# A.I.Ch.E. JOURNAL

JULY, 1964 • VOL. 10, NO. 4

The A.I.Ch.E. 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. Manuscripts should be submitted to the New York office.

#### **PUBLISHER**

F. J. Van Antwerpen

## **EDITOR**

Harding Bliss

#### MANAGING EDITOR

Sylvia Fourdrinier

### MANUSCRIPT EDITOR

Joan M. Macri

# ADVERTISING MANAGER

William Chenoweth

## ADVISORY BOARD

C. M. Cooper	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

W. R. Marshall, Jr. R. R. White R. H. Wilhelm

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 17, New York, 10017. Manuscripts and other communications should be sent to the New York office. Correspondence with the editor may be addressed to him at Yale University, 225 Prospect Street, New Haven 11, Connecticut. Statements and opinions in the AI.Ch.E. Journal are those of the contributors, and the American Institute of Chemical Engineers assumes no responsibility for them. Subscription: opear, member \$6.00; non-member \$25.00; additional yearly postage, Canada 50 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 1964 by the American Institute of Chemical Engineers. National headquarters of A.I.Ch.E. is concerned about nondelivery of copies of the A.I.Ch.E. 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 A.I.Ch.E. Journal, 345 East 47 Street, New York, N. Y. 10017.

Books	434
The Increasing Importance of Technical Books	435
Transport from Extended Surfaces Stanley K. Stynes and John E. Myers	437
Laminar Natural Convection to an Isothermal Flat Plate with a Spatially Varying Acceleration	445
Solution of the Linearized Equations of Multicomponent Mass Transfer: I $H.\ L.\ Toor$	448
Continuous Foam Fractionation: the Effect of Operating Variables on Separation $R.\ B.\ Grieves\ and\ R.\ K.\ Wood$	456
Solution of the Linearized Equations of Multicomponent Mass Transfer: II. Matrix Methods	<b>46</b> 0
Heat Transfer for Turbulent Flow in Rectangular Ducts with Two Heated and Two Unheated Walls  J. L. Novotny, S. T. McComas, E. M. Sparrow, and E. R. G. Eckert	466
Correlation of Thermodynamic Properties of Amine-Water Solutions with Molecular Structure	471
Fluctuations in the Local Rate of Turbulent Mass Transfer to a Pipe Wall  Paul Van Shaw and Thomas J. Hanratty	475
The Prediction of the Viscosity of Nonpolar Binary Gaseous Mixtures at Atmospheric Pressure  Mailand R. Strunk, Wayne G. Custead, and Gerald L. Stevenson	483
Compressibility of Ammonia and its Mixtures with Nitrogen and Hydrogen  I. M. Lichtblau, R. H. Bretton, and B. F. Dodge	486
Resistance to Mass Transfer Inside Droplets A. H. P. Skelland and R. M. Wellek	491
Selectivity in Hydrocarbon Oxidation	496
An Experimental Investigation of the Inherent Uncertainty in Pool Boiling Critical Heat Fluxes to Saturated Water	502
Effects of Reduced Gravity on Nucleate Boiling Bubble Dynamics in Saturated Water	509
Turbulent Disruption of Flocs in Small Particle Size Suspensions  David G. Thomas	517

(Continued on page 434)