

CURRICULUM VITAE

Personal Details

Names : Dr. Emmanuel Austine Ebinga Osore
Gender : Male
Date of Birth : 3rd September 1984
Address : P.O. Box 2102- 50100 Kakamega - Kenya
Marital Status : Married
Religion : Christianity
Nationality : Kenyan (ID No. 23920353, Passport No. BK163993)
Languages Spoken : English, Kiswahili, Luhya
Mobile Phone : +254(0)726143558
Driving License : 1447230
RCID Id : <https://orcid.org/0000-0002-0943-0512>
Researcher ID : AAJ-7227-2021
Email : eebinga@yahoo.com, eosore@mmust.ac.ke, totosifa@gmail.com

Educational Background

PhD in Mechanical Engineering (Manufacturing Process); University of Nairobi, Kenya (2016-2020)

MSc (Mechanical. /Industrial Engineering and Management); Masinde Muliro University of Science and Technology, Kenya (2012- 2014)

B. Tech (Mechanical. /Production Engineering– (First Class Honours); Masinde Muliro University of Science and Technology, Kenya (2005- 2010)

Kenya Certificate of Secondary Education (KCSE: B+); Khamis High School (2000-2003).

Kenya Certificate of Primary Education (KCPE: 515/700); Sparki Primary School (1993-1999)

Personal Profile

I am currently a Graduate Engineer and Lecturer in the Department of Mechanical and Industrial Engineering of Masinde Muliro University of Science and Technology, Kenya. I hold a PhD degree in Mechanical Engineering from The University of Nairobi – Kenya, an MSc. in Industrial Engineering and Management and a B. Tech in Production Engineering both from Masinde Muliro University of Science and Technology, Kenya.

My area of specialization is Manufacturing and Industrial technology which I have taught and researched intensively. I have published in peer-reviewed journals and presented various seminar and conference findings. I have also attended and participated in several workshops. Having worked in an Engineering consulting company, I have commensurate practical skills relevant to the industry. My research focus is on advanced manufacturing techniques, specifically automation in relation to material handling, CNC, 3D Printing and adaptive manufacturing. I also have a strong interest in free energy source discoveries. My current research includes lean automation on the

competitiveness of industries in Kenya and the development of free sources of energy for remote areas in developing countries. I am a reliable, flexible, hardworking well-trained professional, ready to work in a multi-racial and multi-cultural environment with a major aim of providing capacity building to local expertise in the field of Engineering and other closely related fields.

Work Experience

Lecturer - Department of Mechanical and Industrial Engineering, Masinde Muliro University of Science and Technology (2021 - Date)

Assistant Lecturer - Department of Mechanical and Industrial Engineering, Masinde Muliro University of Science and Technology (2014- 2021)

Graduate Assistance - Department of Mechanical and Industrial Engineering, Masinde Muliro University of Science and Technology (2011- 2014)

Internship - Prime Consult Ltd (Mechanical and Electrical Consulting Engineers and Project Management) (October-December 2011)

Data Remediation Clerk - Kenya Commercial Bank Ltd (June - September 2011)

Trainee - South Nyanza Sugar Company, Sare Awendo (May-July 2009)

Trainee - Kenya Ports Authority, Mombasa (September-October 2008)

Trainee- Pan African Paper Mills Ltd, Webuye (July-September 2008)

Professional Affiliation

1. Registered Engineers Board of Kenya (EBK) member – EBK No. B15384
2. Registered member of The Institution of Engineers of Kenya (IEK) – IEK No. G12540
3. Registered member of the Institution of Engineering Technologists and Technicians of Kenya (IET) Registration No. 436

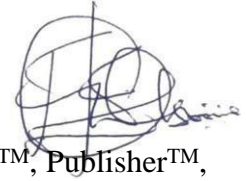
Grants

1. Masinde Muliro University of Science and Technology Staff Development Scholarship SR/No. AC/SM/03/11/002 worth KSh 960,000.
2. ProUniEduWek THB-DAAD Workshop and one month Scholarship 2018 Worth KSh 404,000
3. MSc Research grant by National Commission for Science, Technology and Innovation (NACOSTI) 5th Call 2013/2014 worth KSh 153,000
4. Brandenburg University of Applied Sciences (BAUS) Equipment purchase grant 298,731
5. Brandenburg University of Applied Sciences (BAUS) T8 1310 CNC Engraver for teaching and research. Equipment purchase grant KSh 150,000
6. Magdeburg University of Applied Sciences – Stendel, Bambu lab x1 carbon 3D printer for teaching and research under ‘Water mills for field irrigation’ Multidisciplinary project Equipment purchase grant KSh 450,000

Extra Skills

Computer skills:

1. Basic knowledge of ANSYS™ and CHEMCAD™ Simulation and Modelling softwares
2. Basic knowledge in Part programming for CNC lathe and Milling machines
3. Basic knowledge of Arduino™ Programming.
4. A good command of MS Office™ (Word™, Excel™, Access™ and PowerPoint™, Publisher™, Office Project™)
5. Basic knowledge of programming in Pascal programming language through computer studies at High school.
6. Good command of graphic design applications (AutoCAD™, Inventor™, Fusion™ and SolidWorks™) through training during internship and personal determination.



Leadership skills/ Community contributions:

1. Member of St. Michael community prayer group (Emukhuwa Sub-Parish, Bukaya Parish, Kakamega Diocese) (2012 – Date)
2. Member of St. Mary community prayer group (Mutsembi Sub-Parish, St. Joseph Parish, Kakamega Diocese) (2012 – Date)
3. Active development committee member of the Mary Seat of Wisdom (MSOW) MMUST Chaplaincy (2012-Date)
4. Active philanthropist in personal and community initiatives (2012 – Date)
5. PTA Executive committee member at St. Ignatius Mukumu Boys High School, Kakamega Kenya. Representing Form 3Y (2014-2017)
6. An electoral commissioner for the Engineering Student Association at Masinde Muliro University of Science and Technology and the presiding officer of IEBC for the 2013 general elections.

Additional information

Administrative roles:

1. Chairperson, Department of Mechanical and Industrial Engineering (1st December 2023 – Date).
2. Program Leader of the BSc. Mechanical and Industrial Engineering Program in the Department of Mechanical and Industrial Engineering, SEBE, MMUST (May 2022 – Date)
3. Level 5 TVET Institutions and Industry Coordination Committee (TICC) member at Shamberere National Polytechnic, 2024 - Date
4. Member of the School of Engineering and Built Environment Graduate Studies Committee representing the Mechanical and Industrial Engineering Department (May 2022 – Date)
5. Trained Internal Quality Assurance Auditor, MMUST (9th July 2019 – Date)

6. A member of the Directorate of Corporate Communication and Marketing, School of Engineering and Built Environment Representative, MMUST (1st May 2018 – Date)
7. A member of the Directorate of Quality Assurance in charge of Examination Administration and Monitoring, MMUST (21st February 2018 – Date)
8. Acting Head of Mechanical and Industrial Engineering Department, MMUST (13th December 2016 – 17th January 2017)
9. Projects coordinator in the Department of Mechanical and Industrial Engineering (2014 –Date)
10. A member of the Examination and Timetabling Committee in the Department of Mechanical and Industrial Engineering (2014 – 2018)
11. A member of the Curriculum review committee in the Department of Mechanical and Industrial Engineering (2014 –Date)
12. A member of Events and Functions Committee of the Institution of Engineers of Kenya (IEK) Western Branch (2024 – Date)

Projects Participation:

1. Designed and fabricated a SMART Solar Box for the Empowerment of SMEs in Remote setups, Sponsored by Inter3DNA Program – DAAD, 2023
2. Designed and fabricated a Solar Box for the Empowerment of SMEs in Remote setups, Sponsored by Inter3DNA Program – DAAD, 2022
3. Designed and fabricated a mini 3D CNC Milling Machine for Educational Training, Sponsored by ProUni Edu-WEK Program – DAAD, 2021
4. Mechanical designing of the Roboken Robot construction of Masinde Muliro University of Science and Technology, 2014
5. Design and fabrication of robot at Masinde Muliro University for the national robotic exhibition context held at the Bomas of Kenya in 2010.
6. Flying Faculty member on ProUni Edu-WEK Program at Brandenburg University of Applied Sciences and Magdeburg University of Applied Sciences of Germany in 2018.
7. Flying Faculty member on ProUni Edu-WEK Program at Brandenburg University of Applied Sciences and Magdeburg University of Applied Sciences of Germany in 2021.
8. Flying Faculty member on Inter3DNA Summer School Program at Brandenburg University of Applied Sciences and Magdeburg University of Applied Sciences of Germany in 2022.

Trainings:

1. Competency Based Education Training Module at Golf Hotel on 5TH – 6TH March 2024
2. Supervision and Mentorship of Female Postgraduate in STEM

Journal Reviewer:

Renown Reviewer of Journal of Engineering Research and Reports, Certificate No: PRJERR129226EMM

Publications:

Refereed Journals

1. Griffin P. Mabong, **Emmanuel A. E. Osore**, Peter T. Cherop (2024), *A Demonstrative-Kinesthetic Teaching Approach For Inverse Kinematics Of A 4-Dof Robot Manipulator*, Journal of Applied Engineering Science, Vol. 22, No. 4, 2024, DOI: <https://doi.org/10.5937/jaes0-52032>
2. Griffin Pilot Mabong, **Emmanuel A.E.Osore**, Peter T.Cherop (2024), *Robot Manipulator Programming Via Demonstrative-Kinesthetic Teaching for Efficient Industrial Material Handling Applications*, African Scientific Annual Review, Vol 1(Iss. 1), pp. 165-171, 2024, ISSN: 3007-0902
URN:<https://asarev.net/ojs/index.php/asarev/article/view/15> DOI:
<https://doi.org/10.51867/Asarev.Engineering.1.1.9>
3. Bonface Ochieng Otedo, Peter Tumwet Cherop, **Emmanuel Ebinga Osore** (2024), *Optimization of Drying Parameters for Minimization of Moisture Content in Black Tea Production*, Science Mundi, Volume 4 (Issue 2) 2024, pp. 198-210, ISSN: 2788-5844, URN:
<https://sciencemundi.net/ojs/index.php/scimundi/article/view/74> DOI:
<https://doi.org/10.51867/scimundi.engineering.4.2.18>
4. **E.A. Osore Ebinga** and Christian-Toralf Weber (2021), *Impact of the Number of Turbine Blades on the Efficiency of CrossFlow Turbine for Low Head, Low Flow: Finite Elements' CFD Analysis, Towards Practice-oriented Higher Education for Sustainable Rural Development in Western Kenya*: Proceedings of the final workshop of the DAAD funded project ProUniEdu-WeK Brandenburg an der Havel, Technische Hochschule Brandenburg, Germany.URN:urn:nbn:de:kobv:522-opus4-27420 DOI: <https://doi.org/10.25933/opus4-2742>
5. **E.A. Osore Ebinga**, Christian-Toralf Weber, J.K. Karobe and D.M. Kiteme (2021), *Design, Fabrication, and Testing of an Experimental 3-D programmable Milling Machine for training at Masinde Muliro University of Science and Technology, Towards Practice-oriented Higher Education for Sustainable Rural Development in Western Kenya*: Proceedings of the final workshop of the DAAD funded project ProUniEdu-WeK Brandenburg an der Havel, Technische Hochschule Brandenburg, Germany.URN:urn:nbn:de:kobv:522-opus4-27420 DOI:
<https://doi.org/10.25933/opus4-2742>
6. **Osore E.A.E**, Ogola J.M, and Ogot M.M (2021): *Impact of Lean Automation on Adaptive Control for Improved Real-Time Process Control in Sugar Industry: Case of Kenya*, ARPN Journal of Engineering and Applied Sciences, Vol. 16, No. 6, March 2021, pp. 656-665, ISSN 1819-6608 [Online]. Available: www.arpnjournals.com
7. **Osore E.A.E**, Ogot M.M and Ogola J.M, (2020): *Influence of Lean Automation on Resource Wastage in Sugar Industries: Case in Kenya*, International Journal on Advanced Science, Engineering and Information Technology, vol. 10, no. 5, pp. 1963- 1969, [Online]. Available: <http://dx.doi.org/10.18517/ijaseit.10.5.9261>
8. **E.A.E Osore**, J.M Ogola & M.M Ogot (2020): *Prospects of diffusion as a Six-Sigma automation in*

enhancing continuous improvement of cane juice extraction in Kenya, Cogent Engineering, 7:1, 1733737. Taylor and Francis Publishers. Available online: <https://doi.org/10.1080/23311916.2020.1733737>

9. Osore E.A.E, Ogola J.M & Ogot M.M (2019): *Characterization of Levels of Automation on the Quality of Sugar Cane Juice Extraction: Case of Kenya*, Journal of Automation and Control, Vol. 7, No. 1, 15-24, DOI:10.12691/ Available online <http://pubs.sciepub.com/automation/7/1/3>

10. Osore E.A.E (2019): *Robotics as the appropriate measure for improving National and International security -Review*, International Journal for Research in Applied Sciences and Engineering Technology (IJRASET) ISSN: 2321-9653 Volume 7, Issue IV, April 2019 pp 2467 - 2470 DOI: 10.22214. [Online] <https://doi.org/10.22214/ijraset.2019.4450>

11. Ndugi D.S, Ndiema C.K, Omwando T.A, Osore E.A.E, Yegon E, (2015): *Energy audit for a steam plant (case Study pyrethrum factory in Nakuru, Kenya)*, International Journal of Innovative Research in Engineering & Management (IJIREM) ISSN: 2350- 0557, Volume- 2, Issue-5, September- 2015 pp 111-114

12 Osore E.A. E (2015): *Performance efficiency of jacketing materials in relation to emissivity on environmental conservation in insulated steam pipes*, International Journal of Engineering Research and Technology (IJERT) ISSN: 2278-0181, Volume4, Issue8, August 2015.pp 298-302

13 Osore E.A.E, Ndiema C.K, Masinde H.B, Ndugi D.S (2015): *Characterization of Emissivity of Jacketing Materials on Personnel Safety in insulated Steam Pipes*, International Journal of Engineering and Technical Research (IJETR) ISSN: 2321-0869 (O) 2454-4698 (P), Volume- 3, Issue-7, July 2015 pp18-21

14 Osore E.A.E, Ahmed S.M, Rotich P.K (2015): *Correlation between process control and emissivity of jacketing materials in steam pipes*, International Journal of Engineering Science and Innovative Technology (IJESIT) ISSN: 2319-5967, Volume4, Issue4, July 2015 pp 68- 74

15. Osore E.A.E, Ndiema C.K, Masinde H.B, Ndugi D.S (2015): *Influence of Emissivity of Jacketing Materials on Energy Conservation in Insulated Steam Pipes*, International Journal of Engineering and Technical Research (IJETR) ISSN: 2321-0869 (O) 2454-4698 (P), Volume-3, Issue-7, July 2015 pp13-17

16 Omwando T. A. & Osore E.A.E (2010): *Evaluation and control of particulate fly ash in Sugar industries (A case study of South Nyanza sugar company Ltd-Kenya*, Proceedings of the 1st Engineering, Science and Technology conference at Masinde Muliro University of Science and Technology ISBN:9966-779-11-6 pp 275-288

Conference and Seminar papers presented:

1. **Osore E.A.E** “*Prospects of diffusion as a 6σ - automation to improve production rate of cane juice extraction*”, Newton Fund Researcher Links Workshop: How Resilient Manufacturing can solve the unemployment problem in Kenya; 18th – 21st September 2018 at Intercontinental Hotel, Nairobi, Kenya.

2. **Osore E.A.E** “*Influence of Emissivity of Jacketing Materials on Energy Conservation in Steam Pipes*” Faculty of Engineering Seminar, 2014 Theme: Technology in Touch with Today and Tomorrow: Engineering News 1 (Part Two), 2014

3. **Osore E.A.E** “*Effects of Emissivity of Jacketing material on the performance of thermal*

insulation designs in steam pipes” Seminar presentations in the department of Mechanical and Industrial Engineering of Masinde Muliro University of Science and Technology, 2013

4. **Osores E.A.E** “*Fuels and Combustions*” Seminar presentations in the department of Mechanical and Industrial Engineering of Masinde Muliro University of Science and Technology, 2012

5. **Osores E.A.E** “*Evaluation and control of particulate fly ash in sugar industries (A case study of South Nyanza sugar company-Kenya)*”, presented during the 1st engineering conference for the theme: Science and Technology for Engineering Innovation and Industrialization at Masinde Muliro University of Science and Technology, 9th -11th 2010.

Workshops and conferences attended:

1. Supervision and Mentorship of Female Postgraduate in STEM Workshop at Bishop Nicholas Stam Pastoral centre, 27th February 2024 – APHRC and IUCEA

2. Finite Element Analysis workshop training at Masinde Muliro University of Science and Technology, 5th – 7th March 2024

3. Micro Business Game Training sponsored by Wevarcity Sacco Ltd at Diamond Rock Hotel, 2nd - 4th September 2024

4. Inter3DNA Summer Workshop at Masinde Muliro University of Science and Technology in Kenya, 2023.

5. Inter3DNA Summer Workshop at Brandenburg University of Applied Sciences and Magdeburg University of Applied Sciences in Germany in 2022.

6. ProUni Edu-WEK Workshop at Brandenburg University of Applied Sciences and Magdeburg University of Applied Sciences in Germany in 2021.

7. ChemCAD chemical processes simulation training at MMUST, 29th November 2021 to 3rd December 2021

8. Newton Fund Researcher Links Workshop: How Resilient Manufacturing can solve the unemployment problem in Kenya; 18th – 21st September 2018 at Intercontinental Hotel, Nairobi, Kenya.

9. Stakeholders’ workshop on TVET Programmes held on 17th – 19th February 2016 at Bishop Stem Pastoral center Kakamega, Kenya

10. Performance contracting awareness session held on 9th November, 2015 at the MMUST Graduation Square; Topic: *The role of performance contract in service delivery*.

11. Staff seminar on management of post graduate studies in MCU at Masinde Muliro University of Science and Technology on 23/04/2015

12. Academic advisory training workshop in MCU at Masinde Muliro University of Science and Technology, 2014

13. Faculty of Engineering Curriculum review workshop in MCU at Masinde Muliro University of Science and Technology, 2014

14. The Engineering Student’s conference at Masinde Muliro University of Science and Technology for the theme “Science, Technology for self-reliance, economic stimulation and environmental conservation”, 2014

15. National Human Rights Commission Defenders (NHRCD) workshop on Leadership, Integrity and Transparency at Sheywe Guest House, 2013

16. Publishing of Articles by Singer publishers in MCU Masinde Muliro University of Science and Technology, 2013

Current Postgraduate Research Supervision

1. Boniface Otedo Ochieng, MSc in Industrial Engineering and Management, MMUST: Thesis: Hydrodynamics analysis of fluidized bed dryer for improved thermal efficiency in tea factories using ANSYS – Completed 2024

2. Griffin Pilot Mabong, MSc in Industrial Engineering and Management, MMUST: Thesis: Analysis of Demonstrative kinesthetic teaching technique of Robot manipulators for efficient industrial material handling applications – Completed 2024

3. Joseph Odoor Ochieng, MSc in Industrial Engineering and Management, MMUST: Thesis: Optimization of hybrid cyclone in Reduction of Particulate flash in Sugar Industries – InProgress

4. Samuel Kiragu Mwangi, MSc in Industrial Engineering and Management, MMUST: Thesis: Production and Analysis of PLA Biodegradable plastics for efficiency in the packaging industry – In progress

5. Patrick Owino, PhD in Mechanical Engineering, MMUST: Thesis: Optimization of tilting Rotary Furnace for Waste Recovery in the Informal Manufacturing Sector – In progress

6. David Omooria Masara, PhD in Mechanical Engineering, MMUST: Thesis: Investigation on biochar use for industrial effluent treatment - In progress

7. Vincent Onyango, PhD in Mechanical Engineering, MMUST: Thesis: Dynamics and wear simulation analysis of contact rolling metallic surfaces - In progress

8. Philip Aluoch, PhD in Mechanical Engineering, MMUST: Thesis: Automation of sugar crystal growth rate dispersion for efficient productivity - In progress

Hobbies

Playing football, Athletics, Swimming, Travelling, Chatting

Research topics

3D Printing, Advanced Manufacturing, Industrial robotics, Free energy resources, computational fluid dynamics, modelling and simulation of mechanical systems, design and optimization of industrial processes.

Areas of expertise

Research, Safety, Quality assurance, Engineering design, manufacturing processes, industrial robotics and automation

Courses Taught

Industrial Robotics, Robotics Systems, Engineering design, CAD/CAM, Manufacturing processes, Metrology, Computer Integrated Manufacturing,

Project Coordination and Supervision, Strength of materials, Mechanical vibrations, Workshop Technology and Practices

Referees

Prof. Eng. Julius Maima Ogola

Professor of Mechanical Engineering,

Department of Mechanical and Manufacturing Engineering, University of Nairobi

P.O Box 30197-00100

Tel: 0705135737

E-mail: julius.maima@gmail.com, julius.ogola@uonbi.ac.ke,

Dr. Filbert Onkundi Ombongi

Lecturer, Department of Electrical and Telecommunications Engineering

Masinde Muliro University of Science and Technology

P.O Box 190-50100

Email: onkundifilo12@gmail.com, fombongi@mmust.ac.ke Tel: 0715922479

Prof. Dr.-Ing. Christian-Toralf Weber

Leicht- und Stahlbaukonstruktion Dekan

Fachbereich Ingenieurwissenschaften und Industriedesign (IWID)

Hochschule Magdeburg-Stendal

Breitscheidstraße 2

39114 Magdeburg

Telefon: +49 - 391 - 886 41 50/43 83

Email: christian-toralf.weber@h2.de