



**Name:** Murungi, Jane Igoki

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**Title/Qualification:** Dr. / Ph.D.

**Department/Unit/Section:** Chemistry

**Position:** Senior Lecturer

**Area of Specialization:** Analytical Chemistry

**Professional affiliation:**

- (i) Founder Member, Kenya Chemical Society
- (ii) Member, Kenya Women Engineers and Scientists Association
- iii) Member, Third World Academy of Sciences
- iv) Member Fulbright Association (Kenya Chapter)
- (v) Member, African Student Organization 1981-1982, 1985-1990 (LSU)
- (vi) Member, Chlorine Chapter of American Chemical Society, 1981
- (vii) Member, Link Program at LSU; An organization whose purpose was to help international students settle in Baton Rouge (1981)

**Research/Projects:**

Students Supervised

**Ph.D. Students**

- Wanjau, Ruth "Levels of Aluminium in Body Organs and Factors that Influence Aluminium Uptake in the Intestines" 1997- 1999.(PhD 2002).
- Kinoti, Mary "Ecotoxicology of Nairobi River: Heavy Metals and Organochlorines in the River's Sediments" 1998-
- Nawiri Mildred Assessment of the Impact of Solar Dehydrated Dark Green Leafy Vegetables (DGLV) On Improving the Vitamin A Status Among Pre-School Children (2002- present)

## **M.Sc. Students**

- Waweru, C.K. "Levels of Chromium in Tannery Effluent" (1992-1994)
- Githua, M. "Determination of Levels of Aluminum in Tea and Intercropped Plants" (MSc. 1995)
- Mitei C. Y. "Levels of Heavy Metals in Tobacco Leaves and Kenyan Cigarettes" (MSc. 1996).
- Owago, O.J. "Lead Levels in Blood of Pregnant Women"(MSc. 2000).
- Chivatsi C. M "Levels of Heavy Metals, Nutrients and Dissolved Organics in River Migori" (1999).
- Karanja, C. "Heavy Metals in Raw Material and Traditional Local Brews"(MSc.2001)
- Oyaro, N. "Heavy Metals Contents in Amaranths as a Determinant of Pollution in the City of Nairobi and its Environs"(MSc.2001)
- Muhavini, W. "Speciation of Heavy Metals in Tobacco and Tobacco Products" (MSc.2002).
- Nguyo, N.J. Determination of Organic, Nitrates Phosphates and Nitrite in Mathare-Gitathuru Drainage Basin and Their Significance in rehabilitation ( MSc. 2006).
- Wanjohi, J.N. The Stability of B-carotene in Dehydrated Dark Green Leafy Vegetables Stored in Presence of Oxygen Absorber. (MSc. 2007).
- Shisia, K.S. Trace Element Composition of Soils and Herbs in Relation to Requirement For Grazing Livestock : A Case Study of Uasin Gishu District.(MSc 2007).
- Muchemi, G.N., Determination of Immune Boosting Trace Elements in Selected Food Grains, Herbs, Vegetable and Fruit Seeds. (MSc. 2007).
- Njogu,,P..M. Determination of Heavy Metals on Tea Leaves, Their Infusions and Effect of Citric Acid on Their Extraction (MSc. 2007).

## **Current Master's Students;**

- Njoroge, Samuel A Gas-Chromatographic Determination of Post-Harvest Pesticide Pollution of Maize and its Environmental and Health Impact.
- Asman , W. P. Analysis of Heavy Metals in Tobacco Waste and Leaves From Various Regions in Kenya.
- Masime, J.O. Analysis of Levels of Arsenic, Nitrates and Phosphorus in Alcohols and Drinking Water.
- Kiburu, N.C. Effect of Presence of Antioxidants on Degradation of Beta-carotene in Dehydrated Dark Green Vegetables Stored in Presence of Oxygen Absorber.
- Njagi, S. Effect of Plant Extract From Mount Kenya Region on Soil Acidity.
- Mulehane, L. M. Determination of Buffering Capacity and Levels of Nutrients and Minerals in Extracts From Plants Leaves Growing in Western Kenya.
- Muriuki, M. Immune Boosting Food Supplement From Indigenous Vegetables and Grains For People Living with HIV and AIDS.
- Wachira, N. Immune Boosting Vitamins From Indigenous Vegetables for People Living with HIV and AIDS in Thika District.

- Karanja, W. M. Adaptation of an Enzyme-Linked Immunosorbent Assay for Detection of Diminazene Aceturate in Animal Tissue.
- Njagi, J. Analysis of Pesticide Residues of Some Pyrethroid Insecticides in Selected Vegetables from Urban and Rural Areas.
- Masika, R.N. Determination of Chromium, Vanadium, Zinc and Selenium, Immune Boosting Trace Elements in Some Kenyan foods.
- Bosire, O. G. Phytoremedial Eco-sanitation of Polluted Reverine Wetland: Spectrometric Determination of Heavy Metal Accumulation in Bamboo.
- Mugambi, S. Effect of Applying Copper Fungicides in Tomato Farming on Copper Levels in Tomato Fruits, Water and Soil in Subukia, Kenya.
- Kadima, D. Z. Determination of Levels of Trace Elements in Selected Medicinal Plants Used in Kenya.
- Mogwasi, R. Effects of Environmental Exposure to Lead and Diets on the Levels of Lead in Human Blood.
- Were, H.F. Determination of The Levels of Metals in Human Nails of Children as indicator of Environmental Exposure.
- Oronje, G. A. Determination of the Levels of Selected Elements in Plaque from Human Aorta, and Coronary Arteries.
- Gathii, L. W. Iodine and Selected Immune Boosting Metals in "*Sesuvium portulacastrum (L) L.*" in Kwale and Community Awareness of the Plant.
- Lusi, P.O. Determination of Levels of Bio-Available Zinc, Iron, Selenium, and Chromium in Indigenous Foods and their Effect on Immunity of People Living with HIV-AIDS.
- Wanjala, O.F. Assessment of Concentration of Heavy Metals in Soils Along Selected Major Roads Around Nairobi Using XDRF Spectrometer.

### **Publications/Exhibitions**

1. Murungi, J.I., Robinson, J.W., (1985). "Cadmium Concentrations in the Kidney Cortex and their Relationship to Cardiovascular Diseases". Journal of Environmental Science and Health, Vol. A20(7) P.811
2. Murungi, J.I., Robinson, J.W., (1987). "Synergistic Effects of pH and Aluminium Concentration on Life Expectancy of Tilapia (Mozambica) Fingerlings." Journal of Environmental Science and Health, Vol. A22(5) p.391
3. Murungi, J.I., Robinson, J.W., (1992). "Studies on the Toxic Effects Dissolved Aluminium on Plant Growth, Alligator Grass (*Alternanthera Philaxeroides*). The modifying Effects of pH, Humic Substances and Small Quantities of Cations (Mg, Ca, Fe,)" Journal of Environmental Science and Health, A27(3) pp 735 - 746
4. Murungi, J.I., Robinson, J.W., (1992). "Uptake and Accumulation of Aluminium by Fish - The Modifying Effects of Added Ions". Journal of Environmental Science and Health, A27(3) pp 713 - 719.
5. Murungi, J.I., Robinson, J.W., (1992). "A Study of the Effect of Leaf Extract on Aluminium Toxicity to Fish". Journal of Environmental Science and Health, A27(3) pp 721 - 733.

6. Murungi, J.I., Robinson, J.W.,( 1992). "Characterization of Heart Plaque in Bypassed and Non-bypassed Heart Arteries". *Journal of Environmental Science and Health*, A27(6) pp. 1477 – 1494.
7. Githua M., Nyagah G., and Murungi, J.I., (1995) "AAS Determination of Aluminium Levels in Tea and Other Plants grown in the same locality. *Journal of Environmental Science and Health*, A30 (b) pp 1145 – 1154. Mitei, Y.C. and Murungi, J.I., (1999). "Levels of Cadmium, Lead and Zinc in Kenyan Cigarettes", (*Journal of Kenya Chemical Society* Vol. (1) no 9.)
8. Mbovu, C.C., Chacha, J.S., Murungi, J.I., (2004) The Impact of Agricultural Activities on the Nutrients Levels on a Section of River Migori (*Journal of Kenya Chemical Society* Volume1 (2).
9. Wanjau, R.,N., Murungi, J.I., and Gathu, N., ( 2004). The Effect of Cookware Cleaning Technique On Dietary Aluminium from Aluminium Cookware (*Journal Kenya Chemical Society* Volume 1 (2), pp 1- 5.
10. Murungi,J.I., Thiam, S., Tracy, R.E, Robinson, J.W., and Warner, I. M., (2004). Elemental Analysis of Soft Plaque and Calcified Plaque Deposits From Human Coronary Arteries and Aorta. (*Journal of Environmental Science and Health Part A-Toxic/Hazardous Substances & Environmental Engineering: Vol. A39 No. 6*, pp, 1487-1496.).
11. Oyaro, N., Murungi, J.I., Chacha, S.J. (2006). Heavy Metals in the Soils in Nairobi City, Kenya *Journal of The Kenya Chemical Society* Vol.3(1), pp 49- 55.
12. Owago, J.O., Murungi, J.I., Lang'at, C.C., and Wamicha, W.N., Risk Factors that Influence Levels of Lead in Pregnant Women Living in Nairobi ( Manuscript in submitted for publication)
13. Mitei, Y.C., Murungi, J.I., Nawiri, M. Levels of Lead in Tobacco, Soil and Intercropped Plants.(Manuscript in Preparation). Muchemi, G. N., Wanjau, R. N., Murungi, J.I. and Njue, W., Determination of Some Immune Boosting Trace Elements in Selected Food Grains Grown in Kenya (Submitted to *Journal of Kenya Chemical Society*).
14. Njogu, P.M. Murungi, J.I., Wanjau, R.N., and Nyambaka, H. Chromium and Manganese Content in Black Tea Leaves in the Retail Markets of Nairobi (Manuscript in Preparation).
15. Njogu, P.M., Murungi, J.I., Wanjau, R.N., and Nyambaka, H. Concentration of Cadmium, Copper and Lead in Black Tea Leaves Using differential Anodic Stripping Voltammetry (Manuscript in Preparation).
16. Shisia, K. S., Murungi, J., Nyambaka, H., Jumba, I.O., Oduor, F.O. (2006) Trace Element Nutritional Disorder Diagnosis in Grazing Cattle of Uasin Gishu District: Soil- Plant – Animal Approach. *Proceedings of the Fifth International Conference . Kenya Chemical Society, August 22- 26, 2005*, pp. 185-190.

### **Publications in Conference proceedings and manuals**

- Murungi, J.I., Nyambaka, H. and Nawiri, M. Introduction to Classical Analysis (Module prepared for teaching distant learners K.U. 2003).
- Oyaro, N., Murungi, J.I. and Chacha, S.J.,( August 1999). Heavy Metals Content in Soils in the City of Nairobi and Its Outskirts as Indicators of Pollution.

Proceedings of The Third International Conference of The Kenyan Chemical Society.

**Recognition/Awards**

- (i) 1980-1981) - Fulbright Scholarship
- (ii) 1987 - 1990 - Peace Education Organization (PEO) Scholarship
- (iii) August 1990 - Superior Teaching Assistant Trophy by Chemistry Department, Louisiana State University
- (iv) May 1992 - Certificate of Attendance (British Government)
- (V) February 1999 - Grant by TWAS to facilitate conference participation
- (v) December 2002 Long service award (Kenyatta University)
- (Vi) May, 2007 - Partial Travel Grant by FANUS Secretariat (Quarzazate, Morocco.)