

# RHEOLOGY BULLETIN

Publication of The Society of Rheology, Inc.

Vol. 47, No. 2

August, 1978



## 49th ANNUAL MEETING

October 22-26, 1978

Stouffer's Greenway Plaza Hotel  
Houston, Texas

### Program Committee:

C. I. Chung, Rensselaer Polytechnic Institute, Troy, NY 12181 (Chairman); Y. Chen, Rutgers University; L. V. McIntire, Rice University; D. J. Meier, Midland Macromolecular Institute; G. A. Pope, University of Texas; R. S. Porter, University of Massachusetts; and L. Westerman, Exxon Chemical Company.

Meeting registration from enclosed with program.

### Local Arrangements Committee:

R. W. Flumerfelt, Dept. of Chemical Engineering, University of Houston, Houston, Texas 77004 (Chairman); L. V. McIntire, and R. Darby, Texas A & M University.

### Location:

The meetings will be held at Stouffer's Greenway Plaza Hotel, 6 Greenway Plaza East, Houston, Texas 77046. Phone 713/629-1200.

### Housing:

Housing reservations should be made directly with Stouffer's.

### Incoming Messages during Meeting:

713/629-1200, ext. 7144

### Registration Information:

R. W. Flumerfelt 713/749-2414.

### Registration Fees:

The registration fee has been set at \$25 for members, \$35 for non-members, and \$10 for students. This fee includes Tuesday night banquet. After October 6 an additional registration fee of \$10 will be required.

Registration desk will be open Sunday, October 22, from 4 to 7 p.m., and on Monday and Tuesday from 8 a.m. to 12 noon in the Century Lobby.

### Sunday Evening Reception:

Light refreshments and cash bar from 6-8 p.m. in the Sam Rayburn Room.

### Monday Evening Informal Discussion:

(Beer Session) will be held from 7-10 p.m. in Century II Room.

### Tuesday Evening:

BINGHAM AWARD — *Dr. Thor L. Smith*, IBM Research Laboratory, has been named the 1978 Bingham Medalist. (See excerpt of citation.)

## SHORT COURSE ON RHEOLOGY

### RHEOLOGY OF DISPERSIONS

I. M. Krieger and R. L. Hoffman  
Stouffer's Greenway Plaza Hotel  
Houston, Texas

Saturday, October 21, 9 AM to 5:30 PM

Sunday, October 22, 9 AM to 4:30 PM

This course links the theoretical background essential to understanding the rheology of disperse systems, the measurement techniques, their interpretation and limitations, and practical applications. Emphasis placed on physical aspects of rheology, not mathematical. Course can serve as an introduction to rheology of dispersions for those who wish to obtain general knowledge of field, for those with limited knowledge in area and wish to broaden their perspective, and for those who wish more comprehensive knowledge of the field.

### Prerequisites:

Bachelor's degree in engineering or a physical science with elementary courses in mathematics, chemistry and physics. No previous acquaintance with rheology is assumed. Lecture notes provided.

Fee for course and notes is \$100 prior to Sept. 15, 1978. Late registration penalty of \$25 is acceptable thereafter. Student rates one-half. Checks should be payable to "The Society of Rheology" and sent with registration form (see page 3 of Bulletin) to Dr. E. A. Collins, Diamond Shamrock Corp., P.O. Box 348, Painesville, OH 44077. Phone: 216/352-9311, Ext. 329.

Lodging reservations should be made by participant.

## BIOGRAPHICAL SKETCH OF THOR L. SMITH

Dr. Thor L. Smith, IBM Research Laboratory, has been named the 1978 Bingham Medalist of the Society of Rheology.

Dr. Smith has a B.S. degree from Wheaton College (Illinois), M.S. from Illinois Institute of Technology, and Ph.D. in physical chemistry from the University of Wisconsin. He has had a varied career including positions at Hercules, Inc., Jet Propulsion Laboratory, Stanford Research Institute, and Texas A&M University. Since 1969 he has been in the Research Division of IBM.

Some of the earliest measurements of viscoelastic properties of concentrated polymer solutions are reported in his Ph.D. thesis. In subsequent research he has pursued rheological properties of a wide variety of materials, including rubbers, glassy polymers, dispersions, and composites. He has designed ingenious and precise experimental methods, has obtained extensive



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

data on carefully characterized materials, and has formulated general principles with broad applicability and practical importance. His concept of the failure envelope has been widely applied in the understanding and prediction of rupture processes in polymers. His insight into the basis of mechanical strength has influenced the thinking of many other investigators.

Dr. Smith has also advanced the science of rheology through numerous review articles which provide lucid expositions of rubberlike elasticity, viscoelasticity, strength, and failure. He has been an invited speaker at international congresses, as well as at many meetings of various national scientific societies where he has frequently organized special symposia. He was President of the Society of Rheology from 1967 to 1969.

## FUTURE SOCIETY OF RHEOLOGY MEETINGS

### U.S.-JAPAN JOINT MEETING

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

### CALL FOR PAPERS

Deadline for Abstracts — November 6, 1978

#### *Scope of Papers*

Rheological problems of solid, melt, or solution, involved in material production, processing, characterization and property evaluation, etc. for polymeric materials, foodstuffs, petroleum products and others.

The following symposia are planned in addition to the general sessions.

#### *Polymer Processing (J. L. White and Y. Oyanagi)*

J. L. White  
Dept. of Chemical, Metallurgical & Polymer Engineering, University of Tennessee 37916

#### *Rheology of Suspensions and Filled Systems (S. Onogi and E. A. Collins)*

E. A. Collins  
T. R. Evans Research Center  
Diamond Shamrock Corp.  
P.O. Box 348  
Painesville, Ohio 44077

#### *Mechanical and Chemical Ageing (J. Moacanin and K. Shibayama)*

J. Moacanin  
Jet Propulsion Laboratory  
4800 Oak Grove Avenue  
Pasadena, California 91103

Any questions concerning papers may be directed to the Program Chairman, D. C. Bogue, Dept. of Chemical Metallurgical and Polymer Engineering, University of Tennessee, Knoxville, Tennessee 37916 or to

the Japanese Program Chairman, H. Kawai, Dept. of Polymer Chemistry, Kyoto University, Kyoto, Japan.

#### *Length of Papers*

Each paper will be scheduled for 30 minutes, including discussion. Formal presentation will be limited to about 20 minutes. Translation during question period will be available.

#### *Submission of Papers*

The original and two copies of all abstracts should be in the hands of the Program Chairman by November 6, 1978. Contribution of papers is open to all members and also to non-members of the Society. Because of the language problem, speakers are strongly urged to bring copies of extended abstracts (or short manuscripts) for distribution at the meeting.

#### *Abstract Size*

A maximum of 200 words in English is allowed. Drawings are not permitted and equations are discouraged. All symbols must be clearly defined. Abstracts accepted for presentation will be published in the Winter Bulletin of the Society.

#### *Acceptance of Papers*

Acceptance of papers for presentation will be determined by the Program Committee after review of their general content, originality, and relevance to the objectives of the Society. Publication of papers presented at the Annual Meeting in the official journal of the Society, "Journal of Rheology," is highly recommended but not required.

#### *Facilities*

A blackboard and 2"x2" slide projector will be provided. If other facilities, such as movie projectors, overhead projectors or 3 1/4"x4 1/4" slide projector are required, the program chairman should be notified before March 15, 1979.

## 50th Anniversary Meeting (1979 ANNUAL MEETING) NEW DATE

October 28 — November 1, 1979  
Copley Plaza Hotel  
Boston, Massachusetts

## MESSAGE FROM THE PRESIDENT

With the 49th Annual Meeting immediately before us, The Society of Rheology is poised to enter its fiftieth year. This will be the Diamond Jubilee not only of The Society, but also of rheology as an organized scientific discipline. Your Executive Committee started planning this occasion a year ago, during Jack Knox's presidency. The 50th Annual Meeting will be a major event, with definitive symposia, distinguished invited speakers, and representation from other societies, both here and abroad. It will be held at the Copley Plaza Hotel in Boston Oct. 28-Nov. 1, 1979. Co-Chairmen for Local Arrangements are Tug Tolle and Bob Cohen; Roger Porter is in charge of the Program. They serve on a Coordinating Committee chaired by Jack Knox, with Hershel Markovitz as Historian, Ronald Rivlin and me. Funds are being solicited from industry, government and private foundations to enable us to give the meeting scope and style befitting the occasion. Please contact any member of the Coordinating Committee or the Executive Committee with your ideas and suggestions.

During The Society's fiftieth year, we will drive to attain a regular membership of one thousand, and to increase the number of Sustaining Members. (A motion



will be presented at the Houston meeting to raise Sustaining Members' Annual dues to \$150, in order to restore the ten-to-one ratio with respect to regular members' dues). Chuck Sieglaff chairs the Membership Committee, with John Elliott and Leo Cancio. Please help them identify candidates for regular and sustaining membership. A second joint meeting with the Japan Society of Rheology will be held this spring in Kona, Hawaii. U.S. Co-Chairman for Local Arrangements is Nobu Nakajima, with Don Bogue as Co-Chair-

man for Program.

We have an active and exciting year ahead of us. It opens with the 49th Annual Meeting in Houston. Ray Flumerfelt and his Local Arrangements Committee will give us the keys to this great city, and Chan Chung's Program Committee has put together a really stimulating technical program. Come to Houston and help us get our fiftieth year off to a great start.

I. M. Krieger

### TREASURER'S REPORT

1977 ANNUAL MEETING — MADISON, WISCONSIN  
October, 1977

Balance in account January 1, 1977*		<u>\$14,980.92</u>
Receipts January 1 — June 30, 1977		<u>2,985.00</u>
Interest Elyria Savings Acct 9-19920	\$ 519.27	
Interest Cardinal Savings Certificates	598.59	
Short Course, New York Mtg. Feb./'77	2,650.00	
Page Charges Transactions Vol. 20 No. 4	795.00	
Vol. 21 No. 1	1,410.00	
Vol. 21 No. 2	957.24	
Short Course, Madison	2,025.00	<u>11,940.10</u>
Net Receipts		<u>\$26,921.02</u>
Disbursements — Dues Billing and Collection	549.00	
Member Record File	686.00	
Financial Handling Charge	125.00	
Member Society Dues — 6 months 1977	450.00	
Editorial Expenses	500.00	
Constitution Ballot — Mailing	276.00	
Slate of Officers — Mailing	150.00	
Revision of SOR Brochure	263.00	
May, 1977 Bulletin	305.00	
Winter Meeting, New York	499.00	
Address Lists	62.00	
Administrative Services	600.00	
Miscellaneous	367.00	
Short Course Expense	2,208.00	
ACS Scroll	41.72	
Gift to Editor's Secretary	44.00	
Transfer Funds to AIP	5,000.00	
Expenses Madison Short Course	175.00	
	<u>10,467.72</u>	<u>26,921.02</u>
Balance in Account AIP June 30, 1977		<u>\$16,453.30</u>
Avon Lake Account, October 20, 1977		

Respectfully Submitted  
Dr. Edward A. Collins, Treasurer  
October 20, 1977

\* Adjusted to include 1976 Quoted Price Variance

Send to: Dr. E. A. Collins  
Diamond Shamrock Corporation  
Painesville, OH 44077

### REGISTRATION FORM

RHEOLOGY SOCIETY SHORT COURSE  
Saturday/Sunday, October 21 and 22, 1978  
Stouffer's Greenway Plaza Hotel  
Houston, Texas

Name .....

Residence Address .....

Company Affiliation & Address .....

.....

Work Phone Number .....

(Area Code)

Residence Phone Number .....

(Area Code)

Date of Arrival .....

Check for \$100 made payable to "The Society of Rheology" should be included.



## OTHER MEETINGS

### Rheology of Associating, Structured & Biological Systems

Joint meeting of British, Italian and Netherlands Societies of Rheology, supported by the Polymer Physics Group of the Institute of Physics will be held in Amsterdam, April 18-20, 1979.

Deadline for Papers: October 31, 1978.

Submission of title and 1-page abstract in English is open to members and non-members of the 3 Societies and the Polymer Physics Group. Papers providing link between rheological behaviour and structure of wide class of systems will be welcome. Send abstracts to:

F. N. Cogswell  
67 Daniells

Welwyn Garden City, Herts. AL7 1QT  
United Kingdom

### 3rd International Congress on Biorheology August 28-September 1, 1978

University of California, La Jolla, CA

Write: John Pinto, Secretary General  
The Biorheology Congress

Mail Code M-005, University of California  
San Diego, La Jolla, CA 92093

### 3rd Congress of the Societies of Biomechanics September 14 and 15, 1978

University Pierre et Marie Curie

Place Jussieu, 75005 Paris

Secretariat du 3e Congress de Biomecanique  
Laboratoire de Mecanique Experimentale

des Fluides  
Batiment 502, Campus Universitaire  
91405, Orsay Cedex, France

### VIIIth International Congress on Rheology September 1-7, 1980

Engineering School of University of Naples  
Prof. Nicolais, VIIIth Int. Cong. on Rheology  
c/o Montedison Research Center, DIRS,  
Via Nuova delle Breccie  
150, 80147 - Napoli/Barra, Italy

## ANNOUNCEMENTS

The proceedings of part of the British Society of Rheology Conference held in Edinburgh in September 1977 are published as a 164-page issue of the Journal of Non-Newtonian Fluid Mechanics, Vol. 4, numbers 1 and 2 (June 1978). Members of the Society of Rheology may purchase copies at a special price of \$15 (by surface mail) or \$20 (by air mail) if ordered and paid before Oct. 31, 1978 from Miss R. M. Burke, Elsevier Scientific Publishing Company, Jan van Galenstraat 335, P.O. Box 330, Amsterdam, The Netherlands. Structural Mechanics Software Series, Vol. II, by Perrone and Pilkey, is available from the University Press of Virginia, Box 3608, University Station, Charlottesville, VA 22903.

Proceedings of the International Symposium on Fracture Mechanics, sponsored by the Office of Naval Research, held at George Washington University September 11-13, 1978, will be available in September from University Press of Virginia, Box 3608, University Station, Charlottesville, VA 22903.

## 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