

Macromolecules

EDITOR: FIELD H. WINSLOW

Room 1A-260, AT&T Bell Laboratories, Murray Hill, New Jersey 07974. (201) 582-5340

ASSOCIATE EDITORS

Frank A. Bovey, Room 1D-260, AT&T Bell Laboratories, Murray Hill, New Jersey 07974. (201) 582-6356

Robert W. Lenz, University of Massachusetts, Amherst, Massachusetts 01003. (413) 545-1375

Andrew J. Lovinger, Room 1A-319, AT&T Bell Laboratories, Murray Hill, New Jersey 07974. (201) 582-2151

Wayne L. Mattice, University of Akron, Akron, Ohio 44325. (216) 375-5159

Walter H. Stockmayer, Dartmouth College, Hanover, New Hampshire 03755. (603) 646-2503

EDITORIAL ADVISORY BOARD

J. Blackwell
Benjamin Chu
J. G. Curro
L. J. Fetters

D. G. Gray
Henry K. Hall, Jr.
T. Higashimura
J. P. Kennedy

Jacob Klein
Herman Mark
L. Monnerie
Charles G. Overberger

F. J. Padden, Jr.
J. F. Rabolt
Helmut Ringsdorf
George Smets

D. L. VanderHart
S. E. Webber
G. D. Wignall
Hyuk Yu

Ex-officio: B. M. Culbertson

Macromolecules (ISSN 0024-9297) is published biweekly by the American Chemical Society at 1155 16th St., N.W., Washington, DC 20036. Second-class postage paid at Washington, DC, and additional mailing offices. POSTMASTER: Send address changes to *Macromolecules*, Member & Subscriber Services, P.O. Box 3337, Columbus, OH 43210.

PUBLICATIONS DIVISION

Robert H. Marks, Director

Journals Department: Charles R. Bertsch, Head; Marianne C. Brogan, Associate Head; Mary E. Scanlan and Joseph E. Yurvat, Journals Editing Managers; Virginia R. Colombo and Ann Marie Condo, Associate Editors; Bonnie Saunders, Assistant Editor

Advertising Office: Centcom, Ltd., 500 Post Road East, Westport, CT 06880

© Copyright 1990 by the American Chemical Society. **Copyright permission:** An individual may make a single reprographic copy of an article in this publication for personal use. Reprographic copying beyond that permitted by Section 107 or 108 of the U.S. Copyright Law is allowed, provided that the appropriate per-copy fee is paid through the Copyright Clearance Center, Inc., 27 Congress St., Salem, MA 01970. For reprint permission, please write to the Copyright Administrator, Publications Division, at the ACS Washington address.

The paper used in this publication meets the minimum requirements of American National Standard for Information Sciences—Permanence of Paper for Printed Library Materials, ANSI Z39.48-1984.

Editorial Information

Instructions for authors and copyright transfer form are printed in the first issue

American Chemical Society
1155 16th St., N.W.
Washington, DC 20036
(202) 872-4600
TDD (202) 872-8733

of each volume. Please conform to these instructions when submitting manuscripts.

Manuscripts for publication should be submitted to the Editor, Field H. Winslow, at his Murray Hill address. Correspondence regarding **accepted papers** and **proofs** should be directed to the Journals Department at the address indicated.

Page charges of \$25.00 per page may be paid for papers published in this journal. Payment does not affect acceptance or scheduling of papers

Bulk reprints of individual articles are available. For information write to Distribution Office at the ACS Washington address.

The American Chemical Society and its Editors assume no responsibility for the statements and opinions advanced by contributors. Views expressed in the editorials are those of the author and do not necessarily represent the official position of the society.

Registered names and trademarks, etc., used in this publication, even without specific indication thereof, are not to be considered unprotected by law.

Subscription and Business Information

1990 subscription prices, including postage. Subscriptions are available only on a calendar year basis. (For membership information, contact Office of Membership Development at the ACS Washington address.)

	U.S.	Canada and Mexico	Europe*	All Other Countries*
Printed				
Members—1 yr	\$ 57	\$ 95	\$121	\$144
2 yr	\$102	\$178	\$230	\$276
Nonmembers	\$553	\$591	\$617	\$640
Microfiche				
Members—1 yr	\$ 57	\$ 57	\$ 69	\$ 69
2 yr	\$102	\$102	\$126	\$126
Nonmembers	\$553	\$553	\$565	\$565
Supplementary material (microfiche)	\$ 12	\$ 16	\$ 16	\$ 16

* Air service included.

New and renewal subscriptions should be sent with payment to Financial Operations & Controller, ACS, P.O. Box 28597, Central Station, Washington, DC 20005-

8597. Subscriptions are available only on a calendar year basis. Rates quoted do not apply to nonmember subscribers in Japan, who must enter subscription orders with Maruzen Company Ltd., 3-10 Nihonbashi 2-chome, Chuo-ku, Tokyo 103, Japan. Tel: (03) 272-7211.

Printed edition single issue prices: current year, \$22.00; prior year, \$48.00. **Back volume price:** \$570.00. Foreign postage additional. Mail orders should be sent to Microforms & Back Issues Office at the ACS Washington address.

Phone orders can be placed for printed, microfiche, and microfilm editions by calling the ACS toll free at (800) 333-9511 from anywhere in the continental United States. Phone orders can be charged to Visa, MasterCard, or American Express accounts.

Changes of address must include both old and new addresses with ZIP code and a recent mailing label. Send all address changes to Member & Subscriber Services. Please allow 6 weeks for change to become effective. **Claims for missing numbers** will not be allowed if loss was due to failure of notice of change of address to be received in the time specified; if claim is dated (a) North America; more than 90 days beyond issue date, (b) all other foreign; more than 180 days beyond issue date. Hard copy claims are handled by Member & Subscriber Services.

Supplementary material is noted in the table of contents with a ■. It is available as photocopy (\$10.00 for up to 3 pages and \$1.50 per page for additional pages, plus \$2.00 for foreign postage) or as 24× microfiche (\$10.00, plus \$1.00 for foreign postage). See supplementary material notice at end of journal article for number of pages. Orders *must* state whether for photocopy or for microfiche and give complete title of article, names of authors, journal, issue date, and page numbers. Prepayment is required and prices are subject to change. Order from Microforms & Back Issues Office at the ACS Washington address. Supplementary material except structure factors also appears in the microfilm edition and may be ordered by subscription (in microfiche only).

Journals Department
American Chemical Society
2540 Olentangy River Road
P.O. Box 3330
Columbus, OH 43210
(614) 447-3600, Ext. 3171
TELEX 6842086; FAX (614) 447-3745

Member & Subscriber Services
American Chemical Society
2540 Olentangy River Road
P.O. Box 3337
Columbus, OH 43210
(614) 447-3776
(800) 333-9511