THE TECHNICAL UNIVERSITY OF KENYA

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NAME: PROF PAUL MWANZA SHIUNDU

Faculty:	Applied Sciences and Technology
School:	CHEMISTRY AND MATERIAL SCIENCE
Department:	INDUSTRIAL AND APPLIED CHEMISTRY
Current Designation:	Professor, DEPARTMENT OF CHEMISTRY AND MATERIALS SCIENCE
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Consultation Hours:	8AM-5PM MON - FRI



EDUCATION

LEVEL	QUALIFICATION NAME	INSTITUTION	YEAR
Doctor of Philosophy (PhD)	Analytical Chemistry	University of British Columbia(Canada)	1991
Bachelor of Science (BSc)	Chemistry	University of Nairobi(Kenya)	1986
Certificate	Certificate of postgraduate study in Natural Science	Cambridge University(United Kingdom)	1987
A Level/Equivalent	Kenya Advanced Certificate of Education (KACE)	Maseno School(Kenya)	1981
O level/Equivalent	East African Certificate of Education (EACE)	Bukhalalire Secondary School(Kenya)	1979

WORK EXPERIENCE

PERIOD	INSTITUTION	POSITION
December 2014 - To date	The Technical University of Kenya	Professor - Department of Chemical Sciences and Technology
August 2013 - To date	The Technical University of Kenya	Deputy Vice Chancellor (Academics, Research and Students)
October 2003 - To date	University of Nairobi	Associate Professor - Department of Chemistry
May 2006 - October 2008	University of Nairobi	Analytical Chemistry Thematic Head - Department of Chemistry
June 1998 - October 2003	University of Nairobi	Senior Lecturer - Department of Chemistry
January 1995 - June 1998	University of Nairobi	Lecturer - Department of Chemistry
January 2011 - January 2013	Kenya Polytechnic University College	Deputy Principal
March 2007 - January 2011	University of Nairobi	Dean - School of Physical Sciences
January 1992 - December 1994	University of Utah	Postdoctoral Research Fellow - Field Flow Fractionation Research Centre (Department of Chemistry)
September 1991 - December 1991	University of British Columbia and Dow Chemical Canada Inc.	Postdoctoral Research Fellow - Department of Chemistry
January 2013 - August 2013	The Technical University of Kenya	Ag. Deputy Vice-Chancellor (Teaching, Learning, and Students)
March 2006 - August 2006	University of Nairobi	Ag. Dean - School of Physical Sciences

GENERAL STATEMENT ON RESEARCH AREAS

Adsorption Science and Technology: Investigations into the fundamental adsorption phenomena & application of fundamental adsorption principles to industrial problems and opportunities. Exploration and exploitation of minerals and lignocellulosoic materials in water pollution control strategies. Analytical Methods Development: Development and testing of analytical methods for field and laboratory analysis of organic and inorganic chemicals of various origins.

CURRENT RESEARCH PROJECTS

Separation Science and Technologies; Adsorption Science and Technology; Analytical Methods Development; Water and Wastewater Pollution Control Strategies.	Physical & Analytical Chemistry and Environmental Studies

SELECTED PUBLICATIONS

TITLE	LINK TO PUBLICATION	YEAR
Wycliffe Chisutia Wanyonyi, John Mmari Onyari, and Paul Mwanza Shiundu and Francis Joackim Mulaa, “Enzymatic Decolorization of Malachite Green Dye by a Newly Isolated Bacillus Cereus Strain wwcp1”; Journal of Environmental Science, Toxicology and Food Technology (IOSR-JESTFT), 8 (12), 58 – 64, (Dec. 2014). ISSN: 2319 – 2399	View online	
Davis Anzeze Amboga, John Mmari Onyari, Paul Mwanza Shiundu, and John W. Gichuki “Biosorption of Zn (II) ions from aqueous solutions by water hyacinth (Eichornia Crassipes): Equilibrium and Kinetic studies”; International Journal of Innovation and Scientific Research, Vol. 8 No. 2 Sep., 224 – 233, (2014); ISSN 2351-8014 (http://www.ijisr.issr-journals.org/).	View online	
Davis Anzeze Amboga, John Mmari Onyari, Paul Mwanza Shiundu, and John W. Gichuki “Equilibrium and Kinetics Studies for the Biosorption of aqueous Cd (II) ions onto Eichornia Crasippes Biomass”; IOSR Journal of Applied Chemistry (IOSR – JAC), Vol. 7, Issue 1 ver II, 29 – 37, (Feb. 2014); e-ISSN: 2278 - 5736	View online	
Were, Faridah Hussein; Kamau, Geoffrey N.; Shiundu, Paul M.; Wafula, Godfrey A.; Moturi, Charles M.; "Air and Blood Lead Levels in Lead Acid Battery Recycling and Manufacturing Plants in Kenya", Journal of Occupational & Environmental Hygiene, 9(5) 340-344, (2012). DOI:10.1080/15459624.2012.673458	View online	
Harry Amuguni Chanzu, John Mmari Onyari, and Paul Mwanza Shiundu, “Biosorption of Malachite Green from Aqueous Solutions onto Polylactide/Spent Brewery Grains Films: Kinetic and Equilibrium Studies”; J. Polym. Environ., DOI 10.1007/s10924-012-0479-5, ISSN 1566-2543; Published online: 29 May 2012	View online	
Davis Anzeze Amboga, John Mmari Onyari, Paul Mwanza Shiundu, and John W. Gichuki“Adsorption of Pb (II) ions from aqueous solutions by water hyacinth (Eichornia Crassipes): Equilibrium and Kinetic studies”; International Journal of Environmental Pollution and Remediation; (2) 89 – 95, (2014); DOI: 10.11159/ijepr.2014.013.	View online	
Faridah H. Were; M. Charles Moturi; P. Gottesfeld; Godfrey A. Wafula; Geoffrey N. Kamau; and Paul M. Shiundu, "Lead Exposure and Blood Pressure among Workers in Diverse Industrial Plants in Kenya", Journal of Occupational & Environmental Hygiene, 11 (11), 706 - 715, (2014); DOI:10.1080/15459624.2014.908258.	View online	
Wycliffe Chisutia Wanyonyi, John Mmari Onyari, and Paul Mwanza Shiundu, “Adsorption of Methylene Blue Dye from Aqueous Solutions using Eichornia Crassipes”; Bulletin of Environmental Contamination and Toxicology; 91(3), 362 – 366, (2013); DOI 10.1007/s00128-013-1053-0, ISSN 0007-4861; Published online: 10 July 2013.	View online	
Wycliffe Chisutia Wanyonyi, John Mmari Onyari, and Paul Mwanza Shiundu, “Adsorption of Congo Red Dye from Aqueous Solutions using Roots of Eichornia Crassipes: Kinetics and Equilibrium Studies”; Energy Procedia; 50, 862 – 869, (2014); DOI 10.1016/j.egypro.2014.06.105.	View online	
Stephen Attahiru, Paul M. Shiundu, and Enos W. Wambu, “Removal of Cr(III) from Aqueous Solutions using a Micaceous Poly-Mineral from Kenya”; International Journal of Physical Sciences, 7(8), 1198 – 1204, (2012).	View online	
Were, Faridah Hussein; Kamau, Geoffrey N.; Shiundu, Paul M.; Wafula, Godfrey A.; Moturi, Charles M.; "Air and Blood Lead Levels in Lead Acid Battery Recycling and Manufacturing Plants in Kenya", Journal of Occupational & Environmental Hygiene, 9(5) 340-344, (2012).	View online	
Enos W. Wambu, Gerald K. Muthakia, Joseph K. wa-Thiong’o, and Paul M. Shiundu, “Kinetics and Thermodynamics of Aqueous Cu(II) Adsorption on Heat Regenerated Spent Bleaching Earth”; Bull. Chem. Soc. Ethiop., 25(2), 181 – 190, (2011).	View online	
V.M. Muinde, E.K. Nguu, D.O. Ogoyi, and P.M. Shiundu, “Effects of Heavy Metal Pollution on Omega-3Polyunsaturated Fatty Acids Levels in Tilapia fish from Winam Gulf of Lake Victoria”; The Open Environmental Engineering Journal; 6, 22 – 31, (2013); DOI: 10.2174/1874829501306010022	View online	
D.O. Ogoyi; C.J. Mwita; E.K. Nguu; and P.M. Shiundu; “Determination of Heavy Metal Content in Water, Sedimant and Microalgae from Lake Victoria, East Africa”, The Open Environmental Engineering Journal", 4, 156 – 161, (2011).	View online	
Wycliffe Chisutia Wanyonyi, John Mmari Onyari, Paul Mwanza Shiundu, Francis Jackim Mulaa; Biodegradation and Detoxification of Malachite Green Dye Using Novel Enzymes from Bacillus cereus Strain KM201428: Kinetic and Metabolite Analysis; Energy Procedia Volume 119, July 2017, Pages 38-51.	View online	
John N. Wabomba, John M. Onyari, Paul M. Shiundu, and Ernest Yanful; "Equilibrium and Kinetics Studies of Cu(II)Removal from Aqueous Solutions using a Kenyan Micaceous Mineral"; International Journal for Innovation Education and Research, Volume 5(04), 171-188, (2017)	View online	

POSTGRADUATE STUDENTS SUPERVISION

NAME	PROJECT TITLE	PERIOD
Dorice S. Situma	“Risk Assessment and Photocatalytic Oxidation of Endocrine Disrupting Compounds (EDCs) in Effluents from Sewage Treatment Plants and Light Industries in Nairobi”, Fully Registered Ph.D Research Student in 2010 and continuing.	2010 - 2015
Immaculate Achieng’ Odero	“Evaluating the Efficacy of Selected Lignocellulosic Materials of Kenyan Origin in the Removal of Textile Dyes and Inks from Aqueous Industrial Effluents: Kinetics and Equilibrium Studies”, Fully Registered Ph.D Research Student in 2009 and Continuing.	2009 - 2015
John WABOMBA	"Single- and Multi-component Metal Ion Sorption on a Micaceous Mineral of Kenyan Origin: Kinetics and Equilibrium Studies”, Ph.D. Thesis Successfully Defended and graduated in September, 2011.	2011
Vincent O. Madadi	“Studies of Pesticides and Macronutrients Cyclization and Interaction Dynamics in Lake Victoria and Nairobi River Ecosystems”, PhD Thesis successfully defended in graduated in December, 2012.	2012
Peter N. Muigai	"Eutrophication of Nairobi Dam and its Implications on the Surrounding Environment", Ph.D. Thesis Successfully Defended and Graduated in 2008.	2008
Alice W. Karuri	"Landuse Types and Water Pollution: A Case Study of Thika River", Ph.D Draft Thesis Submitted for Comments and final corrections being made by student. Anticipated date of graduation is December, 2012.	2012
Ndaya Dennis	“Biodiesel Production from Candlenut and Calodendrum Capense Seeds: Process Design and Technological Development”, M.Sc. thesis successfully defended and graduated in September, 2013.	2013
Wanyama Nandokha George	“Residues in Water and Sediments from Mutoine, Nairobi and Kengemi Dams”, M.Sc. thesis successfully defended and graduated in September, 2013.	2013
Veronica M. Muinde	“Heavy Metal Effects on Types and Levels of Omega-3 Polyunsaturated Fatty Acids (PUFAs) in Tilapia Fish (Oreochromis niloticus) in Winam Gulf of Lake Victoria”, M.Sc. Thesis Successfully Defended and graduated in December, 2012.	2012
Amboga Davis Anzenze	“Biosorption of Heavy Metals using Water Hyacinth (Eichornia crassipes (Mart) Solms – Laubach): Adsorption Properties and Technological Assessment”, M.Sc.Thesis successfully defended graduated in September 2012.	2012
Harry Amuguni Chanzu	“Biosorption of Organic Dyes and Copper using Spent Brewery Grains in Batch and Continuous Systems”, M.Sc. Thesis successfully defended and graduated in December 2011.	2011
Robert Koigi	“Assessment of Spatial and Temporal Trends in Pesticide Residues and Nutrients in Water, Soil, and Sediments from Nairobi River” M.Sc. Thesis Successfully defended and graduated in December 2011.	2011
Wycliffe Chisutia Wanyonyi	“Biosorption of Organic Dyes from Aqueous Solution using Water Hyacinth (Eichornia Crassipes) from Lake Victoria”, M.Sc. Thesis Successfully Defended and graduated in September, 2011.	2011
Florence K. Gitari	“Assessment of Polychlorinated Biphenyls (PCBs) in Sediments and Water from Ngong’ and Mathare Rivers”, M.Sc. Thesis Successfully Defended and graduated in September, 2011.	2011
Wycliffe Chisutia Wanyonyi	“Isolation and Characterization of Lignin-Modifying Enzymes from White-Rot Fungi for Bio-pulping and Bioremediation Applications”, Department of Chemistry, University of Nairobi, Graduated with PhD in December, 2016.	2012 - 2015
Nicholas Mwenda Jacob	“Risk Assessment of Pesticide Residues in Cow’s Milk from Agricultural Areas in Nairobi West District, Kenya”; M.Sc. Thesis Successfully Defended and graduated in September, 2011.	2011
Caroline Agoi	“Dye Adsorption Characteristics by Two Unmodified Lignocellulosoic Biomass Materials (Telfairia Pedata and Luffa Cylindrica) in Batch and Fixed-Bed Systems”; M.Sc. Thesis Successfully Defended and Graduated in September, 2010.	2010
Elizabeth N. Ndunda	“Analysis of Polychlorinated Biphenyls (PCBs) in Sediments and Water from Nairobi River”; M.Sc. Thesis Successfully Defended and Graduated in September, 2010.	2010
Dorice Soita Situma	“Analysis of Polycyclic Aromatic Hydrocarbons in Ambient Air and Soils at Selected Sites within Nairobi City”; M.Sc. Thesis Successfully Defended and Graduated in September, 2010.	2010
Herbert Wanjala Kavunja	“Properties and Performance Testing of Biodiesel from Jatropha Curcus and its Blends”; M.Sc. Thesis Successfully Defended and Graduated in September, 2010.	2010
Timothy Muthaura Mugambi	“Removal of Textile Dyes from Aqueous Solutions using Luffa Cylindrica of Kenyan Origin: Kinetics and Equilibrium Sorption Studies”; Thesis Successfully Defended (August, 2009).	2009
Ndathe John Kairu	“A study of the Uptake of Selected Heavy Metal Ions and Trichloroethylene (TCE) by Sweet Potato Varieties in Kenya; M.Sc. Research Thesis Successfully Defended (March, 2009).	2009
Wambu Enos Wamalwa	“Removal of Copper ions from Aqueous Solutions by Regenerated Spent Bleaching Earth (SBE); M.Sc. Research Thesis Successfully Defended, (March, 2009).	2009
Evans Ochieng Omotto	“Evaluation of Nairobi Wastewater Treatment Efficiency at Dandora Sewerage Treatment Works and Possible Applications of the Effluent”, M.Sc. Research Thesis Successfully Defended (February, 2007).	2007
Patrick Musyoki Shem	"Release Kinetics of a Synthetic Tsetse Allomone based on Waterbuck Odour from a Tygon Silicon Dispenser", M.Sc. Research Thesis Successfully Defended, (June, 2006).	2006
Wilson Gichuhi Kamundia	"Influence of selected co-solutes on Cu(II) ion Removal from Aqueous Solutions using a Micaceous Mineral of Kenyan Origin", Research Thesis Successfully Defended (May, 2005).	2005
S.M. Attahiru	"Metal Ion Sorption by a Locally Available Natural Polymineral Adsorbent", M.Sc. Research Thesis Successfully Defended (October, 2003).	2003
Peter M. Guto	"Mediated Dehalogenation of Organohalides at both Rotating (Glassy Carbon and Pyrolytic Graphite) Disk Electrodes and [PSS/metMb] Films in Microemulsions", M.Sc. Research Thesis Successfully defended (June, 2003).	2003
Damaris N. Wachira	"Sorption and Detection of Phenolic Compounds by Rice Husk Ash", M.Sc. Thesis successfully defended (April 2001 and graduated in December 2001).	2001
A.F. Otieno	“Evaluating the Potential of Thermophilic Bacteria of the Rift Valley Hot Springs in Water Pollution Control”, M.Sc. Research (2000).	2000
S.M. Munguti	“Separation and Characterization of Polymeric and Particulate Matter by Thermal Field-Flow Fractionation”, M.Sc.Thesis successfully defended (December, 2000 and graduated in December 2001).	2001
Benson M. Wamalwa	“Studies on Vernonia Oil as a Potential Fatty Raw Material for Soap Manufacture.” Thesis Successfully Defended (July, 1998).	1998
Edna Masenge	“Assessment of Total Petroleum Hydrocarbon, Oil, and Grease in Sediments and Waters in Ngong and Mathare Rivers”, Continuing M.Sc. student (2009).	2009
Tonkei Wilson Kayiongo	“Towards the Development of an Electrochemical Sensor for the Detection of Heavy Metals in Wastewater”, Continuing M.Sc. student (2010).	2010
Farida Hussein Were	“Assessment of Levels of Selected Heavy Metals and their Effects on the Health of Industrial Workers in Nairobi and Athi River, Kenya”, PhD Thesis successfully defended in January 2013 and graduated in September, 2013.	2013
Elizabeth N. Ndunda	“Assessment of Estrogenecity of Nairobi River using Vitellogenin in Tilapia (Oreochromis sps) as a Biomarker and Remediation of the River using Iron (III) Tetra Amido Macrocyclic Ligand (Fe-TAML)”, PhD Thesis successfully defended and graduated in September, 2015.	2010 - 2015

PROFESSIONAL AFFILIATIONS AND SOCIETIES

TITLE	INSTITUTION
MEMBER	National Academy of Sciences
MEMBER, 2327005	The American Cemical society
MEMBER	Kenya Chemical Society