

## ACHEBE, CHINONSO HUBERT



### **Personal Data**

Title: Prof.  
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Other names: Chinonso Hubert  
Date of birth: August 31, 1968  
Sex: Male  
Marital status: Married  
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### **(i) Academic Qualification**

- |   |      |
|---|------|
| (1) Ph.D. ( <i>Mechanical Engineering</i> ) Nnamdi Azikiwe University, Awka       | 2010 |
| (2) M.Eng. (Mech/Prod.Engineering) Nnamdi Azikiwe University, Awka                | 2002 |
| (3) B.Eng. ( <i>Hons</i> ) Mech/Prod. Engineering Nnamdi Azikiwe University, Awka | 1998 |
| (4) WASC Federal Government College, Okigwe                                       | 1986 |

### **(ii) Relevant Experience**

#### **(a) Teaching Experience**

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|--|-------------|
| (1) Nnamdi Azikiwe University, Awka ( <i>Asst. Lecturer</i> )  | 2002 - 2003 |
| (2) Nnamdi Azikiwe University, Awka ( <i>Lecturer II</i> )     | 2003 - 2006 |
| (3) Nnamdi Azikiwe University, Awka ( <i>Lecturer I</i> )      | 2006 - 2010 |
| (4) Nnamdi Azikiwe University, Awka ( <i>Senior Lecturer</i> ) | 2010 - 2013 |
| (5) Nnamdi Azikiwe University, Awka ( <i>Reader</i> )          | 2013 - 2016 |
| (6) Delta State University, Oleh ( <i>Sabbatical</i> )         | 2016 - 2017 |
| (7) Nnamdi Azikiwe University, Awka ( <i>Professor</i> )       | 2016 - Date |

#### **(b) Industrial Experience**

- |   |             |
|---|-------------|
| (1) Coolex Technical Services (Nig.) Ltd Lagos/Oba ( <i>Production Engineer</i> ) | 1999 - 2002 |
| (2) National Iron Ore Mining Project, Itakpe ( <i>NYSC</i> )                      | 1998 - 1999 |

#### **(c) Research Experience**

- (1) Renewable Alternative Energy Resources Harnessing and Utilization
- (2) Surface Thermodynamic Approach to HIV Control
- (3) Surface Thermodynamic Approach to other Biological and Non-Biological Systems
- (4) Analytical Thermodynamics Approach to Biological and Non-Biological Systems
- (5) Thermal/Power Engineering
- (6) Automobile Technology
- (7) Unmanned Aerial Vehicle Technology

(iii) **Creative Output**

(a) **Edited Books/Monographs**

- (1) Obiora Emeka Anisiji, **Chinonso Hubert Achebe**, Jeremiah Lekwuwa Chukwuneke (2017) “Analysis of a Commercial Thermophilic Biogas Plant” LAP LAMBERT Academic Publishing, OmniScriptum GmbH & Co. KG, Saarbrücken, Germany, 2017, ISBN:9783-6596-1281-7
- (2) Jeremiah Lekwuwa Chukwuneke, **Chinonso Hubert Achebe** (2017) “Surface Energetics of Mycobacterium Tuberculosis-Macrophage Interaction” LAP LAMBERT Academic Publishing, OmniScriptum GmbH & Co. KG, Saarbrücken, Germany, 2017, SN: 3659612812.
- (3) **C.H. Achebe** (2014) “*Surface Thermodynamics Approach To HIV-Blood Interactions*” LAP LAMBERT Academic Publishing, OmniScriptum GmbH & Co. KG, Saarbrücken, Germany, 2014, ISBN: 978-3-659-55486-5.
- (4) **C.H. Achebe**, S.N. Omenyi (2012) “Hamaker Coefficient Concept Approach as a Surface Thermodynamic Tool for Interpreting the Interaction Mechanisms of Human Immunodeficiency Virus and the Lymphocytes”, *IAENG Transactions on Electrical Engineering Volume 1, Special Issue of the International Multi-conference of Engineers and Computer Scientists 2012*, Ao, Chan, Katagiri and Xu Editors, World Scientific, 301-314.
- (5) **C.H. Achebe**, S.N. Omenyi (2013) “The Application of Negative Hamaker Concept to the Human Immunodeficiency Virus (HIV)-Blood Interactions Mechanism” *Transactions on Engineering Technologies-Special Volume of the World Congress on Engineering 2013*, Gi-Chul Yang, Sio-Long Ao and Len Gelman Editors, Springer, 281-293.

(b) **Journal Articles**

- (1) **C.H. Achebe**, B.M.O. Ogunedo, J.L. Chekwuneke, N.B. Anosike (2020) “Analysis of diesel engine injector nozzle spray characteristics fueled with residual fuel oil” *Elsevier Heliyon* 6(2020) e04637.
- (2) **C.H. Achebe**, O.C. Okafor, E.N. Obika (2020) “Design and implementation of a crossflow turbine for Pico hydropower electricity generation” *Elsevier Heliyon* 6(2020) e04523.
- (3) EN Obika , **CH Achebe**, JL Chukwuneke and ON Ezenwa (2020) “Effect of cane wood and palm kernel fibre filler on the compressive strength and density of automobile brake pad” *Advances in Mechanical Engineering, SAGE*, 12(7)1-9.
- (4) Iweriolor S., **Achebe C.H.**, Ani O.I. (2020) “Sessile Drop Approach to Surface Energy Determination of Hepatitis C Infected Blood Cells” *Journal of Engineering and Applied Sciences*, 17(1)123-129.
- (5) **C.H. Achebe**, E.N. Obika, J.L. Chukwuneke, E.O. Ani (2019) “Optimisation of Hybridised Cane Wood-Palm Fruit Fibre Frictional Material” *Journal of Materials: Design and Applications, SAGE*, 233(12)2490-2497.
- (6) **C.H. Achebe**, J.L. Chukwuneke, F.A. Anene, C.M. Ewulonu (2019) “A Retrofit for Asbestos-Based Brake Pad Employing Palm Kernel Fibre as the Base Filler Material” *Journal of Materials: Design and Applications, SAGE*, 233(9)1906-1913.
- (7) **C.H. Achebe**, S. Iweriolor, J.L. Chukwuneke (2018) “Surface Energetics Study and Determination of the Combined Negative Hamaker Coefficient for Hepatitis C Virus

- Infected Human Blood Cells” *Journal of Biomedical Science and Engineering*, 11(11)307-319.
- (8) **Chinonso H. Achebe**, Ejiroghene Onokpiti, Anthony O. Onokwai (2018) “Anaerobic Digestion and Co-digestion of Poultry Droppings (PD) and Cassava Peels (CP): Comparative Study of Optimal Biogas Production” *Journal of Engineering and Applied Sciences*, 12(2018)87-93.
  - (9) Ikebudu K.O., Omenyi S.N., **Achebe C.H.** (2018) “Particle-Particle Interactions in Sub-Bituminous Coal Powder Agglomerates: Surface Thermodynamic Approach” *Journal of Engineering and Applied Sciences*, 12, 1-10.
  - (10) **C.H. Achebe**, A.C. Umeji, J.L. Chukwunke (2018) “Energy Evaluation of Various Composites of Biomass Waste Briquettes” *Advances in Research*, 13(6)1-11.
  - (11) Chukwunke L. Jeremiah, **Achebe H. Chinonso**, Sinebe E. Jude, Ugwuegbu C. Duke (2017) “Surface Energetic Effects of Human Immunodeficiency Virus Co-Infection on Mycobacterium Tuberculosis-Macrophage Interaction Mechanism” *Journal of Applied Biotechnology and Bioengineering*, 3(6)1-8.
  - (12) **C.H. Achebe**, J.L. Chukwunke, T.D. Otobo, P.S. Aguh (2017) “Analysis of Carbide Tool Wear of EN38 Steel” *Advances in Research*, 11(5)1-11.
  - (13) Okoli S.O., **Achebe C.H.**, Anosike B.N. (2017) “Comparative Emission Study on Gasoline Vehicles” *IOSR Journal of Engineering (IOSRJEN) www.iosrjen.org*, 7(4)1-5.
  - (14) **Achebe C.H.**, Ohiafi B.O., Chukwunke J.L., Obika E.N. (2016) “Optimization of Coolant Composition on Tool Wear during Turning Operation of Mild Steel” *American Journal of Engineering Research (AJER)*, 3(6)61-69.
  - (15) Gabriel Oladeji Bolarinwa, Sam Nna Omenyi, **Chinonso Hubert Achebe** (2016) “Derivation of Mathematical Model for Micromotion and Micro-Displacement at the Bone-Implant Interface Using Spring Analysis” *Scholars Journal of Engineering and Technology (SJET)*, 4(10)507-511.
  - (16) Nwajude Chukwudi, Omenyi Sam, **Achebe Chinonso** (2016) “Effect of Temperature and Composition on Thermal Properties of Catfish (Siluriforms Clarias)” *International Journal of Engineering and Technical Research (IJETR)*, 6(2)46-48.
  - (17) **Achebe C.H.**, Nwagu A.I., Anosike B.N. (2016) “Evaluation of Frictional Heat Generated in A Mechanical Contact Due to Debris Formation And the Cooling Rates of Some Lubricating Oils” *Quest Journals; Journal of Research in mechanical Engineering, www.questjournals.org*, 3(2)01-10.
  - (18) **Achebe Chinonso Hubert**, Umeobi Happiness Ijeoma, Azaka Onyemazuwa Andrew (2016) “Model Development for Solar Radiation Potential in Awka Metropolis” *International Journal of Engineering and Technical Research (IJETR)*, 4(3)13-19.
  - (19) Chukwunke J.L., **Achebe C.H.**, Ejiofor O.S., Sinebe J.E. (2015) “Surface Energetics of Mycobacterium Tuberculosis-Macrophage Interactions” *Journal of Biomedical Engineering and Medical Imaging*, 2(6)51-61.
  - (20) Chukwunke J.L., **Achebe C.H.**, Omenyi S.N. (2015) “Surface Thermodynamics Approach to Mycobacterium tuberculosis (M-TB)-Human Sputum Interactions” *Bioengineering & Biomedical Science*, 5(3)1-8.

- (21) **Achebe Chinonso Hubert**, Nnamdi Benedict Anosike, Abdulrahman Jubrilla Adamu (2015) “Computer Aided Reverse Engineering and Rapid Prototyping of Motorcycle Rear Hub” *International Journal of Engineering and Technology*, 5(9)523-528.
- (22) **Achebe Chinonso Hubert**, Nnamdi Benedict Anosike, Abdulrahman Jubrilla Adamu (2015) “A Coupled Thermal–Stress Finite Element Analysis of Single Braking Effect on Motorcycle Rear Hub Brake” *International Journal of Engineering Trends and Technology (IJETT)*, 25(3)120-125.
- (23) O.I. Ani, S.N. Omenyi, **C.H. Achebe** (2015) “The Effects of Antiretroviral Drugs on the Absorbance Characteristics of Blood Components” *International Journal of Scientific & Technology Research*, 4(9)154-160.
- (24) O.I. Ani, S.N. Omenyi, **C.H. Achebe** (2015) “Negative Hamaker Coefficients: Application to the Human Immunodeficiency Virus (HIV)-Blood Interactions in Antiretroviral Drug Media” *Journal of Engineering and Applied Sciences*, 11, 1-10.
- (25) Okwuchukwu Ani, Sam Omenyi, **Chinonso Achebe** (2015) “The Effects of Antiretroviral Drugs on the Absorbance Characteristics of HIV – Infected Blood” *Journal of Biomedical Science and Engineering*, 8, 571-581.
- (26) Chukwuneke J.L., **Achebe C.H.**, Omenyi S.N. (2015) “Mycobacterium Tuberculosis (M-TB) – Human Sputum Interaction Mechanisms Energetics” *International Journal of Biological Engineering*, 5(2)23-30.
- (27) Paul Okpala, Sam Omenyi, Godwin Ozoegwu, **Chinonso Achebe** (2015) “Analysis of the Dynamic Energy Flow Associated with Phagocytosis of Bacteria” *Heliyon Elsevier*, No.e00021, 1-14.
- (28) Okwuchukwu Innocent Ani, Sam Nna Omenyi, **Chinonso Hubert Achebe** (2015) “Human Immunodeficiency Virus (HIV)-Blood Interactions in Antiretroviral Drugs Environment-Surface Thermodynamics Approach” *Journal of Biosciences and Medicines*, 3, 1-15.
- (29) **Achebe C.H.**, Ilogebe A.B., Chukwuneke J.L., Azaka O.A. (2015) “The Effects of Inhibition on Corrosion of Mild Steel in H<sub>2</sub>SO<sub>4</sub> using Ethanol Extract of Vernonia Amygdalina” *International Journals of Engineering and Science (IJES)*, 4(8)28-36.
- (30) **Achebe C.H.**, Ilogebe A.B., Chukwuneke J.L., Azaka O.A. (2015) “Mild Steel Corrosion Inhibition in H<sub>2</sub>SO<sub>4</sub> Using Ethanol Extract of Vernonia Amygdalina” *International Journal of Scientific & Engineering Research (IJSTR)*, 14(10)1-9.
- (31) Okafor A.A., **Achebe C.H.**, Chukwuneke J.L., Okolie P.C. (2014) “Experimental Simulation and Optimization of Performance of Four Stroke Spark Ignition Injector Engine” *International Journal of Scientific & Engineering Research*, www.ijser.org, 5(11)167-173.
- (32) Chukwuneke J.L., **Achebe C.H.**, Okolie P.C., Okwudibe H.A. (2014) “Experimental Investigation on Effect of Head and Bucket Splitter Angle on the Power Output of a Pelton Turbine” *International Journal of Energy Engineering*, <http://journal.sapub.org/ijee>, 4(4)81-87.
- (33) Okafor A.A., **Achebe C.H.**, Chukwuneke J.L., Ozoegwu C.G. (2014) “Modeling and Optimization of Performance of Four Stroke Spark Ignition Injector Engine” *International Journal of Scientific & Engineering Research*, www.ijser.org, 5(9)603-608.

- (34) Chukwuneke J.L., **Achebe C.H.**, Nwosu M.C., Sinebe J.E. (2014) “Analysis and Simulation on Effect of Head and Bucket Splitter Angle on the Power Output of a Pelton Turbine” *International Journal of Engineering and Applied Science*, [www.eaas-journal.org](http://www.eaas-journal.org), 5(3)1-8.
- (35) Okolie P.C., Ezeliora, C.D. Chukwuneke J.L., **Achebe C.H.** (2014) “Statistical Analysis of Processing Data for Premier Bread Industry Using Chi-Squared and Goodness-of-Fit Test” *International Journal of Multidisciplinary Sciences and Engineering*, [www.ijmse.org](http://www.ijmse.org), 5(2)1-11.
- (36) Ujam J.A., Chukwuneke J.L., **Achebe C.H.**, Ikwu G.O.R. (2014) “Modelling the Effect of Head and Bucket Splitter Angle on the Power Output of a Pelton Turbine” *International Journal of Engineering and Applied Science*, [www.eaas-journal.org](http://www.eaas-journal.org), 5(3)26-36.
- (37) Anisiji O.E., **Achebe C.H.**, Chukwuneke J.L., Okolie P.C. (2014) “Integrated Process Modelling of a Thermophilic Biogas Plant” *International Journal of Scientific and Technology Research*, [www.ijstr.org](http://www.ijstr.org), 3(7)334-341.
- (38) Nwadike C.E., **Achebe C.H.**, Chukwuneke J.L., Ezeliorah C.D. (2014) “Optimization of Production of Biodiesel from Cow Tallow using Response Surface Methodology” *American Journal of Engineering, Technology and Society (AJETS)*, 1(4)19-27.
- (39) Nwadike Emmanuel Chinagorom, **Achebe Hubert Chukwunonso**, Ezeliora Chukwuemeka Daniel, Azaka Onyemazuwa Andrew (2014) “FTIR Analysis for Groundnut Seed Oil, Cow-tallow Oil, and Castor Seed Oil for Biodiesel Production” *American Journal of Mechanical Engineering and Automation*, 1(4)38-41.
- (40) Chukwuneke, J.L., **Achebe, C.H.**, Okolie, P.C., Okonkwo, U.C. (2013) “Statistical Thermodynamics Approach to Urine Analysis Employing Micro-Canonical Ensemble” *International Journal of Multidisciplinary Sciences and Engineering*, 4(7)60-64.
- (41) **C.H. Achebe**, S.N. Omenyi (2013) “Mathematical Determination of the Critical Absolute Hamaker Constant of the Serum (as an Intervening Medium) Which Favours Repulsion in the Human Immunodeficiency Virus (HIV)-Blood Interactions Mechanism” *IAENG On-line Journal*, [www.iaeng.org/publication/IMECS2012/](http://www.iaeng.org/publication/IMECS2012/), 1380-1384.
- (42) Onyenobi C. Samuel, Chukwuneke L. Jeremiah, **Achebe H. Chinonso**, Okolie C. Paul (2013) “Biogas Production from Municipal Sewage Sludge Using Ultrasound Speeding Digestion Process” *International Journal of Science and Engineering Investigations*, [www.IJSEI.com](http://www.IJSEI.com), 2(15)109 -118.
- (43) Jeremiah L.Chukwuneke, **Chinonso H. Achebe**, Paul C. Okolie, Obiora E. Anisiji (2013) “Modelling of Electromechanical Control of Camless Internal Combustion Valve Actuator” *International Journal of Science and Engineering Investigations*, [www.IJSEI.com](http://www.IJSEI.com), 2(15)123 -136.
- (44) **Achebe C.H.**, Omenyi S.N. (2013) “The Effects of Human Immunodeficiency Virus (HIV) Infection on the Absorbance Characteristics of Different Blood Components” *International Journal of Science Invention*, [www.ijesi.org](http://www.ijesi.org), 2(5)53-61.
- (45) Chukwuneke J.L., **Achebe C.H.**, Okolie P.C., Okafor E.A. (2013) “The Effect of Variety and Drying on the Engineering Properties of Fermented Ground Cassava” *International Journal of Scientific Knowledge (Computing and Information Technology)*, 1(5)13-27.

- (46) Chigbogu G. Ozoegwu, Sam N. Omenyi, Sunday M. Ofochebe, **Chinonso H. Achebe** (2013) “Comparing Up and Down Milling Modes of End-Milling using Temporal Finite Element Analysis” *Journal of Applied Mathematics*, 3(1)1-11.
- (47) Chigbogu G. Ozoegwu, Sam N. Omenyi, **Chinonso H. Achebe**, Chigozie F. Uzoh (2013) “Stability of Circular Feed End-Milling Compared with that of Linear Feed Equivalent” *Journal of Science and Technology*, 3(1)17-23.
- (48) Chigbogu G. Ozoegwu, Sam N. Omenyi, **Chinonso H. Achebe**, Chigozie F. Uzoh (2012) “Effect of Modal Parameters on both Delay-Independent and Global Stability of Turning Process” *Journal of Mechanical Engineering and Automation*, <http://journal.sapub.org/jmea> 2(6)159-168.
- (49) Ozoegwu C.G., Omenyi S.N., **Achebe C.H.**, Chukwuneke J.L. (2012) “Chatter Stability Characterization of a Plastic End-Milling CNC Machine” *Innovative Systems Design and Engineering*, [www.iiste.org](http://www.iiste.org) , 3(11)17-28.
- (50) Mba E.F., Chukwuneke J.L., **Achebe C.H.**, Okolie P.C. (2012) “Modeling and Simulation of a Photovoltaic Powered Vapour Compression Refrigeration System” *Journal of Information Engineering and Applications*, [www.iiste.org](http://www.iiste.org) , 2(10)1-15.
- (51) Chukwuneke Jeremiah Lekwuwa, Ajike Chinagorom Ogbu, **Achebe Chinonso Hubert**, Okolie Paul Chukwulozie (2012) “A Mathematical Model of an Evaporative Cooling Pad Using Sintered Nigerian Clay” *Journal of Minerals and Materials Characterization and Engineering*, [www.SciRP.org/journal/jmmce](http://www.SciRP.org/journal/jmmce), 11, 1113-1120.
- (52) Obiora E. Anisiji, **Chinonso H. Achebe**, Jeremiah L. Chukwuneke, Paul C. Okolie (2012) “A Mathematical Model of a Commercial Thermophilic Biogas Plant” *International Journal of Mechanical Engineering*, 40(10)343-349.
- (53) Chukwuneke J.L., **Achebe C.H.**, Okolie P.C., Chukwumuanya E.O. (2012) “Analysis of a Laboratory Bicycle Ergometer System Using Grand Canonical Ensemble” *International Journal of Multidisciplinary Sciences and Engineering (IJMSE)*, <http://www.ijmse.org>, 3(5)58-65.
- (54) Chukwuneke Jeremiah Lekwuwa, **Achebe Chinonso Hubert**, Okolie Paul Chukwulozie, Ajike Chinagorom Ogbu (2012) “An Application of Statistical Thermodynamics to an Open Flow System” *International Journal of Scientific and Engineering Research (IJSER)*, <http://www.ijser.org>, 3(5)1-6.
- (55) **C.H. Achebe**, U.C. Nneke, O.E. Anisiji (2012) “Analysis of Oil Pipeline Failures in the Oil and Gas Industries in the Niger Delta Area of Nigeria” *IAENG On-line Journal*, [www.iaeng.org/publication/IMECS2012/](http://www.iaeng.org/publication/IMECS2012/), 1274-1279.
- (56) **C.H. Achebe**, S.N. Omenyi, O.P. Manafa, D. Okoli (2012) “Human Immunodeficiency Virus (HIV)-Blood Interactions: Surface Thermodynamics Approach” *IAENG On-line Journal*, [www.iaeng.org/publication/IMECS2012/](http://www.iaeng.org/publication/IMECS2012/), 136-141.
- (57) Nwigbo S.C., **Achebe C.H.**, Onyechi P.C., Otuu O.O., Okewale A.O. (2010) “Adapted (Cassava) Glucose Syrup Reactor” *International Journal of Research in Pure and Applied Sciences*, 2(1)158-164.
- (58) S.C. Nwigbo, **Achebe C.H.**, E.C. Chinwuko, D.A. Tagbo (2008) “Design of Breadfruit Shelling Machine” *African Research Review, Special Edition: Engineering*, 2(4)1-16.



- (59) **Achebe C.H.**, Nwigbo S.C., Chinwuko E.C., M.O. Odhomi (2008) “Energy Losses through Unharnessed Biomass in South Eastern Region of Nigeria” *African Research Review*, 2(3)21-34.
- (60) **Achebe C.H.**, S.C. Nwigbo, E.C. Chinwuko, M.O. Odhomi (2007) “Biogas Generation: A Viable Cleaner Alternative Energy Source in South-Eastern Region of Nigeria” *Journal of Engineering and Applied Sciences*, 3(1&2)31-34.
- (61) **Achebe C.H.**, P.C. Onyechi, C.J. Osuji, O.G. Nnadozie (2006) “Biogas Equipment for Domestic Purposes” *Journal of Engineering and Applied Sciences*, 2(2)1-10.
- (62) **Achebe C.H.**, Ishiekwene U.J. (2005) “Generation of Biogas as an Alternative Energy Source for Domestic Purposes” *The Nigerian Academic Forum*, 9(4)48-53.
- (63) **Achebe C.H.**, Agajelu B.O., Uke U.G., Obika E.N. “Viability of a Mesophilic Anaerobic Digestion Biogas Plant for Udoka Housing Estate Awka Nigeria”, *International Organization of Scientific Research (IOSR)*, Accepted October 2016.
- (64) Chukwunke L. Jeremiah, **Achebe H. Chinonso**, Sinebe E. Jude, Ugwuegbu C. Duke (2017) “Surface Energetic Effects of Human Immunodeficiency Virus Co-Infection on Mycobacterium Tuberculosis-Macrophage Interaction Mechanism” *Journal of Applied Biotechnology and Bioengineering*, 3(6)1-8.

**(c) Conference Papers/Conferences**

- (65) **Achebe C.H.**, Ifezue O.G., Gadzama W.S. (2016) “Performance Analysis of Single Cylinder Diesel Engine Fuelled with Pyrolysis Oil/Diesel/Butanol Blends” *Proceedings of the 6<sup>th</sup> Annual and International Conference of the Renewable and Alternative Energy Society of Nigeria*, University of Nigeria, Nsukka, 4.
- (66) Okoli S.O., **Achebe C.H.**, Ajayi N.O. (2016) “Experimental Investigation of the Effects of the Absence of Catalytic Inverter in Gasoline Cars” *Proceedings of the 2016 Engineering and Technology Conference and Exhibition*, Akanu Ibiam Federal Polytechnic, Unwana.
- (67) E.M. Ozoihu, Sam Nna Omenyi, **C.H. Achebe** (2014) “Human Immunodeficiency Virus (HIV)-Blood Interaction: Contact Angle Approach” *Proceedings of the 2014 National Conference on Engineering for Sustainable Development, Faculty of Engineering, Nnamdi Azikiwe University, Awka*, 369-388.
- (68) **C.H. Achebe**, S.N. Omenyi (2013) “Mathematical Determination of the Critical Absolute Hamaker Constant of the Serum (as an Intervening Medium) Which Favours Repulsion in the Human Immunodeficiency Virus (HIV)-Blood Interactions Mechanism” *Proceedings of the World Congress on Engineering 2013*, Imperial College London, U.K., July 2013, 1380-1384.
- (69) **C.H. Achebe**, S.N. Omenyi, O.P. Manafa, D. Okoli (2012) “Human Immunodeficiency Virus (HIV)-Blood Interactions: Surface Thermodynamics Approach” *Proceedings of the International Multi-Conference of Engineers and Computer Scientists 2012*, Hong Kong, 136-141.
- (70) **C.H. Achebe**, U.C. Nneke, O.E. Anisiji (2012) “Analysis of Oil Pipeline Failures in the Oil and Gas Industries in the Niger Delta Area of Nigeria” *Proceedings of the International Multi-Conference of Engineers and Computer Scientists 2012*, Hong Kong, 1274-1279.

- (71) World Congress on Engineering 2012 (WCE2012), *The 2012 International Conference of Systems Biology and Bioengineering/2012 International Conference of Industrial Engineering*, Imperial College London, U.K., July 2012.
- (72) Ozoegwu C.G., Omenyi S.N., **Achebe C.H.** (2012) “Damping Design of Turning Tool for Global Chatter Stability” *Proceedings of the 2012 National Conference on Infrastructural Development and Maintenance in the Nigerian Environment, Faculty of Engineering, Nnamdi Azikiwe University, Awka*, 315-324.
- (73) Sam Omenyi, **Achebe C.H.** (2006) “Conflict Resolution in the Oil and Gas Sector” *The Nigerian Institute of Quantity Surveyors, National Seminar/Workshop Session*, October 2006.
- (74) **Achebe Chinonso Hubert** (2016) “Adapted Plant for Anaerobic Bioconversion of Human Faeces to Biogas for Domestic Purposes” *Annual Conference of the Nigerian Society of Engineers, “Land of Promise 2016” Uyo*.

**(d) Some Implemented Projects**

- (1) Design and Implementation of a Cross Flow Turbine for Pico Hydropower Electricity Generation, 2019.
- (2) Design and Construction of an Off-Terrain Robot, 2018.
- (3) Design and Construction of Piezoelectric Energy Regenerative System, 2018.
- (4) Production of Asbestos-free Hybrid Automobile Break Pad using Palm Kernel Fibre (PKF) and Cane Wood as Filler Material, 2018.
- (5) Production of Asbestos-free Automobile Break Pad using Palm Kernel Fibre (PKF) as Filler Material, 2016.
- (6) Design and Construction of a Minibus (AUTOZIK II), 2015.
- (7) Design and Construction of Unmanned Aerial Vehicle (Quadcopter), 2015.
- (8) “THERMOCYCLE WIZARD” Software Developed for Solving Problems on Thermodynamic Cycles including Carnot, Rankine, Otto, Diesel and Dual (Partial Pressure) Cycles, 2013.
- (9) Design and Implementation of a Car Tyre Inflator Incorporated with a Touch-light and Powered through the Car Cigarette Port, 2009.
- (10) Design and Construction of a Thermal Book Binding Machine, 2010.
- (11) Design and Implementation of Intelligent Voice Prompt Security Door, 2007.
- (12) Design and Adaptation of Biogas Plant to Water Closet Type of Toilet, 2009.
- (13) Design and Construction of a Pipe Cuter Tool for Refrigeration/Air-conditioning Repairs and other Purposes, 2006.

**(iv) Academic Leadership Qualities**

**(a) Grants Attracted to the University;**

- (1) Fifteen Million Naira (₦15,000,000) Professorial Chair for the Department of Mechanical Engineering, NAU.
- (2) One Million, Nine Hundred and Seventeen Thousand Naira (₦1,917,000) Years 2012-2014 Merged TETFUND Research Projects (RP) Intervention Funds 7<sup>th</sup> Batch.



(3) An Annual Fifty Thousand Naira Cash Award to the Best Academic Performing Final Year Student of the Department of Mechanical Engineering, NAU.

(b) **Supervision of Postgraduate Research Works;** PhD Dissertation, Masters Degree Thesis and PGD Projects in Mechanical Engineering.

S/N	Name	Reg. No.	Title of Dissertation/Thesis/Project	Remarks
<b>PhD</b>				
1	Chukwuneke, Jeremiah Lekwuwa	2012247007P	Surface Energetics of Mycobacterium Tuberculosis-Macrophage Interactions	Concluded 2016
2	Ani, Okwuchukwu Innocent	2011247001P	Surface Energetics Study of the Interactions Between HIV and Blood Cells Treated with Antiretroviral Drugs	Concluded 2016
3	Ikebudu, Kingsley Okechukwu	2008247006P	Particle-Particle Interactions in Coal Powder Agglomerates	Concluded 2018
4	Bolarinwa, Gabriel Oladeji	2011247004P	In Silico Static Structural Analysis of Natural and Prosthetic Femoral Joints	Concluded 2019
5	Mbabuike, Ikenna Uchechukwu	2014247004F	Surface Thermodynamic Approach to Interactions Between HIV and Blood Cells Treated with Herbal Extracts	Concluded 2019
6	Iweriolor, Sunday	2014247001F	Contact Angle Investigation of Hepatitis-C Virus Treated with Conventional Drugs and Bio-Extracts	Concluded 2019
7	Madu, Kingsley Ejikeme	2015247007F	Evaluation of Wind Energy Generation Potentials in Owerri-Ezukala Anambra State	Concluded 2019
8	Udeani, Franklin Obumselu	2015247004F	Influence of Interfacial Parameters on the Adhesion of Pressure Sensitive Adhesives	Concluded 2021
9	Ani, Emmanuel Afamefuna	2015247006F	Effect of Thermal Mass on Heating and Cooling Exigencies of Housing Units in Enugu State	Ongoing
<b>M. Eng.</b>				
10	Nwadike, Chinagorom Emmanuel	2010246032P	Optimization of Production of Biodiesel from Cow Tallow using Response Surface Methodology	Concluded 2014
11	Okafor, Anthony	2009246017P	Simulation and Optimization of Performance	Concluded

	Amaechi		of Four Stroke Spark Ignition Injector Engine	2014
12	Ifezue, Onyeka Godwin	2010246008P	Performance Analysis of Diesel-Pyrolysis Oil-Butanol Blend in Internal Combustion Engine	Concluded 2016
13	Abdulrahman, Jibrilla Adamu	2010246041P	Computer Aided Reverse Engineering and Rapid Prototyping of Motorcycle Rear Hub	Concluded 2016
14	Ezeonuegbu, Happiness Ijeoma	2013246016P	Model development for Solar Radiation Potential in Awka	Concluded 2017
15	Nwagu, Ikechukwu Arrhenius	2012246008F	Experimental Evaluation of Heat Released in Lubricated Contacts Due to Debris Formation	Concluded 2018
16	Onokpite, Ejiroghene	2014246020P	Evaluating the Kinetic Parameters for Optimal Biogas Production from Co-Digestion of Cassava peels and Poultry Droppings	Concluded 2018
17	Umeji, Anthony Chukwuemeka	2014246005P	Optimization of Composition of Selected Biomass for Briquette Production	Concluded 2018
18	Okoli, Stanley Okechukwu	2012246004F	Evaluation of Effect of the Absence of Catalytic Converter in Gasoline Light Duty Vehicles	Concluded 2019
19	Obika, Echezona Nnaemeka	2015246007F	Development of Asbestos-Free Brake Pad Using Locally Sourced Hybrid Filler Materials	Concluded 2019
20	Ogunedo, Briggs Martins Onyinyechukwu	2015246019F	Spray Characteristics of Residual Fuel Oil for Compression Ignition Engine	Concluded 2019
21	Okafor, Obiora Clement	2016246002F	Design and Implementation of a Cross Flow Turbine for Pico Hydropower Electricity Generation	Concluded 2021
22	Ilogebe, Bernard Amamchukwu	2011246018P	Inhibition of Corrosion of Mild Steel in H <sub>2</sub> SO <sub>4</sub> using Ethanol Extract of Vernonia Amygdalina	Exit Defense
23	Mobi, Ifunanya Mariagoretti	2016246004F	Optimization of Palm Kernel Fibre Filler Material for Automobile Break Pad Production	Concluded 2021
24	Eneje, Reuben Amechi	2012246028F	Engine Noise and Emission Measurement System	Ongoing
25	Offor, Ikechukwu Christian	2013246002P	Experimental Study of Long-Wave Night Sky Cooling in Nnamdi Azikiwe University Awka	Ongoing

PGD

26	Attah, Chike Martins	2010245017P	Impact of Computer Aided Design and Manufacture (CAD/CAM) on Nigerian Industries	Concluded 2014
27	Ohiafi, Blessing Ohiole	2012245027P	Coolant Usage During Turning Operation of Mild Steel	Concluded 2015
28	Onwuka, Nnam Ikechukwu	2010245009F	Investigation of Buckling Strength of Engineering Materials Subjected to Different End Conditions	Concluded 2016
29	Tobotekere, Dinipre Paul	2012245004F	Analysis of Carbide Tool Wear Using EN38 Steel	Concluded 2015
30	Ogbeide, Okhaeifoh Ose	2010245014P	Effect of Advanced Manufacturing Technology in Modern Manufacturing	Concluded 2014
31	Nkwor, Collins Okunzuwa	2012245008P	Analysis of Oil Spillage in Niger Delta; A Case Study of SPDC	Concluded 2015
32	Mobi, Ifunanya Mariagoretti	2013245010F	Development of Automobile Break Pad using Locally Sourced Palm Kernel Fibre	Concluded 2016
33	Nwankwo, Samuel	2013245028P	Development of Propeller Blade for Unmanned Aerial Vehicles (UAV) Application	Concluded 2019

- (c) **External Examiner;** Department of Mechanical Engineering, Chukwuemeka Odumegwu Ojukwu University, Uli, 2021.
- (d) **External Examiner;** Department of Mechanical & Production Engineering, Enugu State University of Science and Technology, Enugu, 2018-2020.
- (e) **External Examiner;** Department of Mechanical Engineering, Madonna University, Enugu, 2020-2022.
- (f) **External assessor;** Department of Mechanical Engineering, Michael Okpara University, Umudike, 2021.
- (g) **External Assessor:** Department of Mechanical Engineering, Federal University of Petroleum, Effurun, 2021-2022.
- (h) **External Assessor:** Department of Mechanical Engineering, University Port-Harcourt, 2021-2022.
- (i) **External Assessor:** Department of Mechanical Engineering, Federal Polytechnic, Oko, 2014.
- (j) **Teaching of Postgraduate Courses;** PhD, Masters and PGD in Mechanical Engineering.
- (k) **Editorial Board Membership;**
- (1) Chief Editor, Journal of Engineering and Applied Science, Multi-disciplinary Journal of Faculty of Engineering, Nnamdi Azikiwe University, Awka, 2019 – Date.
  - (2) Editor, Science Review Association (SCIREA) Journal of Mechanical Engineering, 2017.

- (3) Editor, International Conference of Systems Biology and Bioengineering (ICSBB), IAENG, 2013 – Date.
  - (4) Editor, International Conference of Mechanical Engineering (ICME), IAENG, 2013 – Date.
  - (5) Editor, Journal of Engineering and Applied Science, Multi-disciplinary Journal of Faculty of Engineering, Nnamdi Azikiwe University, Awka, 2010 – 2019.
  - (6) Reviewer, Umudike Journal of Engineering and Technology (UJET) Michael Okpara University of Agriculture, Umudike, 2015 – Date.
  - (7) Editor, Journal of Reviews on Global Economics, 2014 – Date.
  - (8) Editor, Journal of Engineering and Applied Sciences, 2014 – Date.
  - (9) Reviewer, *SAGE Open* (an Open-access Peer-reviewed Journal), 2014 – Date.
  - (10) Reviewer, Scientific Research Publishing, 2016 – Date.
  - (11) Reviewer, SCIENCEDOMAIN International, 2016 – Date.
  - (12) Reviewer, Heliyon (Elsevier), 2019 – Date.
- (v) **Administrative Experience**
- (a) **Headship of Department/Unit**
    - (1) Dean Student Affairs, Nnamdi Azikiwe University, Awka, 2019 – Date.
    - (2) Deputy Director Academic Planning, Nnamdi Azikiwe University, Awka, 2018 – 2019.
    - (3) Associate Director Center for Energy and Environment, NAU, Awka, 2018 – 2019.
    - (4) AgHOD; Department of Mechanical Engineering, NAU, Awka, 2014 – 2015.
    - (5) AgHOD; Department of Mechanical Engineering, NAU, Awka, 2013 – 2014.
    - (6) AgHOD; Department of Mechanical Engineering, NAU, Awka, 2012 – 2013.
    - (7) Manager; Faculty of Engineering Workshop, NAU, Awka, 2011 – 2017.
    - (8) AgHead; Mechanical Maintenance Unit, National Iron Ore Mining project, Itakpe, 1999.
- (vi) **Contribution to University/Society**
- (a) **Academic and Education Committees**
    - (1) Committee Member of Technology Incubation Center (TIC), Nnamdi Azikiwe University, Awka, 2019-Date.
    - (2) Member Nnamdi Azikiwe University Committee on ACE for Impact Desk Evaluation Proposal for New Centers, 2018-Date.
    - (3) Member Centre for Sustainable Development, Nnamdi Azikiwe University Awka, 2016-2019.
    - (4) Permanent Senate Member Nnamdi Azikiwe University, Awka, 2017-Date.
    - (5) Permanent Member Faculty of Engineering, NAU, Management Committee, 2017-Date.
    - (6) Member Committee on the Monitoring of Lecture Delivery and Students Registration/Clearance, NAU, Awka, 2015-2016.
    - (7) Member Committee for Manpower Auditing of Department of Works Services, NAU, Awka, 2015-2016.

- (8) Member Committee of the International Conference of Mechanical Engineering (ICME), International Association of Engineers, World Congress on Engineering (WCE), London, 2014-Date.
- (9) Member Committee of the International Conference of Systems Biology and Bioengineering (ICSBB), IAENG, World Congress on Engineering (WCE), London, 2014-Date.
- (10) Committee Member of African Technology Policy Studies Network (ATPS), Nigeria Chapter, 2013-Date.
- (11) Committee Member of Centre for Energy and Environment, NAU, Awka, 2013-2019.
- (12) Member Committee on Investigation of Acts of Sabotage in Faculty Workshop and Laboratories, Delta State University, Oleh, 2016.
- (13) Member Faculty Management Board, Faculty of Engineering, NAU, Awka, 2012-2015.
- (14) Senate Member, Nnamdi Azikiwe University, Awka, 2012-2015.
- (15) Member Faculty of Engineering, NAU, International Collaboration Committee, 2012-Date.
- (16) Member Department of Mechanical Engineering Synergy Committee, 2012-Date.
- (17) Member Faculty of Engineering Courses Coordination Committee, 2012-Date.
- (18) Member Faculty of Engineering, NAU, National Conference Technical Committee, 2011-Date.
- (19) Member Committee on Sharp Practices, Faculty of Engineering, NAU, 2014.
- (20) Post-graduate Studies Coordinator, Department of Mechanical Engineering, 2010-2012.
- (21) Mechanical Engineering Departmental Board Secretary, 2006-2012.
- (22) Time Table Officer, Department of Mechanical Engineering, 2006-2012.
- (23) Supervisor, Anambra State Ministry of Education ETF Computer Proficiency Training for Teachers, 2007.
- (24) Member Departmental Course Curriculum Development Committee, 2006.
- (25) Examination Officer, Department of Mechanical and Production Engineering, 2002-2004.

**(b) Contribution to Society**

- (1) Chairman Organizing Committee for the Institution and Inauguration of the Chaplain Ethics and Values, South-Eastern States, Nigeria (Office of the Special Adviser to the President on Ethics and Values), 2013.
- (2) Bishop's Nominee, Diocese on the Niger Vision 2020 Review Conference, April 2016.
- (3) Vice Chairman School Management Board, Anglican Girls Grammar School Oba, 2016-Date.
- (4) Chairman Chapel Council, Chapel of Glory, NAU, Awka, 2019 – Date.
- (5) Vice Chairman Chapel Council, Chapel of Glory, NAU, Awka, 2015 – 2019.
- (6) National Director, EFAC Students' Ministry Nigeria, 1998 – 2006.
- (7) Staff Adviser, Joint Christian Campus Fellowship (JCCF), NAU, Awka, 2003 – Date.
- (8) Chairman Board of Trustees, Efac Students' Ministry Nigeria, 2015 – Date.
- (9) National Director, Times of Refreshing Gospel Outreach, 2009 – Date.
- (10) Chaplaincy Committee Chairman, Chapel of Glory, NAU, Awka, 2006 – 2012.

- (11) Prayer Committee Chairman, Chapel of Glory, NAU, Awka, 2004 – 2012.
- (12) National Director, Harbingers of Hope Initiative, 2009 – Date.
- (13) Financial Secretary, Association of Mechanical Engineering Students (AMPES), NAU, Awka, 1995 – 1996.
- (14) National President, Efac Students' Ministry Nigeria, 1995 – 1997.

**(c) Consultancy Services**

- (1) Consultant, U&G Global Services Ltd. RC.1077977
- (2) Consultant/Director, Greener Walk Economy Development Initiative CAC/IT/NO.45398
- (3) Consultant, Sequas Engineering Ltd. RC.1319320

**(vii) Awards**

- (1) HULTZ PRICE Mentorship Award, December 2020.
- (2) Church of Nigeria Anglican communion, Joshua Generation Youth and Children Task Force Award of Appreciation, 2021.
- (3) West African Students Union Parliament (WASUP) Pan-African Distinguished Leadership Honour, 2021.
- (4) Excellence Award of Nigerian Top 2% Executives in the Engineering and Manufacturing Industry, Amazon, 2015.
- (5) Golden Legend of Professionalism Merit Award and Fellow Institution of Human and Natural Resources (GHNR), 2014.
- (6) Certificate of Merit for the 2013 International Conference of Systems Biology and Bioengineering, International Association of Engineers (IAENG), 2013.
- (7) Fellow Strategic Institute for Natural Resources and Human Development (FRHD), 2013.
- (8) A Meritorious Award in Recognition of Outstanding Contributions to the Association of Mechanical/Production Engineering Students (AMPES), Unizik, 2002.
- (9) A Meritorious Award in Recognition of Outstanding Contributions to the Association of Mechanical/Production Engineering Students (AMPES), Unizik, 1992.
- (10) Best Academic Graduating Pupil, Central School, Oba, 1981.

**(viii) Professional Body Membership**

- (1) Corporate Member, Council for Regulation of Engineering in Nigeria (COREN), R13978.
- (2) Committee Member, International Association of Engineers (IAENG), Member No.108760.

**(ix) Trainings Attended**

- (1) NUC/Eagle Scientific Ltd Seminar on Science and Engineering Equipment Functionality, Procurement and Processes in Nigerian Universities, NUC Secretariat, Abuja, December 2015.
- (2) African Regional Conference on Engineering Education (ARCEE), University of Lagos, September 2013.
- (3) NNPC-Sponsored Mechatronics/Autotronics Laboratory Equipment Training, Federal Polytechnic Nekede, February 2008.

- (4) ETF-Sponsored National AutoCAD Training for Tertiary Institutions, Federal University of Technology, Owerri, July 2007.
- (5) 22<sup>nd</sup> COREN Engineering Assembly, International Conference Center, Abuja, August 2013.
- (6) 23<sup>rd</sup> COREN Engineering Assembly, International Conference Center, Abuja, August 2014.
- (7) 27<sup>th</sup> COREN Engineering Assembly, International Conference Center, Abuja, August 2018.
- (8) 28<sup>th</sup> COREN Engineering Assembly, International Conference Center, Abuja, August 2019.

(x) **Referees**

- (1) **Prof. Sam Nna Omenyi** (Emeritus Professor and Former DVC Academic, Nnamdi Azikiwe University, Awka)
- (2) **Prof. (Mrs) P.K. Igbokwe** (Dean School of Postgraduate Studies, Nnamdi Azikiwe University, Awka)
- (3) **Prof. S.O. Enibe** (Former Dean Faculty of Engineering, University of Nigeria, Nsukka)