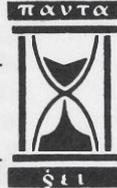


# RHEOLOGY BULLETIN

Published by The Society of Rheology

Vol. 62 No. 2



July 1993

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## 65th ANNUAL MEETING BOSTON, MA OCTOBER 17-21, 1993

The annual meeting of the Society of Rheology will be held at the Omni Parker House in downtown Boston. The technical program and abstracts, information on registration and housing, and other items of general interest are enclosed with this mailing. The meeting organizers are:

### Technical Program Chair:

William B. Russel  
Department of Chemical Engineering  
Princeton University  
Princeton, NJ 08544-5263  
(609) 258-4590, Fax: (609) 258-0211  
Email: wbrussel@pucc.princeton.edu

### Local Arrangements Chair:

Robert C. Armstrong  
Department of Chemical Engineering  
Massachusetts Institute of Technology  
Cambridge, MA 02139  
(617) 253-4581, Fax: (617) 253-9695  
Email: rca@athena.mit.edu

## Rheology Short Course

A two-day short course on *Food Rheology* will be taught by Charles F. Shoemaker, Jacqueline I. Amemiya, Rajendra P. Borwankar, and Kathryn McCarthy and will begin on Saturday, October 16. A course description and registration information are enclosed.

## Beer Session

A Beer Session on "Rheology in Motion" will be held on Wednesday evening, October 20, at the Omni Parker House.

## Instrument Exhibit

Several companies will exhibit rheological instrumentation in Boston.

## DANIEL D. JOSEPH 1993 BINGHAM MEDALIST

The Bingham Medal for 1993 will be awarded to Professor Daniel D. Joseph, Russell J. Penrose Professor of Aerospace Engineering and Mechanics of the University of Minnesota. He has a superb record of accomplishments, having made major contributions to the fields of rheology, fluid mechanics, and thermal science. In these areas he has been both inventor and user of powerful analytical tools which, coupled with phenomena-oriented experiments in his laboratory, has resulted in a sustained program of cutting edge research.

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RHEOLOGY BULLETIN  
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Joseph and his group have brought the techniques of fluid mechanics and applied analysis to bear on problems of rheology by attacking real problems in dynamics rather than by assuming simple kinematics to evaluate constitutive equations. He has been a strong advocate of developing model-independent changes based on asymptotic solutions in which the flow and constitutive equation are perturbed together. An example is his method of domain perturbations for free surface problems which he has applied to rod climbing and other problems. Joseph's group has thereby measured values of the climbing constant for many fluids over the years and has shown how these can be used to determine zero-shear normal stresses.

Together with colleagues and students, Joseph has pursued the implications of elastic response for the analysis of hyperbolicity and wave propagation in viscoelastic fluids. His landmark 1985 paper on hyperbolicity and wave propagation with Renardy and Saut set a new direction in rheological fluid mechanics, showing that vorticity was a key variable, with waves of vorticity propagating into fluids at rest; and he invented a meter to measure the speed of such waves. Joseph's group has subsequently solved many problems involving change of type from regions of elliptic to hyperbolic flow, and has attempted to correlate their measurements with observed phenomena such as anomalous heat and mass transfer in the flow across small wires, drag reduction, delayed die swell, and the inertial tilting of cylinders settling in viscoelastic fluids, all of which involve the viscoelastic Mach number as a rheological parameter. Joseph has also carried out basic experiments on delayed die swell and tilting, and numerical simulations for flow over cylinders which show results consistent with a change from elliptic to hyperbolic flow. He showed that the vorticity equation could become Hadamard unstable, and subsequent researchers have established that this instability can frustrate numerical simulations at high Weissenberg numbers. Workers in the field have since become aware of the structure and consequences of this disastrous instability and are devising methods to block them, aided in no small part by Joseph's 1990 book on the fluid dynamics of viscoelastic liquids.

Joseph's recent studies are on the flow-induced particle microstructures in the motion of bodies through viscoelastic liquids, including sidewise and streaming attractions between spheres, between spheres and walls, chaining of spheres, tilting of cylinders, and anomalous rolling of spheres down inclined walls. Joseph has also recently been working on a

mathematical framework for the precise analysis of potential flows of viscoelastic fluids.

Dan Joseph has brightened the field of rheology through his physical insight, original experiments, and interesting mathematical analysis and is awarded the Bingham Medal in recognition of this effort.

## JOHN M. DEALY RECEIVES DISTINGUISHED SERVICE AWARD

The Society's Distinguished Service Award was presented to Dr. John M. Dealy at the 64th Annual Meeting held in Santa Barbara. This is the third time the Award has been made since its establishment in 1984.

The criterion for the Award is "...members whose service in responsible positions has extended over long periods and has been of great value to the Society". A glance at the history of John's service shows that it meets this criterion fully and admirably. He has served on many Society Committees, including the Executive Committee, on which his attention to issues of Society governance has been of inestimable value. He served as Chairman and principal mover of the Nomenclature Committee, whose report he wrote; it has been reprinted most recently in Volume 37(1) of the Journal of Rheology.

The most noteworthy accomplishment of his service occurred during his Presidency of the Society in 1988-1989. He assumed the office just as the Society was forced to double its dues to the present \$40, because of the financial situation of the Journal, as described by Dr. Collins, Treasurer, in the January 1987 issue of the Rheology Bulletin. Our favorable arrangement to have the Journal published by John Wiley had deteriorated. As a result, the Society had no control over steadily escalating costs of the Journal to libraries. Further, the page size of the Journal was severely limited, requiring either rejection or untimely publication of worthy manuscripts, or large financial penalties, which were the immediate cause of the 1987 dues increase.

John Dealy undertook the task of halting and indeed reversing the precarious path of the publishing and financial situation by having the Society take responsibility for the publication of the Journal through the American Institute of Physics, the umbrella organization of which the Society is a founding member. This required not only courage and confidence, but also diplomacy, perseverance and persuasiveness, in dealing with Wiley, with A.I.P., and with his colleagues on the Executive Committee. The negotiations required innumerable meetings and telephone calls, but were concluded successfully. A measure of the success is that in 1988 the Journal published 822 pages, at a cost to the library subscribers of \$0.29 per page; in 1992 it published 1848 pages at a library cost of \$0.17 per page. And there is no indication that it will be necessary to raise dues in the near future. Indeed the Journal has been able to generate a surplus towards the necessary creation of a reserve fund to guard against contingencies, and in the future may be able to support, if the membership wishes, an expansion of Society activities.

Clearly the turn-around of the Society's publishing and financial situation created by John's service during his Presidency "...has been of great value to the Society", and fully justifies the rare distinction of the Award.

## GUEST EDITORIAL

Our income and financial obligations have changed in a major way since we moved our journal from John Wiley to the American Institute of Physics. We now have opportunities for enhancing our discipline which never had been available to us before, and actions of the Executive Committee as reported in the January issue of this bulletin and in Santa Barbara represent our initial steps in this direction. We clearly can use more constructive input from the membership than may be possible in a one-hour, once-a-year meeting; yet we have been reluctant to usurp time devoted to technical sessions for this purpose. Indeed, until very recently, so few members of the Society attended business meetings that increasing the time devoted to them would have been inappropriate.

Let us list a number of thoughts on where we are and what some of the issues may be.

1. As reported by our treasurer, most libraries pay their subscriptions in advance; we thereby incur an obligation to provide a service "in the future." Indeed, the late Robert Maxwell has been reported to boast that the publishing business may be the only one which bills so far in advance as to enable it to earn interest on the funds collected until the appreciably later date of their usage. Clearly these funds themselves, however, though appearing on our balance sheet, do not represent society resources, but rather a fund being held to meet explicit obligations.

2. Substantially all technical journals have been showing annual declines in their subscription lists in recent years as technical libraries re-evaluate their profligate expenditures for proliferating journals. In theory, therefore, every journal ought to have a reserve fund which will enable it to weather temporary dislocations between costs and income. Furthermore, there is at least some possibility that entirely new publishing formats (electronic?) may need to be launched, and the start-up costs of any such ventures seem likely to require a reserve sufficient for costs over at least a two-year period. Consequently a reserve fund of this magnitude is being established at several A.I.P. journals and we believe this to represent a prudent course for us to adopt also.

3. An aggressive marketing stance would appear to be desirable to mitigate or even reverse the declines in subscription numbers, and we have been working very hard to develop an effective marketing program for our journal. Indeed, several unexpected opportunities arose during 1992 which required previously unbudgeted expenditures; these were taken in part from the two discretionary accounts of officers of the Society. This accounted for a major increase in expenditures from the discretionary accounts, but it is important that we be able to jump into opportunities of this kind whenever they arise. It may be too early to be able to

report on the long-term success of our marketing activities and, indeed, one may never know for sure unless inordinate subscription increases are found, which is unlikely.

4. The Membership Committee are unsung volunteers who are working very effectively to increase the membership of the society. This may represent one of our most significant thrusts for strengthening both our society and our discipline. However, as membership dues do not cover the full costs incurred (for A.I.P. services and for subscriptions to *Physics Today* and *Journal of Rheology*), each success in this area represents a modest further commitment of resources. It would be quite wrong, of course, to label new members as new expenses: they are an investment in our future and, as with most investments, they are accompanied by commitments.

5. The Executive Committee welcomes advice and constructive criticism at any time. Its members, after all, have been, are, and in the future will be, your elected representatives, expending their time and energies for the good of the Society as they best understand it. However, to be truly useful, such advice needs to arrive before decisions are made, not later when that advice is, at least implicitly, a demand for a reversal of direction with consequent disruption. The fact is that the Executive Committee receives very little advice from the members and makes decisions in the good faith belief that these are in the best interest of the Society and its members. More input is much desired on a timely basis.

6. Suggestions and advice frequently deserve more attention than can be given in an off-the-cuff immediate response at our business meetings. Communications at an earlier time, perhaps to be responded to at our annual business meeting, may be one way of obtaining more definitive input from the membership-at-large.

7. Your Executive Committee now meets twice a year and reports its actions in this bulletin and at the Annual Business Meeting. Is this sufficient? It should be recognized that in the past the attending Executive Committee members and the relevant (to the business at hand) Committee Chairs paid their own way and sought compensation through their respective institutional affiliations, i.e. the Society was not footing the bill for its governance. In this day of corporate "downsizing" and stringent government budgets with their effects on grant money, we are already having to address selective subsidization for business meeting travel. Should we do more of this to expand business meeting activity?

8. Please respond to any and all members of the Executive Committee as often as possible. Become more active in your Society, and vote in the coming election.

9. Finally, please take time to respond to the "membership poll" that you have received with the election ballot in a separate mailing. The poll can be returned with your ballot or sent directly to the secretary. If returned with your ballot, Ms. Wiley will separate it carefully from the ballots being tabulated so that the confidence of the ballots is maintained.

This Editorial has been assembled by A. B. Metzner from comments received from K. F. Wissbrun (in his role as the Journal's business manager) and the elected society leadership.

## Nominations for the 1994 Bingham Medal

Nominations for the 1994 Bingham Medal should be submitted **before January 15, 1994** to the chairman of the Bingham Award Committee:

Dr. William H. Tuminello  
The Dupont Company  
P.O. Box 80356  
Experimental Station  
Wilmington, DE 19880  
(302) 695-7330; Fax: (302) 695-8120

The Nominations should be in accord with the following revised Rules and Guidelines.

### Rules to Govern the Bingham Medal Award

The E.C. Bingham Medal shall be awarded, usually on an annual basis but in any event not more often, at the Annual Meeting of The Society of Rheology. The Medal may be awarded to any individual who has made outstanding contributions to the science of rheology, provided that he or she has not previously received the award and is a resident of one of the countries of North America. It is not necessary that the recipient be a citizen of his or her country of residence or a member of The Society of Rheology. There is no restriction as to age of the recipient.

The Bingham Medalist shall be chosen in the following manner. A Bingham Award Committee shall be appointed by the President in conformity with the rules of The Society. The Committee will consist of seven members, each serving a three-year term, and they shall be appointed in a 2, 2, 3-year cycle. The Bingham Award Committee shall consider, in any manner consistent with procedures established by the Executive Committee, all nominations submitted by any member of The Society. At a designated time, usually by April 1 and prior to any Spring Executive Committee meeting, the Chairman of The Bingham Award Committee shall convey its decision to the President and the Secretary of The Society. The President in turn shall transmit the decision to the Executive Committee for action. The official announcement of the award shall be made by the Secretary in advance of actual presentation, preferably in the Summer Bulletin.

### Guidelines for the Bingham Award Committee

1. A call for nominations, with stated January 15 deadline, shall be published in the regular Bulletin of The Society of Rheology prior to the normal Fall date of the annual meeting.

2. Nominations shall include the following information about the nominee:

a. A brief scientific biography.

b. A review of those accomplishments upon which the nomination is based.

c. A concise evaluation of the importance of the nominee's contributions in advancing the science of rheology.

3. The following item, if submitted, must be appended to the nomination:

a. A list of publications.

b. Reprints (no more than 3).

c. Supporting letters from other rheologists which address the nominee's contributions.

4. The Bingham Award Committee should meet at least once, in person or by teleconference, prior to its final decision.

5. Except in special circumstances, the contributions for which the award is granted shall have been made during the ten years preceding the award.

6. The President, Past President, and members of the Bingham Award Committee shall not be eligible to receive the Award during their terms of office.

7. The decision of the Bingham Award Committee must be by (simple) majority vote of its members (including its chairman).

8. The Chairman of the Bingham Award Committee should record and communicate the results of the vote to the committee members.

9. The decision of the Bingham Award Committee shall be submitted to the President and the Secretary at least by April 1 of the year preceding the normal Fall annual meeting. It shall be accompanied by a summary of the information specified in Guideline No. 2 above.

10. If the Bingham Award Committee is unable to arrive at a majority decision, its chairman shall submit to the Executive Committee for its decision the dossiers of those nominees receiving the most support.

11. If the Executive Committee fails to ratify a decision of the Bingham Award Committee, or fails to choose from the dossiers forwarded, then no award shall be given for that year.

12. After its final decision, The Bingham Award Committee shall classify the rejected nominations into three categories:

a. Those to be reconsidered for the next Bingham Award.

b. Those to be returned to the nominators for revision and updating.

c. Those to be retired from consideration.

The Chairman shall notify each nominator of the classifications assigned to his or her nomination.

### Announcing the 1994 Journal of Rheology Publication Award

As signalled in the minutes of the August 1992 Executive Committee Meeting (Rheology Bulletin 62:1, Jan. 1993), a new Society of Rheology award has been established and will be called the Journal of Rheology Publication Award. The complete rules for the award are published below in this issue of the Bulletin.

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The Society of Rheology 65th Annual Meeting  
October 17 - 21, 1993  
Boston, Massachusetts  
**GENERAL INFORMATION**

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**Location**

Technical sessions will be held at the **Omni Parker House**, 60 School Street, Boston, Massachusetts 02108. The Parker House is located in the heart of downtown Boston in easy access to points of interest and various modes of transportation.

**Registration**

The Registration fees for this year's Meeting includes admission to all technical sessions and exhibits, the Reception on Sunday evening in conjunction with Registration; the Reception on Monday evening at Faneuil Hall and the "Rheology in Motion" Session on Wednesday evening. The Sunday and Wednesday evening events will be held at the Omni Parker House. The fees are outlined on the enclosed registration form. The Banquet will be held on Tuesday evening at Boston's Museum of Science; the cost of this event is \$35 per person and is not included in the registration fee.

Please complete and return the enclosed registration form to the MIT Conference Services Office, Room 7-111, Cambridge, MA 02139 by September 15 to take advantage of the early fees. The registration fee may be paid by check or money order made payable to MIT/Rheology; participants paying via Mastercard or Visa may also do so via fax to 617-253-7002. Refunds will be granted if cancellation is received in writing by September 29 less a \$25 administrative fee; no refunds will be granted after that date. Substitutions will be accepted until October 8.

**On-site Registration** will begin on Sunday evening, October 17 at the Omni Parker House from 7:00 - 10:00 pm. Registration will resume Monday morning at 7:30 am; the Registration/ Information Desk will be staffed from 7:30 am to 5:00 pm Monday - Wednesday and from 7:30 - 10:00 am on Thursday.

**Welcoming Reception**

Rheometrics will host a Reception on Sunday evening from 7:00 - 10:00 pm at the Omni Parker House in conjunction with Registration.

**Society Reception**

A Reception will be held on Monday evening at the Great Hall, located in Boston's famed Faneuil Hall Marketplace, a five-minute walk from the Parker House.

**General Business Meeting**

The annual business meeting of The Society of Rheology will be held at the Omni Parker House on Tuesday, October 19 from 5:00 - 6:30 pm.

**Banquet**

The Bingham Award Banquet will be held at Boston's Museum of Science with cocktails beginning at 7:00 pm. Dinner will be served at 8:00 pm. Transportation to and from the Omni Parker House will be provided. The cost of the Banquet is not included in the registration fees.

**Transportation**

Boston's Logan International Airport is served by all major airline carriers and is located approximately three miles from the Omni Parker House. Taxi service is the recommended mode of transportation from the Airport to the Hotel; the estimated one-way cost is \$12-\$15.

### **Instrument Exhibition**

Several companies will demonstrate their products throughout the Meeting at the Parker House.

### **Sightseeing**

Boston offers a wide variety of daytime and evening activities, boasting a unique combination of tradition and trend. Historic Faneuil Hall and Quincy Marketplace--with their many fascinating shops, craft stands and restaurants--are popular gathering spots for both area residents and visitors. Recently-developed Copley Place adds a different dimension to Boston's Copley Square, Back Bay and Prudential Center areas. Attractions of particular interest to visitors include the USS Constitution, the John F. Kennedy Library, the Boston Museum of Science and the Museum of Fine Arts to name but a few. The historic Freedom Trail, just steps from the Omni Parker House, takes visitors from the Boston Common through the popular markets of the North End and the Waterfront districts. Harvard Square, the Cambridge Common and the University Museums are but a few points of interest on the MIT side of the Charles River.

### **Hotel Accommodations**

The Hotel for this Meeting is the **Omni Parker House**. The rates at the Parker House are \$125 per night for single accommodations and \$135 per night for a double room plus local applicable taxes (9.7%). The Omni Parker House is located on the Freedom Trail within easy walking distance of many of the City's historical, cultural and recreational landmarks. Parking (self or valet) is available in a nearby garage at an additional per day cost. To secure your reservations, please return the enclosed reservation form directly to the Omni Parker House by September 15 to ensure room and rate availability, which are only guaranteed until that date. Reservations may also be made via telephone to the Parker House at 617-227-8600 (FAX 617-523-5716); please indicate that you will be attending the "Society of Rheology" Meeting when making your reservations. October is a popular tourist season in Boston, and participants are encouraged to make reservations early.

**There are blocks of rooms also reserved for participants of this year's Meeting in the following area Hotels. Participants should contact the Hotel of choice directly to secure their reservations prior to September 17; rates are exclusive of local tax (9.7%). Please mention that you will be attending the "Society of Rheology" Meeting when making your reservations.**

#### **Days Inn, Newton**

399 Grove Street  
Newton, MA 02162  
Tel: 617-969-5300

\$65 per night for single or double room per night which includes continental breakfast. Hotel is located adjacent to the Subway's Green Line "Riverside" train; 8 miles from downtown Boston and 12 miles from Logan International Airport. Shuttle service via Hudson Airporter Limousine; free parking at Hotel.

#### **Holiday Inn**

1200 Beacon Street  
Brookline, MA 02146  
Tel: 617-277-1200

\$85 per night for a single room; \$95 per night for a double room. Ten minutes from downtown Boston; public transportation stop in front of the Hotel. Free parking and shuttle service from Logan Airport.

#### **The Midtown Hotel**

220 Huntington Avenue  
Boston, MA 02115  
Tel.: 617-262-1000

\$99 per night for a single room; \$109 per night for a double; \$119 per night for a triple and \$129 per night for a quad. Located in the Copley/Prudential area and walking distance to many downtown attractions and public transportation. Free parking.

### **Climate**

New England weather in October is typically glorious! The days are generally pleasant at 60 degrees Fahrenheit, yet can be notoriously unpredictable. The evening temperatures can be somewhat cooler, particularly near the waterfront. Rainwear or an umbrella are advisable to bring along just in case.

**The Society of Rheology 65th Annual Meeting**  
**October 17 - 21, 1993**  
**Boston, Massachusetts**  
**REGISTRATION FORM**

Name \_\_\_\_\_

Name as you would like it to appear on badge if different from above:

\_\_\_\_\_

Affiliation \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State or Province \_\_\_\_\_

Zip or Postal Code \_\_\_\_\_ Country \_\_\_\_\_

Telephone \_\_\_\_\_ FAX \_\_\_\_\_

Electronic Mail Address \_\_\_\_\_

**Registration Prior to September 15:**

Full Conference Member	\$ 85
Non-Member	\$130
Student	\$ 25
Retired Member	\$ 25
Banquet Ticket*	\$ 35

**Late Registration:**

\$105
\$150
\$ 25
\$ 25

As a non-member, you may elect to join the Society and \$40 of the non-member's fee will be designated toward your first year's membership dues. If you wish to join, please signify your intention by signing your name below:

I elect to join the Society of Rheology at this time (sign below):

\_\_\_\_\_

\*Please indicate your attendance at the Banquet on this form; the registration fee does not include this event.

**Refunds:** Cancellations received in writing by September 29 will be subject to a \$25 administrative charge. No refunds will be granted after that date; substitutions will be accepted until Friday, October 8.

**TOTAL ENCLOSED:**      \$ \_\_\_\_\_

**METHOD OF PAYMENT:**     Check or Money Order made payable to MIT/Rheology is enclosed.  
 Credit Card  
 Mastercard or     Visa    (Please check correct card).

Account Number \_\_\_\_\_

Expiration Date \_\_\_\_\_ Cardholder Name \_\_\_\_\_

\_\_\_\_\_  
Signature (Required for credit card transactions).

Your registration will be confirmed upon receipt. Forms with credit card information may be faxed to 617-253-7002.  
**Return completed form and payment to:**

MIT Conference Services Office  
77 Massachusetts Avenue, Room 7-111  
Cambridge, MA 02139 USA.

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**The Society of Rheology 65th Annual Meeting  
October 17 - 21, 1993  
Boston, Massachusetts**

**HOTEL RESERVATION FORM**

**Omni Parker House  
60 School Street, Boston, MA 02108**

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Name \_\_\_\_\_

Affiliation \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Telephone \_\_\_\_\_ FAX \_\_\_\_\_

Arrival Date/Time \_\_\_\_\_ am/pm Departure Date/Time \_\_\_\_\_ am/pm

Check-in time is 3:00 pm.  
Check-out time is 12:00 noon.  
When sharing accommodations,  
please submit only one form to  
avoid duplication.

Your reservation will be held until 6:00 pm unless guaranteed by  
a deposit of one night's room and tax or by a major credit card.  
If you do not cancel your reservation by 6:00 pm on the day of  
arrival, you will forfeit your deposit or the first night's room and tax  
will be charged to your credit card.

Single Room at \$125 per night.

Check or Money Order payable to "Omni Parker House."

Double Room at \$135 per night.

Credit Card (please circle): AMEX, Carte Blanche,  
Mastercard, Visa, Diner's Club.

Name of Persons Sharing  
Accommodations

Account Number \_\_\_\_\_

Expiration Date \_\_\_\_\_

Cardholder's Name \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
Authorized Signature

**Return form by  
September 15, 1993  
to the  
Omni Parker House  
60 School Street  
Boston, MA 02108**

**Reservations may be made via  
telephone by calling 617-227-8600  
or via fax to 617-523-5716. Please  
mention that you will be attending the  
"Society of Rheology" Meeting when  
making your reservations.**



# THE SOCIETY OF RHEOLOGY

Presents

A TWO-DAY SHORT  
COURSE ON

## FOOD RHEOLOGY

### Course Instructors:

Dr. Charles F. Shoemaker, University of California, Davis  
Dr. Jacqueline I. Amemiya, Nabisco Brands, Inc.  
Dr. Rajendra P. Borwankar, Kraft General Foods  
Dr. Kathryn McCarthy, University of California, Davis

To be held Saturday and Sunday  
October 16—17, 1993, 8:30 A.M.

Parker House Hotel  
60 School Street  
Boston MA 02108  
(617) 277-8600  
Fax (617) 742-5729

### Course Description:

This course is designed to provide scientists and engineers an introduction to fundamental rheological concepts and experimental measurement techniques applicable to a variety of food systems. The emphasis will be on physical concepts and principles. Experimental approaches to obtain sound rheological data from various types of food systems will also be emphasized. These types of foods include emulsions, coarse suspensions, gels, hydrocolloids, dough, and others. The

relationship of fundamental rheological data to processing, quality, stability, and texture of foods will be discussed. Participants who have completed a bachelor's degree in science or engineering should have little difficulty with this course.

**Course Outline:**

1. Concepts in food rheology and their application to the food processing, stability, and texture
2. Fundamentals of food rheology and texture
3. Experimental methods and instruments
4. Food emulsion, suspension, and dispersion rheology
5. Viscoelasticity of food gels, composites, and semi-solids
6. Dough rheology
7. Rheology in food processing and extrusion
8. The evaluation and measurement of food texture

**Registration:**

The fee for the two day course and lecture notes is \$325 prior to September 1, 1993. After that a late registration fee of \$25 for a total of \$350 will be charged. Student rates are 50% of the base rate. **Checks should be made payable to "The Society of Rheology"** and sent with the registration form to

Dr. Peter E. Clark  
Department of Mineral Engineering  
The University of Alabama  
P.O. Box 870207  
Tuscaloosa, AL 35487-0207

Further information can be obtained from Dr. Clark (205) 348-1682. Reservations for lodging at the Parker House Hotel should be made by the participants. A block of rooms has been reserved so mention the Society of Rheology when making reservations.

# REGISTRATION FORM

## RHEOLOGY SHORT COURSE

Saturday/Sunday October 16—17, 1993

Parker House Hotel  
60 School Street  
Boston MA 02108  
(617) 277-8600  
Fax (617) 742-5729

NAME \_\_\_\_\_

COMPANY AFFILIATION \_\_\_\_\_

ADDRESS \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

BUSINESS PHONE ( ) \_\_\_\_\_

RESIDENCE PHONE ( ) \_\_\_\_\_

DATE OF ARRIVAL \_\_\_\_\_

Please make checks payable to The Society of Rheology

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Return this registration form together with payment to:

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Dr. Peter E. Clark  
Department of Mineral Engineering  
The University of Alabama  
P.O. Box 870207  
Tuscaloosa, AL 35487-0207

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The inaugural sponsor for the award will be TA Instruments, Inc., who have generously indicated their intent to provide continuing financial support for the award during the five-year period 1994-1998. TA (Thermal Analysis) Instruments, an offspring of Dupont who acquired the Carri-Med group of companies in March 1993, manufacture a range of instruments for thermal and rheological characterization of materials. Sponsorship of the new SoR award reflects TA's ongoing commitment to the development of measurement techniques for solid and fluid material analysis. In accordance with the rules below, the 1994 award will be based on J. Rheology papers published in the calendar years 1992 and 1993. Suggestions are welcomed from the scientific community for "best paper" nominations and should be directed to the Editor, A.B. Metzner, before March 31, 1994.

### **Rules for the Journal of Rheology Publication Award**

The purpose of this award, which is to be privately sponsored and conferred annually by the Society of Rheology, is to promote and recognize excellence in research papers published in the Journal of Rheology. The Award is based on the J. Rheology paper, or series of papers by the same authors, judged as the most outstanding of those published in a given volume of the Journal and appearing in one of the two calendar years immediately preceding the year in which the award is conferred. The award consists of a cash prize, divided equally among the coauthors, and certificates of citation for each.

Papers shall be judged by a committee of five, the Journal Award Committee, consisting of the Editor of the Journal, two persons designated by the Editor, each serving two-year terms, and the two current Members-at-Large of the Executive Committee. Persons in the employ of the private sponsors of the award shall be ineligible to serve on the Committee during the period of sponsorship.

Criteria for the award shall include: importance of the contribution to the basic science or industrial practice of rheology, originality of research methods and results, and quality of the written exposition.

Candidates for the award shall be determined by nominations from the Award Committee, who may accept suggestions from the rheological community at large. Papers coauthored by members of the Award Committee shall not be eligible for the Award during the term of service of these members.

An announcement of the above rules, the Award Committee membership, the names of the current sponsors of the Award and an invitation to submit suggestions for nominees shall appear in the Summer Bulletin of the Society in the year immediately preceding the year of the award.

The winning paper shall be announced in the following Summer Bulletin. The Award shall then be conveyed at the earliest opportunity, and normally at a ceremony held during the annual Society of Rheology meeting. The sponsors of the Award shall be invited to designate a representative to attend this ceremony and to present the award to the winning author(s), or to their designated representative.

It shall be the responsibility of the Executive Committee of the Society of Rheology to solicit or entertain proposals for private sponsorship of the Award, to set the terms and period for such sponsorship and to establish by vote the sponsor and the amount of the Award during that period. In case adequate sponsorship cannot be found, the Award may be temporarily suspended.

### **Student-Member Travel Grants Available for Boston**

The Society of Rheology is offering grants to support the cost of public transportation to a Society of Rheology meeting to any second or third year graduate student who is a member of the Society as of July 1, 1993 and whose faculty advisor is also a member as of that date. Each grant will be a maximum of \$350, available on a first-come, first-served, basis, until available funds are exhausted. To apply, the student should write a letter requesting the grant. The student's faculty advisor should add a letter of support, certifying that both the advisor and the student are members of the Society of Rheology, and that the student is a second or third year graduate student. Only one application per faculty advisor will be accepted. The letters from the student and the advisor should be mailed in the same envelope **before September 15, 1993** to:

Dr. Ronald Larson  
Room 6E-320  
AT&T Bell Laboratories  
Murray Hill, NJ 07974-0636

If the application is accepted, the student will be reimbursed for travel expenses upon submission of the appropriate receipts to the Treasurer of the Society following the meeting.

### **MINUTES OF THE EXECUTIVE COMMITTEE MEETING February 7, 1993**

The Executive Committee Meeting was called to order at 8:00 a.m. on February 7, 1993 at the Sheraton Hotel in Santa Barbara, CA. The Executive Committee Members attending included: Joe Goddard, Bob Armstrong, Art Metzner, Ed Collins, Bob Mendelson, Ron Larson, Dale Pearson, and Andy Kraynik.

The minutes of the August 15, 1992 Executive Committee Meeting, which appeared in the January 1993 Rheology Bulletin, were amended to read that John M. Dealy would receive the Distinguished Service Award of the Society at the Santa Barbara Meeting. The committee expressed its gratitude to Rick Givler for producing the hourglass that would be presented to Professor Dealy.

Ed Collins, Treasurer, reported that the total assets of the Society were \$393,775 at year end 1991; this total includes \$102,594 in deferred subscription revenue and \$33,850 in deferred membership dues. Our estimated total assets for 1992

were \$440,050 of which \$105,220 represented advance income. Collins also provided a report from Zion, Smorag & Associates, CPA, on financial statements and accounting procedures of the Society as of December 31, 1991.

In the Editor's Report, Art Metzner noted that the number of nonmember subscriptions to the Journal of Rheology had decreased slightly. He discussed copyright issues for the Journal, reviewer response, manuscript flow, special symposia, and size and frequency of publication. He also noted that complimentary subscriptions to the Journal were being provided to eleven libraries in the Former Soviet Union. Kurt Wissbrun reported on marketing activities and budget items for the Journal. Various items concerning videotape publishing were also discussed.

Jeff Giacomini, Chairman of the Membership Committee, reported 1250 members in the Society as of December 1992, including 122 student members.

Dale Pearson and Gary Leal reported on the technical program and local arrangements for the Santa Barbara meeting. The regular annual meeting for 1993 will be held in Boston with Bob Armstrong serving as local arrangements chairman and Bill Russel serving as technical program chairman. Antony Beris and Norm Wagner will host the 1994 annual meeting in Philadelphia. In 1995, the annual meeting will be held in Sacramento with Bob Powell coordinating local arrangements. The next International Congress on Rheology will convene in Quebec City in 1996. Rose Wesson and John Collier will host the Winter 1997 Annual Meeting in Baton Rouge.

Ron Larson presented guidelines for awarding the Student-Member Travel Grants announced in the last Bulletin.

Joe Goddard and Art Metzner proposed rules for the Journal of Rheology Publication Award, which were accepted.

Joe Goddard presented revised Guidelines for the Bingham Award Committee.

The meeting was adjourned at 6:15 p.m.

## **MINUTES OF THE BUSINESS MEETING February 9, 1993**

The Business Meeting was called to order at 5:30 p.m. in the Sheraton Hotel in Santa Barbara, CA.

The minutes of the previous meeting were read and approved as they appeared in the January 1992 Rheology Bulletin.

Joe Goddard delivered a President's message in which he noted the improved finances of the Society due to A.I.P. publication of the Journal of Rheology. He announced that the Society would offer Student-Member Travel Grants and a Journal of Rheology Publication Award. He noted that membership had increased substantially due in large part to the efforts of Jeff Giacomini and the Membership Committee. Input on advertising in the Journal and future meeting sites was sought. The importance to the Society of nonmember (library) subscriptions to the Journal of Rheology was emphasized.

Art Metzner, Editor, and Ed Collins, Treasurer, delivered the reports contained in the Minutes of the Executive Committee Meeting, which can be found above.

Dale Pearson noted that over 310 rheologists had come to Santa Barbara and over 200 would attend the Bingham Banquet. About 180 papers were presented at the meeting.

Under new business, it was suggested that the Executive Committee report to the members on the long-term outlook for the Publication Reserve Fund and the General Reserve Fund.

The meeting was adjourned at 7:00 p.m.

## **Journals for Eastern Europe**

If you are in the position to donate a set of the Journal of Rheology to a library, please contact Art Metzner.

## **Meeting Announcements**

November 28 - December 3, 1993: Symposium on "Developments in Non-Newtonian Fluid Mechanics", ASME Winter Annual Meeting, New Orleans, LA. Contact: Prof. Dennis A. Siginer, Dept. Mechanical Eng., Auburn U., Auburn, AL 36849-5341, (205) 844-3331, Fax: (205) 844-3307, Email: dsiginer@eng.auburn.edu. or Prof. William E. VanArsdale, Dept. Mechanical Eng., U. Houston, TX 77204-4792, (713) 743-4525, Fax: (713) 743-4503, Email: wev@menudo.uh.edu.

June 26 - July 1, 1994: 12th U.S. National Congress of Applied Mechanics, U. Washington, Seattle. Contact: Prof. Albert Kobayashi, Dept. Mechanical Eng., FU-10, U. Washington, Seattle, WA 98195, (206) 543-5488, Fax: (206) 685-8047, Email: kobayashi@u.washington.edu.

October 2-6, 1994: 66th Annual Meeting of the Society of Rheology, Hotel Atop the Bellevue, Philadelphia, PA.

November 13-18, 1994: Symposium on "Material Instabilities", ASME Winter Annual Meeting, Chicago, IL. Contact: Prof. R. C. Batra, Dept. Mechanical Eng., U. Missouri-Rolla, Rolla, MO 65401-0249, (314) 341-4589, Fax: (314) 341-4607.

CALL FOR PROPOSALS TO HOST A IUTAM SYMPOSIUM IN 1996 OR 1997. Contact: Prof. Philip G. Hodge, Jr., Secretary, USNC/TAM, 107 Akerman Hall, U. Minnesota, Minneapolis, MN 55455, (612) 625-8000, Email: pghodge@vx.cis.umn.edu.

October 8-12, 1995: 67th Annual Meeting of the Society of Rheology, Sacramento, CA.

**Please remember to return your  
election ballot and membership poll.**

THE SOCIETY OF RHEOLOGY  
FINANCIAL STATEMENT AS OF MAY 1992

**JOURNAL OF RHEOLOGY  
STATEMENT OF REVENUE AND EXPENSE  
TWELVE MONTHS ENDED DECEMBER 31, 1992**

**REVENUE**

SUBSCRIPTION, ADVERTISING AND SALES	196,360
PAGE CHARGES	9,975
MISCELLANEOUS	<u>7,147</u>
<b>TOTAL REVENUE</b>	<b>213,482</b>

**EXPENSE**

ADVERTISING AND MARKETING	25,270
SINGLE COPY AND REPRINTS	7,448
AIP EDITORIAL	31,963
SOR EDITORIAL	25,906
PRODUCTION COSTS	52,947
PRINTING AND MAILING	44,598
SUBSCRIPTION FULFILLMENT	<u>10,470</u>
<b>TOTAL EXPENSE</b>	<b><u>198,602</u></b>
<b>NET REVENUE</b>	<b><u><u>14,880</u></u></b>

**THE SOCIETY OF RHEOLOGY  
FINANCIAL STATEMENT AS OF MAY 1993**

	<u>1991 Budget</u>	<u>1991 Actual</u>	<u>1992 Budget</u>	<u>1992 Actual</u>	<u>1993 Budget</u>
<b>REVENUES</b>					
Dues	46,000	45,001	46,000	45,540	47,000
Interest	14,000	19,978	19,000	14,710	11,000
Journal of Rheology	1,000	204,831	217,830	213,482	224,023
Mailing list Sales	-	537	350	168	300
Annual Meetings	8,000	30,758	-	-	5,000
Short Courses	-	5,925	-	-	6,000
<b>TOTAL REVENUE</b>	<b>69,000</b>	<b>307,030</b>	<b>283,180</b>	<b>273,900</b>	<b>293,323</b>
<b>EXPENSES</b>					
AIP Administrative Service	7,000	6,000	6,000	6,000	6,000
AIP Billing	5,400	380	800	-	-
AIP Member Society Dues	2,400	2,122	2,400	3,330	3,200
AIP Member Records	3,600	7,495	7,500	-	-
AIP Financial Handling	3,000	3,940	3,000	3,471	4,000
AIP Physics Olympiad	1,000	1,000	1,000	-	1,000
Renewal Billing	-	1,889	-	1,432	1,500
Journal of Rheology	-	176,682	197,380	198,602	175,440
Bulletins & Abstracts	5,000	8,815	5,000	13,053	6,000
Short Courses	-	2,703	-	25	6,000
Bingham Award	3,000	-	3,000	-	6,500
Executive Cmt. Meeting	2,000	2,737	2,500	3,406	8,000
Pres. Discretionary Fund	1,500	1,145	1,000	500	1,500
Trea. Discretionary Fund	1,500	744	1,000	508	1,500
Program Chm. Discre. Fund	2,000	-	-	-	2,000
Secretarial Services	1,000	750	1,000	-	1,000
Mailing	2,000	1,854	2,500	118	5,000
Office Expenses	5,000	615	1,500	464	2,500
Banking Services	-	78	50	5	25
Liability Insurance	150	146	150	182	200
Council of Sc. Society Pres.	150	250	250	-	-
Membership Directory	-	719	2,500	6,584	-
Membership Brochure	-	184	500	202	1,500
Accountant	1,000	1,820	1,000	1,450	1,500
Student Member Travel Grant	-	-	-	-	3,500
Miscellaneous	-	-	-	2,500	500
<b>TOTAL EXPENSES</b>	<b>46,700</b>	<b>222,068</b>	<b>240,030</b>	<b>241,832</b>	<b>238,365</b>
<b>NET INCOME (LOSS)</b>	<b>22,300</b>	<b>84,962</b>	<b>43,150</b>	<b>32,068</b>	<b>54,958</b>
<b>NET ASSETS AT YEAR END</b>		<b>257,331</b>		<b>289,399</b>	

*Respectfully Submitted*  
Edward D. Collins  
Treasurer