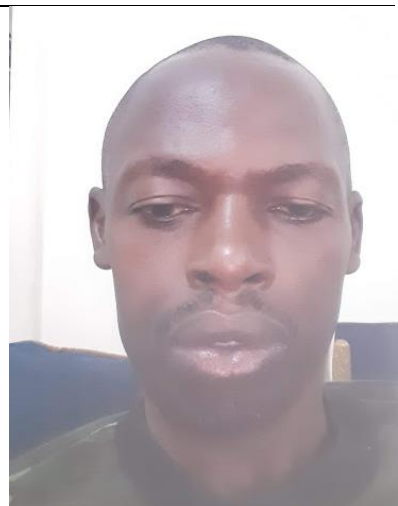


Academic Staff Profile

Personal Profile

Personal Details

Name: Mbuvi Harun Mbatha
Title/Qualification: Dr. / PhD
Department: Chemistry
Designation/Position: Senior Lecturer and Chairman of Department
Email: Mbuvi.harun@ku.ac.ke
Area of Specialization:
- Inorganic Chemistry
- Catalysis
Research Interests:
- Environment, Wastewater Treatment, Soil Fertility, Adsorption, Foliar Fertilizers, Catalyst, Organometallics, Porous Materials, Soil Chemistry, Coordination Compounds
Organometallic Compounds, Porphyrins
- Exploring and developing materials, techniques and practices that offer solutions to global and regional challenges through multidisciplinary research approach.
Google Scholar:
<https://scholar.google.com/citations?user=pZCRZJ0AAA&hl=en>
ORCID ID: <https://orcid.org/0000-0002-3246-768X>



Academic & Professional Qualifications

2007: Ph.D

Research Project – Inorganic Chemistry; Iowa State University, Ames, Iowa, USA

1998: Masters of Science

Research Project – Inorganic Chemistry; Kenyatta University, Nairobi, Kenya

1994: Bachelor of Science, (Chemistry Major); Second Class Honors (Upper Division), Jomo Kenyatta University of Science and Technology

1989: Kenya Advanced Certificate of Education (KACE), Upper Hill High School, Nairobi.

1987: Kenya Certificate of Education (KCE), Kabete Technical School, Nairobi.

Employment History

2000 – 2008: Tutorial Fellow in Inorganic and General Chemistry Department of Chemistry, Kenyatta University.

2002 – 2007: Teaching/Research Assistant, Iowa State University, Ames, Iowa, USA

- 2009 –2014 Departmental Examination coordinator, Department of Chemistry, Kenyatta University.
- 2008 – 2018: Lecturer in Inorganic and General Chemistry, Department of Chemistry, Kenyatta University.
- 2018 – To date: Senior Lecturer in Inorganic and General Chemistry, Department of Chemistry, Kenyatta University.
- 2020 – To date: Chairman, Department of Chemistry, Kenyatta University.

Publications

Referred Journals

- 1) Njue Martin, Mbuvi Harun*, Margret Nga'nga', Mbugua Gerald (2020). *Using Cilantro (Coriandrum Sativum) to Remove Cadmium from Contaminated Water*, **World Environment** 2020, 10(1): 1-9 DOI: 10.5923/j.env.20201001.01
- 2) Adamu Abdulhameed, Harun M. Mbuvi*, Evans O. Changamu. (2020), *Synthesis of Cellulose-Based Superabsorbent Hydrogel from Rice Husk Using a Microwave*. **American Journal of Materials Science** 2020, 10(1): 1-8 DOI: 10.5923/j.materials.20201001.01
- 3) Adamu Abdulhameed, Harun M. Mbuvi, Evans O. Changamu, Francis M. Maingi (2019), *Microwave synthesis of Carboxymethylcellulose (CMC) from Rice Husk*. **IOSR Journal of Applied Chemistry (IOSR-JAC)** e-ISSN: 2278-5736. Volume 12, Issue 12 Ser. I (December. 2019), PP 33-42 www.iosrjournals.org
- 4) F MAINGI, M Mwihaki Ng'ang'a, HM Mbuvi, H Mwangi, (2019) *Clay-Rice Husk Ash based Geopolymers for Remediation of Pb (II) and Cd (II) from Wastewater*, **Egerton Journal of Science and Technology** 17 (1-139), 15-28
- 5) F. M. Maingi, H. M. Mbuvi, M. M. Ng'ang'a, H. Mwangi; (2018) *Adsorption of Cadmium Ions on Geopolymers Derived from Ordinary Clay and Rice Husk Ash*; **International Journal of Materials and Chemistry** 8(1): 1-9 doi: 10.5923/j.ijmc.20180801.01
- 6) F. M. Maingi, H. M. Mbuvi, M. M. Ng'ang'a; (2018) *Aluminophosphates Derived from Tea Leaves and Pumpkin Seeds Ashes Adsorb Lead Ions from Contaminated Water* **Frontiers in Science**, 8(1): 1-10 DOI: 10.5923/j.fs.20180801.01

- 7) Daniel Muvengi; Harun Mbatha Mbuvi; Margaret Ng'ang'a; Removal of Pb²⁺ and Cd²⁺ Ions, Colour and Turbidity from Water Using Carbon and Ash Derived From Maize Cobs; **IOSR Journal of Applied Chemistry**; (2017), 10(06):58-68
- 8) Adamu Abdulhameed; Harun Mbatha Mbuvi; Evans Changamu; Removal of Fluoride Ion by Silicon Nitride Powder; **Int J Water Wastewater Treat**; (2017), 3(1): doi <http://dx.doi.org/10.16966/2381-5299.137>
- 9) F M Maingi; Harun Mbatha Mbuvi; Margaret M. Nganga; Remediation of Water Contaminated with Cr⁶⁺ and Cd²⁺ Using Aluminophosphates Derived from Ashes of Tea Leaves and Pumpkin Seeds; **IISTE Chemistry and Materials Research** (2016), 8(7):94-102
- 10) Moses M Mbugua; Margaret M Nganga; Benson Wachira; Harun Mbatha Mbuvi; Removal of Lead Ions and Turbidity from Waste Water by Adsorbent Materials Derived from Cactus Leaves; **IISTE Journal of Natural Sciences Research** (2016), 6(14):63-72
- 11) Mbugua Gerald, Mbuvi Harun M.*, Muthengia Jackson; Rice Husk Ash Derived Zeolite Blended with Water Hyacinth Ash for Enhanced Adsorption of Cadmium Ions; **current world environment**. (2014); 9(2):280-286. <http://dx.doi.org/10.12944/CWE.9.2.08>
- 12) Kenyanya, O., Mbuvi, H.M.*, Muthengia, J.M. and Omayo, E.K.; Use of Adsorption Isotherm Models to Determine Potassium Fertilizer Acreage Doses for Optimum Maize Growth and Yields in Nyamira County, Kenya; **International Journal of Agriculture and Crop Science**, (2014); 7(15):1525. <http://ijagcs.com/wp-content/uploads/2014/11/1525-1536.pdf>
- 13) Nasiebanda, Roselyne; Onindo, Charles O.; Mbuvi, Harun M.*; Speciation Of Cadmium and Lead in Garage Soils From Ngara- Nairobi and Their Levels in Nearby Vegetables and Water; **International Journal of Physical and Social Sciences**, (2014); 4(3):89-100. http://www.ijmra.us/project%20doc/2014/IJPSS_MARCH2014/IJMRA-4729.pdf
- 14) Kenyanya, O Muthengia, J.M., Mbuvi, H.M., Omayo, E.K; Comparative Studies of Four Parametric Models for Potassium Adsorption in Soils of Nyamira County, Kenya, **International Journal of Management, IT and Engineering** (2013); 3(11):32-42. http://www.ijmra.us/project%20doc/IJMIE_NOVEMBER2013/IJMRA-4073.pdf
- 15) Kenyanya Omanga, Jackson Wachira, Harun Mbuvi *; Determination of Potassium Levels in Intensive Subsistence Agricultural Soils in Nyamira County, Kenya. **International Journal of Agriculture and Forestry**. (2013); 3(7):294-302. <http://article.sapub.org/10.5923.j.ijaf.20130307.06.html>
- 16) Chengo Katana, Murungi Jane, Mbuvi Harun*: Speciation of Zinc and Copper in Open-Air Automobile Mechanic Workshop Soils in Ngara Area-Nairobi Kenya. **Resources and Environment**. (2013); 3(5):145-154. doi:10.5923/j.re.20130305.06 <http://article.sapub.org/10.5923.j.re.20130305.06.html>
- 17) Chengo Katana, Murungi Jane, Mbuvi Harun*: Speciation of Chromium and Nickel in Open-Air Automobile Mechanic Workshop Soils in Ngara, Nairobi, Kenya. **World environment**. (2013); 3(5):143-154. doi: 10.5923/j.env.20130305.01. <http://article.sapub.org/10.5923.j.env.20130305.01.html>
- 18) Naftali T. Muriithi*, Charles O. Onindo, Harun M. Mbuvi and Dickson M. Andala: Oxidation of cyclic amines by molybdenum(II) and tungsten(II) halocarbonyls, [M(CO)4X2]2 (M = Mo, W; X = Cl, Br). **Bulletin of the Chemical Society of Ethiopia** (2013); 27(2):233. <http://dx.doi.org/10.4314/bcse.v27i2.8>

- 19) Harun M. Mbuvi, Erik R. Klobukowski, Gina M. Roberts, L. Keith Woo: OH insertion and tandem NH insertion/cyclization reactions using an iron porphyrin as catalyst with diazo compounds as carbene sources. **Journal of Porphyrins and Phthalocyanines - J Porphyr Phthalocya.** (2010); 14(03):284. DOI: 10.1142/S1088424610001982
- 20) Harun M. Mbuvi, L. Keith Woo: Addition of carbenes derived from aryldiazoacetates to arenes using chloro(tetraphenylporphyrinato)iron as catalyst. **Journal of Porphyrins and Phthalocyanines - J Porphyr Phthalocya.** (2009); 13(01):136 DOI: 10.1142/S1088424609000036.
- 21) Harun M. Mbuvi, L. Keith Woo: Catalytic C–H Insertions Using Iron(III) Porphyrin Complexes. **Organometallics** (2008); 27(4):637-645.

Conference/Workshops/Seminar Papers

Harun Mbatha Mbuvi: *Speciation of Cadmium and Lead in Garage Soils from Ngara-Nairobi and Their Levels In Nearby Vegetables and Water.* The 7 th International Kenya Chemical Society Conference, Maseno University, Kenya; 10/2012

Harun Mbatha Mbuvi: *New Catalytic Reactions of Iron(III) Porphyrins.* International Conference on Porphyrins and Phthalocyanines (ICPP-5); 07/2008

Harun Mbuvi, Department of Chemistry, Woo Group, Iowa State University "Novel Reactions Catalyzed By Metal Porphyrin Complexes". April 11, 2007

Harun Mbuvi, Woo Group "Catalytic C-H Insertions Using Silver, Copper and Iron (III) Porphyrin Complexes" March 25, 2005, Friday, 1352 Gilman,

Funded Projects

Kenyatta University Vice Chancellors' Innovation Grant Award "Commercialization of Locally Developed Agricultural Inputs-Foliar Fertilizers, Hydroponic Nutrient Solutions and Rooting Powders" –Project Aimed at empowering small scale farmer and boost development

Supervision of Postgraduate Students

Masters

SN	Name & Reg No.	Thesis Title/Link	Supervisors * principal supervisor	Year graduated
1	Nasiebanda, Roselyne I56/CE/11211/2007	Speciation of cadmium and lead in soils from open-air motor vehicle workshop in Nairobi and levels in nearby vegetables and stream http://ir-library.ku.ac.ke/handle/123456789/6842	Harun Mbuvi * Charles Onindo	Dec 2012
2	Mutua, Simon	Lead, Cadmium and Zinc		

	Mutuku I56/CE/11716/2007	speciation in Garage Soils, their Levels in Kales and Water along Katothyani Stream, Machakos Town, Kenya http://ir-library.ku.ac.ke/handle/123456789/9047	Jane Murungi* Harun Mbuvi	Dec 2013
3	Chengo, Katana I56/CE/14217/2009	Speciation of selected heavy metals in open-air automobile mechanic workshop soils in Ngara, Nairobi county Kenya http://ir-library.ku.ac.ke/handle/123456789/11145	Harun Mbuvi* Jane Murungi	July 2014
4	Ireri, Sailus Mugendi I56/CE/11196/2007	Determination of the Levels of Selected Heavy Metals in Soil and in Khat (Catha EdulisForsk) Grown in Kenya http://ir-library.ku.ac.ke/handle/123456789/11145	Jane Murungi* Harun Mbuvi	July 2014
5	Mbugua, Wachira Gerald I56/CE/22769/2010	Zeolitic materials from rice husks and water hyacinth for removal of lead, cadmium, methylene blue and suspended particles from wastewater http://ir-library.ku.ac.ke/handle/123456789/11145	Harun Mbuvi* Jackson Wachira	Dec 2014
6	Omanga, Kenyanya I56/CE/22766/2010	Studies on potassium requirements for maize in Nyamira County, Kenya. http://ir-library.ku.ac.ke/handle/123456789/11145	Harun Mbuvi* Jackson Wachira	July 2015
7	Githinji, Irene Mueni I56/CE/22603/2012	Synthesis of Alumino-phosphates from Bones for use in Water Remediation http://ir-library.ku.ac.ke/handle/123456789/	Harun Mbuvi* Margaret Ng'ang'a	July 2015

<u>11145</u>				
8	Mbugua, Moses M. I56/22617/2011	Effectiveness of cactus biomass and its combusted products in removal of colour, turbidity and selected metal ions from contaminated water http://ir-library.ku.ac.ke/handle/123456789/11145	Harun Mbuvi * Margaret Ng'ang'a	July 2015
9	Maingi Mukora Francis I56/CE/11157/2006	Aluminophosphates derived from tea leaves and pumpkin seeds ashes for removal of selected heavy metals from contaminated water	Harun Mbuvi * Margaret Ng'ang'a	Dec 2015
10	Hellen Wambui Ngugi I56/CE/21036/2012	Remediation of Turbid Water Containing Pb ²⁺ and Cd ²⁺ Ions Using Zeolite Derived from Rice Husk and Water Hyacinth Ashes	Harun Mbuvi * Margaret Ng'ang'a	Dec 2015
11	Margaret Wambui Gicheru Njagi I56/CE/21186/2012	Removal of Turbidity, Cd ²⁺ and Pb ²⁺ Ions Using Zeolites Derived from Rice Husk and Sugarcane Bagasse	Harun Mbuvi * Margaret Ng'ang'a	Dec 2015
12	Daniel Muvengei Mwangangi I56/CE/21443/2010	Use of Ash and Charcoal from Maize Cobs for Removal of Selected Inorganic Ions, Colour and Turbidity from Waste Water	Harun Mbuvi * Margaret Ng'ang'a	July 2016
13	Oswago Moses Owino	Chemical and Mineral Analysis of Raw and Acid-Treated Clays from Kano Plains, Kisumu County, Kenya	Harun Mbuvi * Naftali Muriithi	July 2016
14	John Owuor Oyugi I56/CE/21922/2012	Comparative Evaluation of the Proximate, Micronutrients and Phytochemical Analysis of Medicinal Plants; Kuogo (<i>Lannea Schweinfurthii</i>), Sangla (<i>Rhus Natalensis</i>) and Ochol (<i>Euclea Divinorum</i>) Leaves and Rootbarks	Margaret Ng'ang'a* Harun Mbuvi	Dec 2016

In Mbita- Homabay County				
16	Adamu Abdulhameed	Synthesis of silicon nitride from rice husks and sugarcane bagasse ashes for adsorption of fluoride ions from aqueous solutions	Harun Mbuvi * Margaret Ng'ang'a	Dec 2016
17	Njue Martin Kivuti I56/CE/20531/2012	Using Cilantro Leaves and Stems to Remove Lead, Cadmium, Turbidity and Colour from Wastewater	Harun Mbuvi * Margaret Ng'ang'a	Aug 2017
18	Josphine Chepngetich I56/ 22616/ 2011	Capacities and Efficiencies of Electrospun Titania Nanofibers in Removing Organic Dyes and Pesticides from Contaminated Water	Dr. Harun Mbatha Mbuvi Dr. Dickson Andala	Aug 2017
19	Titus Munyao Kasimu I56/CE/21187/2012	Using Pyro-Processed Products Of Coconut Waste For Removing Colour, Turbidity And Selected Metal Ions From Contaminated Water	Harun Mbuvi * Margaret Ng'ang'a	July 2018
20	Getuno Dorothy Nyasunguta I56/CE/26246/2011	Capacity and Efficiency of Bagasse Adsorbents at Different Experimental Conditions for De-Contamination of Spiked Water	Dr. Harun Mbatha Mbuvi Dr. Evans Changamu	Dec 2018
21	Kapis Erick I56/32259/2015	Characterization of NiO-MnO ₂ Co-Deposited Thin Films for Smart Windows Application	Dr. Harun Mbatha Mbuvi Dr. Karanja Thiong'o	Dec 2019
22	Kagwira Rose Gitonga 156/CE/22778/2010	Adsorbent Materials From Rice Husks And Water Hyacinth Ashes Blended With Bone Char For Removal Of Fluoride Ions From Contaminated Water	Harun Mbuvi * Margaret Ng'ang'a	Dec 2020
23	Muoki John Sila I56/CE/22218/10	Potassium Concentration And Optimum Acreage Dosage In Selected Farm Soils Of Matungulu Sub-County, Machakos, Kenya	Harun Mbuvi * Margaret Ng'ang'a	Dec 2020

Ph D

SN	Name & Reg No.	Thesis Title/Link	Supervisors	Year
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			* principal supervisor	graduated
1	Francis Mukora Maingi 184/33102/2015	Functionalized Geo-Polymers Derived From Common Clay And Rice Husk Ash For Application In Adsorption Of Heavy Metals”	Dr. Harun Mbuvi* Dr.Margaret Ng’ang’a Dr. Mwangi	Dec 2018

Peer review in journals

Month/Year	Title of Article	Journal
April 2017	Potassium Adsorption In Soil Cultivated With Sugarcane" For The Annals Of The Brazilian Academy Of Sciences	Anais Da Academia Brasileira De Ciências
June 2016	Levels Of Banned Persistent Organochlorinated Pesticides (Dieldrin, Hexachlorobenzene, Ddt And Its Metabolites) In Selected Wetland Ecosystems In Lake Victoria Basin.	Journal Of African Research And Development
December 2015	Effect Of Soil Nitrogen And Sulfur Nutrient Ratios On The Levels Of Protein Content In Maize Grains	Sky Journal Of Agricultural Research (Sjar)
December 2015	Phosphorus And Potassium, Quantity/Intensity Properties Of Selected South African Soils (Kwa-Zulu Natal) And Their Correlation With Selected Soil Parameters	Applied Ecology And Environmental Research
August 2015	Effect Of Liming On Levels Of Copper Metal In Soils And Its Uptake By Maize In Uasin Gishu And Trans-Nzoia Counties, Kenya	Kenya Chemical Society
2015	Thermodynamics of Micellization of Amphiphilic Non-Ionic Tri-Block Copolymer and Anionic Surfactant Sodium Dedocyl Sulphate in Aqueous Solutions	Kenya Chemical Society

Affiliation of Professional Bodies

Member of Kenya chemical Society

Recognized university administrative positions

2020 – To Date: Chairman, Department of Chemistry
2015: Committee to write a proposal for the establishment of the World Bank African

higher education Centers of Excellence
2015: Committee to write a proposal for Establishment of African Centre for Excellence in 3D Printing Technology Research, Training and Fabrication
2009 – 2013: Departmental Examination Coordinator