AN ABSTRACT OF A THESIS

TURBULENT FLOW ABSORPTION OF CARBON DIOXIDE IN A WETTED-WALL COLUMN

Jahanshah Lohrasbi

Master of Science in Chemical Engineering

The absorption of carbon dioxide by sodium hydroxide in countercurrent turbulent flow in a wetted-wall column was studied. Air was used as a "carrier" gas in this investigation. The concentration of the liquid, the gas flow rates, and the liquid flow rates were varied. Experimental results were compared with the empirical equations found in the literature.

At a constant gas flow rate the mass transfer rate increased with increasing liquid flow rate. The results of these experiments agreed fairly well with both correlations; however, there were indications that the effect of rippling of the liquid film is more important in determining the mass transfer rate than predicted by previously published equations.

TURBULENT FLOW ABSORPTION OF CARBON DIOXIDE IN A WETTED-WALL COLUMN

A Thesis

Presented to

the Faculty of the Graduate School

Tennessee Technological University

by

Jahanshah Lohrasbi

In Partial Fulfillment

of the Requirements for the Degree

MASTER OF SCIENCE

Chemical Engineering

August 1976

CERTIFICATE OF APPROVAL OF THESIS

TURBULENT FLOW ABSORPTION OF CARBON DIOXIDE IN A WETTED-WALL COLUMN

by

Jahanshah Lohrasbi

Graduate Advisory Committee:

William D Holland — June 19, 1976
Chairman — date

David W Yarbrough — June 28, 1976
Member — date

Donald R Pitts — June 30, 1976
Member — date

Approved for the Faculty:

Marvin Peters
Dean, Graduate School

July 14, 1976
Date