

CURRICULUM VITAE

June, 2013

NAME Maurice Kizito Wafula Mangoli

NATIONALITY Kenyan

MARITAL STATUS Married with Children

CURRENT DESIGNATION: Senior Lecturer, Department of Electrical & Information Engineering, University of Nairobi

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1. EDUCATIONAL BACKGROUND & ACADEMIC QUALIFICATIONS

a) UNIVERSITY EDUCATION

1988-1992 Pennsylvania State University, U.S.A.
Doctor of Philosophy in Electrical Engineering,

1978-1979 University of Nairobi
Master of Science in Electrical Engineering, (UNESCO
Scholarship)

1974-1977 University of Nairobi
B.Sc.(1st Class Honours) in Electrical Engineering,
(City Council Scholarship)

b) PRE-UNIVERSITY EDUCATION

1972-1973 Friends School, Kamusinga
Kenya Advanced Certificate of Education (KACE) –
3 principals, 1 subsidiary (3A's)

1969-1971 Sacred Heart High School, Mombasa
Kenya School Certificate of Education (KSCE)

1961-1969 Kimaeti Primary School, Bungoma
Kenya Primary Certificate of Education (KPCE)

2. PROFESSIONAL QUALIFICATION

1980	Graduate Member of the Engineers Registration Board
1984	Associate Member of the Institute of Engineers of Kenya
1989	Member of Institute of Electrical and Electronic Engineers(IEEE)
1994	Member of the Engineers Registration Board of Kenya (R. Eng.)
1996	Member of the Kenya Society for Electrical and Electronic Engineers

3. EMPLOYMENT RECORD

Aug. 2011 to Date	Associate Professor, Department of Electrical Engineering, University of Nairobi
May1992-Aug. 2011	Senior Lecturer, Department of Electrical Engineering University of Nairobi
July198- April 1992	Lecturer, Department of Electrical Engineering University of Nairobi
July1982- June 1984	Traffic signal Engineer City Council of Nairobi
1980 - 1982	Electrical Engineer Nairobi City Council working under Chief Assistant Engineer (Electrical)
1977 - 1978	City Council of Nairobi - Assistant Engineer
1974-1975	Vocational training as Electrical Engineer Trainee with Nairobi City Council

4. SELECTED ADMINISTRATIVE AND ACADEMIC RESPONSIBILITIES

April 2000-Date	Director Institute of Research and Consultancy Unit in the School of Engineering, University of Nairobi, providing Engineering Consultancy services to projects undertaken in the Universty of Nairobi and outside.
April 2000-Date	Member of College Management Board, College of Architecture & Engineering, University of Nairobi

April 1980-Date	Engineering Consultant in town providing Engineering Consultancy in Electrical Engineering, ICT, Energy, & other associated services
April 1980-Date	Member of Technical evaluation team for analysing tenders for the University of Nairobi, Kenya Institute of Education (KIE), Kenya Broadcasting Corporation (KBC), former Electrical Commission (ECK), and many others
July 2007-May 2011	Chairman, Board of Governors, Kibabii Diploma Teachers College, Bungoma (about to become Kibabii University College)
May 2009 – July, 2010	World Bank Consultant on the Human Resource Capacity Challenges tied to Higher Education (Universities) Expansion in Kenya
May 2009-Date	External Examiner, Department of Electrical & Computer Engineering, Makerere University, Uganda
May 2007-Date	External Examiner, Department of Electrical & Communication Engineering, Moi University, Kenya
May 2006-July 2009	External Examiner, Department of Electrical & Electronic Engineering, JKUAT, Kenya
Nov 2009-July 2010	Member of Dispute Arbitration Panel for Energy Regulatory Commission (ERC) resolving Metering Dispute between KPLC and Chandaria Industries Ltd
April 2007-Dec 2009	Member of Board of Kenya Industrial Research and Development Institute (KIRDI)
May 2004-July 2009	Member of Parliamentary Committee on Energy and Transport, Advisor to the MPs on the Power Generation in Kenya

5. TEACHING

A) UNDER GRADUATE STUDENTS

Teaching Control Engineering to 4th and 5th Years of EEE, Electrical Power Systems to 4th and 5th Years of EEE, Electric machinery to 3rd years EEE, Rural Electrifications for 5th Years Agricultural Engineers and other Associate courses. Teaching in the laboratory for the above subject to under-graduate students, Developing curriculum on above subjects , teaching post-graduate courses in

Electrical Power System, Electrical Power System Operation and Control,
Supervising several B.Sc. student projects, 10 M.Sc. Students,

B) POST GRADUATE STUDENTS

Teaching post-graduate courses in Electrical Power System, Electrical Power System Operation and Control, Spervised over 15 M.Sc. Students, Supervised two Ph.D Students

Among the M.Sc. stdents supervises are

- a) Wekesa UON “ New renewable energy sources potential for rural electrification 1996” (Now Dr. Wekesa UoN)
- b) Ms Keren Kabebere JKUAT 1998(now Dr. Kababere JKUAT)
- c) Karanja J.M. Kenya Poltechnic 2006 “A study of electrical Insulation characteristics of clay soil locally available in Kenya”
- d) Nguni KENGEN 2006
- e) Abungu UON 2002 (Now Dr. Abungu UoN)
- f) Naomi Distributed Generation of Green Electricity for Sustainable Rural Electrification in Kenya in 2008
- g) B. K. Kinyanjui: Regional Power Development Planning -The East Africa Experience in 2008

6. PUBLICATIONS

1. Distributed Generation of Green Electricity for Sustainable Rural Electrification in Kenya, Paper presented at the Institute of Engineers of Kenya (IEK) at Kenyatta International Conference, April 2009 and published in ICASTOR Journal of Engineering, Vol. 4, No. 1 (2011)
2. Arbitration Report on Metering Dispute between KPLC and Chandaria Industries Ltd. During period of July, 1998 to October, 2006, Report published for Energy Regulatory Commission June, 2010
3. Optimal Real and Reactive Power Control Using Linear Programming, Electric Power Systems Research, Vol. 26, pp. 1-10, 1993.
4. Optimal Long Term Reactive Power Planning Using Decomposition Techniques, Electric Power Systems Research, Vol. 26, pp. 41-52, 1993.

5. The Human Resource Capacity Challenges tied to Higher Education Expansion in Kenya by Maurice K. Mang'oli and William Saint, Report for World Bank funding for Ministry of Higher Education, Jogoo House, Nairobi July, 2010
6. The liberalization of Kenyan Power System, Paper presented at the IEK Conference at Grand Regency Hotel, Nairobi, April, 2000
7. The Reliability of Kenya Power System, Paper presented at the Institute of Engineers of Kenya (IEK) at Kenyatta International Conference, November
8. **Ph.D. Thesis:-** Mangoli, M.K. "Optimal Long-term Reactive Power Planning Using Decomposition Techniques", Ph.D. Thesis, The Pennsylvania State University, U.S.A., Dec. 1991.

7. PROCEEDINGS

1. Mangoli, M.K.. The Optimal Sources of Energy in Kenya" to *I.E.K National Engineering Seminar on Engineering for Self Reliance - March 23rd-25th, 1994 at the KICC, Nairobi.*
2. Mangoli, M.K., "Optimal Power Flow in Kenya" on *4th August 1994 at the 4th JKUAT Annual Electrical and Electronic Engineering Seminar on Innovations in Electrical Engineering Technology*
3. Mangoli, M.K., "Control System Analysis and Design " in *August 1995 at the 2nd conference of the Kenya Society for the Electrical Engineers - Serena Hotel, Nairobi*
4. Mangoli, M.K., The Kenya Power System " in *August 1996 at the 2nd conference of the Kenya Society for the Electrical Engineers - Serena Hotel, Nairobi*
5. Mangoli, M.K., Power System in the Kenya, *Presented to the Kenya Engineers, 2007.*

8. CONFERENCES & SEMINARS

1. Attended United Nations Conferences on Energy as Kenya Delegate in *Nairobi, Kenya 1980*
2. Attended a three months course on Traffic signal control sponsored by Siemens A.G. in *Munich - West Germany, May 1983.*

3. Attended a three months course on Computer application in university teaching and laboratory work sponsored by British Council at the York University in York City, England, 1985.
4. Attended PICA conference at Baltimore in U.S.A. in July, 1991
5. Attended and presented a paper on "Optimal Real and Reactive Power Control Using Linear Programming", in New York U.S.A. in December, 1991
6. Attended a one month course on AUTOCAD in Nairobi, in June 1993.
7. Attended a one month course on AUTOCAD Lite for Windows sponsored by GTZ of Germany in Nairobi, in August, 1993.
8. Attended and presented a paper on "Optimal Sources of Energy in Kenya" to I.E.K National Engineering Seminar on Engineering for Self Reliance - March 23rd-25th, 1994 at the KICC, Nairobi..
9. Attended and presented a paper on "Optimal Power Flow in Kenya" on 4th August 1994 at the 4th JKUAT Annual Electrical and Electronic Engineering Seminar on Innovations in Electrical Engineering Technology.
10. Attended and presented a paper on "Control System Analysis and Design " in August 1995 at the 2nd conference of the Kenya Society for the Electrical Engineers - Serena Hotel, Nairobi.
11. Attended and presented a paper on "Reliability of the Kenya Power System in Kenya" in August 1996 at the 2nd conference of the Kenya Society for the Electrical Engineers - Serena Hotel, Nairobi.
12. Attended and presented a paper on "The liberation of Kenya Power System" in August IEK Conference at Grand Regency, Hotel, Nairobi.
13. Member o Parliamentary Committee on Energy and Transport, Advisor to the MPs on the Power Generation in Kenya.
14. Memmber of college Academic Baord, College of Architecture and Engineering, University of Nairobi

9. PRIZES & SCHOLARSHIP

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| 1973 | Best student in A Level |
| 1974 | Nairobi City Council Scholarship, for B.Sc. Electrical Engineering, Univesity of Nairobi |

- 1977 Got 1st Class Honours in B.Sc. Elect. Engineering
- 1980 UNESCO Scholarship, for M.Sc. Electrical Engineering, University of Nairobi
- 1988 Fulbright Scholarship, from the United States Government Ph.D..
Electrical Engineering, Pennsylvania State University, State College

10. RESEARCH INTERESTS AND COURSES TAUGHT

10.1 AREAS OF SPECIALISATION

- Control Engineering
- Computer Engineering
- Power Systems
- Information & Communication Technology

10.2 RESEARCH INTEREST

- Optimal reactive power planning using decomposition Technique
- Traffic Signal Control
- Speed control of Electric Motor

10.3 COURSES TAUGHT

- Control Systems
- Electrical Power Systems
- Electrical Machines
- Rural Electrification
- Electrical to Mechanical Engineering
- Digital Systems
- Computer Systems
- Electrical Power System Operation and Control

11. RELATED SKILLS

Computer Packages

IMSL Subroutines, MATLAB, CTRLC, LOTUS, Dbase III+, Dbase IV, MS-DOS 6.22, MS-Windows, Windows 95, Microsoft Office 95 :- (MS-Word for Windows, MS-Excel, MS Access, Power point, MS Mail) Harvard graphics, Grapher, Pagemaker Desktop Publishing, AUTOCAD, Omicron for Accounts, Novell netware, Netscape for Internet, E-mail, ArchiCAD.

Computer Simulations

Experienced in modelling Electrical Power Systems, Load Flows, Optimal Power and load Flow, Decoupled and fast decoupled load flows, optimisation using linear programming and non-linear programming (Gradient Projection Method), static and dynamic programming, sparsity and optimal ordering,

gauss and Raphson methods, short-circuit analysis, reactive power planning, using GPM and LP.

12. PROFESSIONAL UNDERTAKING

1. City Council of Nairobi, City hall Annex - 20 storey project estimated in 1980
2. Feasibility study on the Electrical installations for the Coffee processing factories for the Estate sector in Kenya for the Kenya Planters Co-operative Union Ltd. (KPCU) in 1996, for the African Development Fund.
3. Electrical and mechanical designs for the rehabilitation of the Department of Public Health, at Kenyatta National Hospital, for the University of Nairobi in 1996 for GTZ of Germany
4. Electrical and mechanical designs for the rehabilitation of the hospitals in Central and Rift Valley.Provinces of Kenya in 1996-1997 for the African Development Bank.
5. Electrical and Mechanical services for the completion of the Mtwapa Office Block and rehabilitation of Njoro Kitchen funded by World Bank in 1998
6. Electical and mechanical Consultancy for the proposed shops and offices complex for Trans Nzoia Teachers Sacco in Kitale completed 2000
7. Electrical monitoring and consultancy serves on power factor correction at high voltage at Firestone (1969) Ltd, - completed in July, 2002
8. Electical and mechanical Consultancy for the proposed Rehabilitation of Civil Engineering block for the University of Nairobi, - completed in April, 2002
9. Electical, Meechanical and structural Engineering Consultancy for the proposed Rehabilitation of Civil Engineering block for the University of Nairobi, - still on going
10. Electical and mechanical Consultancy for the new proposed building of Faculty of Pharmacy for the University of Nairob, on going to be build
11. Engineering valuation for the Kenya Pipeline Company by Regent Valuers International (Kenya) Ltd. For all its assets from Mombasa to Nairobi to Eldoret and Kisumu completed 2002
12. Electical Consultancy for the new proposed GOK Research Centre at Ruaraka at upperhill completed 2005

13. Electrical Consultancy for the headquarters of Insurance Regulatory Authority (IRA) at upperhill completed 2009
14. Electrical Consultancy for the headquarters of Kenya Sugar Research Foundation (KESREF) in Kibos on going
15. Technical Engineering valuation for the Kenya Ports Authority for Assets in Mombasa, Nairobi ICD, Kisumu ICD, Eldoret ICD, Lamu, Malindi, Mtwapa - on going
16. Technical Engineering valuation for the Kenya Civil Aviation Authority for Assets in Mombasa, Nairobi, Kisumu, Eldoret, Malindi, Poror, Garisa, Nanyuki, Isiolo, Marsabit, Moyale, Wajir, Mandera, Lodwar, Lokichogio - on going
17. Many other projects countrywide