



THE TECHNICAL UNIVERSITY OF KENYA

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NAME: DR GEORGE DAVID OGINGA OKWADHA

Faculty:	ENGINEERING AND THE BUILT ENVIRONMENT
School:	CIVIL AND RESOURCE ENGINEERING
Department:	STRUCTURAL AND CONSTRUCTION ENGINEERING
Current Designation:	Senior Lecturer, WATER AND ENVIRONMENTAL ENGINEERING (DWEE)
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Consultation Hours:	9AM-5PM MON - FRI



EDUCATION

LEVEL	QUALIFICATION NAME	INSTITUTION	YEAR
Doctor of Philosophy (PhD)	ENVIRONMENTAL ENGINEERING	UNIVERSITY OF WISCONSIN-MILWAUKEE(United States)	2010
Masters of Science (M.Sc.)	ENGINEERING	UNIVERSITY OF WISCONSIN(United States)	2006
Bachelor of Science (BSc)	ENGINEERING	UNIVERSITY OF WISCONSIN(United States)	2003
Higher Diploma	CONSTRUCTION ENGINEERING (SOIL MECHANICS AND FOUNDATION ENGINEERING OPTION)	THE KENYA POLYTECHNIC(Kenya)	1991
Diploma	CIVIL ENGINEERING	MOMBASA POLYTECHNIC(Kenya)	1986
A Level/Equivalent	KENYA ADVANCED CERTIFICATE OF EDUCATION	MARANDA HIGH SCHOOL(Kenya)	1982
O level/Equivalent	KENYA CERTIFICATE OF EDUCATION	MARANDA HIGH SCHOOL(Kenya)	1980
KCPE/Equivalent	CERTIFICATE OF PRIMARY EDUCATION	MADIANY PRIMARY SCHOOL(Kenya)	1976

WORK EXPERIENCE

PERIOD	INSTITUTION	POSITION
January 2014 - September 2015	The Technical University of Kenya	Chairman, Civil & Construction Engineering Department
August 2010 - June 2011	University of Wisconsin-Rock County	Lecturer of Engineering
January 2009 - June 2010	University of Wisconsin-Milwaukee	Research Assistant
September 2012 - January 2014	The Technical University of Kenya	Chairman, Civil & Environmental Engineering Department
January 2005 - January 2009	University of Wisconsin-Milwaukee	Teaching Assistant
October 2010 - February 2012	Bloom Companies, LLC	Research/Project Engineer
August 2011 - December 2011	Concordia University-Wisconsin	Adjunct Professor
January 1987 - December 1999	Materials Testing & Research Department, Ministry of Public Works	Senior Laboratory Technologist
January 2014 - August 2015	The Technical University of Kenya	Ag. Director of School - SIRE
April 2007 - August 2010	We Energies	Student Engineer
January 2004 - April 2007	Giles Engineering Associates	Engineering Technician

GENERAL STATEMENT ON RESEARCH AREAS

My research areas include but not limited to sustainable materials, coal combustion flue gas adsorbents, Biogeotechnics (microbial soil strength improvement), Metals and radionuclides contaminants removal in surface water impoundments and drinking water from aquifers and private wells using microbial carbonate precipitation (lattice and non-lattice coprecipitation) and nanoparticles (nano-size cenospheres) composites use in water treatment and By-products utilization.

CURRENT RESEARCH PROJECTS

Improvement of bearing capacity of red coffee soil using waste thermosetting plastics	Geo-Environmental Engineering - By products utilization - (Sustainable materials)
The use of pyroclastics as coal combustion flue gas adsorbents	Environmental Engineering - By products utilization (Sustainable Materials)
Investigation on why clay bricks made in Elgeyo Marakwet county is preferred as a valuable construction material in Uasin-Gishu County.	Geotechnical Engineering
The use of rice husk ash for stabilization of red coffee soils for use in pavement construction	Geo-Environmental Engineering - By products Utilization (Sustainable Materials)
Evaluating the performance of Sisal sap as an admixture in concrete	Environmental Engineering-By-products utilization (Sustainable materials)
Evaluating the performance of Aloe vera sap as an admixture in concrete	Environmental Engineering-By-products utilization (Sustainable materials)
Developing a database of leguminous plants waste ashes with pozzolanic activities for use as partial replacement of cement in concrete manufacture	Geo-Environmental Engineering - By-products utilization (Sustainable Materials)
The use of plant-mediated metal nanoparticles in water treatment	Environment Engineering (Sustainable Materials)

SELECTED PUBLICATIONS

TITLE	LINK TO PUBLICATION	YEAR
<p>Evaluation of Surface Water Runoff from Fly Ash-Stabilized and Nonstabilized Soil Surfaces</p> <p>Frank J. Dombrowski, CHMM¹; Bruce W. Ramme, Ph.D., P.E., M.ASCE²; George D. O. Okwadha³; and Dave Kollakowsky⁴</p>	<p>View online</p>	
<p>Optimum conditions for microbial carbonate precipitation</p> <p>George D.O. Okwadha, Jin Li</p>	<p>View online</p>	
<p>Biocontainment of polychlorinated biphenyls (PCBs) on flat concrete surfaces by microbial carbonate precipitation</p> <p>George D.O. Okwadha, Jin Li</p>	<p>View online</p>	
<p><u>Biocontainment of PCBs on flat concrete surfaces and coprecipitation of PCBs and metals in boiler chemical cleaning wastewater by microbial carbonate precipitation</u></p> <p>By Okwadha, George D.O., Ph.D., THE UNIVERSITY OF WISCONSIN - MILWAUKEE, 2010, 143 pages; 3416634</p>	<p>View online</p>	
<p>Thermal Removal of Mercury in Spent Powdered Activated Carbon from TOXECON Process.</p> <p>George D. O. Okwadha¹; Jin Li, Ph.D.²; Bruce Ramme, Ph.D., P.E., M.ASCE³; Dave Kollakowsky⁴; and Dave Michaud⁵</p>	<p>View online</p>	
<p>Coal Combustion Utilization Handbook, 3rd Edition. Bruce W. Ramme; Mathews P. Tharaniyil. Reviewed by Dr. Okwadha</p>	<p>View online</p>	
<p>Partial replacement of river sand with volcanic pyroclastics as fine aggregates in concrete production. By Okwadha, GDO and Ngengi KJ</p>	<p>View online</p>	
<p>Partial replacement of cement by plant solid waste ash in concrete production. By Okwadha GDO</p>	<p>View online</p>	
<p>Effectiveness of rice husk ash in stabilizing Kenyan Red Coffee soil for road subgrades construction. G.D.O. Okwadha and P.W. Nyingi</p>	<p>View online</p>	
<p>Evaluation of water hyacinth extract as an admixture in concrete production. By Okwadha G.D.O. and Makomele D.M.</p>	<p>View online</p>	
<p>Determination of effectiveness of traditional drinking water treatment methods. By Okwadha G.D.O. and Ahmed A.A.</p>	<p>View online</p>	

POSTGRADUATE STUDENTS SUPERVISION

NAME	PROJECT TITLE	PERIOD
Mr. John Gitau	Application of Vibro compaction technology for production of soil cement feather fibre stabilized building blocks	PhD (2016-to date). On going.
Mr. Richard Oruko Ong'ong'	Bioremediation of Tannery-based chromium IV complexes in soils near dumpsites in Kenya.	Ph.D (2016-to date). On going.
Mr. Stanley Ng'ang'a Kibe	Groundwater mapping, Quality Assessment and Hydrogeophysical modeling in Makueni County-Eastern Keny	PhD (2014-2022). (Completed)
Victor Odhiambo Ogwanya	An Analysis Of Non-Revenue Water Through Hydraulic Modelling In Kahawa West Estate: A Case Study Of Nairobi City Water And Sewerage Company Ltd.	MSc. (2018 to date). On going
Manyara James Okinyi Meja	Assessing The Status Of Storm Water Management And Its Impact On The Environment And Fresh Water Sources In Kisii Municipality, Kisii	Ph.D (2018-2022). (Graduated)
Tabitha Akinyi Owuor	Development of a low cost, eco-friendly and effective water treatment technology - A case study of use of biosynthesized copper nanoparticles to kill E. Coli in drinking water	MSc. 2019-2021 (Graduated)

PROFESSIONAL AFFILIATIONS AND SOCIETIES

TITLE	INSTITUTION
GRADUATE ENGINEER	ENGINEERS BOARD OF KENYA