

Commentary on Volume I Issue II of the Journal of Oil, Gas and Petrochemical Sciences

Dr. Ir. Yannis Dimakopoulos

Department of Chemical Engineering, University of Patras, Greece

Correspondence: Dr. Ir. Yannis Dimakopoulos, Laboratory of Fluid Mechanics and Rheology, Department of Chemical Engineering, University of Patras, Greece, Email dimako@chemeng.upatras.gr

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Editorial

Dear colleagues and readers,

The current issue of JOGPS marks the beginnings of a new and promising attempt to advance, through the cooperation of many researchers, our understanding, and knowledge on the scientific fields of oil, gas and petrochemical sciences, hoping to set a milestone on a fruitful collaboration between academia and industry.

The contents of the issue and the quality of work that has been produced, embrace the ideals of the journal and contribute significantly towards the goal of promoting well-established scientific principles in order to push the frontiers of the involved scientific fields. The works presented in the current issue are original in their content and cover a broad range of topics.

Current demands for oil resources has led the industry to explore greater depths, affecting the operational variables under which the processes take place. On the other hand, plenty of studies in the literature have attempted to capture the flow behavior of oil via rheological models and the corresponding rheological parameters are well understood, however, results of practical interest for the drilling process have not been extensively examined. This merger is achieved by the work of Ahmad et al.¹ which presents a comprehensive analysis on the dependence of rheological parameters on the major process variables, i.e., pressure and temperature. A water-based mud, “Glydrill,” is used, for that matter, as a model fluid and experiments are conducted to simulate the downhole conditions of the real process. Their work focuses on the effects of temperature and pressure on the properties of the mud, such as viscosity and yield strength. The authors ultimately present both the qualitative and quantitative effects of the process above variables to the rheological characteristics of the mud and conclude that the Bingham model can sufficiently describe the rheology of the material, especially in conditions of elevated temperature and pressure. In addition, the field of oil industry constantly meets new opportunities and thus it is necessary to evaluate the options available in terms of potential carefully. This kind of study has been conducted by Ideozu et al.² regarding the Akani Oil field structures in Eastern Niger Delta, Nigeria. The authors scrutinize the reservoir properties and sealing potential of the aforementioned structures utilizing various tools, such as seismic profiles and petrochemical analyses. According to their study, the field

has a unique morphology which adds to its complexity. They highlight both the virtues of the site in terms of exploitation potential owing to several characteristics while they showcase several unavoidable limitations. Moreover, the field of Petrochemical sciences has many unique traits and is constantly evolving in an attempt to pivot according to the ordains of breakthrough science and technological advancements. This is reflected in the work of Yao et al.³ whose work involves the utilization of microfluidic devices for specific tasks. Advances in this field are expected to find future application to oil and gas related issues. Therefore, the significance of working on this subject can be well appreciated. The main focus of the authors’ study is the effect of the geometrical configuration of microfluidics devices, and more particularly the region of the nozzle, on the generation of droplets and, in general, the opportunities that arise regarding the fabrication of stable emulsions. The authors discuss the physics of the phenomenon with great attention and explain why this study is useful for simulating the events taking place in the reservoir.

To conclude, the current issue includes several studies of great interest both from an academic and an industrial perspective.

Dr. Ir. Yannis Dimakopoulos

Assistant Professor

Laboratory of Fluid Mechanics and Rheology

Department of Chemical Engineering

University of Patras, Greece

Email: dimako@chemeng.upatras.gr

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