THE TECHNICAL UNIVERSITY OF KENYA

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NAME: PROF GEORGE ODHIAMBO AMOLO

Faculty:	Applied Sciences and Technology
School:	Physics, Earth and Environmental Sciences
Department:	TECHNICAL AND APPLIED PHYSICS
Current Designation:	Professor, TECHNICAL AND APPLIED PHYSICS (DTAP)
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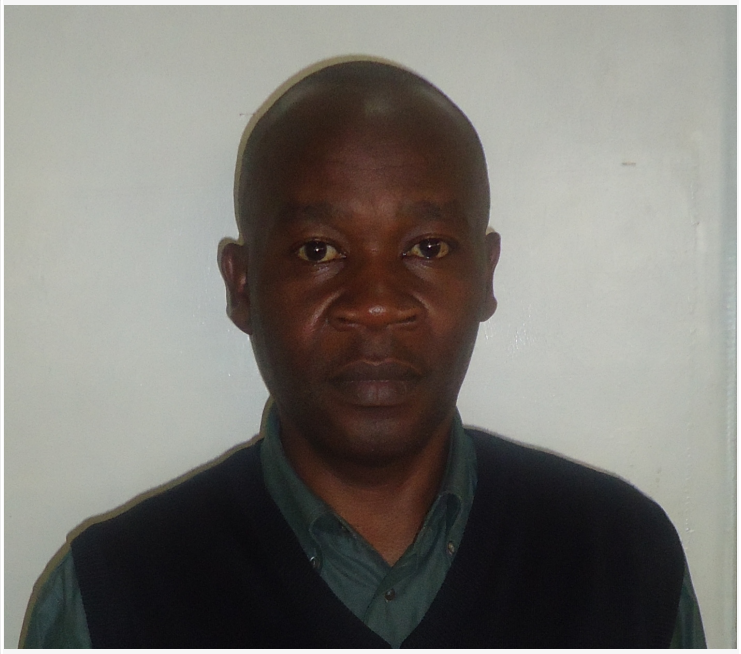

EDUCATION

LEVEL	QUALIFICATION NAME	INSTITUTION	YEAR
Doctor of Philosophy (PhD)	PHYSICS	UNIVERSITY OF THE WITWATERARAND, JOHANNESBURG(South Africa)	2007
Masters of Science (M.Sc.)	PHYSICS	UNIVERSITY OF NAIROBI(Kenya)	1994
Bachelor of Science (BSc)	PHYSICS	MOI UNIVERSITY(Kenya)	1990

WORK EXPERIENCE

PERIOD	INSTITUTION	POSITION
MAY 2024 - OCTOBER 2024	International Union of Pure and Applied Physics (IUPAP)	Reviewer and Africa nominee; review of 100 years of IUPAP
OCTOBER 2015 - OCTOBER 2019	COMMISSION FOR UNIVERSITY EDUCATION	PEER REVIEWER
SEP 2008 - OCT 2012	UNIVERSITY OF ELDORET/ CHEPKOILEL UNIVERSITY COLLEGE	SENIOR LECTURER
AUGUST 2013 - MAY 2016	UNIVERSITY OF ELDORET	COORDINATOR -SCIENTIFIC MENTORSHIP PROGRAM
2017 - DATE	ELSEVIER PUBLISHING COMPANY	PEER REVIEWER - APPLIED SURFACE SCIENCE
DECEMBER 2019 - DATE	TECHNICAL UNIVERSITY OF KENYA	DIRECTOR - SCHOOL OF PHYSICS AND EARTH SCIENCE
OCTOBER 2023 - DATE	ALUPE UNIVERSITY	PHYSICS EXTERNAL EXAMINER
2016 - DATE	CENTRE FOR HIGH PERFORMANCE COMPUTING, CAPE TOWN, SOUTH AFRICA	PRINCIPAL INVESTIGATOR - MATS862
2018 - DATE	ELSEVIER PUBLISHING COMPANY	PEER REVIEWER - SOLID STATE COMMUNICATIONS
2018 - DATE	ELSEVIER PUBLISHING COMPANY	PEER REVIEWER - PHYSICA B - CONDENSED MATTER
2018 - DATE	ELSEVIER PUBLISHING COMPANY	PEER REVIEWER - JOURNAL OF PHYSICS AND CHEMISTRY OF SOLIDS
1ST SEPTEMBER 2018 - DATE	KENYA EDUCATION NETWORK (KENET)	RESEARCH ASSOCIATE (COMPUTATIONAL MODELING AND MATERIALS SCIENCE)
JUNE 2021 - DATE	INTERNATIONAL ADVISORY COMMITTEE - US-AFRI ELECTRONIC STRUCTURE INITIATIVE	MEMBER
2010 - DATE	INTERNATIONAL CENTRE FOR THEORETICAL PHYSICS	MEMBER - INTERNATIONAL ADVISORY PANEL - AFRICAN SCHOOL ON ELECTRONIC STRUCTURE METHODS (ASESMA)
25.04.2019 - DATE	TECHNICAL UNIVERSITY OF KENYA	PROFESSOR
2015 - DATE	SPRINGER SCIENCE	PEER REVIEWER - JOURNAL OF ELECTRONIC MATERIALS
1st January 2016 - 31st December 2018	UNIVERSITY OF THE WITWATERSRAND	VISITING ASSOCIATE PROFESSOR
1ST OCTOBER 2016 - 30TH SEPTEMBER 2019	TECHNICAL UNIVERSITY OF KENYA	CHAIR - DEPARTMENT OF PHYSICS AND SPACE SCIENCE
16.05.2016 - 24.04.2019	TECHNICAL UNIVERSITY OF KENYA	ASSOCIATE PROFESSOR
2016 - 2020	EGERTON UNIVERSITY	PHYSICS EXTERNAL EXAMINER
2010 - 2017	NATIONAL RESEARCH FOUNDATION/NACOSTI/NCST	PROPOSAL REVIEWER/POSTGRADUATE SCHOLARSHIP REVIEWER
2013 - 2016	UNIVERSITY OF NAIROBI	PHYSICS EXTERNAL EXAMINER
OCT 2012 - 2016	UNIVERSITY OF ELDORET/ CHEPKOILEL UNIVERSITY COLLEGE	ASSOCIATE PROFESSOR
2009 - 2014	INTERNATIONAL CENTRE FOR THEORETICAL PHYSICS - ITALY	REGULAR ASSOCIATE
2008 - 2014	UNIVERSITY OF ELDORET/CHEPKOILEL UNIVERSITY COLLEGE	CHAIRMAN - SCHOOL OF SCIENCE RESEARCH COMMITTEE
2009 - 2013	UNIVERSITY OF ELDORET/CHEPKOILEL UNIVERSITY COLLEGE	DEPARTMENTAL POSTGRADUATE STUDIES CHAIR
1995 - 2008	MOI UNIVERSITY	LECTURER
1994 - 1995	MOI UNIVERSITY	TUTORIAL FELLOW
1990 - 1993	MOI UNIVERSITY	GRADUATE ASSISTANT

GENERAL STATEMENT ON RESEARCH AREAS

I work as a Research Associate of a Kenyan special interest group on Computational Modeling and Materials Science on studies of the properties of materials for energy conversion and applications involving collaboration with experimental groups in these areas. These efforts support multidisciplinary approaches to the existing potential of studying complex physical, chemical and biological systems, among others, that characterize current and emerging challenges in our society.

CURRENT RESEARCH PROJECTS

Materials for Green Energy Conversion	Materials Science
Computational Modeling of Selected Materials of Industrial Utility	Physics - Materials Science

SELECTED PUBLICATIONS

TITLE	LINK TO PUBLICATION	YEAR
Growing materials science in Africa – The case of the African School on Electronic Structure Methods and Applications (ASESMA)	View online	
Quantum Monte Carlo study of pressure-induced phase transition in GaAs	View online	
Insights on hydrogen evolution reaction in transition metal doped monolayer TcS2 from density functional theory calculations	View online	
Ab-initio simulations of copper oxide nanowires and clusters on TiO2 (101) anatase surface.	View online	
A Density Functional Theory Study of Water Photo-Oxidation at Copper Oxide Nanostructures on the Anatase (101) Surface	View online	
Hardness characterization parameters of Niobium Carbide and Niobium Nitride: A first principles study	View online	
First-principle calculations of the bulk properties of 4d transition metal carbides and nitrides in the rocksalt, zincblende and wurtzite structures.	View online	
Controlling the magnetic and optical response of MoS2 monolayer by lanthanide substitutional doping: a first-principles study	View online	
Effect of 3d transition metal substitutional dopants and adatoms on monolayer TcS2 ab initio insights	View online	
Adhesion of electrodes on diamond (111) surface: A DFT study	View online	
First-principles study of two-dimensional electron and hole gases at the head-to-head and tail-to-tail 180◦ domain walls in PbTiO3 ferroelectric thin films	View online	
Theoretical investigation of the thermoelectric properties of ACuO2(A = K, Rb and Cs)	View online	
A density functional theory study of the thermoelectric properties of K3AuO	View online	
Two-dimensional graphene–HfS 2 van der Waals heterostructure as electrode material for alkali-ion batteries	View online	
Comparison of band -fitting and Wannier-based model construction for WSe2	View online	
Ab initio insights into Graphene-Zirconium disulfide/diselenide heterostructure as electrode material for alkali-ion batteries	View online	
The impact of anionic vacancies on the mechanical properties of NbC and NbN: An ab initio study,	View online	

POSTGRADUATE STUDENTS SUPERVISION

NAME	PROJECT TITLE	PERIOD
DENIS MAGERO	Investigating Li and Mg Hydrides as Materials for Hydrogen Fuel Applications (MSc)	2010 - 2013
VICTOR MENG'WA	Studies of TiO2 and SnO2 Surfaces for Applications in Dye Sensitized Solar Cells (MSc)	2011 - 2014
CECIL OUMA	Pressure Induced Phase Transition Studies GaAs using Density Functional Theory and Quantum Monte Carlo (MSc)	2008 - 2010
KORIR KIPTIEMOI	First Principles Studies of Group 4d Transition Metal Carbides and Nitrides (MSc)	2008 - 2010
PERPETUA MUCHIRI	The effect of defects on the properties of hard materials (MSc)	2019 - DATE
ISAAC MOTOCHI	Surface Studies of Various Metal Atoms on Diamond using ab initio Methods (MSc)	2008 - 2010
FELIX DUSABIRANE	Electronic Structure of NiO using LDA+U, GW and BSE Methods (MSc)	2011 - 2014
LYNET ALLAN	Nitrogen doping of titania for energy applications (MSc)	2019 - 2021
DR COSMAS RONNO	Modeling Solar Radiation in Selected Kenyan Meteorological Stations (PhD)	2008 -2013
DR VICTOR MENG'WA	Studies of Nanoparticles of TiO2 for carbon dioxide reduction (PhD)	2016 - 2018
DR RONALD ROP	Generation and Manipulation of Novel Laser Beams (PhD)	2008 - 2013
DR HENRY OTUNGA	Phase Transition Studies of GeSbTe using ab initio methods (PhD).	2013 - 2016
DR PHILIP NYAWERE	First Principles Calculations of the Optical and Thermal Properties of Barium Fluoride (PhD).	2010 - 2013
DR JAMES SIFUNA	2D electron and hole gases in selected oxide perovskites (PhD)	2018 - 2023
Dr. GLADYS KINGORI	2D Heterostructures of metal chalcogenides and graphene for battery applications (PhD)	2016 - 2022
DR GEOFFREY ARUSEI	PHYSICAL AND OPTICAL PROPERTIES OF Ti-MAX PHASES: A DFT STUDY (PhD)	2014 - 2023
Dr Fred Omboga	Quantum Wells (PhD)	2019 - 2021
DR MIRIAM CHEPKOECH	Thermoelectric Properties of alpha – and beta-MnO2 (PhD)	2016 - 2020
DR DENIS MAGERO	Electrochemical and Photo Properties of some remarkable Ruthenium Complexes (Elephox project – international multidisciplinary collaboration) (PhD)	2014 - 2017

COURSES TAUGHT

NAME	DESCRIPTION	PERIOD
SPPI3202 - Statistical Physics	This course combines fundamental physics with aspects of statistics in several areas such as thermal and electrical transport, noise and properties of matter.	2016 - TO-DATE
SPPI2103 - Solid State Physics	Is an introductory course that explores the properties of matter from geometrical aspects to interaction of matter with radiation and related observations. The student is provided with fundamentals that help relate geometrical structure with properties measured.	2016 - TO-DATE

PROFESSIONAL AFFILIATIONS AND SOCIETIES

TITLE	INSTITUTION
Member (183)	KENYA NATIONAL ACADEMY OF SCIENCE
Member	Materials Research Society of Kenya
Editor (Eastern Africa)	African Physics Newsletter
Member (10007617)	Materials Research Society - www.mrs.org