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Joint Event

International Conference on

Petroleum Engineering, Oil and Gas

December 06-07, 2018 | Dubai, UAE

allied academies

Cleverson Esene et al., Oil & Gas 2018 &
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Process waste water treatment in a High rate anaerobic digestion reactor (EGSB) under various Hydraulic Retention Times (HRTs)

Haider Al-Rubaye, Manohar M S, Shruti S K, Joseph D Smith and **Mahyar Ghorbanian**
Missouri University of Science and Technology, USA

Process wastewater is generated with a high strength organic and inorganic compounds, which made them stand among one of the top pollutions generating industries. In USA, Environmental Protection Agencies issued regulations that charge for discharging wastes into water bodies. Industrial wastewater with a very high COD strength (1, 10,000–1, 90,000 mg/L), BOD strength (50,000– 60,000 mg/L), were studied in most developed high-rate anaerobic digestion process called 'Expanded Granular Sludge Bed' (EGSB). COD removal efficiency had been studied at different organic loading rates (OLR) and hydraulic retention times (HRTs). For a specific OLR of 6 g COD/l.d and HRT of 5 days, the removal efficiency was more than 95% and for the volatile fatty acids was about 87.2%. An EGSB reactor had been built and used for investigating different variables that have an essential contribution to the wastewater treatment. HRT, pH, Temperature and COD strength are the most effective process variables. Low energy consumption combined with energy production can be accomplished at very low costs. The anaerobic digestion process consists of four steps, hydrolysis, acidogenesis, acetogenesis and methanogenesis. The experimental setup is consisting of two stages, the first two steps will occur in the first stage while the last two will be in the second stage. Building two-step anaerobic process will enhance the stability of the reactor. Actual process waste water had been used for the investigation and various analysis was implemented before introducing the feed to the reactor. The high rate reactors are using biomass granular particles which contain the microorganisms that fed on the waste water that diffuses in to the particles. The pH of the effluent was almost about 7.2 which is safer for the environment than before the treatment. Mesophilic temperature range (T=36^{o}C) was used as operating temperature, temperature monitored and controlled by data acquisition system and temperature controller.

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Modelling and simulation study of carbonated water injection for enhanced oil recovery

Cleverson Esene, Sohrab Zendehboudi and **Amer Aborig**
Memorial University of Newfoundland, Canada

Carbonated water injection (CWI) has been known to improve oil recovery when compared to other secondary and tertiary oil recovery methods. Additional oil recovery and CO_2 sequestration associated with CWI have been investigated through several experimental and modelling studies. There have not been a lot of modelling studies of CWI because of the complex multi-physics involved with fluid-fluid and fluid-rock interaction during CWI process. However, further experimental and modelling studies need to be conducted on CWI in other to fully capture and comprehend the complex physics involved. The focus of this research will be to investigate important aspects such as oil recovery mechanisms, fluids distribution, effect of operational parameters, effect of fractures, changes in Petro physical properties and the capability of CWI for sequestration of CO_2. A new approach of using the grid local pressure to model CO_2 solubility during CWI was adopted and the moles of CO_2/water are controlled by their injection rates.

Speaker Biography

Cleverson Esene is a Ph.D candidate at Memorial University of Newfoundland Canada, whose interest lies in reservoir simulation, reservoir modeling and optimization of enhanced oil recovery methods. He has few years of industrial experience with Transocean and ExxonMobil as a drilling supervisor trainee and field engineer intern respectively. This industry exposure has added to his theoretical, logical and quantitative reasoning in his research abilities. He has been involved with a lot of research project using commercial and open access reservoir simulation packages such as CMG, ECLIPSE, PETREL, MATLAB etc.

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Meys Wasan Ibrahim, Oil & Gas 2018 &
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Is green energy going to replace petroleum industry?

Meys Wasan Ibrahim
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Oil and gas are an old source of energy that have been used since its discovery, where the whole planet relies on. However, due to the environmental reasons and the development of the technology that people have recently discovered, they came to new inventions to produce new energy other than oil and gas, which called now the green energy or renewable energy.

Green Energy is a source of energy that comes from natural sources such as sunlight or wind, apart from the wind mill there is another source of energy called the solar panel, it converts the sunlight to electricity usually it comprises the smaller units called photovoltaic cells to electricity. Scientists nowadays are trying to switch to green energy to reduce the hydrocarbon emissions that is produced from the natural gas, but they must consider a lot of transportations methods that still need oil in everyday life such as cars, airplane fuel or even gas central heating in winter. Some of the electric cars were used by people but to charge an electric car it need at least 30 min for the smallest battery where a atypical electric car it takes 4 hours to charge compared to the oil fuel where the car can move as soon as the tank is full in less than 5min.

Speaker Biography

Meys Wasan Ibrahim has completed her bachelor's degree as a petroleum engineer from London South Bank University, United Kingdom. She is a member of the SPE. During her study she had a geology trip to write a report about the types of the rocks and its differences. She has visited the (SGR) Schlumberger Gould Research Centre in Cambridge is a research Centre focuses on drilling, chemistry, fluid mechanics and seismic, through a combination of theory and experiment and computational simulation.

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Challenges in deep water completion and subsea architecture design of S1 and Vashistha fields in Eastern Offshore India: A case study

Simmiti Swarna Raju, Alok Nandan, V N Saraf, E V Ramam and **Amar Kaligi**
Oil and Natural Gas Corporation Ltd., India

The Krishna Godavari basin which extends into the Eastern offshore of India is a major hydrocarbon hub of India with new developments. Although Hydrocarbons were discovered in the deep-water regions of eastern offshore in the KG basin long ago, development of the fields started only recently owing to the availability of proven and reliable subsea equipment and controls technology, developments related to vessel and rig stability and improved cost economics. The vessel and rig stability were very important factors because of the weather conditions that exist in the eastern offshore, India. Vasishta and S1 Gas fields are two such deep water fields located in water depths ranging from 300m to 700m in Eastern Offshore, India. VA-S1 field development project in G-1/Vasishta PML of erstwhile KG-OS-DW-IV block was one of the earliest deep-water projects in the eastern offshore of India, was undertaken by ONGC with 100% participation interest and was completed in March 2018.

Speaker Biography

Simmiti Swarna Raju has completed his master's in chemical engineering, masters in operations management and has a work experience of 22 years in the oil and natural gas corporation, in the field of well testing and well completions. He has held various positions in the organization and has worked in some of the most challenging projects of the organization which include level 2 and level 3 dual completions, single CTU friendly ERD completions, high angle packer completions and segmented horizontal completions. He has worked as a production in charge and operations manager for various well completion projects in the Mumbai region. He is currently working in the Eastern Offshore, India in some of India's deepest water subsea well completion projects. Vashistha and S1 fields are a part of the eastern offshore field developments. He is a life member of Indian Institute of Chemical Engineers and a member of SPE.

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