

Removal of carbon dioxide from CO₂-CH₄ gas mixture using hollow fiber membrane contactors

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Hollow fiber membrane contactors have been considerable attention in recent years as an effective tool for gas separation application. The separation of carbon dioxide (CO₂) from methane (CH₄) by using a gas-liquid membrane contactor was studied in order to confirm the potential of the CH₄ purification process. The experiments were performed in a membrane contactor constructed with microporous PP hollow fibers and aqueous monoethanolamine (MEA) solution were employed as the absorbents. The effect of operating parameters such as the gas and liquid velocity, pressure and absorbent temperature on the CO₂ flux were investigated along with the mass transfer analysis of the process.