

## عنوان مقاله:

N<sub>2</sub>-bubbling Method for O<sub>2</sub> Removal from the Loaded MEA Solution in the CO<sub>2</sub> Capture Process

## محل انتشار:

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## خلاصه مقاله:

Flue gas stream contains full-oxidized (carbon dioxide), partially oxidized hydrocarbons, and some extent of oxygen. Carbon dioxide can be separated by CO<sub>2</sub> capture and separation (CCS) process using monoethanolamine (MEA). In this process, CO<sub>2</sub> accompanied with O<sub>2</sub> can be absorbed by the solution (MEA+H<sub>2</sub>O). Dissolved molecular oxygen may explicitly participate in the cathodic reaction and generate severe corrosion problems, or it may induce amine degradation via irreversible oxidative reaction, reducing amine efficiency. In this research, the method of N<sub>2</sub>-bubbling was investigated for deoxygenation of loaded aqueous MEA solution on a laboratory scale. N<sub>2</sub>-bubbling set-up was simulated with a known volume glass vessel in which bubbling of N<sub>2</sub> with an available flow rate was applied through the loaded amine solution. A mathematical formula was developed to correlate the N<sub>2</sub>-bubbling flow rate,  $F$ , the volume of amine solution in the bubbling column,  $V$ , and time taking the oxygen concentration decreases from saturated O<sub>2</sub>-solution to less than 0.5 mg/L.

## کلمات کلیدی:

CO<sub>2</sub> capture, De-oxygenation, Dissolved oxygen, monoethanolamine solution, N<sub>2</sub>-Bubbling

## لینک ثابت مقاله در پایگاه سیویلیکا:

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