### DR. ELIZABETH NTHAMBI NDUNDA

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Languages spoken: English, Swahili, Kamba, German



## UNIVERSITY EDUCATION

Doctor of Natural Sciences (Chemistry, magna cum laude). 2016. Ulm University, Germany

Master of Science (Chemistry). 2010. University of Nairobi, Kenya

Bachelor of Science (Chemistry, First Class Honours). 2005. University of Nairobi, Kenya

Kenya Certificate of Secondary Education (B+). 1999. Limuru Girls' School, Limuru, Kenya

Kenya Certificate of Primary Education (B+). 1995. Jiani Primary School, Machakos, Kenya

### PUBLICATIONS IN PEER-REVIEWED JOURNALS

Madadi, V.O., Wandiga, S, O., **Ndunda, E. N**., Mavuti, K. M. (2017). Organochlorine Pesticides Residues in Lake Naivasha Catchment Water. *IJSRSET*, 3(5), 139-147

Ndunda, E. N., Mizaikoff, B. (2016). Synthesis of stationary phases that provide group recognition for polychlorinated biphenyls by porogenic fragment template imprinting. *Journal of separation science*, *39*(5), *939 - 946*.

Ndunda, E. N., Mizaikoff, B. (2016). Molecularly imprinted polymers for the analysis and removal of polychlorinated aromatic compounds in the environment: a review. *Analyst*, *141*(11), 3141 - 3156

Ndunda, E. N., Madadi, V. O., Mizaikoff, B. (2015). An alternative clean-up column for the determination of polychlorinated biphenyls in solid matrices. *Environmental Science: Processes* & *Impacts*, 17(12), 2101 - 2109.

Ndunda, E. N., Mizaikoff, B. (2015). Multi-walled carbon nanotubes: innovative sorbents for preconcentration of polychlorinated biphenyls in aqueous environments. *Analytical Methods*, 7(19), 8034 - 8040.

Ndunda, E. N., Mizaikoff, B. (2015). Front cover for the journal of analytical methods, *Analytical Methods*, 7.

# **REPORTS**

Wandiga, S. O., Mavuti, K. M., Oduor, F. D., Kariuki, D. K., Mirikau, C. W., Wafula, G., Madadi, V. O., Mwenda, N., Masese, F., Gitari, F. K., Masenge, E., **Ndunda, E. N**., Situma, D., Wang'ondu, V. C and Ooko. G. *Water Quality Monitoring Protocol for Nairobi River Basin*. Final report submitted to UNEP regional office for Africa (ROA) in November 2009.

Wandiga, S. O., Mavuti, K. M., Oduor, F. D., Kariuki, D. K., Mirikau, C. W., Wafula, G., Madadi, V. O., Mwenda, N., Masese, F., Gitari, F. K., Masenge, E., **Ndunda**, E. N., Situma, D., Wang'ondu, V. C and Ooko. G. *Mini-monitoring report for the Nairobi River Basin*. Final report submitted to UNEP regional office for Africa (ROA) in November 2009.

### **CONFERENCES PRESENTATIONS**

Ndunda, E. N and Mizaikoff, B (May 2017). "Synthesis of molecularly imprinted polymers providing group recognition for Polychlorinated Biphenyls". 9<sup>th</sup> International Conference of the Kenya Chemical Society (KCS), United States International University-Africa (Kenya).Oral presentation.

Ndunda, E. N, Madadi, V. O and Mizaikoff, B (August 2015). "*Composite-MISPE for the determination of PCBs in solid matrices*" 6<sup>th</sup> Graduate students' symposium on molecular imprinting, University of Kent (UK). Oral presentation.

Ndunda, E. N and Mizaikoff, B (March 2015). "*Multiwalled carbon nanotubes solid-phase extraction for the determination of six indicator PCBs in aqueous samples*". ANAKON Conference. University of Graz (Austria). Poster presentation

Ndunda, E. N and Mizaikoff, B (March 2015). "Development of an extraction and clean-up method for rapid analysis of six indicator PCBs in soil, sediment, and water". 9. Deutsches Biosensor Symposium. TU München (Germany). Poster presentation

Ndunda, E. N and Mizaikoff, B (August 2013). "*Molecularly imprinted solid phase extraction* (*MISPE*) for endocrine disrupting compounds". 5<sup>th</sup> Graduate students' symposium on molecular imprinting. Queen's University Belfast (UK). Oral presentation.

Ndunda, E. N (July 2013). 63<sup>rd</sup> Lindau Nobel Laureate Meeting, Lindau, Germany. Participated as a young scientist.

Ndunda, E. N, Wandiga, S. O and Shiundu, P. M (November 2009). "Assessment of Polychlorinated Biphenyls (PCBs) in Sediments and Water from Nairobi River". Joint 4<sup>th</sup> Society of Environmental Toxicology and Chemistry (SETAC) Africa meeting and International Conference on Environmental Pollution and Toxicology. Kampala, Uganda. Oral presentation.

Ndunda, E. N, Wandiga, S. O and Shiundu, P. M (October 2009) "Assessment of Polychlorinated Biphenyls (PCBs) in Sediments and Water from Nairobi River". Joint 6<sup>th</sup> Kenya Chemical Society, East and Southern Africa Environmental Chemistry, and 8<sup>th</sup> Theoretical Chemistry in Africa Conference. Mombasa, Kenya. Oral presentation.

# **RESEARCH GRANTS AND SCHOLARSHIPS**

- DAAD scholarship to pursue a Doctor of Natural Sciences in Chemistry at Ulm University, Germany.
- University of Nairobi Scholarship to pursue a Master of Science in Chemistry at the University of Nairobi.

# MEMBERSHIP OF PROFESSIONAL BODIES

- German chemical society (Gesellschaft Deutscher Chemiker, GDCh)
- Society for Molecular Imprinting
- Kenya Chemical Society

# **EMPLOYMENT**

Sept 2017 – Present:	Lecturer, Department of Physical Sciences, Machakos University, Kenya
Sept 2017 –Present:	Examinations/Timetabling Coordinator, Department of Biological Sciences, Machakos University, Kenya
May 2017 - Aug 2017	Part-Time Lecturer, Department of Physical Sciences, Machakos University, Kenya
Aug 2011 - Nov 2011:	Assistant Lecturer, Department of Pure and Applied Sciences, Kenya Methodist University, Kenya

March 2011-June 2011: Part-Time Lecturer, Department of Chemistry, University of Nairobi, kenya

## **RESEARCH INTEREST**

Synthesis of molecularly imprinted polymers (MIPs) for application in sample preparation and removal of environmental pollutants. MIPs are materials designed to bind a given target analyte, with high specificity and affinity, therefore most of the time being referred to as antibody mimics, artificial receptors, and plastic antibodies. It is because of these attractive properties that they have found applications as adsorbents in sample pre-treatment procedures to enhance removal of matrix interferences, recognition elements in sensors, among many other notable applications. I am currently focusing on synthesis of highly selective hybrid system, consisting of multiwalled carbonnanotubes and MIPs for application as recognition elements in sensors towards ultra-trace level detection of different environmental pollutants.

### REFEREES

Prof. Dr. Boris Mizaikoff Institute of Analytical and Bioanalytical Chemistry Ulm University Albert-Einstein-Allee 11 89081, Ulm, Germany Email: boris.mizaikoff@uni-ulm.de Tel: +49-731-5022750

Prof. Shem O. Wandiga Department of Chemistry University of Nairobi P.O Box 30197-00100 Nairobi, Kenya Email: wandigas@uonbi.ac.ke Tel: +254-20-311714/315540/4446140

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