

Jackson Wachira Muthengia (Ph.D)
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Senior Lecturer, Embu University College (A Constituent College of the University of Nairobi),
Department of Physical Sciences, Date of Birth: 31st December, 1976

Academic Qualification

2009: **Ph.D** in Cement and Concrete Technology, Kenyatta University

Dissertation: Effect of Selected Media on Novel Portland Pozzolana Cement

2003: **Master of Science** in Chemistry, Kenyatta University

Dissertation: Low Cost Pozzolana Based Cement from Industrial and Agricultural Waste Materials

2000: **Bachelor of Education (Science)**, First Class Honors, Kenyatta University

Current Research Area and Interests

Cement and Concrete Technology:

Developing pozzolanic materials and their chemical and physical performance characterization.

Soil Chemistry:

Calcium alumino silicate (natural and laboratory made - zeolites), beneficiation of selected minerals – Iron and Titanium ores

Gasification: Development of gasification technology

Adsorption and Kinetic Chemistry:

Removal of hazardous material from their solution, kinetics of adsorption and enhancement of adsorbents.

Employment

2013 – To Date: **Senior Lecturer**, Embu University College (A Constituent College of the University of Nairobi)

Responsibility: Dean, School of Pure and Applied Sciences

Chairman and Member to over ten University College Committees

Professional Association

Kenya Chemical Society (KCS): National Executive Secretary and Founder Member, Mt. Kenya KCS Chapter

Academic Publications

1. Mutitu, D. K., ¹Karanja, J. K. and ²Wachira, J. M. Diffusivity of Sulphate in Selected Ordinary Portland Cement and Portland Pozzolana Cements, *Journal of the Kenya Chemical Society*, Volume 8 Issue 1, pp 13 - 25
2. Mbugua, G.W., Mbuvi, H. M. and **Muthengia, J. W.** Ash Derived Zeolite Blended with Water Hyacinth Ash for Enhanced Adsorption of Cadmium Ions, *Current World Environment, International Research Journal of Environmental Science*.
3. Mutitu, D. K., Karanja, J. K. and **Wachira, J. M.** (Mar-April 2014) Diffusivity of Chloride Ion in Mortar Cubes Made Using Ordinary Portland and Portland Pozzolana Cements, *IOSR Journal of Applied Chemistry*, Volume 7, Issue 2 Ver. 1, PP 67-73.
4. Mutembei, P. K., Naftali, T. M. and **Muthengia, J. W.** (March, 2014) Iron Enrichment In Laterites Soils From Selected Regions In Kenya Using Magnetic Separation, *IOSR Journal of Engineering* Vol. 04, Issue 03 pp 42-48.
5. Kenyanya, O., **Muthengia J.** and Harun, M. (2013) Determination of Potassium Levels in Intensive Subsistence Agricultural Soils in Nyamira County, Kenya *International Journal of Agriculture and Forestry* 3 (7):294 - 302.

6. Kenyanya, O., **Muthengia, J. M.** Mbuvi, H. M. and Omayo, E. K. (November 2013) Comparative Studies of four parametric Models for Potassium Adsorption in Soils of Nyamira County, Kenya, *International Journal of Management, IT and Engineering*.
7. Marangu, J. M., **Muthengia, J. W.** and wa-Thiong'o, J. K. (2014) Performance of Potential Pozzolanic Cement in Chloride Media *IOSR Journal of Applied Chemistry IOSR-JAC* Vol 7, Issue 2 Ver. 1, PP 36-44.
8. **Muthengia, JW**, Muthakia, GK and wa-Thiong'o JK (2012) Cementing Material from Rice Husk – Broken Bricks – Spent Bleaching Earth – Dried Calcium Carbide Residue, *Mediterranean Journal of Chemistry*
9. **Wachira, J** (2012) Chloride Ingress in Pozzolana Based Cement, 7Th Kenya Chemical Society International Conference, Abstract Book, Held in Maseno University between 15Th – 19Th October, 2012
10. Muriithi NT, **Wachira, JM**, Mutembei, PK, Njoroge, PW, Wanjau RN and Keru, GK, Concentration of Iron in Laterites: Increasing the Availability of Iron to Achieve Vision 2030, 7Th Kenya Chemical Society International Conference, Book of Abstract, Held in Maseno University between 15Th – 19Th October, 2012
11. Muriithi, NT, **Wachira JM** and Keru, GK (2010) Wasted Natural Resources, Case Study of Iron Rich Murram Deposits in Kenya, 1ST East African Regional Scientific Conference, Kenyatta University, Nairobi
12. **Muthengia, JW**, wa-Thiong'o, JK and Muthakia, GK, (2005) Spent Bleaching Earth as a Pozzolanic Material, *Journal of Civil Engineering Research and Practice*, Vol 2 pp 15 -21
13. **Muthengia, JW**, wa-Thiong'o, JK and Muthakia, GK (2005) Calcium Carbide Residue as Alternative to Calcium Hydroxide for Commercial Building Lime Pozzolana Material, Kenya Chemical Society, 5Th International Conference, August, 22ND – 26TH 2005, pp 209 – 213.

Conferences/Workshops/Seminars Attended and Participated

1. 4th – 7th November, 2014, 1st Dedan Kimathi University of Technology Conference
2. 15Th – 18Th October, 2012, 7Th Kenya Chemical Society International Conference, Held at Maseno University.
3. 28Th April, 2012 – The Kenya Chemical Society Workshop Held at Jomo Kenyatta University of Agriculture and Technology, Nairobi
4. 14Th – 15Th April, 2012 – Research Methodology Workshop of the Association of African Universities (AAU) – EASRN of Tertiary Institution Against The HIV/AIDS Pandemic, Held at Kenyatta University, Nairobi
5. 10Th - 14Th August, 2010 – 1St East African Regional Scientific Conference held at Kenyatta University, Nairobi
6. 25Th April, 2009 - The Kenya Chemical Society Workshop Held at University of Nairobi

Postgraduate Supervision

PhD Supervisions

1. Njoroge Peter Waithaka (Dec, 2014) Chemical Analysis and Concentration of Iron in Laterites in Kamahuha in Murang'a, Kenya
2. Muriithi GL, (Ongoing Ph.D Research) Industrial Waste Water Treatment Using Biomass and Other Potential Adsorbents.
3. Mutembei PK (Ongoing Ph.D. Research)
4. Regina NR (Ongoing Ph.D. Research)

M.Sc. Supervisions

1. Wangui NR (July, 2014) Sulphate and Chloride Ingress and the Effect in Selected Cements Mortar Prisms Immersed in Sea Water and Leather Industry Effluent
2. Mosiori OG (Dec, 2013) Thermo – Chemical Characteristics of Gasifier Fuels

3. Mutembei PK (Dec, 2013) Concentration of Iron in Laterites from Different Localities of Tunyai Division in Tharaka Nithi County in Kenya Using Magnetic Separation
4. Marangu JM (Dec, 2013) Pozzolanicity, Chloride Ingress and Compressive Strength of Laboratory Made Kenya Clay – Portland Cement Blends
5. Kinyua, LJ (July, 2013) Pozzolana Cement Made from and Rice Husks and Clays Calcined in Situ
6. Mutitu D (July, 2013) Diffusivity of Chloride and Sulphate Ions in Selected Ordinary Portland and Portland Pozzolana Cements
7. Keru, GK. (2011) Concentration of Iron in Murram (Laterites) from Ruiru Area in Thika District, Kenya To asses Economic Viability

Referees

1. Prof. Gerald Muthakia
Deputy Principal and Professor, Kimathi University College
gmuthakia@yahoo.com, Cell: 0722567318
2. Prof. Alex K. Machocho
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3. Dr. Karanja wa-Thiong'o
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Sign.....Date.....

Dr. JW. Muthengia