

CURRICULUM VITAE



1. **NAME:** Nicodemus Abungu Odero
2. **CITIZENSHIP:** Kenyan
3. **ADDRESS:** Machakos University, Faculty of Engineering, Department of Electrical & Electronics Engineering, P.O. BOX 136 – 90100, Machakos. Kenya.
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5. **MOBILE PHONE:** +254-713-028362 / +254 20 2373 006
6. **CERTIFICATIONS/MEMBERSHIP OF PROFESSIONAL SOCIETIES:**
 - a. **Engineers Board of Kenya:** Consulting Electrical Engineer (21st January, 2021: Registration No: **E493**)
 - b. **Engineers Board of Kenya:** Professional Electrical Engineer (4th May, 2011: Registration No: **A2625**)
 - b. **Institute of Engineers of Kenya:** Member (5th April, 2012: Membership No: **M4334**)
 - c. **Institute of Electrical and Electronic Engineers, USA** (3rd Feb., 2002: Membership No: **41467634**)
 - d. **Energy Regulatory Commission:** Certified Electrician (9th Nov., 2011: License No: **A1 003630**)

7. POSITIONS HELD:

- [a] **1st March, 2018 TO DATE: Professor at Machakos University.**
 - i. Supervision Of
 1. Undergraduate Final Year Projects for BSc Students
 - ii. Taught undergraduate students
 1. Electrical Machines (3rd Year)
 2. Electrical Power Systems (2nd, 3rd & 4th Year)
 3. Energy Management and Environmental Protection (5th Year)
 4. Power System Economics and Planning (5th Year)
 - iii. Development of MSc Curriculum
- [b] **1st September, 2016 TO 30th September, 2016: Acting Chairman, Electrical and Information Engineering Department, University of Nairobi.**

Duties:

 1. Providing academic leadership.
 2. Leading, managing and developing the department to ensure it achieves the highest possible standards of excellence in all its activities.
- [c] **8th July, 2014 TO 28th February, 2018 : Associate Professor at The University of Nairobi.**
 - i. Supervision Of
 1. PhD Research

- 2. MSc Research
- 3. Undergraduate Final Year Projects for BSc Students
- ii. Taught MSc Students
 - 1. Electrical Power Transmission and Distribution Systems
 - 2. Electrical Power Systems
- iii. Taught undergraduate students
 - 1. Electrical Power Systems(4th Year)
 - 2. Building Electrical Installation Design and Costing(4th Year) [Department of Building and Construction Management]
- iv. Conducted **Final Year Undergraduate** (5th Year) students through these laboratory exercises:
 - 1. Electrical Machines Laboratory
 - 2. Power Systems Laboratory
 - 3. High Voltage Laboratory

[d] **MARCH, 2010 TO 7th July, 2014: Senior Lecturer at The University of Nairobi.**

- i. Supervision Of
 - 1. PhD Research
 - 2. MSc Research
 - 3. Undergraduate Final Year Projects for BSc Students
- ii. Taught MSc Students
 - 1. Electrical Power Systems Operation and Control
 - 2. Electrical Power Transmission and Distribution Systems
 - 3. Electrical Power System Planning and Management
 - 4. Electrical Power Systems
 - 5. Grid-connected and Stand-alone Hybrid Electrical Power Systems(JKUAT, Nairobi Centre)
 - 6. Advanced Power System Protection to **MSc. Students**(Pan African University(PAU), African Institute for Capacity Development(AICAD), JKUAT)
- iii. Taught undergraduate students
 - 1. Electrical Power Systems(4th and 5th Year)
 - 2. Digital Electronics and Microprocessors (3rd Year)
 - 3. Building Electrical Installation Design and Costing(4th Year) [Department of Building and Construction Management]
 - 4. Building Acoustics, Security, Fire Protection, Lightning Protection, Lighting Design, Air-Conditioning, Refrigeration(3rd Year)[Department of Building and Construction Management]
 - 5. Automatic Motor Control Methods[College of Agriculture and Veterinary Sciences, Upper Kabete]
 - 6. Analogue Filter Design(3rd Year)[JKUAT]
 - 7. Simulation and Modeling(4th Year)[Business and Information Technology]

Students, JKUAT Karen Campus]

- iv. Conducted **Final Year Undergraduate** (5th Year) students through these laboratory exercises:
 - 1. Electrical Machines Laboratory
 - 2. Power Systems Laboratory
 - 3. High Voltage Laboratory

 - v. Ad hoc teaching
 - 1. Heavy Current Transmission and Distribution [JKUAT short course attended by staff from 1. **Ministry of Energy**. 2. **Kenya Transmission Company(KENTRACO)]f. MARCH, 2009 TO 2010: Lecturer at The University of Nairobi. Taught Power Systems, Electrical Power Generation, Transmission and Distribution, Automatic Motor Control Methods, Design and Installation of Electrical Distribution Systems and Digital Electronics and Microprocessors to **undergraduate** students. Advanced Power Systems Analysis to **MSc. Students**.**
- [e] **Jan 2006 to Jan 2011** M&E Consulting Engineers, Nairobi, Kenya.
- [f] **Jan 1998 to Jan 2000** Feradon Associates, Nairobi, Kenya
- [g] **1996 TO 2008: Lecturer at Jomo Kenyatta University of Agriculture and Technology.**
- i. Taught **diploma** and **undergraduate** students
 - 1. Electrical Power Generation Methods(Hydro, Geothermal, Thermal, Nuclear, Steam, Tidal, etc),
 - 2. Motor Control and Power Electronics
 - 3. High Voltage Technology,
 - 4. Switchgear and Protection for Electrical Power Systems
 - 5. Protection Against Lightning Strikes,
 - 6. Electrical Power Systems Planning
 - 7. Electrical Power Distribution Systems Design,
 - 8. Electrical Power Transmission Systems,
 - 9. Electrical Installation
 - 10. Insulating materials,
 - 11. Digital Electronics,
 - 12. Electromagnetics,
 - 13. Analogue Electronics,
 - 14. Energy Systems,
 - 15. Transmission Lines Theory, and Power Electronics.

 - ii. Part-time teaching at the University of Nairobi (undergraduate students)

1. Electrical Machines
2. Power Systems
3. Electrical Measurement and Instrumentation

iii. Taught MSc Students

1. Power Systems State Estimation
2. Electrical Power Distribution Systems
3. High Voltage Technology,
4. Power Distribution Networks and Economics
5. Power System Sensitivity Analysis
6. Switchgear and Protection for Electrical Power Systems
7. Protection Against Lightning Strikes,
8. Electrical Power Systems
9. Analogue Electronics
10. Power Electronics

[h] 1994 TO 1996: Assistant Lecturer at Jomo Kenyatta University of Agriculture and Technology.

Taught **diploma** and **undergraduate** students

1. Energy Systems
2. Electrical Power Generation Methods (Hydro, Geothermal, Thermal, Nuclear, Steam, Tidal, etc),
3. Motor Control and Power Electronics
4. High Voltage Technology,
5. Switchgear and Protection for Electrical Power Systems
6. Electrical Installation
7. Insulating materials,
8. Transmission Lines Theory, and Power Electronics to.

[i] 1990 TO 1993: MSc Student at The University Of Nairobi Electrical and Electronics Department

Conducted **undergraduate** students through these laboratory exercises:

1. Electrical Machines Laboratory (dc and ac motors, transformers, hysteresis loop determination, etc)
2. Power Systems Laboratory(power line characteristics, power transmission, etc)
3. High Voltage Laboratory(Generation of high voltage AC, DC, and Lightning Strokes, testing Insulating Materials, etc)

8. WORKING LANGUAGES: English- excellent, Kiswahili, French - good

9. GOOD CAPABILITY REGARDING: Microsoft Word, Excel, Power Point, Visual Basic, C, Fortran, MATLAB, FEMLAB, ETAP 19.0,1, NEPLAN v545 (Electrical Power Systems Simulation Software).

10. EDUCATIONAL BACKGROUND:

- Technische Hochschule Ingolstadt(THI) & Hochschule Neu-Ulm(HNU) University of Applied Sciences, Bavaria, Germany (26th Nov, 2018 -7th Dec, 2018, 5th -12th October 2018, 4th -8th April, 2019) (Application-Oriented Teaching, Applied Research and Knowledge & Technology Transfer Methods).
- JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY PhD (2002 – 2007) (Engineering, Computational Electromagnetics)
- JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY Certificate (February, 2006 – March, 2006)(Occupational Health, Safety and Environment)
- JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY Certificate (November, 2005 – December, 2005)(Environmental Impact Assessment and Audit)
- HASHIMOTO POLYTECHNIC UNIVERSITY(HASHIMOTO, KANAGAWA, JAPAN) Certificate (2000). Attachments at OMRON (Osaki, Japan), HITACHI (Totsuka, Japan), FUJI ELECTRIC COMPANY (Toyoda, Japan), and OMRON (Kyoto, Japan). During these attachments I learnt about Factory Automation(Components, Sensors, Programmable Controller), copper board fabrication (single and multi-layer), colour television maintenance, relay circuits and sensors, programmable logic controls for very large and small power systems, and powers system planning, operation and control. Factory visits to vehicle assembly, beer, battery manufacturing, etc, plants were done.
- UNIVERSITY OF NAIROBI, KENYA MSc. (1990 - 1993) (High Voltage Technology – A, Power Systems – B, Power Electronics – B) BSc. (Electrical Power Engineering) (1987 - 1990) (Upper Second Class)
- SAINT PATRICK'S HIGH SCHOOL, ITEN, KENYA Kenya Advanced Certificate of Education, KACE (1985 - 1986) Grade A in Mathematics, Physics, Chemistry. Grade B in Further Mathematics.
- MANG'U HIGH SCHOOL, THIKA, KENYA Kenya Certificate of Education, KCE (1981- 1984) Distinction 1 in Maths, Physics, Chemistry, Biology. Distinction 2 in Geography, French, Electrical Technology, English.
- XAVERIAN PRIMARY SCHOOL, KISUMU, KENYA. Certificate of Primary Education, C.P.E (1974 - 1980) Grade A in Maths, English, General Science.

11. AWARDS:

- Cash award by the Institute of Engineers of Kenya, I.E.K (1990) for best undergraduate electrical engineering project.
- Cash award [**Gandhi Smarak Nidhi**] by the University of Nairobi (1987) for being one of the best five students at the Department of Electrical Engineering.
- Postgraduate Scholarship award by the German Academic Exchange Service (DAAD) for M.Sc. studies.

- Postgraduate Scholarship award by the German Academic Exchange Service (DAAD) for PhD studies.

12. SUPERVISED THESES FOR M.Sc (Electrical and Information Engineering) POSTGRADUATE CANDIDATES

THE UNIVERSITY OF NAIROBI

	<i>CANDIDATE</i>	<i>THESIS TITLE</i>
1	Mwaniki Charles (graduated, 2012):	Voltage Stability Improvement the 21 st Century Power Transformer.
2	Musau Peter Moses (graduated, August, 2014):	Power Loss Reduction in the Distribution System with a Wind Based Distributed Generation.
3	Kilonzi Charles Julius (graduated, December, 2014):	Loss reduction and Voltage Profile Improvement by Optimal Placement and Sizing of Distributed Generation (DG) using a Hybrid of Genetic Algorithm (GA) and Improved Particle Swarm Optimization (IPSO).
4	Muema Festus Wambua (graduated, 2012):	Electrical Power Substation Energy Audit And The Cost- Benefit Analysis Of Automating Switching Operations During Outages At The Kenya Power Company Limited.
5	Deng' Jacob Manyon (graduated, August, 2014):	Energy Status in South Sudan
6	Dartey Emmanuel Manteaw (graduated, 2013):	Optimization of Combined Economic and Emission Dispatch (CEED) considering losses using Artificial Bee Colony and Particle Swarm Hybrid with Cardinal Priority Ranking.
7	Kigen Christopher Kimosop (graduated, December, 2014):	Voltage Controller for Optimising Voltage Profile of Distribution Networks with Distributed Generation
8	Tony Nyagah (graduated, December, 2016):	Designing and Building Integrated Photovoltaic Solar Roofing Tiles
9	Victor Okinda (graduated, December, 2017):	Optimal Sizing, Modelling, Simulation and Sensitivity Analysis for a Stand-alone Hybrid Solar PV – Wind Renewable Energy Power System with Energy Storage
10	Stephen Taban Inyasio Siri (graduated, December, 2017):	Short Term Load Forecasting using Neural Network Hybrid with Particle Swarm Optimization (PSO) and Genetic Algorithm (GA) techniques.
11	Nang'o Bentlay Odhiambo (ongoing):	Fault Location by Using a Hybrid of Impedance-based and Traveling Wave-based Algorithm for Dynamic Series Capacitor Compensated Distributed Series Reactor Teed Transmission Lines.
12	Olang'o Seline Akinyi (graduated, December, 2018):	Multi-objective and multi-area optimization of hydrothermal dynamic environmental economic dispatch using hybridized bat algorithm
13	Mbenge Martha Kyule	Improving the Voltage Stability of a Distribution System with Renewable Distributed Generation using a three method hybrid.

(graduated, December, 2020):

JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY

CANDIDATE

THESIS TITLE

1. **Obadiah Josiah Ng'ang'a** (successfully defended, 2020): Optimization of power generation in low head small hydro power plants using water pressure boosting mechanisms
2. **Ireri Tarasicio Gichovi** (ongoing); Electrical Load forecasting using Artificial Neural Networks

13. SUPERVISED THESES FOR PhD POSTGRADUATE CANDIDATES

JOMO KENYATTA UNIVERSITY OF AGRICULTURE AND TECHNOLOGY

CANDIDATE

THESIS TITLE

- 1 **Mwaniki Charles** (graduated, 2017): A Meta-heuristic Load Shedding Algorithm Using Voltage and Frequency Parameters

THE UNIVERSITY OF NAIROBI

CANDIDATE

THESIS TITLE

- 2 **Moses Peter Musau** (graduated, 2017): Multi Objective Dynamic Economic Dispatch with Renewable Energy Cost Functions
- 3 **Joel Kitheka** (ongoing): Power flow analysis on 132kV transmission network with Service Potential Transformer Substations.
- 4 **Elisha Aketch Ochungo** (graduated, December, 2020): Urban Households Vulnerability to Intermittent Water Supply : Nairobi City County Adaptation through Smart Soft Path.

14. EXAMINED THESES FOR PhD (Electrical and Information Engineering) POSTGRADUATE CANDIDATES

THE UNIVERSITY OF NAIROBI

CANDIDATE

THESIS TITLE

- 1 **Vasant Dharmadhikary** (graduated, 2012): M. Analysis of Microstrip-Patch Antennas incorporating Arbitrarily-Shaped Apertures

TSHWANE UNIVERSITY OF TECHNOLOGY, Pretoria, Republic of South Africa

CANDIDATE

THESIS TITLE

- 1 **OM POPOOLA** (graduated, 2015): Adaptive Neuro-Fuzzy Inference System (ANFIS)-based modelling of residential lighting load profile

2. **ALIYU HASSAN** Multi-Period Economic Dispatch of Intermittent Renewable Energy with Storage for Power Systems Operation
(graduated, 2020):

15. PAPERS PUBLISHED IN PEER REVIEWED JOURNALS:

1. Stephen Taban Inyasio Siri Ogugu, **Abungu, N.O**, Cyrus Wabuge Wekesa. "24-Hours Load Forecasting Using a Hybrid of Genetic Algorithm (GA) and Particle Swarm Optimization (PSO) for Optimized Neural Network", *International Journal of Emerging Technology and Advanced Engineering (IJETAE)*, Vol 6, Issue 12, ISSN 2250-2459, ISO 9001:2008 Certified Journal, pg 143-158, December 2016. [<https://pdfs.semanticscholar.org/f249/ae7674ab999f5dbdd08f69b098735782ddf7.pdf>]
2. Okinda Victor, **Abungu, N.O**, "Modeling, Simulation and Optimal Sizing of a Hybrid Wind, Solar PV Power System in Northern Kenya", *International Journal of Renewable Energy Research (IJRER)*, Volume. 6- Issue. 04 ,pp 364-374 July 2016 [<http://www.ijrer.org/ijrer/index.php/ijrer/article/view/4323>]
3. Moses Peter Musau, **Abungu, N.O**, Cyrus Wabuge Wekesa. "Security Constrained Multi Objective Economic Dispatch with Renewable Energy Cost Functions and HVDC Transmission Lines"(Being finalized)
4. Moses Peter Musau, **Abungu, N.O**, Cyrus Wabuge Wekesa. " Single Objective Dynamic Economic Dispatch with Cubic Cost Functions using a Hybrid of Modified Firefly Algorithm with Levy Flights and Derived Mutations", *International Journal of Engineering Research & Technology (IJERT)*, Volume. 5- Issue. 02 ,pp 364-370 May 2016 [<https://www.ijert.org/download/15257/single-objective-dynamic-economic-dispatch-with-cubic-cost-functions-using-a-hybrid-of-modified-firefly-algorithm-with-levy-flights-and-derived-mutations>]
5. Okinda Victor, **Abungu, N.O.**, "A review of Techniques in Optimal Sizing of Hybrid Renewable Energy Systems", *International Journal of Engineering Research & Technology (IJERT)*, Volume. 4- Issue 11 ,pp 153-163 November 2015 [https://www.researchgate.net/publication/319165346_A_REVIEW_OF_TECHNIQUES_IN_OPTIMAL_SIZING_OF_HYBRID_RENEWABLE_ENERGY_SYSTEMS]
6. Moses Peter Musau, **Abungu, N.O**, Cyrus Wabuge Wekesa "Combined Real and Reactive Power Economic Dispatch using Multi-Objective Reinforced Learning with Optimized Losses" *International Journal of Scientific and Research Publications (IJSRP)*, Volume 5, Issue 10, October 2015 . [<http://www.ijsrp.org/research-paper-1015.php?rp=P464690>]
7. Moses Peter Musau, **Abungu, N.O**, Cyrus Wabuge Wekesa, N. G Angela. "Economic Dispatch for HVDC Bipolar System with HVAC and Optimal Power Flow Comparisons using Improved Genetic Algorithm (IGA) ", *International Journal of Engineering Research & Technology (IJERT)*, Volume. 4 - Issue. 08 , PP 790-799 August – 2015 [<https://www.ijert.org/download/13983/economic-dispatch-for-hvdc-bipolar-system-with-hvac-and-optimal-power-flow-comparisons-using-improved-genetic-algorithm-iga>]
8. Moses Peter Musau, **Abungu, N.O**, Cyrus Wabuge Wekesa. "Multi Objective Dynamic Economic Dispatch with Cubic Cost Functions" *International Journal of Energy and*

- Power Engineering (IJEPE)*. Vol. 4, No. 3, pp. 153-167, **2015**
[\[https://irjet.net/archives/V3/i6/IRJET-V3I6128.pdf\]](https://irjet.net/archives/V3/i6/IRJET-V3I6128.pdf)
9. Mwaniki, C., **Abungu, N.O**, Muriithi, C.: “Optimal Under-voltage Load Shedding using Cuckoo Search with Levy Flight Algorithm for Voltage Stability Improvement,” *International Journal of Engineering Science Invention (IJESI)*, Vol 4, Issue 7, ISSN (Online): 2319-6734, ISSN (Print): 2319-6726, pg 34-41, July 2015.[\[http://www.ijesi.org/papers/Vol\(4\)7/F047034041.pdf\]](http://www.ijesi.org/papers/Vol(4)7/F047034041.pdf)
 10. Mwaniki C, Muriithi C. M, **Abungu N. O** , Nyakoe G. N.”Optimal Underfrequency Load Shedding using Cuckoo Search with Levy Flight Algorithm for Frequency Stability Improvement”, *International Journal of Emerging Technology and Advanced Engineering (IJETAE)*, Vol 5, Issue 10, ISSN 2250-2459, ISO 9001:2008 Certified Journal, pg 8-14, October **2015**.[\[http://www.ijetae.com/files/Volume5Issue10/IJETAE_1015_02.pdf\]](http://www.ijetae.com/files/Volume5Issue10/IJETAE_1015_02.pdf)
 11. Mwaniki C, Muriithi C. M, **Abungu N. O** , Nyakoe G. N.”Amalgamated Optimal Load Shedding using Cuckoo Search with Levy Flight Algorithm for Frequency and Voltage Stability Improvement”,*International Journal of Emerging Technology and Advanced Engineering (IJETAE)*, Vol 5, Issue 12, ISSN 2250-2459, ISO 9001:2008 Certified Journal, pg 8-14, December **2015**.[\[http://www.ijetae.com/files/Volume5Issue12/IJETAE_1215_03.pdf\]](http://www.ijetae.com/files/Volume5Issue12/IJETAE_1215_03.pdf)
 12. Kigen, C., Abungu, N.O: “Voltage Controller for Radial Distribution Networks with Distributed Generation.,” *International Journal of Scientific and Research Publications (IJSRP)* ISSN: 2250-3153, Issue 3, Volume 4, March 2014, pp. 1-6.[\[http://www.ijsrp.org/research-paper-0314/ijsrp-p27115.pdf\]](http://www.ijsrp.org/research-paper-0314/ijsrp-p27115.pdf)
 13. Kilonzi, J.C, Abungu, N.O. , “Effects of Distributed Generation penetration on system power losses and voltage profiles.” *International Journal of Scientific and Research Publications (IJSRP)* ISSN: 2250-3153, Issue 12, Volume 3, December 2013, pp. 1-8.[\[http://www.ijsrp.org/research-paper-1213/ijsrp-p2458.pdf\]](http://www.ijsrp.org/research-paper-1213/ijsrp-p2458.pdf)
 14. Kilonzi, J.C, Abungu, N.O. , “A combined sensitivity factor based GA-IPSO approach for system loss reduction and voltage profile enhancement”, *International Journal of Innovative Research in Engineering and Science (IJIRES)* ISSN: 2319-5665, Issue 2, Volume 12, December 2013, pp. 2319-5665.
 15. Musau, P.M, Abungu, N.O., Mbuthia, J.M: “Reducing Real and Reactive Power Losses in the Power Distribution System by DFIG Placement and Sizing Using Ordinary PSO and HGAPSO :A Comparison.,”*IJETAE (International Journal of Emerging Technology and Advanced Engineering)* Accepted for Publication.
 16. Musau, P.M, Abungu, N.O.: “Power Loss Reduction in the Active Distribution Network by Doubly Fed Induction Generator (DFIG) Placement and Sizing Using Ordinary Particle Swarm Optimization (PSO) and an Hybrid of Genetic Algorithm (GA) and PSO (HGAPSO),” *IJETAE (International Journal of Emerging Technology and Advanced Engineering)*, Issue 7, Volume 3, July 2013, pp. 26-36.[\[http://www.ijetae.com/files/Volume3Issue7/IJETAE_0713_06.pdf\]](http://www.ijetae.com/files/Volume3Issue7/IJETAE_0713_06.pdf)
 17. Musau, P.M, Abungu, N.O.: “Solving The Active Distribution Network Reconfiguration (ADNR) Problem Taking Into Consideration A Stochastic Wind Scenario and Load Uncertainty By Using HBFDE Method,” *IJETAE (International Journal of Emerging Technology and Advanced Engineering)*, Issue 7, Volume 3, July 2013, pp. 46-56.[\[http://www.ijetae.com/files/Volume3Issue7/IJETAE_0713_05.pdf\]](http://www.ijetae.com/files/Volume3Issue7/IJETAE_0713_05.pdf)
 18. Kilonzi, J.C, Abungu, N.O. : “A GA/IPSO based Approach for System Loss Reduction and Voltage Profile Improvement Employing Arithmetic Crossover and Mutation,”

- IJEST (International Journal of Engineering Science and Technology)*, Issue 7, vol. 5, July 2013, pp. 1501-1510.
19. Manteaw, E.D, Abungu, N.O. : “Multi-objective environmental/economic dispatch solution using hybrid ABC_PSO algorithm,” *IJSRP (International Journal of Scientific and Research Publications)*, Issue 12, vol. 2, December 2012, pp. 8-14.[<http://www.ijsrp.org/research-paper-1212/ijsrp-p1202.pdf>]
 20. Manteaw, E.D, Abungu, N.O. : “Combined Economic and Emission Dispatch problem using ABC_PSO hybrid algorithm with valve point loading effect,” *IJSRP (International Journal of Scientific and Research Publications)*, Issue 12, vol. 2, December 2012, pp. 609-615.[https://pdfs.semanticscholar.org/c405/c05671a8074b46085861e2f23306a42f2ea4.pdf?_ga=2.258547658.1357665805.1526060782-942841631.1526060782]
 21. Musau, P.M, Abungu, N.O.: “Distributed Slack Bus Model for a Wind-Based Distribution Generation using Combined Participation Factors,” *IJETAE (International Journal of Emerging Technology and Advanced Engineering)* Volume 2, Issue 10, Oct 2012, pp. 459-469.[https://profiles.uonbi.ac.ke/pemosmusa/files/ijetae_1012_80.pdf]
 22. Kigen, C., Abungu, N.O.: “Optimising Voltage Profile of Distribution Networks with Distributed Generation.,” *IJETAE (International Journal of Emerging Technology and Advanced Engineering)* Volume 2, Issue 12, Dec 2012, pp. 89-95.[http://www.academia.edu/4353899/Optimising_Voltage_Profile_of_Distribution_Networks_with_Distributed_Generation]
 23. Mwaniki, C, Abungu, N.O, Wekesa, C. : “Voltage Stability Improvement Using the 21st Century Power Transformer”, *International Institute for Science, Technology and Education*, ISSN 2222-1727, Vol. 3, No. 4, Year 2012, pp. 21 - 28.[<http://www.iiste.org/Journals/index.php/ISDE/article/view/1564/1505>]
 24. Abungu, N.O, Konditi, D.B.O. and Otieno, V.A. : “Analysis of Waveguide-backed Apertures of Arbitrary Shape in a Thick Conducting Screen,” *WSEAS(World Scientific and Engineering Academy and Society) Trans. on Communications*, Issue 5, vol. 2, December 2008, pp. 1157-1168.
 25. Abungu, N.O, Konditi, D.B.O. and Otieno, V.A. : “Analysis of Waveguide-backed Inhomogeneously-filled Apertures of Arbitrary Shape in a Thick Conducting Screen,” *WSEAS(World Scientific and Engineering Academy and Society) Trans. on Communications*, Issue 7, vol. 4, July 2007, pp. 746-757
 26. Abungu, N.O, Konditi, D.B.O. and Otieno, V.A. : “Analysis of Waveguide-backed Apertures of Arbitrary Shape in a Thick Conducting Screen,” *Proceedings of the JKUAT Scientific, Technological and Industrialization Conference 2006*.
 27. Abungu, N.O, Konditi, D.B.O. and Otieno, V.A. : “Hybrid Method Analysis of Electromagnetic Transmission through Apertures of Arbitrary Shape in a Thick Conducting Screen,” *WSEAS(World Scientific and Engineering Academy and Society) Trans. on Communications*, Issue 6, vol. 3, December 2004, pp. 1767-1778.
 28. Abungu, N.O, Konditi, D.B.O. and Otieno, V.A. : “Analysis of Electromagnetic Transmission through dielectric filled Apertures of Arbitrary Shape in a Thick Conducting Screen,” *WSEAS (World Scientific and Engineering Academy and Society) Transactions on Communications*, Issue 7, vol. 4, July 2005, pp. 372 - 381

16. PAPERS PUBLISHED IN CONFERENCE PROCEEDINGS:

1. Moses Peter Musau, **Abungu, N.O**, Cyrus Wabuge Wekesa “Implementation of Environmental Decision Making Tool for Renewable Energy Utilization : A Case of Wind and Solar” IEEE EUROCON 2017 17th International Conference on Smart Technologies, pp 816-821.
2. Seline A. Olang’, Moses Peter Musau, **Abungu, N.O** “Hybridized Modified Bat Algorithm with Cardinal Priority Ranking for solving Multi Area Environmental Economic Dispatch Problem” International Conference on Soft Computing & Machine Intelligence(ISCMI 2018) conference, November 2018.
3. Seline A. Olang’, Moses Peter Musau, **Abungu, N.O** “Multi Objective Multi Area Hydrothermal Economic Dispatch using Bat Algorithm” IEEE POWERCON Conference,2018, Guangzhou, 2018.
4. Moses Peter Musau, **Abungu, N.O**, Cyrus Wabuge Wekesa “Security Constrained Multi Area Multi Objective Economic Dispatch with Renewable Energy and Multi-Terminal DC Tie Lines” IEEE POWERCON 2016 Wollongong, Australia 28th September – 1st October 2016(Submitted for Review)
5. Moses Peter Musau, **Abungu, N.O**, Cyrus Wabuge Wekesa “Stability Analysis of a Multi Area System with Renewable Energy and Multi-Terminal DC Tie Lines” IEEE POWERCON 2016 Wollongong, Australia 28th September – 1st October 2016(Submitted for Review)
6. Moses Peter Musau, **Abungu, N.O**, Cyrus Wabuge Wekesa “Multi Objective Dynamic Economic Dispatch with Renewable Energy and HVDC Transmission Lines” IEEE PES AFRICA Livingstone Zambia 28th June -2nd July 2016.
7. Moses Peter Musau, **Abungu, N.O**, Cyrus Wabuge Wekesa “Multi Objective Dynamic Economic Emission Dispatch with Renewable Energy Cost Functions” IEEE PES AFRICA Livingstone Zambia 28th June -2nd July 2016
8. Moses Peter Musau, **Abungu, N.O**, Cyrus Wabuge Wekesa "Multi Area Multi Objective Dynamic Economic Dispatch with Renewable Energy Cost Functions using Scenario-Based Modified Firefly Algorithm with Levy Flights and Derived Mutation", IEEE International Conference on Energy (ENERGYCON 2016) KU Leuven, Belgium 6th – 8th April 2016.
9. Moses Peter Musau, **Abungu, N.O**, Cyrus Wabuge Wekesa “Multi Area Multi Objective Dynamic Economic Dispatch with Renewable Energy and Multi Terminal DC Tie Lines” 6th IEEE International Conference on Power Systems (ICPS 2016) New Delhi, India 4th – 6th March 2016.
10. Moses Peter Musau, **Abungu, N.O**, Cyrus Wabuge Wekesa, N. G Angela. "Economic Dispatch for HVDC Bipolar Link Using Improved Genetic Algorithm", Nairobi Innovation Week Conference, University of Nairobi ,2015
11. Mwaniki, C., **Abungu, N.O**, Muriithi, C.: “Simultaneous Consideration of Bus Voltage and Frequency in Load Shedding in a High Voltage AC Network,” International Annual Conference on Sustainable Research and Innovation (SRI), Kenya School of Monetary Studies, Nairobi, Kenya. May 2015, Pg. 30-34
12. Patricia, L.O., **Abungu, N.O** : “Solution to Economic Load Dispatch using Particle Swarm Optimization,” Proceedings of KSEEE (Kenya Society of Electrical and Electronics Engineers) Conference September 2014.

13. Mwaniki, C., Muriithi, C, **Abungu, N.O** : “Meta-Heuristic Optimization: A New Approach to Load Shedding,” Proceedings of KSEEE (Kenya Society of Electrical and Electronics Engineers) Conference August 2013, Vol. 3, pp 20 - 26.
14. Mwaniki, C., Muriithi, C, **Abungu, N.O.**: “The Dependency of Bus Voltage and Frequency in Load Shedding,” Proceedings of SRI (Sustainable Research and Innovation) Conference, JKUAT, May 2014, Vol. 2, pp 31 - 34.
15. Ileri, T. G., **Abungu, N.O**, Murage, D. K. : “Short Term Load Forecasting Using Artificial Neural Networks,” Proceedings of Mechanical Engineering Annual Conference, JKUAT, 2013.
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22. N.M.L. Ijumba, M.K Gakuru, **Abungu, N.O**. 'Applications of electric field calculations in optimization of insulator designs,' M.Sc. Thesis: Proceedings of the 4th IEEE International Conference on Properties and Applications of Dielectric Materials, University of Queensland, Australia, July 3-7, 1994.

17. PROFESSIONAL PRACTICE PART

1. 27th Nov., 2019 to 2021

Project Title: Upgrading TVET institutions in Liberia.

UNIDO hired me as an individual International Consultant (Electrical Engineer) to do designs as part of the actions towards upgrading TVET institutions in Liberia, under a

project funded by the European Union (EU) and Sweden (Ref.: UNIDO Project ID Nos.: 160082 & 140095). The “**EU and Sweden Support to Technical Vocational Education and Training (TVET) for Young People in Liberia ‘Youth Rising’**” project seeks to strengthen the Liberian TVET sector in its capacity to deliver equitable and gender-balanced access to high-quality and demand-driven TVET.

Project Site: Monrovia, Zwedru, Voinjama, all in Liberia.

Project Sponsors: European Union and Government of Sweden.

Project Implementer: United Nations Industrial Development Organization(UNIDO), Vienna International Centre, Austria.

Project Cost: US \$130 million.

The assignment entails:

- Assess the existing electrical systems/designs for the infrastructure of Monrovia Vocational and Training Centre(MVTC), Booker Washington Institute(BWI), WVS Tubman High School, Zwedru Multilateral High School, Harbel Multilateral High School, and Voinjama Multilateral High School in terms of accuracy, suitability to overall design requirements, including identifying improvements in the designs and be able to propose practical solutions
- Design & analyze electrical engineering systems including renewables for MVTC, BWI, WVS Tubman High School, Zwedru Multilateral High School, Harbel Multilateral High School, and Voinjama Multilateral High School utilizing research, development, relevant codes and good engineering practices Develop electrical drawings including plans, sections, elevations, details and other layouts for MVTC, BWI, WVS Tubman High School, Zwedru Multilateral High School and Voinjama Multilateral High School as needed in AutoCAD according to stipulations.
- Develop Bill of Quantities (BoQ) for electrical works for MVTC, BWI, WVS Tubman High School, Zwedru Multilateral High School and Voinjama Multilateral High School suitable for tender.
- Prepare and verify technical specifications for electrical systems including products, apparatus, services and associated quality of workmanship
- Produce program of works to identify all timelines for the implementation of electrical works for MVTC, BWI, WVS Tubman High School, Zwedru Multilateral High School and Voinjama Multilateral High School sites.

- Prepare cost estimates and prices for electrical works for MVTC, BWI, WVS Tubman High School, Zwedru Multilateral High School and Voinjama Multilateral High School sites
- Asses the power generation station at the BWI campus incl. the possibility of rehabilitating the power generation system and infrastructure to house it. This will include reviewing the possibility to relocate the biomass generators at BWI from the machining area to a dedicated power generation area.
- Prepare and submit a written final assignment report as per the UNIDO prescribed format.

2. 18th November, 2019 to 2021

Project Title: Re-Organization And Upgrade Of Factory Electrical Distribution System.

Inter-Beauty Products Limited hired me to do initial assessments of electrical load distribution and power consumption of the electrical system of the factory on Mombasa Road and subsequently do a redesign and supervise installation to upgrade the switchboard and system to a busbar distribution one, ensuring the existing overloading of certain lines is eliminated.

Project Site: Nairobi.

Project Sponsors: L'Oreal East Africa.

Supervisor: Company Electrical Engineer, Mr. Daniel Baaru, Tel : 0721255833, Email : daniel.baaru@loreal.com

Project Cost: Ksh. 8 million.

3. 18th January 20th to February, 2019,

Project Title: Commissioning of the 15.5kW Hybrid(9.5kW Solar / 6 kW Wind)

Power Plant at Ndeda Island in Lake Victoria.

Vestas Wind Systems Limited hired me to commission the 15.5kW Hybrid (9.5kW Solar / 6 kW Wind) Power Plant at Ndeda Island in Lake Victoria.

Project Site: Ndeda Island, Lake Victoria, Bondo.

Project Sponsors: L'Oreal East Africa.

Supervisor : Ms. Jacinta Murunga, Tel : 0705 140 525, [Email](mailto:jamng@vestas.com) : jamng@vestas.com;

Project Cost: Ksh. 4.7 million.

4. January 2017 to May 2018,

Project Title: Consultancy Services for Socio Economic Surveys, Infrastructure Upgrading plan, & Engineering Designs of Infrastructure in Informal Settlements (Nairobi and Kilifi Counties).

GA Consultants Limited hired me in my individual capacity to Design, Prepare BoQs and Tender Documents for Grid-Tied, Solar Stand-Alone, and Hybrid Floodlight Masts and Street Lights for Mathare and Kilifi Slums.

Project Site: Nairobi and Kilifi Counties.

Project Sponsors: The Ministry of Transport, Infrastructure, Housing And Urban Development. Under the auspices of Kenya Informal Settlements Improvement Project (KISIP) Contract No: MLHUD/KISIP/CS/004A/2014-2015.

Supervisor: Eng. Elisha Aketch Ochungo, P.O. Box 2670 – 00100 Nairobi, Kenya, Tel : 0721 629 706, Email : elishakech1@gmail.com

Project Cost: Ksh. 3.9 Billion (Nairobi 2.5 Billion, Kilifi County 1.4 Billion).

5. 15th March, 2018 to January 2019,

Project Title: Valuation of Assets Countrywide for The Communications Authority of Kenya: Fixed, Mobile and Handheld Radio Monitoring Equipment, Electrical Equipment, and Vehicles.

Syagga & Associates Ltd hired me in my individual capacity to carry out a valuation of Assets **Countrywide(Kenya)** for The Communications Authority of Kenya: Fixed, Mobile and Handheld Radio Monitoring Equipment, Electrical Equipment, and Vehicles.

Project Site: Whole of Kenya.

Project Sponsors: The Communications Authority of Kenya.

Supervisors: Chief Valuer(Prof Paul M. Syagga), Jadala Place, P.O. Box 26060-00504, Nairobi, Kenya, Tel : 0707 711 208, **Assistant Valuer**(Mr. Owino), Tel : 0720 348 105

Project Cost: Ksh. 14 million.

6. Feb 2018 to July 2018

Project Title: Conversion of the main campus UNES Bookshop into a Graduate Research Library.

The University of Nairobi hired me in my individual capacity to Design, Prepare BoQs and Tender Documents for Electrical Works needed in the **Conversion of the main campus UNES Bookshop into a Graduate Research Library.** The work covered the usual lighting, socket, power distribution, and lifts. Additionally, the proposed system is to automate the following tasks using RFID technology, □ Accessing number of books at a time □ Searching a particular book to check its presence in the library □ Locating the physical location of the book □ Accounting/Stock verification of the materials.

Project Site: Main Campus, The University of Nairobi.

Project Sponsor: The Indian High Commission.

Supervisor: Project Architect, Arch. Peter Njeru, Dept. of Real Estate, UoN, Tel :0722 446 39

Project Cost: Ksh. 78 million.

7. 24th November, 2016 to 22nd December, 2016

Project Title: Audit of Electrical Installation Systems of Uni Plaza(Mombasa)

The University of Nairobi hired me in my individual capacity to Audit the Electrical Installation Systems of **Uni Plaza(Mombasa)** and recommend appropriate corrective measures to restore normal electrical operations. Complaints included frequent blowing of light fittings, overheating of cables, and power surges. A redesign of the power distribution system was done to incorporate a Voltage Stabilizer, Higher Capacity Rising Main Busbars, and cables. Redistribution of load equally among the phases was also done. Restoration of the Lightning Protection System and introduction of a Structured Cabling System proposed.

Project Site: Uni Plaza Building, Mombasa Campus, The University of Nairobi.

Project Sponsor: The University of Nairobi.

Supervisor: Arch. Jarrett Odwallo, Manager, Construction & Maintenance Dept., The University of Nairobi. Tel :0721 392 819.

Project Cost: Ksh. 36 million.

8. October, 2016 to 2021

Project Title: Development of the Master Plan for the Electrical Services Infrastructure for Proposed Koitalel Arap Samoei University.

The University of Nairobi hired me in my individual capacity to develop the Master Plan and Bills of Quantities for **Proposed Koitalel Arap Samoei University** Electrical Services Infrastructure. The University is to be built on a **1km by 700m** piece of land in Nandi County. The work covers lighting, power distribution, back-up power, structured cabling, CCTV, Access Control, Fire Alarm and Detection, and Building Management System (**BMS**). Phase 1 of the project comprises School of Law, School of Business, Administration Block, Library, and Auditorium.

Project Site: Nandi County, Uasin Gishu County.

Project Sponsor: The Government of Kenya.

Supervisor: Project Architect, Arch. Kimeu Musau, Dept. of Architecture, The University of Nairobi. **Tel :0720 252 944.**

Project Cost: Ksh. 3.6 billion.

9. July 2014 to March 2018

Project Title: Development of the Master Plan(2015-2035) for The University Of Nairobi (Main, Parklands, Chiromo Campuses).

As part of the **technical team** headed by Professor Peter M. Ngau, Principal, CAE (The University of Nairobi) I was tasked with the work of developing the Master

Plan for the Electrical and Mechanical Services Infrastructure for The University of Nairobi (Main, Parklands, Chiromo Campuses).

Project Site: The University Of Nairobi.

Project Sponsor: The University Of Nairobi.

Supervisor: Professor Peter M. Ngau, Principal, College of Architecture and Engineering, The University of Nairobi. **Tel :** 0722 658 781.

Project Cost: Ksh. 4.6 billion.

10. July 2013 to August 2013

Project Title: Audit and renovation of Teaching Block B and Adjoining Offices of Parklands Law Campus, The University of Nairobi.

The University of Nairobi hired me in my individual capacity to Audit and do designs for the renovation of the Electrical System of **Teaching Block B and Adjoining Offices of Parklands Law Campus**, after a fire incident. Professor Sixtus Mwea, Tel :0722 720435, of The Civil & Construction Engineering Department, The University of Nairobi, handled the Civil/Structural aspects.

Project Site: Parklands Law Campus, The University Of Nairobi.

Project Sponsor: The University Of Nairobi.

Supervisor: Prof. Masu, Manager, Construction & Maintenance Dept., The University of Nairobi. Tel :0722 553 549.

Project Cost: Ksh. 4.5 million.

11. Jan 2015 to Dec 2019

Project Title: Design of the Master Plan for the Industrial and Commercial Development Corporation's (ICDC) Industrial and Commercial Business Park in Eldoret.

As part of the **technical team** constituted by **The University of Nairobi Enterprises and Services (UNES)** and headed by Arch. Erastus Abonyo Omil, Dept. of Architecture, UoN, **Tel :0722 424 331**, I was tasked with the Design of the Master Plan for the Electrical and Telecommunications Services of the Industrial and Commercial

Development Corporation's (ICDC) **Industrial and Commercial Business Park** in **Eldoret** on a **1km by 1km** piece of land.

The project entailed:

- [a] Preparation of a detailed **work plan, survey tools and approaches** and an **outline** of the proposed contents of the **project reports**.
- [b] Development of a **Conceptual Infrastructure Plan** for:
 - Telecommunications Network
 - Proposed Locations for utility installations (i.e., Electrical sub-stations, Telecommunications main and sub-exchanges).
 - Preparation, for budgetary purposes, of estimates of the costs and milestone schedules for the various elements of the works.
- [c] Detailed Designs for the **Telecommunications Network**:
 - Incoming Backbone and Distribution Telecommunications (Metro Ethernet Fibre) Infrastructure, Single Mode Infrastructure and Optics
 - Location of Main Exchange and sub-exchanges to suit the immediate and ultimate telecommunication needs.
 - High Capacity Ethernet Infrastructure to the Complex, the Main Exchange Location is served by two fibre backbones for protection, entering the room from two directions.
 - Underground high capacity infrastructure to each building.
- [d] Detailed Designs for the **Electrical Power Network**:
 - Determination of nearest Secondary Transmission (132kV/33kV) substation to supply the local Primary Distribution (33kV/11kV) Substation
 - Establishing the Primary Distribution (33kV/11kV) substation together with associated switchgear.
 - Location of Ring Main Unit Switching Stations and associated 11/433kV Secondary Distribution Substations.
 - Types of Switches (Load Break or Circuit Breaker) to suit customer demands.
 - Optimum Underground Cable Routes
 - Feeders arranged to form an open HT ring network.
- [e] Detailed Electrical Designs for the **Flagship ICDC Complex Building**:
 - Lighting Scheme Layout.
 - Power Points Layout.
 - Electrical Power Distribution Systems Reticulation including sizing of circuit breakers to ensure discrimination between devices in the same electrical stream/chain.
 - Power Factor Correction.
 - Sizing of Back-up generator.
 - Lightning Protection Scheme.
 - Fire Detection and Alarm Scheme.

Project Site: Eldoret, Uasin Gishu County.

Project Sponsor: The Industrial and Commercial Development Corporation's (ICDC).

Supervisor: Project Architect, Arch. Erastus Abonyo Omil, **Tel :0722 424 331**, Dept. of Architecture, The University of Nairobi.

Project Cost: Ksh. 3.9 billion.

12. Jan 2011 to Jan 2021

I oversaw the design and supervision of the installation of the electrical and mechanical services for the projects below.

Contact Persons : Musa Abdilkadir(Project, Mechanical Engineer), Tel :0722 776 770, George Collins Odhiambo(Project, Mechanical Engineer), Tel :0721377 747, Eng. Paul Ndegwa Wanjohi(Mechanical Engineer), Tel :0720 284 146.

[a] Project Title: Proposed 8-Storey Blue Waters Hotel.

The project comprises construction of and 8 Storey Hotel, plus an adjacent maintenance, bakery and staff residence.

Project Site: opposite Yacht Club, Kisumu.

Project Sponsor: Blue Waters Hotel Limited.

Client: Mr. William Osewe, Managing Director, Ranalo Foods, Tel :0722 529 428.

Project Cost: Ksh. 280 million.

[b] Project Title: Proposed Residential Home.

Project Site: Kisumu.

Project Sponsor: Mr. and Mrs Lelo.

Supervisor: Project Architect, Arch. Shem Macharia Muraguri, **Tel :0734 799 078**, Concise Architects, Nairobi.

Project Cost: Ksh. 34 million.

[c] Project Title: Proposed additions and alterations to THE MALL, Westlands, Nairobi.

Project Sponsor: Anglo African Property Holding

Project Site: Westlands, Nairobi.

Supervisor: Project Architect, Arch. Bryan Adega, **Tel :0722 768 875,**
DesignArtitude Architects, Nairobi.

Project Cost: Ksh. 78 million.

[d] **Project Title: Proposed Twiga Chemicals Office Block, Industrial Area, Nairobi.**

Project Sponsor: Twiga Chemical Industries Ltd

Project Site: Industrial Area, Nairobi.

Supervisor: Project Architect, Arch. Bryan Adega, **Tel :0722 768 875,**
DesignArtitude Architects, Nairobi.

Project Cost: Ksh. 180 million.

[e] **Project Title: Proposed Chalbi Homes Limited, Nairobi.**

Project Sponsor: Chalbi Homes Ltd

Project Site: Chalbi Drive, Nairobi.

Supervisor: Project Architect, Arch. Bryan Adega, **Tel :0722 768 875,**
DesignArtitude Architects, Nairobi.

Project Cost: Ksh. 400 million.

[f] **Project Title: Proposed Pearl Residency(Kenya), Nairobi.**

Project Sponsor: Kings Developers Ltd

Project Site: Kileleshwa, Nairobi.

Supervisor: Project Architect, Arch. Bryan Adega, **Tel :0722 768 875,**
DesignArtitude Architects, Nairobi.

Project Cost: Ksh. 900 million.

[g] Project Title: Proposed Sherwood Apartments, Nairobi.

Project Sponsor: Kings Developers Ltd

Project Site: Lavington, Nairobi.

Supervisor: Project Architect, Arch. Bryan Adeg, **Tel :0722 768 875,**
DesignArtitude Architects, Nairobi.

Project Cost: Ksh. 980 million.

[h] Project Title: Proposed New Classes for Precious Blood Girls' School, Riruta, Nairobi.

Project Sponsor: Kings Developers Ltd

Project Site: Lavington, Nairobi.

Supervisor: Project Architect, Arch. Bryan Adeg, **Tel :0722 768 875,**
DesignArtitude Architects, Nairobi.

Project Cost: Ksh. 980 million.

[i] Project Title: Renovations and Extensions of Weetabix East Africa Offices.

Project Sponsor: Weetabix East Africa Ltd

Project Site: Industrial Area, Nairobi.

Supervisors: Project Architects, Arch. Chris Wahome, **Tel : +254 20 2180199,**
Arch. Ezra Onchaga, Tel : 0710 392 913, Dexdign Architects, Nairobi.

Project Cost: Ksh. 100 million.

[j] **Project Title: Proposed 6-storey block comprising a basement, shops, and residential flats**

Project Sponsor: M/S ALI DAUD MOHAMMED

Project Site: South C, Nairobi.

Supervisor: Project Architect, Arch. Mohamedali Mamdani, **Tel : 0722 817 459**, Wachoraji Associates Architects, Nairobi.

Project Cost: Ksh. 310 million.

[k] **Project Title: Proposed 4-storey block comprising a basement, shops, and residential flats**

Project Sponsor: M/S ALI DAUD MOHAMMED

Project Site: South C, Nairobi.

Supervisor: Project Architect, Arch. Mohamedali Mamdani, **Tel : 0722 817 459**, Wachoraji Associates Architects, Nairobi.

Project Cost: Ksh. 280 million.

[l] **Project Title: Proposed Housing Development comprising 10 Apartments, 7 Maisonettes, Workshop and Warehouse**

Project Sponsor: Bolyen Magic Wall(Mr. Jack Liu, Tel: 0731169169)

Project Site: Kitengela, Nairobi, Kenya.

Supervisor: Project Architect, John Frederick Okello, **Tel : 0724 808 488**, Jofrok Building Consultants - Architects, Nairobi.

Project Cost: Ksh. 1.4 Billion.

[m] **Project Title: Proposed Residential House in Karen, Nairobi**

Project Sponsor: Ms. Esther Kareithi

Project Site: Karen, Nairobi.

Supervisor: Project Architect, Arch. Vincent Ochieng', Tel : 0722 387 997, Ahead Architects, Nairobi.

Project Cost: Ksh. 50 million.

[n] **Project Title: Proposed Residential House in Kitengela, Nairobi**

Project Sponsor: Mr. Raphael Owino

Project Site: Kitengela, Nairobi.

Supervisor: Project Architect, Arch. Emmanuel Gono, Tel : 0722463268, Archetypum Africa Architects, Nairobi.

Project Cost: Ksh. 27 million.

[o] **Project Title: Proposed Residential House in Thome, Nairobi**

Project Sponsor: Mr. Ethan Irungu

Project Site: Thome, Nairobi.

Supervisor: Project Architect, Arch. Vincent Ochieng', Tel : 0722 387 997, Ahead Architects, Nairobi.

Project Cost: Ksh. 30 million.

[p] **Project Title: Renovation and extension of a residential house in Loresho, Nairobi**

Project Sponsor: Ms Mercy Achola

Project Site: Loresho, Nairobi.

Supervisor: Project Architect, Arch. Norbert Musyoki, Dept. of Architecture, UoN, Tel :0722 398 205.

Project Cost: Ksh. 25 million.

[q] **Project Title: Proposed Office and Residential Development in Juba, South Sudan**

Project Site: Juba, South Sudan.

Supervisors: Project Architects, Arch. Chris Wahome, **Tel : +254 20 2180199,**
Arch. Ezra Onchaga, Tel : 0710 392 913, Dextrign Architects, Nairobi.

Project Cost: US \$ 3 million.

[r] Project Title: Proposed Apartments and Shops in Eastleigh, Nairobi

Project Sponsor: M/S ALI DAUD MOHAMMED

Project Site: Eastleigh, Nairobi.

Supervisor: Project Architect, Arch. Mohamedali Mamdani, **Tel : 0722 817 459,** Wachoraji Associates Architects, Nairobi.

Project Cost: Ksh. 310 million.

[s] Project Title: Proposed Faqi Hotel in Eastleigh, Nairobi

Project Sponsor: M/S ALI DAUD MOHAMMED

Project Site: Eastleigh, Nairobi.

Supervisor: Project Architect, Arch. Mohamedali Mamdani, **Tel : 0722 817 459,** Wachoraji Associates Architects, Nairobi.

Project Cost: Ksh. 410 million.

[t] Project Title: Proposed Residential Estate of 112 units.

Project Site: Lower Kabete, Nairobi

Supervisor: Project Architect, Arch. Ezra Onchaga, **Tel : 0710 392 913,**
Dextrign Architects, Nairobi.

Project Cost: Ksh. 520 million.

[u] Project Title: Renovation of Laico Regency (Presidential, Royal, and Standard Suites. Night Club, Bar, and Lounge)

Project Sponsor: Libyan Government

Project Site: CBD, Nairobi.

Supervisor: Project Architect, Arch. Gideon Mulyungi(Former PS Public Works), **Tel : 041 2222806**, Tectonics International Architects, Nairobi.

Project Cost: Ksh. 310 million.

[v] **Project Title: Sejour Plaza (opposite Uchumi Ngong Road)**

Project Sponsor: Dr. Joe Karweti Mwangi, Tel : 0716-225030

.

Project Site: opposite Uchumi Ngong Road, Nairobi

Supervisor: Project Architect, Arch. Ezra Onchaga, **Tel : 0710 392 913**, Dexdign Architects, Nairobi.

Project Cost: Ksh. 320 million.

[w] **Project Title: 9 storey apartments on Kirichwa Road, Hurlingham**

Project Sponsor: Mr. Philipos Tsehaye

.

Project Site: Kilimani, Nairobi

Supervisors: Project Architects, Arch. Chris Wahome, **Tel : +254 20 2180199**, Arch. Ezra Onchaga, **Tel : 0710 392 913**, Dexdign Architects, Nairobi.

Project Cost: Ksh. 320 million.

[x] **Project Title: SAP offices renovations on Riverside Drive, Nairobi**

Project Sponsor: SAP

Project Site: Riverside Drive, Nairobi

Supervisor: Project Architect, Arch. Ezra Onchaga, Tel : 0710 392 913, Dexdign Architects, Nairobi.

Project Cost: Ksh. 90 million.

[y] **Project Title: Proposed Housing Estate comprising 240 houses in Kitengela, Nairobi, Kenya**

Project Sponsor: Bolyen Magic Wall(Chinese Firm).

Supervisor: Project Architect, John Frederick Okello, Tel : 0724 808 488, Jofrok Building Consultants - Architects, Nairobi.

Project Cost: Ksh. 970 million.

[z] **Project Title: Proposed Residential House in Kisumu comprising storeyed main house, cottage, garage, swimming pool.**

Project Site: Kisumu.

Supervisor: Project Architect, Arch. Shem Macharia Muraguri, Tel :0734 799 078, Concise Architects, Nairobi.

Project Cost: Ksh. 67 million.

[aa] **Project Title: Proposed renovation of L'Oreal (Nice n' Lovely) offices, Mombasa Road, Nairobi**

Project Site: Mombasa Road, Nairobi.

Supervisors: Project Architects, Arch. Chris Wahome, Tel : +254 20 2180199, Arch. Ezra Onchaga, Tel : 0710 392 913, Dexdign Architects, Nairobi.

Project Cost: Ksh. 100 million.

[bb] **Project Title: Proposed Apartments on Riverside Drive, Nairobi**

Project Site: Riverside Drive, Nairobi.

Supervisors: Project Architects, Arch. Chris Wahome, **Tel : +254 20 2180199,**
Arch. Ezra Onchaga, Tel : 0710 392 913, Dexdign Architects, Nairobi.

Project Cost: Ksh. 320 million.

18. INSTITUTIONAL, PROFESSIONAL, NATIONAL, SOCIAL AND COMMUNITY RESPONSIBILITIES:

1. 15th June 2016 to 15th June 2019: **Member** – Switchgear and Distribution Equipment Technical Committee, Kenya Bureau of Standards (KEBS).
2. January 2011 to January 2014: **Member** – Board of Governors, Kenya Technical Teachers Training College (KTTC).
3. January 2008 – January 2009: **Patron** – Jomo Kenyatta University Seventh-Day Adventists (JKUSDA).

19. OTHER ACTIVITIES:

1. Attended the **PhD Supervision Workshop** conducted by the University of Nairobi from 26th November, 2012 to 30th November, 2012, at the Central Catering Unit (CCU) Block.
2. Participated as a resource person in the **development of the syllabus** of the Electrical and Electronics Department of Mount Kenya University (MKU) in the year 2012.

20. INTERESTS:

- Electrical Power Systems
- Motivating Students
- Current Affairs (BBC, VOA, Al Jazeera, CNN, etc)
- Animal World (National Geographic Wild)
- Keeping Fit Physically

21. REFEREES:

- | | | |
|--|--|---|
| a. Prof. Walter O. Oyawa,
Comm for Univ Educat,
P.O.Box 54999-00200,
Nairobi,
Kenya.
Mobile: 0728215578 | b. Eng. Arthur W. Ogwayo,
M&E Consulting
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University of Nairobi,
Department of
P.O.Box 30197,
Nairobi,
Kenya.
Mobile: 0720252944 |
|--|--|---|

CERTIFICATION:

I, Eng. Prof. Nicodemus Abungu Odera, certify that this data describe me, my qualifications, and experience.

Signature:

A handwritten signature in black ink, appearing to be 'Akya', written on a light-colored rectangular background.

Date: 5th July, 2022