ABSTRACTS

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INVESTIGATION OF THE WATER CONTENT OF CH_4-H_2 SYSTEM

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Keywords: hydrogen, water content, water dew point, methane-hydrogen mixture, renewable energy
Abstract: Hydrogen, as the clean energy carrier of the future can play a significant role in climate policy efforts in the near future. The study National Energy Strategy 2030 published in January 2020 defines the natural gas network as a seasonal energy storage. Several European countries have investigated whether hydrogen predominantly from renewable sources can be introduced to the natural gas system to reduce GHG emission. One of the important parameters of the natural gas fed into the gas network is the water vapor content, its maximum value of which is regulated by law. In this article, the authors examined whether hydrogen, which differs significantly from the properties of methane, causes a significant change in water saturation. The investigated pressure and temperature ranges cover every state found in the processing and transportation of natural gas. To carry out the calculations the Aspen HYSYS program was used.

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THE ROLE OF SUPPLY CHAIN DYNAMIC CAPABILITIES AND SUSTAINABLE SUPPLY CHAIN MANAGEMENT PRACTICES ON SUSTAINABLE DEVELOPMENT OF EXPORT ENTERPRISES

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***Keywords*:** sustainable development, supply chain dynamic capabilities, sustainable supply chain management, sustainable enterprises

Abstract: Research on supply chain sustainability is important for exporters. Sustainable supply chain management (SSCM) as well as good use of supply chain dynamics will help enterprise adapt to changes in the business environment. This study analyzes the impact of SSCM, supply chain dynamic capabilities on the sustainable development of exporting enterprises in Vietnam. Analyzing with 185 samples, SEM structure model analysis techniques have shown that supply chain dynamic capabilities, SSCM all have positive effects on the sustainable development of businesses (sustainable development is measured by distribution: measuring economic efficiency, social efficiency, and environmental performance). From the results of this study, the authors also made a number of recommendations to help export enterprises to develop sustainably based on the factors of SSCM and supply chain dynamic capabilities.

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WHY THE QUEUING IN THE BANKING ENVIRONMENT IN THE ERA OF ELECTRONIC BANKING

(pages 17-25)

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Keywords: e-banking, queuing, deposits money banks, Nigeria, cashless economy

Abstract: Managing queuing within the banking business in Nigeria has constituted major challenges whose effects have not been thoroughly examined. This study sets to investigate the continuous queuing in the Nigerian banking environment despite e-banking adoption in Nigeria. The research adopted a survey design where primary data were obtained using a structured questionnaire. Fifty (50) respondents were purposively chosen. A purposive sampling technique was used which considered banks having branches within Ladoke Akintola University of Technology and Ogbomoso town. OLS regression was used to determine the influence of electronic banking on customers queuing the factors for queuing in the banking environment amid e-banking adoption at 0.05 level of significance. Findings revealed that queue in the study area was most of the time very high in the morning, high in the afternoon and evening while at night, most time witnessed no queue. Electronic banking had a significant influence on customers' queuing in the study area. Further, Tendency to Hold Cash by banks customers (THC), Poor Internet Infrastructure (PII), Cybercrime (CC) were the major factors causing bank customer queue in the banking environment in Nigeria, followed by Inadequate of Banking Technology Management (IBTM) and E-Banking Transaction Cost (EBTC). Therefore, banks service providers should increase efforts on cashless e-banking services and ensure reliable internet service at all times. Bank customers should be made to appreciate other e-banking services than ATM and allay fear on tendency to hold cash.

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EFFECT OF CO_2 REACH ENVIRONMENT ON THE PETROPHYSICAL PROPERTIES OF ARTIFICIALLY CONSOLIDATED CORE SAMPLES

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Keywords: artificially consolidated, synthetic sandstone, petrophysical properties
Abstract: In order to develop, maintain and deplete reservoirs economically around the globe, various measurements are needed with a high demand on natural core samples. The next stage in the life of every reservoir is a secondary or tertiary method to enhance productivity. However, to tailor the available methods and technologies to the reservoir, several screening processes, feasibility studies and pilot experiments are needed. As an aid to these, like a sensitivity analysis, continuous measurements are set up to study fluid flow, chemical reactions, additional recovery and much more, but for all of these, core samples are needed. The lack and high value of natural core samples yield that the demand cannot be satisfied from this source alone. The aim of the study was to create an artificially consolidated stone core sample, a model material, which can be suitable for being the subject of these experiments, with additional benefits in mass production and reservoir parameter-based quality control. In this article the authors wish to present partial results of a big study, this time with comparing the porosity, permeability, connate water and capillary pressure parameters of the core samples used with different after-cure techniques. The process of compaction was the same, but the overburden pressures and the effect of CO_2 rich curing were examined. For this, part of the samples was prone to high CO_2 environment for different timespans during the after treatment of the samples. The petrophysical parameters were then measured on all of the groups, including a control group and the CO_2 affected cores. The focus was on porosity, permeability, connate water saturation/wettability and capillary pressure measurements and the common features and differences in the yielded pore space's structure are summarized in this article.

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DESIGNING VIRTUAL WORKPLACE USING UNITY 3D GAME ENGINE

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Keywords: methodology, Unity 3D, virtual reality, workplace
Abstract: Designing a workplace may be a challenging task. It is important to make sure that the new workplace will prevent unnecessary resource waste, but also create a safe working environment for employees. Therefore, creating a virtual copy of the workplace before its real-life implementation may help to eliminate design shortcomings. This article presents a methodology of creating a virtual workplace using a game engine – Unity 3D. The methodology describes basic principles and methods used for the creation of virtual workplace, from initial analysis to utilization. The user then can use a VR head-mounted device to see small details and possible shortcomings. Effectiveness of methodology was then evaluated by using it to visualize a bar-processing workplace.