



The Student Chapter of SPE/AAPG cordially invites you to the following event:

Optimization of Acid Gas Removal Process of Sour Natural Gas

Abstract



During the past few years the East Med has proven its potential as a prolific hydrocarbons province. Prime examples include the discoveries of Zohr, Leviathan and Calypso natural gas reservoirs. As most of the discovered natural gas globally is sour, that is, it contains hydrogen sulphide (H_2S) and carbon dioxide (CO_2), acid gas removal constitutes an important task. Following a detailed review of the prevailing methods for acid gas removal, absorption using chemical solvents (amines) was reported to be the most appropriate method for treating gas streams possessing an H_2S and a CO_2 level of $>4ppm$ and $>2.5\%$, respectively.

The most common amine/chemical solvents include monoethanolamine (MEA), diethanolamine (DEA) and their mixtures. However, the existing methodology for designing natural gas facilities does not take into account important parameters such as reaction kinetics, corrosion rate, pressure, reaction time, etc. In this research, we propose a more comprehensive amine circulation rate in the gas absorber. Due to its importance, the circulation rate governs the size of the absorber and the regenerator columns as well as the heat exchanger and pump power requirements. By examining the reaction kinetics of CO_2 with the DEA solution, we aim to formulate a more efficient approach for sizing the amine sweetening process.

Speaker's bio:

Ms. Panayiota Argyrou is currently a doctoral student in Oil, Gas & Energy Engineering at the Marine and Carbon Lab, at the University of Nicosia. Her doctoral research investigates the optimization of the natural gas amine sweetening process and the storage of sweet gas under low pressure conditions. Panayiota holds a Master's Degree by Research in Physics during which she worked at the Magnetism and Superconductivity team of the Condensed Matter Group at University of Warwick, UK. During her Master's studies she was employed at the Department of Engineering as a Laboratory assistant for Physics students. Ms. Argyrou completed her undergraduate studies at the University of Kent, UK, receiving a Bachelor Degree with Honours in Physics. Ms Argyrou's studies are supported by a Cyprus Ministry of Energy (MECIT) scholarship.

The talk will be delivered in English and is open to the public. Please save the date:

Date: Wed., March 14th, 2018

Venue/Time: Conf. room 102, Research & Tech. Bld (RTB), 14:00-15:00