

Thesis Title	Efficiency of removing SO ₂ from gas stream using Packed Bed Tower
Thesis Credits	6
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Degree of Study	Master of Science
Department	Environmental Technology
Academic Year	1999

Abstract

The experiment focused on efficiency of removing SO₂ from gas stream using packed bed tower and the wet process. Pure SO₂ gas was dilute with air to 8,000-15,000 ppm , and flowed into the packed bed tower at a rate of 3.24 m³/min , standard temperatur and pressure. The scrubbing liquid used in the process were Na₂CO₃ : 20, 30 and 40 g/L, NaOH : 33 ,42 and 50 g/L and MgO : 41 , 50 and 58 g/L.

The experimental results showed that the efficien of SO₂ removal using different chemical solutions were in a range of 80-90 percent for Na₂CO₃, 35-52 percent for NaOH and 60-69 percent for MgO, depending on the SO₂ initial inlet concentration and scrubbing solution flow rate. It was found that the concentration of Na₂CO₃ solution at 30 g/L, NaOH solution at 33 g/L and MgO solution at 41 g/L provided the maximum SO₂ removal efficiency. For the operating cost per gram of SO₂ removal, Na₂CO₃ yielded the lowest cost.

Keywords : SO₂ / Packed Bed Tower / Wet scrubber process / Packed bed.