## AICHE JOURNAL SEPTEMBER, 1968 • VOL. 14, NO. 5

The AIChE Journal, an official publication of the American Institute of Chemical Engineers, is devoted in the main to theoretical developments and research in chemical engineering and allied branches of engineering and science.

PUBLISHER

F. J. Van Antwerpen

EDITOR **Harding Bliss** 

MANAGING EDITOR Sylvia Fourdrinier

MANUSCRIPT EDITOR Barbara Ricciotti

C. M. Cooper

## ADVISORY BOARD

R. H. Newton

O. E. Dwyer R. L. Pigford W. C. Edmister E. L. Piret E. R. Gilliland J. M. Smith A. N. Hixson Theodore Vermeulen W. R. Marshall, Jr. R. R. White

Publication Office, 215 Canal Street, Manchester, New Hampshire. Published in January, March, May, July, September, and November by the American Institute of Chemical Engineers, 345 East 47 Street, New York, New York, 10017. All manuscripts should be submitted only to the New York Office. Correspondence with the editor may be addressed to him at Yale University, 225 Prospect Street, New Haven, Connecticut 06520. Statements and opinions in the AIChE Journal are those of the contributors, and the American Institute of Chemical Engineers assumes no responsibility for them. Subscription: one year, member \$6.00; non-member \$25.00; additional yearly postage, Canada 75 cents, Pan American Union \$1.50, other foreign \$2.00 (foreign subscriptions payable in advance). Single copies: \$6.00. Second-class mail. Postage paid at Manchester, New Hampshire Copyright 1968 by the American Institute of Chemical Engineers, National headquarters of AIChE is concerned about nondelivery of copies of the AIChE Journal and urgently requests subscribers to give prompt notification of any change of address. Sixty days must be allowed for changes to be made in the records.

Postmaster: Please send form 3579 to AICHE Journal, 345 East 47 Street, New York, N. Y. 10017.

Books	690
On the Theoretical Calculation of Friction Factors for Laminar, Transitional, and Turbulent Flow of Newtonian Fluids in Pipes and Between Parallel Plane Walls Richard W. Hanks	691
The Application of Theoretical Diffusion Models in the Presence of a Catalytic Reaction	696
An Analysis of Oxygen Absorption in a Tubular Membrane Oxygenator R. G. Buckles, E. W. Merrill, and E. R. Gilliland	703
Coupled Energy and Multicomponent Mass Transfer in Dispersions and Suspension with Residence Time and Size Distributions  Benjamin Gal-Or and Lakshminarasimha Padmanabhan	709
Convective Diffusion in Rotating Disk Systems with an Imperfect Semipermeable Interface	715
Generalized Solution of Freezing a Pure Liquid in a Container Initially at its Melting Temperature	720
A Comparison of Theoretical and Experimental Results for the Internal Dissolution of Soluble Cylinders in Water in Laminar Flow Frank Straight and W. D. Baasel	722
Methods for Solving the Boundary Layer Equations for Moving Continuous Flat Surfaces with Suction and Injection V. G. Fox, L. E. Erickson, and L. T. Fan	726
Thermodynamic Properties of Binary Mixtures of 1-Hexyne and Polar Organic Solvents	737
Correlations for Adsorption of a Binary Gas Mixture on a Heterogeneous Adsorbent —the Methane–Ethane–Silica Gel System Shigehiko Masukawa and Riki Kobayashi	740
Heat Transfer Coefficients and Circulation Rates for Thermosiphon Reboilers P. R. Beaver and G. A. Hughmark	746
A Model for the Prediction of Velocity and Void Fraction Profiles in Two-Phase Flow F. C. Brown and W. L. Kranich	<b>7</b> 50
Analysis of Steady State and Stress Relaxation in the Maxwell Orthogonal Rheometer	758
Adsorption Rate Constants from Chromatography P. Schneider and J. M. Smith	762
Hydrodynamics of Wave Flow C. P. Berbente and Eli Ruckenstein	772
Feedforward and Dynamic Uncoupling Control of Linear Multivariable Systems  Gaylord G. Greenfield and Thomas J. Ward	783
Continuous-Phase Mass-Transfer Coefficients for Liquid Extraction in Agitated Vessels	790

(Continued on page 690)