
THE BRITISH SOCIETY OF RHEOLOGY

BSR BULLETIN incorporating THE 2nd NEWSLETTER OF THE EUROPEAN SOCIETY OF RHEOLOGY

1998, Vol. 41, No. 1

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EDITORIAL

Right, now then, I seem to have got a copy of the last Bulletin through my letter box so *something* must be going right!

This edition has the second European Bulletin contained within its covers so welcome to our many European readers. I can claim no credit for the contents of this section, the hard work was done by Mannfred Wagner - many thanks to him.

Conference reports coming out of our ears also in this edition - many thanks to Phil Banfill for services above and beyond...*etc.* A quick plea to any other attendees at Rheological conferences - a short word on content or social life will always be welcome!

This edition of the bulletin is also a first in that we are offering full colour advertisements (for a *very* reasonable fee).

Getting “back to basics” was one of the comments from the study of the Society’s future - one key “basic” was the provision and organisation of conferences and seminars and I am pleased to draw your attention to Tom McLeish’s December Conference. This event looks very exciting and I hope that members will respond positively (and by voting with their feet!).

I would welcome any suggestions that the members have for items to be included in the Bulletin - I think I said this last time as well!

Ah well, the sun is now starting to shine with a little more regularity, so until next time...

Paul Doody

Readers are reminded that any suggestions for colour or black and white illustrations for the covers of both the Bulletin or Rheology Abstracts are most welcome. These should be sent to either our Publications Manager (Dr Nick Hudson) or myself.

CONFERENCE REPORTS

10th International Congress on the Chemistry of Cement, Gothenburg, Sweden, 2 - 6 June 1997

I attended this Congress and was invited to chair the session on rheology. Compared to previous Congresses in this series, this one with 400 delegates was on the small side, but I feel that would be no reflection on the attractiveness of Gothenburg as a venue. Indeed the sun shone a lot and it was easy to resent being inside the Congress Centre all the time.

From the sample of five papers on rheology one might falsely conclude that cement rheology is an unimportant subject. On the contrary, cement manufacturers are always seeking the holy grail of reduced water demand for their product since more water required for workability also means lower strength in the hardened product. Additionally, users understand that the freshly mixed material must be able to flow and remould itself to fill moulds and voids otherwise the hardened product will not develop its full potential. As one of the Japanese delegates pointed out in introducing his paper, Japan is prone to earthquakes so engineers use very densely concentrated steel reinforcement in concrete and therefore it is vital to have highly fluid mixes.

Some potentially interesting work on rheology was presented, including the effects of powder size distribution, use of limestone powder in addition to cement, use of dispersants and ultra fine cement, and development of a new cement using carbonate instead of sulphate to retard the set. However, the detail of the rheological measuring techniques was mentioned very briefly and no paper described the type of geometry and whether smooth or rough surfaces were used, nor did any give any information on the mixing procedure used. These are such fundamental pieces of information for a material which is shear history dependant and which is known to be prone to slippage at the surfaces of smooth cylinders or plates in a viscometer that it is disappointing that authors did not report them. Differences in preparation and measuring technique can cause up to 50-fold differences in the measured parameters and consequently the rheological work reported at this Congress is of relative significance only and the values cannot be compared with those elsewhere in the literature.

Unfortunately, we as rheologists know this, but the challenge for those of us working in cement and concrete is to avoid getting set in our ways and to communicate good practice to other researchers.

A final niggle is that the published proceedings are in four unpaginated volumes, so that papers will have to be cited as "paper 2ii004, 8pp" instead of "vol 2, 125 - 132". I do wish that organisers would keep the users of the proceedings in mind when preparing their volumes.

Lest the foregoing remarks seem curmudgeonly I must confess that I did not go to the Congress just for the rheology and it was a delight to meet old friends to discuss cement in a place I was visiting for the first time.

Phil Banfill

Second RILEM Workshop on Hydration and Setting Dijon, France, June 11 - 13, 1997

Subtitled "Why does cement set? - an interdisciplinary approach" this workshop followed an experimental meeting of 1991, in which colloid scientists and cement chemists came together to explore common ground and identify the issues relevant to setting of cement. This meeting, held in the Hotel Sofitel in Dijon, was again organised by the Research Laboratory on the Reactivity of Solids of the University of Burgundy and was more successful than the first because of the greater emphasis on work in progress. It was particularly encouraging to note the large number of young research workers from Dijon and other French organisations who were there both as speakers and delegates. Some very lively discussions took place and Andre Nonat and Jean-Claude Mutin are to be congratulated on the programme they had put together.

The programme format involved a number of lectures, by specialists invited for the purpose, and submitted research papers. The lecture topics included interparticle interactions, fundamental mechanisms of adhesion, simultaneous study of rheology and hydration of cement, and crystallisation concepts in aqueous solutions. The range of papers covered surface behaviour, electrokinetic properties, cohesion, microstructure, shrinkage, rheology, nucleation and the behaviour of cement and plaster during hydration.

The papers were available at the meeting as a book of preprints and it is expected that the final proceedings volume will be published in 1998,

after authors have had the opportunity to revise their texts in the light of the discussion at the meeting. I hope to be able to abstract relevant papers when it appears.

The social programme was good and offered a chance to sample the gastronomic delights for which Dijon is famous. A cultural highlight was the music recital given by a very talented trio before the Conference dinner.

As ever, I was loath to leave such a productive event and begin the hard work of assimilating the interesting material into my way of looking at the behaviour of cement systems.

Phil Banfill

Nordic Rheology Conference Reykjavik, Iceland, August 6-9, 1997

I attended the annual conference of the Nordic Rheology Society, which has featured in the pages of this Bulletin in previous years, at the invitation of the organisers and I am very grateful to them for their hospitality. As the Director of the Icelandic Building Research Institute pointed out in his opening welcome, this was the first conference on rheology to be held in Iceland. About 70 delegates from Scandinavian countries and a few from Germany, France and the UK gathered at the Grand Hotel Reykjavik.

The meeting opened on a sombre note as Arild Saasen, the Society's President, announced the death, the

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previous week, of Professor Carl Klason who had been a driving force in the establishment of the Nordic Rheology Society and will be sadly missed. Also held during the meeting was the Society's Annual General Meeting.

The technical sessions were divided into plenary sessions with the invited speakers followed by papers on instrumentation, general and theoretical rheology, and two parallel sessions on food and polymer rheology and on cement, concrete and drilling fluids. The organisers had judged the relative levels of interest in the two parallel sessions very nicely so that no-one had to suffer the indignity of speaking to the chairman and only a few other people in the audience.

Howard Barnes, invited to speak on dispersion rheology, gave his customary tour de force, covering flow curves, models, concentration dependence and other important phenomena like dilatancy and thixotropy. It was good to hear that his most recent review, on thixotropy, had now been published in *Journal of Non-Newtonian Fluid Mechanics*. I had been invited to speak on cement paste rheology and I was somewhat disconcerted when the Chairman introduced me with the remark that a conference I had organised in 1990 was used as the model for the present meeting because of its low cost. I had hoped that it would be remembered for its high quality!

It would be too tedious to mention all the submitted papers in detail, other than to remark that the presentations were generally of a high standard and the discussions were lively. It was disappointing that a number of authors had failed to arrive, in several cases despite registering and paying fees. In one case the session would have been unsatisfactorily brief so I gave a short ad lib presentation on a current research project on the vibration of fresh concrete. The papers themselves were bound as a slim (140 pager) and attractive volume of proceedings and abstracts will appear in *Rheology Abstracts* in due course. There was a small exhibition by equipment manufacturers. On the day before the conference itself, the local organiser, Dr Olafur Wallevik, ran a one day workshop on concrete rheology, which attracted about 20 people. It was held at the Icelandic Building Research Institute and gave delegates a chance to see demonstrations of equipment as well as the opportunity to be nosy about some of the other work in progress at the Institute.

The social programme was full and varied with a reception at the city hall, hosted by the President of the City Council. A dinner at the

Pearl, a restaurant built over the geothermally supplied hot water storage tanks for the city, offered wide views over the city, and an excellent meal enlivened by the presentation of the Society's annual award to Annika Sahlstrom and by a certain amount of humour associated with a presentation to our host Olafur to recognise the way he had entertained us with his use of new technology in the form of graphics software based visual aids for his talk. Before the meal we saw another side of our host with a display of karate. The setting was of further interest for rheologists because the tables are positioned on a moving floor forming the annulus between the circular core and the exterior dome of the building. I noticed that there was a 10mm gap between the fixed and moving members, making the whole structure the world's largest coaxial cylinders viscometer (10m radius, 0.5 rev/hour). A back of the napkin calculation suggested a shear rate of about 1 sec^{-1} .

There was a visit to the Blue Lagoon, a lake of mineral salt enriched water obtained from about 5000 feet below ground and naturally heated to 38°C . It was an interesting sight to see the delegates in the water, wreathed in ghostly steam trails and an unique sensation to be served a cocktail by a waiter clad in trunks and bow tie while luxuriating in warm salty water in the middle of a lava field next door to a power station.

The final highlight was a full day sightseeing trip, the so-called Golden Circle, encompassing Thingvellir, the site of Iceland's first parliament where one man recited the country's laws to the assembly at every meeting, Gullfoss, the country's most impressive waterfall, Geysir, where the ground is pockmarked with steaming hot springs one of which spouts high every few minutes, and finishing with a visit to a volcanic crater and a village owing its existence to geothermally heated greenhouses. Apparently Iceland is the biggest exporter of bananas in Europe. It was such a clear, bright day that we were rewarded with distant views of glaciers, mountains and offshore islands. An unforgettable experience.

This was a most enjoyable and technically very useful meeting with much informal networking between rheologists in different fields. I hope to be able to return to Iceland again in the future and venture to suggest that it would be a good venue for a European Rheology Conference.

Phil Banfill

Report on European School of Rheology, Leuven, 1997

From 8-12 September the ESR organized - in cooperation with the Belgian Group of Rheology, a European School on Rheology at the K.U. Leuven. The course attracted over 50 participants from 8 different countries, 50% from industry and 50% from universities throughout Europe. The teaching staff was very international; The most recent Bingham medalist, Prof. G.G. Fuller from Stanford University (USA) taught classes on rheo-optics and extensional rheometry. Prof. R. Keunings from the Université Catholique de Louvain (B) gave an overview of the recent developments in the field of numerical computation in rheology. The physics behind polymer rheology were didactically explained by Prof. G. Marrucci from the Università di Napoli (I). Prof. M. Wagner of the IKT, Universität Stuttgart (G) had the interesting task of explaining the concept of nonlinear viscoelasticity and to demonstrate the importance of rheology in polymer processing. The hosts of the European School on Rheology, Prof. J. Mewis and Prof. P. Moldenaers (course director) took care of most of the introductory sessions and their own favorite subjects of respectively suspension rheology, and rheometry and the rheology of immiscible blends.

The classes were held in the scenic location of the Arenberg Castle. Much time was also allocated to laboratory sessions on the various aspects of rheometry (rotational and capillary rheometry, extensional rheometry and rheo-optics) which were held in the Department of Chemical Engineering. There was also a demonstration by manufacturers of rheological equipment on Wednesday and Thursday. All major manufacturers participated in this initiative.

In addition to the scientific activities, some events were organized. On Monday there was a welcome reception in the Laboratory of Applied Rheology with the Dean of the Faculty of Engineering, Prof. J. Berlamont, being present. The Dean is a civil engineer, who shares an interest in rheology. On Tuesday there was a visit to the town of Leuven which ended in the pub of a local microbrewery to taste a few of Belgium's beers (it could be noted that some participants had a good experimental approach and tested quite exhaustively). Finally on Thursday night there was a Banquet in the Faculty Club of the K.U. Leuven.

The participants evaluated the course very positive. Some people remarked that the level of the course was very high and yet very broad, and that digesting all this information in one week was quite demanding.

The concept of a European School of Rheology has proven its merit. Organizing this in the framework of the ESR and keeping a European perspective really contributes to the quality of the course. At this point, the course was organized without any financial support, yet it was aimed to keep the admission fees as low as possible. It might be useful to seek for financial support from the EU in the future.

Finally the team of the K.U. Leuven wishes to thank all those who participated for their active contributions. We believe that the initiative is well worth being continued within the framework of the ESR.

On behalf of the K.U. Leuven team,
Jan Vermant, course coordinator

Editor's note. This was the 4th European School of Rheology. The 5th will be held in the UK later this year.

**The participants of the European School of Rheology
in front of Arenberg Castle, K.U. Leuven.**

THE BRITISH SOCIETY OF RHEOLOGY

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**“PARTNERS IN RHEOLOGY”
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**Organiser: Professor T. C. B. McLeish
IRC in Polymer Science & Technology
University of Leeds, Leeds LS2 9JT**

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Professor Paul Callaghan (Massey, NZ)
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Dr. Richard Buscall (ICI)
Dr. Malcolm Mackley (Cambridge)
Professor Joachim Meissner (Zurich)

Costs

	Member	Student/retired	Non-member
Conference Fee	£80	£55	£110
	Day rate	24 hr Delegate	24 hr Delegate (sharing twin room)
Accommodation	£50	£180	£150

Note: a £20 surcharge will be applicable to all applications received after 30th September 1998

Application form

Photocopy and return to:

Prof. T. C. B. McLeish,
IRC in Polymer Science & Technology,
University of Leeds,
Leeds LS2 9JT.

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ANNOUNCEMENTS OF THE EUROPEAN SOCIETY OF RHEOLOGY (ESR)



5th EUROPEAN RHEOLOGY CONFERENCE

September 6 - 11, 1998

The Bernadin Hotels, Portoroz, Slovenia

Visit the Web Site: <http://www.fs.uni-lj.si/cem/RHEO.htm>

For further scientific information contact:

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University of Ljubljana

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E-mail: igor.emri@ki.si

For general information (i.e. registration, accomodation exhibition, ...) contact the conference secretary:

Mateja Bourke

Center for Experimental Mechanics

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Nominations for the 1998 Weissenberg Award

The first "**Weissenberg Award**" for outstanding contributions to rheology will be bestowed at the 5th European Rheology Conference (ERC), Slovenia 1998. A few excellent nominations have been received already. Nominations are invited for submission to the chair of the Weissenberg Award Committee **not later than April 1998**:

Prof. Ken Walters FRS
Department of Mathematics
University of Wales
Aberystwyth SY23 3 BZ
Great Britain
Fax: +44-1 970 622 777

The following guidelines apply:

Eligible are rheologists with outstanding, long term achievements, whose centre of scientific activities lies in Europe. The award will be bestowed biannually, delivered at a conference location covered by the ESR. Nominations shall include:

- A brief scientific biography;
- A review of the nominee's accomplishments advancing the science of rheology upon which the nomination is based;
- A curriculum vitae with publication list;
- Supporting letters from other rheologists addressing the nominee's achievements.

Bids for the 6th EUROPEAN RHEOLOGY CONFERENCE 2002

At the 5th European Rheology Conference (Portoroz, September 6-11, 1998) the Committee of the ESR, i.e. the delegates of the Rheology Groups belonging to the ESR, will decide on the location of the 6th European Rheology Conference (6th ERC) in the year 2002. The Executive Committee of the ESR suggests that **letters of intent** to host the 6th ERC should reach the Secretary of the ESR,

Prof. M.H. Wagner
IKT
Boeblinger Str.70
D-70199 Stuttgart
Fax: +49-711-641-2335
EMail: wagner@ikt.uni-stuttgart.de

by **June 30, 1998**. Prospective applicants will then be invited by the Secretary to present a detailed documentation of their bid at the Committee Meeting in Portoroz.

ANNOUNCEMENTS OF THE LOCAL EUROPEAN SOCIETIES

VINOGRADOV SOCIETY OF RHEOLOGY

The 19th Meeting of the Vinogradov Society of Rheology will be held on June 22-27, 1998 in Klaipeda, Lithuania. The first circular was distributed at the end of November 1997. All potential foreign participants are kindly requested to contact

Prof. V. Kulichikhin

Institute of Petrochemical Synthesis RAS

29 Leninsky Pr.

Moscow 117912

Russia

Tel. 7-095-952-4145

Fax: 7-095-230-2224

E-mail: flow@aha.ru

Valery Kulichikhin

CZECH GROUP OF RHEOLOGY

1) The 18th Discussion Conference "Mechanical Behaviour of Polymeric Materials" will be held in Prague, 20 - 23 July 1998, under the auspices of the International Union of Pure and Applied Chemistry. More detailed information and application forms are available at the www site

<http://www.imc.cas.cz/~sympo/pmm98.html>

or contact the conference chairman **Dr. Miroslav Raab** at raab@imc.cas.cz

2) The International Conference "Flow and Deformation in Biology and Environment" will be held in Prague, 14 - 16 September 1998. The Conference program will be divided into the following symposia:

- Water flow and transport
- Flow visualization with a workshop on "Environmental Fluid Dynamics"
- Rheology and Texture of Biological Bodies, Agromaterials and Foods
- Transport systems in biology with a workshop on "Carbohydrate Transport in Plants".

For more detailed information, please contact:

Dr. Jiri Blahovec

Conference FDBE,

Czech University of Agriculture

16 521 Prague 6 - Suchbátka, Czech Republic

E-mail: blahovec@tf.czu.cz

Phone: (+420 2) 2438 4281

3) The announcement in the previous issue of the Newsletter on the "Microsymposium on Engineering Rheology" in the general frame of the 13th International Congress of Chemical Engineering should be corrected in the sense that it will take place in Prague on August 23 - 28th, **1998** (and not 1997 as erroneously announced). For more detailed information contact:

chisa@icpf.cas.cz

Jiri Sesták

GROUPE FRANCAIS DE RHÉOLOGIE (GFR)

1) The GFR held its "32nd Annual Meeting" on October 28 to 30, 1997 in Nantes with the title "Rheology for the Food, Cosmetic and Pharmaceutical Industries". The meeting was organised by Jacques Lefebvre and Jean Louis Doublier from INRA Nantes. This meeting was a joint meeting with the "Netherlands Group of Rheology", which was represented by two distinguished scientists, Kees de Kruif (NIZO, Ede) and Ton Van Vliet (Wageningen Agricultural University). During the meeting, Madeleine Djabourov announced the names of two Ph. D. students who have been allocated the Annual Grants (5000FF each) of the GFR: these are Françoise Berzin (CEMEF, Sophia Antipolis) and Andreas Redl (INRA, Montpellier). She also presented the laureat of the Annual Prize of GFR, which is given in association with Rheometric Scientific: Bernard Launay from ENSIA Massy.

2) The next Annual Meeting of the GFR will be held in Biarritz, October 12 to 14, 1998, organised by Gerard Marin, University of Pau. The topic is "Rheology in Multiphase Systems: Role of Interfaces and Interphases". It will be a joint meeting with the Spanish and the Portuguese Groups of Rheology. For more information please contact:

gerard.marin@univ-pau.fr

3) There will be a "Meeting of Young Rheologists" at OYONNAX on May 26 to 27, 1998, organized by Claude Wolff (CNAM, Paris). Participants are expected to be Ph.D. students or recently graduated Ph.D.s. For information please contact:

wolff@cnam.fr

Madeleine Djabourov

HELLENIC SOCIETY OF RHEOLOGY (HSR)

1. Recent and Future Meetings

Participation of HSR members was strong with several presentations made during the 69th Annual Meeting of the SOR in Columbus, OH, USA, in October 1997.

The executive and many members of the HSR participated in the 4th Panhellenic Congress on Polymers held in Patras, Greece, during November 20-22, 1997. The HSR organized a well-attended session on Rheology and Polymer Processing chaired jointly by its President, Prof. Evan Mitsoulis, and Vice-President, Dr. Dimitris Vlassopoulos, while the Secretary-Treasurer, Prof. John Tsamopoulos, was one of the organizers of the Conference.

The 2nd Scientific Meeting of the Society (HSR'98) will take place from August 31 to September 2, 1998, in Heraklion, Crete, Greece. This meeting will be an international forum on recent developments with world-renowned invited speakers. The event is conveniently scheduled the week before the European Rheology Conference to be held in Slovenia, so that participants can savour both scientific meetings on the same trip.

For more information about HSR'98, please contact:

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2. Awards

Two Greek rheologists and HSR members, John Perdikoulis and Costas Tzoganakis (University of Waterloo), were awarded the best paper award of the Extrusion Division of the Society of Plastics Engineers (SPE) during the ANTEC 1997 meeting held in Toronto, Ontario, Canada, in May 1997 for their paper entitled: "Interfacial Instabilities during Coextrusion of LDPEs".

Professor Spyros H. Anastasiadis, HSR member, University of Crete and IESL/FORTH, was awarded the Dillon Medal of the High Polymer Physics Division of the American Physical Society (APS) for 1998, in recognition of his "pioneering work on structure and dynamics of polymer melts, solutions and thin films". The award will be presented to him in March 1998 at the APS meeting in Los Angeles, CA, USA.

Evan Mitsoulis

DUTCH SOCIETY OF RHEOLOGY (NRV)

The last meeting of the NRV was held at Shell Research & Technology Centre, Amsterdam November 12th, 1997. The topic was: **Industrial Application of Rheology**. Speakers and titles of the lectures:

Martin Laun, BASF Aktiengesellschaft, Ludwigshafen/Rhein, Germany

"Industrial Applications of Rheology"

Markus Gahleitner, PCD Polymere GmbH, Linz, Austria

"Rheology as a Quality Control Instrument"

Mike Phillips, Shell Research & Technology Centre, Amsterdam

"A novel diagnostic using viscoelastic creep to detect phase changes and physical ageing around T_g "

Paul Steeman, DSM Research B.V., Geleen

"Rheology as a tool for studying the molar mass distribution of polymers"

Xavier Muyldermans, Shell Research & Technology Centre, Louvain-la-Neuve

"Rheology of thermoplastic elastomers in the adhesives field"

Rudy Koopmans, Dow Benelux N.V., Terneuzen

"On 'Melt Fracture' and how to handle it"

The next meeting of the NRV will be held on April 22, 1998 at the Eindhoven University of Technology, Eindhoven, The Netherlands. Topic: **'Highlights in Non-Newtonian Fluid Mechanics'**. Speakers and titles of the lectures:

Frank Baaijens, Eindhoven University of Technology, Eindhoven

'Determination of rheological constitutive equations for polymer solutions and melts in complex flows'

Patrick Anderson, Eindhoven University of Technology, Eindhoven

'3D Mixing Flow Analysis'

Robert Smit, Eindhoven University of Technology, Eindhoven

'Deformation and Fracture in Heterogeneous Polymer Systems'

Inge Vinckier, BASF Aktiengesellschaft, Ludwigshafen/Rhein, Germany

'Viscoelastic effects of the interfacial tension in two-phase polymer blends'

Dirk van den Ende, University of Twente, Enschede

'On the microrheological modelling of dispersions in steady shear flow'

Speaker from DSM Research B.V., Geleen

'Flow induced phase separation processes during injection moulding'

Marleen Rieken

SPANISH GROUP OF RHEOLOGY (GER)

1) 1997 Annual General Meeting:

The Annual General Meeting was held, on June 27, in Madrid (Instituto de Ciencia y Tecnologia de Polimeros). During this meeting the members agreed unanimously to give the First GER Medal to Prof. Jose Aleman, former President of the Spanish Group of Rheology. The ceremony of award will be held during the 1998 Annual General Meeting (Biarritz, France).

2) Spanish Rheology Newsletter:

Prof. Antonio Guerrero was elected as Editor of the "Boletin de Reologia" (Junio 1997).

3) Course on Viscoelastic Materials:

A course on the rheology of complex materials of interest in food and pharmaceutical industries was held in Valencia, October 13-17, 1997, with the participation of a number of rheometer producers.

4) 1998 Annual General Meeting:

The First French-Iberian Meeting on Rheology will be held in Biarritz (France), October 12-14, 1998, within the framework of the 16th Annual General Meeting of the Grupo Espagnol de Reologia and the 33rd Annual Meeting of the Groupe Francais de Rheologie, under the general title: "Rheology of multiphase systems: interfaces and interphases". The aim of the Conference is to analyze multiphase systems including theoretical and practical aspects in the field of suspensions, emulsions, paints, varnishes, biological fluids, polymer blends, foods, etc., including: Multiphase flow; Rheological characterization of interfaces and interphases; Stability of dispersions during flow; Evolution of morphologies and stability of interfaces; Industrial applications.

For more information please contact:

Prof. Antxon Santamaria

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or

Prof. Gerard Marin

e-mail: gerard.marin@univ-pau.fr

Crispulo Gallegos

NEW GROUPS IN THE ESR

PTRT

Polskie Towarzystwo Reologii Technicznej POLISH SOCIETY OF ENGINEERING RHEOLOGY

The Polish Society of Engineering Rheology was founded on 7th February 1997 by 16 founding members representing seven Polish academic centres.

Contact persons:

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Prof. Zdzisław Kemblowski

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Meetings

The first scientific meeting of the Society took place in June 1997 at the Technical University of Zielona Góra, and the second one in November 1997 at the Technical University of Kraków.

Foundation Meeting of the Polish Society of Engineering Rheology (PTRT).

Attendees (from left to right) are: Prof. Jerzy Petera, Dr. Tomasz Kiljanski, Prof. Edward Walicki, Dr. hab. Jolanta Stacharsha-Targosz, Dr. Jerzy Sek, Prof. Regina Drabent, Dr. Anna Walicka, Prof. Lidia Zander, Dr. hab. Lubomira Broniarz-Press, Prof. Tomasz Jankowski, Prof. Zdzislaw Kemblowski, Prof. Kazimierz Wojs, Prof. Stefania Grzeszczyk, Prof. Zbigniew Matras, Prof. Marek Dziubinski, and Dr. Pawel Budzynski.



ITALIAN GROUP OF RHEOLOGY (GIR)

The Italian Group of Rheology was constituted only recently, in October 1996, as a consequence of the disappearance (following a long period of inactivity) of the past Italian Society of Rheology. The aim of the Group is to continue the scopes and the tradition of the previous association: to be a common point of aggregation for the Italian rheological community, and to represent it at the international level.

Strong support to the creation of the new Group has come from the only national organization active in the 90's, "Rheotech" (Italian Association of Applied and Industrial Rheology). In fact, it is expected that the two Societies will merge into a single one in the near future.

The recent activity of GIR included the organization of a National School of Rheology (Milan, 27-31 January, 1997), with some 40 attendents from both industry and academy, and of the 1st Annual Meeting of the Group (Viterbo, 5-7 June, 1997), in conjunction with the 5th Annual Meeting of Industrial and Applied Rheology organized by Rheotech. A joint meeting of the national groups of Italian, Austrian and Slovenian Groups of Rheology is scheduled for May 1998 in Trieste.

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XIIIth International Congress of Rheology: "Rheology 2000"

Visit the Web Site

<http://abbey4.swan.ac.uk/rheology2000/>

for more information on:

XIIIth International Congress of Rheology

**20-25th August 2000
Cambridge, U. K.**

Rheology 2000 will be held in the city of Cambridge, one of the most beautiful cities in the United Kingdom. It is a city with magnificent historic buildings, elegant bridges and a wealth of open parkland, spread along the banks of the River Cam.

The Congress will be organised by the British Society of Rheology on behalf of the European Society of Rheology. The Congress will be held at the University, the first college of which, Peterhouse, was founded in 1284 by the Bishop of Ely. The Conference Office will be based at Robinson College, a much more recent addition to the University. Her Majesty the Queen officially opened the College in May 1981.

Accommodation will also be available in Newnham College and St John's College (Founded in 1511). The range and standard of accommodation in the University is excellent, but for those who would prefer conventional hotels there are many from which to choose

Lectures will be held in the Lady Mitchell Hall Complex on the Sidgwick Site, with a Plenary Session planned to be held in the Corn Exchange.

M. H. Wagner

OBITUARY

CARL KLASON

On the morning of Sunday 27th July 1997 we heard the crushing unexpected news that our friend and colleague professor Carl Klason had passed away during the night after a relatively brief illness. He was only 59 years old. He is survived by his wife Gunilla and seven sons.



Carl Klason was born in Linköping. After his high school studies he completed his undergraduate degree at the University of Stockholm. In 1965 he was employed as a research assistant at the Swedish Wood Research Institute (STFI) in the department of paper technology. During his time at STFI, Calle, as he was called by friends and colleagues, began to study synthetic polymers. His ability to combine knowledge of wood, paper and cellulose on the one hand and polymer science on the other resulted in a number of pioneering works.

In 1969 the second Swedish polymer technology institute was formed at Chalmers University of Technology under the direction of professor Josef Kubát. Calle's industry and dynamism played a decisive role in the quick development of a successful group. His organisational talents and pedagogical expertise were of especially great value.

Calle Klason's research contributions covered an unusually wide spectrum. He began by interesting himself in thermal transitions in cellulose. Then he shifted his attention to the electrical conductivity of polymers filled with conductive components. The results of these efforts were summarised in an important doctoral thesis presented in 1975. A large part of it was pioneering work, the implications of which are not yet fully realised.

In the continuation there followed a series of publications concerning the rheology of filled polymers, improved processing methods for filled polymers and not least the development of cellulose-plastic composites. It was in the last mentioned field that Calle Klason had one of his most important patents wherein the problem of compounding cellulose-plastic composites was solved using partial hydrolysis and which patent brought the Department of Polymeric Materials many research grants, including some from the European Union in Brussels.

Calle Klason was awarded the docent title by Chalmers in 1985. Five years later he was appointed professor in polymer technology at the University of Lund as well as director of the Polymer Center at the University of Lund.

He returned from Lund to Chalmers in 1993 to take over the leadership of the Department of Polymeric Materials. Also as department head he showed evidence of the same energy and dynamism as during the two previous decades he had devoted to Chalmers.

Calle Klason was certainly one of the people that effectively contributed to placing Swedish polymer research on the world map. Already in 1976, when he organised the 7th International Congress on Rheology, many people realised that he would be an important link in the international contact network. Not only his scientific production but also his humanistic predilection contributed to this, the latter including interests in the visual arts, music and literature and impressive culinary knowledge combined with generous hospitality in his home open to guests from the whole world.

Colleagues and students will remember Calle Klason as a polymer researcher rich in ideas and a devoted teacher. Also his handbook "Plastics - data and choice of materials", known in the whole country and published in several editions, will be a reminder of his contributions to the Swedish plastics industry.

Calle Klason has now left us all too early and it will be difficult to fill the vacuum that he has left behind.

Hans Bertilsson, Josef Kubát

MEMBERSHIP NEWS

The following new members were agreed at the British Society of Rheology Council Meeting on 19th December 1997

Dr V J Morris,

Dept of Food Biophysics, Institute of
Food Research, Norwich Research
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vic.morris@bbsrc.ac.uk

Mr M Hoy,

Color Matrix UK Ltd, 9 Unity Grove,
Knowsley Industrial Estate,
Merseyside, L34 9ET

Dr A E James,

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Dr A S Burbidge,

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Nottingham University, University
Park, Nottingham NG7 2RD

Adam.Burbidge@nottingham.ac.uk

Prof T T Andreassen,

Dept of Connective Tissue Biology,
Institute of Anatomy, University of
Aarhus, DK-8000 Aarhus C,
Denmark

Prof D Woolfson,

School of Pharmacy, The Queen's
University of Belfast, 97 Lisburn
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Mr A M Ukeje,

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Dr T D Papathanasiou,

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papathan@engr.sc.edu

Dr H Pinkerton,

Environmental Science Dept,
Institute of Environmental and
Natural Sciences, Lancaster
University, Lancaster, LA1 4YQ

h.pinkerton@lancaster.ac.uk

Dr E E Pashkovski,

Colgate-Palmolive Company, 909
River Road, PO Box 1343,
Piscataway, NJ 08855-1343, USA

Eugene-Pashkovski@colpal.com

Classification of abbreviations for Members' rheological interests are as follows:

f	Member's main interest is rheology (<i>i.e.</i> full-time)
p	rheology is secondary interest (<i>i.e.</i> part-time)
e	approach is experimental
t	approach is theoretical
s	area of work is pure science
a	area of work is technology
A	metals
B	composites
C	solid polymers
D	molten or dissolved polymers
E	natural fibres
F	liquid-liquid systems
G	liquid-solid systems
H	particulate systems
I	glasses, ceramics
J	oils, greases
K	building & road materials
L	foodstuffs
M	biological materials
N	theoretical models
O	other systems

Membership is open to anyone concerned with rheology. You should apply by contacting the Membership Secretary for an application form. There is an entrance fee of £1 and the present annual subscription is £15 *per annum*. Subsequent annual fees are reduced to £10 if paid by Banker's standing order or by credit card (Visa or Mastercard only). The subscription is due, in advance, on 1st October each year. *Bona fide* students pay no entrance fee. Benefits of membership include the *BSR Bulletin* with its list of conferences, courses, rheological articles, *etc.* and *Rheology Abstracts* which collates thousands of abstracts each year from hundreds of journals. Both of these are published quarterly.

CONFERENCE DIARY

Readers are reminded that inclusion of an event in the Diary section is free of charge. Submissions should be sent to the Editor, either by post or electronically.

1998	
13-16 May Banff Aberta, Canada	Mechanics of Nonlinear Materials D DeKee , Dept of Chemical Engineering, Tulane University, New Orleans, LA 70118, USA D A Siginer , Dept of Mechanical Engineering, Auburn University, 201 Ross Hall, Auburn, AL 36849-5341, USA J Stastna , Bituminous Materials, University of Calgary, ENF 62, Calgary, Alberta, Canada T2N 1N4
20-23 May Trieste Italy	Joint Conference of Italian, Austrian, Slovenian Rheologists Sabrina Pricl , DICAMP - University of Trieste, piazzale Europa 1, I 34127 Trieste, Italy T: +39(0)40 6763750 F: +39(0)40 569823 E: sabrinap@dicamp.univ.trieste.it
26-27 May OYONNAX France	Groupe Francais de Rhéologie (GFR) - Young Rheologist's Day Dr Claude Wolff , CNAM, Paris, France E: wolff@cnam.fr
2-4 June Birmingham UK	Eurochem 98 - EXHIBITION K Liversage , Marketing Manager, Reed Exhibitions Co Ltd, 26 The Quadrant, Richmond, Surrey TW9 1 DL, UK T: +44(0)181 910 7859 F: +44(0)181 910 7989
10-12 June Lund Sweden	Nordic Rheology Society 7th Annual Conference (with a special section on Gels) Gunlög Tånge , Calmia AB, Box 2161, SE-220 02 Lund, Sweden T: +46 (0)46-211 00 20 F: +46 (0) 46-211 00 20 E: calmia@swipnet.se
12-17 July	World Polymer Conference M Mackay , Materials Characterisation and Processing Centre, Department of Chemical Engineering, The University of Queensland St. Lucia, Brisbane, QLD 4072, Australia. http://www.uq.edu.au/~cmawhitt/macro98.html T: +61-7-3365-4171/3708 F: +61-7-3365-4199/4795 E: m.mackay@cheque.uq.oz.au
22-27 June Klaipeda Lithuania	19th Meeting of the Vinogradov Society of Rheology Prof V Kulichkhin , Institute of Petrochemical Synthesis RAS, 29 Leninsky Pr., Moscow 117912, Russia T: +7 095 952 4145 F: +7 095 230 2224 E: flow@aha.ru
23-25 June Golden CO USA	Semi-Solid Processing of Alloys & Composites Office of Special Programs & Continuing Education , Colorado School of Mines, Golden, CO, USA 80401 T: +1 303 273-3321 F: +1 303 273-3314
7-9 July Brighton UK	World Congress on Particle Technology 3 Jennie Black , Conference Section, IChemE, 165-189 Railway Terrace, Rugby, CV21 3HQ, UK T: +44 (0)1788 578214 F: +44 (0)1788 577182 E: jblack@icheme.org.uk

20-23 July Prague Czech Republic	18th Discussion Conference “Mechanical Behaviour of Polymeric Materials” http://www.imc.cas.cz/~sympo/pmm98.html Dr Miroslav Raab , E: raab@imc.cas.cz
22-24 July Lisbon Portugal	EUROMAT 98 FEMS Secretariat , Les Fontenelles, 1 rue de Craïova, F-92024 Nanterre, France F: +33 1 41 02 03 88
23-28 Aug Prague Czech Republic	** ERRATUM ** Microsymposium on Engineering Rheology (in XIIth International Congress of Chemical Engineering) E: chisa@icpf.cas.cz
31 Aug- 2 Sept Heraklion Crete	2nd Scientific Meeting of the Hellenic Society of Rheology (HSR) Ms E Karali , Foundation for Research & technology - Hellas Institute of Electronic Structure and Laser, PO Box 1527, 711 10 Heraklion, Crete, Greece T: +30 81 391 469 F: +30 81 391 305 E: dvlasso@iesl.forth.gr
6-11 Sept Garmisch- Partenkirchen Germany	EURADH 98 B Thilenius / C Mitter , Dechma e V, Congress Office, PO Box 15 01 04, D-60061 Frankfurt am Main, Germany T: +49(0)69 7564 152/280 F: +49(0)69 7564 201
6-11 Sept Portoroz Slovenia	5th European Rheology Conference Scientific Information: Prof Igor Emri , Centre for Experimental Mechanics, University of Ljubljana, Cesta na Brdo 49, SI-1125 Ljubljana, Slovenia T: +386 (0)61 123 2247 F: +386 (0)61 123 2471 E: Rheo.98@ki.si http://www.fs.uni-lj.si/cem/RHEO.html General Information: Teja Alic , Cankarjev dom Presernova 10, SI-1000 Ljubljana, Slovenia T: +386 (0)61 210956 F: +386 (0)61 217 431 E: cankarjev.dom@k2.net
9-11 Sept Brighton UK	POLYMER 98 The Institute of Physics , Conferences Department, 76 Portland Place, London W1N 4AA, UK T: +44(0)171 470 4800 F: +44(0)171 470 4900
14-16 Sept Prague Czech Republic	International Conference on Flow and Deformation in Biology & Environment Dr Jiri Blahovec , Conference FDBE, Czech University of Agriculture, 16 521 Prague 6 - Suchdol, Czech Republic T: +4202 2438 4281 E: blahovec@tf.czu.cz
21 Sept Cambridge UK	The British Society of Rheology's “Young Rheologists’ Workshop” - PRELIMINARY NOTICE Dr Malcolm Mackley , Dept of Chemical Engineering, University of Cambridge, Pembroke Street, Cambridge, CB2 3RA, UK T: +44 (0)1223 334784 F: +44 (0)1223 334796 E: mrm1@cheng.cam.ac.uk
22 Sept Cambridge UK	The British Society of Rheology's “ Rheology & Processing I: Printing Inks” - PRELIMINARY NOTICE Dr Malcolm Mackley , Dept of Chemical Engineering, University of Cambridge, Pembroke Street, Cambridge, CB2 3RA, UK T: +44 (0)1223 334784 F: +44 (0)1223 334796 E: mrm1@cheng.cam.ac.uk

4-8 Oct Monterey CA USA	70th Annual Meeting of the Society of Rheology Local Arrangements Chair: Prof Gerald G Fuller , Dept of Chemical Engineering, Stanford University, Stanford, CA 94305, USA T: +1 415 723-9243 F: +1 415 725-7294 E: ggf@chemeng.stanford.edu Technical Programme Chair: Dr Patrick Mather , WL/MLBP, Bldg. 654, 2491 P St., Ste 1, Wright Patterson AFB, OH 45433, USA F: +1 937 255-9157 E: matherpt@ml.wpafb.af.mil
12-14 Oct Biarritz France	Joint Annual Meeting of the GFR and GER- "Rheology in Multiphase Systems: Rôle of Interfaces and Interphases" Prof Antxon Santamaria , Dpto Ciencia y Tecnologia de Polimeros, Facultad de Quimica, Universidad del Pais Vasco, Paseo Manuel de Lardizabal, 3. Apdo. Correos 1072, 20009 San Sebastian, Spain E: popsaiba@sq.ehu.es Prof Gererd Marin , University of Pau, France E: gerard.marin@univ-pau.fr
15-20 Nov Anaheim CA USA	Symposium on "Rheology and Fluid Mechanics of Nonlinear Materials" - CALL FOR PAPERS ASME International Mechanical Engineering Congress & Exposition Prof Dennis A Siginer , Dept of Mechanical Engineering, Auburn University, 201 Ross Hall, Auburn, AL 36849, USA T: +1 334 844-3331 F: +1 334 844-3307 E: dsiginer@eng.auburn.edu Prof Daniel DeKee , Dept of Chemical Engineering, Tulane University, New Orleans, LA 70118, USA T: +1 504-865 5772 F: +1 504 865-6744 E: ddekee@mailhost.tcs.tulane.edu
1999	
March Leipzig Germany	Rheolgentagung 1999 German Society of Rheology (DRG) and the Polymer Physics Group of the German Society of Physics (DPG)
17-21 Oct Madison WI USA	71st Annual Meeting of the Society of Rheology
2000	
21-26 Aug Cambridge UK	Rheology 2000 - XIIIth International Congress on Rheology To be organised by the BSR with the assistance of the European Society of Rheology. Chairman of the Executive Committee: Prof K Walters FRS , University of Wales, Dept of Mathematics, Penglais, Aberystwyth, Dyfed, SY23 3BZ, Wales, UK http://abbey4.swan.ac.uk/rheology2000/ T: +44 (0)1970 622750 F: +44 (0)1970 622777

Travel grants are available to help students attend any of these meetings. Applications should be addressed to the BSR Secretary supported by a letter from your supervisor.

COURSE DIARY

1998	
5-6 May Malmö Sweden	Advanced Course in Rheology - HELD IN SWEDISH Gunlög Tånge , Calmia AB, Box 2161, SE-220 02 Lund, Sweden http://home3.swipnet.se/~w-35509 T: +46 (0)46-211 00 20 F: +46 (0) 46-211 00 20 E: calmia@swipnet.se
12 May Coventry UK	Brookfield Seminar N Murrell / L Burns , Brookfield Viscometers Ltd, 1 Whitehall Estate, Flex Meadow, Pinnacles West, Harlow, Essex CM19 5TJ, UK http://www.brookfieldengineering.com T: +44(0)1279 451774 F: +44(0)1279 451775
26-29 May Ross Priory Loch Lomond Scotland	Theoretical, Experimental and Industrial Aspects of Rheology Dr N E Hudson , Dept of Pure & Applied Chemistry, University of Strathclyde, 295 Cathedral St, Glasgow G1 1XL, UK T: +44(0)141 548 2162 F: +44(0)141 548 4822 E: n.e.hudson@strath.ac.uk
10 June Lund Sweden	An Introduction to the Rheology of Polymer Systems - Nordic Rheology Society Gunlög Tånge , Calmia AB, Box 2161, SE-220 02 Lund, Sweden T: +46 (0)46-211 00 20 F: +46 (0) 46-211 00 20 E: calmia@swipnet.se
12-13 Oct Malmö Sweden	Basic Course in Rheology - HELD IN SWEDISH Gunlög Tånge , Calmia AB, Box 2161, SE-220 02 Lund, Sweden http://home3.swipnet.se/~w-35509 T: +46 (0)46-211 00 20 F: +46 (0) 46-211 00 20 E: calmia@swipnet.se
19-21 Oct Malmö Sweden	Powder Sampling & Characterisation Gunlög Tånge , Calmia AB, Box 2161, SE-220 02 Lund, Sweden http://home3.swipnet.se/~w-35509 T: +46 (0)46-211 00 20 F: +46 (0) 46-211 00 20 E: calmia@swipnet.se
26-29 Oct Hinckley UK	School of Industrial Rheology (SIR '98) - Camtel Limited Sponsored by <i>BOHLIN INSTRUMENTS</i> Mrs B Duffy , CAMTEL LTD, 5 Carrington House, 37 Upper King Street, Royston, Herts SG8 9AZ, UK http://www.camtel.co.uk T: +44(0)1763 244280 F: +44(0)1763 244298 E: info@camtel.co.uk

2-6 Nov Glasgow Scotland	The 5th European School of Rheology and Course on Process Rheology Dr N E Hudson , Dept of Pure & Applied Chemistry, University of Strathclyde, 295 Cathedral St, Glasgow G1 1XL, UK T: +44(0)141 548 2162 F: +44(0)141 548 4822 E: n.e.hudson@strath.ac.uk
16-17 Nov Malmö Sweden	Emulsion Science & Technology - HELD IN SWEDISH Gunlög Tånge , Calmia AB, Box 2161, SE-220 02 Lund, Sweden http://home3.swipnet.se/~w-35509 T: +46 (0)46-211 00 20 F: +46 (0) 46-211 00 20 E: calmia@swipnet.se
23-24 Nov Malmö Sweden	Advanced Course in Rheology - HELD IN SWEDISH Gunlög Tånge , Calmia AB, Box 2161, SE-220 02 Lund, Sweden http://home3.swipnet.se/~w-35509 T: +46 (0)46-211 00 20 F: +46 (0) 46-211 00 20 E: calmia@swipnet.se
30 Nov-1 Dec Malmö Sweden	The Rheology of Industrial Coatings Systems Gunlög Tånge , Calmia AB, Box 2161, SE-220 02 Lund, Sweden http://home3.swipnet.se/~w-35509 T: +46 (0)46-211 00 20 F: +46 (0) 46-211 00 20 E: calmia@swipnet.se

AIMS OF THE SOCIETY

THE BRITISH SOCIETY OF RHEOLOGY

Founded 1940

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The way liquids flow and solids deform affects all aspects of life.

Extraction and processing of crude oil, moulding of plastics, use of toothpaste, spreading of margarine, painting and the lubrication of joints in the human body are all examples of processes depending upon rheological behaviour. Rheology is defined as the science of the deformation and flow of matter.

If your work is concerned with rheology in any way, then you have much to gain by joining the British Society of Rheology - publications, conferences and access to fellow members who, while working in a different discipline or industry, may be facing similar problems to yours.

The Society is non-profit making and is registered as a charity.