

### A computer simulation of CO<sub>2</sub> capturing process using aqueous NH<sub>3</sub> solution

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Aqueous amine solution(MEA) is currently the most widely used in the industrial CO<sub>2</sub> capturing process. However, the operating cost of MEA process is high due to its huge energy consumption in regeneration and operating problems such as corrosion, solvent loss and solvent degradation. Aqueous NH<sub>3</sub> solution is considered as a substitute of amine solutions because of its high CO<sub>2</sub> loading capacity, no absorbent degradation, low energy consumption for CO<sub>2</sub> regeneration and resistance to oxidation.

In this paper, a new CO<sub>2</sub> capturing process using aqueous NH<sub>3</sub> solution at room temperature and atmospheric pressure was studied. Process simulation was applied to analyze and evaluate the proposed NH<sub>3</sub> process. Heat consumption of a new NH<sub>3</sub> process was compared with the conventional MEA process and the chilled NH<sub>3</sub> process.