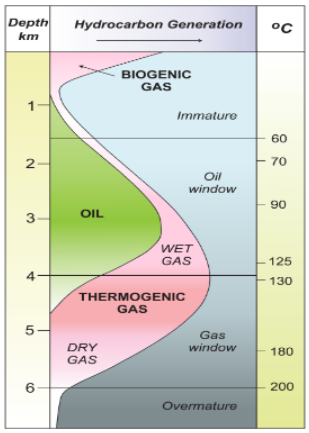
The Cyprus SPE Section/AAPG Student Chapter cordially invites you to an online talk:

Understanding Biogenic Methanogenesis

Abstract



Natural gas is increasingly becoming a dominant energy source worldwide as it is a versatile fuel and exhibits a relatively lower CO_2-to-energy footprint helping governments and companies meet their environmental goals. Natural gas is categorised into thermogenic gas, generated from oil, and into biogenic natural gas, formed from a class of bacteria called methanogens that thrive under anoxic conditions. One of the main differences between the two categories is the volume of methane (CH_4). Biogenic gas is purer with a methane content often exceeding 97% compared to thermogenic, which features a significant proportion of condensates.

Biogenic gas is generated as a by-product of methanogens that coexist and depends on the chemical reactions from a series of other bacteria that reduce sulphates and ferment the organic matter during its decomposition phase.

Previous research has revealed that biogenic natural gas is created at rock layers shallower than 1,000 m under certain favourable conditions. These conditions comprise a TOC equivalent of at least 0.5%, in the absence or under low levels of sulphates, temperatures ranging between 20°C to 75°C, burial rates spanning between 200 to 1000 m/Ma, adequate pore space, sufficient methane solubility in the interstitial water and favourable pH level.

The present presentation will elaborate on the preceding conditions that foster commercial volume biogenic natural gas. Concluding, we will turn attention on the characteristics of biogenic natural gas discoveries in the eastern Mediterranean with particular emphasis offshore Cyprus.

Speaker's bio:

Mr. Christos Christoforou is currently reading for the PhD in Oil, Gas and Energy Engineering, at the Marine & Carbon Lab, at the University of Nicosia. His doctoral research investigates the generation and migration of biogenic gas in the Levantine basin. Part of Christos' research will focus on the interpretation of geophysical surveys which will be used to create models using various parameters, which aim to elucidate the migration pathways of biogenic gas and potential traps. Christos holds a bachelor's degree in Geology and Geo-Environment from the National and Kapodistrian University of Athens and a master's degree in applied geophysics from the Aristotle University of Thessaloniki, Greece.

The talk to be delivered in English will be live streamed online:

Date: Wed. 7th of April, 2021 | Time: 16:30–17:30

WebEx link: https://bit.ly/2PkAs4z | Meeting number: 183 892 9237