Simulation of Acid gas (CO_2 and H_2S) Removal from Natural gas for LNG Production

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The worldwide increase in demand for energy has aid the search for alternative sources of primary energy, even to the remote part of the globe. The major alternative source with less environmental impact discovered some decade ago is energy from natural gas. Natural gas at its geological conditions in some deposits contain some complex contaminants such as CO2, H2S, CO, Mercaptan , which constitute great environmental hazards and also hindered natural gas processes. Therefore, removal of CO2 from natural gas is currently a global issue, apart from meeting the customer's contract specifications and for successful liquefaction process in LNG project. This work presents a theoretical investigation of the simultaneous absorption of CO2 and H2S in to aqueous solution of MDEA, DEA and MEA. The use of amine solvents for gas sweetening has been investigated using process simulation program HYSYS. The effects of temperature, circulation rate and amine concentration on the rate of absorption were studied.

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