Curriculum Vitae

Of

Dr Emmanuel O Egbogah, PhD, DIC, D.Sc. OON.

(Registered Professional Engineer, P. Eng)

Special Adviser to the President on Petroleum Matters

Federal Republic of Nigeria

E-mail: <u>dre@emeraldngr.com</u> Website: www.dregbogah.com

Last update: October 2009

HONOURS AND DISTINCTIONS DR EMMANUEL ONU EGBOGAH, P. Eng. OON

1. Distinguished Member, Society of Petroleum Engineers International (Dallas, Texas, USA, Oct 25 1995)

Citation: "The Board of Directors of the SPE has elected Dr Emmanuel Onu Egbogah as Distinguished Member in 1995 in recognition of distinguished achievements in the field of petroleum engineering and noteworthy service to the Society of Petroleum Engineers".

2. Recipient of the Society of Petroleum Engineers 1998 Asia Pacific Regional Service Award (Jakarta, Indonesia, April 20 1998).

Citation: "The Board of Governors of the SPE presented to Dr Emmanuel Onu Egbogah, in Recognition of the continuing and outstanding commitment of personal effort and time to further the organizational efforts and those of technology transfer throughout the Asia Pacific Region".

3. Recipient of the SPE Nigeria Council Millennium Award (Abuja Nigeria, August 5, 1999)

Citation: "The SPE Nigeria Council presents the Recognition Millennium Award to Dr Emmanuel 0 Egbogah in recognition for his active and dedicated Service to the Society in the 20th Century: Abuja, Nigeria, August 5/99".

4. Recipient of the Nigerian Canadian Association "1999
Distinguished Citizen Award", Calgary, Canada, October 17.

Citation: "This recognizes your dedication to enriching the educational, social and emotional well being of Calgarians and Nigerians. Your work and commitment at the local. national and international levels in the academic arena as well as in the Oil & Gas Sector are exemplified by your passion and dedication to community organizations around the world and the benefit to many".

- 5. Honorary Degree of Doctor of Science in Engineering (D.Sc. Honoris Causa), University of Port Harcourt, Nigeria, March 2006

 Citation: "In recognition of your outstanding contributions as a foremost Intellectual to the development of the energy sector, both in Nigeria and other countries of the world."
- 6. **Director, Africa Region, Society of Petroleum Engineers.** A member of the 27- member Board of Directors of the 76,000-member, 63-country pre-eminent Global Society on the Oil & Gas Industry
- 7. Recipient of the Nigeria 2006 National Honour of *Officer of the Order of the Niger, (OON)* for significant contribution for the Nation's development.
- 8. Recipient of the 2007 NMGS/SHELL AWARD

 The Nigerian Mining & Geosciences Society/Shell AWARD is for any Earth
 Scientist who has made significant contributions to the field of Earth
 Sciences on the African Continent through excellence in research in either
 or both the pure and applied aspect of the sciences

DR EMMANUEL O EGBOGAH, P.Eng. OON

Resume

Dr Emmanuel Egbogah has over 35 years of diversified geological and petroleum engineering experience in consulting, teaching, research & development, and project planning, implementation and management in Canada, United States, Europe, Africa, Middle East and the Asia Pacific region. He is an internationally recognized authority in the fields of petroleum policy and strategy, improved/enhanced oil recovery, stimulation procedures and multidisciplinary team approach to field development planning and reservoir management.

Dr Egbogah is founder and Executive Chairman of Emerald Energy Resources Limited, the operator of continental shelf block OPL 229, (Now OML 141) Niger Delta, Nigeria. He is also the Executive Vice President & Director, Training and Technology Transfer, VRMT International Inc, Houston, Chairman, Pipeline Integrity Nigeria Limited and O & G Technologies Limited, Calgary, Alberta, Canada. He was Vice President, International Production for Niko Resources Limited, an international E&P company in Calgary, Alberta, Canada.

Previously, Dr Egbogah served for eight years as Technical Advisor and Technology Custodian for PETRONAS, the national oil company of Malaysia where he was responsible for strategic planning and expansion program leading to the company's E&P establishment in over 25 countries around the world. He served for five years as Enhanced Oil Recovery Advisor for the Libyan National Oil Corporation, Tripoli, where he was responsible for the Reservoir Management of 159 reservoirs containing about 40 billion barrels of oil reserves. He was responsible for the planning and supervision of EOR programs in 34 Libyan reservoirs.

A former Petroleum Engineering Manager & EOR Specialist for Amerigo International in Calgary and Houston, Dr Egbogah was previously Senior Consultant and Vice President Engineering for Applied Geoscience and Technology (AGAT) Consultants Ltd of Calgary, Alberta, Canada, where he directed a multi-million dollar, multi-client study on Reservoir Sensitivity and Completion Procedures Project on behalf of 53 multinational and 10 independent oil companies, issuing a 2200-page report of the same to its subscribers.

Dr Egbogah started his oil and gas industry career in Canada with Phillips Petroleum Canada (Pacific Petroleums) Ltd in 1973. He is a distinguished presenter of petroleum industry short course, workshops and seminars in field development, reservoir management, including applied petroleum geology, petroleum reservoir engineering, enhanced oil recovery, and strategic planning for many international oil corporations and organizations. He was the pioneer and founding petroleum engineering lecturer at the Institute of Applied Science and Technology, (later to be known as the Faculty of Technology), the University of Ibadan, Nigeria. Dr Egbogah has authored and co-authored over 80 technical publications so far. A Distinguished Member (1995) of the International Society of Petroleum Engineers, Dr Egbogah was a Review Chairman for the Journal of Petroleum Technology, JPT, a 1993-99 Steering Committee member of the Asia Pacific Oil & Gas Conference and a 1992-96 Steering Committee member for Forum Series In Asia Pacific, and Chairman of the 1995 SPE Forum Series in Asia Pacific on "Challenges in Gas Reservoir Management," member of the Diversity/Governance Task Force, SPE Speakers Bureau Speaker and member, SPE Cedric Ferguson Gold Medal Committee.

He served as Senior Editorial Advisor to the Journal of Petroleum Technology on Field Development Planning and Reservoir Management (1994-1998).

He is the current Chairman of the SPE Applied Technology Workshops on Practical/Cost-Effective Reservoir Management and Multidisciplinary Field Development Planning as well as Steering Committee member, SPE Asia Pacific International Conference on Improved Oil Recovery (2001-2005).

He is currently an SPE Director, Africa Region. Dr Egbogah is also a member of Petroleum Society of CIM (Canada), American Society for Engineering Education, International Society for Rock Mechanics, and the New York Academy of Sciences.

He is a registered professional engineer of the province of Alberta, Canada.

He is listed in the world's Who's Who in Science and Engineering, and is the life Patron of the African-Caribbean Network for Science & Technology, United Kingdom. Dr Egbogah is the recipient of the Society of Petroleum Engineer's 1998 Asia Pacific Regional Service Award (Jakarta, Indonesia, April 20, 1999) in recognition of his continuing and outstanding commitment of personal effort and time for technology transfer throughout the Asia Pacific Region and also received the 1999 SPE Nigeria Council Millennium Award (August 5, Abuja, Nigeria) in recognition of his active and dedicated service to the Society of Petroleum Engineers in the 20th Century.

He is a Member of the 15-person African Oil Policy Initiative Group, (AOPIG), the policy strategy think tank that produced the White Paper "African Oil: A Priority for U.S National Security and African Development" which forms the new American oil policy predicated on West African Oil.

Dr Egbogah served (2002-2003) as Long Term Policy and Strategic Advisor, Oil and Gas Sector, for the Presidency's Bureau of Public Enterprises, the Secretariat of National Council on Privatization with a responsibility for the Restructuring of the Nigerian Oil & Gas Sector of the Economy. He completed the Presidential Assignment and produced the following reports:

- BPE/200301: PROPOSED NEW STRUCTURE OF THE PUBLIC SECTOR OF THE PETROLEUM INDUSTRY.
- BPE/200302: PROPOSED STRATEGY OF DIVESTMENT OF FEDERAL GOVERNMENT OF NIGERIA'S SHARES IN THE OIL SERVICE COMPANIES.
- BPE/200303: FISCAL REGIME FOR THE OIL & GAS SECTOR.
- BPE/200305: PROPOSAL ON ISSUES RELATING TO HOST COMMUNITIES.

He is a recipient of the Nigeria 2006 National Honour of "Officer of the Order of the Niger", (OON) for significant contribution to the Nation's development.

A Distinguished Member of the National Commission on Science & Technology, Dr Egbogah is the current Director, Africa Region for the Society of Petroleum Engineers International, a Member of the 27-member Board of Directors, the highest decision-making body of the 88,000-member global society of Oil & Gas Industry.

He is currently serving as Special Adviser to the President on Petroleum Matters, Federal Republic of Nigeria, Member, Economic Management Team, Member of The Nigerian Economic Summit Group and Chairman of the Governing Board, Nigerian Nuclear Regulatory Authority.

Dr Egbogah is Member of Nigeria's Vision 20-20 Steering Committee and National Working Group.

Philanthropy:

Dr Emmanuel O. Egbogah's contributions towards energy technology education/human capital development/capacity building in Nigeria

ENDOWMENTS:

 UNIVERSITY OF PORT HARCOURT, Institute of Petroleum Studies (April 29, 2006)

- One Million US Dollars (\$1,000,000.00) for the Construction of the Emerald Energy Centre for Petroleum Economics, Policy & Strategy.
- 20 I-Mac Computers with Associated Software for use in teaching and research at the Institute of Petroleum Studies of the university.
- No.0 Million/Year for Emmanuel Egbogah Chair in Petroleum Engineering, held by the Director of the Institute for Petroleum Studies, Professor Joseph Ajienka.
- National Legacy Lecture Series in Petroleum Economics, Policy & Strategy at the University of Port Harcourt.
- Two Scholarships of N100,000.00 each to Top Graduate Students in Petroleum Engineering & Project Management, named after Professor Amos Nur (Chief Technology Officer for Emerald Energy) and Dr Jude O Amaefule (Vice Chairman/Chief Operating Officer for Emerald Energy).
- Dr Egbogah's Technical Library a collection of Dr Egbogah's technical library, notes, reports and published works.

2. BELL'S UNIVERSITY OF TECHNOLOGY, OTA (Nov. 2005)

- 20 I-Mac Computers with Associated Software for use in teaching and research at the university.
- N2.0 Million Cash Donation.
- National Million/Year to support the Organization and management of Annual Technology Fair hosted by Emerald Energy Resources Limited with participation of technology front leaders from world's top technology universities, industry and R&D centers.

3. FEDERAL UNIVERSITY OF TECHNOLOGY, OWERRI

20 i-Mac Computers with Associated Software for use in teaching and research at the university's department of petroleum engineering.

4. UNIVERSITY OF IBADAN Faculty of Technology (January 2007)

- Nation (\$600,000.00) for the Construction of Dr Emmanuel Egbogah Centre for Petroleum Engineering (in honour of Dr E O Egbogah, founder of and pioneer lecturer in Petroleum Engineering at the University of Ibadan).
- Two Emmanuel Egbogah Scholarships of N100, 000.00 each/ year for needy petroleum engineering students (who must be members of the Society of Petroleum Engineers International).
- Name 1.0 Million/Year for Organization and management of Emmanuel Egbogah Annual Lectures in Petroleum Engineering.
- N500, 000.00/Year Africa Regional Director grant to the University's Student Chapter of the Society of Petroleum Engineers (SPE) to facilitate the organization/management of their Annual Engineering week.

5. LAGOS STATE UNIVERSITY, Epe Campus (February 2007)

• Nation 100,000.00/Year Emmanuel Egbogah Scholarship to an Engineering Student (who must be a member of the Society of Petroleum Engineers International).

6. COMMUNITY SECONDARY SCHOOL, UMUOKPU-AWKA, Anambra State (February 2005)

• 10 I-Mac Computers with Associated Software for teaching

- N40Million for the Construction of a Building Complex housing Emerald Energy Computer Lab and T.C Okoli Memorial Library (opened September 2007).
- PLUS \$37,000 27KVA Power Generator to provide electricity for the computer laboratory and the library complex.

7. DENNIS MEMORIAL GRAMMAR SCHOOL, ONITSHA (April 2007).

 10 I-Mac Computers for teaching of computer science at my Alma Matter.

8 SCHOLARSHIP PROGRAM TO NNAMDI AZIKIWE UNIVERSITY, AWKA (November 2008)

N4.0Million endowment to Awka Development Union, Lagos for the award of 10 scholarships annually to indigenes of Awka to study Science and Engineering at Nnamdi Azikiwe University.

SOCIETY OF PETROLEUM ENGINEER'S ACTIVITIES OF DR EMMANUEL O EGBOGAH

Dr. Emmanuel Onu Egbogah (SPE No. 0595801) Join Date: 1 September 1973

35-Year Member

SPE Distinguished Member Award (Presented at 1995 SPE Annual Technical Conference and Exhibition in Dallas, Texas, U.S.A)

<u>Citation:</u> The Board of Directors of the SPE has elected Dr Emmanuel Onu Egbogah as Distinguished Member in 1995 in recognition of distinguished achievement in the field of petroleum engineering and noteworthy service to the Society of Petroleum Engineers.

 Recipient of the Society of Petroleum Engineers 1998 Asia Pacific Regional Service Award (Jakarta, Indonesia, April 20 1999). <u>Citation:</u> The Board of Governors of the SPE presented to Dr Emmanuel Onu Egbogah ,In Recognition of the continuing and outstanding commitment of personal effort" and time to further the organizational efforts and those of technology transfer throughout the Asia Pacific Region.

3. Recipient of the SPE Nigeria Council Millennium Award (Abuja Nigeria, August 5, 1999)

<u>Citation:</u> The SPE Nigeria Council presents the Recognition Millennium Award to Dr Emmanuel 0 Egbogah in recognition for his active and dedicated Service to the Society in the 20" Century: Abuja, Nigeria, August 5/99.

COMMITTEE ACTIVITIES:

Committee Name/Position	Appointed Date/Expire Date	
SPE Kuala Lumpur Section Director	1 July 1991 to 1 July 1993	
Chairman of Editorial Review Committee for SPE Journal of Petroleum Technology (JPT)	1 Oct 1994 to 15 April 1998	
Technical Editor for SPE Journal of Petroleum Technology (JPT)	4 Aug 1995 to 15 April 1998	
Member of SPE Cedric K. Ferguson Medal Committee	1 Oct 1992 to 1 Oct 1996	
Member of SPE Task Force on Diversity/Governance	1 Oct 1994 to 1 Oct 1995	
Steering Committee Member for SPE Forum Series in	1 May 1991 to 1 May 1992	
Asia Pacific on "Wellbore and Formation Damage		
Related to Completion Practices"	1 huly 1002 to 1 hum 1002	
Steering Committee Member for SPE Forum Series in Asia Pacific on "Near-Wellbore Stimulation"	1 July 1992 to 1 Jun 1993	
Chairperson for SPE Forum Series in Asia Pacific on	1 June 1994 to 1 May 1995	
"Challenges in Gas Reservoir Management"		
Programme Committee Member/Session Co-	1 Feb 1992 to 1 Feb 1993	
Chairperson for 1993 SPE Asia Pacific Oil & Gas		
Conference and Exhibition		
Programme Committee Member/Session Co-	1 Nov 1993 to 1 April 1995	

Chairperson for 1995 SPE Asia Pacific Oil & Gas Conference and Exhibition	
Programme Committee Member/Session Co-	1 Sep 1996 to 1 April 1997
Chairperson for 1997 SPE Asia Pacific Oil & Gas	200 1000 10 17 1007
Conference and Exhibition	
	4 A 1 4 000 t - 4 A 1 4 000
Programme Committee Member/Session Co-	1 April 1998 to 1 April 1999
Chairperson for 1999 SPE Asia Pacific Oil & Gas	
Conference and Exhibition	
Programme Committee Member/Session Co-	1 July 1997 to 1 March 1998
Chairperson for 1998 SPE Asia Pacific Conference	
on Integrated Modeling for Asset Management	
on integrated incusing for Acces management	
Programme Committee Member/Session Co-	10 Mar 1999 to 30 Oct 1999
Chairperson for 1999 SPE Asia Pacific Improved Oil	
Recovery Conference in	
Programme Committee Member/Session Co-	16 Nov 2000 to 31 Oct 2001
Chairperson for 2001 SPE Asia Pacific Improved Oil	10 1407 2000 10 31 001 2001
·	
Recovery Conference	22.5
Programme Committee Member/Session Co-	29 Dec 2002 to 31 Oct 2003
Chairperson for 2003 SPE International Improved Oil	
Recovery Conference in Asia Pacific	
Programme Committee Member/Session Co-	1 Sep 2004 to 31 Dec 2005
Chairperson for 2005 SPE International Improved Oil	-
Recovery Conference in Asia Pacific	
Reservoir Subcommittee Member for 2005 Internation-	11 Aug 2004 to 30 Nov 2005
al Petroleum Technology Conference	
an i chicicum roomiciogy comerciae	
Co-Chairman for 1997 SPE Applied Technology	
Workshop on "Cost Effective/Practical Reservoir	
Management", 26-28 May 1997, Kuala Lumpur, Malaysia	
Chairman for 1997 SPE Applied Technology Work-	
shop on "Cost Effective/Practical Reservoir Man-	
agement", 26-29 October 1997, Bandung, Indonesia	
Chairman for 1998 SPE Applied Technology Work-	
shop on "Cost Effective/Practical Reservoir Man-	
agement", 23-26 August 1998, Bandar Seri Begawan,	
Brunei	
Steering Committee Member for 1998 SPE Applied	
Technology Workshop on "Field Development	
Planning: Multidisciplinary Team Approach", Chi-	
ba(Tokyo), Japan	
Steering Committee Member for 1998 SPE Applied	
Technology Workshop on "Integrated Petroleum	
100 miology Workshop on micgrated retroleding	

Asset Management", Nusa Dua, Indonesia	
Steering Committee Member for 1999 SPE Applied	
Technology Workshop on "Increasing the Oil Re-	
covery of High Water Cut Reservoirs", Daqing, China	
Co-Chairman for 2000 SPE Applied Technology	
Workshop on "Developing and Managing Marginal	
Fields", Kemaman, Terengganu, Malaysia	

SPECIAL SPEAKER INFORMATION:

Panelist, Energy Roundtable, Offshore Technology Conference, Houston, Texas, USA, May 07, 2008

Speaker for Special Session on "Reservoir Evaluation" at 2001 SPE Asia Pacific Oil & Gas Conference and Exhibition in Jakarta, Indonesia

Panel Session Moderator on "Risk Assessment/Management of Uncertainty" at the 1997 SPE Asia Pacific Oil & Gas Conference and Exhibition.

Panel Session Moderator on "Safety – Evaluating Commitment" at the 1999 SPE Asia Pacific Oil & Gas Conference and Exhibition.

Panel Session Moderator on "IOR Experiences – Best Practices and Lessons Learnt" at 1999 SPE Asia Pacific Improved Oil Recovery Conference.

Panel Session Moderator on "50% of the World's Oil Production Will Come From IOR/EOR by 2020" at the 2001 SPE Asia Pacific Improved Oil Recovery Conference.

Panel Session Moderator on "More Footage Instead of EOR" at the 2003 SPE International Improved Oil Recovery Conference in Asia Pacific.

Panel Session Moderator on "Are We Progressing in the Right Direction?" at the 2005 SPE International Improved Oil Recovery Conference in Asia Pacific.

SPE PAPER PUBLICATIONS (Search Result from SPE eLibrary)

Year Paper Title, Authors

1997 38692 <u>Correction Factor for Residual Oil Saturation From Conventional Cores</u>

Egbogah, Emmanuel O., Petronas Carigali Sdn Bhd; Amae-

	fule, Jude O., VRMT International, Inc.
1997 38683	Reducing Field Development Planning and Reservoir Management Uncertainty Through a Comprehensive Core Analysis Program in the Dulang Field, Offshore Peninsular Malaysia Egbogah, Emmanuel O., Petronas Carigali Sdn Bhd
1995 29286	STOCHASTIC AND DETERMINISTIC RESERVES ESTIMATION IN UNCERTAIN ENVIRONMENTS Karra, Sastry, Egbogah, Emmanuel O., Yang, Foo Wah, PETRONAS Carigali Sdn Bhd
1995 29262	Core-log Data Integration for Improved Formation Evaluation in the Dulang Field, Offshore Peninsular Malaysia Amar, Zarool Hassan Bin Tajul, Egbogah, Emmanuel O., Nurdin, Abdul Rahim Bin, Petronas Carigali Sdn. Bhd.
1987 14876	The Concept of Relative Ganglion Velocity and Generalization to Oil- Bank Movements in Porous Media Egbogah, Emmanuel, Amerigo Intl.
1976 6497	INTERFACIAL PROPERTIES OF CERTAIN CRUDE OILS IN THE PRESENCE OF CHEMICALLY TREATED WATERS EGBOGAH, ONU E., THE UNIVERSITY OF ALBERTA
1986 14826	Acidization of Dirty Sandstones With Buffered HF Acid Systems Smith, M.J., Clark, G.J., Amerigo R and D Ltd.; Hendrickson, A.R., Hendrickson Intl.; Egbogah, E.O., Amerigo R and D Ltd.
1994 27771	A Systems Approach to Enhanced Oil Recovery Planning in Malaysia Egbogah, E.O. *, Hovdestad, W.R. *, Petronas Carigali Sdn Bhd; Daud, M.E., Raja, D.A. *, Petroleum Research and Scientific Sercives Sdn Bhd
1995 29253	Integrated Approach to Natural Gas Utilisation in the Asia Pacific Region Hovdestad, Wayne R., Egbogah, Emmanuel O.
1997 38091	Reservoir Management Key Performance Indicators Sawabini, C.T., Reservoir Management Consultant; Egbogah, Emmanuel O., Petronas Carigali Sdn Bhd
1997 38044	An Integrated Approach to Petroleum Resources Definitions, Classification and Reporting Zainul, Abdul Jalil, Md Nor, Rosly, Hong, Teh Yat, PETRONAS Egbogah, Emmanuel O., Musbah, A. Wahid, Hamdan, M. Kamal, Yang, Foo Wah, PETRONAS Carigali Sdn Bhd

1997 38024 Accurate Initial / Residual Saturation Determination reduc-

es Uncertainty in Further Development and Reservoir Management of the Dulang Field, Offshore Peninsular Malaysia

Egbogah, Emmanuel O., Amar, Zarool Hassan Bin Tajul, Petronas Carigali Sdn Bhd

- 1993 25335 A Synergistic Approach to the Development of the Dulang Field, Offshore Peninsular Malaysia

 Egbogah, E.O., Chandramohan, S., Embong, M.K., Petronas Carigali Sdn. Bhd.
- 1992 25012 Reservoir Management of the Dulang Oil Field, Offshore
 Peninsular Malaysia: The Heuristic Approach
 Hussain, Ahmad, Egbogah, E.O., Hovdestad, W.R., Petronas
 Carigali Sdn. Bhd.
- 1981 10115 A Model of Oil Ganglion Movement in Porous Media
 Egbogah, Emmanuel O., United Petrol Laboratories Ltd.;
 Wright, Robert J., Dawe, Richard A., Dept. of Mineral Resources Engineering, Imperial College

CURRICULUM VITAE

A. PERSONAL DATA:

Name: Emmanuel Onu EGBOGAH

Nationality: Nigerian/Canadian

Home: Awka South, LGA

Umuokpu – Awka, Anambra State

Family Status: Married with 3 children

B. EDUCATION:

1977 – 1979	Imperial College of Science & Technology London, U.K.
1972 – 1976	University of Alberta, Edmonton, Alberta, Canada
1970 – 1971	McGill University, Montreal, PQ, Canada
1963 – 1969	Friendship University, Moscow, USSR
1957 – 1961	Dennis Memorial Grammar School, Onitsha
1950 – 1956	Central School, Amawbia

C. ACADEMIC QUALIFICATIONS:

D.Sc. (Honoris Causa) University of Port Harcourt, Nigeria, 2006

PhD (Petroleum Reservoir Engineering), Imperial College of Science & Technology, University of London, 1979.

DIC (Petroleum Reservoir Engineering) Imperial College of Science & Technology, Royal School of Mines, London, 1979.

M.Sc. (Petroleum Engineering), University of Alberta, Edmonton, Alberta, 1975

M.Sc. (Applied Petroleum Geology) Friendship University, Moscow, 1969.

WASC Cambridge West African School Certificate

D. ACADEMIC DISTINCTIONS - (Major Scholarships and Awards)

- 1. Natural Sciences and Engineering Research Council of Canada (Summer Program) Grants (1984-1985).
- 2. Govt. of Canada, New Tech. Employment Program Grant (1981-1983)
- 3. University of Ibadan Academic Grant (1977-1979)
- 4. Canadian International Development Agency Scholarship (1972-1976)
- 5. Excellent Student, Faculty of Engineering, Moscow (1967-1968)
- 6. Faculty of Engineering Dean's Honour List, Moscow (1967-1969)
- 7. U.S.S.R. State Scholarship (1963-1969)

E. MAJOR AREAS OF TECHNICAL EXPERTISE

- Long range Policy & Strategic Planning Advice and Implementation in the Oil & Gas Industry
- Multidisciplinary (Synergistic) Team Approach to Field Development Planning and Integrated Reservoir Management.
- Reservoir Engineering, Enhanced Oil Recovery Designs and Project Implementation.
- Resources/Reserves Evaluation Definitions, Classification Guidelines and Technical Audit Procedures.
- Formation Damage Diagnosis/Analysis and Stimulation Program Applications.
- Problem Well & Reservoir Performance Analyses.
- Skill Matrix Design and (Petroleum Engineering) Career Development Planning.
- Long-range technology planning for E& P competitiveness.
- Design of strategic technical alliances and technology partnerships.
- Appraisal, Development Planning and Reservoir Management Design for Marginal Oil Fields.

 Distinguished competence in designing and conducting technical seminars and training & technology transfer courses for oil and gas companies and professional organization.

F. EMPLOYMENT AND PROFESSIONAL EXPERIENCE

August 2007:

Special Adviser to the President on Petroleum Matters, Federal Republic of Nigeria

2001 - Aug 2007:

Executive Chairman, Emerald Energy Resources Limited (Operator of Continental Oil Block OPL 229, Niger Delta)

F1. Industrial and Consultancy:

1999 - Present:

Chairman, PINL Marine & Oil Services Limited (formerly Pipeline Integrity Nigeria Limited), Lagos, Nigeria

Chairman/CEO, O & G Technologies Limited, Calgary, Alberta, Canada.

1998 - Present:

Executive Chairman, Emerald Energy Resources Limited, Lagos, Nigeria

Executive Vice President & Director, Training and Technology Transfer, VRMT International Inc, Houston, Texas, USA

1998 – 2001:

Group Executive Chairman, Evergreen Gas Company Inc, Houston, Texas, USA and Evergreen Gas Company Nigeria Ltd, Lagos, Nigeria.

1997- 2000

Vice President, International Production, Niko Resources Limited, Calgary, Alberta, Canada.

1996 - 1997:

Technology Custodian, Reservoir Engineering, Petroleum Engineering Department, PETRONAS CARIGALI SDN BHD, Kuala Lumpur, Malaysia

Duties:

- Long-range technology planning, including acquisition application, monitoring and application performance evaluation of new E&P technologies.
- Structuring and supervision of technology acquisitions through strategic technical alliance and technology partnerships.

1991 - 1995:

Technical Advisor, Petroleum Engineering Department, PETRONAS CARIGALI SDN BHD, Exploration/Production subsidiary of PETROLIAM NASIONAL BERHAD, PETRONAS, the National Oil Company of Malaysia, Kuala Lumpur.

Duties:

The position involves the provision of petroleum engineering expertise, to advise Carigali on the assessment, planning, development and production of the company's oil and gas field. The primary functions and responsibilities include:

- Advise and recommend on petroleum engineering matters and practices including but not limited to formation evaluation, reserves estimation, field development planning, initiation, economics, reservoir surveillance and management programs, pressure maintenance programs, well completion design, EOR feasibility and work-over.
- Initiate and supervise technical studies as require ensure optimal field development and depletion.
- Advise and recommend on the acquisition of technology.
- Advise and recommend on research areas relevant to Carigali/Petronas, and provide direct technical assistance to the Petroleum Research Institute.
- Conduct seminars/lectures for Carigali/Petronas personnel.
- Promote and supervise technical writing for publication.

 Mentoring the staff, in-house staff training, and quality control in all technical work.

Near Term Tasks:

Chairman, Petronas Geosciences Committee on Resource Evaluation and Nomenclature Standardisation.

Duties:

Create and insure the application of consistent standards in the Geosciences throughout PETRONAS and its operating units. The 12-man Geo-science Committee, drawn from all E&P Depts., Engineering & Safety Unit and Petroleum Research Institute is one of the committees of the National Standard Organisation.

II. Dulang Field

- Project Team Leader for the Planning, Studies, Design and Implementation of Pressure Maintenance (by Water Injection and Gas Injection) into Reservoirs of the Dulang Unit Area (operated by PETRONAS Carigali and Esso Production Malaysia Inc.)
- Assist in the formulation of the Reservoir Management Plan and defining the requirements for Reservoir Surveillance and Monitoring.
- Assist in defining the data management requirements (hardware and software) necessary for efficient field operations.
- Assist in defining the reporting requirements and the development of formats for the necessary operational, technical and management reports.
- Assist in the planning activities in preparation for start-up of drilling and production.
- Planning, Design, and Implementation of well Scoped Core Analysis Data Acquisition and Documented Report of same.

III Champion and Advisor, to the Managing Director on Technology Matters:

Duties

Served as Champion Technology Breakthrough Team of the Organisation Effectiveness Study (1973-1995) and Technology -Focal Point; Technology Domain Team, responsible for developing a long range strategic plan for the

company to insure its E&P competitiveness in the 21st century. A technology-blueprint was issued in a document "PETRONAS CARIGALI TECHNOLOGY PLAN". 1995-2000". Responsibi1ities included negotiating strategic technical alliance and technology partnerships with RLD institutions and commercial technology vendors in the petroleum industry.

IV. Baram Delta and Other Joint Ventures

Assist in defining the role and functions of PED with respect to the Baram Delta and other Joint-Venture Operations

- V. **Associate Editor,** RESOURCE, magazine of the Malaysian Petroleum Club
- VI **Advisor**, Petroleum Engineering Skill Group Steering Committee, Executive Training and Career Development, Petronas Carigali Sdn Bhd

Duties:

Design of Skill Matrix and Training Courses for the Geo-sciences staff.

VII. Advisor, Corporate Organisational Structure

responsible for the re-organisation of petroleum engineering departments Including delineation of responsibilities and description of job functions. A one-and-half year's study resulted in a re-organisation of the company's four petroleum engineering departments (in Baram Delta Operations (Miri), Sabah, (Kota Kinabalu), Peninsular Malaysia Operations (Kerteh) and Kuala Lumpur into multi-disciplinary area project teams for a greater efficiency and cost-effectiveness.

Dec. 1985 - Dec. 1990:

Enhanced Oil Recovery Advisor, National Oil Corporation, Tripoli, Libya.

Duties

- Served as planning 8 engineering group leader responsible for long range planning, co-ordination and supervision of all enhanced oil recovery projects in Libya. This involved the supervision of EOR and integrated reservoir management of more than 160 reservoirs containing over 40 billion barrels of reserves. Developed Guidelines for Planning, Design and Field Implementation of EOR Projects in 34 Libyan Reservoirs.
- Conducted reviews and technical/economic screening of fields/reservoirs for EOR candidate selection, and formulated technical evaluation approaches.

- Defined scope of work and supervised reservoir engineering studies and EOR project economics by international energy consultants.
- Advised the Human Resources Development Centre on energy technology education requirements for national engineer and explorationists.

Chairman, Technical Advisory Committee on Petroleum Engineering Research 8 Development, Petroleum Research Centre, Tripoli.

Associate Editor, Petroleum Research Journal.

- Organised and presented special EOR and Reservoir management short courses to the oil industry.
- Mentored/trained young engineers and provided leadership and direction on technical quality of all company activities.
- Organised the very successful 1st Technical Symposium on EOR in Libya, Tripoli, May 1 8 2, 1990, attended by 335 participants from 32 countries. Received special Letters of gratitude from both Chairman of the National Oil Corporation and the Libyan State Secretary for Petroleum.

1983 - 1985

Engineering Manager and Enhanced Oil Recovery Specialist, Amerigo Technology Limited, Calgary, Alberta, Canada

Duties

- Design, Optimisation and Implementation of Enhanced Oil Recovery Procedures, Application of Screening Procedure for Enhanced Oil Recovery Method Selection. Responsible for the Design, Implementation and Reservoir Management of a \$2.6 million Amflo Pilot Flood Project Dodsland Field, Saskatchewan Completion designs, Formation Damage Diagnosis and Well Stimulation designs.
- Post-treatment well performance analysis. Problem Well Analysis Conducted extensive laboratory research on steam-bearing additives for EOR, residual oil saturation and Tapered Chemical Injection Process Technology.

- Received government of Canada grant (\$560,000) for the field application testing of the Process in Dodsland Field Saskatchewan.
- Responsible for the worldwide engineering activities of the company with branch offices in Houston, Texas, USA and Aberdeen, Scotland.
- Recipient of Natural Sciences and Engineering Research Council (NSERC) of Canada Grant for Innovative Technology and Training of Cooperative program students and graduates.

April 1983 - Dec. 1985

Project Manager, Twin-CO2 Project, Locygne-Cadmus Field, Linn County, (Overland Park), Kansas, U.S.A Supervised the application of Huff 'n Puff CO2 Process to stripper wells to increase oil production 2 - 5 fold in places.

Director of Energy Practice, American Hydrocarbon Technologies, Inc. Calgary, Alberta, Canada

1981 - Present

President, EMEG Engineering Limited, Calgary, Alberta Canada.

1981-1982:

Enhanced Oil Recovery Consultant, Oil Recovery Engineering Ltd., Calgary, Alberta, Canada.

May 1981 - March 1983

Vice President. Engineering and Director of Research, Applied Geo-science and Technology (AGAT) Consultants Ltd., Calgary, Alberta.

Responsible for the direction of Reservoir Fluids and Special Core analysis programs for conventional and enhanced oil recovery evaluations; and programming of company's reservoir engineering studies and consulting services on a worldwide basis. Engineering consultant on the Multi-million dollar, Worldwide Reservoir Sensitivity and Completion Procedures Project conducted by AGAT on behalf of 53 multi-national and 10 independent oil companies. Supervised a multidisciplinary team 28 engineers, scientists, technologists and technicians.

July 1981/May 1982

Manager Reservoir Engineering, United Petro Laboratories Ltd. (A division of AGAT Ltd.), Calgary, Alberta, Canada.

May 1980/June 1981

Technical Services Manager, United Petro Laboratories Ltd., (A division of AGAT Ltd.) Calgary, Alberta, Canada

Duties

- Design, testing and optimisation of various enhanced oil recovery laboratory programs with special emphasis on fluid-fluid and rock-fluid interactions and pilot feasibility programs. Responsible for technical programming and technical quality of company operations. Engineering supervisor, Reservoir Sensitivity and Completion Procedures Project which combines detailed geological analysis with reservoir engineering procedures to evaluate the dominant mineralogical problems in sandstones reservoirs on a worldwide basis.
- Technical Director of Government of Canada sponsored- New Technology Employment Program for the training of young engineers and scientists for meaningful employment in the oil and gas industry in Canada. Successfully conversion-trained six chemists, four (civil, mechanical, chemical) engineers, one physicist and two geologists.

Jan. - Dec. 1979:

Associate Consulting Reservoir Engineer, Applied Geoscience and Technology (AGAT) Consultants Ltd., GeoChem Laboratories (Canada) Ltd., and United Petro Laboratories Ltd., 3560 - 21 St. N.E., Calgary, Alberta, Canada.

Duties

 Reservoir engineering analysis, reservoir quality analysis, petroleum geochemistry, enhanced oil recovery studies, stimulation studies, reservoir engineering project development and consulting.

1975/1976

Consultant to Porta-Test Manufacturing Ltd., Edmonton, Alberta, Canada, on Soviet gas technology, technical design literature and instrumentation.

1973 - 1977

Consulting Petroleum Engineer for Oil and Gas Division, Department of Indian and Northern Affairs, Information and Liaison ACND, Ottawa, Ontario, Canada.

Duties

Supplied all such information on the current developments in the oil and gas industry in the U.S.S.R North required by the Department. This included reviews and surveys on the current exploration, production and marketing of the U.S.S.R. North Oil and Natural Gas as well as problems of the U.S.S.R North Oil and Gas Development. The information Section of the Ministry of Technology in Ottawa also shared in the data provided by the Occasional reports.

1973:

Petroleum Reservoir/Production Engineer, Pacific Petroleums Ltd., Calgary, Alberta, Canada

Duties

Special performance analysis of the producing Mississippian Blueberry Field, Fort Saint John, British Columbia, Canada. As the production of this field dwindled, it was necessary to conduct a feasibility study for pressure maintenance by waterflooding in order to sustain production. By integrated geological and reservoir engineering studies, a special waterflood scheme was designed by myself for the field. This resulted in greatly improved production. Gas lift system study was also conducted and new designs which altered the T-corners improved wellhead flow.

1970/1972

Consulting Geologist for Northern Science Research Group, 400 Laurier Ave. W., Ottawa, Ontario, Canada. To review Soviet literature on Arctic Geology and supply all such information required by the Research Group on Arctic Geology. The Department of Indian Affairs and Northern Development in Ottawa also shared in the resulting information and database.

1970/1971

Graduate Teaching Assistant, McGill University, Montreal, Quebec Conducted sedimentary geology field trip along St. Lawrence Lowlands, Quebec, Canada, with students of the Department of Geological Sciences, McGill University, Montreal, Quebec, Canada.

Duties

Provided guidance to students in course of the field mapping, to study Bioherms and Biostromes of that sedimentary basin, and to construct the stratigraphic column of the area.

1968

Assistant Well-site Geologist with U.S.S.R. Academy of Sciences Geological/Geophysical Party at the Black Sea Area Exploration. Stratigraphic correlations, collection and identification of rock bit samples and analysis for possible hydrocarbon shows/presence. To provide necessary geological interpretations and prepare stratigraphic-lithologic columns which could be used to plan completions.

F2. <u>Teaching Experience:</u>

From 2005:

Visiting Professor, Institute of Petroleum Studies, University of Port Harcourt, Nigeria

1991/1992:

Adjunct Visiting Professor, Department of Petroleum Engineering, University Teknologi Malaysia, Jalan Semarak, 54100 Kuala Lumpur, Malaysia.

<u>Courses Taught</u>: SKP5323 - Waterflooding (final year students) Postgraduate Degree Supervision (1992-1995) PhD: Mat Hussin Yunan Research/Thesis Topic - Effects of Heterogeneous Wettability on Fluid Flow and Fluids Distribution in Porous Media.

1982 - 1985

Sessional Instructor on behalf of the Canadian Association of Petroleum Accountants, Centre for Professional Management, Mount Royal College, Calgary.

Course offered: Introduction to the Petroleum Industry.

Petroleum Geoscience & Engineering Courses/ Workshops Taught

(1984 - Present):

- 1. Fundamentals of Reservoir Engineering, National Oil Corporation, Tripoli, Libya, July 22 26, 1984
- 2. Fundamentals of Enhanced Oil Recovery, National Oil Corporation, Tripoli, Libya, July 29 August 2, 1984
- 3. Well Completions and Operations, National Oil Corporation, Tripoli, Libya, August 5 16, 1984
- 4. Aspects of Well Completions, Stimulation and Work over, National Oil Corporation, Tripoli, Libya. February, 17 28, 1985.

NOTES: All courses taught in Libya included participation of engineers from the following operating companies and engineers/geoscientists from African Petroleum Production Association countries:

- 1. Agip
- 2. AME (Libvan Branch)
- 3. Sirte Oil Company Formerly Esso Standard Libya, Inc.
- 4. Oesis Oil Company, Inc.,
- 5. Arabian Gulf Oil Company
- 6. Occidental Oil Company of Libya, Inc., and
- 7. Mobil Oil Libya Petroleum Geology for Engineers, Petroleum Training Institute/Nigerian National Oil Corporation/Elf Nigeria, Warri, Nigeria. July 1 5, 1985
- 8. Applied Petroleum Geology for Engineers, National Oil Corporation and 6 operating oil companies), Tripoli, Libya, February 15 19, 1987
- 9. Petroleum Reservoir Technology, National Oil Corporations (and 6 operating oil companies), Tripoli, Libya, March 15 19, 1987
- 10. Fundamentals of Reservoir Engineering, National Oil Corporations (and 6 operating oil companies, Tripoli, Libya, June 14 16. 1987.
- 11. Enhanced Oil Recovery Methods: A Systems Approach to Project Planning, Design, and Field Implementation, National Oil Corporation (and 6 operating oil companies), Tripoli, Libya, August 9 20, 1988.
- 12. Introduction to Offshore Technology, National Oil Corporation (and 6 operating oil companies), Tripoli, Libya, August 23 27, 1987.
- Applied Petroleum Reservoir Engineering, National Oil Corporation, Tripoli, with participation from six operating oil and service companies, and African Petroleum Producers Association, July 1989 and July 17 – 28, 1990.
- 14. Secondary Recovery: Waterflooding, Petroleum Industry Training in South East Asia, Hilton Hotel, Jakarta, Indonesia, Aug 30- Sept 4, 1992.
- 15. Applied Petroleum Reservoir Engineering, PETRONAS Management Training Institute (PERMATA), Bangi, Malaysia, July 12-16, 1S93.

- 16. Field Development Planning: The Multidisciplinary Team Approach, PETRONAS Management Training Institute (PERMATA), Bangi, Malaysia, December 6-10, 1993.
- 17. The Science and Technology of Core Analysis, Baram Delta Operations, Miri, Sarawak, Malaysia, March 28-30, 1994
- 18. Bhandut Field: Reserves Re-evaluation 8 Field Development Plan, A Workshop for the Gujarat State Petroleum Corporation and Institute of Reservoir Studies, August 20-22, 1998.
- 19. Applied Petroleum Reservoir Engineering, Mobil Producing Nigeria Unltd., Lagos, Nigeria, Sept 28 October 2, 1998.
- 20. Field Development Planning and Reservoir Management of Marginal Fields, Sheraton Hotel & Towers, Lagos, Nigeria, February 2001
- 21. Marginal Fields Worldwide Review of Development Experience and Best Practices, Hilton Hotel, Abuja, Nigeria, April 2001

1981/82:

Sessional Instructor, Department of Geology, Petroleum and Mineral Resource Land Management, Mount Royal College, Calgary.

<u>Course Offered:</u> Introduction to the Petroleum Industry. Course Content: Designed for people seeking basic knowledge of the oil industry, such as investors, accountants, bank managers, computer specialist, administrative assistants, draftsmen, landmen, lawyers, technologists, non-petroleum engineers, non-technical supervisors, and/or managers, and those contemplating employment within the petroleum industry. The course is a non-technical treatment of oil and gas exploration, drilling and production operations including reservoir management and property evaluation.

1979/80

Senior Lecturer in Petroleum and Natural Gas Engineering, University of Ibadan, Nigeria.

<u>Courses Taught:</u> Drilling and Drilling Fluids Laboratory, Rock-Fluid Properties, Secondary Recovery, Enhanced Oil Recovery, Physical Properties and Phase Behaviour of Petroleum Fluids and Interfacial Phenomena. Supervised Final Year Thesis Projects.

1978/79

Teaching Assistant, Petroleum Engineering Laboratory, Royal School of Mines, Imperial College of Science and Technology, London.

Supervised M.Sc. Students' laboratory research projects.

1974/75

Pioneer Nigerian Lecturer in Petroleum Engineering, Institute of Applied Science and Technology, University of Ibadan, Nigeria

Collaborated with Canadian and American professors in setting up the first ever Petroleum Engineering Department of a Nigerian University. Taught Fundamentals of Reservoir Engineering, Reservoir Fluid and Rock Properties to seniors and postgraduate students. Designed and taught Petroleum Geology and Aspects of Natural Gas Engineering to postgraduate diploma students.

1973/76

Teaching and Research Assistant,_Department of Mineral Engineering, University of Alberta, Edmonton, Canada. Conducted teaching, seminars and laboratory classes on Secondary Recovery of Petroleum as well as seminars and teaching in Operations Research. Other courses supervised included Pressure Build Up Analysis, Natural Gas Engineering, Advanced Secondary Recovery, Petroleum Reservoir Engineering and Interfacial Phenomena.

1971/72

Lecturer in Petroleum Technology, University of Ibadan, Nigeria. Principal lecturer to postgraduate students taking diploma courses in Petroleum Technology. Courses taught included the following:

Geology for Engineers; Paleontology; Well Logging and Formation Evaluation; Geophysical Methods of Exploration, and Hydrogeology.

Organized and supervised seminar series for the final year students of Geology Department. Organized and supervised field trips for the postgraduate students to oil installations in Sapele, Warri and Ughelli area of the Niger Delta as part of their diploma requirements.

Organized and jointly supervised a field trip to the sedimentary basin of Eastern Nigeria for the final year students of Geology. Supervised seven final year students' thesis projects.

1970/71

Teaching and Research Assistant, Sedimentary Geology Laboratories, Department of Geological Sciences, McGill University, Montreal, PQ, Canada.

Conducted undergraduate seminars and laboratory classes in paleontology, sedimentary petrography and geochemistry. These included identification of fossils, thin-section microscopic studies and age determination by use of carbon, oxygen and radon techniques.

F3 Research Experience:

1992-1995:

Advisor and Supervisor of PhD Research on the Effects of Heterogeneous Wettability on Fluid Flow and Fluids Distribution in Porous Media.

PhD Researcher: Mat Hussin Yunan, University Technology Malaysia.

1983 - 1985

Amerigo Research and Development Limited, a division of Amerigo Technology Ltd., Calgary, Alberta, Canada. Conducted extensive applied laboratory research into the mechanics of fluid flow in porous media, including:

- Steam Stimulated EOR by the use of Steam-bearing additives Successfully field-tested and used by ESSO in Lloyd Minster field operations.
- 2) Waterflooding by Tapered Chemical Injection Method; the technique has been successfully tested in the Dodsland Field, Saskatchewan under a \$560,000 grant from the Canadian government
- 3) Mechanics of Dirty Sandstone Stimulation by Use of Buffered Acid Systems; Successfully applied in many US and Canadian fields.
- 4) Mechanisms of Fines Movement Control in Petroleum Reservoirs Result: An industry Monogram/Correlation used in the Design of Fines Movement/Sand Control in Production Operations.

1980 - 1983:

Applied Geo-science and Technology (AGAT) Consultants Ltd, Calgary, Alberta, Canada. Reservoir Sensitivity and Completion Procedures in Sandstone Reservoirs, Contract Research for a Consortium of 63 Oil Companies.

1972 - 1976:

Research Assistant in Petroleum Engineering, University of Alberta, Edmonton, Alberta, Canada, Department of Mineral Engineering.

1970 - 1971:

Research Assistant in Sedimentary Geology, Department of Geological Sciences McGill University, Montreal, Quebec, Canada. Worked towards Ph.D. in Geology (Sedimentation).

F4. Research Completed:

- 1) Principal Investigator, "Interfacial Properties of Heavy Crudes in the Presence of Chemically Treated Waters".
- 2) "Interfacial Properties of Crude Oil-Surfactant Solution Systems at Evaluated Temperatures and Pressures".
- "Mechanisms of Residual Oil Mobilization in Porous Media".
- 4) Mechanisms of Permeability Impairment (Formation Damage) in Petroleum Reservoirs.
- 5) Reservoir Sensitivity and Completion Procedures in Sandstone Reservoirs (4 -volume report issued to the industry).
- 6) Reservoir Stimulation by Chemical Treatment.
- 7) Mechanisms of Heavy Oil Recovery by Steam Bearing Additives.
- 8) Foam Drilling and Stimulation.
- 9) Improved Waterflooding of Water-Sensitive Reservoirs by Tapered Chemical Injection Process.
- 10) Mechanics of Formation Damage and Treatment Procedure.
- 11) New Techniques of Formation Damage Identification and Evaluation: The Production Chemistry Aspects.
- 12) Analysis of Oil Bank Movements in Petroleum Reservoirs.
- 13) Problem Well Analysis and Diagnosis Procedures.

G. COMMITTEES. HONOURS AND DISTINCTIONS:

2007:

Member, Economic Management Team, Federal Republic of Nigeria

2006:

Officer of the Order of the Niger, OON, 2006 National Honours Award, Federal Republic of Nigeria, Abuja, December 22, 2006.

Honourary Doctor of Science Degree in Engineering (DSc honoris causa), University of Port Harcourt, Nigeria

Director, Africa Region (2007-2009), Society of Petroleum Engineers International, San Antonio, Texas, USA, September 28, 2006

2002 - Present:

Member, African Oil Policy Initiative Group (AOPIG), oil policy and strategy think tank, Washington, DC, USA. Produced the White Paper for the US government on "African Oil: A Priority for the U.S National Security and African Economic Development.

1996 - 1999:

Member, International Technology Panel, Technology Policy and Assessment Centre, Georgia Tech., Atlanta, Georgia, USA.

Duties

To provide indicators of national technological competitiveness for 30 countries of the world in order to predict each country's capability to export technology-intensive products over the next 15 years.

April 22, 1999:

Recipient of the SPE Asia Pacific Regional Service Award, Jakarta, Indonesia for contributions in Field development Planning and Reservoir Management Practices in the Asia Pacific region over the last 7 years.

October 25, 1995:

Distinguished Member (1995), Society of Petroleum Engineers

Citation for Award

The Board of Directors of SPE has elected Emmanuel O. Egbogah as Distinguished Member 1995 in recognition of distinguished achievement in the held of petroleum engineering and noteworthy service to the Society of Petroleum Engineers

As voted by the SPE Board, Distinguished Membership recognizes and honors those members of the Society who have achieved distinction deemed worthy of

special recognition by the Society. It is further an acknowledgement of those members who have attained eminence in the petroleum industry or in the academic world, or of those who have made unusually significant contributions to the Society of Petroleum Engineers.

1995-1997:

Review Chairman, the SPE Editorial Review Committee, Journal of Petroleum Technology.

1994:

Listed in Who's Who in Science and Engineering, 2" Edition 1994, Marquis Publishers/Biographers, Iowa, USA. **Citation** inclusion in **Who's Who** is limited to those individuals who have demonstrated outstanding achievement in their own fields of endeavour and who have, thereby, contributed significantly to the betterment of contemporary society.

1992 - 1995:

Member, Steering Committee for the SPE Forum Series in the Asia Pacific region.

Co-Chairman, Steering Committee, 1995 SPE Forum Series in Asia Pacific on "Challenges in Gas Reservoir Management"

Member, Program Committee for the 1993, 1995 and 1997 SPE Asia Pacific Oil and Gas Conference, (Singapore, Kuala Lumpur).

Chairman, PETRONAS Geo-sciences Committee on Resource Evaluation and Nomenclature Standardization.

1988 - 1990:

Chairman, Technical Advisory Committee on Petroleum Engineering Research 8 Development, Petroleum Research Centre, Tripoli.

1981 - 1985:

Official Judge, Calgary Youth Science Fair, City of Calgary, Alberta.

1983 - 1985:

Recipient, Natural Sciences and Engineering Research Council of Canada (NSERC) Grant on Innovative Technology Transfer and Training for co-operative students and graduates.

1981 - 1985:

Member, Peer Review Committee, Natural Sciences and Engineering Research Council of Canada. One of the 5 APEGGA nominees on the NSERG Review Committee.

1979/80:

Member, Board of Postgraduate studies, Faculty of Technology (Petroleum Engineering), University of Ibadan, Nigeria.

May - Dec. 1976:

Member, Admission Requirements Committee, General Faculties Council, University of Alberta, Edmonton, Alberta, Canada.

Oct 1975 - June 1976:

Member of the Selection Committee, Ocean of Engineering, University of Alberta, Edmonton, Alberta, Canada.

1973/74 and 1975/76

Executive Council, Graduate Students Association, University of Alberta, Edmonton, Alberta, Canada.

H. MEMBERSHIP OF PRQFESSIONAL LEARNED SOCIETIES:

- Distinguished Member (1995) Society of Petroleum Engineers International
- Petroleum Society of the Canadian Institute of Mining and Metallurgy.
- The Association of Professional Engineers, Geologists and Geophysicists of Alberta, APEGGA
- American Society for Engineering Education.
- American Association for the Advancement of Science.
- Canadian and International Rock Mechanics Association
- Networking Member, Commonwealth PARTNERSHIP for Technology Management
- Distinguished Member, New York Academy of Sciences

I. HOBBIES AND INTERESTS:

Listening to Classical Music.

Ballet and Operas (Sponsor of Southern Alberta Opera Association)

International Affairs (discussion and analysis of current affairs)

Travelling

Sports (Soccer) Enthusiast

J. UNPUBLISHED REPORTS:

Egbogah, E.O. (1973) "Blueberry Mississippian Field, British Columbia, Canada-A Performance Review," Internal Report, Pacific Petroleums Ltd., Calgary, Alberta, Canada, 57 pages.

Egbogah, E.O. (1974) "Oil and Gas Industry in the U.S.S.R. - An Appraisal", Confidential Report, Oil and Gas Division, Department of Indian and Northern Affairs, Ottawa, Ontario, Canada, 52 pages.

Egbogah, E.O. (1982), Preliminary Assessment of Enhanced Oil Recovery Possibilities, Miri Field, Sarawak, Malaysia; Report prepared for Petroliam Nasional Berhad (PETRONAS), March 1982.

Egbogah, E.O. (1982), A Preliminary Data Review of The Nido Field Development, Offshore N.W. Palawan, Philippines; Report prepared for Bureau of Energy Development, Ministry of Energy, Republic of The Philippines, November 1982.

Egbogah, E.O. (1987), General Guidelines for EOR Project Planning, Design and Implementation in Libyan Reservoirs, National Oil Corporation, Tripoli, Libya.

Egbogah, E.O. (1991), Dulang Field; Preliminary Considerations for Monitoring, Surveillance and Reservoir Management, PETRONAS Carigali Sdn Bhd, Kuala Lumpur, Malaysia.

Egbogah, E.O. et al. (1992), Marginal Field Development Study (Malong, Sotong, Anding Fields, Malaysia). Page 19.

Egbogah, E.O. (1993), Organizational Structure and Delineation of Responsibilities between Central and Area Petroleum Engineering Depts., PETRONAS Carigali Sdn Bhd, A Study Report. (July 1993).

Egbogah, E.O. (1994), Strategic Technology Plan for PETRONAS Carigali Sdn Bhd 1995-2000.

Egbogah, E.O. et.al. (1995), Dulang Unit Area Development: Water Injection/Gas Injection Reservoir Management Plan.

Plus more than forty major engineering reports for client oil companies and research organizations.

K. PUBLICATIONS:

- 89) Egbogah, E O (2008) "Radiation Safety in the Petroleum Industry" Keynote Address, Conference on Radiation Safety in the Petroleum Industry organized by the National Institute for Radiation Protection & Research, Nigerian Nuclear Regulatory Authority in collaboration with the International Atomic Energy Agency, Hotel Presidential, Port Harcourt, 28 July -1 August 2008.
- 88) Egbogah, E O (2008) "Energy Security of Supply and Demand: Nigeria's Perspectives and Challenges" OTC 2008 Energy Roundtable, Houston, Texas, May 7, 2008.
- 87) Egbogah, E O (2008) "The Nigerian Gas Master Plan: Implementing Successful Gas Infrastructure Blueprint-Comparative Analysis on Global Best Practice" Buja, April 2008.
- 86) Egbogah, E O (2008) "Malaysian Reform Lesson for Nigeria" presented at the Business Law Conference of the Nigerian Bar Association Business Law Section, Transcorp Hilton Hotel, Abuja, March 26, 2008.
- 85) Egbogah, E O (2008) "The Nuclear Electricity Component to the Nigerian 20-2020 Ambition" being a Plenary Lecture at the Opening Ceremony of the 2nd National Seminar on the Legislative and Regulatory Requirements for a Successful Nuclear Power Programme: Transcorp Hilton Hotel, Abuja, march 17-20, 2008.
- 84) Egbogah, E O (2008) "Nigerian Energy Crisis: Any Silver Bullet Power & Gas Supply Challenges" presented at the Institute of Directors Business Luncheon, Golden Gate Restaurant, Lagos, March 18, 2008
- 83) Egbogah, E O (2008) "Nigeria's Oil & Gas Industry and Vision 20 2020" Aret Adams memorial Lecture, Metropolitan Club, Lagos, February 2008.

- 82) Egbogah, E O (2008) "New Gas Geopolitics: security vs Markets Developing Nigeria's Gas Market" special presentation at the CERAWEEK Conference, Houston, TX, USA February 13, 2008.
- 81) Egbogah, E O (2007) "Gas Flare Out Deadline- Evolving a Win-Win Scenario through Continuous Engagement" a Keynote Address at the Nigeria Energy Digest 6th National Conference on Gas Development and Utilization in Nigeria, Eko Hotel & Suites, Lagos, October 23, 2007.
- 80) Egbogah, E O (2007) "Oil & Gas and the Future of Nigeria: Opportunities, Challenges, Roadmap to Development" presented at the 1st Abuja Petroleum Roundtable, Transcorp Hilton Hotel, Abuja, Nigeria, March 8, 2007.
- 79) Egbogah, E O (2007) "The Role of Science and Technology in National Development: The Miracle of Malaysia and the Promise for Nigeria" presented at the 1st National Technology Fair, Bells University of technology, Ota, Nigeria, March 5, 2007.
- 78) Egbogah, E O (2007) "The Role of Technology in National Development" Talent and Technology Journal, Society of Petroleum Engineers, p April 2007
- 77) Egbogah, E O (2006) "The Great Oil and Gas Reserves Potential of Nigeria", Nigeria's Oil & Gas Monthly, October 2006, p28.
- 76) Egbogah, E O (2006) "Gulf of Guinea: The New Frontier in Global Hydrocarbon Supply" An Invited Paper delivered at the Annual Legislative Conference, The Congressional Black Caucus, United States Congress, Washington DC, September 8, 2006.
- 75) Egbogah, E O (2006) "Fifty Years of Petroleum Exploitation in Nigeria" 1st Emmanuel Egbogah Lecture Series on Petroleum Policy and Strategy, Institute of Petroleum Studies, University of Port Harcourt, Nigeria, March 27, 2006
- 74) Egbogah, E O (2005) "Nigerian Oil Reserves: Are they Understated?" A 5th Anniversary Lecture of the Centre for Petroleum Information, presented at the Nigerian Institute of International Affairs, Lagos, Nigeria, November 16, 2005.
- 73) Frederick Cedoz, Paul Michael Wihbey, E O Egbogah et al (2005) "Breaking the Oil Syndrome: Responsible Hydrocarbon Development in West Africa" Congressional Black Caucus Foundation, Inc, Center for Policy Analysis and Research, Washington DC, July 2005.
- 72) Egbogah, E O (2004) "Setting Realistic and Measurable Nigerian Content Target and Metrics," presented at Stakeholders Seminar on Nigerian Content Development in the Upstream Sector of the Petroleum Industry, Abuja, Nigeria, march 24-25, 2004.

- 71) Egbogah, E O (2003), "Growing Oil and Gas Reserves, Production and Technology: impact on a Growing Economy," presented at the 27th Nigeria Annual International Conference & Exhibition of the SPE, Abuja, Nigeria, August 04, 2003.
- 70) Egbogah, E O (2003), "Technology Enhancement for the Petroleum Industry," ThisDay Vol 9 No 2977, page 31, June 24, 2003
- 69) Egbogah, E O (2003), "Cost Reduction Initiatives: Models for Nigeria's Petroleum Industry," Thisday, Vol 9, No 2970, page 27, June 10, 2003.
- 68) Egbogah, E O (2003), "Sustaining Growth in Oil and Gas Industry: The Malaysian Model," ThisDay, Vol9 No 2963, page 31, June 3, 2003.
- 67) Wihbey P M, Egbogah, E O et al (2002) "African Oil: A Priority for U.S. national Security and African Development" U.S Energy Policy White Paper produced by African Oil Policy Initiative Group formally accepted (January 2002) by the U.S Congress and the U S Department of Energy, published June 2002.
- 66) Egbogah, E 0 (1998), "Integrated Petroleum Asset Management at PETRONAS Carigali," Petromin, September 1998,
- 65) Egbogah, E 0 (1997), "Reducing Field Development and Reservoir Management Uncertainties in Freshwater Environments through Advanced Coring and Core Analysis," presented at the SPE Annual Technical Conference & Exhibition, San Antonio, Texas, Oct.1997
- 64) Egbogah, E 0 (1997), "Reservoir Management Practices at PETRONAS Carigali," The RESOURCE, August 1997
- 63) Amaefule, J.O., Njoku, F.A., Egbogah, E.O., Keelan, D.K., Rasolovoahangy, R.E. and Udegbunam, E.O. (1997), "Mature Niger Delta Reservoirs: Integration of Core and Log Data for Flow Unit Zonation and Permeability Prediction", SPENC Paper 9705, presented at the 1997 SPE Nigeria Council Annual International Conference held in Port Harcourt, Nigeria, 20-22 August 1997.
- 62) Egbogah, E. O. and Amaefule, J.O. (1997), "Reducing Field Development and Reservoir Management Uncertainties in Low-Resistivity, Low-Contrast Reservoir Environments through Advanced Coring and Core Analysis," SPENC Paper 9704, presented at the 1997SPE Nigeria Council Annual International Conference held in Port Harcourt, Nigeria, 20-22 August 1997.
- 61) Abdul Jail Zanily, Egbogah, E.O. et al., "An Integrated Approach to Petroleum Resources Definitions, Classification and Reporting," paper SPE 38044 presented at the SPE Asia Pacific Oil 8 Gas Conference and Exhibition, Kuala Lumpur, Malaysia (April 14-16).

- 60) Sawabini, C.T. and Egbogah, E.O. (1997), "Reservoir Management Key Performance Indicators," paper SPE38091 presented at the SPE Asia Pacific Oil & Gas Conference 8 Exhibition, Kuala Lumpur, Malaysia (April 14-16)
- 59) Egbogah, E.O. and Zarool Hassan T. Amar (1997), "Accurate Initial/Residual Saturation Distribution Reduces Uncertainty in Further Development and Reservoir Management of the Dulang Field, Offshore Peninsular Malaysia," paper SPE 38024 presented at the SPE Asia Pacific Oil and Gas Conference & Exhibition, Kuala Lumpur, Malaysia (April 14-16).
- 58) Egbogah, E.O. 91996), "Managing Waterfloods," The Journal of Petroleum Technology, December 1996, p1129.
- 57) Yunan, M.H., Idris, A.K. and Egbogah, E.O. (1996) "Mobilization of Oil by Immiscible Displacement at Non-Uniform Wetting Conditions", poster presentation at the 4th International Symposium on Evaluation of Reservoir Wettability and Its Effect on Oil Recovery, Montpellier, France, 11-13 September 1996
- 56) Egbogah, E.O. (1996), "Smart Partnerships for a Win-Win Approach", The RESOURCE, vol. 4 No 1 PP7-10.
- 55) Karra, S., Egbogah, E.O. and Yang, F.W. (1995) "Stochastic and Deterministic Reserves Estimation in Uncertain Environments," paper SPE 29286 presented at the SPE Asia Pacific Oil and Gas Conference & Exhibition, Kuala Lumpur, Malaysia (March 20-22).
- 54) Hassan, Z., Egbogah, E.O. and Nurdin, A.R. (1995) "Core-Log Data integration for Improved Formation Evaluation in the Dulang Field, Offshore Peninsular Malaysia," paper SPE 29262 presented at the SPE Asia Pacific Oil and Gas Conference 8 Exhibition, Kuala Lumpur, Malaysia (March 20-22).
- 53) Hovdestad, W.R. and Egbogah, E.O. (1995) "Integrated Approach to Natural Gas Utilisation in the Asia Pacific Region," paper SPE 29253 presented at the SPE Asia Pacific Oil and Gas Conference 8 Exhibition, Kuala Lumpur, Malaysia (March 20-22).
- 52) Yunan, M.H, Idris, A.K. and Egbogah, E.O. (1995) "Microstructure and Mobilization Mechanism of Residual Oil in Different Wetting Conditions", paper SPE 029005, presented at the SPE International Symposium on Oilfield Chemistry, San Antonio, Texas, USA, Feb. 14-17, 1995.
- 51) Egbogah, E.O. (1994) "EOR Target Oil and Techniques of its Estimation," J. Pet. Sci. Eng., 10 (1994) 337-349
- 50) Egbogah, E.O. (1994) "The Role of Technology in the Oil and Gas Industry,"

The RESOURCE, vol. 2, Issue No 2, pp 8-12

- 49) Egbogah, E.O., W.R. Hovdestad, D.M.Anwar Raja and M.Ekrami Daud (1994) "A Systems Approach to Enhanced Oil Recovery Planning in Malaysia," paper SPE 27771 presented at the Ninth Symposium on Improved Oil Recovery Tulsa, Oklahoma (April 17-20).
- 48) Egbogah, E.O., S. Chandramohan and Mohd Khalid Embong (1993) "A Synergistic Approach to the Development of the Dulang Field, Offshore Peninsular Malaysia," paper SPE 25335 presented at the 1993 SPE Asia Pacific Oil & Gas Conference 8 Exhibition, Singapore, (February 8-10).
- 47) Hussain, A., Egbogah, E.O., and Hovdestad, W.R. (1992) "Reservoir Management of the Dulang Field, Offshore Peninsular Malaysia: The Heuristic Approach," paper SPE 25012 presented at the SPE European Petroleum Conference, Cannes, France (16-18 Nov.1992).
- 46) Egbogah, E.O., et. al (1992) "Integrated Multi-Disciplinary Approach to Field Development: The Case of the Dulang Field, Offshore Peninsular Malaysia," paper No CIM 92-65 presented at the 43rd Annual Technical Meeting, Petroleum Society of CIM, Calgary, Alberta, Canada, June 7-10.
- 45) Egbogah, E.O. and Ng, J.T. (1990) "An Improved Temperature- Viscosity Correlation for Crude Oil Systems," J.Pet.Sci.Eng., 4:197-200. Also In: Craft & Hawkins, *Applied Petroleum Reservoir Engineering* (2nd Editio1994) by B C Craft and M Hawkins, pp40-44.
- 44) Egbogah, E.O. (1990) "Enhanced Oil Recovery Target Reserves and Techniques of Their Estimation," Proceedings, 1st Technical Symposium on EOR in Libya, Tripoli, May 1 L 2, pp. 12-24.
- 43) Egbogah, E.O., Misellati, A.A. and Krekshi, F.M. (1990) "Enhanced Oil Recovery in Libya," Petroleum Research Journal Vol. 2 1990, pp. 5-11.
- 42) Egbogah, E.O. (1990) "Technology for Petroleum Resource Exploitation," Khalil, T.M. and Bayraktar, B.A. (Editors) Management of Technology II The Key to Global Competitiveness, Proceedings of the Second International Conference on Management of Technology. Miami, Florida, U.S.A., Feb. 28 March 2.
- 41) Egbogah, E.O. (1989) "African Energy Project," Industry 8 Profession DIALOG, JPT (Dec. 1989) 1303
- 40) Egbogah, E.O., Krekshi, F.M and Misellati, A.A. (1988) "Prospects for Carbon Dioxide Utilisation for EOR Projects in Libya," proceedings of International

- Conference on Gas Exploitation and Utilisation in APPA Countries, Misurata, Libya, October 24-26.
- 39) Egbogah, E.O. (1987) "Preliminary Considerations for Enhanced Oil Recovery in Nigeria," paper SPEN 8701, Proceedings of 11 Annual International Conference, Society of Petroleum Engineers Nigeria Section, Warri, Nigeria, August 6-8, pp 19-25.
- 38) Egbogah, E.O. (1987) "The Concept of Relative Ganglion Velocity and Generalization to Oil Bank Movements in Porous Media," SPE Reservoir Engineering, November, pp.671-676.
- 37). Smith, M.J., Egbogah, E.O., Clark, G.J. and Hendrickson, A.R. (1986), "Acidization of Dirty Sandstones with Buffered HF Acid Systems," Paper SPE 14826 presented at the 1986 SPE Symposium On Formation Damage Control, Lafayette, Louisiana, Feb. 26-27, 1986.
- 36) Egbogah, E.O., White, L.C. and Mirkin, M.I. (1985) "Steam Stimulated Enhanced Oil Recovery by Oilflo," paper presented at the Lloydminster and District Heavy Oil Section of the Petroleum Society of CIM, Heavy Oil and Production Operations and Facilities Seminar, Lloydminster, Alberta, November 5-7, 1985.
- 35) Egbogah, E.O., Clark, G.J., Smith, M.J., and Mungan, N. (1985) "Waterflooding: The Graded Chemical Concentration Approach", Paper No. 85-36-5, presented at the 36th Annual Technical Meeting of the Petroleum Society of CIM, Edmonton, June 2-5, 1985, Conference Proceedings, pp. 37-56.
- 34) Egbogah, E.O. 91S85) "Tapered Chemical Injection Process: A New Waterflood Method For Water-Sensitive Reservoirs," paper No. 4 presented at Enhanced Recovery Week's Conference on Chemical EOR, Denver, Colorado, May 13-14, 1985.
- 33) Smith, M.J., Egbogah, E.O. and Clark, G.J. (1985) "Aspects of Fines Removal from Petroleum Reservoirs", Paper No. 39, presented at the 87 CIM Annual General Meeting, Vancouver, British Columbia, Canada, April 21-25, 1985
- 32) Egbogah, E.O. and Dawe, R.A. (1985) "Spontaneous Emulsification Aspect of Enhanced Oil Recovery", J. Chem. Tech Biotechnol. 35A, pp. 132-144.
- 31) Egbogah, E.O. (1985) "Research into Enhanced Oil Recovery Technologies," J.Can. Pet. Tech., Jan-Feb. 1985, pp. 71-72.
- 30). Egbogah, E.O. and King, F.W. (1984) "Enhanced Oil Recovery

- Considerations for Ontario," Proceedings, 23rd Annual Conference of the Ontario Petroleum Institute, Toronto, Ontario, Oct. 21-23, 1984.
- 29). Haverslew, B.C., Reichenbach, M.E., Gordon, A.A. and Egbogah, E.O. (1984) "The Viking Formation: Reservoir Quality Analysis," IEL Engineering Ltd., Calgary.
- 28). Egbogah, E.O. (1984) "An Effective Mechanism for Fines Movement Control in Petroleum Reservoirs, "Paper No. 84-35-16, presented at the 35th Annual Technical Meeting of the Petroleum Society, Calgary, June 10-13, Conference Proceedings, pp. 269-282
- 27) Egbogah, E.O. and Ng, J.T.H., An Improved Temperature-Viscosity Correlation for Crude Oil Systems, Paper No. 83-34-32, presented at the 34th Annual Technical Meeting of the Petroleum Society of CIM un Banff, May 11-13, 1983.
- 26) Egbogah, E.O. (1981) "Technology for Mineral Resource Exploitation and Development: An Integrated Systems Approach", Proceedings of Symposium on Development of Indigenous Technology, organized by Ministry of Science and Technology, Anambra State of Nigeria, Enugu, Nigeria, Oct. 29-31, 1981.
- 25) Egbogah, E.O., Wright, R.J. and Dawe, R.A. (1981) "A Model of Oil Ganglion Movement in Porous Media", paper SPE 10115 presented at SPE 56th Annual Technical Conference and Exhibition, San Antonio, Texas, Oct. 4-7, 1981.
- 24) Egbogah, E.O. and Moneme, P.C. (1981) "The Significance of Mining Industry in Nigeria's Fourth (1980-85) National Development Plan", World Mining, July 1982.
- 23) Egbogah, E.O. and Dawe, R.A. (1981) "Spontaneous Emulsification Aspect of Enhanced Oil Recovery", paper No. 81-32-40 presented at t 32nd Annual Technical Meeting of The Petroleum Society of CIM, Calgary, Alberta, Canada, May 3-6, 1981.
- 22) Egbogah, E.O. and Dawe, R.A. (1980) "Microvisual Studies of Size Distribution of Oil Droplets in Porous Media", Bulletin of Canadian Petroleum Geology, Vol. 28, No. 2, p.200-210.
- 21) Egbogah, E.O. and Dawe, R.A. (1980) "The Role of Spontaneous Emulsification in Enhanced Oil Recovery", paper SPE 80N411, presented at the SPE 4th Annual Symposium of the Lagos Nigeria Section, August 6-8, 1980.
- 20) Egbogah, E.O. (1980) "Enhanced Oil Recovery Prospects for Nigeria", paper presented at the 16th Annual Technical Conference of the Nigerian Mining and Geosciences Society, Lagos, April 14-18, 1980.

- 19) Egbogah, E.O. and Lambert-Aikhionbare, D.O. (1980) "Possible New Oil Potentials of the Niger Delta", The Oil and Gas Journal, April 14, 1980, p.176-184.
- 18) Egbogah, E.O. and Lambert-Aikhionbare, D.O. (1979) "Current Mining Activities in Nigeria", World Mining Encyclopedia, July 1979, .177-179.
- 17) Egbogah, E.O. "Mechanisms of Residual Oil Mobilization in Porous Media", Ph.D. Thesis, University of London, (Imperial College), 1979.
- 16) Egbogah, E.O. and Oronsaye, W.I. (1979) "Nigerian Oil's Future Prospects Seen Keyed to Government Policies", The Oil and Gas Journal, vol. 77, No. 24, June 11, 1979, p.96-104 and OPEC Bulletin Vol. X, 24/25, pp.1-14.
- 15) Egbogah, E.O. (1978) "Nigeria Looks to Gas for a Solution to its Problems" World Oil November, 1978, pp. 144-148, and OPEC Bulletin, Vol. IX, p.4-7.
- 14) Dawe, R.A., Egbogah, E.O. and Wright, R.J. (1978) "Models of Two Phase Flow in Porous Media", Proceedings of 2nd European Symposium on Enhanced Oil Recovery, held at the Institute of Offshore Engineering, Heriot-Watt University, Edinburgh, July 5-7, 1978, p.289-302
- 13) Dawe, R.A. and Egbogah, E.O. (1978) "Recovery of Oil from Petroleum Reservoirs", Contemporary Physics, Vol. 19, No. 4, July 1978, p.355-376.
- 12) Egbogah, E.O. (1978) "Vast Oil, Gas Potential Seen in USSR North" The Oil and Gas Journal, Vol. 76, No. 7, February 13, 1978, p. 138-141.
- 11) Egbogah, E.O. and Peters, E.J. (1977) "The Importance of U.S.S.R. North in the Total Soviet and World Energy Supply System", Proceedings of the International Conference on Energy in the U.S.S.R. and Eastern Europe, Edmonton, Canada, May 27-29, 1977, 57 pages.
- 10) Egbogah, E.O. (1976) "Interfacial Properties of Certain Crude Oils in Presence of Chemically Treated Waters", SPE Unsolicited Paper No. SPE 6497, 28 pp (Dec. 1976).
- 9) Egbogah, E.O. (1976) "Training of Nigerian Petroleum Engineers", TECHNOS, Journal of the International Division of the American Society for Engineering Education, Vol. 5, No. 3, July September 1976, p.29-40.
- 8) Egbogah, E.O. (1975) "Russia's Long-Term Oil Prospects Lie in Siberian Basin Development," Part II, The Oil and Gas Journal, Vol. 73, No. 51, December

- 22, 1975, p.74-86.
- 7) Egbogah, E.O. (1975) "Russia's Long-Term Oil Prospects Lie in Siberian Basin Development", Part I, The Oil and Gas Journal, Vol. 73, No. 50, December 15, 1975, p.98-102.
- 6) Egbogah, E.O. "Interfacial Properties of Heavy Crudes in the Presence of Chemically Treated Waters", M.Sc. Thesis, University of Alberta, 1975.
- 5) Egbogah, E.O. (1975) "Technical and Professional Training of Petroleum Engineers in Nigeria", Proceedings of the 11th Annual Technical Conference of the Nigerian Mining, Geological and Metallurgical Society, held at the University of Nigeria, Nsukka, July 9 12, 1975.
- 4) Egbogah E 0 (1975) "Height Distribution of West African Bauxites as an Index of Neogene Tectonism", Journal of Mining and Geology, Vol. 10, Nos. 1 and 2, May 1975, p.1-14.
- 3) Egbogah, E.O. (1972) "Career in Petroleum Engineering", Occasional Publication, Department of Geology, Petroleum Technology Section, University of Ibadan, Nigeria.
- 2) Egbogah, E.O. "Geological Structure and Final Exploration of the 5th and 6th Horizons of the Akhtirsk-Bugundirsk Oilfield, Krasnodar Region, U.S.S.R." M.Sc. Thesis, Friendship University Moscow, 1969.
- 1) Julio, R.G. and Egbogah, E.O. (1968) "Similarities in Geological Structure between the Gulf of Guinea and East Atlantic Coast of Brazil (Bahia)" Proceedings of the 3rd Technical and Scientific Conference of the Faculty of Engineering, Friendship University, Moscow.

L. MAJOR TECHNICAL PRESENTATIONS:

- 1. Time and Space in Stratigraphy, Dept. of Educational Services, City University of New York, Brooklyn, N.Y., February 1971.
- 2. On the PreCambrian-Cambrian Boundary Problem, Dept. of Geological Sciences, McGill University, Montreal, March 1971.
- 3. Continental Drift: Fact or Fiction, TV Symposium (8th International Geological Congress, Montreal, August 1972).
- 4. Interfacial Properties of Certain Alberta Crudes in the Presence of Chemically Treated Waters, Petroleum Engineering Seminar, University of Alberta, Fall, 1974.

- 5. Technical and Professional Training of Petroleum Engineers in Nigeria, 11th Annual Technical Conference of Nigerian Mining, Geological and Metallurgical Society, University of Nigeria, July 1975.
- 6. Character and Causes of Residual Oil, Petroleum Engineering Seminar on Reservoir Physics, Royal School of Mines, Imperial College, Price Consort Road, London, Feb. 1978.
- 7. Model of Two-Phase Flow in Porous Media, 2nd European Symposium on Enhanced Oil Recovery, Institute of Offshore Engineering, Heriot-Watt University, Edinburgh, July, 1978.
- 8. Enhanced Oil Prospects for Nigeria, 16th Annual Technical Conference of the Nigerian Mining and Geosciences Society, Lagos, April 1980.
- 9. Enhanced Oil Recovery Aspects of Spontaneous Emulsification, 32nd Annual Technical Meeting of the Petroleum Society of CIM, Calgary, May 1981.
- 10 Interactive Geology and Engineering in Hydrocarbon Reserves Evaluation, Industry Seminar, AGAT Consultants Ltd., Calgary, July 1981.
- 11. A Model of Oil Ganglion Movement in Porous Media, 56th SPE Annual Technical Conference and Exhibition, San Antonio, Texas, October 1981
- 12. Technology for Mineral Exploitation in Nigeria: A Systems Approach, Symposium on Development of Indigenous Technology, Enugu, Nigeria, October 1981.
- 13. Fundamental Aspects of Formation Damage and Well Stimulation, Amerigo Technology Centre, Calgary, May 1983.
- 14. An Improved Temperature-Viscosity Correlation for Crude Oil Systems, 34th Annual Technical Meeting of the Petroleum Society of CIM, Banff, May 1983.
- 15. Mechanics of Particle Movement and Pore Plugging in Petroleum Reservoirs, 35th Annual Technical Meeting of the Petroleum Society of CIM, Calgary, June 1984.
- 16. Enhanced Oil Recovery Possibilities for Ontario, 23rd Annual Conference of the Ontario Petroleum Institute, Toronto, October, 1984.
- 17. Steam-Stimulated Enhanced Oil Recovery by Steam-Bearing Additives, at the Lloydminster and District Heavy Oil and Production Operations Seminar, Lloydminster, Alberta, November 6, 1985.

- 18. Technology for Petroleum Resource Exploitation, at the Second International Conference on Management of Technology, Miami, Florida, March 1, 1989
- 19. Enhanced Oil Recovery Target Reserves and Techniques of their Estimation, at the 1st Technical Symposium on EOR in Libya, May 1, 1990.
- 20. Residual Oil Saturation and Techniques of its Determination to aid Field Development Planning, at Esso Production Malaysia Inc., Kuala Lumpur, Malaysia, Nov. 30, 1992., Sarawak Shell Berhad, March 23, 1993; LEMIGAS Pertamina, Indonesia, Nov. 21, 1994.
- 21. Worldwide Reservoir Management Practices, A Keynote Address delivered at SPE Forum on Reservoir Management, Kota Kinabalu, Malaysia, Nov 18, 1993.
- 22. A Systems Approach to EOR Planning in Malaysia, at 9th DOE/SPE Symposium on Improved Oil Recovery, Tulsa, Oklahoma, April 19, 1994.
- 23. Aspects of Water Injection into a Waxy-Crude Oil Reservoir, Keynote presentation at the 1996 SPE Forum on Production and Handling of Waxy Crudes/Condensates, Bali, Indonesia, May 20, 1996; and SPE Luncheon Talk, SPE Terengganu Section, Kerteh, Malaysia, August 14, 1996.

M. INVITED LECTURES/SEMINARS:

February 14, 1979: "Mechanisms of Residual Oil Mobilization in Porous Media" at ESSO Production RESEARCH DIVISION, 339-50 Avenue S.E., Calgary, Alberta, Canada.

February 22, 1980: "Mechanics of Ganglion Movement in Porous Media" at Department of Chemical and Petroleum Engineering, The University of Calgary, Alberta, Canada.

December 4, 1980: "A Model of Oil Ganglion Movement in Porous Media" at Research Centre, AMOCO PRODUCTION COMPANY, Tulsa, Oklahoma, U.S.A.

December 5, 1980: "Mechanisms of Residual Oil Entrapment and Mobilization in Porous Media' at GEOCHEM RESEARCH INC., Houston, Texas, U.S.A.

March 9/10, 1983: "Reservoir Sensitivity at Prudhoe Bay Field, Alaska: A Joint Engineering and Geological Assessment", at The STANDARD OIL CO (Ohio) Research Centre, 440 Warrensville Centre Road, Cleveland, Ohio, U.S.A.

February 21/22, 1984: "Reservoir Sensitivity and Completion Procedures in the Austin Chalk Trend", at SEA ROC OIL COMPANY, San Antonio, Texas, U.S.A.

May 13/14, 1985: "Amflo Tappered Chemical Injection Process," Enhanced Oil Recovery Week's Conference on Chemical EOR, Denver, Colorado, U.S.A.

July 13/14, 1990: Planning and Management of a Waterflood Project," Petroleum Engineering Department, PETRONAS CARIGALI SDN BHD, Kuala Lumpur, Malaysia.

August 05, 1992: "The Science and Technology of Core Analysis," at PETRONAS Carigali Sdn Bhd, Wisma Peladang, Kuala Lumpur, Malaysia

Nov. 30, 1992 "Residual Oil Saturation and Techniques of Its Determination to aid Field Development at Esso Production Malaysia Inc (EPMI), Kompleks Antarabangsa, Kuala Lumpur, Malaysia.

Same Topic also presented as follows:

March 17, 1993 at Sarawak Shell Berhad, Lutong, Sarawak, Malaysia.

March 18, 1993 at the Petroleum Engineering Dept, Baram Delta Operations, Miri, Sarawak, Malaysia.

Nov 18, 1993: "Worldwide Reservoir Management Practices," A Keynote Address for the SPE Forum on Reservoir Management of Malaysian Petroleum Reservoirs, Kota Kinabalu, Sabah, Malaysia.

Nov 21, 1994: "Initial/Residual Hydrocarbon Saturation Determination: An Aid to Field Development Planning and Reservoir Management, Research and Development Centre for Oil and Gas Technology, PPTM "LEMIGAS", Jakarta, Indonesia, November 21, 1994.

May 20, 1996: "Reservoir Engineering Aspects of Water Injection into a Waxy-Crude Oil Reservoir," An invited presentation at the 1996 SPE Forum Series in Asia Pacific on Production and Handling of Waxy Crudes/Condensates, Bali Hilton International, Nusa Dua, Indonesia.

Reservoir Management: Principles & Practices, presented at the SPE Applied Technology Workshop Series on **Effective/Practical Reservoir Management**"

May 1997: Kuala Lumpur, Malaysia October 1997: Bandung, Indonesia

May 1998: Lagos, Nigeria

August 1998: Brunei

April 4, 1998: Benefits of Multidisciplinary Team Approach to Field Development Planning & Reservoir Management, Chiba, Tokyo, Japan **August 23-27, 1999**: Increasing Oil Recovery from High water-Cut

Reservoirs, SPE Applied Technology Workshop on Daqing Oilfield, Daqing, China.

February 27 – March 1, 2000: Developing and Managing Marginal Fields, SPE Applied Technology Workshop, Terengganu, Malaysia.

August 6, 2001: Developing and Managing Local Content in the Oil & Gas Industry in Nigeria, SPE Nigeria Council International Conference, Abuja, Nigeria.

August 7. 2002: Critical Issues in Deepwater Developments in Nigeria, SPE Nigeria Council International Conference, Abuja, Nigeria

December 16, 2005: "Nigerian Oil & Gas Reserves – Are they Understated?" A 5th Anniversary Lecture of the Centre for Petroleum Information, presented at the Nigerian Institute of International Affairs, Lagos, Nigeria, December 16, 2005.