**ENGR. DR. CHIGBO AGHAEGBUSI MGBEMENEA description...**

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**PERSONAL:**

Date and Place of Birth: May 30, 1969, Ajalli, Orumba North L.G.A.

State and Nationality: Anambra State, Nigerian.

**Marital Status:** Married with 2 Children.

**EDUCATION:**

* MIT Certificate of Completion of Teaching Certificate Programme (2014), Massachusetts Institute of Technology, Cambridge Massachusetts, USA.
* Certificate in Advanced Studies in Academic Practice (2011), Newcastle University, Newcastle-upon-Tyne, UK.
* Ph.D (Energy & Power Technology)2011, University of Nigeria Nsukka, Nigeria.
* M.Eng. (Mechanical Engineering)2002, University of Nigeria Nsukka, Nigeria.
* Certificate on General Health, Safety and Environment (1993), Nigerian Institute of Safety Professionals.
* B.Eng. (Mechanical Engineering)1991, University of Nigeria Nsukka, Nigeria.

**PROFESSIONAL SOCIETIES:**

Member, Nigerian Society of Engineers, Nigerian Institute of Mechanical Engineers, American Society of Mechanical Engineers, Northeast Sustainable Energy Association USA, National Aeronautics Research Association of Nigeria, Solar Energy Society of Nigeria and Environmental

Division Nigerian Society of Engineers. COREN Registered Engineer.

**OTHER SCHOLARLY ACHIEVEMENTS:**

* Fulbright Scholar, University of Massachusetts, Lowell, Massachusetts, USA, 2006 – 2007.
* Visiting Researcher, Bern University of Applied Sciences, Switzerland, 2010.
* Outstanding Membership Award, University of Nigeria Alumni Association of New England USA, May 2007.
* The Holcim International Awards for Sustainable Construction Africa Middle East, 2011 **Acknowledgement Prize** for the work “Recycling Agricultural Waste to Produce Affordable Housing.”
* **Gold Award** in the “Materialica Design + Technology Award October 2012” in Munich (Germany) for the work “Tannin bonded composite panels from recycled agricultural waste”.
* Fellow of Higher Education Academy UK (2013)
* MIT ETT Fellow (2014)

**WORK EXPERIENCE:**

Industrial Attachee, Premier Breweries PLC, Onitsha, Anambra State (1989).

Industrial Attachee, Ebunso (Nig.) Limited, Nnewi, Anambra State (1990).

N.Y.S.C., Nigeria Breweries PLC, Kaduna, Kaduna State (1991-1992).

Senior Supervisor (Mechanical) Premier Breweries PLC, Onitsha, Anambra State (1992-1993).

Contractor, Anambra State Primary Education Board, Awka (1994-1998).

Contractor and Researcher (1998-2004).

Lecturer, University of Nigeria, Nsukka, Enugu State (2004 till date).

**SERVICE TO GOVERNMENT AND OTHER PUBLIC BODIES:**

**Academic Coordinating Positions**

1. Departmental SIWES Coordinator 2004 – 2006, 2009 - 2011

2. Departmental Examination Officer 2005/2006 Session

3. Final Year Projects Coordinator 2006 – 2014

4. University Development Officer 2009 – 2014

5. Departmental Postgraduate Programme Coordinator 2011- 2012; 2013 – 2016, August 2017 till date.

6. Head of Department August 2015 – July 2017

**Elective Departmental/Faculty Standing Committees**

1. Staff Adviser Department of Mechanical Engineering Students

Association 2004 - 2005

1. Staff Adviser Nigerian Society of Engineers Student Chapter

Faculty of Engineering 2005 – 2007

1. Chairman Committee on Refresher Courses

Faculty of Engineering 2010 – 2016

1. Member Committee on Auto Mechanic Maintenance

Workshop, Faculty of Engineering 2010 – Feb. 2012

**University Committees**

1. Secretary UNN NUGA 2008 Sports Facilities Subcommittee 2006 – 2008

2. Expert Central Assessment Committee February 2008

3. Member Committee on Investigation on Cases of Examination

Malpractice/Investigation July – Aug. 2011

4. Member University Senate Ceremonials Committee 2009 – 2014

**Board Memberships**

1. Secretary Board of Management, A.E.D. Mgbemene Foundations, 2005 till date.
2. Member Board of Management, Hillcrest Preparatory and Primary School, Nsukka, 2010 till date.
3. Member Board of Management, Goodness and Mercy Foundations Medical Centre Ajalli, February 2011 till date.

**Community Service**

1. Publicity Secretary 1987 – 1988, Nigerian Universities Engineering Students’ Association (NUESA).
2. Secretary General 1999 – 2005, Ajalli Welfare Union, Nigeria and International.
3. Staff Adviser 2001 – 2003, National Union of Ajalli Students, Nigeria.
4. President General 2000 – 2002, Ugwumba Age Grade, Ajalli, Nigeria.
5. Volunteer for Free Medical Missions in Ajalli by Surgical Eye Expeditions International, Santa Barbara, California USA, July 2001.
6. Volunteer for Free Medical Missions, Ajalli Welfare Union, Nigeria, 2000 till date.
7. Treasurer 2006 – 2007, Graduate Student Association, University of Massachusetts, Lowell USA.
8. Secretary 2005 – 2010, Nigerian Society of Engineers (NSE) Nsukka Branch.
9. Member of Chapel Council 2009 – 2011, August 2013 – July 2017, Christ Church Chapel University of Nigeria, Nsukka.
10. Coordinator Fulbright Alumni Association of Nigerian (FAAN) Nsukka Chapter, 2010 till date.
11. Chairman 2010 - July 2014, Nigerian Society of Engineers (NSE) Nsukka Branch.
12. Chairman 2017 – Till date, Board of Management, Hillcrest Preparatory and Primary School, Nsukka.

**PUBLICATIONS AND RESEARCH:**

**Research Area:** Renewable Energy, Waste to Wealth, Gas Turbine Technology, Fluid Dynamics and Heat Transfer.

**Journals:**

1. [Mgbemene, C. A., Agwubilo, I. O., and Okafor, F.C., 2006, “A Module for Thermal Pest Control in Stored Raw Materials used in Feed Mills/Food Manufacturing Industries,” Animal Research International, 3(1), pp. 434 – 438,](https://scholar.google.com/scholar?oi=bibs&cluster=12222581520000978439&btnI=1&hl=en)

<http://www.zoo-unn.org/index.php/published-volumes/2-uncategorised/21-vol3-1>

1. [Mgbemene, C. A., Duffy, J., Sun, H., and Onyegegbu, S. O., 2010, “Electricity Generation from a Compound Parabolic Concentrator Coupled to a Thermoelectric Module,” ASME Journal of Solar Engineering, 132(3), 031015. Published online, 28 June 2010,](http://turbomachinery.asmedigitalcollection.asme.org/article.aspx?articleid=1458106) <http://link.aip.org/link/?SLE/132/031015>
2. Mgbemene, C. A., 2010, “The Need to Embrace Renewable Energy Technologies in Nigeria,” Nigerian Journal of Solar Energy, 21, pp.187 – 195. <http://sesn-ng.org/journals.php?volswap=21>
3. Ekeocha, P. and Mgbemene, C. A., 2010, “Power Sector Reform and National Development: Time to Commercialize the Use of Renewable Energy Technologies,” Nigerian Journal of Legislative Affairs, 3(1- 2), pp. 102 – 123.
4. [Mgbemene, C. A., 2012, “Poor Blade Curvature – A Contributor in the Loss of Performance in the Compressor Unit of Gas Turbine Systems,” Journal of Energy Technologies and Policy, 2(4), pp. 26 – 39. Published online, 1 July 2012,](https://www.researchgate.net/profile/Chigbo_Mgbemene/publication/283709619_Poor_Blade_Curvature_-A_Contributor_in_the_Loss_of_Performance_in_the_Compressor_Unit_of_Gas_Turbine_Systems/links/5643802c08ae9f9c13e049e1/Poor-Blade-Curvature-A-Contributor-in-the-Loss-of-Performance-in-the-Compressor-Unit-of-Gas-Turbine-Systems.pdf) [www.iiste.org/Journals](http://www.iiste.org/Journals).
5. [Mgbemene, C. A., 2012, “The Design and Fabrication of Low Speed Axial-Flow Compressor Blades by Joukowski Transformation of a Circle,” International Journal of Engineering Research and Technology, 1(8), pp. 1 – 17. Published online, 1 October 2012,](https://www.researchgate.net/profile/Chigbo_Mgbemene/publication/283708315_The_Design_and_Fabrication_of_Low_Speed_Axial-_Flow_Compressor_Blades_by_Joukowski_Transformation_of_a_Circle/links/566f01cc08ae0e4446b4c4ed.pdf) <http://www.ijert.org/browse/october-2012-edition?start=30>.
6. [Mgbemene, C., Rosenkranz, A., Pichelin, F., Lehmann, M., Job, C., Kimeng, H., Mustapha, S., and Nduka, O., 2014. “A Feasibility Study on the Production of Particleboard from Maize Cobs, Rice Husks, and Groundnut Shells Using Acacia Mimosa Tannin Extract as the Bonding Adhesive.” Journal of Architectural Engineering, 20(1), 04013006. Published online, Sep. 21, 2013,](https://ascelibrary.org/doi/abs/10.1061/(ASCE)AE.1943-5568.0000135)

<http://ascelibrary.org/doi/abs/10.1061/(ASCE)AE.1943-5568.0000135>

1. Akpan, P. U., Yeung, H., Jones, S., Njoku, H. and Mgbemene, C. A., 2014. “Mathematical Models of Air Vessels Pressure Transient Control in Water Pipelines – A Review.” International Journal of Current Research, 6(2), pp. 5267 – 5272, Available online, 28th February, 2014, <http://www.journalcra.com> .
2. [Chigbo A. Mgbemene, Chidozie C. Nnaji and ChekwubechukwuNwozor, 2016. “Industrialization and Its Backlash: Focus on Climate Change and Its Consequences.”Journal of Environmental Science and Technology, 9(4), pp. 301-316,](https://scialert.net/fulltextmobile/?doi=jest.2016.301.316)  **DOI:** [10.3923/jest.2016.301.316](http://dx.doi.org/10.3923/jest.2016.301.316)
3. [Nwanya, S. C., Achebe, C. N., Ajayi, O. O., and Mgbemene, C. A., 2016. “Process variability analysis in make-to-order production systems.” Cogent Engineering, 3(1), 1269382.](https://www.cogentoa.com/article/10.1080/23311916.2016.1269382) <https://doi.org/10.1080/23311916.2016.1269382>
4. [C.G. Ozoegwu, C.A. Mgbemene, P.A. Ozor, 2017. “The Status of Solar Energy Integration and Policy in Nigeria,” Renewable and Sustainable Energy Reviews, 70, pp. 457–471,](https://www.sciencedirect.com/science/article/pii/S1364032116309947) <http://dx.doi.org/10.1016/j.rser.2016.11.224>
5. [C.G. Ozoegwu, C. Eze, C.O. Onwosi, C.A. Mgbemene, P.A. Ozor, 2017. “Biomass and Bioenergy Potential of Cassava Waste in Nigeria: Estimations Based Partly on Rural-Level Garri Processing Case Studies.” Renewable and Sustainable Energy Reviews, 72, pp. 625–638,](https://www.sciencedirect.com/science/article/pii/S1364032117300321) <http://dx.doi.org/10.1016/j.rser.2017.01.031>
6. [Njoku, H.O., Bafuwa, O.R., Mgbemene, C.A. and Ekechukwu, O.V., 2017. “Benchmarking Energy Utilization in Cement Manufacturing Processes in Nigeria and Estimation of Savings Opportunities,” Clean Technologies and Environmental Policy,](https://link.springer.com/article/10.1007/s10098-017-1353-x) [doi:10.1007/s10098-017-1353-x](http://doi:10.1007/s10098-017-1353-x)
7. [Agbo,Cornelius Ogbodo Anayo,Mgbemene, Chigbo A., Okorie, Boniface A. and Obikwelu Daniel O. 2017. “Effects of Cure-Hold-Temperature and Step-Wise Cool-Down Path on the Service Strength of Fiber-Mat Reinforced Composites,” (In production)](http://onlinelibrary.wiley.com/doi/10.1002/pc.24432/full) [Polymer Composites](http://onlinelibrary.wiley.com/journal/10.1002/(ISSN)1548-0569), [DOI:10.1002/pc.24432](http://DOI:10.1002/pc.24432)
8. [S. I. Neife, V. S. Aigbodion and C. A. Mgbemene, 2018, High-temperature thermal treatment of co-deposition of Zn-10ZnO-25Ant hill particulate composite coating on mild steel, The International Journal of Advanced Manufacturing Technology](https://link.springer.com/article/10.1007/s00170-017-1559-4), <https://doi.org/10.1007/s00170-017-1559-4>, online January 10, 2018.
9. [C.C Enyi, V.S Aigbodion, E.T Akinlabi, C. A Mgbemene, Electrochemical and mechanical study of co-deposited Zn–ZnO-snail shell particles composites coating on mild steel, The International Journal of Advanced Manufacturing Technology, 1-7](https://link.springer.com/content/pdf/10.1007/s00170-018-1757-8.pdf)

**Books and Monographs**

[Mgbemene, C. A., 2012, *Solar Thermoelectric Power Generation: Using Compound Parabolic Concentrators*, (Monograph), Saarbrucken, Germany, LAP LAMBERT Academic Publishing, ISBN-10: 3659196576, ISBN-13: 978-3659196577.](https://www.amazon.ca/Solar-Thermoelectric-Power-Generation-concentrators/dp/B01JQ765C4)

**Conferences:**

1. Chigbo Mgbemene, Ifeanyi Jacobs, Agbo O. Cornelius, Stephen Nwanya and Chigbogu Ozoegwu “Experimental Investigation on the Performance of a Solar Air Heater with the Absorber Plate Made of Aluminum Soda Cans,” *35th National Solar Energy Forum 2017, Nigeria beyond Recession: Unlocking the Potentials of Solar Energy for Economic Recovery*, Abuja, Nigeria, November 2017.
2. Oguejiofor, Miracle Mbah, Samuel OgbonnaEnibe, Chigbo Mgbemene, “Performance Evaluation of Sky Models for Estimating Global Solar Radiation on Tilted Surface at Nsukka, Nigeria,” *UNN-FZJ Maiden Conference, Exploring Africa’s Renewable Energy Resources for Sustainable Development*, NCERD, Nsukka, 31st July – 2nd August 2017.
3. [Chigbo Mgbemene, “Alternative Energy Source, a Way to Go in the Reduction of Climate Change Causing Agents,” *Fulbright Alumni Association of Nigeria 10th Anniversary Conference Development, Environment and Climate Change: Challenges for Nigeria,* University of Ibadan. 12 – 15 September 2011.](https://scholar.google.com/scholar?oi=bibs&cluster=592194334421935869&btnI=1&hl=en)
4. [Chigbo Mgbemene, “The Effects of Industrialization on Climate Change,” *Fulbright Alumni Association of Nigeria 10th Anniversary Conference Development, Environment and Climate Change: Challenges for Nigeria,* University of Ibadan. 12 – 15 September 2011.](https://scholar.google.com/scholar?oi=bibs&cluster=1844146807860110055&btnI=1&hl=en)
5. A. Rosenkranz, F. Pichelin, M. Lehmann, C. Job, H. Tata Kimeng, S. Mustapha, O. E. Ndukaand C. Aghaegbusi Mgbemene, “Nigerian Agricultural Waste Products for the Production of Particleboard,” *Italic 6: Science & Technology of Biomass: Advances and Challenges from Forest and Agricultural Biomass to High Added Value Products: Processes and Materials*, Tuscia University, Viterbo, Italy, 5 - 8 September 2011.
6. C. A. Mgbemene, A. Rosenkranz, F. Pichelin, M. Lehmann, C. Job, H. Tata Kimeng, S. Mustapha and O. E. Nduka, “The Use of Agricultural Waste Products in the Production of Building Materials*.” Interactive Forum on the Use of Agricultural Waste Product as Building Materials,*BernerFachhochschuleArchitektur, Holz und Bau Biel, Switzerland, 17thNovember 2010.
7. Chigbo Mgbemene, John J. Duffy, Hongwei Sunand Samuel Onyegegbu, “Electricity Generation from a Compound Parabolic Concentrator Coupled to a Thermoelectric Module,”*Proceedings of ES2008 Energy Sustainability 2008*, Jacksonville, Florida USA, August 10-14, 2008.
8. Chigbo Mgbemene, 2007, “Renewable energy: Solar Hydrogen Production,” *Fulbright Forum: International Perspectives on Contemporary Global Challenges*, John F. Kennedy School of Governance, Harvard University Cambridge MA, USA, 10th March 2007.