Editor’s Comment

I introduce the fifth issue ((2013) Vol. 3 No. 2 PTDJ) of our journal. Since we changed name in 2011 from Petroleum Training Journal (PTJ) to Petroleum Technology Development Journal (PTDJ) following the transfer of the journal to Nigeria's Petroleum Technology Development Fund (PTDF), researchers and writers from other countries including countries in Middle East and Europe have shown increasing interest in the journal. Furthermore, we allow free download of articles on our website www.ptdjournal.com. This makes the website quite attractive to petroleum industry professionals, researchers and students. Indeed I am humbled when I look back over our progress and the caliber of diverse writers and assessors we have attracted over these few years. For me and the Editorial Board, this provides the motivation and determined commitment to sustain the highest standard as the leading and authoritative petroleum industry technology development journal.

In this issue, Dr. Aaron E. Auduson of the Department of Earth Sciences, Kogi State University, Anyigba, Nigeria in the paper Integrated AVO and Rock-physical Analyses Calibrated on the Triassic Volpriehausen Formation, Southern North Sea, deals with one of the exploration challenges in the Southern North Sea gas field which has been attributed to salt-plugging into the hydrocarbon reservoir spaces. The study “aims to gain better insight into the (subtle) differences in seismic response induced by water, gas or salt-fill scenario.” The approach adopted by the author is by studying the seismic response at various existing wells in one of the fields and the corresponding seismic responses of the processed 3D seismic survey. It is expected that the results of this study would lead to an improved characterization of the Buntsandstein reservoirs and to a higher success rate in drilling.

In the paper titled Investigation of Inflow Performance Relationship in Gas Reservoirs for Vertical and Horizontal Wells, Adel M. Salem Ragab, Assistant Professor of Petroleum Production Engineering, American University in Cairo (AUC), and Shedid A. Shedid, Professor of Reservoir Engineering, British University in Egypt, Cairo, Egypt, evaluate the well performance of horizontal wells and compare it to that of vertical wells. Using the same drainage areas and similar fluid properties, they evaluate and compare the well productivity and Inflow Performance Relationship (IPR) for both vertical and horizontal wells for steady-state flow of compressible and incompressible fluids. They evaluate current models for both types of vertical and horizontal wells to stress their strengths and weaknesses. They then calculate the replacement ratio of horizontal well to vertical well and perform a sensitivity analysis on common variables before comparing and evaluating the vertical and horizontal well flow equations.

Nigeria still depends on petroleum for most of its foreign earnings. All of the country’s current petroleum production is from the River Niger delta basin. However, the country has other sedimentary basins that have potentials for petroleum (oil and gas) similar to genetically related contiguous basins in the neighbouring counties of Chad Republic and Niger Republic as well as not too far away Sudan. These other basins are the Benue Trough, Anambra, Bida, Borno, Dahomey and Sokoto basins. In two separate papers, Nuhu G. Obaje, Professor of Geology, Department of Geology & Mining, IBB University, Lapai, Niger State, Nigeria working with two separate teams further explore the prospect of finding oil and gas in the Bida and Sokoto basins. They provide valuable update of technical knowledge on the potentials for finding and producing petroleum in the two frontier inland basins.

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1 About 95% of the country’s foreign earnings come from petroleum resources.
In the paper on **Preliminary Integrated Hydrocarbon Prospectivity Evaluation of the Bida Basin in North Central Nigeria** Professor Nuhu G. Obaje, and his team on the Bida Basin describe the basin and its formations, and explain that “all geological maps available on the Bida Basin had lumped the sediments in the basin as one undifferentiated Nupe Sandstone, making it impossible to infer the prospectivity of the basin for hydrocarbon exploration.” They assert that the delineation of inferred boundaries between the formations in the basin is a significant initial criterion in evaluating the hydrocarbon prospectivity. The paper is an institutional research project involving preliminary geological mapping and complete prospectivity map for the basin. The combined geological and aeromagnetic maps provide the basis for detailed further prospectivity evaluation in the search for oil and gas in the basin. The prepared geological map is the first complete geological map to be produced on the Bida Basin.

Professor Nuhu G. Obaje, and his other team carried out geological mapping, geochemical analysis and aeromagnetic geophysical investigation to preliminarily assess the hydrocarbon prospectivity of the Sokoto Basin. Their paper on **The Sokoto Basin of Northwestern Nigeria: A Preliminary Assessment of the Hydrocarbon Prospectivity** is a report of their work in this regard. They assert in the paper that “The geological mapping and interpretation of the geological map indicate that the basin deepens towards the border with Niger Republic,” and that “Geochemical analysis shows that 90% of the samples examined have equal or more than the minimum limit of TOC value (0.5wt%) required to initiate hydrocarbon generation from source rocks.”

L. C. Edomwonyi-Otu, A. S. Adenowo and B. O. Aderemi of Chemical Engineering Department, Ahmadu Bello University, Zaria, Nigeria seek for a substitute for bauxite as an alumina precursor, and kaolinites clays such as white Kankara and Bauchi kaolinites in the paper **Ferric Alum Production from Brown Kankara Kaolin Clay**. The effort made in the work is aimed at studying the feasibility of producing ammonium ferric alum from brown (Kankara) kaolin clay and to ascertain its reproducibility by applying statistical instruments: range, mean, standard deviation and normal distributions to the yields of the alum.

In the paper **Project-Affected Communities/Landowners and the Distribution of Benefits in Shale Gas Development: United States’ Regime to the Rescue?** Ondotimi Songi, of The Centre for Energy, Petroleum and Mineral Law and Policy, University of Dundee, United Kingdom examines the extent to which the United States of America (USA) regime on benefit-distribution to project-affected communities and landowners can influence law and policy-making for other shale gas resource-rich regions in dealing with community/landowner expectations. The paper shows that agreement-making between communities and landowners is the likely mechanism that can shape benefit-distribution legal frameworks in shale gas resource-rich developing countries. Songi argues that while it is unrealistic to expect other shale gas rich developing countries to make provision for private ownership of minerals as in the USA, shale gas-rich developing countries can legalize benefit-distribution to communities and landowners learning from the USA experience. His caution is that agreement-making should be supported with non-legal tools such as capacity building that focuses on negotiation skills, proper representation, transparency, accountability, and revenue management.

Chibuogwu L. Eze of the Institute of Geosciences and Space Technology, Rivers State University of Science and Technology, Port Harcourt, Nigeria presents a method of ground roll reduction in three

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3 N. G. Obaje, M. Aduku, I. Yusuf
component seismic data using adaptive filters in the paper **F-K Filter and Ground Roll Suppression in the Niger Delta Area of Nigeria.** Field seismic 3-D data can often be enhanced by the application of various filters. Eze’s study investigates the design, use and result of 3-D F-K filters operating on field data in the Niger Delta of Nigeria. Velocity or F-K filters have proven to be quite useful in 3-D enhancements. The results presented in Eze’s work show successful application of F-K filter on field data and significant ground roll reduction without any dependence on spatial sampling or receiver arrays.

In **Environmental Rights (?) and Development in The Niger Delta: Incongruent Life Partners Or Reconcilable Adversaries?**, Sunday Bontur Lugard of the Department of International Law and Jurisprudence, Faculty of Law, University of Jos, Nigeria examines the impact of petroleum operations on the environment and concludes that “the unabated pollution or environmental ‘wrongs’ constitute a severe breach of environmental ‘rights’ of the host communities; the economic substance of petroleum operations to the Nigerian economy, notwithstanding”. Lugard raises “posers concerning whether rights connected with the environment are consequential, hence lacking their own legs, but lean on the socio-cultural, political rights” and he concludes that “our pursuit of development must be situated within the province of human rights protection; if corporate, human and environmental sustainability hold any value to the society.”

Dr. Aminu Hassan, Assistant Professor of Oil and Gas Accounting, Department of Accounting and Finance, College of Business Administration, Prince Mohammad Bin Fahd University, Al-Khobar, Kingdom of Saudi Arabia takes a critical look at the petroleum industry in his paper on **Review of the Global Oil and Gas Industry: a Concise Journey from Ancient Time to Modern World.** The paper relies on available literature to embark on a historical journey through the discovery, development and use of petroleum and other hydrocarbon related energy resources by humankind. The paper traces the exploration and usage of oil and gas from the ancient world down to the modern oil and gas industry which began in America and spread to other parts of the world. Hassan concludes that “so long as some alternative sources of energy are not discovered in economically large scale, hydrocarbons will continue to have their enormous dominance and influence on the world’s economy, politics and environment for many years to come.”

PTDF with its PTDJ is proud to be leading the major advancement in petroleum technology development in Africa. We are grateful to researchers who continue to send us their papers for publication. To all our anonymous external assessors and technical advisers we say thank you very much indeed for your invaluable services to the petroleum industry and to us in PTDJ.

Dr. Momodu Kassim-Momodu
Editor