
Editorial

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Biographical notes: Raad Y. Qassim is a Professor of Logistics and Transportation at the Department of Naval and Ocean Engineering, COPPE, of the Federal University of Rio de Janeiro. After obtaining his BSc, MSc and PhD in Chemical Engineering at London University in the 1960s, he worked in industrial R&D and has academic experience of more than four decades in mechanical, production and naval engineering. In 2009, he was one of the winners of the Inter-American Development Bank Call on Renewable Energy Resources on the mathematical modelling of tidal current energy extraction for electricity generation. At present, his principal lines of research are: project scheduling and rescheduling, logistics network and supply chain design and optimal turbine energy positioning in tidal current and offshore wind energy systems.

For more than four decades, oil and gas offshore production has been increasing, with operations moving into deep sea and ocean environments. This has led to an increasing challenge in order to ensure that deep water offshore production is both economically attractive and operationally safe. This challenge has been met with undeniable success in a number of regions such as the North Sea, the Gulf of Mexico and the Southern Atlantic Shelf. In essence, offshore production may be viewed as a type of factory, where most operations are performed in a difficult deep water environment. The success of this factory depends on the joint and inseparable efforts of scientists, engineers and managers, among others. It is with this idea in mind that this Special Issue of the *Int. J. Computer Applications in Technology* has been conceived. This issue comprises 12 papers, out of the 19 original contributions received in response to the invitation for papers.

The first two papers deal with structural aspects. Maddalena et al. investigate experimentally the structural behaviour of cylindrical shells under compression, obtaining a good correlation between physical experiments and non-linear finite models. Nolau Neto and Estefen propose a floating protection system for FPSOs, concluding that the proposed system is sufficiently adequate under the collision scenarios which have been considered.

In the third paper, Sphaier et al. study the safety of offloading operations from a FPSO to a shuttle tanker, employing mathematical models allied to experiments in ship hydrodynamics. They recommend a more detailed risk analysis, which is being evaluated by PETROBRAS. In the fourth paper by Sales Jr et al., it is shown that the hydrodynamic performance of FPSOs may lead to substantial impacts on economic and safety aspects of production systems. A new concept of offshore platforms, mono-column, is evaluated experimentally in the fifth paper

by Masetti et al. This research work is continuing with a view to obtain more attractive configurations, both from an economic and operational point of view. Grove et al, in the sixth paper, introduce an innovative concept of FPSOs, which has been shown to be highly promising, albeit needing further improvements.

The seventh and eighth papers treat thermal and hydrodynamic aspects pertaining to offshore systems, respectively. Su et al. study the heat transfer in multi-layered composite pipelines in the context of deep water environments. Deng and Chwang investigate transverse waves in the context of wave generations. In the ninth paper, Qassim et al. demonstrate the utility of the use Bayesian updating in risk-based inspection, which is being increasingly employed in deep water installations.

The last three papers cover logistics and management aspects of offshore systems. Duarte et al. apply ergonomic principles in the design of offshore platforms. Pires and Antoun employ Monte Carlo Simulation with a view to forecast the demand for offshore supply vessels. Duarte et al. study the link between small and medium enterprise and the use of information technology in the context of petroleum supply chains.

Concluding, I would like to take this opportunity to express my appreciation to Dr M.A. Dorgham, Inderscience Editor-in Chief, for his kind invitation to edit the Special Issue, to the authors of the papers included herein, to the reviewers for their arduous and punctual efforts, to all Inderscience Staff who provided support for this issue and to Mrs L.F. Machado for her assistance in manuscript formatting and proof checking. I hope that we have succeeded in the production of this Special Issue at the high level, which is customary in the *Int. J. Computer Applications in Technology*.