

CURRICULUM VITAE

BIO-DATA:

NAME: - UME, JOSHUA

IFEANYICHUKWU

DATE AND PLACE OF BIRTH: - 15th February, 1953

(Enugu)

PERMANENT HOME ADDRESS: - 10 A, Umunachi Street, Upper Chime Avenue, New Haven, Enugu, Enugu State, Nigeria

CONTACT ADDRESS: - 10 A, Umunachi Street, New Haven, P. O. Box 2277, GPO, Enugu, Enugu State, Nigeria

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NATIONALITY: - Nigerian

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EDUCATIONAL RECORD:

THE PENNSYLVANIA STATE UNIVERSITY, UNIVERSITY PARK PA 16802, USA (1991- 1994). - Ph.D. Fuel Science & Engineering

UNIVERSITY OF LAGOS, LAGOS, NIGERIA, (1980 – 1982). - M.Sc. in Chemical Engineering

UNIVERSITY OF LAGOS LAGOS, NIGERIA (1975 – 1978). - B.Sc. First Class Honours in Chemical Engineering

DENNIS MEMORIAL GRAMMAR SCHOOL, ONITSHA (1972-1973). - Higher School Certificate

COLLIERY COMPREHENSIVE SCHOOL, NGWO, ENUGU (1965-1971). - WAEC Division One Distinction

AREAS OF SPECIALIZATION:

Process/Plant Design, Process Optimization/Control and Nuclear Engineering.

STATEMENT OF EXPERIENCE:

Senior Lecturer, Department of Mechanical Engineering, University of Nigeria, Nsukka and Visiting Professor of Chemical Engineering, Caritas University,

- Functions Include: Teaching, Research and Public Service.



Enugu (01 July 2014 **till date**).

Director, Projects Development Institute (PRODA), Federal Ministry of Science and Technology, Enugu, and Visiting Professor of Chemical Engineering, Caritas University, Enugu (November 2010 - 30 June, 2014).

Director, Nigeria Atomic Energy Commission (NAEC), Federal Ministry of Science and Technology, Abuja, and Visiting Professor, Caritas University Enugu (on Secondment/November, 2008 - October, 2010).

Director, Projects Development Institute (PRODA), Federal Ministry of Science and Technology, Enugu and Adjunct Senior Lecturer, (2005 – October 2008).

Senior Lecturer in Chemical Engineering and Industrial Chemistry, University of Nigeria, Nsukka, Nigeria, and Associate Senior Lecturer, Faculty of Engineering, Enugu State University of Science and Technology. Enugu (August 1994 – January, 2005).

Member, Presidential Visitation Panel to Federal College of Education (Special) Oyo, State. (July 2004 - September, 2004).

Member, Presidential Technical Committee on Coal Development in Nigeria (June 2003 – December, 2003).

Principal Consultant, Precision Engineering Consultants, Enugu (1982 **till present**).

- Director, Materials and Energy and Technology. Functions Included: Research and Development, Public Service. Other Functions Include: Member, Faculty Board of Engineering, and Member, University Research, Planning and Grants Committee.

- Director, Nuclear Power Plant Development.
- Responsible to the Director General/CEO
Major accomplishments included:
(i) Finalization of National Nuclear Power Plant Strategic Plan (ii) Task Team Leader, Nuclear Power Plant Site Selection Project.

- Director, Materials and Energy and Technology.

- Functions included:
Teaching, Research and Public Service.
Director of Particulate and Fuels Research Group, University of Nigeria, Nsukka.

- Evaluation and Assessment of Facilities, Faculty and Programmes of Federal College of Education (Special), Oyo.

- Development and Restructuring of the Nigerian Coal Corporation.

- Area of Activities Include: Design and Installation of LPG Facilities and Utilities; Design, Supply, Installation and Maintenance of Industrial Plants, Generators and Boilers; Oil Services and Supplies; Engineering Management and Consultancy Services; Project Coordinator, Falcon (Nig) Ltd/Shell Nigeria Gas - Natural Gas Reticulation and Equipment Conversion Projects.

Attachments to:

- Consultant to Nigerian Coal Corporation, 29 Okpara Avenue, Enugu (1994 -1996).
- Graduate Research Assistant, The Pennsylvania State University, University Park, 16802, (1991 – July, 1994).
- Lecturer in Industrial Chemistry, University of Nigeria, Nsukka (1988-1990).
- Lecturer in Chemical Engineering Options, Mechanical Engineering Department of Mechanical Engineering, University of Nigeria, Nsukka (1984 – 1988)
- (i) Intradal Products Belgium N.V and Amersfort, Holland- A Manufacturer of Household Products and Industrial Chemicals (1982).
- (ii) Coster Technologie Specialli SPA, Pero and Milano, Italy - A Manufacturer of Industrial Process equipment and machinery (1983). Factory Manager, Rokana Industries, Owerri and Lagos, Nigeria
- Design and Fabrication of Process Pilot Plant for Production of Activated Carbons from Nigerian Coals.
- Functions included:
Teaching and Research, Characterization and Processing of Fossil Fuels and Particulate Systems.
- Other functions included:
(i) Coordinator of Industrial Chemistry Programme and Industrial Training Coordinator,
(ii) Research work on the Modification and Development of Coals, Carbons, and Clays.
(iii) Consultant to INFRA (Nig) Ltd., Enugu.
- Coordinator of Chemical Engineering Options

SPECIAL AWARDS AND MEMBERSHIP OF SCIENTIFIC AND PROFESSIONAL ORGANISATIONS:

- 2013 - Member/Secretary of Editorial Board, Journal of Nigerian Society of Chemical Engineers
- 2010 - Fellow of Nigerian Society of Chemical Engineers.
- 2007 - Presidential Merit Award, Nigerian Society of Chemical Engineers.
- 2007 - Registration with Council of Registered Engineers of Nigeria (COREN).
- 2004 - Special Adviser to the International First Aid Society (An Affiliate of the United Nations).
- 2003 - Chairman, Nigerian Society of Chemical Engineers, Anambra/Enugu/Ebonyi/States Chapter.
- 2000 - Member of Nigerian Society of Engineers.
- 1999 - Member of Nigerian Society of Chemical Engineers.
- 1978 - West African Portland Cement Prize for Best Final Year Student in Chemical Engineering, University of Lagos, Lagos.
- 1976 - Gulf Oil Scholarship/Merit Award.
- 1975 - National Award, University of Lagos, Lagos.

RECENT MEETINGS, CONFERENCES AND WORKSHOPS ATTENDED:

- i. The 44th Annual Conference of the Nigerian Society of Chemical Engineers (NSChE), Owerri, Imo State, 20 - 22 November 2014.

- ii. The 43rd Annual Conference of the Nigerian Society of Chemical Engineers (NSChE), Uyo, Akwa Ibom State, 14 - 16 November 2013.
- iii. Meeting of the Special Implementation Committee of Nigeria-South Africa Commission, Cape Town, South Africa, November, 2012.
- iv. Regional Workshop on IAEA Milestone Approach & Considerations related to the Building of Nuclear Power Infrastructures, Abidjan, Cote d'Ivoire, 1- 4 June 2010.
- v. Interregional Workshop on Project Management, Ulsan, Republic of Korea, 10 - 14 May 2010.
- vi. Regional (AFRA) Training Course on "Modular Design of Processing and Storage Facilities for Small Volumes of Radioactive Waste Including Disused Sealed Radioactive Sources" in Pretoria, South Africa, 9-20 August 2010.
- vii. Workshop on Appreciation of Nuclear Energy For Power Generation in Developing Countries, 22-25 March 2010, Seoul, Korea.
- viii. Scientific Visit to Czech Republic and Slovakia, 10 – 13 February 2010.
- ix. IAEA Human Resource Development Expert Mission, Abuja, Nigeria, 25 - 28 January 2010
- x. International Atomic Energy Agency (IAEA) Expert Mission to Nigeria on “The Development of A Comprehensive National Radioactive Waste Management System and Disposal Facility for Low and Intermediate Radioactive Waste,” Abuja, 14 - 17 July, 2009.
- xi. Technical Meeting on 'Workforce Planning to Support New Nuclear Power Programmes, 31 March - 2 April 2009, IAEA's Headquarters, Vienna, Austria.
- xii. The 40th Annual Conference of the Nigerian Society of Chemical Engineers (NSChE), Port Harcourt, Rivers State, 18 - 20 November 2010.
- xiii. International Conference on Harnessing the Potentials of New and Advanced Materials for Developing Economies, Abuja, Nigeria, 09 - 12 August 2011.
- xiv. National Workshop on Fibre Reinforced Plastics and Mould Technology, Projects Development Institute (PRODA), Enugu, September 2005.

CREATIVE OUTPUTS:

A. Textbooks

- (i) Ume, J. I., A Conceptual Analysis of Process Systems, New Generation Books, Ogui Road, Enugu (2002).
- (ii) Ume, J. I., Fundamental Principles of Process Design, John Best Publishers, 54, Obiagu Road, Enugu (2001).
- (iii) Ume, J. I., (Ed.), Basic Principles of Physical Chemistry, John Best Publishers, 54, Obiagu Road, Enugu (2001).
- (iv) Ume, J. I., and Udeh, S., Thermodynamics for Science and Engineering, Sunshine Printing and Publishing Ltd., 6, Bishop Anyogu Street, Uwani, Enugu (2000).

B. Journal Papers

- (i) Oguejiofo T. Ujam, Ogochukwu E. Offie, Pius O. Ukoha, Allen G. Oliver, **Joshua I. Ume**, Rhonda L. Stoddard & J. Scott McIndoe, Alkylation of [Pt2(μ-S)2(PPh3)4] with boronic acid derivatives, *Journal of Coordination Chemistry*, 2016.
- (ii) Cosmas Anyanwu, Nneka Ogbuagu, Iwanafa Green and **Joshua Ume**, Comparative Performance Evaluation of a Composite-Padded Evaporative Cooling Storage Bin, Submitted to *J. Food Engineering*, April 2016.

- (iii) C. N. Anyanwu, C. I. Ibelegbu, C. N. Ugwu and **J.I. Ume**, Comparative Evaluation of Mesh Sieve Performance of a Wet Cereal Slurry Sieving Machine, Submitted to Springer *JFST*, February, 2016.
- (iv) Patrick Akpan, Chigbo Mgbemene, **Joshua Ume**, Sarah Jones and Hoi Young, Constant Heat Outflow Rates for Air Vessel Modelling During Pressure Transients, Submitted to *J. Process Safety and Environmental Protection* (February, 2016).
- (v) Sharma, V. K., Braccio, G. and **Ume, J. I.**, Solar Powered Seawater Desalination: A potential Solution to Ever-Increasing Water Demand and Conflicts Among Local Communities, *J. Renewable & Alternative Energy Tech.* 1 (1) December 2015.
- (vi) Oguejiofo, Theophilus. Ujam, Ogbonna, C. Ogbonna, Allen Oliver, **Joshua, I. Ume**, Eric, Janusson and Charles Chime, Synthesis, Crystal Structure and Spectroscopic Studies of 4-hydroxy-6-methyl-3-[(1E)-1-(2-phenylhydrazinylidene)ethyl]-3,4-dihydro-2H-pyran-2-one, *J. of Structural Chemistry*, November 2015.
- (vii) **Ume J. I.**, Ani, J. U. and Onukwuli, O. D., Purification of Fibre-Cement Industry Effluent by Adsorption on Coal-Based Activated Carbons, *J. NSCHE* (2015).
- (viii) **Ume, J. I.**, Nnaji, P. C. and Okolo B. I., An Investigation of the Kinetics of Pulverized Snail Shell – Alum Induced Coagulation-Flocculation of Quarry Effluent by Response Surface Methodology, *J. NSCHE* (2015).
- (ix) Omotioma, M., Ejikeme, P. C. N. and **Ume, J. I.**, Improving the Rheological properties of Water based Mud with the Addition of Cassava Starch, *IOSR Journal of Applied Chemistry*, 8 (8), (2015), PP. 70 – 73
- (x) **Ume, J. I.**, Ejikeme, P. C. N and Ejikeme, Ebere M, Factorial Design as an Effective Tool for Optimization of Alcoholic Wine Production from Paw Paw Fruits, *IJMMS - IJENS*, --15 (3) (2015), pp. 44 – 52.
- (xi) **Ume, J. I.**, Ejikeme, P. C. N. and Egbuna, S. O., Optimization of Process Control Conditions for Alcoholic Wine Production from Pineapple using RSM, *JMSE*, 6 (3) (2015), pp. 23 – 30.
- (xii) Egbuna, S. O., **Ume, J. I.** and Eze, Kenneth, Process Design Features of A 5 Tonnes/Day Multistage, Intermittent Drainage, Continuous Full Immersion, Vegetable Oil Solvent Recovery Extraction Plant, *IJRET*, 03 (10) 2014, pp. 71 – 81.
- (xiii) Egbuna, S. O., **Ume, J. I.** and Omotioma, Monday, Design Features of A 5 Tonnes/Day Multistage, Intermittent Drainage, Continuous Full Immersion, Vegetable Oil Solvent Recovery Extraction Plant – Mechanical Design, *IJRET*, 03 (10) 2014, pp. 82 – 93.
- (xiv) N. J. N., Nnaji, J. U. Ani, L. E. Aneke, O. D. Onukwuli, U. C. Okoro and **J. I. Ume**, Modelling the Coag-Flocculation Kinetics of Cashew Nut Testa Tannins in an Industrial Effluent, *J. Ind. Engr. Chem.*, 20, No. 4 (2014).
- (xv) **Ume, J. I.**, Influence of Solute Dissociation Constants on the Optimum Adsorption of Weak Electrolytes on Activated Carbons, *Int. J. Environment and Pollution*, Vol. 23, No. 1 (2005).
- (xvi) **Ume, J. I.**, Analysis of Adsorption Equilibrium for Aqueous Solution of Weak Organic Electrolyte-Activated Carbon System, *Int. J. Environment and Pollution*, Vol. 23, No. 2 (2005).

(xvii) L. R. Radovic, L.F. Silva, **J. I. Ume**, J.A. Menedez, Leon Y Leon, and A. W. Scaroni, An Experimental and Theoretical Study of the Adsorption of Aromatics Possessing Electron - Withdrawing and Electron-Donating Functional Groups, *Carbon*, 35, 9 (1997), pp. 1339 – 1343.

(xviii) Ljubisa R. Radovic, **Joshua I. Ume** and Alan W. Scaroni, On Tailoring the Surface Chemistry of Activated Carbons for Their Use in Purification of Aqueous Effluents, *Fundamentals of Adsorption*, M. D. Levan (Ed.), Boston, Massachusetts, (1996), p. 749.

C. Conference Papers/Proceedings

(i) Inyiama, F. C. and Ume, J. I., Improving Oil production by Smart Feedback Control of Hydrodynamic Slug Flow, Proceedings of the Nigerian Society of Chemical Engineers Conference (2014).

(ii) Ani, J. U, Ume, J. I. et al., Purification of Fibre-Cement Industry Effluent by Adsorption on Coal-Based Activated Carbons, Proceedings of the Nigerian Society of Chemical Engineers Conference (2014).

(iii) Ume, J. I., Obioh, I. B., Karniliyus, J. S., and Ekedegwa, A. I. G., Nuclear Energy: A Safe and Reliable Option of Power Generation, Proceedings of the Nigerian Society of Chemical Engineers Conference 40, 45 – 56 (2010).

(iv) Ume, J. I., Nigeria Nuclear Programme Strategy and Infrastructure Strategy, RAF0033 – Presentation at Milestone Workshop, Abidjan, Cote d'Ivoire - June 2010.

(v) Ume, J. I. (Ed.), Proceedings of the National Workshop on Fibre Reinforced Plastics and Mould Technology, Projects development Institute (PRODA), Enugu (2005).

(vi) Ume, J. I., and Ejikeme, P.C.N., Interfacial Phenomena in Activated Carbon Adsorption from the Aqueous Media, *NSChE Annual Conference/AGM*, Port Harcourt, November, 2004, p.3.

(vii) Ume, J. I., Experimental and Computer Modelling of Adsorption of Aromatics on Activated Carbons, 33rd Conference of *NSChE*, Abeokuta, November, 2003, p.26.

(viii) Ume, J. I., Safety Principles and Practice in LPG Environment, Proceedings of 1st Annual Workshop of *NSChE*, Anambra/Ebonyi/Enugu States Chapter, December 10-11, 2003, p.13.

(ix) Ume, J. I., and Nnolim, B. N., Production of Egg Powder in a Spray Dryer, National Drying Symposium (NDS 2003), University of Port Harcourt, 21-23 October, 2003.

(x) Ume, J. I., (Ed.), Proceedings of the 1st Annual Workshop, Nigerian Society of Chemical Engineers, Enugu (2003).

(xi) L. F. Silva, J. I., Ume, A.W. Scaroni and L.R. Radovic, Effects of Surface Chemistry of Activated Carbons on the Adsorption of Aromatics Containing Electron-Withdrawing and Electron-donating Groups, ACS Symposium, “Production and Use of Carbon-based Materials for Environmental cleanup,” Fuel Chemistry Division, New Orleans, March, 1996.

(xii) L. R. Radovic, L.F. Silva, J. I. Ume, J.A. Menedez, Leon Y Leon, and A. W. Scaroni, An Experimental and Theoretical Study of the Adsorption of Aromatics Possessing Electron - Withdrawing and Electron-Donating Functional Groups, *Carbon*, August 1996.

(xiii) Ume, J. I., et al., Influence of Carbon Surface chemistry on the Adsorption of Inorganic and Organic Species from Solution, *AIChE*, Seattle, August, 1993.

D. Technical Reports

- (i) Ume, J. I., Design, Construction and Management of Water Facility for Army Hotel Project submitted to the Headquarters, 44 Division Engineers, Nigerian Army Engineers, PMB 01421, Enugu, 05 December 2013.
- (ii) Ume, J. I., Establishment of a Construction Materials Testing Laboratory, submitted to the Headquarters, 44 Division Engineers, Nigerian Army Engineers, PMB 01421, Enugu, 27 March 2013.
- (iii) Ume, J. I., The Establishment of a Mini-Refinery, submitted to The Federal Ministry of Science and Technology, Federal Government Secretariat Complex Shehu Shagari Way, PM 331, Garki, Abuja, January 2012.
- (iv) Ume, J. I., Report on Site Selection for Nigeria's Premier Power Plants, submitted to the Nigeria Atomic Energy Commission, Asokoro, Abuja, July 2010.
- (v) Ume, J. I. et al., Strategic Plan for the Implementation of Nigerian Nuclear Power Programme, NAEC Technical Document, submitted to the Nigeria Atomic Energy Commission, Asokoro, Abuja, March 05, 2009.
- (vi) Ume, J. I., A Feasibility report on Coal Carbonization and Briquetting, submitted to The Federal Ministry of Science and Technology, Federal Government Secretariat Complex Shehu Shagari Way, PM 331, Garki, Abuja, January 2012.
- (vii) Ume, J. I., Redesign of Coal Carbonization Retort, Submitted to the Raw Materials Research and Development Council (Federal Ministry of Science and Technology, Abuja), 2006.
- (viii) Ljubisa R. Radovic, Joshua I. Ume and Alan W. Scaroni, Characterization and Modification of Carbon-Coated Alumina, Technical Report Submitted to Aluminum Company of America, ALCOA Technical Centre, PA 15069, May 30, 1992.

E. Designs, Inventions and Creative Outputs

- (i) Design, procurement, installation and commissioning of Liquefied Petroleum Gas Plant, Thinkers Corner, Enugu (1986). Reference: Dr. Sam Oji, Managing Director, Infra Nigeria Limited, Enugu.
- (ii) Procurement, installation and commissioning of Aerosols and Liquefied Petroleum Gas Plants for Rokana Industries PLC, Nekede, Owerri (1982). Reference: Chief Charles Ugwu, Managing Director, erstwhile Chairman of Manufacturers Association of Nigeria and Honourable Minister of Commerce and Industry.
- (iii) Design and fabrication of mixers. Clients: Mr. B. I. Obiegbuna, 7 Nnegene Street, Achara Layout, Uwani, Enugu and Chief Ikechukwu Ume, Eastern Nigeria Industrial Estate, Uwani, Enugu (1986).
- (iv) Design and fabrication of a spray dryer and the production of egg powder for production of confectionery. Client: 2 M Foods Company Limited, Asuoha lane, Emene, Enugu (1984).
- (v) Sweetening of Liquefied Petroleum Gas and Kerosene for utilization in the production of aerosols. Client: Johnson Wax (Nig.) Limited and Cadbury (Nig.) Limited, Lagos (1984).


F. Community Service and Service to Outside Bodies

- (i) Manuscript/Book Reviewer, Tertiary Education Trust Fund, 6 Zambezi Crescent, off Aguiyi Ironsi Street, Maitama, Abuja, Nigeria (August, 2015 till present)

- (ii) Chairman of GNG Educational Foundation, Akpugoeze, Oji River LGA, Enugu State (2012 till present).
- (iii) Visiting Professorship in Chemical Engineering, Caritas University (2008 till present).
- (iv) Member, Presidential Visitation Panel to Federal College of Education (Special) Oyo, State (July 2004 - September, 2004). Function included the evaluation and assessment of facilities, faculty and programmes of Federal College of Education (Special), Oyo.
- (v) Member, Presidential Technical Committee on Coal Development in Nigeria (June 2003 – December, 2003). Function included the development and restructuring of the Nigerian Coal Corporation.
- (vi) External Examiner in Chemical Engineering in local universities and polytechnics (1995 till present).
- (vii) Project Coordinator, Falcon (Nig) Ltd/Shell Nigeria Gas - Natural Gas Reticulation and Equipment Conversion Projects (1988 – 1990).

Attestation:

I certify that the information given by me in all the sections above is correct.

A handwritten signature in blue ink, consisting of a horizontal line with a complex, scribbled loop in the middle and a small circle at the end.

Engr. Dr. Joshua Ifeanyichukwu Ume.