

# CAMILLUS SUNDAY OBAYI



**Department of Metallurgical & Materials Engineering Phone: +2348037506514**  
**Faculty of Engineering**  
**University of Nigeria, Nsukka,**  
**Enugu State, Nigeria.**

**E-mail:** [camillus.obayi@unn.edu.ng](mailto:camillus.obayi@unn.edu.ng)  
[camibay@yahoo.com](mailto:camibay@yahoo.com)

---

## PERSONAL DATA

**Date of Birth:** 6<sup>th</sup> October, 1962

**Marital Status:** Married

**Local Government Area:** Nsukka

**State and Country of Origin:** Enugu State, Nigeria.

**Present rank:** Lecturer I

**RESEARCH INTEREST:** Biomaterials (Biodegradable metals), Nanotechnology,  
Solar Energy Conversion (Organic photovoltaics) and Composites.

## EDUCATION

- **Doctor of Philosophy (Ph.D), Mechanical Engineering** (Material Technology & Mechanics), 2016. University of Nigeria, Nsukka (2009-2016)
- **Master of Engineering (M.Eng.), Mechanical Engineering** (Design & Production), 2008. University of Nigeria, Nsukka (2005-2008)
- **Bachelor of Engineering (B.Eng.), Mechanical Engineering** (Second Class Honours, Upper Division), 1987. University of Nigeria, Nsukka (1982-1987).
- **West African School Certificate (WASCE)** (9 Credits), 1982  
St. Theresa's College, Nsukka (1977-1982)
- **General Certificate of Education (GCE) O' Level** (5 Credits), 1981  
St. Theresa's College, Nsukka (1977-1982)
- **First School Leaving Certificate (FSLC)** (Distinction), 1977

Community Primary School, Nguru-Nsukka (1972-1977).

## **RESEARCH EXPERIENCE**

**Ph.D Intern** March 1<sup>st</sup> - August 31<sup>st</sup>, 2011

Laboratory for Biomaterials and Bioengineering, Department of Mining, Metallurgical and Materials Engineering & University Hospital Research Centre. Université Laval, Quebec City, G1K 7P4, Canada.

**Ph.D Intern** December 1<sup>st</sup>, 2012 – May 31<sup>st</sup>, 2013

Laboratory for Biomaterials and Bioengineering, Department of Mining, Metallurgical and Materials Engineering & University Hospital Research Centre. Université Laval, Quebec City, G1K 7P4, Canada.

## **TEACHING EXPERIENCE**

1. **Graduate Assistant** 2007 - 2008
2. **Lecturer II** 2008 - 2012
3. **Lecturer I** 2012 – Date

## **INDUSTRIAL WORK EXPERIENCE**

- **Industrial Trainee**, National Freight Company Ltd, Kaduna (July-September, 1985). Activities: Maintenance and repairs of Fiat Trucks.
- **Industrial Trainee**, Leventis Technical/Motors Ltd, Kaduna (April-September, 1986). Activities: Maintenance and repairs of Mercedes cars and trucks.
- **Corps Member (NYSC)**, State Ministry of Works and Transport, Sokoto, Sokoto State (29<sup>th</sup> August, 1987-30<sup>th</sup> August, 1988). Activities: Maintenance and repairs of electric power generators and active participation in community development service.
- **Pupil Engineer**, G.M.O. Steel Industries Ltd, Onitsha (Welding Electrode Division) (15<sup>th</sup> November, 1988-20<sup>th</sup> July, 1989). Activities: Supervision, production of mild steel welding electrodes and maintenance of production machinery.

- **Production Engineer and Head of Department**, G.M.O. Steel Industries Ltd, Onitsha (Steel Nail Division) (20<sup>th</sup> July, 1989-23<sup>rd</sup> September, 2000). Activities: Management, Staff training, Production planning, maintenance of steel nails production machinery.
- **Chief Engineer**, G.M.O. Steel Industries Ltd, Onitsha (23<sup>th</sup> September, 2000-30<sup>th</sup> April, 2002). Activities: Planning, organizing and supervising of preventive, breakdown, running and shut down maintenance of plant and machinery. Tools and spares design and fabrication.
- **Engineer I**, Ajaokuta Steel Company Ltd, Ajaokuta (Coke Oven & Byproduct Plant) (April-December, 2005) Activities: Reconditioning and testing of pumps, compressors, centrifuges, pipelines and conveyors in various sections of the plant such as the condensate pump house, air pumping station, phenol water treatment unit, NH<sub>4</sub>SO<sub>4</sub> unit, alkali preparation unit, etc.

## PUBLICATIONS AND PEER-REVIEWED CONFERENCE PAPERS

1. **Camillus Sunday Obayi**, Ranna Tolouei, Afghany Mostavan, Carlo Paternoster, Stephane Turgeon, Boniface Adeleh Okorie, Daniel Oray Obikwelu & Diego Mantovani. *Effect of Grain Sizes on Mechanical Properties and Biodegradation Behavior of Pure Iron for Cardiovascular Stent Application*. Biomatter (2016), 6:1, e959874, DOI [:10.4161/21592527.2014.959874](https://doi.org/10.4161/21592527.2014.959874)
2. Paul S. Nnamchi, **C.S. Obayi**, Iain Todd, M.W. Rainforth. *Mechanical and electrochemical characterization of new Ti–Mo–Nb–Zr alloys for biomedical applications*, Journal of the Mechanical Behaviour of Biomedical Materials, 60 (2016), 68-77.
3. **Camillus Sunday Obayi**, Ranna Tolouei, Carlo Paternoster, Stephane Turgeon, Boniface Adeleh Okorie, Daniel Oray Obikwelu, Glenn Cassar, Joseph Buhagiar, Diego Mantovani. *Influence of cross-rolling on the micro-texture and biodegradation of pure iron as biodegradable material for medical implants*, Acta Biomaterialia 17 (2015) 68–77. <http://dx.doi.org/10.1016/j.actbio.2015.01.024>.
4. I.C. Ezema, A.R.R. Menon and **C.S. Obayi**: *Effect of Surface Treatment and Fiber Orientation on the Tensile and Morphological Properties of Banana Stem Fiber Reinforced Natural Rubber Composite*. The Journal of Minerals and Materials Characterization and Engineering (JMMCE), 2, 216-222, 2014. <http://dx.doi.org/10.4236/jmmce.2014.23026>.
5. Chikezie W. Onyia, Boniface A. Okorie, Simeon I. Neife, **Camillus S. Obayi**, *Structural Modification of Sand Cast Eutectic Al-Si Alloys with Sulfur/Sodium and Its Effect on Mechanical*

*Properties*. *World Journal of Engineering and Technology*, 1, 9-16, August, 2013.  
<http://www.scirp.org/journal/wjet>.

6. **C. S. Obayi**, Ranna Tolouei<sup>1</sup>, P.S. Nnamchi, N.I. Amalu, Diego Mantovani. *Grain Size Distribution Effects on the Mechanical and Corrosion Behaviours of Biodegradable Metallic Biomaterials*. *Journal of Metallurgy and Materials Engineering*, Vol 8, September, 2013; pp.1-7.
7. R.E. Njoku, **C.S. Obayi**, P.S. Nnamchi, *Hybrid effect on the Mechanical Properties of Sisal Fiber and E-Glass Fiber reinforced Polyester Composites*, *Nigerian Journal of Technology*, Vol.30, No.3, pp 97-102, 2011.
8. P.S. Nnamchi, **C.S. Obayi**, B.A. Okorie and C.O. Nebo (2010): *Effect of Extrusion and Annealing Conditions on the Elevated Temperature Microstructure and Mechanical Properties of a Melt-spun Al-8.43 Fe-1.08-1.35V Aluminium Alloy*. *Journal of Metallurgy and Materials Engineering*, Vol 5, No.1, April 2010; pp.43-47.
9. P.S. Nnamchi, **C.S. Obayi**, I.A. Figueroa, *Effect of Cr additions on the mechanical properties of some amorphous Fe-based melt-spun ribbons*. *Journal of Metallurgy & Materials Engineering*, Vol.4, No.1, pp. 1-3, April, 2009.
10. **C.S. Obayi**, A.O. Odukwe, D.O.N. Obikwelu, *Some Tensile Properties of Unsaturated Polyester Resin Reinforced with Varying Volume Fractions of Carbon Black Nanoparticles*, *Nigerian Journal of Technology*, Vol.27 No.1, pp. 20-28, March, 2008.
11. **C.S. Obayi**, D.O.N. Obikwelu, *Steel Nail Manufacturing and Metallurgical Profession in Eastern Nigeria* (presented at the 26<sup>th</sup> Annual Conference of Nigerian Metallurgical Society, October, 2009, held at Metallurgical Training Institute, Onitsha, Nigeria).
12. I.C. Ezema, I.U. Agbo, **C.S. Obayi**, A.N. Enetanya, *Development of Natural Fibre Composite: The Challenges and Prospects for Sustainable Development*, (presented at 2<sup>nd</sup> RMRDC International Conference on Natural Resources Development and Utilization, Abuja, Nigeria, February 9-11, 2010).
13. **C.S. Obayi**, B.A. Okorie, D.O.N. Obikwelu, R.E. Njoku, Diego Mantovani, *Biodegradable Metals for Biomedical Applications: A Paradigm Shift In Metallic Biomaterials* (presented at the 10<sup>th</sup> Annual Nigerian Materials Congress held at EMDI, Akure, Nigeria, November 21-24, 2011).
14. **Camillus Sunday Obayi**<sup>1</sup>, Afghany Mostavan<sup>2</sup>, Ranna Tolouei<sup>3</sup>, Stephane Turgeon<sup>4</sup>, Diego Mantovani<sup>5</sup>, *Effect of Grain Sizes on Mechanical Properties and Corrosion Rates of Pure Iron for Biodegradable Stent Application* (presented at the 4th International Symposium on Biodegradable Metals, Maratea, Italy, August 27th - September 1st, 2012).

15. N.I. Amalu, C.W. Onyia, **C.S. Obayi**, B.A. Okorie, *Assessment of the Role of Steel in Industrial Development* (presented at 29<sup>th</sup> Annual Conference and AGM of Nigerian Metallurgical Society (NMS) held at Ajaokuta Steel Company Ltd, Ajaokuta, Kogi State, October 30<sup>th</sup> – November 2<sup>nd</sup>, 2013).
16. **Camillus Sunday Obayi**, Ranna Tolouei, B.A. Okorie, D.O.N. Obikwelu, S.I. Neife, Diego Mantovani, *Impact of Nanotechnology on Biodegradable Metallic Implants for Cardiovascular Application* (presented at the 1<sup>st</sup> African International Conference/workshop on Applications of Nanotechnology to Energy, Health and Environment at University of Nigeria, Nsukka, Nigeria, March 23 – 29, 2014).
17. Paul S. Nnamchi, **Camillus S. Obayi**, Boniface A. Okorie, *Theoretical Design of Ti-Mo-Zr alloy for biomedical applications*. (Presented at the 13<sup>th</sup> Annual Nigerian Materials Congress held at Yaba College of Technology, Yaba, Lagos State, Nigeria, November 23-27, 2014).
18. **CS Obayi**, PS Nnamchi, R Tolouei, D Mantovani, *Effect of stent manufacturing steps on functional degradation of Fe-based biodegradable metals* (presented at the 8<sup>th</sup> BIOMETAL Symposium on Biodegradable Metals for Biomedical Applications at Esterel Resort, Montreal, Canada, May 14 – 17, 2016).
19. Agung Purnama, **Camillus Sunday Obayi**, Ranna Tolouei, Essowe Mouzou, Carlo Paternoster, Malgorzata Sikora-Jasinska, Hendra Hermawan, Diego Mantovani, *Modulating the degradation behaviour of iron-based alloys by grain-sizing and alloying* (presented at 10<sup>th</sup> World Biomaterials Conference held at the Palais des congrès de Montréal, Montreal, Canada, May 17-22, 2016).
20. **CS Obayi**, R Tolouei, BA Okorie, DON Obikwelu, D Mantovani. Grain size distribution effects on the degradation and mechanical behaviours of biodegradable metallic biomaterials (presented at 10<sup>th</sup> World Biomaterials Conference held at the Palais des congrès de Montréal, Montreal, Canada, May 17-22, 2016).

## COMMENDATIONS

1. Winner of University of Nigeria Foundation Bursary Award (1983-1987)
2. Winner of Mrs. Ogbonna scholarship for Best Nsukka Town Undergraduate in University of Nigeria, Nsukka for 1982/83 Session.
3. Winner of Canadian Common Wealth scholarship, 2010.

## **MEMBERSHIP OF PROFESSIONAL BODIES**

1. **Member**, Nigerian Society of Engineers (MNSE), Membership No: 14065.
2. **Member**, Materials Society of Nigeria (MMSN), Membership No: P/1073.

## **OTHER RESPONSIBILITIES**

1. **Member**, UNN-TuDelft Collaboration committee
2. **Copy Editor**, Faculty of Engineering Magazine (**Techno-Dynamics**).
3. **Member**, Faculty of Engineering Research Group.
4. **Chairman**, Faculty of Engineering Welfare Committee.
5. **Chief Exam Officer**, Department of Metallurgical & Materials Engineering, UNN
6. **Time-table Officer**, Department of Metallurgical & Materials Engineering, UNN
7. **B.Eng. Project Coordinator**, Department of Metallurgical & Materials Engineering, UNN

## **SKILLS**

1. Ability to work as an individual and in a team
2. Adaptable and ready to learn new things

## **REFEREES.**

### **1. Prof. D.O.N. Obikwelu**

Department of Metallurgical & Materials Engineering

University of Nigeria, Nsukka

E-mail: [dobikwelu@yahoo.com](mailto:dobikwelu@yahoo.com) Phone: +23438035405025

### **2. Prof. B.A. Okorie**

Department of Metallurgical & Materials Engineering

University of Nigeria, Nsukka

E-mail: [bonokorie@yahoo.com](mailto:bonokorie@yahoo.com) Phone: +2348034714355

### **3. Dr. F.I. Ezema**

Department of Physics

University of Nigeria, Nsukka

E-mail: [fiezema@yahoo.com](mailto:fiezema@yahoo.com) Phone: +2348036239214