

# RHEOLOGY BULLETIN

Publication of The Society of Rheology, Inc.

Vol. 60 No. 1



January 1991

## THE SOCIETY OF RHEOLOGY OFFICERS AND BOARD - 1989-91

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### Nominating:

M. M. Denn, chairman  
M. T. Shaw  
J. M. O'Reilly

## Nominations for the 1991 Bingham Medal

As announced in the July 1990 Rheology Bulletin, nominations were due to the Bingham Award Committee by January 15, 1991. The committee chairman is:

Ronald G. Larson  
AT&T Bell Laboratories  
Room 6E, 600 Mountain Avenue  
Murray Hill, NJ 07974  
(201) 582-6158

## 63rd ANNUAL MEETING ROCHESTER, NEW YORK OCTOBER 20-24, 1991

The annual meeting of The Society of Rheology will be held in Rochester, NY. The North American Society of Biorheology will hold their annual meeting as an integral part of the Rochester meeting. The meeting organizers are:

### Technical Program Chairman:

Bruce Hartmann, Code R31  
Naval Surface Warfare Center  
10901 New Hampshire Ave.  
Silver Spring, MD 20903-5000  
(301) 394-2629, FAX: (301) 394-2414

### Local Arrangements Chairman:

Glen H. Pearson  
Eastman Kodak Co.  
Rochester, NY 14652-3701  
(716) 722-9138, FAX: (716) 722-7072

Rochester is located on the south shore of Lake Ontario in western New York state. With over one million residents, Rochester is the third largest city in the state and offers the advantages of big city life with the comforts and congeniality of small city living. The proximity to the Lake usually brings an extended fall with October daytime temperatures averaging 62F.

The meeting will be held at the Holiday Inn-Genesee Plaza in downtown Rochester, ten minutes from the airport. From this central location, local attractions such as the Eastman Theatre (home of the Rochester Philharmonic), the International Museum of Photography at the George Eastman House, the Memorial Art Gallery, the Rochester Museum and Science Center, and the Margaret Woodbury Strong Museum are all within a few minutes by car or taxi. The Finger Lakes wineries, Niagara Falls, and the Genesee Country Village and Museum are within two hours drive. In addition to the Sunday Reception, Bingham Banquet, Beer Session, and a reception at the George Eastman House, tours of local attractions are being arranged for interested meeting participants and guests.

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RHEOLOGY BULLETIN  
Andrew M. Kraynik, Editor  
Division 1511  
Sandia National Laboratories  
Albuquerque, New Mexico 87185  
(505) 844-9696 (Editor)  
(505) 844-8872 (Secretary)  
FAX: (505) 846-0295

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**Rheology in Composite Processing, Structure, and Properties:** Effective viscosity related to degree of cure, effective medium theories, and moisture effects for short fiber reinforced composites, polymer composites, and ceramic composites.

Suresh Advani  
University of Delaware  
Department of Mechanical Engineering  
Newark, Delaware 19716  
(302) 451-8975  
FAX: (302) 292-3619

#### TECHNICAL PROGRAM FOR ROCHESTER

Authors wishing to present a paper in Rochester must submit a **camera-ready abstract on the enclosed form** to the appropriate symposium organizer or to the Technical Program Chairman by May 1, 1991. The planned symposia and their organizers follow.

**Molecular Models of Polymer Liquids:** Experimental and theoretical work on diffusion, linear viscoelasticity, and nonlinear rheological properties.

Michael Rubinstein  
Eastman Kodak Company  
Rochester, New York 14650-2110  
(716) 477-3659  
FAX: (716) 722-2327

**Rheology of Emulsions and Dispersions:** Experimental and theoretical studies of suspension rheology with particular interest in food rheology and biorheology.

Juan A. Menjivar  
Nabisco Brands, Inc.  
RMS Technology Center  
200 DeForest Avenue  
East Hanover, New Jersey 07936  
(201) 503-3689  
FAX: (201) 503-2364

**Viscoelastic Properties of Bulk Polymers:** Experimental and theoretical studies of amorphous and crystalline polymers. Areas of particular interest include molecular theories for frequency and temperature dependence and comparisons between different instruments.

Donald J. Plazek  
Materials Science and Engineering  
University of Pittsburgh  
848 Benedum Hall  
Pittsburgh, Pennsylvania 15261  
(412) 624-7864  
FAX: (412) 624-1108

**Polymer Processing of Homopolymers and Polymer Blends:** Viscoelastic flow in complex geometries, the relation between flow and morphology for polymer blends, and structure-property relations.

Edward M. Chan  
James River Corporation  
1915 Marathon Avenue  
P.O. Box 899  
Neenah, Wisconsin 54957-0899  
(414) 729-8479  
FAX: (414) 729-8161

**The Science and Technology of Electrorheological Materials:** Rheological measurements, microrheological models, and continuum theories, as they relate to applications of ER fluids.

Frank E. Filisko  
Materials Science and Engineering  
University of Michigan  
Ann Arbor, Michigan 48109  
(313) 763-2240  
FAX: (313) 763-4788

**Networks and Gelation:** Experimental and theoretical work characterizing branched polymers, critical gels, and crosslinked networks.

Ralph H. Colby  
Eastman Kodak Company  
Rochester, New York 14650-2110  
(716) 477-5031  
FAX: (716) 722-2327

**Coatings and Coating Processes:** Rheology of coatings, process modeling, and analysis.

Richard R. Eley  
The Glidden Company  
16651 Sprague Road  
Strongsville, Ohio 44136  
(216) 826-5474  
FAX: (216) 826-5600

# THE SOCIETY OF RHEOLOGY

## ESTIMATED 1991 BUDGET

**Estimated Balance in Account on January 1, 1991** \$125,000.00

**Estimated Receipts (January 1 - December 31, 1991)**

Dues Collections - 1990, 1991, 1992	\$46,000.00	
Interest	14,000.00	
Journal of Rheology Volume 35 (1991)	1,000.00	
Annual Meeting Proceeds (Santa Fe)	8,000.00	\$69,000.00
		\$194,000.00

**Estimated Disbursements (January 1 - December 31, 1991)**

Dues Billing and Collection @ 4.50/item	\$5,400.00	
Preparation and Maintenance of Records @ 3.00/member	3,600.00	
Financial Handling (5/8% of business handled)	3,000.00	
Member Society Dues @ 2.00/member	2,400.00	
Printing of Bulletins and Abstracts	5,000.00	
Administrative Secretary (AIP)	7,000.00	
Bulletin Mailing	2,000.00	
President's Discretionary	1,500.00	
Treasurer's Discretionary	1,500.00	
Physics Olympiad (AIP)	1,000.00	
Council of Scientific Society Presidents Dues	150.00	
Miscellaneous Postage and Office Supplies	5,000.00	
Liability Insurance	150.00	
Executive Meeting Expenses	2,000.00	
Bingham Award Expenses	3,000.00	
Secretarial Services	1,000.00	
Technical Program Chairman (Speaker travel expenses)	2,000.00	
Accountant Consultant	1,000.00	\$46,700.00

**Estimated Balance in Account on December 31, 1991** \$147,300.00

Dr. Edward A. Collins  
Treasurer  
October 31, 1990

# JOURNAL OF RHEOLOGY - VOLUME 35

## ESTIMATED 1991 BUDGET

This statement of income and expenses for 1991 is based on:

Pages to be published	1500
Non-member subscriptions	590
Subscription Price	\$290.00

### Income (January 1 - December 31, 1991)

Page Charges - 40% honored @ 15.00/page	\$9,000.00	
Reprint Sales @ 5.00/page	2,000.00	
Royalties	500.00	
Non-Member Subscriptions	171,100.00	
Advertising Sales	8,500.00	\$191,100.00

### Expenses (January 1 - December 31, 1991)

Composition, Illustration, Editorial Mechanics, Printing, Binding, Mailing @ 98.00/page	\$147,000.00	
Editorial Secretary	18,000.00	
Editorial Miscellaneous	1,000.00	
Editor	10,000.00	
Subscription Fulfillment @ 15.00/member	8,745.00	
Marketing	3,000.00	
Administrative Assistant Expenses	2,500.00	\$190,245.00

**Net Income** **\$855.00**

Dr. Edward A. Collins  
Treasurer  
October 31, 1990



**Numerical Simulation of Viscoelastic Flows:**  
Calculations of steady-state and time-dependent viscoelastic flows.

Antony N. Beris  
Department of Chemical Engineering  
University of Delaware  
Newark, Delaware 19716  
(302) 451-8018  
FAX: (302) 451-1048

**Workshop on Sharkskin Melt Fracture:** Critical examination of experiments and theories of sharkskin followed by extended discussions intended to focus future work.

Stuart Kurtz  
Union Carbide Chemicals and Plastics  
P.O. Box 670  
Bound Brook, New Jersey 08805  
(201) 563-5981  
FAX: (201) 563-5086

**General Papers:** All aspects of experimental and theoretical rheology not explicitly covered by the other symposia.

Bruce Hartmann, Code R31  
Naval Surface Warfare Center  
10901 New Hampshire Ave.  
Silver Spring, MD 20903-5000  
(301) 394-2629  
FAX: (301) 394-2414

#### PLENARY SPEAKERS

In addition to the Bingham Lecture, plenary lectures will be delivered by Prof. Sam F. Edwards of Cambridge University and by Prof. John L. Kardos of Washington University.

#### SPECIAL EVENTS FOR ROCHESTER

A Beer Session on *Molecular Models of Polymer Liquids* will be moderated by Prof. Giuseppe Marrucci, University of Naples, on Monday, October 21. The Bingham Banquet will be held at the Holiday Inn-Genesee Plaza on Tuesday, October 22. An evening reception at the George Eastman House is planned for Wednesday, October 23. Several companies will exhibit rheological instrumentation. Further details and registration information will be published in the July 1991 Rheology Bulletin.

#### RHEOLOGY SHORT COURSE

A two-day short course, *Science of Adhesion: Rheology of Bond Formation and Bond Breakage*, will be taught by Prof. Gary R. Hamed, University of Akron, on Saturday and Sunday, October 19 and 20.

## THANK YOU

The Society of Rheology thanks the following organizations for their financial support of the Santa Fe Meeting:

BOHLIN REOLOGI  
RHEOMETRICS INC.  
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PEN KEM INC.  
SANDIA NATIONAL LABORATORIES

#### MINUTES OF THE EXECUTIVE COMMITTEE MEETING October 21, 1990

The Executive Committee Meeting was called to order at 9:00 a.m. on October 21, 1990 in the Hilton of Santa Fe. Officers present included: Bob Mendelson, Joe Goddard, Ed Collins, Art Metzner, John Dealy, Henning Winter, and Andy Kraynik.

The minutes of the April 22, 1990 Executive Committee Meeting as printed in the July 1990 Rheology Bulletin were approved as read.

Harry Goldsmith, President of the North American Society of Biorheology, expressed the continued interest of his group in associating with our annual meetings.

Don Marlette, Manager of Journal Productions at AIP, reported on publication issues involving the Journal of Rheology. Margaret Ensley of the AIP described her duties as administrative secretary in support of The Society of Rheology.

Monty Shaw, technical program chairman for the Santa Fe meeting, reported on the activities of his session organizers. Andy Kraynik, local arrangements chairman, described final preparations for the Santa Fe meeting. The Executive Committee commended Sandia National Laboratories for supporting the Santa Fe meeting.

Glen Pearson reported on local arrangements for the 1991 Annual Meeting in Rochester, NY. Bruce Hartmann described detailed plans for the technical program. In August 1992, the XIth International Congress on Rheology will be held in Brussels, Belgium, so there will be two meetings of the Society in 1993, a Winter meeting in Southern California and a Fall meeting in Boston. Bob Landel reported on Southern California sites under consideration for the Winter meeting, which will be held in January or February of 1993. Suggestions for host locations beyond 1993 are welcome.

Jeff Giacomini, Chairman of the Membership Committee, reported that as of September 1990, the Society has 1087 members, which includes more student (70) and retired (29) members than ever. A nonmember registering for any future meeting of the Society will become a member by paying the nonmember registration fee and indicating their desire to join the Society on the registration form.

Art Metzner provided the editor's report. Because of the increased financial responsibility associated with publication of the Journal of Rheology, the position of Administrative Assistant to the Editor was created; Kurt Wissbrun has agreed to serve in this capacity. Income from the Journal will be expanded by accepting advertisements, which are to appear in the back of each issue. It was agreed that the Editor should decide on the publication of any Letter to the Editor that is received. The Editor seeks suggestions for potential authors of review articles for the Journal. John Wiley has agreed to accept a financial settlement of \$12,000 for all claims against the Society for publishing the Journal. The Editor's report was accepted as read.

Ed Collins, Treasurer, reported a balance of \$226,951.56 as of October 4, 1990. It was estimated that the balance at the end of 1990 will be about \$125,000 after outstanding bills are paid. A motion was passed to pay the Editor an annual honorarium of \$10,000 starting January 1991. The Treasurer's report was accepted as read.

The Secretary announced that members of the Society had voted in favor of the ballot to amend Article VIII.1 of the Society Rules to read: The Society shall award a medal, to be called "The Bingham Medal," and a prize of \$2500, for outstanding contributions to the field of rheology...

The meeting was adjourned at 5:00 p.m.

#### MINUTES OF THE BUSINESS MEETING October 23, 1990

The meeting was called to order at 6:10 p.m. in the Sweeney Convention Center, Santa Fe, NM.

The minutes of the previous meeting were approved as they appeared in the January 1990 Rheology Bulletin. The Secretary announced that the Amendment to Article VIII.1 concerning a Bingham Prize of \$2500 had passed.

Art Metzner, Editor, reported that Kurt Wissbrun would serve in the newly created position of Administrative Assistant to the Editor. For the year ending September 1990, 101 manuscripts had been submitted for publication in the Journal of Rheology; 54 manuscripts had been accepted, 32 manuscripts were rejected, and 15 were under review. The time required to publish manuscripts will be reduced to eight months by February 1991.

Ed Collins gave the treasurer's report. He announced that the Editor will be paid an annual honorarium of \$10,000 starting in January 1991. The estimated year-end balance for 1990 is \$125,000.

Monty Shaw, the Technical Program Chairman for the Santa Fe Meeting, announced that over 170 papers were being presented. Andy Krainik, the Local Arrangements Chairman,

indicated that the meeting attendance would surpass three hundred with two hundred people attending the Bingham Banquet.

Glen Pearson described preparations for the 1991 Annual Meeting in Rochester, NY.

The meeting was adjourned at 6:45 p.m.

#### MEETING ANNOUNCEMENTS

May 20-21, 1991: Annual Meeting, Society of Rheology, Japan, in Kyoto. Contact Prof. Kunihiro Osaki, 1-101 Izumidono-cho, Yoshida, Sakyo-ku, Kyoto, 606 JAPAN.

May 27-29, 1991: IUTAM Symposium on Numerical Simulation of Nonisothermal Flow of Viscoelastic Liquids, Kerkrade, The Netherlands. Contact: IUTAM'91 c/o KIVI, P.O. Box 30424, 2500 GK The Hague, The Netherlands.

July 15-18, 1991: "Rheology of Polymer Melts," Prague. Contact: 14th Discussion Conference, P.M.M. Secretariat, c/o Institute of Macromolecular Chemistry, Czechoslovak Academy of Sciences, 162 06 Prague, Czechoslovakia.

October 7-9, 1991: The 22nd Midwestern Mechanics Conference will be held at the University of Missouri-Rolla. For further information contact Prof. R. C. Batra, or Mr. W. L. Ries, Continuing Education, University of Missouri, Rolla, MO 65401. Telephone: (314) 341-4132.

October 23-25, 1991: 39th Rheology Congress, Society of Rheology, Japan in Nagoya. Contact: see May 20, 1991.

February 2-5, 1992: Seventh International Workshop on Numerical Methods in Non-Newtonian Flow, Hutchinson Island, Stuart, FL. Contact: Prof. D. G. Baird, Department of Chemical Engineering, Virginia Polytechnic Institute & State University, Blacksburg, VA 24061-0211.

August 17-22, 1992: XIth INTERNATIONAL CONGRESS ON RHEOLOGY, Brussels, Belgium. Contact: Dr. Paula Moldenaers, Chemical Engineering Department, Katholieke Universiteit Leuven, W. de Croylaan 46, B-3001 Leuven, BELGIUM, FAX: 32-16-22 15 22.

August 22-28, 1992: 18th International Congress of Theoretical and Applied Mechanics, Haifa, Israel. Contact: Prof. A. Solan, Secretary ICTAM 1992, Faculty of Mechanical Engineering, Technion - Israel Institute of Technology, Haifa 32000, ISRAEL.

#### FREE ISSUES OF J. RHEOLOGY AVAILABLE

Chem-Trend Inc. will donate the past 20 volumes of the Journal of Rheology to a non-profit organization. Contact: Dr. David B. Cox, Chem-Trend Inc., 1445 West McPherson Park Drive, P.O. Box 850, Howell, MI 48844-0860.