

# 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

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

Burton C. Anderson  
Richard H. Boyd  
Stuart L. Cooper  
Pierre G. de Gennes  
Adi Eisenberg

Curtis W. Frank  
Eugene Helfand  
Julia S. Higgins  
William R. Krigbaum  
Herman Mark

Carl S. Marvel  
James H. O'Donnell  
Charles G. Overberger  
Bengt Ranby  
Ulrich W. Suter

Matthew Tirrell  
Robert Ullman  
Gerhard Wegner  
Bernhard Wunderlich  
Hiromi Yamakawa

*Ex-officio:* B. M. Culbertson

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

## BOOKS AND JOURNALS DIVISION

D. H. Michael Bowen, Director

Journals Department: Charles R. Bertsch, Head; Marianne C. Brogan, Associate Head; Mary E. Scanlan, Assistant Manager; Ann Marie Sprungle, Assistant Editor

Research and Development Department: Lorrin R. Garson, Head

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

© Copyright 1987 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, Books and Journals Division, at the ACS Washington address.

## Editorial Information

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

**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

**1987 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.)

|                                     | Canada<br>and<br>U.S. |       | Mexico | Europe<br>Air Service<br>Included | All Other<br>Countries<br>Air Service<br>Included |
|-------------------------------------|-----------------------|-------|--------|-----------------------------------|---------------------------------------------------|
| Printed                             |                       |       |        |                                   |                                                   |
| Members                             | \$ 53                 | \$ 66 |        | \$ 83                             | \$ 97                                             |
| Nonmembers                          | \$306                 | \$319 |        | \$336                             | \$350                                             |
| Microfiche                          |                       |       |        |                                   |                                                   |
| Members                             | \$ 53                 | \$ 53 |        | \$ 65                             | \$ 65                                             |
| Nonmembers                          | \$306                 | \$306 |        | \$318                             | \$318                                             |
| Supplementary material (microfiche) | \$ 10                 | \$ 14 |        | \$ 14                             | \$ 14                                             |

**New and renewal subscriptions** should be sent with payment to Business Management Division, ACS, P.O. Box 57136, West End Station, Washington, DC 20037. 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 \$26.00; prior year \$32.00. **Back volume price:** \$377.00. 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) 227-5558 from anywhere in the continental United States; Washington, D.C., area call (202) 872-4363. 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 Membership & Subscription 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 one year beyond issue date; or if the reason given is "missing from files". Hard copy claims are handled by Membership & Subscription 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 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).

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

Journals Department  
American Chemical Society  
2540 Olentangy River Rd.  
P.O. Box 3330  
Columbus, Ohio 43210  
(614) 421-3600 ext. 3171  
TELEX 6842086

Membership & Subscription Services  
American Chemical Society  
2540 Olentangy River Rd.  
P.O. Box 3337  
Columbus, Ohio 43210  
(614) 421-3776