Andala and **E. Masika**, Antibacterial activity of green synthesized silver nanoparticles using *Citrullus lanatus* fruit rind extract, *Journal of the Kenya Chemical Society* **13-1** (2020), 22-27.
- ii) Bonface Juma Wafula, **Eric Masika** and Charles Onindo; ZnO Nanoparticles (ZnO-NPs): Synthesis Using *Tithonia diversifolia*, Characterization and in-vitro Antimicrobial Bioassays, *IOSR Journal of Applied Chemistry (IOSR-JAC)* e-ISSN: 2278-5736. Volume 13, Issue 8 Ser. I (August. 2020), PP 14-21.
- iii) S. N. Nyamu, L. Ombaka, **E Masika** and M. Ng'ang'a (2019), One-pot microwave-assisted synthesis of size-dependent l-glutathione-capped spherical silver nanoparticles suitable for materials with antibacterial properties, *Interdisciplinary Nanomedicine* Volume 4 Issue 3 86-94.
- iv) Nicholas Musila, Mathew Munji, Justus Simiyu, **Eric Masika**, Raphael Nyenge and Miriam Kineene, Characteristics of TiO₂ Compact Layer prepared for DSSC application *Traektorîâ Nauki = Path of Science*. 2018. Vol. **4**, No 10.
- v) Ernest O. Nachaki,, Peter M. Ndangili, Noah M. Naumi and **Eric Masika**, Nickel-Palladium-Based Electrochemical Sensor for Quantitative Detection of Formaldehyde; *Chemistry Select* Vol. 3,(2) pp 384–392, 2018.
- vi) Nicholas Musila, Mathew Munji, Justus Simiyu, **Eric Masika** and Raphael Nyenge, Effect of TiO₂ Compact Layer on DSSC Performance, *Traektorîâ Nauki = Path of Science*. 2018. Vol. **4**, No 9.
- vii) Joseph Odundo, Naumih Noah, Dickson Andala, Janet Kiragu and **Eric Masika**, Development of an electrochemical nano-biosensor for rapid and sensitive diagnosis of bilharzia in Kenya, *South African Journal of Chemistry*, Vol **71**, 2018, 127 -134.
- viii) Nicholas Musila, Mathew Munji, Justus Simiyu, **Eric Masika** and Raphael Nyenge, Optical Properties and Analysis of OJL Model's Electronic inter-band Transition Parameters of TiO₂ Films, *Traektorîâ Nauki = Path of Science*. 2018. Vol. **4**, No 7.

- ix) Nyamu Samuel, Lucy Ombaka, **Eric Masika**, and Margaret Ng'ang'a, Antimicrobial Photodynamic Activity of Phthalocyanine Derivatives; *Hindawi :Advances in Chemistry Accepted 15 Jan, 2018*.
- x) Ojiambo, O. C, Nawiri, M. P. and **Masika, E.**, Reduction of Cyanide Levels in Sweet cassava Leaves Grown in Busia County, Kenya Based on Different Processing Methods, *Food Research 1 (3) : pp - pp (June 2017)*.
- xi) M. Ndikau, N. Noah, D. M. Andala and **E. Masika**, Green Synthesis and Characterization of Silver Nanoparticles Using Citrullus lanatus Fruit Rind Extract, *Hindawi: International Journal of Analytical Chemistry*, Volume 2017.
- xii) **E. Masika** and R. Mokaya, Exceptional gravimetric and volumetric hydrogen storage for densified zeolite templated carbons with high mechanical stability', *Energy Environ. Sci.*, 2014, 7, 427 – 434.
- xiii) **E. Masika** and R. Mokaya, High surface area metal salt templated carbon aerogels via a simple subcritical drying route: Preparation and CO₂ uptake properties, *RSC Advances*, 2013, 3, 17677 - 17681.
- xiv) **E. Masika**, R. Bourne, T. Chamberlain and R. Mokaya, "Supercritical CO₂ mediated incorporation of Pd onto templated carbons: A route to optimising the Pd particle size and hydrogen uptake density", *ACS Applied Materials & Interfaces*, 2013, 5 (12), pp 5639 - 5647.
- xv) **E. Masika** and R. Mokaya, "Preparation of ultrahigh surface area porous carbons templated using zeolite 13X for enhanced hydrogen storage", *Progress in Natural Science: Materials International*, 2013, 23(3), pp 308 - 316.
- xvi) **E. Masika** and R. Mokaya, "Hydrogen storage in high surface area carbons with identical surface area but different pore size: Direct demonstration of the effects of pore size", *Journal of Physical Chemistry C*, 2012, 116 (49), pp 25734 – 25740.
- xvii) **E. Masika** and R. Mokaya, 'Mesoporous Aluminosilicates from a Zeolite BEA Recipe', *Chemistry of Materials*, 2011, 23(9), pp 2491 – 2498.

Referred Learning Modules

- Dr. Eric Masika and Prof. Charles Otieno Onindo; (December, 2020); SCH 852 *Heterogeneous Kinetics and Equilibria*; Digital School of Virtual and Open Learning in Collaboration with Department of Chemistry; School of Pure and Applied Sciences. VETTED BY: Dr. Lucy Kiruri.
- Prof. Charles Otieno Onindo, Dr. Eric Masika and Mr Gitari Mugambi (September, 2020) SCH201: *Chemical Thermodynamics*; Digital School of Virtual and Open Learning in Collaboration with Department of Chemistry; School of Pure and Applied Sciences. VETTED BY: Dr. Kibe Macharia.

Consultancy and Project Reports

- Dr. George Onyango, Dr. Rhoda Gitonga, Dr. Elizabeth Mwaniki, Dr. Samuel Mutweleli, Dr. Syprine Oyoo and **Dr. Eric Masika**; *Feasibility Study Report: EXTEND Programme*; Commonwealth of Learning; 8th March 2021.
- Prof. Micheal Gicheru, Dr. Anne Maundu, Dr. Joshua Mutiso, Dr. Paul Muoria, Dr Adelaide Mutune, **Dr. Eric Masika**, Dr. Margaret Ng'ang'a, Dr. Evans Changamu, Dr. Patroba Odeny, Dr. Regina Ntabo; *Feasibility Study Report: STEM Labs*; Commonwealth of Learning; 3rd May 2021.

Scholarly Presentation at Conferences/Workshops/Seminars-

- i) **Eric Masika**; Leadership & Strategy Development Workshop; By Collaboration for Entrepreneurial Universities ((CEPU) Workshop Series IV; Kenyatta University 1st – 7th October 2020.
- ii) **Eric Masika**; Commonwealth of Learning Workshop on Quality Assurance Review Tool and Improvement Plans: A PEBL/SPHEIR Engagement Activity – held in Kenyatta University, Nairobi, 11th – 19th November 2019.
- iii) **Eric Masika**; Building a Diversified and Transformative Workforce for the 21st Century Job Market; by Directorate of Career Development and Mentoring Programmes; 22nd October 2019.
- iv) **Eric Masika**; Training of Trainers Workshop for Staff Mentors and Growing Leaders Facilitators; by Directorate of Career Development and Mentoring Programmes; 7th November 2019.

- v) **Eric Masika**; Leadership & Strategy Development Workshop; By Collaboration for Entrepreneurial Universities ((CEPU) Workshop Series III; Kenyatta University 1st October 2019.
- vi) **Eric Masika**; CEPU Training for Service-Oriented Administrations; By Collaboration for Entrepreneurial Universities ((CEPU) Workshop Series; Kenyatta University 11th -13th June 2019.
- vii) **Eric Masika**; Leadership & Strategy Development Workshop; By Collaboration for Entrepreneurial Universities ((CEPU) Workshop Series; Kenyatta University 12th -14th February 2019.
- viii) Bernadatte M. Ratemo, **Eric Masika**, Paul Mireji and Ahmed Hassanali; Pan Africa Chemistry Network congress 2018: Managing resources through chemistry: Wealth not Waste. 6th - 8th November 2018, Nairobi, Kenya; Microcapsules for downstream deployment of an Optimized 4-Component Tsetse- Repellent Blend. (Best Poster PACN Award).
- ix) **Eric Masika**; **Applied** Entrepreneurship Education Programme (AEEP) Train the Trainers Workshop; Collaboration between Kenyatta University and Hochschule Neu-Ulm University of Applied Sciences -1st November 2018.
- x) **Eric Masika**; HEInnovate Assessment Tool Workshop II; _CEPU Project _ Kenyatta University; 4th October 2018.
- xi) **Eric Masika**; Leadership & Strategy Development Workshop; By Collaboration for Entrepreneurial Universities ((CEPU) Workshop Series; Kenyatta University 3rd October 2018.
- xii) **Eric Masika**; HEInnovate Assessment Tool Workshop; _CEPU Project _ Kenyatta University; 19th July 2019.
- xiii) **Eric Masika**; United Nations Environmental Assembly 3 (UNEA3) with participations in UN Science-Policy-Business Forum on the Environment, taking place at UN Environment's headquarters in Nairobi 27th November – 6th December 2017. (Participation)
- xiv) Michael Ndikau, Naumih M. Noah, Dickson M. Andala, **Eric Masika**; 9th Kenya Chemical Society (KCS) International Conference- USIU-Africa, Nairobi, Kenya 9th-12th May, 2017: Investigation of the Anti-Bacterial activity of Silver Nanoparticles synthesized Using *Citrullus lanatus* fruit rind extract. (Poster)
- xv) **Eric Masika**; Pan Africa Chemistry Network Congress 2016 – Sustainable Water Resources in Africa; 30th November -2nd December 2016.
- xvi) **Eric Masika**; KCS Nairobi Chapter Symposium; Theme – Chemistry for Sustainable Development; Nairobi, Kenya – 23rd April 2016.
- xvii) **Eric Masika**; The 8th International Kenya Chemical Society Conference; Theme – Applied Chemistry and Technology in Industry; held at The University of Nairobi, Chiromo Campus, Millennium Hall; 5th – 8th May 2015.
- xviii) **Eric Masika**, 5th IUPAC International Conference on Green Chemistry, Durban; South Africa, 17th – 21st August 2014: Porosity Modulation of Mesoporous Aluminosilicates via Simple Washing/Refluxing in Water for Applications in Water Purification (Talk).
- xix) **Eric Masika**; RSC-P& G SYMPOSIUM ON: Regulatory Harmonization, Hygiene and Sustainability July 8th and 9th 2014 Chiromo Campus University of Nairobi: Provision of sustainable water for domestic application. (Talk)
- xx) **Eric Masika**, Kenya Chemical Society, Nairobi Chapter AGM cum workshop, Kenyatta University on 15th February 2014 (Attendance).
- xxi) **Eric Masika**: 1st Stakeholder's workshop to discuss the draft Policy on exploitation of Nanotechnology at Utalii hotel, Nairobi, Kenya on 16th January, 2014. (Attendance).
- xxii) **Eric Masika** and Robert Mokaya, 'TA Instruments - UK Materials Characterization seminar, University of Bradford, 13th and 14th September 2011 'Synthesis and Characterization of Pd-doped Zeolite Templated Carbons for Hydrogen Storage.'(Poster).
- xxiii) **Eric Masika**, Richard Bourne, Thomas Chamberlain and Robert Mokaya, 34th Annual British Zeolite Association Conference, Edinburgh, 11 -13th April 2011, 'Supercritical CO₂ mediated Incorporation of Palladium Nanoparticles into Zeolite Templated Carbons with enhanced Hydrogen Storage; (Presentation).
- xxiv) **Eric Masika** and Robert Mokaya, 34th Annual British Zeolite Association Conference, Edinburgh, 11 - 13th April 2011. 'Mesoporous Aluminosilicates via Molecular Templating; (Poster).

- xxv) **Eric Masika** and Robert Mokaya, Driving innovation in Chemistry and Engineering Lectures, The University of Nottingham, 12th March 2010, ‘Templating Routes to Nanostructured and Mesosstructured Porous Materials’; (Presentation).
- xxvi) **Eric Masika** and Robert Mokaya, 2010 Physical Chemistry Postgraduate Symposium, 9th July 2010. ‘Synthesis and Characterization of Pd-doped Zeolite Templated Carbons for Hydrogen Storage; (Presentation).
- xxvii) **Eric Masika** and Martyn Poliakoff, MSc. Nanoscience (2007/2008) Research day, The University of Nottingham, 21st August 2008; ‘The Supercritical Hydrothermal Synthesis of Metal Oxide Nanoparticles; (Presentation).

Quality Teaching, Learning and Mentorship

Students Evaluations

- SCH 101 Introduction to Physical Chemistry – Academic Year; 2019/2020 – First Semester.
- SCH 201 Chemical Thermodynamics - Academic Year; 2014/2015 – First Semester.
- SCH 852 Heterogeneous Kinetics and Equilibria - Academic Year; 2014/2015 – First Semester.

Training in Higher Education

- Developing People and Enabling Practice (DPEP) course while tutoring a group six academic staff by Staff Education Development Association (SEDA) of UK: March. 2020 to November 2020.
- Research Writing in the Sciences by INSAP (AUTHORAID); in Collaboration with Royal Society of Chemistry/Pan Africa Chemistry Network; 10th September 2019 to 9th December 2019.
- The Study Tour on Start-Up Development: the joint project “Collaboration for Entrepreneurial Universities-CEPU” conducted by the Bonn-Rhein-Sieg University of Applied Sciences, the University of Leipzig, Wismar University of Applied Sciences and Leuphana University as well as Kenyatta University and Mount Kenya University Leipzig Germany; between 23rd to 29th June 2019.
- Partnerships in Enhanced Blended Learning (PEBL) Training on Interactive Content Development, Online Facilitation and Staff Capacity Development by Staff Education Development Association (SEDA) of UK: Feb. 2018 to Dec 2018.
- Intensive Learning and Teaching Programme (ILTP) Course in Higher Education Learning and Teaching with main focus on enhancement of skills for teachers and supporters of student learning; Venue:- The University of Nottingham; Dates:- 17th -22nd June 2011.
- Advanced presentation skills, skills for demonstrating in chemistry laboratories, marking and assessment for scientists and a practical look at core teaching skills.

Ongoing supervisions

- Gathiru Marylyn Mugure, I56/37610/2017: Topic**; Solar-disinfection incorporated with green synthesised silver-titania nanocomposite, using watermelon rind extract, for enhancement of water-sanitation standards of Obunga slum residents. **(Masters)**
- Nalobile Protus (MSc) I84/32281/2015: Topic**; Design and Validation of a Kiln for Production of Pozzolana Cement at a Micro and Small Enterprise Scale. (PhD)
- Wafula Bonface Juma, (B.ED SCIENCE) I56/CE/25746/2014: Topic**; Synthesis Of Rhodium And Ruthenium- Doped Zinc Oxide Nanostructures For Ethanol, Carbon (II) Oxide And Hydrogen Sulphide Sensors.
- Okumu M. Assumptor (B.Ed Sci); I56/29971/2014: Topic**; Probing the optimal blends of pozzolans to develop supplementary cementing material within Busia County, Kenya. **(submitted)**
- Pauline Nanjala Juma (B.Sc.) 156/27266/2014): Topic**; Citric acid modified sugarcane bagasse for Cu (II), Cd (II), Pb (II) and Cr (VI) ions removal in wastewater.
- Okello James Olando, B.Ed (Sci) – KU: I56/23324/2013: Topic**; High capacity Li-ION battery anodes using nanostructured silicon from wheat husks.

Supervision of Postgraduate Students

Masters (Reverse Chronological order)

- i) **Daniel Murage, (B.Ed Sc) I56/CE/28842/2015: Topic**; Adsorption of Selected Heavy Metals Using Modified *Pennisetum purpureum* Plant Stalks: A Case Study of River Ruiru, Kiambu County, Kenya.
- ii) **Wachira Samuel Mutahi, (BSC and PGDE) I56/CE/34258/2016: Topic**; Customized Potassium Foliar Feed for Optimum Yield of Maize in Nyeri County, Kenya.
- iii) **Ndambo Michael Mwashighadi (BSc. Chem) I56/CE/26148/2013: Topic**; Electrochemical Treatment of Textile Dye Wastewater by Aluminium and Stainless-Steel Electrodes for Potential Re-Use in Agricultural Sector.
- iv) **Bernadatte Moraa Ratemo (B. Sc. Analytical Chem. with Management); I56/37034/2016; Topic**; Microencapsulation of an optimized 4-component tsetse- repellent blend into β -cyclodextrin and the kinetics of release.
- v) **Nafuna Elizabeth Wanyonyi (B.E.D SC) REG NO.156/CE/24489/2012; Topic**; characterisation of TiO₂ based dye-sensitized solar cell prepared by screen printing method.
- vi) **Ernest Ojiambo Nachaki (Bed. SC) I56/CE/25228/2013; Topic**; Fabrication of nickel-palladium based electrochemical sensor for quantitative detection of formaldehyde in water.
- vii) **Sigei Kipkirui Enock B.Ed (Sci) – REG No. 156/22808/2012: Topic**; Low cost nanostructured silicon for high performance Li-ion battery anodes from rice husks (RH).
- viii) **Michael Ndunda Ndikau B.Ed. (Sc.): I56/20027/2012; Topic**; Green synthesis of silver nanoparticles using citrullus lanatus rind extract as reductant for anti-bacterial applications against selected bacteria.
- ix) **Charles Ojiambo Ogombe (BED Sci): REG NO: I56/23844/2012: Topic**; Determination of cyanide levels and effective methods of processing cassava leaves used as vegetables in coast and western regions, Kenya.
- x) **Markus Okoth Odhiambo (BE.D SC.) REG No I56/CE/21449/2012; Topic**; Thermo-chemical characteristics of peat as a potential Gasfier fuel in the Lake Victoria basin.

PhD.

- i) **Nyamu N. Samuel (MSc. Chemistry); I84/32254/2015: Topic**; Synthesis, spectrophotometric and photocatalytic activity of novel Phthalocyanine conjugated to metal nanoparticles and study of their antimicrobial properties.
- ii) **Musila Nicholas Muendo (M. Sc): REG. NO. I84/32067/2015: Topic**; Characterization and efficiency improvement studies of TiO₂ based dye-sensitized solar cells.

Professional/Consultancy

Networks/Collaborations

- Spearheaded the University of Nottingham –Kenyatta University Collaboration.

Consulting for organizations/institutions

- **Eric Masika**; Programme Localiser and Tutor for Extend-Africa (EXT-AFR); Jan 2020 –May 2022.
- **Eric Masika**; Supported Co-Facilitator in Digital Literacy Lab for Educators in Global Perspective; By Commonwealth of Learning (COL); 28th April 2021 – 9th June 2021.
- **Eric Masika**; The Young Scientists Kenya (YSK) Natural Sciences Online Outreach 17th October 2020. (Talk)
- **Eric Masika**; Representative of Pan Africa Chemistry Network/Royal Society of Chemistry at Kenya Science and Engineering Fair 2018; 11th -13th April 2018. (Award of Chemistry Prizes)
- Committee Member Department of Chemistry Consultancy Unit (KU-DCCU); accredited by Pest Control Products Board (PCPB): Since April 2016 – to May 2018.
- Stakeholders Workshop for Program Development; MSc Material Sciences_ Multimedia University of Kenya; Thursday 29th October 2015.

Membership to acad/prof bodies

- Committee Member – PACN/RSC Local Management Committee- since Jan 2017 to Date
- Member:- Royal Society of Chemistry since April 2014 to Date

- Member: Kenya Chemical Society since January, 2014 to Date
- Member:- British Zeolite Association since April 2011 to April 2012
- Committee Member:-The Royal Society of Chemistry East Midlands Section Trust; from November 2008 to March 2013.
- Associate Member: - Royal Society of Chemistry since September 2008 to January 2014.
- Member: - Midlands Physics Alliance Graduate School since January 2008 to January 2009.

Any other (Editorship/Peer review, external examiner, etc)

- **Journal Reviewer:** PLOS Neglected Tropical Diseases; January 2021.
- **External Examiner:** Nelson Mandela African Institution of Sciences and Technology, effective November 2020.
- **KNEC Examiner,** 233/2 (Chemistry Paper 2); November 1999 to September 2007.

Administrative and Responsibilities

Recognised university administrative positions

- Deputy Director Student Affairs 4th November to Date.
- Ag. Director, Centre for Teacher Professional Development and Excellence; 4th March 2019- 5th May 2019.
- Coordinator, Continuing Education Programme (CEP), Digital School; 12th Jan, 2018 to Date.
- Digital School Coordinator for School of Pure and Applied Sciences since July 2014 to June 2017.

Other responsibility in the university

- Ag. Director, International Programmes and Collaborations; 3rd -19th Dec, 2018.
- Ag. Dean, Digital School; 16th – 23rd April 2018
- In charge of Departmental Website: Chemistry Department since August 2016 to Date
- Team Lead for BEd. (Science) Department Curriculum review: Sept. 2016 to date
- Zonal Coordinator: Teaching Practice and Mentorship since March 2016 to Feb 2018
- STEP Trainer: Since March 2015 – to - Date
- Assistant Examination Coordinator: Chemistry Department; Since Oct 2015- to- January 2018
- Teaching Practice Supervisor since May 2014 to Date
- Team Leader – Departmental Secretariat since May 2014 to Date
- Committee Member – Departmental MSc Industrial Chemistry review committee since May 2014 to Date
- Mentor; Kenyatta University Mentorship Programme since March 2014 to Date.

Community Engagements and Other Contributions

Research funding

- **Co-Principal Investigator;** (2020) Support for virtual labs for STEM subjects pilot project and capacity building of staff in online and distance teaching using the Extend – Empowered Educator Professional Learning programme by Commonwealth of Learning (COL), Canada; CAD 17,360.
- **Principal Investigator;** (2020) Green chemistry synthesis of Iron doped TiO₂ nanoparticles for potential applications in organic wastewater treatment; under FLAIR Fellowships 2021; Application ID - FLR\R1\211289; GBP 299,581.86; (Unsuccessful).
- **Co-Principal Investigator;** (2017) Embedding Sustainability: Advanced Materials for Energy Applications under the Newton Fund; Application ID; 2017-RLWK8-10349; GBP 44,000; (Unsuccessful).
- The 5th IUPAC International Conference on Green Chemistry (2014) held in Durban, South Africa; Financial Support; USD 792.
- **Co-Principal Investigator;** (2012 -2013) Postdoctoral Pump-priming project under EPSRC to investigate the physical concept underlying the hollow spheres contrast agents in Magnetic Resonance Imaging (MRI).

- PhD Chemistry Scholarship (2008 -2012); School Merged by the University of Nottingham, UK; Full Scholarship inclusive Stipend.
- MSc Nanoscience Scholarship (2007 -2008); By All Saints Educational Trust (ASET, UK); GBP 12,000.

Community outreach

- **Chairman Academic Committee** and member of Board of Management – Forestal S.A. Secondary School, P.O. Box 344-30106 Turbo.
- **Volunteering:**
 - **STEM Ambassador;** Motivational talks encouraging students into pursuing courses in Science, Technology, Engineering and Mathematics (STEM).
- **Number Partners Volunteering Community Ambassador:** Aimed at inspiring children from “under represented” student groups to develop their understanding and love of math’s by taking a new and innovative approach to learning.

Recognitions awards and hours

- Vice-Chancellor’s Achievement Award for exemplary Student Ambassador; University of Nottingham, UK.

Any other sub-category

- **Eric Masika;** Integrity Assurance Officers Training held at Kenyatta University Conference Center; By Ethics and Anti-Corruption Commission; 25th – 28th June 2018.
- Volunteer/Coordinator; University of Nottingham Alumni Event held at Serena Hotel, Nairobi on 12th May 2015.
- Reference Letter by Dr. June McCombie, University of Nottingham.

Referees

Prof. Robert Mokaya FRSC
Professor of Materials Chemistry
and Pro-Vice-Chancellor for
Global Engagement
The University of Nottingham
University Park, Nottingham
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Chairman, Chemistry
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