



THE TECHNICAL UNIVERSITY OF KENYA

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Faculty:	ENGINEERING AND THE BUILT ENVIRONMENT
School:	Electrical & Electronic Engineering
Department:	ELECTRONIC AND COMMUNICATION ENGINEERING
Current Designation:	Lecturer, TELECOMMUNICATIONS AND INFORMATION ENGINEERING (DTIE)
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Consultation Hours:	8AM-5PM MON - FRI



EDUCATION

LEVEL	QUALIFICATION NAME	INSTITUTION	YEAR
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
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

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
Measurements, Characterization and Modelling of Power Line Communication (PLC) Impulsive Noise	Power Line Communication

SELECTED PUBLICATIONS

TITLE	LINK TO PULICATION
Empirical Identification of Narrowband Interference in Broadband PLC Networks at the Receiver, 2018 Progress in Electromagnetics Research Symposium (PIERS-Toyama)	https://ieeexplore.ieee.org/search/searchresult.jsp?newsearch=true&queryText=awino
Time Series Analysis of Impulsive Noise in Power Line Communication (PLC) Networks, SAIEE Africa Research Journal, Vol. 109, No. 4, 2018	https://ieeexplore.ieee.org/search/searchresult.jsp?newsearch=true&queryText=awino
Measurements and Multipath Characterization of Power Line Communication Channel	http://www0.sun.ac.za/saupec2017/Proceedings/ProceedingView.php
On the in-door low-voltage power line for broadband data communication	http://research.tukenya.ac.ke/index.php/2015-06-08-16-13-26/conference-workshop-seminar-proceedings
Alternative approach to Power Line Communication (PLC) channel modelling and multipath characterization.	http://researchspace.ukzn.ac.za/xmlui/handle/10413/13286
Measurements and Statistical Modelling for Time Behaviour of Power Line Communication Impulsive Noise	https://doi.org/10.15866/irecap.v9i4.16094
Analytical BER of OFDM power Line Communication at Different IAT of Impulsive Noise	http://www0.sun.ac.za/saupec2017/Proceedings/ProceedingView.php?%20ProceedingID%20=%2025
Power Line Communication Channel Modelling Using Parallel Resonant Circuits Approach	http://www.satnac.org.za/proceedings/2015/SATNAC%202015%20Proceedings.pdf

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,	2016 - TO-DATE
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,	2016 - TO-DATE
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.	2016 - TO-DATE
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.	2016 - TO-DATE
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).	2016 - TO-DATE
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
Analogue Electronics A	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	2016 - TO-DATE
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