

AICHE JOURNAL

MARCH 1979 • VOL. 25, NO. 2

The AIChE Journal, a publication of the American Institute of Chemical Engineers, is devoted to fundamental research and developments having immediate or potential value in chemical engineering.

PUBLISHER

J. C. Forman

PUBLICATIONS DIRECTOR

Larry Resen

EDITOR

Robert H. Kadlec

PRODUCTION EDITOR

Maura Mullen

EDITORIAL ASSISTANT

Barbara T. Lynn

EDITORIAL BOARD

Andreas Acrivos
Charles A. Eckert
R. Dale Biggs
K. C. Chao
James M. Douglas
James R. Fair
George R. Gavalas
L. Louis Hegedus
Maurice A. Larson
Dan Luss
Kenneth A. Smith
Stephen Whitaker

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. Manuscripts should be submitted to Robert H. Kadlec, Editorial Offices, Room 3036, East Engineering Building, The University of Michigan, Ann Arbor, Michigan 48109. 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, \$60; special member rate, \$10; additional yearly postage, Canada \$4.00, Pan American Union \$4.00, other foreign \$4.00 (foreign subscriptions payable in advance). Single copies: \$16.00. Single copies more than one year old: \$17.00. Second-class postage paid at New York, N. Y. and additional mailing offices. Copyright 1979 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.

AIChE Symposium Series

Recent Studies

180. Spinning Wire from Molten Metal. This volume brings together for the first time, many of the major contributions to this developing technology. Several alternative processes which avoid problems posed by melts having low viscosity and high surface tension are discussed, as well as process considerations and new areas of technology.

1978 116 pp.

AIChE members, \$7.50; Nonmembers, \$20

181. Biochemical Engineering: Renewable Sources of Energy and Chemical Feedstocks. The papers in this volume deal with sources and availability of substrates, lignin utilization, overview of process technologies, and fuels and feedstock production.

1978. 123 pp.

AIChE members, \$7.50; nonmembers, \$20

182. Biorheology. Theoretical Hemorheology, Experimental Hemorheology, and Biorheology other than Hemorheology are the topics discussed in this volume.

1978. 135 pp.

AIChE members, \$7.50; nonmembers, \$20

Order from American Institute of Chemical Engineers, 345 East 47 Street, New York, New York 10017.

ASK FOR THE AIChE PUBLICATIONS CATALOG.

Reproducing copies

The appearance of the code at the bottom of the first page of an article in this journal indicates the copyright owner's consent that for a stated fee copies of the article may be made for personal or internal use or for the personal or internal use of specific clients. This consent is given on the condition that the copier pay the per-copy fee (appearing as part of the code) through the Copyright Clearance Center, Inc., P. O. Box 8891, Boston, Massachusetts 02114, for copying beyond that permitted by Sections 107 or 108 of the U.S. Copyright Law. This consent does not extend to copying for general distribution, for advertising or promotional purposes, for inclusion in a publication, or for resale.

Articles published before 1978 are subject to the same copyright conditions, except that the fee is 75 cents for each article.