

CURRICULUM VITAE

OF

COMM. PROF. ONWUAMAEZE CASMIR ILOEJE

*Professor of Mechanical Engineering, Univ. of Nigeria, Nsukka
Pioneer Federal Commissioner, Nig. Electricity Regulatory
Commission*

Chartered Engineer

Member, Nigerian Society of Engineers

Member, Inst. of Mech. Engineers (UK)

Member, Int. Assoc. for Solar Energy Education

Member, Solar Energy Society of Nigeria.

Fellow, Solar Energy Soc. of Nigeria



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1. PERSONAL DATA

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Nsukka.
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BIODATA

Surname: Iloeje
Other Names: Onwuameze Casmir
Date of Birth: 28 October, 1945
Marital Status: Married
No. of Children: Four
State and Nationality: Enugu, Nigeria

PRESENT POSITION

Retired Professor of Mechanical Engineering
Specialization: *Heat Transfer, Energy & Power, Solar & Renewable Energy*

2 EDUCATIONAL RECORD

Professor O.C. Iloeje attended nationally and internationally renowned schools and performed with distinction in all of them

- i. **Ph.D Mechanical Engineering, Feb., 1975**
Massachusetts Institute of Technology
Cambridge, Massachusetts, USA.

(At a dinner held in his honour and that of his colleague, Dr. Sinha, by their doctoral supervisor, Prof. W.M. Rohsenow, after the successful defence of their Ph.D. Theses, Prof. Rohsenow had this to say to his two graduates: “They are people like you that make M.I.T what it is!”)

- ii. **SM in Mech. Eng. 1971 & SM Mechanical Engineering, 1971**
Massachusetts Institute of Technology
Cambridge, Massachusetts, USA.
- iii. **B.Sc. 1st Class Honours – Mech. Engineering, 1968**
University of Nottingham, England

- iv. **British Institution of Mechanical Engineers, Part III, 1969**
Courses in Industrial Law, Industrial Management and Economics,
Woolich Polytechnic, England
- v. **HSC with Distinction – Physics, Pure Maths., Applied Maths, 1964**
Government College Umuahia, Nigeria.
- vi. **WASC, Grade I, 1962**
Government College Umuahia, Nigeria
- vii. **First School Leaving Certificate, with Distinction**
St. Joseph’s Primary School, Nsukka, Nigeria

3 **PROFESSIONAL AND OTHER QUALIFICATIONS**

- Chartered Engineer
- Member; Nigerian Society of Engineers
- Member, Institute of Mechanical Engineers, UK
- Member, Int. Assoc. for Solar Energy Education
- Member, Solar Energy Society of Nigeria
- Fellow, Solar Energy Society of Nigeria

Also

- Associate, International Centre for Theoretical Physics, Trieste, Italy
- General Electric Nuclear Energy Div. USA, Certificates in
 - a) Nuclear Engineering Fundamentals I
 - b) Economic Analysis of Alternatives
 - c) Effect Presentation
- Woolich Polytechnique London, Certificates in
 - a) Industrial Management
 - b) Industrial Law
 - c) Economics

REGULATORY COURSES ATTENDED

I attended a number of courses to further improve competence in electricity regulation, including:

- i. **10-21 Jan 2005: *Public Utility Regulation***, Univ. of Florida
Public Utility Research Center, USA.
- ii. **13-17 Nov. 2006: *Strategic Research and Development Management***,
INSEAD, Fontanbleau, France.
- iii. **4-15 Dec. 2006: *Public Private Partnership***, International
Law Institute, Washington DC. USA.

- iv. **15-26 Oct 2007: *Advanced Course in Electricity and Water Utilities*,**
1P3, Washington DC, USA.
- v. **4-15 Aug. 2008: *Regulatory Impact Analysis*,** 1P3,
Washington DC, USA
- vi. **etc etc.**

4. HONOURS AND AWARDS

- **Patron, Solar Energy Practitioners Association of Nigeria**, for contributions to the development of the solar and renewable energy industry in Nigeria, in 2005.
- Conferred with **Excellence Award in Solar Energy** by the Solar Energy Society of Nigeria, for contributions in solar energy research, the development of solar energy research capacity, applications and business in Nigeria, in 2008.
- Conferred with the Honour of **Patron of the Blessed Iwene Tansi Community** by the Community, Abuja, 2008.
- Conferred with the **Chieftaincy Title *Akachizuoha of Uwani-Amokwe***, by the Igwe of Uwani-Amokwe, for contributions to the town, Nigeria and humanity, on 29th December, 2007.
- Conferred with **Century Continental Legacy Award, 2011** for Immense Contribution to Development of Africa, by Our Majesty Global Publications.
- Conferred **Award of Recognition for Being Influential and a Role Model to Young Engineers**, by Dept. of Mechanical Engineering Students Body, THERMAC, in 2012.
- Conferred **The Best Teacher of Our Time Distinguished Academic Award**, Dept. of Mechanical Engineering, UNN, Class of 2014, in September 2014.
- Recognized in *New Telegraph's* **LEADING SCIENTISTS IN NIGERIA: A Centennial Celebration list of Top 100 Nigerian Scientists**, *New Telegraph* of 26 June, 2015.

(See Also Section 9 for Scholarships and Prizes)

5. HIGH LEVEL POLITICAL AND PROFESSIONAL APPOINTMENTS

5.1 Federal Exec. Commissioner, *Nigerian Electricity Regulatory Commission* Oct. 2005–Oct. 2010:

Responsible for actualization of the electric power sector reform, from a govt. monopoly to a private-sector-led and competitive industry; expansion of investments in power sector and increase in quantity and quality of power supply services through effective regulation; Responsible for Research & Development (Oct 2005-Oct 2008) and Engineering Standards & Safety (Oct. 2008-Oct. 2010) Divisions of NERC.

CONTRIBUTIONS AS ELECTRICITY REGULATOR

As an Electricity Regulator and Commissioner – contributed to the development of a number of regulatory instruments and milestones, over 2005-2010, including:

- i. Granting of licenses to over 25 new Independent Power Producers for the addition of 10,271 MW of generation capacity to the national grid.
- ii. Development of Guidelines for the Siting of Power Plants – to assist new power plant developers with the steps towards the actualization of a power plant project, including location study, power evacuation, environmental impact analysis, business plan, financial strategy and agreements, viable power purchase agreement, fuel supply agreement, etc, and towards enhancing the probability of success of their license applications.
- iii. Development of Metering, Distribution and Grid Codes for electricity operators.
- iv. Development and Implementation of Customer Service Regulations that are more customer friendly, covering complaints handling, connections and disconnections, service standards and meter reading/billing and cash collection.
- v. Development and Implementation of a Multi-Year-Tariff-Order (MYTO) – a new tariff regime to protect consumers, give incentives to investors and improve the financial health of the power sector.
- vi. Securing from the Federal Government a Three-Year Sector Subsidy of N177b to support the shortfall between tariff and correct price of power, during the first three years of MYTO and transition to cost-reflective tariffs.
- vii. etc etc.

5.2 Director, Energy Planning Analysis *Energy Commission of Nigeria (ECN), Abuja* (Jan 1999 – Oct. 2005)

[ECN supervises 4 No university-based energy research centers. It is also responsible for overall national energy policy and plan]

- Development of National Energy Policies and Plans
- Co-ordination and Supervision, at the National Level, of activities in Four University-based Energy Research Centres, namely;
 - National Centre for Energy R & D (NCERD), Univ. of Nig. Nsukka
 - Centre for Energy Research & Training, (CERT), ABU Zaria
 - Centre for Energy Research & Dev (CERD), OAU Ife
 - Sokoto Energy Research Centre (SERC), UDU Sokoto
- Establishment and Co-ordination of Linkage Programme between University of Nottingham (School of Built Environment) and NCERD/UNN & SERC/UDU under the ECN
- Co-ordination and Administration of Programmes on National Energy Policy Development and Implementation
- Energy System Modelling and National Energy Master Plan Development
- Energy Manpower Training

5.3 **Director, Energy Information Systems**

Energy Commission of Nigeria (ECN), Abuja

(Feb. 1996 – Dec. 1998)

- Co-ordination and Supervision, at the National Level of activities in Four No. University-based Energy Research Centres, namely;
 - National Centre for Energy R & D (NCERD), Univ. of Nig. Nsukka
 - Centre for Energy Research & Training, (CERT), ABU Zaria
 - Centre for Energy Research & Dev (CERD), OAU Ife
 - Sokoto Energy Research Centre (SERC), UDU Sokoto
- Management of the Promotion and Dissemination of the Use of New Energy Technologies
- Development of a National Energy Data Bank
- Energy Manpower Training

CONTRIBUTIONS AS DIRECTOR AT ECN

- i. Introduced the use of the following Computer Models for planning and analysis in the Nigerian energy sectors:
 - Model for Analysis of Energy Demand (MAED)
 - Model for Electricity Generation Expansion Plan (WASP)
 - Model for Planning of Energy Demand and Supply Strategies (MESSAGE)
- ii. Directed work on, and produced, a 25-year Energy Demand Study for Nigeria (2005-2030) – with projections of electricity, gasoline, diesel, natural gas, kerosene, fuel wood and other energy resource demands for the country (2004 & 2005).

- iii. Directed work on, and produced, a 25-year Electricity Generation Expansion Plan for Nigeria – with a least cost projection of required annual generation capacity additions, by quantity and generation technology type (i.e. gas turbine, steam turbine, coal, oil, nuclear or solar/renewable power plant) together with the investment requirements (2005).
- iv. Directed work on, and produced, A Renewable Energy Master Plan for Nigeria (2005).
- v. Established a **Solar Programme** for the Promotion of Renewable Energy Application in the Nigeria Economy, including the establishment of pilot projects. The Programme introduced an Intervention Strategy involving: *Socio-Economic and Energy Resources Survey, followed by Energy Demand Analysis, Design and Introduction of Appropriate Renewable Energy Technologies, Establishment of Sustainability Strategies.*
- vi. Established the **ECN-NYSC Renewable Energy Programme** for the promotion of renewable energy technologies
- vii. Obtained **Duty Concessions for Imports of Renewable Energy Technologies** and promoted the growth of the renewable energy industry in diverse other ways.

5.4 Director, National Center for Energy Research and Development

University of Nigeria, Nsukka

(May 1989 - Aug 1994)

My leadership of the Center rescued it from imminent closure (as per Govt. White Paper) and transformed it into a viable and vibrant R & D institution, during:

Five (5) years and three (3) months of:

- Management, Administration and Research Leadership of the NCERD – for Renewable Energy Research and Development. Technology Dissemination and Manpower Training.
- Planning and Implementation of Staff and Research Facilities Development

At the time I took over as Director of the NCERD in 1989, the Center was scheduled for *closure and Transfer to another University*, as per Federal Government White Paper on the Report of the Justice Mohammed Visitation Panel (1975 – 1985). As a result of my directorship of the Center, the work of the staff and the progress made by the Center within a few years of my administration, that aspect of the White Paper was set aside. Instead, the Federal Government, through the Supervising Agency – the Energy Commission of Nigeria.

1. Restored capital grants to the Center
2. Increased the total grants to the Center from N0.59m in 1989 to N6.34 in 1993

3. Paid off the Center's debt of N12.48m, in 1992
4. Sent vehicles and other equipment to the Center
5. Placed the Center on the National Budget
6. Approved a 4 fold increase in the Center staff strength

[See my response to the request for input by the UNN Council Ad Hoc Committee on the Government White Paper on the Report of the Justice Mohammed Visitation Panel (Attached)]

6 OTHER ADMINISTRATIVE AND PROFESSIONAL RESPONSIBILITIES

6.1 Member Committee of Deans and Directors

University of Nigeria, Nsukka
(May 1989 - Aug 1994)

As Director of the Energy Center, I was a member of the Committee of Deans and Directors of the University

6.2 Associate Dean of Engineering

University of Nigeria, Nsukka
(1987 – 1989)

For the two (2) years of reference, I:

- Acted for the Dean in the latter's absence
- Had responsibility for Faculty Courses, Herbert Macaulay Memorial Lecture Even, the Faculty's Engineering Design and Production Center, etc
- Assisted the Dean in the Administration of the Faculty

6.3 Professor of Mechanical Engineering

University of Nigeria, Nsukka
1989 - Date

6.4 Research Leadership; Undergraduate and Postgraduate Teaching, Research and Supervision at the –

i. *General Electric Nuclear Energy Division (GE/NED)*
San Jose, California, USA
1974 - 1977

- The only African, and for a while, the only Black Person in the Employ of the Research and Development Section of the GE/NED at the time
- Engineer/Senior Engineer responsible for
 - Transient Two-Phase Flow Split in Nuclear Reactor Parallel Channels – Modelling & Experimentation
 - Nuclear Reactor Heat Transfer and Blowdown Transient Analysis

ii. *University of Nigeria, Nsukka*
1977 - Date

- Teaching: Research Execution, Supervision and Leadership at the University of Nigeria:
 - 2 PhD Graduates
 - 9 PhD students
 - 7 Masters Graduates
 - 12 Masters students
 - Several Projects leading to Publications
 - Several Staff Projects at the Energy Center
 - Secretary of the National Science & Tech. Dev. Agency's **Solar Energy** Project, UNN
 - Several Undergraduate Projects
 - Teaching of Undergraduate and Postgraduate courses in Heat Transfer, Solar Energy, Power Plant Engineering, Mechanics of Machines and Nuclear Engineering.

6.5 **Research Assistant**

Dept. of Mechanical Engineering
MIT Cambridge, Massachusetts, USA

On:

- Film Boiling Transition in Forced Vertical Flow
- Post Critical Heat Flux Heat Transfer
- Collapse and Surface Rewet in Dispersed Vertical Flow

6.6 **Systems Design Engineer**

Hall Thermotank International, Dartford, England
1968 - 1970

Two years of professional experience in design and installation of and problems rectification on, Commercial and Industrial Refrigeration and Air-conditioning Systems.

(See also Section 10 for further details of his Administrative and Professional Experiences as manager, researcher, education, Mechanical Engineering systems designer and consultant).

6.7 **Summary of University Administrative Experience**

- Co-ordination and Supervision, at National Level of 4 No. University-based Energy Research Centers (NCERD/UNN, CERT/ABU (CERD/OAU and SERC/UDU)

1996 – 2005

- Establishment and Co-ordination of Linkage Programme (Univ. of Nottingham England and ECN/NCERD/SERC) 2001 – 2005
- Director, National Center for Energy R & D, UNN 1989 – 1994
- Member Committee of Deans & Directors, UNN 1989 – 1994
- Associate Dean of Engineering, UNN 1987 – 1989
- Chairman, Board of Management of CEC/UCH, UNN 1987 – 1992
- Hall Warden, Akintola Hostel, UNN 1982 – 1984

See also Section 8 for details of Professional, Academic and Public Responsibilities and 8.4 for detailed list of Services to the University of Nigeria

7 SOME NOTABLE CONTRIBUTIONS TO KNOWLEDGE

i. Comprehensive Post Dry Out Heat Transfer Model

Developed a model for the analysis and prediction of post dry out liquid deficient dispersed flow heat transfer. The model covers both the transition and film boiling regimes (his PhD work). It combined, in a single equation, what normally required three separate equations to represent. This unique model is a reference work and a very important contribution to heat transfer analysis in liquid deficient two-phase flows. It has applications in water-cooled nuclear reactors and other steam generators. At the time of its development, it constituted (and was acknowledged) the latest and most significant advance in the knowledge of that area. (See also page 30).

1974

ii. Innovative Flow Split Model for Nuclear Reactors

Developed a model for the transient analysis of two-phase flow splits in the parallel channels of nuclear reactors, following a loss of coolant accident (Gen. Electric Nuclear Energy Division, San Jose, California, USA). The work is very important for the Safety qualification of water-cooled nuclear reactor designs.

1976

iii. Solar Powered Solid Absorption Refrigerator

Developed a Solar Powered Refrigerator working on a solid absorption principle (UNN, Nigeria). The physical stabilization of the absorbent, a hitherto difficult problem, was achieved in this reference work. It was the first solar powered solid absorption refrigerator to be built using the $\text{CaCl}_2/\text{CaSO}_4$ concept

1983

- iv. ***High Performance and Unique Friction Brake Pad***
Developed a high performance, friction lining for brake pads of motor vehicles, based on *palm kernel shells* and predominantly locally available materials (UNN, Nigeria). It performed better than commercially available models. **1987**

- v. ***Large Scale Commercial Solar Rice Dryer (Location: Adarice, Adani)***
Developed a large scale (2 tonnes capacity) commercial solar rice Dryer (UNN, Nigeria). The dryer is particularly useful for rainy season rice harvest and it cost-effectively cuts down on product losses. **1990**

- vi. **25-Year Energy Demand Projection for Nigeria**
Directed work on, and produced, a 25-year Energy Demand Study for Nigeria (2005-2030) – with projections of electricity, gasoline, diesel, natural gas, kerosene, fuel wood and other energy resource demands for the country (2004 & 2005). *ECN, Nigeria* **2005**

- vii. **25-Year Electricity Generation Expansion Plan for Nigeria**
Directed work on, and produced, a 25-year Electricity Generation Expansion Plan for Nigeria – with a least cost projection of required annual generation capacity additions, by quantity and generation technology type (i.e. gas turbine, steam turbine, coal, oil, nuclear or solar/renewable power plant) together with the investment requirements (2005). **2005**

- viii. **Renewable Energy Master Plan for Nigeria**
Directed work on the development of a Renewable Energy Master Plan for Nigeria, based on the 25-year Energy Demand Projection. **2005**

He's also the Author of over 82 other works consisting of

- 36 Journal and Referred Conference Papers
- 6 Books, Booklets and Proceedings
- 13 Technical Reports
- 27 Invited Workshop and Seminar Papers

8. PROFESSIONAL, ACADEMIC & PUBLIC RESPONSIBILITIES

8.1 National and International Academic Responsibilities

Professor O.C. Iloeje has contributed, nationally and internationally to the promotion of academic standards through his work as:

- i. **Professorship External Reviewer for:**
 - University of Ibadan **1997**
 - Federal University of Technology, Owerri **1995**
 - Federal University of Technology, Makurdi **1994**
 - Nnamdi Azikiwe University, Awka **1997**
 - University of Port-Harcourt **2014**

- ii. **External Assessor for:**
 - Federal Polytechnic, Uwana, Afikpo **1994**

- iii. **External Examiner for:**
 - PhD and M.Eng, Nnamdi Azikiwe Univ., Awka **2010-14**
 - PhD and M.Eng, Univ. of Benin **2011-Date**
 - PhD. Dept. of Agric. Eng., Ahamadu Bello Univ. Zaria Nigeria **1990/91**
 - M.Phil. Dept. of Chemistry, Univ. of West Indies **1991/92**
 - B.Eng., Dept. of Mech, Eng., Univ. of Ibadan, Nigeria **1986-89**
 - B.Eng., Dept. of Mech/Prod Eng. ESUT, Enugu, Nigeria **1993-94**
 - B.Eng., Dept. of Mech/Prod Eng. ASUTECH, Enugu, Nigeria **1988-91**
 - B.Eng., Dept. of Mech. Eng., Fed. Univ. of Tech. Akure, Nig. **1993-96**
 - HND, Inst. of Management and Tech., Enugu, Nigeria **1985-88**

- iv. **Chairman (Mech. Eng. Panel) NBTE Accreditation Panel to Federal Polytechnic, Uwana, Afikpo, Nigeria** **1984**

- v. **Member, NBTE Accreditation Panel to IMT, Enugu , Nigeria** **1984**

- vi. **Reviewer for the following International and National Journals:**
 - Int. J. of Heat and Mass Transfer
 - ASME J. of Heat Transfer
 - Nigerian Academy of Science J.
 - Nigerian J. of Technology
 - Nigerian J. of Engrg. and Technology
 - Nigerian J. of Solar Energy
 - Nigerian J. of Renewable Energy
 - Nigerian Soc. of Agric. Engineers J.

8.2 Services to the Nation

He has represented the country on many national and international assignments as indicated below:

- i. Federal Exec. Commissioner, Nigerian Electr. Regulatory Comm. 2005-10

- i. Member, Electric Power Sector Reform Implementation Committee (EPIC), - a Committee of the National Council on Privatisation (NCP). Jan. 2000 – 2005.
- ii. Member, Nigerian Delegation on the Meeting of African Ministers of Energy, Algiers, 2001.
- iii. Leader, Nigerian Delegation to National Coordinators' Meeting of IAEA Project on Sustainable Energy Development in Sub-Sahara Africa, Accra, Ghana, 26-30 March, 2001.
- iv. Leader, Nigerian Delegation to National Coordinators' Meeting of IAEA Project on Sustainable Energy Development in Sub-Sahara Africa, Khartoum, Sudan, 31 Aug.-4 Sept., 2002.
- v. Member, Federal Government Delegation to the International Atomic Energy Agency Conference, Vienna, Austria (1981)
- vi. Leader, Nigerian Delegation to G15 Countries Expert Meeting on Solar Energy, Cairo, Egypt, 1993.
- vii. Member, Nigerian Official Delegation to Meeting of D-8 Countries, on Energy Matters, Abuja, 2001.
- viii. Member, Nigerian Delegation to Regional Meeting of the World Energy Council, Abidjan, Ivory Coast, 1993.
- ix. Member, Nigerian Delegation to Meeting of World Energy Council, Dakar, 1997.
- x. Leader, Nigerian Delegation to the African Energy Forum, Bamako, Mali, 1998.
- xi. Member, Technical Advisory Committee of the Energy Commission of Nigeria (1989 – 94).
- xii. Member, Inter-Ministerial Committee on Combating Desertification and Deforestation, 2000.
- xiii. Member, Inter-Ministerial Committee on the National Energy Policy (1996/97 and 2002).
- xiv. Member, Drafting Committee on National Energy Policy (1991 – 92)
- xv. Director, Energy Planning and Analysis, Energy Commission of Nigeria (Jan. 1999 – Date)

- xvi. Director, Energy Information Systems, Energy Commission of Nigeria (Feb. 1996 – Dec. 1998).
- xvii. Director, National Center for Energy Research and Development, Univ. of Nigeria, Nsukka, (1989 – 94).
- xviii. Member, National Ad Hoc Committee on Nuclear Energy, (1982)
- xix. Member, Nigerian National Committee of the World Energy Council (1990 – date).

8.3 Services to the State

Professor O.C. Iloeje has served the Anambra and Enugu State Governments in various capacities as follows:

- i. Member, Anambra State Government Investigation Panel on Niger Steel Co. Emene, Enugu **1980/81**
- ii. Technical Adviser (Resource Person) to Anambra State Government on Industries **1979-88**
- iii. Member, Anambra State Government Advisory Council **1985-88**
- iv. Member, Enugu State Univ. of Science and Tech. Development Committee **1992**

8.4 Services to the University of Nigeria

Professor O.C. Iloeje has rendered very valuable services to the University of Nigeria

- As Director at the Energy Commission of Nigeria, Abuja (1996-2005)
- As Director, Natl. Center for Energy Research and Development (1989-1994)
- As Assoc. Dean of Engineering (1987-1989)
- As Member of the Committee of Deans and Directors (1989-1994)
- As Member of Senate (1989-Date)
- As the developer of the Department of Mechanical Engineering Postgraduate Programme, 1978/79
- As the initiator and founding Chairman of the Faculty of Engineering Design and Production Center. (1982-86 & 1987-89)
- As the initiator and founding Co-ordinator of Mechanical Engineering Consultancy Group
- In Leadership/Chairmanship and Membership positions in various academic and administrative units and committee

- As Students' Hall Warden (1982-84) and THERMAC Staff Adviser

Details are given below:

- | | | |
|-------|---|------------------|
| i. | Chairman, Faculty Committee on the Development
Of a Draft B.Eng. Academic Programme for proposed
Dept. of Chemical Engineering. | 2015 |
| ii. | Initiator and Leader, Renewable and Alternative Energy
And Energy Regulation and Policy Research Groups, Dept.
of Mechanical Engineering. | 2015 |
| iii. | Director, Energy Planning and Analysis, Energy
Commission of Nig. (See 4.1) | 1996-Date |
| iv. | Director, Energy Information System, Energy
Commission of Nig. (See 4.2) | 1996-1998 |
| v. | Director, Energy Centre UNN | 1989-94 |
| vi. | Associate Dean of Engineering | 1987-89 |
| vii. | Member Committee of Deans and Directors | 1989-94 |
| viii. | Member of Senate | 1989-Date |
| ix. | Chairman Board of Management, CEC/UGH | 1987-92 |
| x. | Member Board of Management, CEC/UGH | 1986-87 |
| xi. | Member, Physical Facilities Committee | 1986 |
| xii. | Member, University Consultancy Management
Board | 1982-86 |
| xiii. | Hall Warden, Akintola Hostel, Univ. of Nig. Nsukka | 1982-84 |
| xiv. | Member, Energy Centre Task Force | 1983-85 |
| xv. | Member, Students' Hall Task Force | 1982-83 |
| xvi. | Secretary, Fed. Min of Sci. & Tech. Solar Energy
Project, UNN | 1979-94 |
| xvii. | Member, Investigation Panel into Fire Incident
in the Dept. of Electronic Engineering | 1995 |

xviii.	Member, Other Univ. Investigation Panels	1987/88; 1988/89
xix.	Member Univ. Works Committee	1995
xx.	Initiator and Founding Chairman, Engineering Design and Production Centre, Faculty of Engineering, UNN	1982-86&1987-89
xxi.	Member, Faculty of Engineering Post Grad. Comm.	1979-87
xxii.	Chairman, Faculty of Engineering Enlightenment Committee	1981-82
xxiii.	Member, Faculty of Engineering Enlightenment Committee	1980-81
xxiv.	Co-ordinator, Mech. Engrg. Post Grad. Committee	1979-87&1994-95
xxv.	Co-ordinator, Mech. Engrg. Services Unit	1994-96
xxvi.	Co-ordinator, Mech. Engrg. Consultancy Group	1994-96
xxvii.	Staff Adviser, THERMAC	

8.5 Other Professional and Civic Leadership Responsibilities

Professor O.C Iloeje has held various leadership responsibilities at school and in the large society, from his youth to adulthood, as indicated below.

i.	President, Solar Energy Society of Nigeria	1997-2001
ii.	Technical Secretary, Solar Energy Society of Nigeria	1990-1992
iii.	Patron, Renewable Energy Companies Assoc. of Nigeria	2002-Date
iv.	President, Catholic Men Organisation, Univ. of Nigeria Nsukka.	1994-96
v.	President, Enugu Regional Assoc. Univ. of Nigeria Nsukka	1983-85
vi.	Holder of Akintola Hostel, UNN, Chieftaincy Title of OCHENDO I of Akintola Hostel	1984-Date
vii.	President, African Society, Univ. of Nottingham, England	1966-67

- viii. College Prefect, Govt. College Umuahia **1964**
- ix. Captain, House Tennis Team, Govt. College Umuahia **1964**
- x. Member, School Boxing Team, Govt. College Umuahia **1960**
- xi. Captain, House Boxing Team, Govt. College Umuahia **1963-64**
- xii. House Prefect, Govt. College Umuahia **1963-64**
- xiii. Captain House Cross Country Team (Jnr.), Govt. College Umuahia **1961**
- xiv. Member, House Soccer Team **1961**

9. SCHOLARSHIPS AND PRIZES

- a) M.I.T. Research Assistantship **1970-74**
- b) Shell BP Scholar **1970-73**
- c) Shell BP Scholar **1965-68**
- d) Govt. College Umuahia Scholar **1960-64**
- e) Govt. College Umuahia House Colours Winner **1961**

10. SOCIAL ACTIVITIES AND HOBBIES

- i. Tennis, Table Tennis, Soccer, Jogging
- ii. Member, Catholic Men Organization, UNN
- iii. Member, Eziokwu Bu Ndu Social Club of Amokwe
- iv. President (former) and Member, Enugu Regional Association, UNN
- v. Member Amokwe Progressive Unions, Nsukka and Abuja
- vi. Member Govt. College Umuahia Old Boys Association, Lagos (1996-2001), Abuja and Nsukka.
- vii. Member, Umuodu Village Union
- viii. Member, Umuomanta family Union

11 DETAILS OF PROFESSIONAL AND ADMINISTRATIVE EXPERIENCE

- 2005 – 2010** **Exec. Commissioner** *Nigerian Electricity Regulatory Commission: Electricity Regulator*
- 1989-Date** **Professor of Mechanical Eng.** *UNN and Member of Senate*
- Jan. 1999 to 2005:** **Director**, Energy Planning and Analysis, *Energy Commission of Nigeria* Supervisor of University-based energy research centres. Co-ordination of Linkage Program with foreign Univ. for training of Centres' staff: Energy Planning, Analysis and Projects Development: Energy Policy Issues; Renewable Energy Projects Dev. And Implementation: Power Sector Restructuring.
- Feb. 1996 to Dec. 1998:** **Director:** Energy Information Systems *Energy Commission of Nigeria*, Supervision of University-based Energy research centres; Energy Information Acquisition and Dissemination, Dev. of Energy Data Bank, National Energy Policy, Planning, Programme Development and Execution.
- 1989 – 94:** **Director**, National Centre for Energy Research and Development, *Univ. of Nigeria, Nsukka*, - with responsibilities for Planning, Execution and Management of RDD & T in Renewable and Alternative Energy Technology.
- 1989 – 1994:** **Member Committee of Deans and Directors** *Univ. of Nigeria, Nsukka:* As Director Natl. Centre for Energy R & D/UNN.
- 1987 – 1989:** **Associate Dean of Engineering;** *Univ. of Nigeria Nsukka:* Acted for Dean; Organisation of Faculty Courses, Herbert Macaulay Lecture, Design & Practice Centre, etc.
- 1977 – Date:** **Teaching and Research,** *Department of Mech. Engrg. Univ. of Nigeria, Nsukka;* - in Heat Transfer, Solar Energy, Power Plant, Mechanics, Nuclear Engineering, Themophysical Properties of Materials.
- 1993:** **Principal Consultant,** NITEL-UNN PV *Project, Univ. of Nigeria, Nsukka – For Realization of Project on Design and Installation of PV Power supply for Repeater Station – for Nitel.*

- 1988-91:** **Consultant**, Project on Production of Friction Brake Linings from Predominantly Locally Available Materials, - *for Fenok Industries Nig. Ltd., Lagos.*
- 1981-87:** **Consultant**, Project on Redesign and Fabrication of Relief Valve Spindle – *for Nigerian, Nkalagu, Enugu State, Nigeria*
- 1982:** **Consultant**, Project on Feasibility Study for the Establishment of a Building Materials Industry – *for Anambra State Government, Nigeria.*
- 1980-82:** **Consultant**, Project on the Establishment of a Metallurgical Industry – *for Anambra State Govt., Nigeria.*
- 1974-77:** **Engineer/Snr. Engineer**, *General Electric Nuclear Energy Division. San Jose, California, USA*, - Research, Development and Design on:
- (a) Transient Two-Phase Flow Split Engrg. and Computer Model for Parallel Channels of Boiling Water Resectors.
 - (b) Experimentation on Flow Split Relationship in Vertical Parallel Channel Two-Phase Flows
 - (c) Heated Parallel Channel Interactions in Transient Two-Phase Flow.
 - (d) Film Boiling Heat Transfer Data Analysis
 - (e) Reactor Blowdown Transient Data Analysis
- 1970-74:** **Research Assistant**, *Dept., of Mech, Engrg., M.I.T., Cambridge Massachusetts, on:*
- (a) Film Boiling Transition in Forced Vertical Flow
 - (b) Post Critical Heat Flux Heat Transfer in Forced Convection Systems
 - (c) Collapse and Surface Rewet in Dispersed Vertical Flow
- 1974 (Jan-Mar)** **Consultant**, Boston Edison Power Company, on Computer-based Statistical Analysis of Long Term Power Plant Performance Data, - *Boston Edison Co., Boston, Massachusetts, USA.*

- 1972 (June)** **Engineer,** *Stone and Webster Engineering Co., Boston, Massachusetts, - on Thermal Modelling of Gas Cooled Fast Breeder Power Reactor.*
- 1968-70** **System Design Engineer,** *Hall Thermotank International, Dartford, England, - Design, Installation and Problems Rectification of Commercial and Industrial Refrigeration and Air-Conditioning Systems.*
- 1967 (June-Sept.)** **Research Work,** *Shell Research Center, Thornton, England, - on Ignition Improver Additives to Diesel Engines.*
- 1966(June-Sept)** **Engineering Workshop Practice,** *Foxboro-Yoxall Co. Radhil, England, (manufacturers of Engineering Systems Control Devices).*
- 1965 (Apr.-Sept.)** **Pre-University Training,** *Shell-BP Nigeria, Ltd., Port-Harcourt, Nigeria, - on Drill Site Construction and Operation.*
- 1965 (Jan.-Apr)** **Teaching,** *St. Patrick's College, Emene, Enugu, Nigeria, - Teaching of Maths, Add. Maths and Physics in Secondary School.*

12 LIST OF PUBLICATIONS

Prof. O.C. Iloeje is widely published in national and international journals. The publications are reference materials on their respective subject matters.

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- [12.2] [Iloeje, O.C., Rohsenow, W.M., Griffith, P. \(1975\) Three-Step Model of Dispersed Flow Heat Transfer in a Forced Convection System, ASME Winter Annual Conf., November, Houston, Texas, Paper No. 75 WA/HT-1](#)
- [12.3] [Iloeje, O.C., Avila, J. \(1979\) Two Phase Flow Split Model for Parallel Channels, Nigerian J. of Technology 3\(1\), pp. 52-62.](#)

- [12.4] [Iloeje, O.C., Plummer, ND, Rohsenow, WM, Griffith, P. \(1982\) Effects of Mass Flux, Flow Quality, Thermal and Surface Properties of Material on Rewet of Dispersed Flow Film Boiling, *ASME J. of Heat Transfer*, May, pp. 304 – 306.](#)
- [12.5] [Iloeje, O.C., \(1982\) Effects of Parallel Channel Interactions, Steam Flow, Liquid Subcool and Channel Heat Addition on Nuclear Reactor reflood Transients, *Nigerian J. of Technology*, 6\(1\), September, pp. 25 – 35.](#)
- [12.6] [Iloeje, O.C., Kervinen, JN, Ireland, J., Shiralkar, BS \(1982\) Flow Split Relationships in Two Phase Parallel Flows, *ASME J. of Fluids Engrg.*, 104\(4\), December, pp. 45 – 462.](#)
- [12.7] [Iloeje, O.C., \(1982\) Effects of Parallel Channel Interactions on Two-Phase Flow Split in Nuclear Reactors, *Nigerian J. of Technology*, 6\(1\), September, pp.38 – 50.](#)
- [12.8] Iloeje, O.C., Plummer, DN, Rohsenow, WM (1983) Film Boiling Control in the Rod Flow Regime, *Nigerian J. of Engineering and Technology*, 6(1), April, pp. 127 – 140.
- [12.9] Iloeje, O.C., (1984) Some Factors Affecting the Productivity of Small Scale Steel Plant in Nigeria – A Case Study, *Nigerian Engineer*, 19(1), Jan. – March.
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- [12.15] [Iloeje, O.C., \(1988\) Parametric Effects on the Performance of a Solar Powered Solid Absorption Refrigerator, *Solar Energy*, 40\(3\), pp. 191 – 195.](#)
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- [12. 62] [Iloeje, O.C, SO Olayinde, AO Yusuf, \(2004\)\] Report on an indicative survey of sectoral energy consumption in Nigeria, Energy Commission of Nigeria, Abuja.](#)

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- [12.63] [Iloeje, O.C., \(1985\)\] Instersol 85, Vol. 2, pages 1339, Pergamon Press, Oxford.](#)
- [12.64] [Iloeje, O.C., Editor \(1997\)\] Potentials for Renewable Energy Applications in Nigeria, Energy Commission of Nigeria.](#)
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D. Invited Workshop and Seminar Papers

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- [12.95] [Iloeje, O.C., \(2004\) Overview of Renewable Energy in Nigeria, Opportunities for Rural Development and Development of a Renewable Energy Master Plan;](#)

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13 COMMENTS ON THE WORK OF O.C. ILOEJE, by

Prof. Warren M. Rohsenow - page 30

Prof Borivoje B. Mikic - page 31

Professors W. M. Rohsenow and B.B. Mikic were both Professors and Emeritus Professors of Mechanical Engineering, Massachusetts Institute of Technology, Cambridge, , Massachusetts, USA, and World Renowned Authorities in Heat and Mass Transfer.

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May 15, 1975

To Whom It May Concern:


Onwuamaeze Casmir Iloeje came to M.I.T. graduate school in 1970 after receiving a BS degree in England. In his graduate work to the Ph.D. degree here, he was one of our most outstanding doctors degree students.

In his Ph.D. thesis, he developed a detailed model explaining and correlating heat in the post burnout or dry out region of forced convection evaporation. The understanding of this problem which he obtained is vital to the prediction of safety of operation during a loss of coolant accident in nuclear reactors.

Since completing this work, he joined the General Electric Company where he is applying this development to nuclear reactor safety studies.

Dr. Iloeje has made the latest and most significant advance in our knowledge of this important problem. In this sense, he indeed has a unique capability in a very important highly specialized field. He is recognized nationally for his work in this field.

Sincerely,


Warren M. Rohsenow

WMR:pg

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Room 3-142

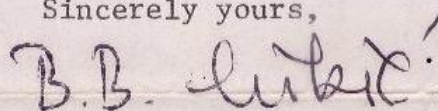
May 27, 1975

To Whom It May Concern:

This letter deals with professional qualifications of Dr. Onwuamaeze C. Iloeje and is written on his request.

I have known Dr. Iloeje since 1972. He took a couple of graduate courses with me, and I also served on his doctoral's committee. Dr. Iloeje was an outstanding student, hard working, solid, thorough, well motivated. As a researcher, he was a first class investigator: very original, able to cope with highly involved phenomena, an excellent analyst. He obtained a unique training during his Ph.D. thesis work. His training is related to nuclear reactor safety designs. In the present situation of the large scale energy shortage, the required expertise needed for expansion of nuclear reactor power application, made Dr. Iloeje's training extremely valuable to this country.

Sincerely yours,



B. B. Mikic
Professor of
Mechanical Engineering