

**CURRICULUM VITA FOR ENGR. PROFESSOR DANIEL ORAEBUNA
NNAMDI OBIKWELU FNSE, FNMS, FASI SPX.**

1.0: PERSONAL DETAILS:

Names: Obikwelu, Daniel Oray Nnamdi
Address: Department of Metallurgical & Materials
 Engineering, University of Nigeria, Nsukka
Marital Status: Married
Tel: 080305405025
E-mail: daniel.obikwelu@unn.edu.ng,
 nwaobikwelu@gmail.com
D.O.B: 9TH September 1952

2.0: EDUCATIONAL QUALIFICATIONS:

B.Sc (Hons) Second Class (Upper)
University of Nigeria, Nsukka with Scholarship (1975)

M.S (with merit award) in Metallurgical Engineering,
Wayne State University, Detroit. Michigan. USA
With Scholarship (1979)
Passed with a merit award as the best MSMet.Eng Graduate.

PhD (Metallurgy), Michigan State University,
E. Lansing. Michigan. U.S.A
With Scholarship and an American Navy Fellowship (1982)
Elected into Sigma Xi Honour Research Society for
Outstanding Research Potential.
Federal Government of Nigeria Scholar (1966-1970,
1976-1981)

3.0: PROFESSIONAL CERTIFICATION:

COREN Registered Engineer, R.4002	1990
Fellow of the Nigerian Society of Engineers (FNSE)	2002
Fellow of the Nigerian Metallurgical Society(FNMS)	1989
Fellow of African Scientific Society (FASI)	2014
Professional of Excellence, NSE, MMM Division (SPX)	2008
Rotary Award of Professional Excellence	2008
Electro-optical Techniques Certification Michigan State Univ.	1980
Scanning & Transmission Electron Microscopy Certification Michigan State Univ.	1981
Certifications in Nanoscience & Nanotechnology, Stanford University	2006
Teaching in Tertiary Institutions Robert Gordon University, SHELL Petroleum Development Company Intensive	
Postgraduate Training in Engineering	2000-2010

4.0: COMMENDATIONS:

Professional Commendation by Department of Metallurgy, Mechanics and Materials Science, College of Engineering, Michigan State University, E.Lansing, USA. (1982).

Commendation by the Centre for Electro-optics, Michigan State University. U.S.A.

Professional Commendation by Nigerian Society of Engineers (1990)

Commendation by Igwe-In-Council (The Traditional Ruling Council) for meritorious voluntary Service to the Community.

Commendation by the Management of Delta Steel Company in Nigeria for Research Breakthrough in Steel Production (1993).

Elected Full Member of an apex Research Society in America: The Sigma Xi Scientific Honour Society of America (2005).

5.0: PROFESSIONAL AWARDS:

- **Fellow of the Nigerian Metallurgical Society (FNMS). (1995)**
- **Fellow of the Nigerian Society of Engineers (FNSE) Adjudged by the College of Fellows as the best Fellow of the year 2002/2003**
- **Fellow of African Scientific Institute (FASI).**
- **Rotary Award of Professional Excellence.**
- **Member of Engineering Programs Accreditation Panel for Nigerian Tertiary Institutions (Universities and Polytechnics)**
- **Professional Registered Metallurgical Engineer with the Council for the Regulation of Engineering in Nigeria (COREN).**
- **Chief Inspector, COREN Engineering Regulation Monitoring, Delta State.**
- **Member of University of Nigeria-Technical University of DELFT, Holland Joint Team for Collaboration.**
- **Federal Government of Nigeria, Scholar 1966-1970, 1976-1981.**
- **Molybdenum Climax Award (AMAX SCHOLARSHIP), Wayne State University, Michigan (As the best graduating Masters' Degree Candidate in Metallurgical Engineering (1979)).**
- **Award of Professional Excellence in Metallurgical Engineering by the Nigerian Society of Engineers (Metallurgical, Mining & Materials Division)**
- **Award of Professional Excellence in Engineering by Rotary International, University of Nigeria. Nsukka.**
- **Elected Judge for the gifted in Engineering Innovations in America for the Conrad Spirit of Innovation for the Gifted.**
- **Invited to the NASA Space Center at Orlando Florida to show-case innovative UNN Engineering Student Project.**
- **University of Nigeria 79th Inaugural Lecturer.**

6.0:**(I): TEACHING INTERESTS: SUBJECTS DISCUSSED AND/OR TAUGHT AT BACHELOR AND ADVANCED DEGREE LEVELS:**

- **Materials Science and Strength of Materials.**
- **Materials Selection & Design using Ashby Maps.**
- **Thermodynamics.**
- **Nanoscience & Nanotechnology (unique techniques in the field for solving engineering materials problems).**
- **Corrosion Engineering... Corrosion Prevention & Control in Oil & Gas Industry.**
- **Technical Report Writing for Engineers.**
- **Engineering Law & Management.**
- **Ceramic Engineering.**
- **Mechanics of Materials.**
- **Engineering Metallurgy.**
- **Dislocation Theory & Applications in Engineering.**
- **Design of Furnaces.**
- **Refractory Materials in the Oil, Gas, Iron & Steel Industries.**
- **Workshop Practices for Engineers**
- **Engineering Mathematics.**
- **Iron & Steel Making and Metallurgical Plant Design.**
- **Computational Methods in Engineering.**
- **Transport Phenomena.**
- **Melting Discipline Boundaries to solve problems**
- **Problem Solving Techniques.**

(ii) RESEARCH INTERESTS:

- **Phase Transformations in Titanium and Ferrous Alloys.**
- **Electron Microscopy of Materials.**
- **Mechanical Behaviour of Materials.**
- **Computational Methods in Engineering.**
- **Nanoscience and Nanotechnology including Green Nanotechnology.**
- **Biomedical Engineering.**
- **Biomass Utilization.**

8.0:PUBLICATIONS.**8.1: EDITORSHIP OF CONFERENCE PROCEEDINGS:**

- (1) **Edited The Proceedings of The Annual Technical Conference of The Nigerian Metallurgical Society held at The Presidential Hotel Enugu,(1988)**
- (2) **Edited The Proceedings of The National Conference on "Nigerian Steel Industry: Problems and Prospects" Organized by The National Institute for Policy and Strategic Studies (NIPSS) Kuru and The Nigerian Metallurgical Society (1988).**

8.2: BOOKS

- (3) **Obikwelu D.O.N. Differential Equations and Applications [Text for Undergraduate Engineering Students]. Alhabet Publishers, Owerri, Nigeria [1997].**

(4) Obikwelu D.O.N. Introduction to Computational Methods in Engineering [Text for Advanced Engineering Undergraduate and Graduate Students] Policy Publishing & Printing Company Ltd. (1988).]

(5) Obikwelu D.O.N. Science and Engineering of Refractories. Textbook for Engineering Students, Eme & Sons Press (2003).

(6) Nano-science and Nano technology..... An Introduction

A Text-Book for University Engineering Students.

ADROIT PUBLISHERS,

Enugu, (2012)

(7) Obikwelu D.O.N Chapters 21, 22 and 23 in "An Introduction to Engineering" a Text for Freshman Engineering Student, De-Adroit Innovation Publishers. Edited by O.J. Eze-Uzoamamaka and J.C. Agunwamba.

(8) Obikwelu D.O.N. Nano-science and Nanotechnology: An Introduction. Adroit Innovation Publishers. Enugu

9.3: JOURNAL ARTICLES

(9) D.O.N. Obikwelu, Dilemma of the Metallurgical Profession, Journal of Metallurgical Digest, Production of Delta Steel Company Metallurgical Society, pp.10-12, (1989).

(10) C.O.Chukwudorue D.O.N.Obikwelu, J.E.Osakwe, S.O.Urhogide Substitution of Drewfloc 260 in the Direct Reduction Plant of Delta Steel Company with caustized starch. Journal of the Nigerian Society of Chemical Engineers, 15, pp.38-47, (1994).

(11) E.I.Ovwata and S.O.Urhogide, D.O.N. Obikwelu Formulation of Al_2O_3 – base mortar for use in the Steel Industry. Journal of the Nigerian Society of Chemical Engineers, 15, pp.31-37, (1994).

(12} D.O.N. Obikwelu, Solute Partitioning in Ti-6wt% Al-2wt%Nb-1wt%Ta-1wt%Mo (Ti6211), Using Electron Microprobe miroanalyzer. The Nigerian Society of Engineers' Technical Transactions, pp.42-45, (2004).

(13) D.O.N. Obikwelu, Application of the Ficks 2nd Law to the Diffusivity of Aluminium in the □-and □-phases of Titanium alloys. The Nigerian Society of Engineers' Technical Transactions, pp.58-64, (2004).

(14) D.O.N. Obikwelu, Development of the lime-laterite-cement mix for making blocks with high compression strength and stability. Journal of Scientific and Industrial Studies, pp.61-64, (2004).

(15) D.O.N. Obikwelu, Optimisation of the cutting properties of 10.1W – 3.7 Mo – 9.9 Co high speed cutting tool for machining operations, Journal of Research and Engineering, pp.9-12, (2005).

(16) Obikwelu N.D. G.I.Nwadikom and, D.O.N. Obikwelu Development of Solar Heater for Domestic purposes. Journal of Engineering Research, pp.7-12, (2005).

(17) D.O.N. Obikwelu, Micro-structural Study of the new industrial alloy [Ti 6211] [Ti-6w/o-Nb-2w/o-Ta-1w/oMo-1w/o], using Optical Microscopy (OM) and Scanning Electron Microscopy (SEM), Nigerian Society of Engineers (NSE) Technical Transactions, pp.64-68, 42,4, (2005).

(18) D.O.N.Obikwelu, Metallurgical Review of Modern Trends In Materials Corrosion Control and Prevention. Journal of Industrial Studies pp. 121-127,(2005).

(19) D.O.N. Obikwelu, Foundry core oil for High Manganese Steel castings and Cast irons. Journal of Scientific and Industrial Studies, no.8 (2005).

(20) D.O.N. Obikwelu, Development of lime-base emulsion, alkyd resin-base and petroleum-base oil paints using locally available materials, Journal of Engineering and Applied Sciences, A Publication of The Faculty of Engineering and Technology, Nnamdi Azikiwe University pp.48-55,(2006).

(21) D.O.N.Obikwelu, Critical Review of Nigerian Steel Industries, Accepted for Publication in the Nigerian of Engineers' Technical Transactions (2007).

(22) D.O.N.Obikwelu, Manufacture of Electrical Components – An Introduction, Accepted for Publication in the Nigerian Society Engineers' Technical Journal (2007)

(23) D.O.N. Obikwelu, Crystallographic features of the various phases in Ti-6wt% Al-2wt%Nb-1wt%Ta-1wt%Mo (Ti6211) as a function of thermal history, International Journal of Engineering, International Centre for Advanced Studies Nabadhoi School-Para, Dattapukur, North 24 Prgs.,West Bengal 743248, pp.221-230, India (2008)

(24) D.O.N. Obikwelu A Novel Insulating Ceramic Powder Developed for Application in the Materials Industry. International Journal of Engineering, International Centre for Advanced Studies Nabadhoi School-Para, Dattapukur, North 24 Prgs.,West Bengal 743248, India pp.201-211, (2008)

(25) D.O.N.Obikwelu, Research Challenges in Nanoscience and Nanotechnology For Developing Countries. International Journal of Engineering, International Centre of Advanced Studies, Nabadhoi School-Para, Dattapukur, North 24 Prgs, W.Bengal 743248, India,pp.261-270 (2008).

- (26) C.S.Obayi, A.O.Odukwe, D.O.N.Obikwelu, Some Tensile Properties of Unsaturated Polyester Reinforced with varying volume fractions of carbon black nanoparticles. *Nigerian Journal of Technology*, vol.27, no.1 issue,pp.20-28, (2008).
- (26) A.M.Van Voorden, S.O.Ani and D.O.N.Obikwelu Autonomous Renewable Energy System, *Nigerian Journal of Technology*, pp.93-118, vol.28, (2008)
- (27) R.E.Njoku, D.O.N.Obikwelu Characterization and Tensile Properties of Natural Fiber Reinforced Plastic in selected Solvents, *Nigerian Journal of Technology*, pp.58-63, vol27. (2008)
- (28) R.E. Njoku, O.B.Oloche and D.O.N.Obikwelu effects of selected Aldehydes on corrosion inhibition of low carbon steels in hydrochloric acid pickling solution, *Journal of Metallurgy and Materials*, vol.4,1,2009)
- (29) P.O.Offor, C.C.Daniel & DON.Obikwelu, Mechanical Properties of the Intercritically annealed 0.5%C-0.32%Mn Steel and quenched in SAE Engine oil at room temperature, *Nigerian Journal of Technology*,29,vol2, pp.32-37,2010.
- (30) P.O.Offor, C.C.Daniel, D.O.N.Obikwelu, Effects of Quenching Media on the Mechanical Properties of inter-critically annealed 0.15%C-0.32%Mn Steel, *Nigerian Journal of Technology*, pp.76-81,29,2,2010.
- (31) A.D.Omah, D.O.N.Obikwelu and I.Ezema, Comparative Wettability Studies of 63Sn-37Pb and 58Sn-42In Solders, *Nigerian Journal of Technology*, pp.113-117,29,2,2010.
- (32) G.A.Ibe, D.O.N.Obikwelu, The effect of notch depth and fibre content on the strength of coir-reinforced cashew nut shell resin composite, *International Journal of Engineering*, vol.5, no.1, march 2011.
- (32) G.A. Ibe, D.O.N.Obikwelu, A 2-D finite element modelling from first principles of a pre-cracked v-notched composite of cashew nut resin reinforced with coconut fibre (coir), *International Journal of Engineering*, vol.4, no 4, December 2010.
- (33) Camillius Obayi, Rama Tolouei, Carlo Patemoster, Stephane Turgeon, Boniface Adeleh Okorie, Danel Oray Obikwelu, Glenn Cassar, Joseph Buhagiar, Diego Mantovani. Effect of grain size on the mechanical properties and Biodegradation behavior of Pure Iron for Cardiovascular Stent Application. *Journal of Acta Biomaterials*, pp. 1 to 21. September 04 (2014).
- (34) John Paul C.Ezechdelu, Samuel O.Enibe, D.O.N.Obikwelu, Paul. S.Nnamchi, Camilius. S.Obayi, Effect of heat treatment on the microstructure and mechanical properties of a Welded AISI 410 Martensitic steel, *International Advanced Journal in Science, Engineering and Technology*, Vol. 3, April (2016).

9.4: CONFERENCES

- (35) D.O.N. Obikwelu, The Challenge of Refractories in the Economic Development of Metallurgical Industries, *Proceedings of the Nigerian Metallurgical Society*, Ajaokuta, pp.46-52, [1986]

- (36) D.O.N. Obikwelu, The Nigerian Heritage of Non-ferrous Metallurgy. Proceedings of the Technical Conference of the Nigerian Metallurgical Society, Ajaokuta pp.46-51, [1989]
- (37) E.U. Chukukere and D.O.N. Obikwelu, Metallurgy- The core of Military Hardware Manufacture, Proceedings of The Nigerian Metallurgical Society, vol.8, pp.21-40,, [1990].
- (38) D.O.N.Obikwelu Investigative Studies of Nanonized Inorganic Salt Cum Plant Extract for Curative Purposes. Presented at the Materials Research at Victoria Falls Zimbabwe. (2009).
- (39) D.O.N.Obikwelu Nanotechnology in Transportation Systems, Invited Paper at The Nigerian Society of Engineers Annual Technical Conference, Tinapa Calabar. (2010)
- (40) D.O.N.Obikwelu Nano-materials and Advanced Materials, Paper Presented at the Conference on Advanced Materials Development of Non-Aligned Countries, held at Abuja, Nigeria (2010)

9.5:TECHNICAL REPORTS (TEACHING MANUALS)

- (41) Technical Report on "Steam Turbines", prepared by Engr. Dr. D.O.N Obikwelu for the Warri Refining and Petrochemicals Company Ltd. Delta State, on request and invitation by the Company for their Gas Turbine Maintenance Personnel. November (1993).
- (42) Technical Report on "Planning and Management of Maintenance Activities" prepared by Engr. Dr. D.O.N Obikwelu for The Nigerian Gas Company Ltd. Warri on request and invitation by the Company for her Maintenance Engineers. July, (1997).

6.6:CREATIVE AND PHILANTROPIC WORKS :

- (43) Obikwelu D.O.N. Formulation and Production of a Calibration Gas for X-ray Spectrometer and other Gas Analyzers in Steel and Allied industries. This special gas was a bottleneck in materials analysis and controllers in the industries so a request was made for a substitute for this imported consumable. Commendation was given for the breakthrough (1989)
- (44) Country Women Association of Nigeria (COWAN), Branch of Women Empowerment Programme Instituted at Umuodiegwu Family by Engr. Professor D.O.N.Obikwelu to empower the rural women in my Community.
- (45) Rural Women Empowerment Guild (RUWEG) Poverty alleviation Guild for empowering rural women driven by Engr Professor D.O.N.Obikwelu.

9.0: TEACHING,PROFESSIONAL AND INDUSTRIAL EXPERIENCES:

INDUSTRIAL EXPERIENCES:

Delta Steel Company Ltd. Warri **1984-1995**
Asst Chief Engineer (Iron & Steel Production)
Chief Engineer/Manager
Research & Quality Control Department.

SHELL PETROLEUM COMPANY LTD, Warri **2000-2010**
Lecturer in the SHELL Intensive Graduate Training Programme
Instructor/Coordinator of Workshop Practices in the Oil & Gas
Operations in the Company

TEACHING & PROFESSIONAL EXPERIENCES:

Graduate Teaching/Research Asst.
Wayne State University, Detroit. **1977-1979**
Teaching/Research Asst.

Michigan State University. E.Lansing.
Teaching/Research Asst. **1980-1982**

Anambra State University of Science & Technology, Awka **1983-1984**
Lecturer I

Senior Lecturer
Federal University of Technology, Owerri **1995-1997**

University of Port Harcourt
Senior Lecturer, Department of Mechanical Engineering **1997-1998**

Nnamdi Azikiwe University
Awka (Part-time Senior Lecturer
Department of Metallurgical & Materials Engineering **2005**

University of Nigeria, Nsukka
Senior Lecturer
Dept of Mechanical Engineering **2006 -2008**

University of Nigeria, Nsukka,
Coordinator of Met/Materials Engineering
Department of Mechanical Engineering **2006-2007**

Foundation Head/Professor
Department of Met/Mat Engrg
University of Nigeria, Nsukka **2007-2010**

Co-ordinator, Nanotechnology Group
University of Nigeria. Nsukka. **2009 to date**

Invited Professor and Researcher

**On Nano-engineering & Nano-medicine
College of Engineering, Wayne State University
Detroit. Michigan**

October 2015

10.0: CONFERENCES:

CONFERENCES

Paper Read

**International Conference on Advanced
Materials Organized by Non-Aligned
Nations & The Raw Materials Research Council.**

**Invited Key Note Speaker on
Advanced Materials.**

Abuja. 2010.

**Nigerian Metallurgical
Conference, 1990**

**Metallurgical Review
of the modern trends in
In Corrosion Control and Prevention**

**International Workshop on
Nanoscience and
Nanotechnology
University
Held at the University
Of Nigeria, Nsukka.'09**

**The Story of anoscience/
Nanotechnology and
Nanostudies at the
Nigeria, Nsukka.**

**Nigerian Television Guest on
Focus at NTA Enugu
On Renewable Energy, 2009
(ARES)
The Institute of Mechanical
Engineering Students
Assoc. Conf. S-E Zone
Of Nigeria
Held at Awka, Nigeria**

**Uninterrupted Power Supply
in Nigeria using The Autonomous
Renewable Energy System**

**Renewable Energy for the
21st Century and Beyond:
Challenges for the Nigerian
Engineer.**

**Fifth International Conference of the
African Materials Research Society/
Nigerian Materials Society Conference
Abuja.**

**Chairman of Session on
Nano-technology Session
Some Tensile Properties of
Unsaturated Polyester
Reinforced with varying volume
fractions
of carbon black nanoparticles.**

**Invited Guest Lecturer at The College of
Medicine, University of Nigeria Nsukka.**

**Domestication of
Presentations on
Nanotechnology at the
International Conf.
on Nanotechnology at Nsukka
Campus. 2009.**

Invited Guest Lecturer at The College Of Medicine, University of Nigeria, Nsukka Enugu Campus, Nigeria. 2010. **Nanoparticles in Cancer Therapy, 2010**

African Materials Research Society for whom? Materials Conference at Zimbabwe, 2011 **Material Engineering Education for what? how?**

African Materials Research Society Materials Conference at Zimbabwe, 2011 **Nanoparticles in Breast Cancer Treatment--interdisciplinary approach.**

Nigerian Society of Engineering, Enugu Chapter Meeting at Enugu. 2010 **Professionalizing Engineering in Nigeria.**

11.0:	POSITIONS HELD:	
President	Ogidi Union Nigeria, Warri Branch	1984-1994
President	East Central State Students, Nigerian School of Science, Onikan, Lagos.	1970-1971
President	Ogidi Union Nigeria, Nsukka Branch.	2010 to date.
Chairman	Nigerian Students Association, Michigan State University Chapter	1980-1982
Patron and Adviser	Anambra State Students' Association University of Nigeria. Nsukka	2010 to date
Standards Organization Of Nigeria	Member (Specifications of Standards for Steel) Standards Committee	1983 -2005
The Nigerian Metallurgical Society.	General Secretary	1984
The Metallurgical Society Of American Inst. Of Mining, Metallurgical & Petroleum Soc (AIME), Nigerian Section	Secretary	1986

Raw Materials Research & Development Council (Materials Policy Prescription Committee)	Nominated Member of the Federal Govt. Appointed Group to Prescribe the Materials Policy for Nigeria, held at NIPSS Kuru	1988
Warri Refining & Petro-Chemicals Company, Warri	Invited Refractories Engineering Specialist to advise on the multi-million dollar expired Refractory materials.	1989
Federal Ministry of Defence, (Critical Metals Group).	Member of the Group to Strategize on Critical Metals and its Military Applications for Nigeria.	1989
Warri Refining & Petro-Chemicals Company.	Resource Person to Produce Teaching Manual For Steam Turbine Maintenance.	1983
Warri Refining & Petro-Chemicals Company.	Resource Person to Produce Teaching Manual for Refractories Applications And Handling in the Company's High Temp Reactors/ Furnaces	1994
Nigerian Gas Company Warri.	Resource Person to produce Teaching Manual for Maintenance Activities in the Gas Company	1997
SHELL Petroleum Development Company, Warri	Coordinator/ Instructor, Workshop Practices.	2000-2006
COREN (Supervised Industrial Training for Engineers (SITSIE) in Engrg Establishments.	Coordinator for the COREN (SITSIE) Industrial Placement of NYSC graduate Engineers	2000- 2006
Materials, Metallurgical, Mining Division. Warri , Zone	Chairman of the Division of The Nigerian Society of Engineers Warri Chapter.	2004

The Council for the Regulation of Engineering in Nigeria (COREN) **COREN Chief Inspector (Regulation Monitoring of Engineering Practice.** **2006 to 2010**

The Nigerian Society of Engineers (metallurgical, Materials, Mining Division). **Chief Examiner** **2010**

12: HOBBIES:

- **Lawn and Table Tennis**
- **Chess**
- **Sports (Athletics)**
- **Writing**
- **Computing**
- **Community Voluntary Service.**

13: REFERENCES:

- **Engr Prof. J.C. Aguwamba**
Faculty of Engineering,
University of Nigeria.
Tel: 08035644561
- **Engr. Dr Victor Aigbodion**
Department of Metallurgical & Materials Engineering
University of Nigeria. Nsukka.
- **Engr. Prof. T.C. Madueme,**
Faculty of Engineering
University of Nigeria. Nsukka.
Enugu State. Nigeria.
- **Engr. Prof. Asalor**
Department of Mechanical Engineering
Delta State University
Abraka. Delta State.

