

Modeling and Simulation of Rotating Packed Bed for Carbon Capture

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Rotating packed bed is one of the technologies for process intensification. Interfacial area for mass transfer is increased by centrifugal force. Consequently, the size of the rotating packed bed is smaller than the conventional packed bed to attain the same amount of transferred mass. Therefore, rotating packed bed is one of the alternatives for replacing the conventional packed bed. Absorption process based on amine solvent is a mature technology for post-combustion carbon capture. However, the size of the absorber required to remove CO₂ in flue gas from a power plant is too large. The same amount of CO₂ could be captured by the smaller volume of rotating packed bed compared to the conventional packed bed. In this study, the rotating packed bed for absorber using monoethanolamine is simulated based on the rate-based model.