

THE BRITISH SOCIETY OF RHEOLOGY

BULLETIN



1990, Vol. 33 No. 2

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THE BRITISH SOCIETY OF RHEOLOGY
OFFICERS AND MEMBERS OF COUNCIL
1989/90

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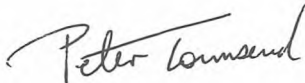
EDITORIAL

By the time you read this it will almost be here. If you don't know what I'm referring to you must have been asleep for the last year or so. The Jubilee meeting will of course be underway shortly in Edinburgh. There may still be time to register ... contact Chris Petrie now!

This issue contains, amongst other things, reports from two of our recent meetings - 'fresh cement and concrete' and 'polymer latices' - both very successful. There are also two commentaries on recent Council meetings - two this time because we forgot to allocate the task to a Council member at the April meeting.

I would draw your attention to the notice relating to the AGM and in particular the Council resolution to raise the annual subscription to fifteen pounds.

It is with some sadness that I put together this last issue of my term of office as editor of the Bulletin. I was a little nervous about taking on the job but 16 issues and some 350 or so pages later things seem to have been O.K. I haven't had any major complaints anyway. I am a little concerned that members don't contribute more to what is after all their Bulletin. Perhaps my successor will have more success in that respect. I wish him or her luck over the next four years.

A handwritten signature in dark ink, reading "Peter Townsend". The signature is fluid and cursive, with a long horizontal stroke extending from the end of the name.

Peter Townsend

NOTICE OF THE ANNUAL GENERAL MEETING

The 50th Annual General Meeting of the British Society of Rheology will be held on Thursday 6 September 1990 in the Appleton Tower at the University of Edinburgh, starting at 4.45pm.

Members are reminded that, under rule 7(b), the business of the meeting includes:

- (a) The election of a President for 1990-92.
- (b) The election of other Officers and Council Members for 1990-91.
- (c) The receipt of a report and audited accounts from Council.
- (d) Dealing with matters raised by Council or by any Member, and receiving suggestions from Members for consideration by Council.

Nominations received to date are as follows :-

President:	Dr D C H Cheng
Honorary Secretary:	Mrs C A Moules
Honorary Treasurer:	Mr P C Anderson
Membership Secretary:	Dr D J Hourston
Bulletin Editor:	Dr P F G Banfill
Abstracts Editor:	Dr G J Brownsey
 Ordinary Members of Council:	 Mr S T E Aldhouse Dr R Buscall Mr R E Carter Dr A Evans Dr N Hudson Prof P Townsend

A motion has been proposed by Council for consideration by the Meeting;

"That the annual subscription be increased to £15.00".

Nominations for Council or for any of the Offices are invited. Nominations should be sent to the Secretary or may be made at the meeting (see Rule 5(b)).

The Secretary would be pleased to receive notice of any matter that any Member wishes to raise.

R E Carter

Honorary Secretary

COMMENTARY

the 260th Council Meeting

The 260th Council meeting was held in the Law Seminar room of the Hugh Owen Library at the University College of Wales, Aberystwyth, on 14th March 1990. A buffet lunch had been arranged by the Secretary in Brynamlwg, the staff club. Because of the remoteness of Aberystwyth with respect to the corners of the country from which Council Members had to travel, the Council meeting was scheduled to start after lunch, rather than at around 11.30.

Before the meeting proper started, the Council were given a guided tour by the library staff of the Scott Blair collection, which was the motivating factor for having the meeting at Aberystwyth. The collection was housed in the basement of the library, in a nondescript set of archival bookshelves set on rails. The Council spent some time examining the fascinating collection of books and papers before returning to the Meeting. A cheque for £2,000 would be presented after the Meeting to the librarian in order to finance moving the Collection from the basement to a readily-available room in the library. A commemorative plaque would be fixed to the wall near the Collection. The Society would provide new books to the Collection, and donations from Authors were to be solicited. Mr Carter said that the Royal Aerospace Establishment were sending him Dr Mardle's papers and books.

Having heard the apologies from Mr Aldhouse and Dr Cheng for not being able to attend the meeting, the Minutes of the previous meeting were considered and, after some amendment, these were duly signed by the President.

Since there were no Matters Arising, the Society's Awards were considered. Mr Schimanski, the Membership Secretary, hoped to have a list of potential Honorary Members by the next Council Meeting. It was agreed that the Scott Blair Scholarship scheme should be continued. Mr Carter had brought to the meeting two hand-drawn,

framed Certificates for the previous Scott Blair Scholars. These were signed by the President, and Mr Carter agreed to despatch the Certificates to the recipients. Mr Carter went on to say that two Gold Medals were being made for presentation at Edinburgh, and that the manufacture was being arranged by Dr Oliver. A nomination was made for the Annual Award, and this was to be considered in the light of any further nominations at the next meeting. Mr Carter said that an ex-gratia award for some postgraduate work in Europe was in abeyance.

In reporting the financial position, Mr Anderson said that there had been a lot of expenditure in the previous quarter, but not a lot of income. This was primarily due to the purchase of some computer hardware to improve the efficiency of Abstracts production. Also, 3 or 4 Council Members had been subsidised to attend the inaugural meeting of the Portuguese Society of Rheology. Mr Anderson tabled a well-researched paper on the standing of the Society with regard to Value Added Tax, and it was agreed after discussion that the Society would have to register. It was thought that, on balance, registration for VAT would not greatly affect the Society's finances.

The Membership secretary apologised for not being able to keep up with Council work due to commercial pressures, and said that, for this reason, he was considering stepping down in September 1990 instead of 1991. It was agreed that some clerical help was needed to keep the database up to date, and Mrs Moules said that she would arrange for a temporary secretary to help. Prof. Townsend would look at means of updating the obsolete computer and software system to modern standards.

17 new Members were accepted, and one resignation noted.

Prof. Townsend reported that Vol. 34 (2) of the Bulletin had been published recently, and that the deadline for the next issue was March 15. He appealed for a details of meetings for the Conference Diary, and said that a list of papers for Edinburgh would be published in

the next issue. He noted that the price for advertising in the Bulletin had not changed for 4 years, and thought that the next Editor might like to consider raising the fees.

Dr Brownsey said that the latest issue of the Abstracts had been printed and was awaiting posting. The next issue should be printed by the end of March. He had persuaded Pergamon to contribute 50% of the cost of new equipment for making Abstracts production more efficient. There was a backlog of abstracts which needed translation. There were 13 abstracters at present, and one covered about 25 Journals. It was hoped to increase the number of abstracters so that each covered about 3 Journals. All agreed that Dr Brownsey was doing a superb job in revitalising the Abstracts.

For the Honorary Secretary's report, Mr Carter said that one tie had been sold during the quarter, and that other items which he had to discuss were covered elsewhere in the meeting.

Conferences were then considered. Mr Carter said that production of the Proceedings for the Warwick conference had been delayed until July-August by Elsevier because they had been waiting for five outstanding manuscripts. The accounts could not be finalised until Elsevier and postage charges had been paid. Dr Hourston reported a profit of £1,666 on the 'Rheology of Latices' meeting, of which the Society would get 50%. Dr Ferguson reported that 251 papers had been received for the Golden Jubilee meeting, that there would be four parallel sessions, a reception at Stirling Castle, and a reception for invited guests on another evening. One afternoon would be left free. A tie with a BSR logo in gold would be given to male delegates, and a pin to ladies.

Dr Banfill reported that 35 papers had been submitted for his forthcoming conference on Fresh Cements, and that the meeting would have a truly international flavour. Mr Carter tabled programmes for a joint meeting with the IFST and SCI on Rheometry in Food Process Control. He said that some new techniques would be revealed at the meeting.

Regarding future meetings, Dr Buscall said that a meeting on Computer Simulation in

Colloid and Interface Science was being organised by the Royal Society of Chemistry in 1991. There was a possibility of collaboration with the BSR for future meetings.

It was important that future meetings were agreed soon, and Mr Carter agreed to search the archives and product a list of past meetings in time for the next Council Meeting. Dr Evans suggested a meeting on Theoretical Rheology, to be held in Cambridge.

Under Any Other Business, Dr Ferguson reported that an application for COMET funding from the EEC was being submitted by four societies to establish a permanent European School of Rheology. He would report progress at later meetings. Mrs Moules was arranging some headed notepaper for the Society.

It was realised that no-one had been nominated to write this commentary, and the Secretary was nominated to do this. He only remembered on the drive home that this task had been allocated to Ordinary Members of Council and specifically not to Officers!

After agreeing that the next meeting would be somewhere in York on June 13th, and after a final examination of the collection mounted on the wall of cartoons depicting lawyers through the ages, the Council Members dispersed to the three winds (not Westwards - the sea was too cold!).

Roy Carter

MEMBERSHIP NEWS

The following applications for Membership were approved at the Council Meeting on 13 June 1990.

Mr L Hamnelid
AB Axel Christiernsson
Box 19
440 41 Nol
Sweden

fetsa

Mr C S Hindle
Napier Polytechnic
Edinburgh

fea

Mr K Juvas
Partek Corporation
SF 21600 Pargas
Finland

fea

Mr J Jennings
Campact Ltd
Alnick Grange Road
Hexham

pea

Mr N H Davies
Polytechnic of Wales
Pontypridd

ftsa

Dr A Capmas
Lararge Fondue International
92521 Neuilly
France

petsa

Dr D S Marshall
Milpark Drilling Fluids
Altens
Aberdeen

fesa

Mr P Wheeler
Mitech Corporation
Twinsburg
Ohio
USA

fetsa

Dr D I Graham
Polytechnic South West
Plymouth

ftsa

Mr R Ahmed
Fitzwilliam College
University of Cambridge

fet

Dr A E Terentyev
UL Cercinyk
Yurmala
USSR

fetsa

Mr H Wallerik
Norwegian Inst. of Technology
Trondheim
Norway

fea

Prof M P Escudier
University of Liverpool
L69 3BX

pesa

Mr G H Jonsson
BNFL
Seascale
Cumbria

pe

Dr A J Huson
Wellcome Environmental Health
Berkhamsted
Herts

peta

ANNUAL SUBSCRIPTION REMINDER

The annual membership subscription of £5.00 for the year 1990/91 falls due for payment on the 1st of October 1990. May I remind all members who have not paid in advance or who do not pay by Banker's standing order to send their payment now to: **The Hon. Membership Secretary**

It would be very helpful if all those members who do not yet pay by Banker's standing order, could arrange so to do. It would save a great deal of time spent in sending out individual reminders. The order, to pay £5.00 each year on the 1st of October, should be made payable to the **British Society of Rheology Membership Dues account, number 0180985 at Lloyds Bank, 20 North Street, Leatherhead, Surrey. (Branch code number 30-94-94).**

In addition please also notify me at the above address that you have so instructed your bank. Overseas members, who pay their subscriptions in a currency other than Sterling, should add the equivalent of £3.00 to cover our exchange costs. A single payment may be used to pay for a number of years in advance and/or for any number of members to save exchange expenses. May I remind our North American members that a personal cheque in dollars has proved perfectly acceptable to our bank in the past. At present rates, \$8.00 (£5 x 1.60) per year per member plus \$4.80 per cheque is the amount to remit. For our European members, Eurocheques denominated in pounds sterling, have proved acceptable. If used, please remember to write your card number on the back of the cheque, otherwise we do have to pay exchange expenses.

Members should note that as from the 1st October 1988 the subscription for those who do not pay by standing order has been raised to £6.00 per annum. Members should also note the subscription may well be raised at the next AGM (see AGM notice).

Membership Secretary.

APPEAL FOR BOOKS ON RHEOLOGY

**Scott-Blair Legacy
and
Rheology Collection at Aberystwyth**

In helping with the wishes of the late Mrs Scott-Blair, a cheque for £2,000 has been presented to the Librarian at U.C.W., Aberystwyth for the enhancement of the collection of Dr Scott-Blair's papers and books. The interest from the remaining £8,000 will now be used to purchase rheology books with the stated intent of making the Aberystwyth collection totally comprehensive as far as the rheological literature is concerned.

Many rheology books published over the years are now out of print. Your Council is very anxious that these should be included in the Collection. If you have books which you feel would be of use, and which are in good condition, please contact Dr. Mervyn Jones. *4/o Physics Department,
U.C.W., Aberystwyth*

All donations to the Collection will be acknowledged and the full contents will be available through Inter-Library Loans and by direct reference, to all rheologists.

You might also care to note that Council will consider sympathetically all applications from students for travel grants to Aberystwyth for referencing the Collection.

COMMENTARY.....

(The 261st Council meeting - close to a Shambles)

The B. S. R. Council road-show convened in the Dean Court Hotel in York (hence the closeness to the Shambles!) on Wednesday June 13th 1990, for the 261st Council meeting. Only two members of Council were unable to attend on this occasion.

The President, Dr J Ferguson, opened the meeting by welcoming Dr D Cheng, the President Designate, who attended to ensure continuity following Dr Ferguson's retirement from the post at the AGM in September. During the course of the meeting, Dr Cheng showed the Council the chain of office that he has so generously donated to the Society. This splendid item of regalia will be formally presented to the Society at the banquet during the Golden Jubilee meeting in Edinburgh in September.

This Council meeting was both long (11.30 am to nearly 5 pm) and detailed. Consequently, this commentary is selective, with only items the commentator believes will be of general interest to the membership being highlighted.

Following the Council's last meeting in Aberystwyth, during which the Scott Blair collection of books, papers etc. was inspected, the Society has made a donation of £2,000 to the University Library to improve both the housing of, and the access to, this information source. It has been decided that members of the BSR will be approached regarding the possibility of their donating unwanted books on rheology to the Scott Blair collection. This request, with details on how to respond, will appear shortly in the Bulletin.

As one of the Society's principal functions is to organise conferences, the discussion of past and future events occupied a significant fraction of the meeting. It was reported that the

conference at Warwick attracted 76 delegates and generated a surplus of around £700, while the Liverpool meeting has 73 delegates and the surplus will be about £2000. The latex rheology meeting held in London was a joint venture with the Macro Group. It was attended by 123 delegates and made a surplus of £1462 which was shared equally with the Macro Group. A large number of topics for future meetings were discussed. It was decided that a one-day meeting probably entitled 'Extensional Viscosity in Industry' will be organised by Dr Ferguson for March of next year. The autumn meeting will be on 'Engineering Rheology' and will likely be in Bath.

The President reported that arrangements for the Golden Jubilee meeting (3rd to 7th September in Edinburgh) were well in hand with more than 230 papers received and an expectation of around 400 delegates.

As membership subscriptions now represent a rather small fraction of the Society's revenues, it was reluctantly decided to bring a proposal to the next AGM that the fee be raised to £15. It was also agreed to propose that the student membership fee be £5 and that at all BSoR conferences the registration fee for members will be at least £15 lower than that charged to non-members.

Other items of business included the approval of 15 new members and a detailed discussion of the Society's position with respect to VAT.

The next meeting of Council will be in Edinburgh during the Golden Jubilee meeting.

INTERNATIONAL CONFERENCE ON RHEOLOGY OF FRESH CEMENT AND CONCRETE

Although cement pastes and concrete have featured largely in some previous meetings, notably at Sheffield in 1967 and 1974, this is the first Conference of the Society devoted entirely to those materials, as was pointed out by Dr P F G Banfill in his opening address, and it is also the first that could truly earn the word International in its title. It was held at Dale Hall of the University of Liverpool from 26th to 29th March 1990 and attracted over 70 participants from 12 different countries, including USA, USSR, Japan, and countries of both western and eastern Europe.

The 34 papers covered theoretical topics, experimental investigations, and the direct application of rheological principles to practical industrial problems, and the materials dealt with were cement pastes, oil well cements, grouts, and fresh concrete. Authors of four of the papers (three from China) were unable to be present and Dr Trevor Gregory undertook the difficult task of providing a short summary of their work. Abstracts of all the papers will be published in Rheology Abstracts and the full versions will appear in the Proceedings to be published later this year by E & F N Spon.

The programme was deliberately arranged to stimulate discussion and to allow time for the forging and renewing of personal contacts without which any conference may be deemed a failure. Thus, each presentation was limited to 20 minutes, each session limited to three or four papers followed by 20 minutes discussion, and ample time was given to coffee, tea, and lunch breaks. The result was that discussions were lively and productive, not only in the conference chamber but also in the coffee room where there was an exhibition of up-to-date rheological apparatus. Contacts for future cooperation were established.

Instead of a Conference Dinner, on the Tuesday evening there was a visit to the Liverpool Tate Gallery for a buffet meal following a conducted tour during which we were shown works by modern painters and sculptors, including Moore and Hepworth and other later ones. Some of us did wonder about the propriety of spending public money on a two-dimensional matrix of empty (but at least clean) HP sauce bottles, or on a pile of old timber that looked as if it were ready for November 5th, and some expressed opinions a little less elegantly than Hamlet's 'Angels and ministers of grace defend us..... Thou com'st in such a questionable shape', while others reflected sadly on these successors to Praxiteles and Michelangelo.

The facilities provided by Dale Hall were excellent. The overall organisation of the Conference was in the hands of a small committee of three but there is no doubt that the major burden was carried by Dr Banfill and thanks are due to him for his efforts.

The success of this Conference and the support it enjoyed are a reflection of the growing interest in the subject since the early days of the 1950s when the complex rheological behaviour of cement pastes was first demonstrated with a home made viscometer. Unfortunately the message has not yet penetrated to parts of the construction industry where crude and inadequate empirical tests are still relied upon. It was encouraging to note that about half of the participants in the /conference did come from industry or industry based research organisations, but there is still a fair way to go to get important concepts over to practising engineers.

G H Tattersall

THE RHEOLOGY OF POLYMER LATICES

This one-day international symposium organised by Dr D J Hourston of the Polymer Centre at Lancaster University and Dr R Satgurunathan of ICI Chemicals and Polymers Ltd. was held at the SCI, Belgrave Square, London on 13th December, 1989.

The rheology of polymer latices continues to be an important subject for both the academic and the industrial communities. This fact was highlighted by the large number of delegates (123) from both these sectors. The programme consisted of seven lectures given by Dr W J Frith (ICI Corporate Colloid Science Group), Professor J E Glass (North Dakota State University), Dr J Goodwin (University of Bristol), Professor J Mewis (Catholic University of Leuvin), Professor R H Ottewill (University of Bristol), Dr P A Reynolds (International Paint) and Mr P K Thomas (ICI Agrochemicals Ltd.).

In the opening lecture entitled 'Viscoelastic Properties of Strongly Interacting Latex Particles', Dr Goodwin outlined the types of rheological experiments that can be used to study latex systems showing viscoelastic behaviour. He discussed their interpenetration in terms of the structures formed and the particle characteristics.

Professor Ottewill's lecture, 'Investigations of Sheared Systems using small Angle Neutron Scattering' was a fascinating account of the use of neutron scattering to elucidate the processes involved in flowing latex systems.

A lecture on 'Viscoelastic Properties of Polymer Colloids' by Mr P K Thomas presented an account of how oscillatory measurements can be used to study the interaction forces between polystyrene latex particles. The systems studied included electrostatically stabilised latex (interactions from electric double-layer overlap), polyethylene oxide grafted polystyrene latex (strong interactions when

the inter-particle distance is less than twice the adsorbed layer thickness), weakly flocculated latex and the coagulated system produced by electrolyte addition to an electrostatically stabilised latex.

After lunch, Professor J E Glass lectured on 'Associative Thickeners' with ethoxylated urethane polymers. He described the mechanism of association at both low and high shear rates as a function of the polymer architecture, the structure of the conventional surfactant and the surface topography of the latex. Dr W J Frith's lecture of 'Shear Thickening in Concentrated Latices' outlined how monodisperse polymethyl methacrylate suspensions in a non-aqueous medium, whose refractive index is equal to that of the particles, could be used to characterise suspensions in terms of their size, shape and long-range forces, thus aiding the understanding of the mechanisms of systems displaying dilatancy. In his lecture of the 'Effect of Stabiliser Layer Softness on Polymer Latex Rheology'. Professor J Mewis discussed experimental evidence for errors in predicted rheological behaviour of sterically-stabilised suspensions caused by assuming that the stabiliser layer is rigid. He indicated the effect became especially pronounced for small particles or at high concentrations and outlined possible theoretical explanations of this effect. In the final lecture of the day, Dr P A Reynolds in a talk called 'Rheological Control of Latex Coatings', discussed the various mechanisms by which associative thickeners can contribute to the type of thickening rheology experimentally observed, highlighting the fact that commercially-available latices have very different thickening interactions in specific rheological regions with commercially-available associative thickeners.

In conclusion, the large attendance at this meeting reflected the considerable interest in this area of rheology, indicating that more meetings of this type are desirable.

N G Carter and D J Hourston

The Polymer Centre, Lancaster University.

CONFERENCE DIARY

Date	Place	Details
3-7/9/90	Edinburgh, Scotland, U.K.	'Third Conference of European Rheologists' and 'Golden Jubilee Meeting' British Society of Rheology', contact Dr. C.J.S. Petrie, Dept. of Engineering Mathematics, University of Newcastle upon Tyne, Newcastle upon Tyne, NE1 7 RU, U.K.
11-13/9/90	Bristol U.K.	Faraday Discussion No. 90 : 'Concentrated Dispersions' contact: Mrs Y A Fish, Royal Society of Chemistry, Burlington House, London, W1V 0BN
27-28/10/90	Liège Belgium	'Polymer chemistry in extruder' contact: Mme A.Choprix, ULB - Campus de la plaine, CP 206-4, Bd du Triomphe, B-1050 Brussels, Belgium.
3-6/12/90	St. Etienne, France.	'Experimental identification of the mechanical characteristics of composite materials and structures', contact: Prof A.Vautrin, Dept. Mechanical and Materials Eng., Ecole des Mines de St-Etienne, 42023 St.Etienne Cedex 2, France.
7-12/1/91	Tucson Arizona USA.	'Third International Conference on Constitutive Laws for Engineering Materials: Theory and Application, contact: Professor C.S.Desai, Dept. of Civil Engineering and Engineering Mechanics, Univ. of Arizona, Tucson, AZ 85721, USA.
15-17/1/91	Aussois France	'Response of shear flows to imposed unsteadiness' contact: Dr G.Binder, Institut de Mécanique de Grenoble, B.P. 53 X, 38041 Grenoble Cedex, France.
21-24/1/91	Villard-de -Lans France.	'Extensional viscosity determination for the test polymer solution D5.' contact: Prof K.Walters, Dept of Mathematics, UCW, Aberystwyth, Dyfed, U.K.

ADVANCES IN PARTICULATE TECHNOLOGY

15 - 17 APRIL 1991

UNIVERSITY OF SURREY, GUILDFORD, UK

This Symposium will be a successor to a Symposium with the same title held at UMIST in April 1987. Like its predecessor, it is supported by the Science and Engineering Research Council to disseminate the results of its Specially Promoted Programme (SPP) in Particulate Technology. However, work to be presented at the Symposium is not limited to the SPP. The Symposium is co-sponsored by The Institution of Chemical Engineers, The Filtration Society and The British Materials Handling Board. There will also be significant international participation.

The areas particularly featured at the Symposium will be:

- * Particle Formation - including nucleation, growth, agglomeration and comminution.
- * Mass and Bulk Flow - of both wet and dry particulates.
- * Properties of Particulate Materials - including instrumentation and measurement, and the relationship of macroscopic properties to microstructure.
- * Surface Phenomena - including friction, cohesion and adhesion.
- * Processing and Handling

Proceedings will be published as a special volume of "Powder Technology", with copies provided to registrants at the Symposium. There will also be opportunities at Poster Sessions to discuss projects in the SPP, the work of interested industrial organisations, and other "work in progress".

The Symposium will start with a Buffet Reception on the evening of Sunday, 14th April. There will be a Symposium Dinner (attendance limited) on the evening of Tuesday, 16th April. The Symposium will close no later than 17.00 on Wednesday, 17th April.

Further information and further copies of the registration form can be obtained from the Course Coordinator:

Mrs Jean Libaert
Dept of Chemical & Process Engineering
University of Surrey,
Guildford, GU2 5XH
U.K.

(tel: 0483 506330 fax: 0483 303807)

A number of free registrations supported by the Symposium's industrial sponsors, will be available for *bona fide* students. Information will be sent to Heads of appropriate Departments at the start of the 1990/91 Academic Year.

Please note that no further full contributions for the Symposium can be considered. However, depending on demand, it may be possible to accept further Poster contributions. Registrants will be advised once this possibility is clear.

15 - 17 APRIL 1991

REGISTRATION FORM

CODE

DD The Day Delegate Rate includes coffee, lunch and tea for each of the three days of the Symposium. It also includes a copy of the Proceedings and a place at the conference dinner on the evening of 16 April but please see proviso below. If a day delegate also wishes to attend the evening reception on Sunday, 14 April, an additional payment of £10.00 is applicable.

RD The Residential Delegate Rate includes all items mentioned above, and also a free place at the reception on the evening of Sunday, 14 April. Your accommodation will be in standard students' rooms.

SRD The Superior Residential Delegate Rate covers all items above, including a free place at the evening reception. Your accommodation will be in the University's prestige "University Court" with private bathroom facilities.

.....
I wish to register for the "Advances in Particulate Symposium" - Second Symposium.

DD at £230 ☐ RD at £290 ☐ SRD at £350 ☐

As a day delegate, I wish to attend the evening reception and therefore enclose an additional £10.00. ☐

Only one of the following can be claimed:

I am a member of the IChem E, The Filtration Society or the BMHB and therefore claim £20 discount on the above amount: ☐

I am the main author of a paper submitted to the Symposium and therefore claim £20 discount on the above amount: ☐

Amount payable: £ (+ VAT at 15%): £ Total amount payable: £

Delete as required:

Please invoice/I enclose a cheque for £.....made payable to the University of Surrey. (Please write ref: CA 6B on the reverse side of the cheque)

Bankers Drafts must be in sterling and drawn on a British Bank.

Please note that there is a limited number of places available at the Conference Dinner. The tickets will be issued on a "first-come first-served basis" and you will be sent your ticket with your joining instructions during March 1991. Please indicate your intention:

I wish/do not wish to attend the conference dinner on 16 April.

SurnameFirst Name (for name badge).....

Title.....Organisation

Address.....

.....
Please send this tear-off slip to Mrs Jean Libaert, Dept of Chemical & Process Engineering, University of Surrey, Guildford, Surrey, GU2 5XH, UK.
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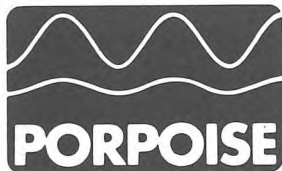
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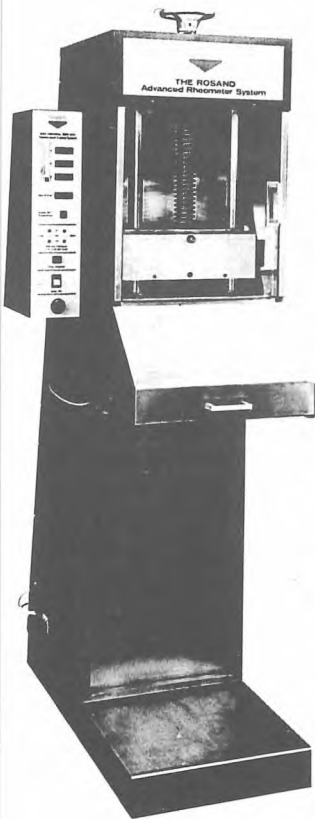
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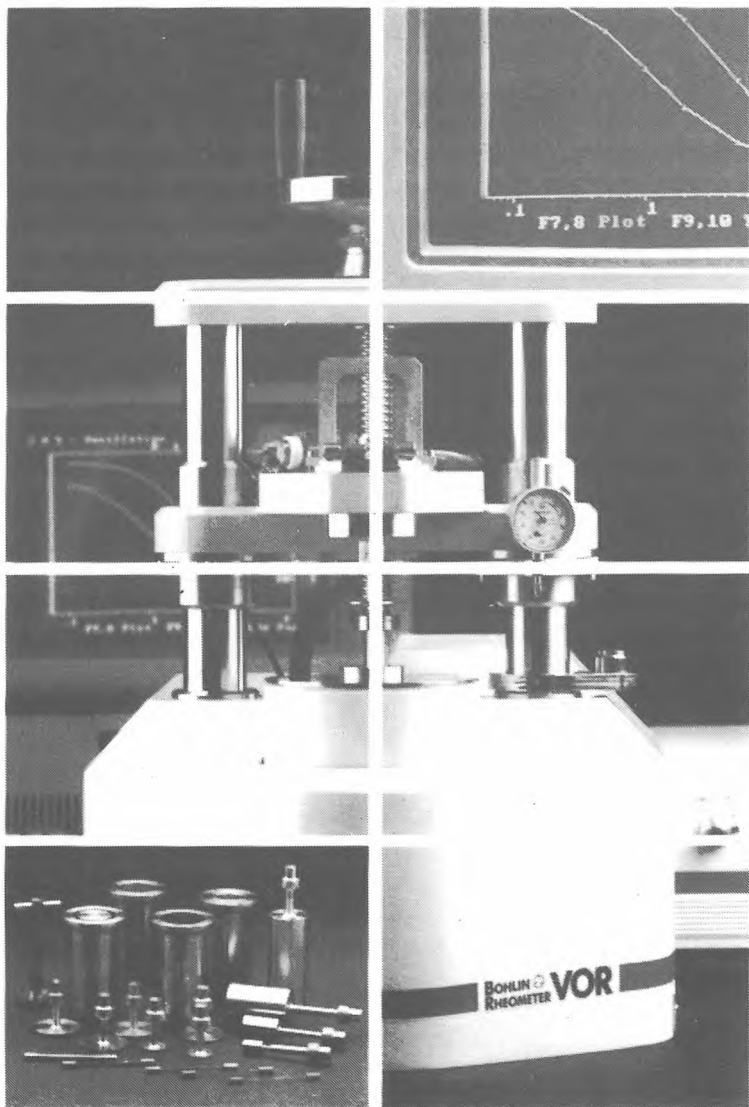
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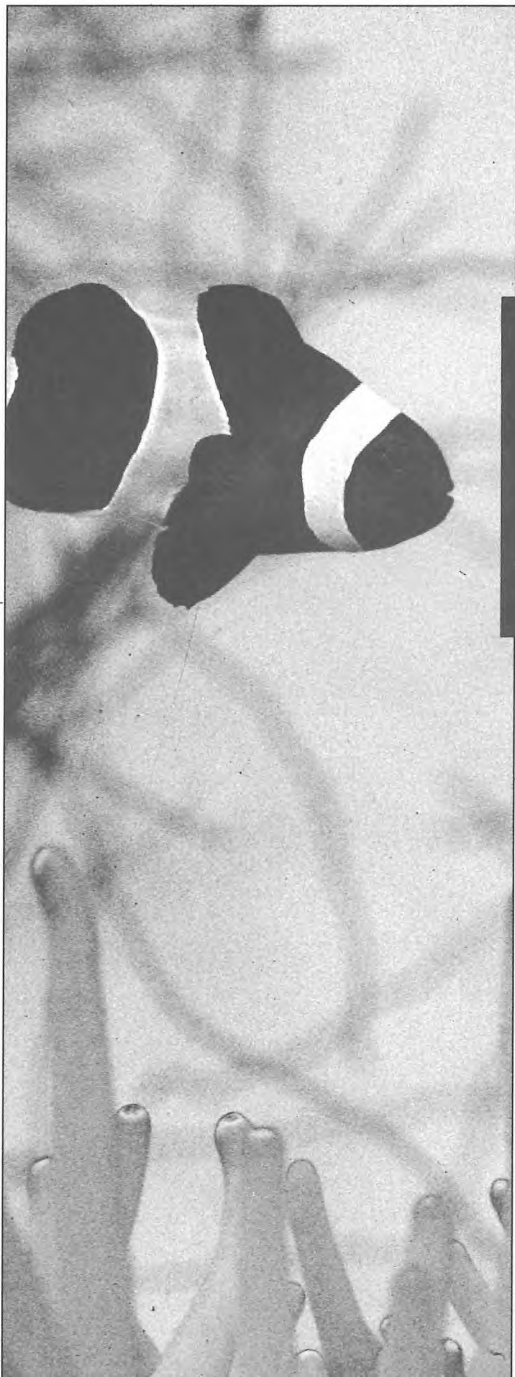
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