THE TECHNICAL UNIVERSITY OF KENYA

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NAME: DR STEVEN OMONDI AWINO × Faculty: ENGINEERING AND THE BUILT ENVIRONMENT School: Electrical & Electronic Engineering Department: ELECTRONIC AND COMPUTER ENGINEERING Lecturer, SCHOOL OF ELECTRICAL AND ELECTRONIC ENGINEERING **Current Designation:** (SEEE) Office Telephone: +254(020) 2219929, 3341639, 3343672 Official Email: sawino@tukenya.ac.ke **Consultation Hours:** 8AM-5PM MON - FRI

LEVEL	QUALIFICATION NAME	INSTITUTION	YEAF
Doctor of Philosophy (PhD)	ELECTRICAL ENGINEERING	UNIVERSITY OF KWAZULU- NATAL(South Africa)	2019
Masters of Science (M.Sc.)	ELECTRONIC ENGINEERING- TELECOMMUNICATION ENGINEERING MAJOR	UNIVERSITY OF KWAZULU- NATAL(South Africa)	2015
Bachelor of Technology (B.Tech)	ELECTRICAL AND ELECTRONIC ENGINEERING- TELECOMMUNICATION SYSTEMS ENGINEERING	TECHNICAL UNIVERSITY OF KENYA(Kenya)	2012
Diploma	ELECTRICAL AND ELECTRONIC ENGINEERING- TELECOMMUNICATION ENGINEERING	THE KENYA POLYTECHNIC(Kenya)	2010
O level/Equivalent	KENYA CERTIFICATE OF SECONDARY EDUCATION	KWOYO OYUGIS SEC. SCHOOL(Kenya)	2003

WORK EXPERIENCE

PERIOD	INSTITUTION	POSITION	
MAY 2016 - NOV 2016	ROYAL MEDIA SERVICES (RMS)-ICT DEPT.	RADIO SUPPORT OFFICER	
SEP 2013 - JAN 2015	RADIO AFRICA GROUP LTD-TECHNICAL DEPARTMENT, BROADCAST SECTION	BROADCAST SUPPORT ENGINEER	
SEP 2019 - CURRENT	TECHNICAL UNIVERSITY OF KENYA	LECTURER	
NOV 2021 - CURRENT	TECHNICAL UNIVERSITY OF KENYA	Ag. DIRECTOR, SEEE	
DEC 2016 - AUG 2019	TECHNICAL UNIVERSITY OF KENYA (TUK)- TELECOMMUNICATION DEPT.	TUTORIAL FELLOW	
FEB 2013 - AUG 2013	STANDARD MEDIA GROUP-KTN TV	STUDIO MAINTENANCE TECHNICIAN	
JAN 2016 - APR 2016	RADIO AFRICA GROUP LTD-TECHNICAL DEPARTMENT, BROADCAST SECTION	TECHNICAL SUPPORT ENGINEER	

GENERAL STATEMENT ON RESEARCH AREAS

My research focuses on the use of indoor low-voltage power line networks for data transmission. This is due to the fact, power line networks are readily available and thus a cost-effective technology as compared to other systems. However, this channel suffers from several kinds of disturbances, especially, an ever-varying impedance, multipath propagation due to several branching points and impulsive noise among others.

CURRENT RESEARCH PROJECTS

Measurements, Characterization and Modelling of Power Line Communication (PLC) Impulsive Noise	Power Line Communication	
Powerline Channel modelling	POWER LINE COMMUNICATION	
Measurements and characterization of the powerline channel for data transmission	POWER LINE COMMUNICATION	
OFDM based BPSK Modulation and BER analysis in impulsive noise power line communication	POWER LINE COMMUNICATION	

SELECTED PUBLICATIONS

TITLE	LINK TO PUBLICATION	YEAR
Empirical Identification of Narrowband Interference in Broadband PLC Networks at the Receiver, 2018 Progress in Electromagnetics Research Symposium (PIERS-Toyama)	View online	
Time Series Analysis of Impulsive Noise in Power Line Communication (PLC) Networks, SAIEE Africa Research Journal, Vol. 109, No. 4, 2018	View online	
On the Application of Parsimonious Periodic Autoregressive Models to Bursty Impulsive Noise in Low-Voltage PLC Networks	View online	
Measurements and Multipath Characterization of Power Line Communication Channel	View online	
On the in-door low-voltage power line for broadband data communication	View online	
Alternative approach to Power Line Communication (PLC) channel modelling and multipath characterization.	View online	
Measurements and Statistical Modelling for Time Behaviour of Power Line Communication Impulsive Noise	View online	
Analytical BER of OFDM power Line Communication at Different IAT of Impulsive Noise	View online	
Power Line Communication Channel Modelling Using Parallel Resonant Circuits Approach	View online	

COURSES TAUGHT

NAME	DESCRIPTION	PERIOD
Microwave Engineering	Electromagnetic wave propagation, Rectangular waveguides, Circular waveguides, Scattering matrix, Microwave generators, Antennas, and Transmission line theory	2016 - TO- DATE
Electromagnetic Fields	Vector Algebra, Coordinate Systems and Transformation, Vector Calculus, Electrostatic fields, Electric Fields in Materials, Magnetostatic Fields, Magnetic Forces and Materials and Devices, Boundary Conditions in Electromagnetic Fields,	
Control System Engineering	Introduction to Control Systems Engineering, Control Systems Modelling, Feedback Control Systems, Time Response Analysis, Stability Analysis, Frequency Response Analysis, Polar and Nyquist plots.	2016 - TO- DATE
Analogue & Digital Control System	Introduction to control systems, Control systems representation and modelling, Feedback system characteristics and analysis, Control system components, Converters, Shaft position encoders, Motors, Analogue and digital control system,	
Digital Broadcasting	Introduction and development of Digital Broadcasting technology, Digital Audio and Video compression techniques, Digital modulation schemes used in Digital Broadcasting systems, Digital Audio Broadcasting (DAB), Digital Video Broadcasting (DVB), Conditional Access techniques and management, Structure of Digital TV networks and Transmitting Stations, Future developments in Digital Broadcasting.	
Multimedia Communication	Introduction to multimedia communication, Packet switching technologies, Network access technologies and protocols, System hardware and design, Fundamental concepts in Video and multimedia applications, Multimedia video compression techniques, Multimedia audio compression techniques, Multimedia broadcasting.	
Computer Hardware & Maintenance	The visible PC, Motherboard, Memories, Power supplies, Hard disk drives (HDD), Floppy and CD media drives, Audio and video drives, Network cards and drives, Printers and scanners.	2016 - TO- DATE
Digital Electronics	Medium scale integrated logic circuits, Sequential logic circuits, Programmable logic devices, Semiconductor memories, Introduction to microcomputers, Analogue-to-digital converters (ADC) and Digital-to-analogue converters (DAC).	
Electrical Engineering Measurement INTRODUCTION TO MEASUREMENTS AND MEASUREMENT SYSTEMS, MEASUREMENTS STANDARDS, ELEMENTS OF MEASUREMENT SYSTEMS, MEASUREMENT ERRORS AND ANALYSIS, TRANSDUCERS, MEASUREMENT INSTRUMENTS, CALIBRATION OF INSTRUMENTS AND MEASUREMENTS.		2016 - TO- DATE
Electrical Measurement & Fault diagnosis	Units, Measurement Techniques, Circuits and common faults, Repair aids, Reliability Maintenance, Fault location and repair.	2016 - TO- DATE
Characteristics of PN junction, Bipolar Junction Transistor (BJT) Amplifiers, Field Effect Transistor (FET) Amplifiers, Two-port networks, Amplifier coupling methods and responses, Feedback in amplifiers and oscillators, Large signal amplifiers, Miller effect, Pulse amplifiers, Noise in amplifiers		2016 - TO- DATE
Electrical Circuit Theory IIB	Two port networks, Transmission lines, Impedance matching on transmission lines, Network synthesis, Filter Approximation, Realizability conditions on network functions, Two element kind networks	
Analogue Electronics I	Thermionic emission, Atomic theory of matter, Semi conductor theory, Semi conductor diodes, Bipolar Junction Transistors (BJT), Power Supplies. Field Effect Transistors (FET)	2016 - TO- DATE

DESCRIPTION

IEEE (SA): Member No. 92872486 IEEE-HKN Mu Eta Chapter: Member IET (KENYA), Member