

Operating parameters of membrane system performance for CO₂ capture from post-combustion – in the respect of pressure dependence

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The capture of post-combustion carbon dioxide (CO₂) from power plant is an important environmental issue these days. Among the various processes for CO₂ capture, membrane technology has been intensively considered recently because of its low energy consumption and compact system. Concentration of CO₂ at permeate can be varied by operating condition.

In process design for commercialization, operating condition such as feed or permeate pressure or stage-cut needs to be optimized at each stage to obtain high purity and recovery of CO₂.

In this study, membrane performance such as permeate purity or permeate flow rate has been obtained in operating condition such as pressure or membrane capacity. Selectivity, a main index of membrane performance, is also associated with operating condition.