

MACRO GROUP UK POLYMER PHYSICS GROUP BULLETIN



IOP | Institute of Physics
Polymer Physics Group

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Editorial

Welcome to the second bulletin of 2008.

This issue sees many of the usual features updating and advertising the hectic conference schedule for the next few months. It is also time for nominations for the Macro Group Medals (Outstanding Achievement, UK Medal and Young Researchers Medal) - details of how to nominate are contained within.

There are also conference reports from the Frontiers of Research, Young Researchers Meeting and 75 years of poly(ethylene) conferences and the issue also contains reports from 2 young Macro Group DH Richards Bursary winners—complete with photos of the awardees with plenary lecturers from the conference (a new condition of the award).

Please remember to keep us updated on upcoming conferences that you may be organised or alternatively feel free to write and submit a news article!

James Sharp
Andrew Dove
Bulletin Officers

Contributions for inclusion in the *BULLETIN* should be emailed (preferably) or sent to either:

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Tel: (0115) 951 5142

The deadline for contributions for the next issue is

30 November 2008.

*The Pure and Applied Macromolecular Chemistry Group
(Macro Group UK) is a joint group of the Royal Society of Chemistry and the Society of Chemical Industry.
The Polymer Physics Group is a joint group of the Institute of Physics and the Royal Society of Chemistry.*

From the Chairman of Macro Group



Major efforts are now underway towards holding a successful IUPAC World Polymer Congress in Glasgow in between July 11th and 16th 2010. The scientific program and symposia are well advanced and there will be over 20 symposia covering the whole range of Polymer Science with the theme "Polymer Science in the Service of Society". This is the 43rd World Polymer Congress and promises to be the largest gathering of Polymer Scientists ever in the UK.

Macro Group UK is the host of this major event and is being organised by the Royal Society of Chemistry. At present we are confirming sponsors for the event and any organisation which would like to be associated with this prestigious event should contact me and I can send you further information.

This years YRM held at Warwick was the largest ever and coincided with the Medal award lectures from Steve Armes and Rein Ulijn. Due to the success of running the two events together this format will be followed in 2009.

Dave Haddleton

Chairman
Macro Group

Thoughts from the PPG Chair:



Bringing Polymer Physics into the Physics mainstream

A student who emerges from an undergraduate degree in physics in a British university will certainly have been exposed to the ideas of a phonon, the free electron model of metals, and theories for the binding energy of a nucleon; whether they've come across the freely jointed chain model of a polymer is much more a matter of chance. This isn't because our discipline – Polymer Physics – is particularly weak in the UK – many departments have individuals and groups that are of international prominence. Instead, it is because there seems to be a more general perception that Polymer Physics, and the other closely related fields that form the broader area of Soft Condensed Matter physics, aren't perceived as being part of the physics mainstream in the way that other fields, that are no more fundamental than soft condensed matter, are.

This is a pity. The most recent international review of physics, co-ordinated by the Institute of Physics on behalf of the research councils (see <http://www.epsrc.ac.uk/AboutEPSRC/IntRevs/2005PhysicsIR.htm>), made the point quite forcibly: "it is the perception of the Panel that there are quite a few physics departments where students get little, if any, exposure to modern soft matter physics. This is regrettable, because soft matter physics has deep links with many other areas of science, whilst the theoretical concepts and experimental techniques of this field are of direct relevance for biophysics. In addition, soft matter physics has many industrial applications."

The most obvious place to bring polymer and soft matter physics into an undergraduate physics degree is as a module in the third or fourth years. A number of UK departments – including my own – have taught such a module for some years, and there's now a wealth of experience of teaching successful and popular courses of this type. Those departments that don't, at the moment, offer their students the valuable experience of soft matter physics at this level should be reassured that there's plenty of expertise in the UK for the teaching such courses, and I'm sure that PPG members would be more than willing to help colleagues in other universities who wished to improve their courses in this way.

Of course, an in-depth, but optional, module in the later years of a physics degree gives students the opportunity to be exposed to soft matter physics, but it doesn't guarantee that they will take it. Students who choose to specialise in some other branch of physics may still have the impression that polymer and soft matter physics is an obscure specialisation. To counteract this, and truly bring our subject into the mainstream of physics, an introduction to some soft matter concepts should be integrated with the core teaching of the early years of the physics degree. The natural context for this is in introductory courses about thermal physics and the properties of matter. Here the introduction of topics from soft matter physics can help make difficult concepts like entropy much more tangible, as well as illustrating important applications of modern physics to other disciplines like biology and even finance.

Richard Jones PPG Committee Chairman

PPG & Macro Group Committees

PPG Committee 2007-2008

Chair:

Professor Richard Jones

Vice-Chair:

Dr. Simon Hanna

Honorary Secretary and Treasurer:

Dr. Nigel Clarke

Ordinary members:

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Dr. Roy Christopherson

Dr. Sally Organ

Dr. Ian Robinson

Dr. Joseph Keddie

Dr. Michael Butler

Dr. João Cabral

Dr. Alex Routh

Dr. James Sharp (Bulletin Officer)

Dr. Daniel Read

Dr. Thomas Waigh

Macro Group Committee

Chairman: Prof. David Haddleton (University of Warwick) 2007 - 2010**Secretary:** Dr Joachim Steinke (Imperial College) 2008 - 2009**Treasurer:** Prof. Stephen Yeates (University of Manchester) 2005 - 2009**Ordinary Members:**Dr Peter Cormack (University of Strathclyde), *Membership Officer* 2005 - 2009

Dr Carl Waterson (Infineum International) 2006 - 2009

Dr Neal Williams (ICI Paints) 2006 - 2009

Dr Raj Bhardwaj (Polymer Laboratories) 2007 - 2010

Prof. Steve Brocchini (London University) 2007 - 2010

Dr Andrew Dove (University of Warwick), *Bulletin Officer* 2007 - 2010

Prof. Steve Howdle (University of Nottingham) 2007 - 2010

Dr Andrew Lewis (Biocompatibles) 2007 - 2010

Dr Christopher Sammon (Sheffield Hallam University), *Web Site Officer* 2007 - 2010

Dr Sharon Cooper (Durham University) 2008 - 2011

Professor Ian Manners (University of Bristol) 2008 - 2011

Dr Ezat Koshdel (Unilever) 2008 - 2011

Professor Ian Hamley (University of Reading) *Meetings Programme Officer* 2008 - 2011**Co-opted Member:***Dr Fred Davies (University of Reading), Polymer Roadshow Officer***Representative Members:****Representing Society of Chemical Industry:***Prof. Richard Jones (University of Kent)***Representing Colloid & Interface Science Groups, RSC and SCI:***Prof. Peter Williams (NEWI)***Representing Materials Chemistry Forum, RSC:***Prof. Stephen Yeates (University of Manchester)***Representing Polymer Physics Group, IoP:***Dr Nigel Clarke (Durham University)***Representing Biomaterials Chemistry Group, RSC:***Dr Chris Ansell (BITECIC Ltd)***Representing Institute of Materials, Minerals and Mining:***vacant***Representing European Polymer Federation:***Dr Wayne Hayes (University of Reading)***Representing Polymer Degradation Discussion Group:***Dr Michelle Edge (Manchester Metropolitan University)***Representing Polymer Colloids Forum:***Prof. Peter Lovell (University of Manchester)***Representing RAPS Network:***Dr Rachel O'Reilly (University of Cambridge)*

IOP Institute of Physics

Career Break Grants

The Institute's Career Break Grants help members to stay in touch with the wider physics community.

Contributions towards attendance and associated costs are available.

Members can apply by going to http://www.iop.org/activity/academia/Career_Break_Grants/page_5466.html

or by emailing cbg@iop.org

Career Break Rates for Conferences

Members can attend all Institute of Physics conferences at a reduced rate.

Reduced Membership Subscription Rates

Members on a career break are entitled to a reduced membership subscription rate, which is currently just £10.

Email membership.iop.org, including your membership ID number in the text, to qualify for this rate.

A Random Walk in Polymer Science

19th December
2008

University of
Durham



A one day meeting to celebrate the career and achievements of Professor Randal W. Richards.

This meeting will celebrate the career and achievements of Professor Randal W. Richards at the time of his retirement from his role as Deputy Chief Executive of EPSRC. Prior to this he was Head of the Department of Chemistry, Durham University, Director of the Interdisciplinary Research Centre in Polymer Science and chair of MacroGroup UK. Throughout his career Randal has had an enormous influence on polymer science within the UK, Europe and farther a field.

The meeting consists of a number of invited seminars by colleagues and former students of Randal's who have themselves made significant contributions to polymer science. Confirmed speakers include;

Professor Dame Julia Higgins, Imperial College London

Professor Athene Donald, University of Cambridge

Professor Richard Jones, University of Sheffield

Dr Bill MacDonald, Dupont Teijin Films

Dr Andrew Taylor, ISIS

Dr Jeff Penfold, ISIS

Professor Richard Pethrick, University of Strathclyde

Dr Stella Peace, Unilever.

This event will culminate with a drinks reception.

Further details and registration information can be found on the Institute of Physics Website

<http://www.iop.org/Conferences/>

or from Dr Aline Miller, University of Manchester:

aline.miller@manchester.ac.uk

Aline Miller
University of Manchester

This meeting is kindly sponsored by:



What is new in 'Polymers & Neutron Scattering'? A meeting honouring the achievements of Dame Julia Higgins

Polymer physics owes much to neutron scattering. The development of this technique has contributed dramatically to our understanding of polymer conformations in melts and solutions, polymer dynamics, polymer blends and interfacial phenomena. Dame Julia Higgins DBE FRS FREng co-authored some 250 papers in the field and wrote the unambiguously titled 'Polymers & Neutron Scattering' with Henri Benoit. This book continues to guide beginners and experts alike through the 'nuts and bolts' of neutrons, spatio-temporal correlation functions and 'How, why and when to use deuterium labelling?' to name a few examples.



After graduating from Oxford (BA and DPhil), Dame Julia moved to Manchester University, then to Strasbourg's 'Centre de Recherche Macromoleculaire' and the Institut Laue-Langevin (ILL), France, before joining Imperial in 1976. Her research career has focussed on the application of scattering techniques, notably neutron scattering, to the understanding of polymer dynamics, phase transitions in mixtures and polymer interfaces.

Dame Julia was the first woman to be elected a Fellow of both the Royal Society (1995) and the Royal Academy of Engineering (1999). She served as Foreign Secretary and Vice President of The Royal Society (2001-2006), President of the British Association (2003-2004), Chairman of EPSRC (2003-2007) and even as trustee of The National Gallery. Julia was made a Dame of the British Empire in 2002 and a Chevalier de la Legion d'Honneur in 2003 and holds honorary doctorates from a number of Universities. She contributed to the advancement of women in science, engineering and technology as chair of the Athena Project but is quoted as stating that "the best thing that I could do for women in science was to be one"! Last but not least, Dame Julia was the recipient of the PPG's 'Founders prize' (2005).

This year, PPG, the Neutron Scattering and Materials and Characterisation Groups of the IOP have teamed up to review what is new in "Polymers & Neutron Scattering" and to celebrate Dame Julia's contributions to the field. "Advances in Polymers & Neutron scattering science - in honour of Dame Julia Higgins -" will take place at Imperial College London on September 14-15 2008 and will bring together experts, friends (and former 'rivals') and hopefully newcomers, to discuss this vibrant field of research. The programme and registration info are available online at www.iop.org/Conferences/. There will be a reception and dinner before the meeting at the Polish club in South Kensington which will hopefully be an excellent occasion to meet everyone informally. We hope you will be able to join us at Imperial in September!

João Cabral, Imperial College

MacroGroup UK Awards

Nominations for MACRO Group Medals Now Open!

Macro Group UK Medal for Outstanding Achievement

Awarded to a scientist any where in the world that has made outstanding contributions to the field of polymer science. The recipient will be awarded a gold medal and will be expected to deliver a medal lecture at an appropriate Macro Group UK meeting.

Nominations for this award are invited biannually and the next deadline of 30th October 2008.⁺

Macro Group UK Medal

Awarded to a UK-based scientist who has made a significant and substantial contribution to the development of polymer science through his/her scientific achievements and/or services to the UK polymer science community. The recipient will be awarded a silver medal and will be expected to deliver a medal award lecture at an appropriate Macro Group UK meeting.

Nominations for this award are invited annually and the next deadline of 30th October 2008.⁺

Macro Group UK Young Researchers Medal

Awarded to a UK-based scientist, normally under the age of 36 on December 31st of the preceding year, whose contributions to polymer science show outstanding promise for the future. The recipient will be awarded a bronze medal and will be expected to deliver a medal award lecture at an appropriate Macro Group UK meeting.

Nominations for this award are invited annually and the next deadline of 30th October 2008.⁺

Nominations

All Macro Group UK awards are open to scientists from any organisation (industrial, commercial, government, academic...). Nominations for the Macro Group UK Medal and the Macro Group UK Young Researchers' Medal are restricted to scientists currently working in the UK, whereas the Macro Group UK Medal for Outstanding Achievement is open to scientists from all countries of the world.

Nominations should consist of a proposer and a seconder (both current members of Macro Group UK), who should provide:

- 1) A supporting statement (describing the contributions for which the nominee is notable) and
- 2) A brief (1-4 page) CV of the nominee.

Nominations for the Macro Group UK Medal for Outstanding Achievement may also be made by proposers and/or seconds who are not Macro Group UK members with prior approval from the Macro Group UK Chairman. All nominations must be received by the Macro Group UK Secretary no later than the nomination deadline.



Macro Group UK Medal for Outstanding Achievement *

- 2006** J.M.J. Fréchet
- 2005** K. Matyjaszewski
- 2004** P. Hodge
- 2003** A.B. Holmes
- 2002** D.C. Sherrington
- 2001** J.M.G. Cowie
- 2000** J.C. Bevington
- 1999** E.W. Meijer
- 1998** W.J. Feast
- 1997** G. Wegner

Macro Group UK Medal

- 2007** S.P. Armes
- 2006** D.M. Haddleton

Macro Group UK Young Researchers Medal

- 2007** R.V. Ulijn
- 2006** S. Périer
- 2005** P.A.G. Cormack
- 2004** W.C. Hayes
- 2003** N.R. Cameron
- 2002** A.I. Cooper
- 2001** W. Huck
- 1999** A. Slark
- 1997** S. Rannard

75 Years of Polyethylene†: Past Successes and Future Challenges

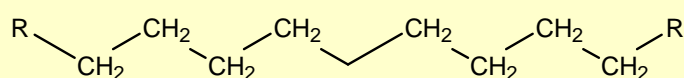
Polyethylene is a material which has seen much bad press in the recent couple of years, so outside the polymer community the anniversary of its serendipitous discovery in 1933 has not been greeted with universal acclaim. At a meeting held at the Science Museum in London, the complexity of polyethylene was revealed; we hope the message has gone out to the wider community that polyethylene is not just about paper bags.

The 27th March 2008 was the 75th anniversary of the discovery of polyethene. To celebrate this occasion, a group of scientists met at the Science Museum in London. The conference, organised by the authors on behalf of the Macro group of the RSC and SCI, the Polymer Physics Group, and the Science Museum, was entitled “75 Years of Polyethylene: Past Successes and Future Challenges”. The aim of the meeting was at least in part to counter the somewhat negative image of polyethene which had focused largely on the problems associated with disposal and degradation. This was summed up in an article earlier that week in *The Independent* entitled “Polyethene’s story: The accidental birth of plastic bags”.¹ In this article Ron Sharp reflected that the anniversary was one that no one would be celebrating.

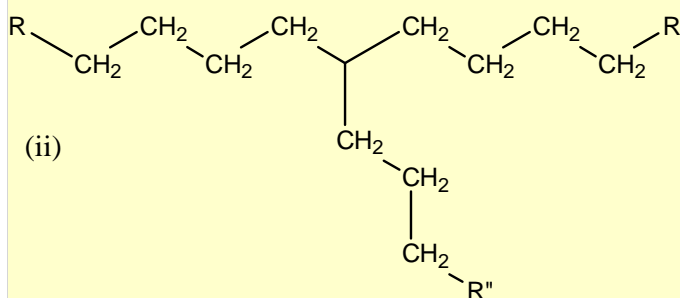
On the basis of this meeting Ron Sharp was a little wide of the mark. The first session was devoted to not only to the discovery and development of polyethene but also the future. In the chair was David Oxley who had his own memories of the polyethene story, however a fuller overview was provided by Harold Fielding, formally of ICI; he reflected on the way polyethene was discovered, the timeliness of the discovery (in particular in view of the vital role of this material as an insulator for cables used in Radar), and the way in which the processes developed. This theme was further developed by John Sale, who had spent many years involved in the marketing of polyethene, and reflected on the way the market for polyethylene had developed in the past, and how it might develop in the future, he discussed the kaleidoscope of uses for polyethene, ranging from cement sacks (which have to be stitched apparently) to radiation shields. The talks were accompanied by some enthusiastic discussion, particularly by the old hands from ICI, who were able to share a wealth of experiences.

An excellent lunch and poster session was then followed by a tour of the temporary plastics exhibition “Plasticity – 100 years of making plastics” at the Science Museum. The audience were shown the original apparatus as used by Fawcett and Gibson, together with a vast range of materials produced from polymers, from an array of early 20th century Bakelite items (including a rare Bakelite coffin) through a large variety of everyday items to light emitting polymers, innovative applications in transport, as well as ideas for new and future uses of plastics and developments in sustainable polymers.

Following this entertaining and informative interlude, the after-lunch session was “polyethene challenges”



(i)



(ii)

Figure 1: One monomer, many polymers: linear polyethene produced using the Ziegler-Natta process (i) and a long-chain branched comb-structured polyethene (ii) produced by Professor Walter Kaminsky using the tandem action of two single-site catalysts.²

and was chaired by Professor Manfred Bochman of the University of East Anglia, who provided a brief introduction to the chemical advances made in the construction of polyethylene systems. This was then followed by Professor Walter Kaminsky, who provided an outstanding overview into developments in metallocene catalysts, an area he made possible himself through his early work, and by which a range of new polyethylene materials are possible. The audience were particularly interested in his use of tandem catalysts to produce comb-like polyethene with long crystallisable side-chains. Dr Jamie Hobbs, of the University of Sheffield then gave an excellent overview of the way polyethene crystallises, and showed (literally by virtue of his videos of crystallisation in progress)³ that the simplicity of the repeat unit in no way matched that of its behaviour.

The final session was devoted to applications; this was chaired by Colin Richards, who clearly

Conference Reports

had some considerable experience of not only the advantages but also the challenges involved in polyethene applications. The complexity of the behaviour exhibited by polyethene was further stressed in the talk by Dr Peter Hine (the University of Leeds) he focussed on ways of controlling the physical properties of polyethene, the particular importance of processing in the development of mechanical structure was highlighted, as was the concept of 'single polymer' composites.⁴ For example Dr Hine explained not only how the mechanical strength of polyethene could be enhanced by orientation, but also how such a process could lead to new applications; in this way polyethene can compete with Kevlar for high strength applications, for example. It was quite instructive to compare this with the talk given by Professor Kaminsky; who had shown how one monomer could be converted to a host of different materials; Dr Hine in contrast showed how by application of processing technology one polymer could be converted into a host of materials with different properties; it would seem there is plenty of science left in this old material yet! The final talk of the day was perhaps appropriately given by an industrial scientist and in a way turned the audience back to the original applications of polyethene as an insulating material. Dr Simon Sutton (Dow) discussed the problems associated with using polyethylene for power cables and in particular explained why the development of polyethylene insulation for high voltage power transmission cables had proved to be a less than straight-forward process.⁵ The meeting closed with a vote of thanks from Professor Vaughan.

In conclusion this proved to be an outstandingly interesting day, which was only made possible by the support of an array of companies and individuals, these are as follows: the Science Museum, the Centre for Advanced Microscopy at the University of Reading, the Worshipful Company of Horners, British Polyethene Industries, the Institute of Materials, Minerals and Mining, SCI, the Polymer Physics Group of the Institute of Physics,

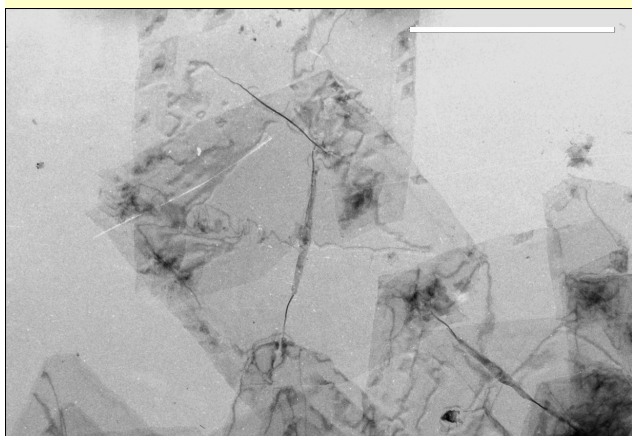


Figure 2 Polyethene exhibits a range of complex morphologies. The morphology of polyethene is a major factor in determining the properties of the resultant material; this in turn can be controlled by processing. The photo above shows a sample of polyethene crystallised from solution (the scale bar represents 5 μm).

and the Macro Group of the Royal Society of Chemistry and the Society for Chemical Industries. Finally, whilst a scientific meeting of this type can do little to counter the current bad press of polymers in general and polyethene in particular, by holding the meeting it was possible at least to put forward some of the many positive aspects of polymers often ignored by the press (and governments) to a more general audience. In particular Professor Mitchell and Professor Dame Julia Higgins spoke about polyethene, the anniversary and the many uses other than packaging on *The Material World* (BBC Radio 4).⁶ In addition, by holding this meeting it was possible to counter the argument in *The Independent* and say "yes people are celebrating the discovery of polyethene" A letter to this effect from the organisers was published in the *Independent* on 31st March 2008.⁷ What was particularly apparent from this meeting was that polyethene is not a single material, either from a chemical, or from a mechanical point of view and the material can be tailored for use in a wide range of applications.

1) <http://www.independent.co.uk/news/science/polyethenes-story-the-accidental-birth-of-plastic-bags-800602.html> (The Independent 25 March 2008)

2) O. Sperber, and W. Kaminsky, *Macromolecules* 2003, 36, 9014-9019

3) J.K. Hobbs, C. Vasilev, A.D.L. Humphris, *Polymer*, 2005, 46, 10226-10236

4) N. D. Jordan, R. H. Olley, D. C. Bassett, P. J Hine, I. M. Ward, *Polymer*, 2002, 43, 3397-3404.

5) See for example, A. S. Vaughan, Y. Zhao, L. L. Barré, S. J. Sutton, S. G. Swingler, *European Polymer Journal*, 2003, 39, 355-365

6) http://www.bbc.co.uk/radio4/science/thematerialworld_20080320.shtml

7) <http://www.independent.co.uk/opinion/letters/letters-dna-database-problems-803016.html> (The Independent 31st March 2008)

† - Polymers of the monomer ethene are commonly known as polyethylene or by the DuPont trade name Polythene. The IUPAC name for the material is polyethene.

Frontiers of Research and Young Researchers Meetings

Thursday 17th & Friday 18th April 2008 at the University of Warwick

For the first time the popular Frontiers of Research meeting was combined with the Macro Group UK Young Researchers Meeting, this year held at the University of Warwick. The meeting was organised as a celebration of the award of the Macro Group UK medal and Macro Group UK Young Researchers Medal to Prof. Steve Armes (University of Sheffield) and Dr. Rein Ulijn (University of Manchester) respectively. The meeting also served as the vehicle for the Macro Group Annual General Meeting (AGM). The attendance at these meetings once again has continued its upward trajectory, increasing on this occasion to 140 total attendees from across the country, of which 111 were present for the young researchers part of the meeting the following day. As for previous meetings, the science was excellent and the Macro Group Annual General Meeting (AGM) integrated smoothly into the programme for the first day.

The meeting began with a lectures from Prof. Tony Ryan (Sheffield), Prof. Norman Billingham (Sussex) and Dr Peter Cormack (Strathclyde). After coffee, the quality of lectures remained high with Prof. Andy Cooper (Liverpool) and Prof. Dek Woolfson (Bristol) describing some of their recent research to the audience. Following lunch and the Macro Group AGM, the afternoon session was devoted to the medal lectures and awards. Dr Rein Ulijn spoke about his research into self-assembling peptide-based materials before the lectures ended with the 2006 Macro Group UK Medal Lecture from Prof. Armes. The day ended by transitioning into the young researchers meeting, specifically the poster session. 67 posters were being presented with the 6 best posters being awarded prizes (details later) and was followed by a social programme that went late into the night.

The second day began with a strong and varied programme of presentations from young researchers. In total 13 talks were able to be squeezed into the programme and they provided a broad overview of the different aspects of polymer research being conducted across the UK. Special mention should go to Laurent Chabanne stepping in to talk at only a few hours notice! As with the posters, the quality of all of the presentations was extremely high. The conference was concluded by the presentation of 2 awards for the best presentations (awarded to Adam Moughton and Tom McDonald). The poster prizes were awarded to Patrick Colver, Hannah Lomas, John-Charles Eloi, Antoni Beltran Carbo, Gregory Hunt and Nicholas Schaefer.

Andrew Dove



Rein Ulijn receiving the 2007 Macro Group UK Young Researchers Medal from Dave Haddleton



Steve Armes receiving the 2007 Macro Group UK Medal from Dave Haddleton

Conference Reports—DH Richards Bursary Awards

19th Polymer Networks Group Meeting 22nd to 26th June 2008, Larnaca, Cyprus

The Polymer Networks Group (PNG) is an independent international organization for the promotion of international contacts and the stimulation of research in the field of polymer networks. The main activity of the group is the organization of a conference on the formation, structure, properties, and applications of polymer networks. Meetings now occur biennially, with the last meeting being held at the University of Sheffield in 2006.

The 2008 meeting was held at the Lordos Beach Hotel, Larnaca, Cyprus. Larnaca is a city located on the southern coast of Cyprus offering the perfect location for a very enjoyable conference. PNG 2008 was attended by more than 250 participants from 34 countries and 4 continents. Two hundred papers were presented over the 5 day conference, 97 lectures and 103 posters.

The PNG conference brought together chemists, physicists, materials scientists, biologists and engineers to discuss all aspects of polymer networks, lead-



ing to a packed and diverse scientific program. Within this conference there were sessions dedicated to synthesis, properties, applications, biogels, nanohybrids and bioapplications.

Very interesting plenary lectures were given by Prof. K. Matyjaszewski (Carnegie Mellon University), Prof. A. Ryan (University of Sheffield) and Prof. M. Gottlieb (Ben Gurion University), as well as diverse talks from 21 Invited speakers. Specific attention was paid to the synthesis of well-defined polymer networks using controlled/living polymerisation and a number of talks were given in this area. For me, the conference highlighted the number of different applications for polymer networks and the large number of techniques now available to synthesise them.

I am very grateful to the Macrogroup UK for a bursary which made my attendance at PNG 2008 possible.



Louisa Gilmore, Department of Chemistry, University of Sheffield

Macro2008 Taipei, Taiwan “Polymers at Frontiers of Science and Technology”



Gregory J Hunt, IRC in Polymer Science and Technology, Dept. of Chemistry, University of Durham

D H Richards Memorial Bursaries (Macro Group UK)

- Are you:**
- a student member of Macro Group UK?
 - desperate to go to an important conference?
 - short of all the funding needed?

then the D H Richards Memorial Bursaries scheme can help you!

About the bursaries

Macro Group set up the bursaries as a memorial to D H Richards, who was one of the founding officers of Macro Group and worked hard to establish it as a major group in the UK. Under this scheme, Macro Group sets aside funds each year to support its student members that wish to attend a scientifically-important conference, but are short of funds to make this happen. Only one student from a particular department/school will be granted a bursary for a particular conference. The applicant must be a current Macro Group member, have their supervisor's support, and be planning to make an oral or poster contribution at the conference. It is expected that part of the funds needed to attend the conference will be obtained from other sources. A particular student can only receive one bursary award during their period of study and the maximum amount awarded will be £300. A condition of receiving a bursary award, is that the student will be required to write a short conference report for publication in the *Bulletin*.

How to apply

Application forms can be obtained from the Macro Group Secretary, Wayne Hayes, by sending an email request to: w.c.hayes@reading.ac.uk The *completed application form must be sent by the applicant's supervisor* (to confirm their support of the application) via email to Wayne Hayes in accord with the following three deadlines:

1 November, 1 February and 1 May

Decisions will normally be announced less than 4 weeks after the deadline.

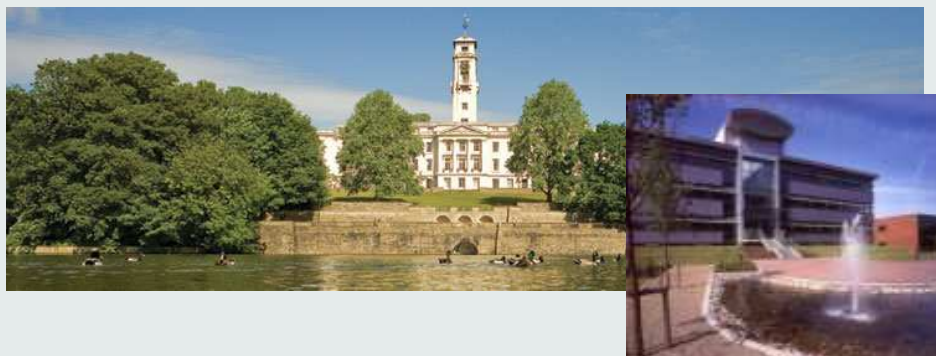
Institute of Physics Bursaries

The Institute of Physics has a limited number of conference grants for people that are at an early stage of their career (e.g. student, post doc, newly appointed academics) .

All applicants should be Institute of Physics members and be making an oral or poster contribution to the conference.

Further details can be found at:

http://www.iop.org/activity/grants/C_R_Barber_Trust/page_3139.html

Forthcoming Meetings & Conferences

Recent Appointees in Polymer Science 10th Anniversary Meeting, 17th - 19th September 2008

The next annual RAPS meeting will be hosted in the picturesque surroundings of the Boots Pharmacy Building at the University of Nottingham

Keynote speakers

Dr. Derek Irvine (University of Nottingham)

Dr. Patrick Fairclough (University of Sheffield)

Prof. Ijeoma F. Uchegbu (University of London)

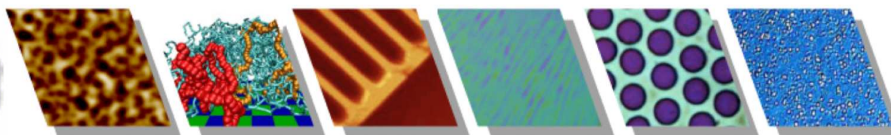
This year there will be a panel session themed discussion on various topics relating to research and polymer science, with senior academics and RAPS members. There will also be a career development session aimed at highlighting opportunities for publication, funding and commercialisation of research.

RAPS is an organisation that is dedicated to supporting recent academic and industrial appointees at the beginning of their careers. RAPS grants are available to recent appointees covering the registration fee and the accommodation costs in full.

If you would like to receive more information, then please email the chairperson (Rachel O'Reilly, rko20@cam.ac.uk) with your contact details and she will be happy to provide further information and add you to the RAPS circulation list.

Alternatively, you can visit the RAPS web site at [**www.raps.org.uk**](http://www.raps.org.uk)

Forthcoming Meetings & Conferences



Confined polymer films: Deviation from bulk behaviour.

September 8-12 2008
University of Sheffield

For registration and more information please go to: <http://www.polyfilm.eu.com/conference/index.php>

Confirmed Speakers

<p>U. Wiesner (Cornell University)</p> <p>D. Bucknall (Georgia Tech)</p> <p>A. Sharma (India Institute of Technology, Kanpur)</p> <p>J. Genzer (North Carolina State University)</p> <p>W. Huck (University of Cambridge)</p> <p>F. Kremer (Universität Leipzig)</p> <p>J.-U. Sommer (Leibnitz Institut für Polymerforschung Dresden)</p> <p>M. Winnik (University of Toronto)</p> <p>M. Thelakkat (Universität Bayreuth)</p> <p>G. Hadziioannou (Université Louis Pasteur, Strasbourg)</p>	<p>A. Yang (National Tsing Hua University, Taiwan)</p> <p>T. Russell (University of Massachusetts)</p> <p>A. Semenov (Institut Charles Sadron, Strasbourg)</p> <p>U. Thiele (Loughborough University)</p> <p>P. Damman (Université de Mons-Hainaut, Mons)</p> <p>O. Tsui (University of Boston)</p> <p>J. Forrest (University of Waterloo, Ontario)</p> <p>A. Ryan (University of Sheffield)</p> <p>J. Rühle (Albert Ludwigs Universität Freiburg)</p> <p>E. Raphaël (École Supérieure de Physique et de Chimie Industrielles, Paris)</p>
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One day Polyelectrolyte Workshop

17th September 2008
University of Manchester

The University of Manchester will be holding a one day workshop on Experiment, Simulation and Theory of Polyelectrolytes. The CCP5 invited speaker is Dr Christian Holm (University of Frankfurt) who is an expert on the simulation of polyelectrolytes. As well as dealing with simulation issues we also welcome contributions from theoreticians and experimentalists.

We would like to invite abstracts for talks (approximately 30 mins) and we will use these to compose a final program. We aim to start with coffee at 10.0 am and for talks to begin at 10.30 am, finishing around 17.00. Numbers will be limited to around 30 and there will be no registration fee.

If you are interested, please contact: andrew.masters@manchester.ac.uk

The list of speakers currently includes Dr Christian Holm, Dr Yuan (Manchester), Dr Lue (Manchester) and Dr Miller (Manchester).

IMPORTANT: If members of the UK academic community would like to host a visit by Dr Christian Holm for discussions, collaboration and/or lectures during the week 15-19th September 2008 could you please email ccp5-admin@dl.ac.uk so that an itinerary can be established. The host will be required to pay for Dr Holm's travel and accommodation.

Forthcoming Meetings & Conferences

Biological And Soft Matter

University of Warwick
6th-8th April 2009

Soft condensed matter and biological physics are rapidly growing areas of physics. They are concerned with developing an understanding of the key concepts that underpin the basic science and technological potential of 'soft systems'. These systems include polymers, biological systems and complex fluids and typically comprise large organic molecules, collections of organic molecules and/or small colloidal particles that display a wide range of interesting dynamic, mechanical and structural properties.

Synthetic soft materials have provided many examples of fascinating problems to physicists, chemists, engineers and material scientists. However, the structure and dynamics of biological systems are also strongly influenced by many of the physical principles that govern the behaviour of synthetic soft materials. Developing an understanding of the physical phenomena that determine the dynamic and mechanical properties, as well as the self assembly and structural properties of all these systems, promises to provide some exciting challenges to scientists and engineers.

This conference will cover a broad range of scientific problems related to the equilibrium and non equilibrium physical properties of synthetic soft condensed matter and biological systems

The meeting will include an exciting program of national and international speakers and is jointly supported by the *Biological Physics Group*, the *Liquids and Complex Fluids Group* and the *Polymer Physics Group*.

Organising Committee

Dr. Matthew Turner (University of Warwick), Dr. Mike Jenkins (University of Birmingham), Prof. Peter Olmstead (University of Leeds) and Dr. James Sharp (University of Nottingham)

Invited Speakers:

Rheology and Network Dynamics

Christof Schmidt (University of Goettingen, Germany)

Tom Lubensky (University of Pennsylvania, USA)

Peptide aggregation

Dek Woolfson (University of Bristol, UK)

Ken Dill (University of California, San Francisco, USA)

Adhesion/bioadhesion

Denis Wirtz (John Hopkins University, USA)

To be announced

Confined Fluids

David Weitz (Harvard University, USA)

Daan Frenkel (University of Cambridge, UK)

DNA as a nanomaterial

Paul Rothemund (Caltech, USA)

Andrew Turberfield (University of Oxford, UK)

Membranes

Pierre Nassoy (Institut Curie, France)

Patricia Bassereau (Institut Curie, France)

Call for abstracts

Contributions are currently being invited for oral and poster presentations. Further details can be found at http://www.iop.org/Conferences/Forthcoming_Institute_Conferences/biosoftmatter/

Forthcoming Meetings & Conferences

Date(s)	Title and Location	Organiser
8th-12th Sept 2008	PolyFilm -Confined Polymer films (University of Sheffield)	Mark Geoghegan
14th-15th Sept 2008	Advances in Polymer Science and Neutron Scattering A conference in honour of Dame Julia Higgins	João Cabral
17th Sept 2008	One Day Polyelectrolyte Workshop	Andrew Masters
17th-19th Sept 2008	Recent Appointees in Polymer Science (University of Nottingham)	Rachel O'Reilly
10th-12th Dec 2008	Self assembly and self organisation at surfaces and interfaces (University of Cambridge)	Ullrich Steiner
4th Dec 2008	Additives for adhesives (SCI)	Dave Tod
19th Dec 2008	A Random Walk in Polymer Science: a one day meeting to mark Randall Richards' Retirement (University of Durham)	Aline Miller
6th-8th April 2009	Biological and Soft Matter (University of Warwick)	Matthew Turner and Claire Garland (IoP)
11th -16th July 2010	IUPAC World Polymer Congress 2010 Scottish Exhibition and Conference Centre, Glasgow	Peter Lovell and Nicole Morgan (RSC)

Self-assembly and Self-organisation at Surfaces and Interfaces

Selwyn College, University of Cambridge
December 10 – 12 2008
<http://www.nottingham.ac.uk/physics/sssi/>

Self-Assembly and Self-Organisation at Surfaces and Interfaces (SSSI-2008) will cover self-assembly and self-organisation in a variety of diverse systems and environments. From the self-assembly of organic molecules under ultrahigh vacuum conditions, through pattern formation in nanofluids, nanostructured thin films, and soft matter, to complexity driven by bioorganic interactions, SSSI-2008 spans a broad range of topical multidisciplinary themes. The following invited speakers are confirmed:

Philip Ball (Freelance author and editor of nature), **Jacob Klein** (Weizmann Institute), **Karina Morgenstern** (Uni. Hannover), **N. Goldenfeld** (Uni. Illinois), **A. Mikhailov** (Fritz Haber Institut), **Eduard Arzt** (Saarland Uni.), **Andrei Zvelindovsky** (Uni. Central Lancashire), **Anne-Marie Cazabat** (Uni. Pierre et Marie Curie), **O. Ikkala** (Helsinki Uni.), **Elie Raphael** (Laboratoire de Physico-Chimie Theorique), **D. Bonn** (Uni. Amsterdam), **Richard Jones** (Uni. Sheffield), **F. Besenbacher** (Aarhus Uni.)

For abstract submission and registration please visit <http://www.nottingham.ac.uk/physics/sssi/>.

SSSI-2008 organising committee: Ulli Steiner (Cambridge), Uwe Thiele (Loughborough), and Philip Moriarty (Nottingham).

Advertising within the BULLETIN & Newsletter

The membership of the Macro Group UK and the Polymer Physics Group comprises many of the UK's premier polymer scientists in both industry and academia; scientists involved in teaching, training, research and consultancy, and scientists who buy, or influence the buying of, books and journals, scientific equipment and chemicals, in fact goods and services of many kinds. The *BULLETIN* is posted on the Macro Group and Polymer Physics Group web sites and the *Newsletter* is mailed twice a year (usually in January and July).

Material for circulation with the Macro Group UK/PPG Newsletter

Material may be mailed with the *Newsletter* to members of the Macro Group UK and/or to members of the Polymer Physics Group (excluding those members who have asked not to receive such material). **Please note that this is not a free service and you will be charged at the rate in force at the time of circulation.**

A notification of intention to circulate, together with a copy of the item for circulation, should be sent to the Macro Group Secretary, Dr Wayne Hayes (Department of Chemistry, University of Reading, e-mail: w.hayes@reading.ac.uk), and to the Bulletin Officers, Dr Andrew Dove (MGUK) and Dr James Sharp (PPG), who can then advise on the procedure to be followed.



Polymer Science and Technology

9 Day Modular Course

27th October –6th November 2008

Venue: Novotel Sheffield

Intended Audience



This course is designed for personnel with a need to know more about polymer science and technology and should appeal to those with some background in the sciences and who wish to broaden their horizons with a general overview of these topics. It has been approved by IOM3 for professional development.

This course is specifically for you if: you interact with polymer scientists (either as customers, suppliers or research and development teams); or you are commercial/ engineering/production based and need to understand more about how your products and/or processes work.

Course Structure

Please note that we reserve the right to make changes to the course content and lecturers should it be necessary. Provisional course details are as follows

WEEK ONE

- Day 1: Basic Polymer Science part I
- Day 2: Basic Polymer Science part II
- Day 3: Polymer Chemistry
- Day 4: Polymer Engineering (Polymer Processing)
- Day 5: Polymer Physics

WEEK TWO

- Day 6: Multi-phase Polymer Materials and Composites
- Day 7: Polymer Dynamics and Macromolecular Rheology
- Day 8: Polymer Nanotechnology
- Day 9: Polymeric Biomaterials

Course Notes

Each participant will receive at the beginning of the course, a bound set of course notes and a CD of the same information.

Further Details further details can be found at <http://www.polymerirc.org/pages/CourseDescriptions>
contact Miss S.H. Cowley, The Polymer Centre, Dainton Building, University of Sheffield, S3 7HF (Tel: 0114 222 9520)
or e-mail: s.h.cowley@sheffield.ac.uk

**Discounted rates on
course fees for PPG
members**

**Student member
50% discount**

**Non student member
15% discount**

Macro Group AGM Minutes

Minutes of the AGM

Held at the University of Warwick 17th April 2008

Present: D M Haddleton, C Waterson, P Lovell, R Bhardwaj, S Yeates, A Dove, P Cormack, plus 21 additional Macro Group Members.

Welcome

Approval of Minutes of the AGM held on April 3rd 2007

These were accepted as a true record

Matters arising from Minutes

None

Chairman's Report

The objectives I have set for the Macro Group UK are

1. Increase the membership numbers and participation by members in activities by all UK institutions involved in Polymer Science in the UK and in particular with a focus on young scientists.
2. Increase International Interactions e.g. US, China, EPF
Improve web-site and communications

Last year we invited RAPS to become fully affiliated with MGUK with a representative for RAPS on the full committee (Rachel O'Reilly).

MGUK awards were decided by ballot of the committee and awarded to Professor S Armes and Dr R Ulijn. In 2008 we will be making three awards, the above two and the biannual medal for Outstanding Achievement which is awarded to a scientist, from any country, who is recognised internationally for his/her continued, outstanding achievements in the field of polymer science. The recipient will be awarded a silver medal and will be expected to deliver a medal award lecture at an appropriate Macro Group UK meeting.

We held several meetings over the last year including

- YRM at Nottingham in April organised by Dr Cameron Alexander.
- UK Polymer Colloid Forum Meeting at Warwick organized by Dr Stefan Bon (September 2007)
- RAPS Annual meeting at Cambridge organized by Dr Rachel O'Reilly (September 2007)
- One day meeting on Polymer Characterization at the University of Nottingham organized by Professor S Howdle and Dr Raj Bharjwaj in December 2007.

A number of meetings are planned in 2008 and 2009 and most importantly MGUK are hosting IUPAC 2010 in Glasgow and things are well under way with approximately 30 symposia required across polymer science. This is organized by RSC and is underwritten by the RSC and it is noted that financial gain/loss will be by the RSC and not the MGUK.

We had a quiet time for D H Richards awards in 2007 but I am pleased to say we awarded 4 applications at our February meeting and we hope to award a further 5 in 2008.

It was decided, on the suggestion of CEPSC, to appoint a chair for the Scientific Committee, who will report into the Organising Committee and also act as deputy chair of the Organising Committee. This will enable the programme workload to be shared more

evenly and to allow Pete Lovell, as Organising Committee chair, more time to focus on all aspects of the conference's development. Dave Haddleton (University of Warwick), current chair of Macro Group, has agreed to act as Scientific Committee chair.

Appointment of members to the Organising Committee is complete and to the Scientific Committee is almost complete (see the appendix to this report). Terms and conditions for these committees, as well as for symposium conveners and the International Advisory Board (IAB) have been finalised and agreed.

The Organising Committee will have their first meeting on 25 April to discuss fund raising strategies, sponsorship, commercial exhibition, young scientist funding, opening ceremony, social events etc.

The Scientific Committee will have their first meeting on 6 June to discuss symposia topics and conveners, plenary and keynote speakers, co-sponsoring organisations, satellite events, programme structure, speakers expenses etc.

The next committee meeting will be held on May 28th 2008 at the SCI in London

Questions were invited from the floor

Membership

This year we have a number of retiring committee members and I would like to thank them for their support of MGUK, leaving are Mr Jeffery Carter (ICI), Dr Nigel Clarke (Durham University), Dr Rob Hunter (Unilever), Dr Peter Cormack, (Strathclyde) and Dr Joachim Steinke (IC) and Wayne Hayes (Reading).

I would like to add a special thanks to Wayne Hayes for acting as secretary for the MGUK. Joachim Steinke has kindly agreed to stay on the committee as secretary for at least one year from today and we have a number of nominations for the 5 vacant positions

1. Dr Sharon Cooper (Durham University)
2. Professor Ian Manners (Bristol University)
3. Dr Ezat Koshdel (Unilever)
4. Professor Ian Hamley (Reading)

Elections to the Committee

Dr Sharon Cooper (Durham University); Professor Ian Manners (Bristol University); Dr Ezat Koshdel (Unilever); Professor Ian Hamley (Reading) were duly elected.

In addition I Hamley agreed to act as meetings secretary and J Steinke agreed to act as secretary for one year in the first instance and Peter Cormack agreed to remain on the committee as an ad hoc member.

AOB

Communications were raised from the floor regarding the issue of electronic verses non electronic communication it was agreed to investigate the wishes of the members over the coming year.