

## CURRICULUM VITAE



### **Dr. Abayomi T. LAYENI**

*BSc (Unilag), MSc. (Ibadan), PhD (FUNAAB), R.Eng (COREN), MASME*  
Department of Mechanical Engineering,  
Faculty of Engineering, College of Engineering & Environmental Studies,  
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#### **A. PERSONAL DATA**

1. **Name:** Dr. LAYENI, Abayomi Temitope
2. **Place and Date of Birth:** Lagos Island, Lagos State, October 09, 1972
3. **Home Address:** 42, James Robertson Road, Surulere, Lagos
4. **Present Postal Address:** 42, James Robertson Road, Surulere, Lagos
5. **Gender:** Male
6. **E-mail:** [yomilayeni@gmail.com](mailto:yomilayeni@gmail.com)  
[abayomi.layeni@oouagoiwoye.edu.ng](mailto:abayomi.layeni@oouagoiwoye.edu.ng)
7. **Phone Number (Mobile):** 08055386660, 08104115209
8. **Nationality at Birth:** Nigerian
9. **State:** Lagos
10. **Marital Status:** Married
11. **Name and Address of Spouse:** Mrs. Folakemi O. Layeni, No 42, James Robertson Road, Surulere, Lagos State.
12. **Name and Address of Next of Kin:** Mrs. Folakemi O. Layeni, No 42, James Robertson Road, Surulere, Lagos State.
13. **Present Place of Work** Olabisi Onabanjo University, Ago-Iwoye
14. **Date of 1<sup>st</sup> Appointment with the University:** November 21<sup>st</sup>, 2005
15. **Status of 1<sup>st</sup> Appointment and Salary:** Assistant Lecturer, CONUASS 2(1)
16. **Present Position and Salary:** Senior Lecturer, CONUASS 5(3)
17. **Total No. of Years of Teaching & Research:** 16 Years

## **B. EDUCATIONAL BACKGROUND**

### **1. Academic Qualification/Institutions Attended (With Dates):**

#### **FEDERAL UNIVERSITY OF AGRICULTURE, ABEOKUTA**

Abeokuta, Nigeria. PhD. (Thermofluids), Viva December 2016, Effective 9<sup>th</sup> of June 2017

#### **UNIVERSITY OF IBADAN**

Ibadan, Nigeria. MSc. Mechanical Engineering, 2001

#### **UNIVERSITY OF LAGOS, AKOKA**

Lagos, Nigeria. BSc. (Hons) Mechanical Engineering, 1997

**FATE FOUNDATION NIGERIA**, Certificate, Aspiring Entrepreneur, 2002

### **2. Awards and Distinction:**

#### **1. Fate Foundation Nigeria,**

Business Plan Competition, First Place Award, 2002

#### **2. University of Pennsylvania, Wharton School, Philadelphia, USA,**

Africa Business Plan Competition, Third Place Award, 2003

#### **3. University of the West of Scotland, Paisley, Scotland, UK**

Carry out doctoral research bench work at UWS, Partly-funded by Olabisi Onabanjo University, Ago-Iwoye, February – July 2014

## **C. WORK EXPERIENCE**

### **1. Previous Work Experience outside the University System:**

#### ➤ CRIMSON Business Solutions Ltd, Onikan, Lagos

April 2005 – September 2007

Grant Consultant

Responsible for the carrying out feasibility studies and development of business plans for MSMEs

Achievements:

- Carrying out feasibility studies for 5 MSMEs
- Development of business plans for 5 MSMEs

#### ➤ BARLAY CONSTRUCTION, Surulere, Lagos

March 2004 – October 2005

Project Manager

Responsible for the successful organization and management of projects

Achievements:

- Supervised the construction of building projects
- Design and construction of plumbing, drainage and sewage systems for homes
- Project planning
- Maintenance planning and management
- Facility Management Consulting

➤ CAIRN LIMITED, Lagos

August 2002 – October 2004

Facility Maintenance Manager

Responsible for the successful planning, organisation and management of maintenance jobs

Duties: Maintenance Planning and Execution

- Perform Strict Contract Management to achieve deliverables
- Monitor installations/ construction adhering to safety, health and environmental standards
- Managing Compliance to Agreements
- Financial Management and Reporting

➤ ABBEY’S PLACE,

Dolphin Plaza, Dolphin Estate, Ikoyi, Lagos

November 2001 – July 2002

Store Manager

Achievements:

- Store Supervision
- Inventory/ Stock Management
- Assist in the Preparation of weekly & monthly accounts and reports

➤ SENFLON NIGERIA LIMITED, Surulere, Lagos

May 2000 – October 2001

Sales Engineer

Achievements:

- Attended a course on vehicle security installation
- Conduct Marketing/ Market research
- Manage procurements of products from the South-Africa based manufacturers (PFK Electronics, Durban, South-Africa)

➤ GOVERNMENT SECONDARY SCHOOL, Bellel, Adamawa State, (NYSC)

July 1997 – May 1998

Subject Instructor/ and Class Teacher

**2. Previous Work Experience in Other Institution:**

Gateway ICT Polytechnic, Itori-Ewekoro, Ogun State, Nigeria

2009 -2010

Part-Time Lecturer

**3. Details of Professional Experience at Olabisi Onabanjo University:**

**(i) Teaching Function**

Courses taught during the Period 2005 – date) of Time at Olabisi Onabanjo University:

- MEG 203 Engineering Thermodynamics I 2Units
- MEG 205 Engineering Mechanics I (Statics)2Units
- MEG 207 Engineering Drawing I 2Units

- MEG 206 Engineering Mechanics I(Dynamics) 2Units
- MEG 208 Intro to Mechanical Engineering, 1Unit
- MEG 210 Engineering Thermodynamics II 3Units

•MEG 213 Fluid Mechanics	3Units	•MEG 214 Engineering Drawing II	2Units
•MEG 301 Mechanics of Machines I	2Units	•FEG 302 Engineering Maths III	3Units
•MEG 309 Applied Thermodynamics	3Units	•MEG 302 Mechanics of Machines II	2Units
•MEG 313 Machine Design I	3Units	•MEG 304 Mech Measurement &Instrumentation	2Units
•FEG 401 Technical Communication	1Unit	•MEG 306 CAD/CAM	2Units
•MEG 401 Machine Design II	3Units	•MEG 308 Fluid Mechanics II	3Units
•MEG 403 Vibrations	3Units	•MEG 314 Machine Drawing	2Units
•MEG 405 Applied Fluid Mechanics	2Units	•MEG 316 Mech Maintenance & Repair	2Units
•MEG 407 Heat & Mass Transfer	3Units	•MEG 502 Advanced Heat & Mass Transfer	2Units
•MEG 411 Air-Conditioning & Refrigeration	2Units	•MEG 504 Automobile Engineering	3Units
•MEG 501 Internal Combustion Engines	3Units	•MEG 512 Fluid Power Engineering	3Units
•MEG 503 Fluid Machinery	3Units	•MEG 510 Assigned Project	
•MEG 511 Energy Technology	3Units	•MEG 513 Air Conditioning & Refrigeration II	3Units

**(ii) Research (On-Going)**

- Renewable Energy (Ocean Energy Technology, Solar Organic Rankine Cycle);
- Eco-Housing (Ventilation, Waste Water Treatment, Waste Management, Energy, Passive Ventilation Systems, Building Acoustic Management);
- Pipe Network Analysis (Flow and Failure Analysis);
- HVAC System Analysis, Optimisation and Development;
- Energy & Exergy Analysis of Engineering Systems Energy Conservation & Environmental Impact Analysis;
- Crash Impact Energy Analysis of colliding Bodies (Automobile Application)
- Vibration and Acoustics: Fluid-Structure Interaction (FSI) Studies of Vortex Induced Vibration
- Electric Vehicle Project
- Solar Chimney Power Plant
- Computational Fluid Dynamics (CFD), Computational Analysis of Mechanical Systems using ANSYS Multiphysics

**(iii) Administrative Functions & Contribution to the University**

**Administrative Duties:**

- Ag. Dean, Faculty of Engineering (Aug 2021 – Date)
- Post Graduate Coordinator, College of Engineering & Environmental Studies (Jan 2017 – July 2017)
- Sub-Dean Post Graduate, Faculty of Engineering (August 2017 – Date)
- Sub-Dean, College of Engineering & Environmental Studies (February 2009–July 2013)
- Ag. Head of Department, Department of Agricultural & Mechanical Engineering (August 2011 – July 2014)
- Coordinator Mechanical Engineering Programme (March 2008 – November 2011)
- Chairman, College Admission Committee (February 2009 – July 2013)
- Chairman, College Examination Committee (February 2009 – April 2012)
- Chairman, College Time-Table & Curriculum Committee (February 2009 – April 2012)
- Chairman, College Postgraduate Committee (January 2017– July 2017))
- Chairman, Faculty Postgraduate Committee (August 2017– Date)

- Member, Accreditation Preparation Committee (October 2008)
- Departmental Project Coordinator (2006 – 2008)
- Chairman, Departmental Mini Conference (October 2007)
- Member, College Disciplinary Committee (February 2009–2017)
- Member, Departmental Board of Examiners (November 2005 – Date)
- Member, College Board of Studies (March 2008 – Date)
- Member, College Admission Committee (March 2008 – 2014)
- Member, Senate Committee on Examination (February 2009 – 2013)
- Member, University Time-Table Committee (February 2009 – 2013)
- Member, University Board of Survey (February 2013 – Date)

**D. Membership of and Registration with Professional Bodies**

- Registered member: ‘The Council for the Regulation of Engineering in Nigeria’ (COREN).  
Registration Number: R 17,645
- The Nigerian Society of Engineers (NSE)
- The Nigerian Institution of Mechanical Engineers (NiMechE)
- Associate Member, American Society of Mechanical Engineers (ASME)
- Council for Renewable Energy Nigeria (CREN)

**E. <sup>1</sup>PUBLICATIONS**

**i. Theses/Dissertation**

- i. **Layeni, A. T.**, (Dec. 1996). The Gas Turbine – Demonstration of the Joule Cycle. Project Report Submitted to the Mechanical Engineering Department, University Of Lagos. 58Pp
- ii. **Layeni, A. T.**, (Feb 2001). The Design and Performance Analyses of a Municipal Pipe Network Using a Computer Code. MSc. Project Report Submitted to the Post-Graduate School, University of Ibadan. 40Pp
- iii. **Layeni, A. T.**, (Dec 2016). Computational Analysis of Combined Ventilation and Power Solar Chimney. PhD. Thesis Submitted to the Post-Graduate School, Federal University of Agriculture, Abeokuta. 273Pp

**ii. Monographs**

1. **^Layeni, A. T.** and Nwaokocha, C. N. Engineering Drawing, (April 2012), Volume I, ISBN: 978-978-51218-0-3. (62 Pages)
2. **^Layeni, A. T.** and Nwaokocha, C. N. Fundamentals of Fluid Mechanics, (April 2012), ISBN: 978-978-33652-5-3. (85 Pages)
3. **^Nwaokocha, C. N.** and **Layeni, A. T.** Engineer in Society, (April 2012), ISBN: 978-978-51218-6-5. (61 Pages)

**iii. Journal Articles**

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<sup>1</sup> [*\*International Publications, ^Local Publications*]

4. ^**Layeni, A. T.**, Nwaokocha, C. N. and Bolarinwa, A. R. (2012). Impact Test Simulation of Steel & Aluminium Beams. *Journal of Engineering and Environmental Studies*, College of Engineering and Environmental Studies, Olabisi Onabanjo University, Ago-Iwoye, Nigeria. 3(2): 106 – 110.
5. ^Giwa, S., **Layeni, A.** and Ogunbona, C. (2012), Synthesis and Characterization of Biodiesel from Industrial Starch Production Byproduct. *Energy and Environmental Engineering Journal*, 1(1): 45-51, Academic Society of Science, Engineering and Technology.
6. \*Nwaokocha C. N. and **Layeni A. T.** (2013). Ocean Wave Energy: An Option for Nigerian Power Situation. *Scientific Research & Essay*; 8(32): 1547–1552.  
[DOI:10.5897/SRE10.1023](https://doi.org/10.5897/SRE10.1023). USA [**SCImago**]
7. \*Lemboye, K. T., **Layeni, A. T.**, Oduntan, K., Akintunde, M. A. and Dahunsi, O. A., (2015). Developing a two-stage cascade compressor arrangement for ice block production. *Journal of Machinery Manufacturing and Automation*, Hong Kong. 4(2): 10–16.  
<http://www.academicpub.org/jmma/paperInfo.aspx?PaperID=16253>.
8. \*Nwaokocha C. N., Giwa S. O., **Layeni A. T.**, Akinyemi O. O. & Kuye S. I. (2016). An Experimental Investigation of LPG as an Alternative Fuel for a Retrofitted Spark Ignition Engine. *International Journal of Energy, Environment & Economics*, USA. 24(1): 121–130.
9. \***Layeni A. T.**, Nwaokocha C. N., Adebayo K., Ochibe E. & Yusuf R. (2016). Design and fabrication of a Palm Oil Pressure Stove. *International Journal of Energy, Environment & Economics*, USA. 24(1): 131 - 146. USA [**Scopus**].
10. ^Giwa, S. O., Nwaokocha, C. N. & **Layeni, A. T.** (2016). Assessment of Millenium Development Goal 7 in the Niger Delta Region of Nigeria via Emissions Inventory of Flared Gas. *Nigerian Journal of Technology*, Faculty of Engineering, University of Nigeria, Nsukka, Nigeria. 35(2): 349–359.  
<http://dx.doi.org/10.4314/njt.v35i2.16>.
11. \* **Layeni A. T.**, Adebayo J. K., Nwaokocha C. N., Samuel O. S., Jubril O. L. (2017). Model Testing of a Sub-Sonic Wind Tunnel. *MAYFEB Journal of Mechanical Engineering*, MAYFEB Technology Development, Toronto, Ontario, Canada. 1: 17 – 28.  
<http://www.mayfeb.com/OJS/index.php/MEC/article/view/308>
12. ^Nwaokocha, C. N., **Layeni, A. T.**, Giwa, S. O., Yusuf, R. & Adebayo, K. (2017). Performance Evaluation of a Cassava Pelleting Machine powered by a Diesel Engine. *African Journal of Science and Nature*, Olabisi Onabanjo University, Ago-Iwoye, Nigeria. 5: 91 – 94.
13. \*Giwa, S. O., Nwaokocha, C. N., **Layeni, A. T.** & Sulaiman, M. A. (2017). Greenhouse Gas Inventory: a Case of Gas Flaring Operations in Nigeria. *African Journal of Science, Technology, Innovation and Development*, United Kingdom. 9(3): 241 – 250.  
<http://dx.doi.org/10.1080/20421338.2017.1312778> (Taylor & Francis, UK).
14. ^Akinyemi, O. O., Nwaokocha, C. N., Adeyemi, H. O., **Layeni, A. T.**, Adama, O. O. (2017). Investigation of Corrosion behaviour of Dual Phase Steel Reinforcement and Structural Steel

Reinforcement in Concrete. *African Journal of Science and Nature*. Olabisi Onabanjo University, Ago-Iwoye, Nigeria. 4: 27-38.

15. ^**Layeni, A. T.**, Nwaokocha, C. N., Giwa, S. O. & Olamide, O. O. (2018). Numerical and Analytical Modelling of Solar Chimney for Combined Ventilation and Power in Buildings. *Covenant Journal of Engineering and Technology*, Covenant University, Ota, Nigeria. 2(1):36 – 58.
16. ^Nwaokocha, C. N., Giwa, S. O., Kuye, S. I., Okezie S. U., Adeala A. A., **Layeni, A. T.**, Nwaokocha, J. C. & Kale S. A. (2018). Emission Characteristic of LPG Retrofitted Generator. *Journal of Experimental Research*, Enugu State University of Science & Technology. 6(3): 41 – 47.
17. ^Sulaiman M. A., Nwaokocha, C. N., Olamide, O. O., **Layeni, A. T.**, Giwa, S. O. & Adama O. O., (2018). Performance Indicators for Sustainable Cement Production in Nigeria. *Covenant Journal of Engineering and Technology*, Covenant University, Ota, Nigeria. 2(2): 1 – 11.
18. ^ **Layeni A. T.**, Olanrewaju A. I., Nwaokocha C. N., Waheed M. A., Giwa S. O., Kuye S. I., Adedeji K. A. (2019). Comparative Engineering Economic Analysis of a Variable Refrigerant Flow and Mini-Split Air Conditioning System Design. *Arid Zone Journal of Engineering, Technology and Environment*, University of Maiduguri, Nigeria. 15(1): 55-66.
19. \*Adebayo J. K., **Layeni A. T.**, Nwaokocha C. N., Oyedepo S. O. and Folarin S. O. (2019). Design and Fabrication of a Vertical Axis Wind Turbine with introduction of Plastic Gear. *Journal of Physics: Conference Series*, 1378:04 2098, doi:10.1088/1742-6596/1378/4/042098
20. \***Layeni A. T.**, Nwaokocha C. N., Giwa S. O., Sulaiman M. A., Adedeji K. A. and Olanrewaju A. I. (2019). Design and Engineering Economic Analysis of a Variable Refrigerant Flow (VRF) and Mini-Split Air Conditioning System. *Current Journal of Applied Science and Technology*. 34(1): 1-25. DOI:10.9734/CJAST/2019/v34i130111.
21. \*Giwa, S. O., Nwaokocha, C. N., **Layeni, A. T.** (2019). Inventory of Kiln Stacks Emissions and Health Risk Assessment: A case of a Cement Industry in Southwest Nigeria. *African Journal of Science, Technology, Innovation and Development*, University of Pretoria, South-Africa, 11:3, 299-312, DOI: 10.1080/20421338.2018.1527881 [Taylor & Francis – Scopus]
22. ^Giwa, S. O., Nwaokocha, C. N., Olaluwoye, O. O., **Layeni, A. T.** (2019). Energy Harvesting from Household Heat Sources Using a Thermoelectric Generator Module. *Nigeria Journal of Technological Development*, University of Ilorin, Ilorin, Nigeria. 16(3):127-134. DOI: 10.4314/njtd.v16i3.6.
23. ^Akinyemi O. O., Adeyemi H.O., Giwa S. O., Nwaokocha C. N., **Layeni A. T.** (2019). Performance Evaluation of a Stationary Diesel Engine Emission. *Nigerian Research Journal of Engineering and Environmental Sciences*, University of Benin, Benin, Nigeria. 4(1) 2019 pp. 210-218
24. \* Nwaokocha C. N., Phakatkar H. G, Giwa S. O., **Layeni A. T.**, Kale S. A. (2019). The Viability of Refuse-Derived Fuel as a Green Household Cooking Fuel. *International Journal of Recent Technology and Engineering*. 8(1:SI4): 1031-1034. [Scopus].

25. ^Nwaokocha C. N., Waheed M. A., **Layeni A. T.**, Lasode O. A., Giwa S. O., (2019). Characteristics of Calabar Tidal Resource: Patterns and Relationships to Sustainable Clean Energy. *Journal of Experimental Research*, Enugu State University of Science & Technology. 7(2): 70 – 74.
26. \***Layeni A. T.**, Waheed M. A., Adewumi B. A., Bolaji B. O., Nwaokocha C. N., Giwa S. O., (2020). Computational Modelling and Simulation of the Feasibility of Combined Solar Chimney for Power Generation and Passive Ventilation in Buildings. *Scientific Africa* 8 (2020) e00298 <https://doi.org/10.1016/j.sciaf.2020.e00298> [Elsevier - Scopus]
27. \* Mboreha C. A., Somashekar V., Kumar G., Nwaokocha C. N., **Layeni A. T.** (2020). Comparative study of mixing and under-flow air distribution system in an aircraft cabin using CFD. *International Journal of Research in Engineering and Innovation*, 4(5): 280-286. <https://doi.org/10.36037/IJREI.2020.4507>.
28. \* Abdallah C. S., Mboreha C. A., Nwaokocha C. N., Kumar G., **Layeni A. T.** (2020). Staying Healthy On Long-Haul Commercial Flights: Guidelines. *International Journal of Advances in Engineering and Management*, 2(7): 510-515. DOI: 10.35629/5252-0207510515.
29. \* Nwaokocha C. N., Giwa S. O., **Layeni A. T.**, Kuye S. I., Samuel O. D., Ogunbona C., Adebayo J. K., Sosanya A., Babalola A. A. (2021). Microbial Fuel Cell: Bio-Energy Production from Corn Starch Wastewater Using Iron Electrodes. *Materials Today: Proceedings*. 46(11): 5565-5569. <https://doi.org/10.1016/j.matpr.2020.09.345> [Elsevier - Scopus].
30. \***Layeni A. T.**, Waheed M. A., Adewumi B. A., Nwaokocha C. N., Sharifpur M., Tongo S. O., Okeze R. C., Mboreha C. A. (2021). Computational and Sensitivity Analysis of A Dual Purpose Solar Chimney for Buildings. *Materials Today: Proceedings*. 47(13): 4126-4136. <https://doi.org/10.1016/j.matpr.2021.07.292> [Elsevier - Scopus].
31. \*Mboreha C. A., Tytelman X., Nwaokocha C. N., **Layeni A. T.**, Okeze R. C, Amiri A. S. (2021). Numerical simulations of the flow fields and temperature distribution in a section of a Boeing 767–300 aircraft cabin. *Materials Today: Proceedings*. 47(13): 4098-4106. <https://doi.org/10.1016/j.matpr.2021.06.426> [Elsevier - Scopus].
32. \* Giwa S. O., Nwaokocha C. N., **Layeni A. T.** (2021). Experimental investigation of noise footprints of gasoline-fueled backup generators. *IOP Conference Series: Materials Science and Engineering*, 1107: 012020. <https://doi.org/10.1088/1757-899X/1107/1/012020> [WOS].
33. \* El-Suleiman A., Samuel O. D., Amosun S. T., Emovon I., Ashiedu F. I., Fayomi O. S. I., **Layeni A. T.**, Nwaokocha C. N., Afolabi S. A. (2021). Gas Turbine Performance Forecast and Assessment- GM LM2500 in Outlook. *IOP Conference Series: Materials Science and Engineering*, 1107: 012020. <https://doi.org/10.1088/1757-899X/1107/1/012025> [WOS].
34. ^Babalola A. A., Adetifa B., Adama K. O., Gbadamosi-Olatunde B. O., Adeyemi H. O., **Layeni A. T.** (2021). Design and Modelling of an Automatic Walk-Through Disinfectant Tunnel Using Water Mist-System. *African Journal of Science and Nature*, Vol. 11, 196–203: 510-515. P-ISSN 2536-6904, E-ISSN 2705-2761.



#### iv. Papers Accepted for Publication (With Letters of Acceptance)

35. C. N. Nwaokocha, S. O. Giwa, O. Shittu, B. Badejo, **A. T. Layeni**, S. I. Kuye, C. Ogunbona, S. Oyedepo (2020). Characterization of Alternative Aqueous Media for Hydrogen Production: A Preliminary Study. In: K. Kumar, S. Singh, D. Zindani, J. P. Davim, eds. *Renewable and Sustainable Energy*, Elsevier. [Scopus].

#### v. Contribution to Books

36. \*Nwaokocha, C. N., Waheed, M. A. and **Layeni, A. T.** (2015). Estimation of Tidal Power Potential of Nigeria Coastal Area. In *Renewable Energy and Sustainable Development*, edited by R. T. D. Parbhakaran, S. A. Kale and K. Prabakar, (University of Strathclyde, Glasgow, UK; Trinity College of Engineering and Research, University of Pune, India and Pusan National University, Korea), Nova Science Publishers, Inc., New York, pp. 163 - 171. ISBN: 978-1-63463-464-9. [Scopus].
37. \*Babalola, A. A., **Layeni, A. T.**, & Lawal, N. S. (2017). Vehicular Emission: Carbon Sequestration Potential of Teak Tree (*Tectona Grandis*) in Abeokuta Metropolis. In Book Edited by Simeon O. Jekayinfa, Alexander Von Humboldt-Kolleg: Cuviller Verlag, Gottingen, *Harvest of Research Outcomes to Confirm Achievement of the Millennium Development Goals*, Germany, pp 1 – 11. ISBN 9783736996168.
38. \*Nwaokocha, C. N., Alamu, O. J., Giwa, S. O, **Layeni, A. T.**, Kuye, S. I., Oyedepo, S. O. (2018). Solar Energy and Food Preservation in Nigeria. In Book Edited by Sandip A. Kale, Nova Science Publishers, Inc., New York. *Advances in Renewable Energy and Sustainable Systems*, Page 97 – 105. ISBN: 978-1-53614-022-4. [Scopus].
39. \***Layeni, A. T.**, Waheed, M. A., Adewumi, B. A., Bukola, B. O., Nwaokocha, C. N., Giwa, S. O., Olamide, O. O. (2018). Development and Analysis of a Novel Dual Purpose Solar Chimney for Buildings. In Book Edited by Sandip A. Kale, *Advances in Renewable Energy and Sustainable Systems*, Nova Science Publishers, Inc., New York, Page 107 – 150. ISBN: 978-1-53614-022-4. [Scopus].
40. \***Abayomi Layeni**, Collins Nwaokocha, Olalekan Olamide, Solomon Giwa, Samuel Tongo, Olawale Onabanjo, Taiwo Samuel, Olabode Olanipekun, Oluwasegun Alabi, Kasali Adedeji, Olusegun Samuel, Jagun Zaid Oluwadurotimi, Olaolu Folorunsho, Jacob Adebayo and Folashade Oniyide (2020). Computational Analysis of a Lecture Room Ventilation System. Chapter in the Book, *Zero-Energy Buildings*, IntechOpen. DOI: <http://dx.doi.org/10.5772/intechopen.92725>. [Web of Science]
41. \*C. N. Nwaokocha, S.O. Giwa, **A.T. Layeni**, S.I. Kuye, S.O. Oyedepo, N.S. Lawal and O.S. Fasinu (2021) Energy Generation From Corn Starch Effluent Using Microbial Fuel Cell Using Lead Electrodes. In: Sandip A. Kale, editor, *Advances in Electrical and Electronics Engineering*, Grinrey Publications, Pune, India. pp. 87-96. ISBN: 978-81-948951-1-4

#### vi. Published Conference Proceedings

35. \***Layeni, A. T.**, (Nov. 2004), Maintenance Planning, the Life Span Extender. International Conference on Life Cycle Assessment, Behaviour and Properties of Concrete and Concrete Structure. Brno University of Technology, Czech Republic.
36. ^**Layeni, A. T.**, (Aug. 2006), Improving Electrical Power Output: The Magneto-Hydrodynamic (MHD) Option. International Conference on Engineering Research & Development: Impact on Industry, University of Benin. .
37. ^**Layeni, A. T.**, (Oct. 2007), Harnessing the Wave Energy. 20<sup>th</sup> National Mechanical Engineering Conference and Annual General Meeting (NIMechE) Kaduna.
38. ^Adeala A. A., **Layeni A. T.**, (2008), Solving Time Management Problem in Transportation – An Optimization Algorithm. International Conference on Engineering Research & Development (ICERD), University of Benin. Pp. 1002.
39. ^**Layeni A. T.**, Adeala A. A., (2008), Effective Intra-Campus Transportation System Transport Network Analysis. International Conference on Engineering Research & Development (ICERD), University of Benin. Pp. 72
40. ^**Layeni, A. T.**, (Oct. 2007). The Magneto-Hydrodynamic (MHD) Energy System. The Future Direct Energy Conversion system. 20<sup>th</sup> National Mechanical Engineering Conference and Annual General Meeting (NIMechE) Kaduna.
41. ^Samuel O. D., Adegun A. O. and **Layeni A. T.**, (August 2011), Critical Review of in-situ Transesterification Process for Biodiesel Production. Federal University of Technology, Owerri. Renewable and Alternative Energy Society of Nigeria, FUTO Alternative Energy Conference 2011. Pages 10 – 15.
42. \***Layeni, A. T.**, Waheed, M. A., Jeje, O. O., Giwa, S. O. (2015). Computational Analysis of a Dual Purpose Solar Chimney for Buildings in Nigeria. Proceedings of the 8<sup>th</sup> International Conference on Sustainable Energy & Environmental Protection (SEEP2015), Paisley, August 11-14, 2015, 8(1), Pages 363 – 369.
43. \*Giwa, S.O., **Layeni, A.T.**, Nwaokocha, C.N.and Sulaiman, M.A. (2015). Emission Inventory of Flared Gas in the Niger Delta Region of Nigeria. Proceedings of the 8<sup>th</sup> International Conference on Sustainable Energy & Environmental Protection (SEEP2015), Paisley, August 11-14, 2015, 8(2), Pages 345 – 350.
44. ^**Layeni A.T.**, Olanipekun O.A, (2016). Noise Analysis and Control in a Metal-Work Workshop (A Case Study of the Olusegun Obasanjo Engineering Workshop, Olabisi Onabanjo University, Ibogun Campus, Ogun State). International Conference of Mechanical Engineering, Energy Technology And Management (IMEETMCon 2016), Department Of Mechanical Engineering, Faculty Of Technology, University Of Ibadan, Ibadan, Nigeria, 2016.
45. \*Nwaokocha, C. N., Giwa, S. O., **Layeni, A. T.**, Akinyemi, O.O. & Kuye, S. I. (2016). Emission Assessment of a Converted Spark Ignition Engine to Enable the Use of Liquefied Petroleum Gas.

Proceedings of the International Conference on Energy Systems & Developments (ICESD 2016), University of Pune, Pune, India. February 19-20, 2016, pages 192 – 197.

46. \***Layeni, A. T.**, Nwaokocha, C. N., Adebayo, K., Ochibe, E. & Yusuf, R. (2016). Development of a Palm Oil Pressure Stove. Proceedings of the International Conference on Energy Systems & Developments (ICESD 2016), University of Pune, Pune, India. February 19-20, 2016, pages 198 – 205.
47. ^Giwa, S. O., Nwaokocha, C. N., **Layeni, A. T.** & Sulaiman, M. A. (2016). Characterization of Noise and Exhaust Gases from Household Generators: A Case of Sango, Ogun State, Nigeria. Proceedings of the College of Engineering International Conference at Federal University of Agriculture, Abeokuta, Nigeria. March 7-11, 2016, pages 236 – 242.
48. ^**Layeni A.T.**, Nwaokocha C. N., Giwa, S. O., Adedeji, K., & Olamide, O. O., (2018). Ventilation Analysis of a Lecture Hall Adapting Passive Ventilation Methods Using Computational Method. International Conference of Mechanical Engineering, Energy Technology And Management (IMEETMCon 2018), Department Of Mechanical Engineering, Faculty Of Technology, University Of Ibadan, Ibadan, Nigeria, 2018.
49. ^**Layeni A.T.**, Adefuye A. A., Nwaokocha, C. N., Olanipekun O. A., Giwa, S. O., & Adebayo, J. K., (2018). Development of a Computational Crash Analysis Model of a Light Weight Vehicle. National Engineering Conference on the Role of Engineering in the Diversification of Nigeria Economy (ABU-NEC2018). Ahmadu Bello University Zaria, November 14 -17, 2018, pages 429 – 433.
50. ^Babalola A. A., Lawal N. S., Adetifa B. O., Sosanya A. O., **Layeni A.T.**, Tongo S. M., (2018). Evaluation of Agricultural Tractor Noise in Field Operations at the College of Engineering and Environmental Studies, Olabisi Onabanjo University, Ago-Iwoye, Nigeria. National Engineering Conference on the Role of Engineering in the Diversification of Nigeria Economy (ABU-NEC2018). Ahmadu Bello University Zaria, November 14 -17, 2018, pages 559 – 563.
51. ^Adebayo J. K., Dare A. A., **Layeni A.T.**, Nwaokocha C. N., Akpobasa S. O. (2018). Characterization of Fluid Flow in an Electrified Micro Channel. National Engineering Conference on the Role of Engineering in the Diversification of Nigeria Economy (ABU-NEC2018). Ahmadu Bello University Zaria, November 14 -17, 2018, pages 585 – 589.

#### vii. Other Conference Papers

52. ^**Layeni A. T.** and Nwaokocha C. N., (2011), Design and Fabrication of a Palm Oil Pressure Stove. Osun State University, Osogbo, College of Science, Engineering & Technology Conference 2011.
53. ^ Nwaokocha C. N., and **Layeni A. T.**, (2011), Evaluation of Ocean Wave Energy Potential – An Option for Nigerian Power Situation. Osun State University, Osogbo, College of Science, Engineering & Technology Conference 2011.

54. ^Nwaokocha C. N., Waheed M. A. and **Layeni A. T.**, (2011), Extracting Marine Energy to Solve Nigeria's Energy Crisis. Osun State University, Osogbo, College of Science, Engineering & Technology Conference 2011
55. ^Babalola A. A., **Layeni A. T.**, Nwaokocha C. N. & Lawal N. S. (2015). Vehicular Emission: Carbon Sequestration Potential of Teak Tree (*Tectona Grandis*) In Abeokuta Metropolis. *Alexander von Humboldt-Kolleg Ogbomoso 2015 Conference at Ladoke Akintola University of Technology, Ogbomoso, Nigeria. January 13 – 16, 2015.*
56. ^**Layeni A. T.**, Nwaokocha C. N., Giwa S. O., Adedeji K. A. & Sulaiman M. A., (2017). Mathematical Modelling of Combined Ventilation and Solar Power Chimney. International Conference on Engineering for a Sustainable World, ICESW 2017, Department of Mechanical Engineering, College of Engineering, Covenant University, Ota, Nigeria. July 3rd – 7th 2017
57. ^Sulaiman M. A., Nwaokocha C. N., Olamide O. O., **Layeni A. T.**, Giwa S. O. and Adama O. O., (2017). Performance Indicators for Sustainable Cement Production in Nigeria. International Conference on Engineering for a Sustainable World, ICESW 2017, Department of Mechanical Engineering, College of Engineering, Covenant University, Ota, Nigeria. July 3rd – 7th 2017
58. \*Extracting Marine Energy to Solve Nigeria's Energy Crisis. International Congress on Engineering and Technology (ICET 2019), Trinity College of Engineering and Research, Pune, India. February 27-28, 2019.
59. \*The Development of a Computer Code to Execute Design and Operations Analyses of Pipe Networks. International Congress on Engineering and Technology (ICET 2019), Trinity College of Engineering and Research, Pune, India. February 27-28, 2019.

#### **viii. Technical Reports (Workshop Papers and Public Lectures)**

60. **Layeni, A.T.**, (2000). Magneto-hydrodynamic Generator – the Direct Energy Conversion Device. Seminar, Mechanical Engineering Department, University Of Ibadan.
61. **Layeni, A.T.**, (Sept. 2007). The Magneto-Hydrodynamic (MHD) System: The Future Energy System. Mechanical Engineering Department Mini-Conference, Ibogun.
62. **Layeni, A.T.**, (Sept. 2007). Wireless Power Transmission: The Nikola Tesla Project. Mechanical Engineering Department Mini-Conference Ibogun.
63. **Layeni, A.T.**, (2007). Research, Design & Development: Bridging the Gap between Industry & the Academia, Nigerian Union of Engineering Student Association, Ibogun.
64. **Layeni, A.T.**, (2010). Engineering Within & Outside the Academia. Engineering Week College of Engineering University of Agriculture Abeokuta.
65. **Layeni, A.T.**, (2010). Mechanical Engineering & Industrialization in Nigeria: Association of Mechanical Engineering Students Week 2009/2010 (Workshop), Mechanical Engineering Department Ibogun

66. **Layeni, A.T.**, (2017). Computational Analysis: the Future in Scientific, Engineering and Technology, Research, Design and Development. Seminar Presented at the Faculty of Engineering, College of Engineering & Environmental Studies, Ibofun Campus, Olabisi Onabanjo University, Ago-Iwoye.

### **Technical Reports (Professional Projects)**

#### **A. Within the University**

67. **Layeni, A.T.**, (2021 -Date): Dynamic Modelling of Flow (Vortex) Induced Vibration in Underwater Pipelines. (*Modelling & Simulation*).
68. **Layeni, A.T.**, (2021 -Date): Design and Simulation of Multi-Phase Flow in Pipelines. (*Modelling & Simulation*).
69. **Layeni, A.T.**, (2021 -Date): Design and Construction of an Agricultural UAV for Pesticide Spraying of Agricultural Fields. (*Research on going: Preliminary design, Fabrication and Testing*).
70. **Layeni, A.T.**, (2021 -Date): Development of Energy Recovery Systems Using the Vapour Absorption and the Organic Rankine Cycle Devices. (*Modelling & Simulation*).
71. **Layeni, A.T.**, (2021 -Date): Mathematical Modelling of a Dual Solar and Wind Charging System for an Electric Automobile. (*Modelling & Simulation*).
72. **Layeni, A.T.**, (2020 -Date): Development of a Triple-Powered Automated Charcoal, Gas and Electric Oven. (*Research on going*).
73. **Layeni, A.T.**, (2019 -Date): Development of an Automated Charcoal Oven. (*Research on going*).
74. **Layeni, A.T.**, (2019 -Date): Development of Automobile Brake Pads Using local Composite Materials. (*Research on-going*).
75. **Layeni, A.T.**, Davou T. (2016 -Date): Design and Construction of a Solar Organic Rankine Cycle Power Plant. (*Research on-going: Preliminary design, Fabrication and Testing and redesigning*).
76. **Layeni, A.T.** (2015): Mathematical Modelling of a Wind Charging System for an Electric Automobile. (*Design Analysis*).
77. **Layeni, A.T.** (2014 - Date): Design and Construction of an Electric Automobile (*Research on-going: Preliminary design and drawings, study into different storage and charging options*).
78. **Layeni, A.T.** (2012): Design and Construction of a Fuel-less Power Generator (*Design and working drawings*).
79. **Layeni, A.T.** (2012): Design and Construction of a Horizontal Wind Turbine (*Design and working drawings*).

80. **Layeni, A.T.** (2012): Design and Construction of Sub-sonic Wind Tunnel for Use in the Laboratory at CEES, OOU Ibogun Campus (*Design and working drawings*).
  81. **Layeni, A.T.** (2012): Design and Construction of a Cassava Pelletizing Machine (*Design and working drawings*).
  82. **Layeni, A.T.** (2011): Design and Construction of An Ice Making Machine Using the Cascade Refrigeration System (*Design and working drawings*).
  83. **Layeni, A.T.** (2011): Life Cycle Analysis for Automobiles.
  84. **Layeni, A.T.** (2010): Development of An Electromagnetic Driven Reciprocating Pump (*Design and working drawings*).
  85. **Layeni, A.T.** (2010): The Energy & Exergy Analysis of Sedan Automobile (Spark Ignition) Engine.
  86. **Layeni, A.T.** (2010): Proposed Laboratory Complex for Obafemi Awolowo College of Health Sciences, Ikene. Olabisi Onabanjo University. Ogun State. (Design of Mechanical drawing and Supervision)
  87. **Layeni, A.T.** (2009): Proposed OOU Engineering Complex, Ibogun (*Design of Air-Conditioning Cooling Loads And Systems*)
  88. **Layeni, A.T.** (2009): Design of Stabilizing Unit for Boats/Ships (*Design and working drawings*).
  89. **Layeni, A.T.** (2009): Short and Long Term Demand and Supply Water Forecast for Ibogun, Ifo LGA.
  90. **Layeni, A.T.** (2008): Design and Fabrication of a Palm Oil High Pressure Burner (*Design and working drawings*).
  91. **Layeni, A.T.** (2008): Design of a Noise Control System for the Olusegun Obasanjo Engineering Workshop, CEES Ibogun Campus (*Design and working drawings*).
  92. **Layeni, A.T.** (2008): Design and Construction of a Horse Riding Simulator (*Design and working drawings*).
- Outside the University:**
93. **Layeni, A.T.** (2009): Proposed Development of Four-Star Hotel in Abuja for A.U.P.C.T.R.E. at Kado District, F.C.T., Abuja. (*Design of Mechanical Engineering Systems: Air-conditioning, Plumbing and Lifts*).
  94. **Layeni, A.T.** (2005): Designed and performance analysis of a municipal pipe.
  95. **Layeni, A.T.** (2003): Design and Construction of a Leach Field for an Eatery at Alaba, Ojo, Lagos State.

**ix. Manuscripts Submitted for Publications**

## **F. CONTRIBUTIONS TO NATIONAL AND INTERNATIONAL LIFE**

### **A. Within the University:**

1. Represented the University at the University of the West of Scotland (UWS), UK, to assist in developing a collaboration MOU with Olabisi Onabanjo University (OOU), Ago-Iwoye, Nigeria
2. Developed and drafted the Civil Engineering Curriculum for the Faculty of Engineering, Olabisi Onabanjo University, based on the course module from UWS, which is focused on industrial practice of engineering.
3. Supervision of Students Research Projects in view of developing new devices to improving community life
4. Planning of the first Postgraduate School Exhibition (member PG School Exhibition Committee) at the Olabisi Onabanjo University (OOU), Ago-Iwoye, Nigeria

### **B. Outside the University:**

1. An Academic Board/LOC member of the Fafunwa Educational Foundation
2. Volunteer of the Junior Achievements Nigeria, a subsidiary of the Junior Achievements USA.
3. A member of the Community Development Association in my residential area


## **G. RECOMMENDATION**

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**(3) Professor E. P. Oaikhinan**, *B.Sc.(Staffordshire), M.Sc. (Leeds), Ph.D (Cardiff), MNSE, MNMS, MICeram, R. Engr. (COREN)*  
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**Signature**

30<sup>th</sup> December, 2021

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**Date**