

The Economic Evaluation of CO₂ Absorption Process using Monoethanolamine

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CO₂ absorption process has been considered as a powerful and visible process among the candidates of the post combustion processes. Monoethanolamine (MEA) is the most common absorbent for the CO₂ absorption process since it is cheap and it has the fast reaction, but, much regeneration energy is demanded to regenerate MEA solvent. Many research groups, therefore, have been studying to reduce the regeneration energy of solvent as several new configurations of the origin process are proposed. In this study, the new configurations of the conventional CO₂ absorption process were studied and simulated using Aspen Plus™. In order to evaluate the economics of the new configurations distinctly and reasonably, the criteria for the evaluation of the economics were set, and a number of processes improved were discussed with respect to the total cost which consists of the operating cost and the capital cost.