

# RHEOLOGY BULLETIN

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January 1993

## THE SOCIETY OF RHEOLOGY EXECUTIVE COMMITTEE - 1991-93

|                  |                                     |
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## KURT F. WISSBRUN 1992 BINGHAM MEDALIST

Kurt F. Wissbrun has been chosen to receive the Bingham Medal for 1992. Highlights of the exceptional scientific and industrial careers that led to this award can be found in the following pages. The Bingham Banquet honoring Dr. Wissbrun will be held on Tuesday, February 9, 1993 at the 64th Annual Meeting in Santa Barbara, CA.

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

The annual meeting of the Society of Rheology will be held in Boston, MA. The meeting organizers are:

### Technical Program Chairman:

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 Chairman:

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

Boston is the capital of the Commonwealth of Massachusetts and the largest city in New England. Founded in 1630, it is surrounded on three sides by water and grew as a harbor town that has been closely linked to the sea throughout its history. Today, Boston thrives as a center for medicine, high tech, finance, education, and much more. The city is 48 square miles and has a population of 575,000.

Boston possesses all the resources of a major metropolis yet presents them to the visitor in an intimate, easily accessible, and eminently practical package. Convenience is one of the city's greatest assets. Logan International Airport is located just three miles from the downtown business district. The city is also reachable by train (Amtrak) and by major highway (Interstate Routes 93 & 95). Parking, however, is one of Boston's major difficulties, and we therefore recommend using mass transit and taxis while you are staying in the city.

Due to its small geographic size, Boston is an excellent walking city. The Massachusetts Bay Transit Authority, known as the "T", provides convenient, direct service to about



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RHEOLOGY BULLETIN  
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anywhere in Metropolitan Boston. There is no shortage of things to see and enjoy in Boston, Cambridge, and surrounding areas; and many of the treasures are within walking distance of one another. The Freedom Trail, designated by a red line on the sidewalks and streets throughout the city, connects sixteen significant landmarks of our nation's history. Located on the Freedom Trail in the heart of Boston -- with the Boston Commons, Public Gardens, Faneuil Hall Marketplace, and Downtown Crossing shopping district only steps away -- is the Parker House, the official hotel and conference site for the annual meeting. The hotel is a National Historical Landmark.

Seasons in Boston are distinct. You can expect fall temperatures ranging from the 40s to the 60s. Occasionally, we will have Indian Summer in October with temperatures reaching into the 80s! Fall is thought by many to be one of the best times of the year to visit Boston, because of the spectacular foliage that can be seen in the surrounding New England countryside.

## TECHNICAL PROGRAM

Authors wishing to present a paper in Boston should submit a camera-ready abstract on the enclosed form to the Technical Program Chairman, W. B. Russel, with a copy to the appropriate symposium chair by May 15. The planned symposia and their organizers follow.

### Non-Newtonian fluid mechanics:

Andrew M. Kraynik  
Department 1512  
Sandia National Laboratories  
Albuquerque, NM 87185  
(505) 844-9696  
Fax: 844-8251  
Email: amkrayn@sandia.gov

### Polymer melt processing and rheology:

Donald G. Baird  
Department of Chemical Engineering  
Virginia Polytechnic and State University  
Blacksburg, VA 24060  
(703) 231-5998  
Fax: (703) 231-5022  
Email: local344@vtvm2.bitnet

### Experimental techniques:

Norman J. Wagner  
Department of Chemical Engineering  
University of Delaware  
Colburn Laboratory  
Newark, DE 19716  
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Fax: (302) 831-1048  
Email: wagner@colburn.che.udel.edu

### Multiphase and liquid crystalline polymers:

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California Institute of Technology  
Pasadena, CA 91125  
(818) 356-4138  
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### Complex fluids:

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### Suspensions:

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### Solids and composite materials:

Gregory B. McKenna  
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Fax: (302) 869-3239  
Email: greg@micf.nist.gov / @nbsmicf

### Biorheology and food rheology:

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Rutgers University  
New Brunswick, NJ 08903  
(908) 932-9669  
Fax: (908) 932-6776







# AIP Introduces Compuscript Program for the *Journal of Rheology*

AIP will be promoting its REVTeX compuscript program for journals in the weeks and months ahead. This program is the culmination of more than a year of project development. The purpose of the compuscript program is to use machine-readable files (compuscripts) to produce author proofs.

AIP has been able to employ many "media conversion" techniques since the Xyvision system was implemented. The most successful efforts have been for Books and Special Projects, where AIP has successfully converted WordPerfect, troff, untagged ASCII, and data base formats to Xyvision format. This has allowed AIP to use all the benefits of the Xyvision page composition system (table of contents generation, indexing, page makeup, etc.). Media conversion for Books and Special Projects has been very well received by the societies that have taken advantage of it, so it is not surprising that there has been a great deal of interest in a compuscript program for journals.

## Why have a compuscript program?

There are two main reasons for a compuscript program: (1) to satisfy author and society demand and (2) to take advantage of possible savings in page costs and time spent in production.

Authors tell AIP that they enjoy participating in the publication process. By providing their file for use in production, they are making a bigger contribution to the publication process. And with sufficient volume, compuscript processing will become standard enough so that page charge reductions and accelerated production schedules can be considered. A feasibility analysis will probably require a year's worth of data.

## Why REVTeX?

Most authors use one of only a few different tools to prepare manuscripts. In market research conducted by AIP, authors indicated that three main tools are being used to compose physics manuscripts: TeX, WordPerfect, and Word. AIP decided to launch its first compuscript program based on TeX, partly because of the success that the American Physical Society has seen in their REVTeX compuscript program. Project development for WordPerfect and Word compuscripts has begun with a feasibility study. AIP is interested in hearing from authors who use WordPerfect and Word, particularly those authors with experience using the new SGML interfaces.

## How to participate?

Refer to the Information to Contributors in the January issue of JOR.

If your manuscript has been composed using REVTeX, indicate in the cover letter that accompanies your original submission that you have a REVTeX file and your interest in AIP's compuscript program, or call the editorial office directly.



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I wish to apply for membership in THE SOCIETY OF RHEOLOGY dating from January 19 \_\_\_\_\_

Name \_\_\_\_\_

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

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Fax Number \_\_\_\_\_

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

- PRIMARY
- SECONDARY
- TERTIARY

### Professional Affiliation

- Academic
- Industrial
- National Laboratory
- Other

| INTEREST AREA                  | CODE |
|--------------------------------|------|
| Biorheology                    | A    |
| Experimental methods           | B    |
| Foods                          | C    |
| Inks, Paints, Coatings         | D    |
| Materials Science              | E    |
| Petroleum Production           | F    |
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| Polymer Dilute Solutions       | H    |
| Polymer Melts and Conc. Solns. | I    |
| Rational Mechanics             | J    |
| Rubbers and Elastomers         | K    |
| Solid Polymers                 | L    |
| Suspensions                    | M    |
| Theory of Viscoelasticity      | N    |
| Electrorheology                | P    |
| Composite Materials            | Q    |
| Other _____                    | O    |

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 \$40 for Regular Annual Dues (\$25 for Student and Retired Members) and mail to:

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

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## Videos:

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## Instrument Exhibit

Several companies will exhibit rheological instrumentation during the annual meeting in Boston.

**Registration and housing forms, abstracts, a short-course announcement, and other information concerning the Boston Meeting will be included with the July Bulletin.**

## KURT F. WISSBRUN 1992 BINGHAM MEDALIST

The Bingham medal for 1992 will be awarded to Dr. Kurt F. Wissbrun who was a Senior Research Associate at the time of his retirement from the Celanese Corporation in 1990. This award is given in recognition of his outstanding scientific contributions and professional service to the field of rheology.

Kurt Wissbrun was educated in chemistry at the University of Pennsylvania and at Yale University before taking a post-doctoral position at the University of Rochester in 1955. He joined the Celanese Corporation in 1957 as a Research Chemist. Kurt assumed his current position as Adjunct Professor in the Department of Chemical Engineering at the University of Delaware in 1974.

Dr. Wissbrun's scientific and technological activities span statistical mechanics, experimental rheology, and polymer processing; he has employed sophisticated tools to help commercialize new products. More specifically, his work relating molecular weight distribution to rheological behavior has contributed substantially to the development of our subject and includes the important observation that rheological properties can only provide plausible distributions not necessarily unique ones. His studies of particulate interactions with the surrounding polymer, his work on powder coating technology, on blow molding, film blowing, and fiber

spinning addressed a whole host of contemporary scientific problems, and, led to new or improved commercial products.

In the area of liquid crystalline polymer rheology, he was the first to address the important connection between stress relaxation and understanding the "macro" or "domain" structure of these new materials; he also developed a model of this domain structure. His "review" article on liquid crystal rheology, published in 1981, is far more than a review as it introduced new interpretations of previous observations. His work on polyblends with liquid crystals elucidates the unusual ability of these rigid-rod molecules to reduce the viscosity of a blend to levels below that of either component. His research on liquid crystals supported the industrial development of new polymers; and his observation of their peculiar "flash" behavior during injection molding led to new applications. Kurt Wissbrun is known internationally as a leader in both the science and technology of liquid crystalline polymers.

In other areas of study, Kurt has employed statistical mechanics and lattice theory to understand the effect of deformation rate on the phase boundaries of polymeric solutions and melts, first in a preliminary way in a paper coauthored with Rangel-Nafaile and Metzner, and then in much greater detail in a PhD thesis by Massouda. Having dedicated a successful career to studies that span from the demands of commercial enterprise to the scrutiny of fellow scientists, Kurt recently coauthored a book with Professor John Dealy which links polymer science and problem solving in the plastics industry. This textbook stands as an appropriate landmark for a very productive career.

In recognition of all these accomplishments, the 1992 Bingham Medal will be awarded to Kurt Wissbrun in Santa Barbara, California at the 64th Annual Meeting of the Society of Rheology in February 1993.

## EXECUTIVE COMMITTEE MEETING August 15, 1992

The Executive Committee Meeting was called to order at 9:00 a.m. in Brussels, Belgium, where most committee members were attending the International Congress on Rheology.

Executive Committee Members present included: Joe Goddard, Bob Armstrong, Art Metzner, Bob Mendelson, Ron Larson, and Andy Kraynik. Kurt Wissbrun, Jeff Giacomini, and Gary Leal also attended.

The minutes of the April 12, 1992 Executive Committee Meeting, which appeared in the July 1992 Rheology Bulletin, were approved as read.

It was decided that \$4000 (\$500 per person) would be budgeted to assist Executive Committee Members who request help with travel expenses to attend committee meetings.

In the Editor's Report, Art Metzner noted that we should increase efforts to attract theoretical manuscripts for the Journal of Rheology. There were 553 non-member subscriptions to the Journal as of June 1992 compared to 588 in December 1991. We discussed the question of where advertising should appear in the Journal, if at all. Opinions on



this matter can be directed to any member of the executive committee.

The wisdom of endowing society awards was discussed but viewed as unnecessary at this time.

It was decided to establish an annual "Best Paper Award" for contributions to the Journal of Rheology. The Editor will choose four additional members to serve on a committee that will decide on the recipient. Each year, two new committee members will be appointed to a two-year term. Art Metzner and Joe Goddard are to present a detailed proposal on this award at the Santa Barbara executive committee meeting. The award will consist of \$1000 and a certificate. A sum of about \$300 will be used to create a supply of certificates.

It was decided to establish Student Member Travel Grants to assist graduate students in their second year or beyond with travel expenses to technical meetings of the Society of Rheology. The faculty advisor, who must be a member of the society, should submit a letter indicating that the student is engaged in rheological research when requesting a grant. Members-at-large of the executive committee will be responsible for distributing these grants, which are not to exceed \$350 per student or a total annual amount of \$10,000.

Jeff Giacomini, Chairman of the Membership Committee, reported 1146 members in the society as of December 1991 and 1216 members, which includes 113 student members, as of July 1992.

Gary Leal reported on plans for the technical program and local arrangements for the annual meeting in Santa Barbara in February 1993; Dale Pearson will coordinate local arrangements. 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 the Sacramento area with Bob Powell coordinating local arrangements.

A recommendation to award the 1992 Bingham Medal to Kurt F. Wissbrun was approved, after Kurt left the meeting room. It was decided that the President and Past President of the Society and members of the Bingham Award Committee would not be eligible to receive the Bingham Medal during their term of service.

The annual dues of Corporate Associates were set at \$2500. The names of all such organizations would be published in the Rheology Bulletin and in the Membership Directory.

The meeting was adjourned at 6:00 p.m.

## STUDENT MEMBER TRAVEL GRANTS

As mentioned above, the society will offer student members financial assistance to attend our technical meetings. The July Bulletin will contain more information.

## CHANGE OF ADDRESS

If you are moving, be sure to inform: Ms. Margaret Wiley, American Institute of Physics, 335 East 45th Street, New York, NY 10017, (212) 661-9404 Fax: 697-2785.

## MEETING ANNOUNCEMENTS

March 16, 1993: Workshop on Rheological Testing of Difficult Materials at Warren Spring Laboratory, UK. Contact: Miss P Madhvi, Warren Spring Laboratory, Gunnels Wood Road, Stevenage, Hertfordshire, SG1 2BX, 0438 741122 ext. 2438, Fax: 0438 360858.

March 18, 1993: Seminar on Mixing Technology at Warren Spring Laboratory, UK. Contact: Dr. Gavin Wonnacott, Warren Spring Laboratory, Gunnels Wood Road, Stevenage, SG1 2BX, 0438 741122, Fax: 0438 360858.

May 9-14, 1993: "Fluid-Particle Interactions III", Davos, Switzerland. Contact: Engineering Foundation, 345 E 47th St, New York, NY 10017, (212) 705-7836, Fax: (212) 705-7441.

August 22-26, 1993: Symposium on "Advances in Structured and Heterogeneous Continua", Moscow, Russia. 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.

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: 67th 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.

**Financial Statements for the Society of Rheology will appear in the July Bulletin**