

RHEOLOGY BULLETIN

Publication of The Society of Rheology, Inc.

Vol. 47, No. 3

December, 1978



U.S. - JAPAN JOINT MEETING

April 6-8, 1979
Hotel King Kamehameha
Kona, Hawaii

FINAL CALL

Registration forms and travel information were mailed separately to members in October. Write Nobu Nakajima, P.O. Box 122, Avon Lake, Ohio 44012 or call (216) 933-6181, ext. 1608. Fee is \$25 plus \$5 for spouses.

Specialized Travel & Tours, Inc., 111 High Ridge Rd., Stamford, CT 06905 is handling flight/tour programs that include the ACS meeting in Honolulu preceding the SOR meeting.

PROGRAM

The program organized by co-chairman D. C. Bogue appears as a separate enclosure, along with the abstracts of the papers.

50th JUBILEE MEETING

Copley Plaza Hotel
Boston, Massachusetts
Oct. 28 - Nov. 1, 1979

This year the Society of Rheology celebrates its 50th anniversary. A gala meeting is being planned to be held in Boston, Massachusetts October 28 - November 2, 1979. Plans include a special technical program, invited speakers and guests from foreign societies, presentation of the Bingham Award to an outstanding researcher in the science, a luncheon honoring former Bingham medalists, a social program for the ladies and a four-day instrument exhibit. We expect attendance to be larger than any previous meeting of the Society. Robert Cohen and Tug Tolle are cochairmen of the Local Arrangements Committee.

We are planning General Sessions as well as symposia and grouped papers on:

Biorheology
Composite Mechanics
Continuum Mechanics
Extensional Flow
Fluid Transport and Drag Reduction
Food Rheology
Molecular Theory
Multiphase Flow
Rheology of Solids
Viscoelastic Testing
Polymer Rheology:
Solutions, Melts & Processing

Transmit to the Program Chairman abstracts up to 200 words. The title, authors' addresses and texts to reach R. S. Porter, GRC 701, University of Massachusetts, Amherst, MA 01003 by July 15, 1979.

FORMAT OF MEETING ABSTRACTS

Use 8-inch width for typing text, elite type, if available, single spacing, 200 words or equivalent. Place in the following order: TITLE OF PAPER, Authors' names and complete addresses, one-line space, abstract.

SHORT COURSE SURVEY

The newly formed Committee on Education, chaired by Donald Hunston, desires opinions on topics for short courses. Please complete the enclosed questionnaire and mail it to D. Hunston at Naval Research Lab, Code 6120, Washington, DC 20375.

COMMITTEES

Executive Committee

Irvin M. Krieger (President)
Edward B. Bagley (Vice President)
Edward A. Collins (Treasurer)
Montgomery T. Shaw (Secretary)
Raymond R. Myers (Editor)
Arthur B. Metzner (at large)
William R. Schowalter (at large)
J. R. Knox (Past President)

Membership Committee

Charles L. Sieglauff (Chairman)
Leopold V. Cancio
John H. Elliott

Awards Committee

E. B. Christiansen (1979) (Chairman)
Stanley G. Mason (1979)
R. Byron Bird (1980)
Kurt Wissbrun (1980)
Robert S. Moore (1981)
Larry V. McIntire (1981)

1979 Spring Meeting (Hawaii)

Local Arrangements Committee

Nobuyuki Nakajima (Co-chairman)
*Hirotaro Kambe (Co-chairman)

Program Committee

*Hiromichi Kawai (Co-Chairman)
*Michio Kurata
*Kazuhiko Ninomiya
Donald Bogue (Co-Chairman)
Robert Landel
Richard Stein

*Japan Society of Rheology

1980 Annual Meeting (Boston)

Coordinating Committee

J. R. Knox (Chairman)
E. J. Tolle (Local Arrangements)
Roger S. Porter (Program)
Ronald S. Rivlin
Irvin M. Krieger
Herschel Markovitz (History)
Robert S. Marvin (History)

Local Arrangements

E. J. Tolle (Co-Chairman)
Robert E. Cohen (Co-Chairman)

Program

Roger S. Porter (Chairman)

Committee on Site Selection and Topics

Edward A. Collins (Chairman)
E. J. Tolle
Christopher T. Hill

Committee on Education

Donald Hunston (Chairman)
Edward A. Collins
Christopher W. Macosko

Nominating Committee

Robert L. Mendelson (Chairman)
Joe D. Goddard
Robert F. Landel

Representative to International Committee on Rheology

J. R. Knox

RHEOLOGY BULLETIN

Raymond R. Myers, Editor
Department of Chemistry
Kent State University
Kent, Ohio 44242

Publicity and Public Relations

J. R. Knox (Chairman)
Roger S. Porter

Representative to National Committee on Theoretical and Applied Mechanics

Hershel Markovitz

MINUTES OF EXECUTIVE COMMITTEE MEETING

Houston, Texas
October 22, 1978

The meeting was called to order by President I. Krieger at 2:00 p.m. In attendance were executive committee members E. A. Collins, I. M. Krieger, A. B. Metzner, R. R. Myers, W. R. Schowalter, and M. T. Shaw. Other participants included D. C. Bogue, C. I. Chung, D. Hunston, R. A. Mendelson, R. S. Porter, and C. L. Sieglauff.

The Secretary read the report to be presented at the annual business meeting and the minutes of the last executive committee meeting as printed in the Bulletin. The Treasurer went through the present and estimated balances. It was noted that corporate contributions received for the 50th annual meeting were being kept separate by J. R. Knox, with a running audit by the Treasurer. Both reports of the Secretary and the Treasurer were approved by motion, second and voice vote.

The chairman of the Program Committee, C. I. Chung, reported on the activities leading up to the 49th Annual meeting in Houston. Scheduled were 64 contributed papers, and 4 invited papers. Chung described several inconveniences during his tenure, including lack of listings of telephone numbers and delays in issuing the abstracts. It was suggested that a standard form or format for abstracts be instituted and that AIP do more of the abstract preparation.

Program Chairman for the spring meeting in Hawaii, D. Bogue, reported that very few abstracts had been received in spite of a November 6, 1978 deadline. Action to increase the flow of contributions will include announcements of the 49th meeting, a mailing of a call for papers and contacts with participants in appropriate ACS symposia.

The report of the Committee on Education (formerly the Short-Course Committee), chaired by Hunston, was read by Collins who has developed a list of all past short courses for the benefit of future instructors. Repeats of popular past courses were discussed along with a proposed course for the Boston meeting. More distant objectives of the Committee on Education include the development of a list of formal rheology courses regularly scheduled at universities and audio-visual self-study courses. President Krieger charged Hunston with the responsibility of determining policy for the Committee on Education.

The report of the Program Committee for the 50th Anniversary meeting in Boston was read by its chairman, R. S. Porter. Arrangements at the Copley Plaza are such that three concurrent sessions will be possible. The following symposia have been planned: Composites, Food Rheology, Fluid Transport and Drag Reduction, Biorheology, Tribology, Rheology of Metals, and Rheology of Suspensions. The first five have been arranged, and chairmen assigned. Symposia not listed will be established as abstracts are received. Porter was authorized to commit a substantial portion of the special funds for the 50th meeting to enhance the quality of the program. A. Metzner suggested that government (NSF) funds be sought to support the program.

The report of the Membership Committee was read by Chairman C. L. Sieglauff. To help raise the membership from the present 870 to 1000 by next year, a new brochure will be prepared and sent to members (particularly those at universities) for an all-out membership drive. A motion was presented to authorize the preparation of a new brochure and its distribution to all members; it was seconded and passed by voice vote. Methods of increasing the sustaining membership to 25 were discussed; a dues increase at this time was felt to be counterproductive.

The report of the Editor was presented by Myers. The "Journal of Rheology" will reach 700 pages per year, with 800 as a goal. The 50th-year edition will be supplied with a gold cover and every effort will be made to include historical talks presented at the 50th annual meeting. No separate proceeding of the 50th meeting will be published (the papers will be handled in the usual fashion) as determined by motion, second, and voice vote.

President Krieger discussed several topics concerning the American Institute of Physics which have bearing on The Society. Tax-exempt status has been upheld for APS and therefore difficulty for The Society is not envisioned.

AIP, on the otherhand, may have further problems. A new formula for reapportioning representation on the AIP governing board was approved by the Executive Committee, but a decision on who should represent The Society (currently it is the President) was not reached.

Collins gave the report of the Meeting Site Selection Committee which had concerned itself with the two meetings scheduled for 1981: the 52nd and 53rd Annual Meetings. Philadelphia or Williamsburg for the 52nd and a location in Ohio or the Poconos for the 53rd were thought appropriate.

President Krieger discussed at this point some miscellaneous new business. One item was the discovery of two minor constitutional inconsistencies by R. Marvin. These will be considered by the yet-to-be-convened Nominating Committee.

A more difficult question was that of the proposed Ruth Weltmann award for female rheologists. After considerable discussion it was decided that no award other than Bingham Medal will be offered by The Society. Krieger was empowered to expore with Ms. Weltmann the possibility of a fellowship or other fund for helping students studying rheology.

An item forwarded by A. B. Metzner concerned the proposal by the publishers of "Rheological Acta" to sell their journal at a modest discount to members of The Society in return for the use of The Society's name as a supporting group. A Metzner was assigned the task of obtaining their response on a number of counter proposals including the mutual publication of meeting notices and tables of contents.

The next Executive Committee meeting will be scheduled by I. Krieger for a Saturday early in March, 1979, at the Cleveland airport. The meeting was adjourned at 6:30 p.m.

Respectfully submitted,
M. T. Shaw, Secretary

*The apparent disappearance of the 51st Annual Meeting is due to an historical misnumbering, which will be corrected at our 50th Anniversary.

EDITOR'S REPORT TO THE EXECUTIVE COMMITTEE

October 16, 1978

Publication Status

Volume 22 has issued bimonthly; Issues 1 through 5 contained 23 papers, 2 notes, and abstracts from Volumes 3 and 4 of the Journal of Society of Rheology, Japan, and abstracts from the 46th and 47th annual meetings of The Society of Rheology.

To date 46 papers were submitted in 1978. There are 33 in the hands of the assistant editors, with roughly half of those heading for rejection or extensive revision.

The Journal of Rheology will reach 700 pages this year. This represents a considerable dividend for members. Subscriptions are rising.

Bulletins

Bulletins were issued in April and August, 1978. A Program and Abstracts for the 49th Annual Meeting to be held in October were also published in August, 1978. Deadline for material for the last Bulletin this year is December 10.

The executive Committee authorized \$100 to have Certificates of Appreciation printed and lettered. This has been done; the certificates were delivered at the Houston meeting to any assistant editors who were present; the rest by mail.

We will ask Wiley Interscience to cover the 1979 issue of Journal of Rheology in gold.

Raymond R. Myers
Editor

MINUTES OF ANNUAL BUSINESS MEETING

Houston, Texas
October 23, 1978

The annual business meeting was called to order by President I. M. Krieger at 5:40 pm. The President opened the meeting by expressing his appreciation for the help provided by J. R. Knox and E. B. Bagley during his absence.

The Secretary read the annual report which was moved and voted to be accepted. The award of the Bingham Medal to T. L. Smith, the publication of a new directory and the slow membership growth were highlighted in this report.

Treasurer E. A. Collins gave the financial report, noting a slight increase in the assets of The Society. A question concerning the contributions for the 50th Anniversary Meeting was raised and it was explained by the Treasurer that these monies were being held in a separate account administered by J. R. Knox but controlled by the Executive Committee. Collins noted in response to a second question that membership dues were entered as they were received, not when due. The treasurer's report was accepted after motion, second and vote.

Editor Myers provided a report on the publishing activities of The Society. Six issues of the "Journal of Rheology" and three issues of the "Bulletin" are scheduled for 1978. Planned for 1979 is a gold cover for the "Journal of

Rheology" and the inclusion of historical articles currently being prepared. The Editor concluded by thanking the Assistant Editors and issuing them certificates of appreciation.

President Krieger described the past accomplishments of the Short-Course Committee (seven successful short courses) and announced that its name would be changed to the Committee on Education to reflect its increased responsibilities including compilation of films, books, courses and other educational services, along with the possible development of a self-study course. Ideas are being solicited and should be directed to Chairman D. Hunston.

The president, on behalf of the Membership Committee, charged The Society as a whole with the task of increasing membership to 1,000 by the end of 1979. He also announced that the sustaining membership would increase from 10 to about 20 as a result of the solicitation effort for the 50th Anniversary Meeting.

E. A. Collins reported for the Site Selection Committee, describing the scheduled meetings at the Hotel King Kamehameha in Hawaii (April 6-9, 1979) and at the Copley Plaza in Boston (October 28 - November 2, 1979). Tentative sites for the 52nd Annual Meeting (February, 1981) are Philadelphia or Williamsburg, while sites in Ohio or the Poconos will be considered for the 53rd Annual Meeting (Fall, 1981). No meetings are scheduled during 1980 because of the International Congress.*

Program Committee Chairman for the Houston Meeting, C. I. Chung, reported all was going well; the contributions of Local Arrangements Chairman R. W. Flumerfelt were acknowledged. D. C. Bogue, the Program Committee Chairman for the Hawaiian Meeting, issued an urgent request for papers. Program Committee Chairman for the Boston Meeting, R. S. Porter, described his activities including the scheduling of several symposia and the planning of other special events.

No additional old business was brought forward.

New business consisted of an objection from the floor concerning the inclusion of the banquet fee in the registration fee and the charge for late registration. It was pointed out by the President that the late charge is necessary to facilitate planning, but the banquet fee question would be considered further.

The meeting was adjourned at 6:15 pm.

Respectfully submitted,
M. T. Shaw, Secretary

*The apparent disappearance of the 51st Annual Meeting is due to an historical misnumbering which will be corrected at our 50th Anniversary.

1978 REPORT OF THE SECRETARY TO THE ANNUAL BUSINESS MEETING

Houston, Texas
October 24, 1978

During 1978, The Society enjoyed a relatively quiet year, gathering once for the current 49th Annual Meeting in Houston, Texas, where approximately 70 papers are scheduled to be presented. In spite of the apparent calm, increasing committee activity has been witnessed in anticipation of a spring meeting in Hawaii and the 50th Annual Meeting in Boston.

Thor L. Smith was named the Bingham medalist for 1978.

Continued strict handling of members delinquent in dues payments has limited the membership increase to five (up from 831 to 836 as of June 30, 1978). Similar small increases in past years point to the need for a radical program to reach the goal of 1,000 members by the end of the 50th year. A new membership directory was issued containing 855 listings, including those of new, sustaining, and retired members. Revisions of the Constitution and Rules approved in 1977 were incorporated in this directory.

On the horizon are possible difficulties with unfavorable tax rulings for organizations such as The Society; the election of officers, Hawaiian meeting, and gala "Golden Anniversary" meeting next year; and the more distant 8th International Congress in Italy in 1980.

Finally, the Secretary would like to express his appreciation to the Institute of Materials Science, the University of Connecticut, for clerical and financial assistance in carrying out the tasks of this office.

Respectfully submitted,
M. T. Shaw
Secretary

AMERICAN INSTITUTE OF PHYSICS INC. FOR SOCIETY OF RHEOLOGY

STATEMENT OF RECEIPTS AND DISBURSEMENTS Year Ended December 31, 1977

Balance in Account - January 1, 1977*		\$15,227.92
<u>Receipts (January 1 - December 31, 1977)</u>		
Dues Collections:		
1976, 1977, and 1978 Dues	\$12,955.00	
Interest, Savings and Certificates	1,455.16	
Short Course, New York and Madison	1,132.47	
Transaction Page Charges, <u>20(4)</u> and <u>21(1,2,3)</u>	3,892.24	19,434.87
		<u>\$34,662.79</u>
	Net Receipts	
<u>Disbursements (January 1 - December 31, 1977)</u>		
Charge for Dues, Billing and Collection (\$1.20/Item Billed)**	1,050.00	
Charge for Preparation and Maintenance of Member Record File (\$1.50/member record)	1,485.00	
Financial Handling Charge (5/8 of 1% of business handled)	250.00	
Member Society Dues, 1977, (\$1/member/year)	900.00	
Editorial Expenses: Salaries, Phone, Postage, File Cab.)	1,375.00	
SOR Mailing Labels	25.00	
Constitution Ballot Mailing	276.00	
Mailing Memo re Slate of Officers & Amendments	150.00	
Revision of SOR Brochure	264.00	
May 1977 Bulletin	305.00	
Winter Meeting, New York, Feb. 28 - March 2	499.00	
SOR Ballot Mailing and Interest Questionnaire	149.00	
August 1977 Bulletin and October Abstracts	1,761.00	
Addressing Lists	82.00	
New Letterhead, Revised Brochure, Membership Cards	390.00	
Other:		
Administrative Services	1,200.00	
Miscellaneous	693.72	
Mailing Charges, Transactions: <u>21(1,2,3,4)</u>	195.00	
Transfer Funds, AIP	5,000.00	16,049.72
		<u>\$18,613.07</u>
Balance in Account, December 31, 1977		

Respectfully submitted,
Edward A. Collins
Treasurer
October 22, 1978

AMERICAN INSTITUTE OF PHYSICS INC.
FOR THE SOCIETY OF RHEOLOGY

STATEMENT OF RECEIPTS AND DISBURSEMENTS
Six Months Ended June 30, 1978

Balance in Account - December 31, 1977		\$18,613.07
<u>Receipts (January 1 - June 30, 1978)</u>		
Dues Collections - 1977 and 1978	\$ 3,922.00	
Sales of Mailing Lists	46.00	
Net Receipts from 1976 Annual Meeting (New York, February 1977)	1,136.00	
Interest, Savings and Certificate	<u>615.10</u>	<u>5,719.10</u>
Net Receipts		<u>\$24,332.17</u>
<u>Disbursements (January 1 - June 30, 1978)</u>		
Charge for Dues, Billing & Collection (1.23/Item Billed)	514.00	
Charge for Preparation & Maintenance, Member File (1.50/member)	667.00	
Financial Handling Charge - Six Months 1978 (5/8 of 1% of Business Handled)	100.00	
Member Society Dues - Six Months 1978,	450.00	
Editorial Expenses: Salaries, Telephone, Postage	800.00	
April 1978 Bulletin Mailing	426.00	
Combined Mailing of Letter from SPE and ICR	116.00	
Short Course Mailing	72.00	
New Letterhead	56.00	
Assistant Editor Gold Certificates	58.00	
Letter to Delinquent Members	11.00	
Other:		
Administrative Services	600.00	
Miscellaneous	<u>103.00</u>	<u>3,973.00</u>
Balance in Account, June 30, 1978		<u>\$20,359.17</u>

1979 TREASURER'S ESTIMATE

Estimated Balance in Account, January 1, 1979		\$19,000
<u>Receipts</u>		
Dues, 1978 and 1979	\$12,000	
Interest, Savings Certificates and Savings, Checking Accounts	1,100	
Income, Short Course, Houston and Boston	4,000	
Transaction Page Charges	3,800	
Annual Meeting	<u>1,000</u>	<u>21,900</u>
Net Receipts		<u>\$40,900</u>
<u>Disbursements</u>		
Charges for Dues, Billing and Collection (1.23/item billed)	\$12,000	
Charges for preparation and maintenance of member record file (1.50/member)	1,500	
Financial Handling Charge (5/8 of 1% of business handled)	300	
Member Society Dues, \$1/member	1,000	
Editorial Expenses	2,400	
Journal of Rheology	6,300	
Subscription Expenses	1,700	
Spring Bulletin	550	
Summer Bulletin	550	
Fall Bulletin and Meeting Abstracts	2,000	
50th Meeting Expenses	600	
Short Course Mailing and Expenses	2,000	
Administration (AIP) Services	1,200	
Miscellaneous	900	
New Roster	<u>600</u>	<u>\$22,800</u>
Estimated Balance, December 31, 1979		<u>\$18,100</u>

Respectfully submitted,
Edward A. Collins
Treasurer
October 22, 1978

ANNOUNCEMENTS

March 5-7, 1979

Chemical Engineering Rheology 1979 at
 Institut für Verfahrenstechnik
 Rheinische Westfälische Technische
 Hochschule Aachen
 Turmstraße 46
 D-5100 Aachen, West Germany
 Write to B. Schummer at above address.

March 26-28, 1980

Practical Rheology in Polymer Processing Loughborough University of
 Technology sponsored jointly by The British Society of Rheology and the
 Plastics and Rubber Institute. Papers are planned in rheology and product
 performance, machine design and process efficiency, and techniques and their
 relevance.

Contact D. E. Marshall, Institute of Polymer Technology, University of
 Technology, Loughborough, Leicestershire, LE11 3TU, England.

Three short courses in polymers and rheology will be presented at Kent
 State University. "Dispersion of Pigments and Resins in Fluid Media" May
 21-25, 1979; "Coatings and Polymer Characterization" June 11-15, 1979; and
 "Applied Rheology for Industrial Chemists" June 25-29, 1979.

Contact Carl J. Knauss, Chemistry Department, Kent State University,
 Kent, Ohio 44242.

The National Bureau of Standards Office of Standard Reference Materials
 has recently announced the availability of two materials of particular interest
 to rheologists.

Research Material 40 is a solution of polystyrene (molecular weight average
 about 440,000 g/mol) in a solvent of mixed tri-cresyl-phosphate and Arochlor

5432. The index of refraction of the solvent matches that of polystyrene at
 25°C, i.e. 1.5880. The zero shear viscosity and density of this sample are given
 over a temperature range from 20 to 35°C and viscosity and first normal stress
 difference are given at 25°C for shear rates from 0.044 to 22.0 reciprocal
 seconds. The properties of this material are very sensitive to temperature
 (viscosity approximately halved in 5°C). It is useful for checking rheological
 instruments for viscous heating effects or other thermal effects, for flow
 birefringence measurements and for general studies of non-viscometric flows.
 The material is issued in 250 milliliter quantities at a cost of \$223.

Standard Reference Material 1490 is designed for calibrating and checking
 rheological instruments. It is a 10½ solution of polyisobutylene in cetane. The
 mechanical properties are quite stable in storage and relatively insensitive to
 temperature changes. (Viscosity changes by about 16% in 5°C). Zero shear
 viscosity and density of this sample are given for the range from 20 to 30°C.
 Viscosity is given at 25°C for shear rates from .0177 to 280 reciprocal seconds
 and first normal stress difference is given for shear rates from 0.56 to 70
 reciprocal seconds. This material will be useful primarily as a calibration
 standard. It is issued in 250 milliliter quantities at a price of \$169.

Both of these materials may be ordered from the Office of Standard
 Reference Materials, Room B-311, Chemistry Building, National Bureau of
 Standards, Washington, D. C. 20234.

W. M. Jones, Department of Physics, The University College of Wales,
 Penglais, Aberystwyth, Dyfed, United Kingdom, has been elected President of
 the British Society of Rheology. His two-year term began in September.

There are two openings for rheologists at Jet Propulsion Laboratory to
 investigate the nonlinear behavior of liquids and solids. Blend of experimental
 and theoretical approach is desired with emphasis on molecularly based theory
 rather than pure continuum mechanics.

Contact: Dr. Steven T. J. Peng, Energy and Materials Research Section, Jet
 Propulsion Laboratory, California Institute of Technology, 4800 Oak Grove
 Drive, Pasadena, CA 91103.

SHORT COURSE SURVEY (Mail to D. Hunston, Naval Research Laboratory, Code 6120, Washington, DC 20375)

Indicate whether you (0) would not attend, (1) would consider, or (2) would
 attend, a short course on the following topics:

Possible Repeat Courses

- Elementary Problem Solving in Rheology _____
- Instrumentation and Measurement of Rheological Properties _____
- Rheo-Optical Studies of Morphology Deformation and
 Relaxation of Polymers _____
- Mechanics of Polymer Processing and Effects of Processing
 Variables on Structure and Performance _____
- Deformation and Fraction of Polymers _____
- Basic Survey of Rheology and Its Application _____
- Rheology of Dispersions _____

New Topics

- Advanced Linear and Non-linear Viscoelasticity _____
- Fluid Mechanics _____
- Composites _____
- Applied Rheology _____
- Engineering Rheology _____
- Polymer Processing _____
- Rubber Processing _____
- Applied Process Engineering Rheology _____
- Selection and Areas of Rheological Instruments _____
- Agitation and Mixing _____
- Solutions _____

Your Suggested Topics

Other Comments

APPLICATION FOR MEMBERSHIP IN THE SOCIETY OF RHEOLOGY

I hereby desire to apply for membership in THE SOCIETY OF RHEOLOGY dating from
January 19_____

NAME _____
(Please print)

MAIL ADDRESS _____

PROFESSIONAL AFFILIATION _____

POSITION _____

Please indicate in the boxes provided below the code letter from the list to the right, which best describes your areas of interest, in order of decreasing importance.

- PRIMARY
- SECONDARY
- TERTIARY

INTEREST AREA	CODE
Biological Materials	A
Foods and Natural Products	B
Inorganic Materials	C
Oils and Lubricants	D
Soils	E
Synthetic Polymers	F
Fluids (Including Solutions)	G
Solids	H
Suspension and Particulate Systems	J
Engineering	K
Experimental Techniques	L
Mechanics	M
Phenomenology	N
All of the above	Y
None of the above	Z

I understand that my regular member's subscription to the *Journal of Rheology* is for my personal, use and not for library use.

Signature

Date

Enclose remittance of \$15 for Regular Annual Dues or \$100 for Sustaining Annual Dues and mail to:

THE SOCIETY OF RHEOLOGY
c/o American Institute of Physics
335 East 45th Street
New York, New York 10017