

The effect of packing materials on the hydraulics in a packed column under offshore conditions

한송희, 손용호, 김희용, 김광인, 이상윤, 이광순<sup>†</sup>

서강대학교

(kslee@sogang.ac.kr<sup>†</sup>)

Effective ocean plant design is significant for ocean resources. FPSO (Floating Production Storage and Offloading) receives attention as one of the deep sea oil well exploitation. Offshore plant has many economic advantages but it is constantly exposed to the ocean environment like permanent tilt, dynamic motions that cause the liquid mal-distribution in the ocean natural gas treating process. This liquid mal-distribution directly is related to the gas treating efficiency.

In this study, we conducted the air/water system experiment to analyze the liquid flow characteristics in the 133mm diameter column packed with corrugated sheet structured packing. The hydraulic experiment for liquid holdup was carried out by using two kinds of structured packing materials which are stainless steel and polypropylene. The experimental data were analyzed using the theoretical correlation of liquid width and thickness and compared with the available correlations in open literature to develop a proper holdup model. This developed model will be used in the absorption model under offshore conditions.