# RHEOLOGY BULLETIN

# Publication of The Society of Rheology, Inc.

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### 1989 BINGHAM MEDAL NOMINATIONS

Nominations, as announced in the summer bulletin last July, are to be in the hands of the committee chairman prior to January 15, 1989. Since most members may not receive this bulletin until after that date, the formal elicitation of nominations, and the rules covering these, were all presented

in the July bulletin. Should you have any last-minute questions, Dr. Curro's address is:

> Dr. John Curro Division 1813 Physical Properties of Polymer Sandia National Laboratories Albuquerque, NM 87185 (505) 844-3963

**60TH ANNUAL MEETING** Gainesville, Florida February 12-15, 1989

All members should have received the full details on this meeting in a separate mailing, approximately on December 1.

Sessions are being held on Numerical Analysis and Constitutive Equations, Viscoelasticity, Colloids and Complex Fluids, Interfaces and Melts, Rheology in Emerging Technologies, Solids, Engineering Applications and a General Session. People to contact are as follows:

### PROGRAM COMMITTEE

Program Chairman: Co-Chairman: James M. O'Reilly Leszek A. Utracki

Eastman Kodak Co. Institut de Genie des Materiaux Corporate Research Lab 75. De Montagne

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Arthur B. Metzner, Editor
Debbie Cook, Secretary
Chemical Engineering Department
University of Delaware
Newark, Delaware 19716
302-451-2328

### 60th Annual Meeting (cont.)

Rheologists planning to attend the Florida meeting should note that the official travel agent for this meeting has reserved a block of rooms at a special rate at the Hilton Hotel, as well as a special travel rate on Eastern Airlines. This travel agency is:

> UNIGLOBE UCT Travel 1131 West University Avenue Gainesville, FL 32601 Telephone: (904) 377-4228

Since the number of Hilton rooms available is probably less than necessary, these will be reserved on a first-come basis. There are several other hotels nearby for additional rooms.

### 61st ANNUAL MEETING MONTREAL, CANADA October 21-26, 1989

This meeting is being held in conjunction with the FIRST ANNUAL MEETING OF THE CANADIAN RHEOLOGY GROUP and the FIRST INTER-AMERICAN CONFERENCE ON RHEOLOGY. It is organized by the Canadian Rheology group and is also being cosponsored by Asociacion Argentina de Reologia, Asociacion de Universidades de America Latina - UDUAL, Instituto Mexicano de Ingenieros Quinmicos, Sociedad Mexicana de Reologia, North American Society of Biorheology, Rheology groups in Brazil, Chile, Peru, Uruguay and Venezuela.

Authors interested in submitting a paper should send a 200-word abstract, on the usual S of R form included in this mailing, prior to MAY 1, 1989, to the Technical Program Chairman:

Dr. L. A. Utracki NRCC/IMRI, 75 boul. de Mortagne Boucherville, Que., Canada J4B 6Y4 Telephone: (514) 641-2280 FAX: (514) 641-4627

Telex: 055-61622

Authors should please note that <u>all</u> abstracts should be sent to Dr. Utracki, who will see to it that they are distributed to the session chairmen listed in the following tentative program. A large interest is already evident in this unique meeting and so it is important that the May 1 deadline be observed carefully. Additional Abstract forms are available from the technical program chairman as well as from the Society's editor. We may need to include a poster session; please indicate your preference for inclusion in an oral or a poster presentation. By mid-December a total of 130 titles had already been submitted.

A Plenary Lecture will be given by Professor H. P. Schreiber and a substantial number of Invited Lecturers will participate, including at least the following: J-F. Agassant, D. V. Boger, M. J. Crochet, H-G. Fritz, H. Giesekus, G. Marrucci, T. Masuda, J. Meissner, J. Mewis, A. Michel, V. M. Nadkarni, L. Nicolais, R. H. Ottewill, D. Pearson, C. Petrie, J-M. Piau, K. Walters and A. Ziabicki,

### TECHNICAL PROGRAM

This is organized in three parallel streams lasting four days. Poster presentations will be accommodated. Names listed are those of the co-chairman for each session.

Stream I: "MULTIPHASE SYSTEMS AND BIOPOLYMERS" dedicated to Prof. S. G. Mason.

- I.1 MicrorheologyT. G. M. van de Ven and H. Brenner
- I.2 Rheology of Multiphase Systems M. M. Dumoulin and H. H. Winter
- I.3 Biorheology: Rheology of Blood and Tissues (Organized by the North American Society of Biorheology)
  S. P. Sutera and H. Goldsmith
- I.4 Rheology of Biopolymers
   L. Choplin and R. K. Prud'homme

Stream II: "THEORETICAL AND SOLID PHASE RHEOLOGY"

- II.1 Molecular Theories and Constitutive EquationsR. G. Larson and R. C. Armstrong
- II.2 Mathematical Methods and Flow Modeling
   P. A. Tanguy and P. G. Lafleur
- II.3 Solid State DeformationsR. S. Porter, B. Tremblay and A. E. Zachariades
- II.4 Rheology of Single Phase Polymeric Fluids;Solutions and MeltsD. De Kee and B. Mena

### Stream III: "EXPERIMENTAL RHEOLOGY"

- III.1 Rheological Methods and Tools
   J. M. Dealy and R. L. Powell
- III.2 Rheology Under High Temperature and Pressure

(Melt flow of metals, ceramics, astrorheology)

- B. Hartman and W. R. Peltier

III.3 Rheology in Reactive and Other Time-Dependent Systems

- M. E. Ryan and Octavio Manero

- III.4 Adhesives, Sealants and Coatings
   I. M. Krieger and E. A. Collins
- III.5 Lubricants, Lubrication and Tribology
   S. Baczek and J. A. Spearot

# MINUTES OF THE SOCIETY OF RHEOLOGY EXECUTIVE COMMITTEE November 13, 1988

The executive meeting was called to order at 9:00 a.m. on November 13, 1988 at the Ramada Airport Hotel in Philadelphia. Officers present were: John Dealy, Bob Mendelson, Ed Gollins, Art Metzner, Joe Goddard, Bob Landel and Greg McKenna. In the absence of Don Baird, SOR Secretary, Greg McKenna acted as secretary for the meeting. Visiting was Kurt Wissbrun to report on AIP and at the request of the President. Robert Baench, AIP Publications Division, was there to discuss the possible transfer of publication of the Journal of Rheology from Wiley to AIP.

### Old Business

Business proceeded by first considering the minutes of the March 13th meeting. The executive committee noted that the proposal to increase the Sustaining Member dues to \$300.00 was successfully passed by vote of the SOR membership.

It was also noted that there will be a Biorheology symposium at the 1989 annual meeting to be held in Montreal.

### Publication of the Journal by AIP

The Executive Committee took up a discussion of the possibility of changing the publication of the Journal of Rheology from John Wiley to AIP. The history of prior discussions between AIP and SOR was reviewed and a draft proposal from AIP to the SOR formed the basis for indepth discussion and preparation for the visit of Mr. Robert Baench from the Publications Division of the AIP. Both the financial aspects of the proposal and difficulties which the editor of the Journal has had with the services from Wiley were discussed.

The questions of paramount importance were whether the current arrangement is satisfactory, whether or not AIP will help improve the technical quality of the Journal, and whether or not the Society incurs unacceptable financial risk in changing the publication arrangement from the current contract with Wiley to a service contract with AIP.

At 10:15 a.m. Mr. Robert Baench from the AIP publications division was asked to join the meeting and to discuss with the Committee the AIP proposal. At 1:00 p.m. Mr. Baench departed.

Based upon Mr. Baench's presentation and response to questions from the Committee members, it was decided that further information on the proposed change will be obtained before Jan. 6, 1989 and the issue will be an item of high priority with intent of resolution at the next Executive Committee meeting to be held in Gainesville, Florida in February, 1989.

### Editor's Report

Currently the Bulletin of the SOR is edited by Art Metzner in his capacity as editor of the Journal of Rheology. Professor Metzner requested that the executive committee find a solution which would relieve him of the duties as Bulletin Editor. After some discussion it was moved and seconded that "Editorship of the Bulletin be made a duty of the Secretary of the SOR effective with the 1989 Society elections." After further discussion the motion was passed by a vote of 4-2 with 1 abstention. It was further recommended that the nominating committee inform the next candidate(s) for the post of Secretary of the addition to the duties of Secretary. The Committee also felt that discussion of additional support to the Secretary was not appropriate at this time and tabled discussion with a note that it may become a subject for a future meeting and after the change has taken place.

### Nominating Committee

The President requested input from the Committee Members of names of possible Society Members who should be considered by the President in his appointments to the Nominating Committee.

### Membership Directory

After the March, 1988 Executive Committee Meeting a form was sent to the Society Membership requesting information for a new directory. Because fewer than 100 members responded to the form, the editor requested that a new directory be published with the current information. The Executive Committee agreed to publish a new directory now and to use the dues notice to collect additional information, such as telephone, FAX, BITNET, etc. numbers for a subsequent edition of the directory.

### Directory of Viscometer/Rheometer Manufacturers

A brief discussion of the appropriateness of the building of a directory of viscometer and rheometer manufacturers was held. It was decided that the Society and equipment manufactures could make better use of the Annual AIP Physics Today Buyer's guide. No other action was taken.

### Updating of Committee Membership Lists

The question was raised as to the currency of lists of committee membership. Ed Collins has the list and will send it to John Dealy who will assure its distribution to other members of the executive committee.

### Membership Committee

The President has decided to appoint a new Membership Committee. The Committee suggested possible appropriate names as members of this committee. It was also suggested that work by Joan Armour's committee to create a membership data base be continued under the new committee and that the data base be passed on to the new committee.

### Report from SOR Representative to the AIP Governing Board

Kurt Wissbrun is the SOR representative to the AIP Governing Board and reported to the committee on the activities of the Board. In particular, the AIP supports the U.S. participation in the International Physics Olympiad for young physics students. It was moved and seconded "that the SOR make a contribution of \$500 to the AIP fund for the 1989 Physics Olympiad." The Executive Committee discussed the issue and the motion was passed by a vote of 4 for 2 against and 1 abstention. The entire committee voiced concern about and support given by passage of this motion. Does the SOR, which is a small society give more or less than other member societies of the AIP? The Executive Committee directed Kurt Wissbrun to obtain this information to help guide the committee in deciding future levels of support.

### Get Well FAX to Roger I. Tanner

Roger I. Tanner recently underwent major surgery. Because of his activities and contributions as a foreign member, the Executive Committee sent a FAX wishing, on behalf of the SOR, Roger a rapid recovery.

### Ad Hoc Committee on Sustaining Member Policy

The recent increase of dues to Sustaining Members has occasioned a discussion of the role of Sustaining Members on the Society. The Executive Committee agreed that an Ad Hoc Committee should be appointed by the president to look into costs, policies, benefits, etc. which would be involved in any proposed changes in Sustaining Member Policy. This committee would be tasked with proposing a formal policy,

which is currently poorly defined. The Executive Committee suggested names of possible appointees to the president. It was strongly urged that this committee be heavily represented by SOR members from private industry.

# Annual Meeting Policy

This subject is one of continuing concern to the Executive Committee. It was noted that an increase in joint symposia, which many members have discussed in the past, is possible and progress is being made as exemplified by the biorheology symposium in Montreal in 1989, the 1989 meeting being held in conjunction with the 1st InterAmerican Rheology Meeting and the Canadian Rheology Group. Also a joint symposium with the Society for Experimental Sciences will be held at the Santa Fe meeting in 1990. However, there is no part of the policy on Annual Meetings which deals with joint endeavors with other scientific groups. One suggestion was made that the Program Committee be instructed by the Executive Committee to endeavor to involve the Biorheology Society in annual meetings and that Larry McIntyre is already the SOR contact with that group.

The importance of this subject and its complexity were recognized, some of the members had to leave to catch planes due to the late hour, so the Committee decided to defer further discussion until the next Executive Committee Meeting in Gainesville, Florida. It was further agreed that, along with the decision about changes in the publication arrangements, the question of Annual Meeting Policy be a principle item on the meeting in Gainesville. Further, due to the presence of two such major items on the agenda, the Committee agreed to meet in Gainesville for 1-1/2 days beginning on the Saturday evening before the Technical Sessions begin. Furthermore, Bob Landel agreed to put together an information package on the Annual Meetings Policy and distribute it prior to the Gainesville meeting.

THE NORTH AMERICAN SOCIETY OF BIORHEOLOGY is organizing a two-part biorheology session for the technical program of the 61st Annual Meeting, as noted in the program for that meeting. Entitled "Rheology of Blood and Tissues", this session will be dedicated to the late Stanley G. Mason, a pioneer in the field of suspension rheology. Responsible for the organization of the session are Drs. Harry L. Goldsmith of the Montreal General Hospital and S. P. Sutera of Washington University in St. Louis.

Anyone interested in becoming a member of the NASB is invited to contact the chairman of the membership committee, Dr. Rakesh K. Jain, Department of Chemical Engineering, Carnegie-Mellon University, Pittsburgh, PA 15213-3890. Telephone: (412) 268-2235.

# SOCIETY OF RHEOLOGY

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### **OBITUARY**

Professor G. V. Vinogradov, long a valued scholar of rheology and polymer science, passed away in Moscow on April 27, 1988, after more than a decade of failing health during which he continued his work with impressive dedication and undiminished acuity. Western rheologists may know him best for his many research contributions, for his book "Rheology of Polymers" co-authored with A. Y. Malkin, (1977; English Edition 1979) and for his two lecture tours of the U.S. approximately one and two decades ago: during these we learned of his wit and urbaneness as well as of his scholarship. Professor White also recalls a vigorous discussion with him at the Gothenburg Congress; unfortunately they were standing near a doorway and impeding the traffic. Finally Professor Vinogradov, noticing this, turned to White with "Excuse me; it hurts me to say this but we must move to the right!"

Notice of Professor Vinogradov's death arrived last summer, too late for inclusion in the summer Bulletin. Repeated requests for the more detailed obituary information befitting his stature were made but no reply has been obtained.

### **ANNOUNCEMENTS**

PROCEEDINGS OF THE XTH INTERNATIONAL CONGRESS ON RHEOLOGY are available as a 2-volume set for \$96 U.S. postpaid. Checks should be made out to The Australian Society of Rheology and sent to Professor R. I. Tanner, Department of Mechanical Engineering, University of Sydney, Sydney 2006, Australia.

THE NORTH AMERICAN SOCIETY OF BIORHEOLOGY has also organized a session on "Rheological Properties of White Blood Cells: Current Status and New Approaches" within the 7th International Congress on Biorheology which will take place in Nancy, France, 18-23 June 1989. For information on the Congress contact Lorraine Congres, Symposium INSERM, Palais des Congres, 1 rue de Grand Rabbin Haguenauer, 54000 Nancy, France.

A IUPAC Symposium on Polymer Blends will be held in Prague, France on July 17-20, 1989, at the Institute of Macromolecular Chemistry, Czechoslovak Academy of Sciences. Their mailing address is: 32nd Microsymposium, P.M.M. Secretariat, c/o Institute of Macromolecular Chemistry, Czechoslovak Academy of Sciences, CS-16206 Prague (Czechoslovakia).

MACROMOLECULES '89, the 2nd Euro-American Symposium on the theme "Functional Polymers and Biopolymers" will be held at Oxford University, England, September 4-8. Information is available from Mrs. Jane Vogl, Polytechnic University, 333 Jay Street, Brooklyn, NY 11201. Telephone: 718-260-3125.

further information should oggae; Dr. L. A. Ciracki or Dr.

An International Conference on the Micromechanics of Granular Media will be held September 4-8, 1989 in Clermont-Ferrand, France. Languages are French and English. The deadline for submitting abstracts has passed but information on the meeting may be obtained from R. Gourves, C.U.S.T., Laboratoire de Genie Civil, Universite Blaise Pascal, de Clermont-Ferrand II, Rue des Meuniers, 63170 AUBIERE, FRANCE. Telephone: 73-26-41-10.

The Division of Polymeric Materials Science and Engineering of the American Chemical Society will present a symposium on the subject "Polymers as Rheology Modifiers" at its September 10-15, 1989 meeting in Miami Beach. Titles from prospective authors were due in 1988 but as abstracts are not due until April 1, 1989, some opportunities for contributions may still arise. Contacts: D. N. Schultz, Exxon Chemical Co., P. O. Box 45, Linden, NJ 07036. Telephone: (201) 474-2056 or Professor J. E. Glass, Polymers and Coatings Department, North Dakota State University, Fargo, NJ 58105. Telephone: (701) 237-7633.

The Annual Meeting of the Deutsche Rheologische Gesellschaft will be held April 19-21, 1989 in Darmstadt, W. Germany. Contact Professor Dr. K. Kirschke, Deutsche Rheologische Gesellschaft, Unter den Eichen 87, D-1000 Berlin 45, German Federal Republic.

The 1989 Annual Meeting of the BRITISH SOCIETY OF RHEOLOGY will be held September 12-15, probably at University of Warwick. The theme is "Rheology of Food, Pharmaceutical and Biological Materials". Contact Roy Carter, Royal Ordnance R&D Centre, Waltham Abbey, Essex EN9 1AY, England. Telephone: 0092-713030.

The 10th International Symposium on Polymer Blends will be held at the Industrial Materials Research Institute in Montreal on October 30-31, i.e. following the 61st Annual

Meeting of the Society of Rheology. Individuals interested in further information should contact Dr. L. A. Utracki or Dr. B. D. Favis at NRCC/IMRI (address under 61st Annual Meeting).

Rheology in the Food, Cosmetic and Pharmaceutical Industries is the subject of the 24th Annual Colloquim of the Groupe Français de Rheologie in November 1989. Further information is available from Monsieur le Professeur B. Launay, Laboratoire de Biophysique, Departement Science de l'Aliment, ENSIA, 1 avenue des Olymppiades, 913056 MASSY.

The 1989 International Chemical Congress of Pacific Basin Societies will be held in Honolulu, Hawaii, U.S.A. on December 17-22, 1989. It will include a Symposium on "Polymer Rheology and Processing". Chemists and chemical engineers are invited to submit papers for consideration. The meeting is co-sponsored by the Chemical Society of Japan, the Canadian Society for Chemistry and the American Chemical Society. Chemical societies in all Pacific Basin countries plus the Asian and Latin American federations of chemical societies will be Official Participating Organizations.

The basic requirements for submitting papers are: (1) an abstract of about 250 words on special Congress abstract forms and (2) a longer abstract of about 1,000 words (plus critically important tables, graphs and figures).

The deadline for receipt of abstracts is March 15; for submitting a paper or more information please contact Dr. L. A. Utracki at his address earlier in this bulletin.

The Eleventh U.S. National Congress of Applied Mechanics will be held on May 21-25, 1990 at the University of Arizona. Summaries of proposed papers should be submitted for consideration prior to October 31, 1989, to Professor C. F. Chen, Department of Aerospace and Mechanical Engineering, University of Arizona, Tucson, Arizona 85721 U.S.A.

The First World Congress of Biomechanics will be held at the University of California, San Diego campus in La Jolla, California, August 26-31, 1990. Address inquiries and correspondence to: Prof. Geert W. Schmid-Schönbein, Secretary General, The First World Congress of Biomechanics, AMES - Bioengineering M-005, University of California-San Diego, La Jolla, CA 92093 U.S.A. Telephone: (619) 534-4272.

The Golden Jubilee Conference of the British Society of Rheology and the Third European Rheology Conference will take place from Monday 3rd to Friday 7th September, 1990 in the city of Edinburgh. Accommodation has been reserved in the Pollock Halls of Residence of the University of Edinburgh and technical sessions will take place in the University's Appleton Tower and George Square lecture theatres.

Delegates may be able to arrange accommodations in the Pollock Halls for the previous week, which is the final week of the 1990 Edinburgh International Festival of Music and Drama. Details of this will be available later.

Further details of the conference will be available early in 1989. Enquiries and offers of papers should be sent to:

> Dr. C. J. S. Petrie Department of Engineering Mathematics University of Newcastle upon Tyne Newcastle upon Tyne NE1 7RU **ENGLAND**

[Electronic mail to: Chris\_Petrie@Newcastle.AC.UK on the EARN/BITNET networks or, on JANET.

Chris\_Petrie@U.K.AC.Newcastle

62nd Annual Meeting, Society of Rheology, will be held in Santa Fe, New Mexico, in October, 1990. The program chairman is M. T. Shaw, University of Connecticut, and the local arrangements chairman is A. M. Kraynik of Sandia Laboratories.

EXHIBITORS OF RHEOLOGICAL AND PROCESSING EQUIPMENT. The Montreal meeting, October 1989, will include a major equipment exhibit. Exhibitors not yet included are urged to contact Dr. Utracki as soon as possible.