

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

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

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 \$8.00; non-member \$35.00; additional yearly postage, Canada \$1.00, Pan American Union \$1.50, other foreign \$2.00 (foreign subscriptions payable in advance). Single copies: \$10.00. Second-class mail. Postage paid at Manchester, New Hampshire. Copyright 1969 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	3
Residence Time Distribution of the Dispersed Phase in a Spray Column <i>Ruth Letan and Ephraim Kehat</i>	4
The Synthesis of System Designs: II. Heuristic Structuring <i>A. H. Masso and D. F. Rudd</i>	10
Effects of Pore Diffusion in the Catalytic Oxidation of Ethylene <i>L. S. Caretto and Ken Nobe</i>	18
A Theory of Laminar Flow <i>Richard W. Hanks</i>	25
Graphical Calculation of Multiple Steady States and Effectiveness Factors for Porous Catalysts <i>Warren E. Stewart and John Villadsen</i>	28
On the Particle Size Distribution Function and the Attrition of Cracking Catalysts <i>John E. Gwyn</i>	35
An Approximate Solution for Countercurrent Heat Exchangers <i>Chi Tien and Seshadri Srinivasan</i>	39
Mass Transfer Driving Forces in Packed and Fluidized Beds <i>George S. Wilkins and George Thodos</i>	47
Liquid Film Flow Rates in Two-Phase Flow of Steam and Water at 1,000 lb./sq.in.abs. ... <i>Kuldip Singh, W. A. Crago, E. O. Moeck, and C. C. St. Pierre</i>	51
Sensitivity of a Class of Distributed Parameter Control Systems <i>John H. Sienfeld</i>	57
The Effect of Pressure on the Permeation of Gases and Vapors through Polyethylene Usefulness of the Corresponding States Principle <i>S. A. Stern, J. T. Mullhaupt, and P. J. Gareis</i>	64
Permeation through Plastic Films <i>N. N. Li and R. B. Long</i>	73
Axial Dispersion in Turbulent Flow through Standard 90 deg. Elbows <i>Robert E. Cassell, Jr., and Joseph J. Perona</i>	81
Evaluation of Drying Schedules <i>R. E. Peck and J. Y. Kauh</i>	85
Surface Rheological Properties of Foam Stabilizers in Nonaqueous Liquids <i>R. J. Mannheimer</i>	88
Structuring Design Computations <i>J. H. Christensen and D. F. Rudd</i>	94
The Estimation of Parameters for a Commonly Used Stochastic Model <i>A. L. Sweet and J. L. Bogdanoff</i>	100

(Continued on page 2)