

MACRO GROUP UK POLYMER PHYSICS GROUP BULLETIN



IOP | Institute of Physics
Polymer Physics Group

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Editorial

Welcome to the September edition of the Macro Group and PPG Bulletin.

First of all, congratulations to the winner of the both the Jon Weaver PhD prize and the Ian Macmillan Ward prize, **Charalampos Pappas** (University of Strathclyde).

All MacroGroup medal-winning speakers will give presentations at the MacroGroup Medal Winners Symposium (Aston University, 10th November 2017), including **Ian Hamley** (University of Reading), **Theoni Georgiou** (Imperial College), **Nikos Hadjichristidis** (KAUST) and **Charalampos Pappas** (2016 Jon Weaver PhD Prize).

Congratulations also to **Michael Hore** of Case Western Reserve University, winner of the APS DPOLY/PPG Exchange Lectureship, who will give an invited lecture at the PPG biennial meeting, to be held at Swansea University from 13-15 September.

As usual, a reminder to **PhD students and postdoctoral researchers** who are members of the Macro Group that **D. H. Richards bursaries** are available to help fund conference expenses. Application deadlines are now **four times a year** in February, May, August and November. Bursaries of up to £300 for attendance at international conferences and visits to international facilities are also available from the **IOP Early Career Researchers Fund**.

We would also like to draw your attention to the new prestigious **Ottewill International Travel Scholarship**. **UK-based PhD students** wishing to present their work at an international conference are encouraged to apply.

Finally, we have a number of announcements of forthcoming meetings and reports on conferences, including an article on the APS meeting in New Orleans by the recipient of the PPG/DPOLY exchange lectureship, **Andrew Parnell**. Thank you to all who have contributed an item to this issue of the bulletin.

Valeria Arrighi — Martin Greenall
Bulletin Officers

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

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or

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The deadline for contributions for the next issue is

31st December 2017

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.



IOP Institute of Physics

Views from the Top

From the Chairman of Macro Group



The first year of my term as Macro Group UK Chair has passed all too quickly, much as the 'academic summer' seems to do each year. However, there have been many activities in which Macro Group has been involved in 2016/2017, and the good health of UK polymer science is very evident in all of these.

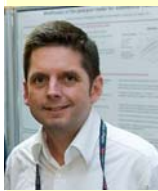
The showcase event for me so far this year was the annual Young Researchers Meeting, which was held in Edinburgh over 2 very sunny and warm June days. A full report on the meeting is elsewhere in this Bulletin but I want to highlight here the outstanding quality of the talks and posters. Whilst of course science evolves over time, there is no doubt that the scientific level of the presentations at the YRM this year was significantly higher than when I presented at the forerunner of the YRM, n years ago (where n is a disturbingly large number)... However, it is also the breadth of the polymer science being carried out in the UK now that is so impressive. PhD students, post-docs and early career researchers from academic and industry positions are synthesising, characterising and applying polymers in fields ranging from catalysis, computation, construction, energy, medicine, smart packaging, sensing, sustainability and waste management. Most of the talks and posters described work that was inherently multidisciplinary, many were highly collaborative and all showed innovative science. There was also a pleasing balance between 'curiosity-led' and 'challenge-driven' projects (although sometimes it is hard to differentiate these in polymer science), so as a community we can be confident in our ability to push the boundaries of research and serve societies' needs at the same time. The other very pleasing aspect of the meeting was the atmosphere surrounding the talks, posters and social events. Even though the numbers were large, there were lots of interactions between different groups, engaging questions, supportive discussions and a real air of positivity. This I am sure augers well for the future, and a big thank-you to Mike Shavers and his team at Edinburgh for putting on such a great conference.

As noted in my prior column, a priority for me as MGUK Chair is to build on international links and to develop new groupings so that our science can benefit as many people as possible across the world. A start in this endeavour is that next year's YRM will be held in Dublin and will be organised by Dr Andreas Heise and his team at the Royal College of Surgeons in Ireland. Whatever happens in the UK Brexit negotiations, we will want to maintain as strong collaborations as we can with EU countries, so a YRM in Ireland seems a good first step to do this. I am also keen that we hold some joint meetings with other European polymer societies, and welcome members thoughts on how best to do this when there is already rather limited space in the conference calendars. It is also worth stating there are other routes to collaborations, and UK research councils can fund research stays for post-docs in other countries through grants, and inter-industry links between countries will be possible via EU grants for a few years yet irrespective of the Brexit situation, and are likely to be expanded for non-EU countries via Innovate UK. We will aim to post details of collaboration opportunities and other international linking schemes on the Macro Group website (<https://macrogroup.org.uk/>) along with jobs postings, conference listings and other news items.

My final thoughts for this column return to the theme of Early Career Researchers and future prospects for polymer science. There has been much publicity about the difficulties of science careers (mainly in academia), and there is no doubt that the

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From the Chairman of the PPG



Six years have passed since our 25th Biennial Meeting, hosted at the University of Surrey, when I took on the helm as the Chair of the Polymer Physics Group. The time has now arrived for me to step down. Although I look back with fondness and pride at the Group's activities and achievements, I also appreciate that new leadership will maintain the vitality of the Group.

I am absolutely delighted and relieved to hand over to two very fine individuals. I wish to send my sincerest congratulations to the new Chair of the Group, Aline Miller, and to the new Secretary/Treasurer, João Cabral. It is heartening to leave the Group in their capable hands, knowing that they will ensure that the Group continues to flourish. On behalf of the Group, I'd like to thank Aline and João for taking on these responsibilities.

It is heartening too that there are five nominees (James Adams, Christopher Finlayson, Andrew Parnell, Manlio Tassieri, and Zhenyu Zhang) for the three Ordinary Members of the Committee. It's a positive sign that so many in our community wish to contribute to the Group. The election will be held via the IOP's on-line system, with a deadline of 5:45 pm on the 13th of September. That time and date conveniently coincides with our AGM, being held in Swansea, at which we will announce the winners. Please make sure you vote. With our membership of a few hundred people, every vote will count!

I feel that the programme for our upcoming biennial meeting looks very strong, with many interesting topics being presented. Of course, I am looking forward to Mark Warner's Founders' Prize lecture on liquid crystal elastomer along with the Ian Macmillan Ward Prize lecture by Charalampos Pappas on the topic of supramolecular nanomaterials made from peptides.

At our previous biennial meetings, we have awarded poster prizes, but they were not formally recognised as a Group prize by the IOP. Now with a generous donation from the Alexei Likhtman Memorial Fund, we will be awarding the first-ever PPG poster prizes in Alexei's memory at the meeting in Swansea. The idea behind the prizes arose from Katrina Likhtman's desire to help the next generation of polymer physicists. At our previous meeting in Manchester, Alexei's team in Reading won two of the poster prizes. Katrina recalled how pleased Alexei had been with the recognition, and so a poster prize in Alexei's memory was a natural choice. All of us hope that the prizes will have a positive effect on the development of early-career researchers by boosting confidence, providing encouragement, and opening up new opportunities.

It truly has been a pleasure to serve the Polymer Physics Group and to contribute to its ongoing successes. During my term as Chair, I have seen the field of soft matter physics attract increased interest within the wider physics community, especially topics such as active matter, additive manufacturing and nano-devices. Polymer physicists have an important contribution to make. But I feel that our impact will be greatest when we team up with researchers in other disciplines. During my tenure, I have tried to facilitate conversations and to establish connections through PPG's one-day meetings and our larger Soft and Biological Matter conference.

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Views from the Top

pressures involved are considerable.

The Recent Appointees in Polymer Science (RAPS) initiative, which is still highly active nearly 20 years after it first started, was started because some of the Early Career Researchers in the late 1990s felt there needed to be better support for new polymer scientists. As a community, polymer scientists have been very supportive to each other, and RAPS has almost become an 'Impact Case Study' due to its success. Nevertheless, we should not be complacent about the challenges, as well as the rewards, of careers in polymer science, and we particularly need to do more to encourage diversity, to enhance mentoring and for those of us in later careers, to 'put something back' for the newer generations. Many of us on the Macro Group Committee have benefitted from mentors, advocates and critical friends, so if you are a newer member of Macro Group, don't hesitate to get in touch with a committee member for advice, and if you are a more established member of the group, why not apply to join the Committee? In either case, we'd be very happy to hear from you!

Cameron Alexander
Chairman, Macro Group

The first meeting of the Polymer Physics Group was held 53 years ago in Shrivenham in 1964. Back then, they would have been astounded to see today's AFM images with nanoscale resolution, dynamic measurements using neutron scattering, and movies made using molecular dynamics simulations. We can only guess what polymer physicists will achieve in the next 53 years. Although this is my farewell as the PPG Chair, it certainly is not a goodbye to the Polymer Physics Group. I definitely intend to see you at future events, but I cannot guarantee I will be able to attend beyond the 53rd biennial meeting to be held in the year 2067.

Joseph Keddie
Chair, Polymer Physics Group

PPG & Macro Group Committees

Macro Group Committee

Chairman: Prof. Cameron Alexander (University of Nottingham) 2012 - 2018
Secretary: Dr Valeria Arrighi (Heriot-Watt University) 2013 - 2019
Treasurer: Dr Adam Limer (Unilever) 2013 - 2019

Ordinary Members:

Dr Frederik Claeysens (University of Sheffield) 2014 - 2017
Dr Steve Edmondson (University of Manchester), *Web Site Officer* 2014 - 2017
Dr Rachel Evans (University of Cambridge) 2015 - 2018
Dr Theoni Georgiou (Imperial College London) 2014 - 2017
Prof Matthew Gibson (University of Warwick) 2013 - 2019
Prof. Natalie Stingelin (Imperial College London) 2014 - 2017
Dr Paul Topham (University of Aston) 2013 - 2019
Dr Gary Tustin (Synthomer) 2017 - 2020

Representative Members:

Representing European Polymer Federation: Dr Theoni Georgiou (Imperial College London)
Representing Colloid & Interface Science Groups, RSC and SCI: Dr Cecile Dreiss (Kings College London)
Representing Materials Chemistry Forum, RSC: Prof Mark Weller (University of Bath)
Representing Polymer Physics Group, IoP: Dr Valeria Arrighi (Heriot-Watt University)
Representing Biomaterials Chemistry Group, RSC:
Representing Polymer Degradation Discussion Group: Dr Mogon Patel (AWE)
Representing RAPS Network: Dr Helen Willcock (Loughborough University)

Polymer Physics Group Committee

Chair:

Prof. Joe Keddie (University of Surrey)

Honorary Secretary and Treasurer:

Prof. Aline Miller (University of Manchester)

Ordinary members:

Dr Jonathan Howse (University of Sheffield)
Dr Martin Buzza (University of Hull)
Dr Mike Ries (University of Leeds)
Dr Martin Greenall (University of Lincoln)
Dr Ann Terry (Lund University)
Dr Anthony Higgins (Swansea University)
Dr James Elliott (University of Cambridge),
Dr Vasileios Koutsos (University of Edinburgh),

Representing Macro Group: Dr Valeria Arrighi (Heriot-Watt University)

Nominations for MACRO Group Medals Now Open!

Macro Group UK Medal for Outstanding Achievement

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.

*Nominations for this award are invited biennially and the next deadline is 30th September 2017.**

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 lecture at an appropriate Macro Group UK meeting.

*Nominations for this award are invited annually and the next deadline is 30th September 2017.**

Macro Group UK Young Researchers Medal

Awarded to a UK-based scientist with up to 12 years of experience since completion of PhD on December 31st of the preceding year (exclusive of career breaks) and 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 lecture at an appropriate Macro Group UK meeting.

*Nominations for this award are invited annually and the next deadline is 30th September 2017.**

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.

All nominations must be received by the Macro Group UK Secretary no later than the nomination deadline.



Macro Group UK Medal for Outstanding Achievement *

2016 N. Hadjichristidis
 2014 E. Rizzardo
 2012 M. Sawamoto
 2010 C. J. Hawker
 2008 M. Antoinetti
 2006 J.M.J. Fréchet
 2005 K. Matyjaszewski
 2004 P. Hodge

Macro Group UK Medal

2016 I. Hamley
 2015 D. Adams
 2014 C. Alexander
 2013 U. Steiner
 2012 H. Colquhoun
 2011 A. Cooper
 2010 I. A. Manners
 2009 A. J. Ryan

Macro Group UK Young Researchers Medal

2016 T. Georgiou
 2015 M. Shaver
 2014 P. D. Topham
 2013 L. Dougan
 2012 M. I. Gibson
 2011 I. Kinloch
 2010 J.V.M. Weaver
 O.A. Scherman
 2009 A. P. Dove

Jon Weaver PhD Prize

2016 C. Pappas
 2015 G. Sicilia
 2014 A. Anastasaki
 2013 J. Patterson
 2012 E. Appel
 2011 K. Kirkham

* previously known as the Macro Group UK Lectureship and Medal (1997-2005)

Full list of winners available from MGUK web site:
<http://www.macrogrouk.org.uk/>

MacroGroup UK Awards—The Jon Weaver PhD Prize 2016

The Jon Weaver PhD Prize sponsored by Synthomer rewards the best PhD students in the field of Polymer Science in the UK. The prize is awarded to a PhD student who has displayed an outstanding ability across a range of criteria throughout their PhD.



The 2016 Macro Group PhD Prize has been awarded to **Dr Charalampos Pappas** from the University of Strathclyde, Glasgow. His thesis was entitled “Supramolecular Systems Chemistry Using Peptides”. Charalampos worked under the supervision of Prof. Rein Ulijn and developed far-from-equilibrium chemical systems under the influence of different energy input and a methodology to autonomously identify supramolecular polymers based on peptides, creating dynamic peptide libraries, using spectroscopic and micro-

scopic techniques. During his PhD, Charalampos spent a year at the new Advanced Science Research Centre (ASRC), in the City university of New York (CUNY) after his supervisor took on the Director position in the nanoscience initiative, building also links and collaborations between Strathclyde and ASRC. His work has been published in leading chemical and polymer journals (e.g. Nature Nanotechnology, Angewandte Chemie, ACS Nano, Materials Horizons) and was selected as inside front cover in Materials Horizons and Nature Nanotechnology. It was also highlighted in other scientific journals and websites such as Chem Cell Press, Materials Today, Science Daily, Nanowerk, The Engineer and others.

Charalampos presented his research at various national and international conferences, winning a poster prize (Peptide Materials for Biomedicine and Nanotechnology, Italy, 2013). His research interests include dissipative self-assembly, complex reaction networks, systems chemistry and origin of life.

In January 2017, Charalampos was awarded a prestigious Marie Curie Postdoctoral fellowship, for which he is currently working on the fabrication of self-replicating molecules and the way that fully synthetic chemical systems can give rise to achieve life-like behavior, in the center of Systems Chemistry, in the University of Groningen, the Netherlands under the supervision of Prof. Sijbren Otto.

Charalampos Pappas



PPG Awards—APS DPOLY/PPG Exchange Lectureship



Professor Michael Hore from Case Western Reserve University has been chosen as the APS DPOLY/PPG exchange lecturer for 2017, and will give an invited talk, entitled ‘Investigations of Star, Cyclic, and Concatenated Polymers with Neutron Scattering’, at the Physical Aspects of Polymer Science meeting at Swansea University in September.

Professor Hore studied Physics and Mathematics at the University of Memphis, completing an M.S. thesis on phase separation in nanoparticle-containing immiscible fluids. He then moved to the University of Pennsylvania, where he was awarded a PhD in 2012 for his work on polymer-grafted gold nanorods in polymer thin films, carried out under the supervision of Professor Russell J. Composto. From 2012 to 2014, he worked as a National Research Council Postdoctoral Associate at the NIST Center for Neutron Research in Gaithersburg, under the guidance of Dr Boualem Hammouda, studying the small-angle neutron scattering of polymer nanocomposites and polymer solutions and the directed assembly of nanoparticles. In 2014, he was appointed to his current position at Case Western.

His research group uses a combination of theory, simulation and neutron scattering experiments to investigate a range of problems in polymer physics, and current research projects include the thermodynamics of co-nonsolvent systems, the synthesis of nonlinear polymer architectures and the development of new scattering models. He has received a range of awards and honours for both his research and teaching, including a National Science Foundation CAREER award that will provide a federal grant for research and education activities from 2017 to 2022.

Richard Pethrick (1942—2017)

Professor Richard Pethrick, Emeritus Professor at the University of Strathclyde, Glasgow, died on Monday, 12th June 2017.



Dick Pethrick had an extremely successful, fifty-year career in polymer science. According to the Web of Science and SCOPUS databases, he published 453 papers, from his first one, in 1968, related to his PhD work at the University of Salford with his supervisor Evan Wyn-Jones (Ultrasonic relaxation in relation to the structure of cyclic sulphites) to his last as a PhD supervisor published just in April this year (A dielectric study of water uptake in epoxy resins). That's already a remarkable achievement without considering his contribution to books, presentations at conferences, patents and the numerous private reports for companies.

As his career developed, from his PhD in the mid-60's, through his appointment to Strathclyde in 1969, his DSc from Salford in 1982, his professorship in 1984, his Fellowship of the RSE in 1986 through to his formal retirement in 2008, and indeed up to his last paper in April this year, the one scientific constant was his passion for the characterisation of molecular motion. Dick's great strength was in developing techniques that could probe that motion indirectly; the ultrasonic and dielectric techniques of those first and last papers, for example.

He was as much a physicist as a chemist. His single most referenced paper was one describing not the motion of molecules but a means of measuring the minute space between the molecules that is needed for the molecular movement to occur. The technique in question was Positron Annihilation Lifetime Spectroscopy.

As an academic, he collaborated with scientists the world over (professors, industrialists and students in Europe, Asia, Africa, the US). He had, for example, an extended and eventful sabbatical in India which made him lifetime friends.

Dick loved working with industry. That was in part because he was a natural problem-solver. Whether it was delivering an enhanced product, or solving a production difficulty, Dick loved the challenge of providing a solution. He worked with big multi-nationals such as Samsung, Rank Xerox, ICI in many of its guises including Tioxide and Dulux Paint, Mars Confectionery, Polaroid, the National Museums of Scotland (studying the decay of museum artefacts), Ford Motors (he was approached by the company to look into the embrittlement of what they thought were tough polypropylene car bumpers), Boeing Aircraft (he was instrumental in developing toughened thermoset resins with what was then called ICI Fiberite). He also worked with smaller companies and it pleased him to help a company thrive. Particularly with the smaller, more local companies he

PPG and MacroGroup News

liked to help business grow or secure employment. He was a proponent of what has become known as *knowledge exchange* long before it became fashionable.

Of course, as an academic, Dick was more than just a scientist. He was HoD twice, the second time for an extended period just when he was getting back up to speed after the first appointment. He was a very active head of department and probably his biggest success was seeing the extension of the Thomas Graham Building (promised for some 40 years) as well as extensive refurbishment of other accommodation across the Department.

As a colleague, he was generous with his time, his knowledge and his ideas. He was a mentor to colleagues, myself included, and he guided literally dozens of PhD students and young researchers to successful careers.

He exemplified the aphorism, if you want something done, ask a busy man. Maybe at times he sometimes did too much but Dick found it difficult to refuse a request for help or advice. That was his way. Relaxation was not a term that you would think featured in Dick's vocabulary, yet ironically, a phenomenon of the molecular motion in polymers which he studied so much is a process called "relaxation" and 128 of Dick's scientific papers centre around "relaxation". Maybe there was a subliminal message there!

John Liggat

Support for IOP early-career researchers

Early Career Researchers Fund

Providing financial support to early career researchers to attend international meetings and visit international facilities.

Bursaries up to the value of £300 are available.

Applications are considered on a quarterly basis and should reach IOP by 1 March, 1 June, 1 September and 1 December.

For further information, see iop.org or contact supportandgrants@iop.org.

PPG Bursaries and other support from IOP

IOP Research Student Conference Fund (available to PPG students)

The Institute of Physics provides financial support to research students to attend international meetings and major national meetings.*

Research Student Conference Fund (RSCF) bursaries are available to PhD students who are a member of the IOP and of an appropriate IOP group (such as the Polymer Physics Group). The IOP handles the application process but it is the relevant IOP group that makes the decision on whether to award the bursary and its value. Students may apply for up to £300 during the course of their PhD. Students may apply more than once, for example they may request the full amount or decide to request a smaller amount and then apply for funding again for another conference at a later stage.

Groups have limited funds to award bursaries and so students may not receive the full amount they have requested. If the full amount is not awarded students may apply again to receive further support for a different conference until they reach £300 overall.

Note that grants will normally cover only part of the expenses incurred in attending a conference and are intended to supplement grants from other sources.

All recipients are asked to produce a conference report for IOP and for publication in the Bulletin.

How to apply: RSCF applications are considered on a quarterly basis and should reach the Institute by: 1 March, 1 June, 1 September or 1 December; a decision will be made within eight weeks of the closing date. Your application must reach IOP by the deadline which is at least three months before the conference you wish to attend. It is strongly recommended that you submit your application early. For application details and an application form visit the IOP website under 'Support and Grants' (http://www.iop.org/about/grants/research_student/page_38808.html).

For further information please contact supportandgrants@iop.org.

* Please note that bursaries are not available for meetings organised by the Institute of Physics including those organised by IOP Groups.

MacroGroup Competition and Bursaries

The Jon Weaver PhD Prize 2017

MacroGroup UK are delighted to announce *the MacroGroup UK* "Jon Weaver PhD Prize" sponsored by Synthomer, directed at rewarding the best PhD students in the field of Polymer Science in the UK. The prize will be awarded to a PhD student who has displayed an outstanding ability across a range of criteria throughout their PhD. The recipient will receive a certificate and will be invited to deliver a prize lecture.

Nominations

The Macro Group UK PhD Prize is open to scientists who have received their PhD from a UK-based institution. Self-nomination is acceptable, however nominations should consist of:

- 1) a covering letter from the nominee (1 page maximum) describing how the nominee fits the selection criterion;
- 2) a letter from the PhD supervisor on headed paper (1 page maximum), confirming that the student has submitted a corrected thesis;
- 3) a letter from the external examiner of the thesis, in which the date of the viva is specified;
- 4) thesis abstract;
- 5) a brief (1 - 4 page) CV of the nominee including publications list.

The prize will be judged by a sub-committee considering the following criteria:

- Award of PhD between 1st January and 31st December 2017 (note submission of a corrected thesis is sufficient; the University does not have to have formally awarded the degree certificate).
- Evidence of transition to independence
- Fit to MacroGroup UK remit
- Quality and quantity of publications/outputs
- Novelty of Work
- Communication of Science
- The student **MUST** be a member of MacroGroup to be eligible



Applications must be sent electronically to the Macro Group secretary prior to the deadline.
Closing date: 30th March 2018, midnight.

D H Richards Memorial Bursaries (Macro Group UK)

- Are you:**
- **A student or postdoctoral researcher (PDRA) member of Macro Group UK?**
 - Desperate to go to an important conference?
 - Short of all the funding needed?

then the DH 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 and PDRA members that wish to attend a major conference in the area of polymer science, but are short of funds to make this happen. Only one student or PDRA from a particular research group will be granted a bursary for a particular conference. A student or PDRA can only receive one bursary award during their period of study. 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. The maximum bursary amount awarded will be £300 for a meeting in the UK and £500 for a meeting overseas. As a condition of receiving a bursary award, the student or PDRA will be required to write a short report on the conference they attended for publication in the Bulletin.

How to apply: Application forms can be downloaded from the Macro Group web site (<http://www.macrogroupphysics.org.uk/awards/bursaries.php>).

The *completed application form must be sent via email by the applicant's supervisor* to the Macro Group secretary in accord with the following deadlines - **1st February, 1st May, 1st August and 1st November**. Decisions will normally be announced less than 4 weeks after the deadline.

Ottewill International Travel Scholarship

The UK Polymer Colloids Forum (UKPCF) closed in 2015 and assigned its residual funds for use in awarding the new Ottewill International Travel Scholarship in honour of Professor Ronald Harry Ottewill OBE FRS (1927-2008). The award (worth up to £1000) is designed to assist, each year, one outstanding UK-based graduate researcher (whose research relates to polymer colloids) in presenting their work at an international conference outside the UK. The first award was made to Qian Sun from Cambridge University. Qian is carrying out PhD research into aqueous core, metal-coated colloidosomes under the supervision of Dr. Alex Routh and will use the award to attend and present at the 91st ACS Colloid & Surface Science Symposium in New York in July 2017.

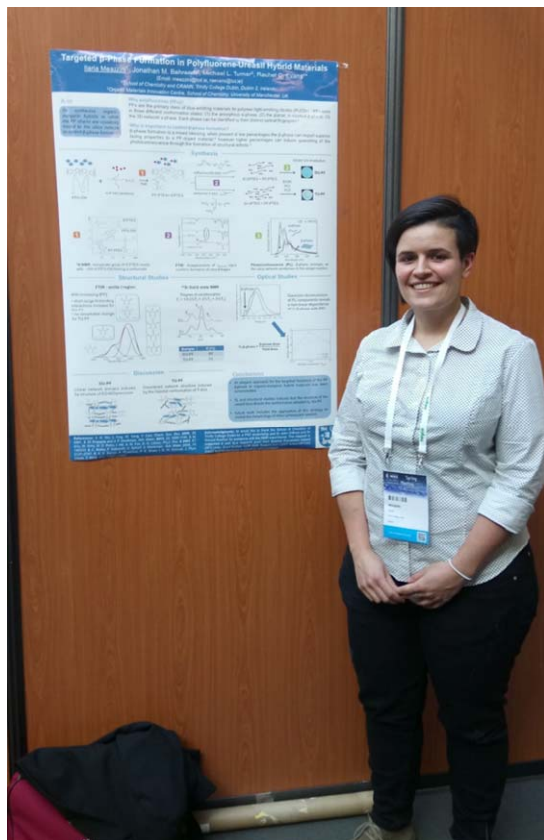
Applications are called for the second award of the scholarship. The conditions of the award and an application form can be obtained from Craig Jones of Unilever (by email to craig.jones@unilever.com). In short, applications for the 2018 award must be received by 15 October 2017 and all applicants will be informed of the outcome by 30 November 2017. The adjudicating committee comprises Brian Vincent (Bristol University), Peter Lovell (Manchester University) and Craig Jones (Unilever).

Pete Lovell

*on behalf of the Ottewill International Travel
Scholarship Award Committee*

Bursaries and Conference Reports**European Materials Research Society (EMRS) Spring Meeting**

21-26 May 2017, Strasbourg, France



The European Materials Research Society (EMRS) spring meeting was held at the Strasbourg Convention Centre from the 21st to the 26th of May, 2017. This meeting counted 26 parallel sessions covering a huge variety of research topics related to material science and its applications. Each symposium consisted of opening keynote talks of 30 minutes followed by 15 minutes oral presentations throughout the day and a poster session during the afternoon. The quality of the research presented at the conference was outstanding. In particular, I had the pleasure to attend a talk from Prof. Jean-Pierre Sauvage (University of Strasbourg) who won the 2016 Nobel Prize in Chemistry and hear about his work on molecular machines and a talk from Prof. Richard Friend (University of Cambridge), whose work in conjugated polymers is of great inspiration for my current research. I presented my work with two posters at two different symposia. My first project: "Targeted β -phase formation in poly(fluorene)-ureasil grafted organic-inorganic hybrids" was featured in the: "New materials for organic electronics: from synthesis to processing, characterization and device physics" symposium and my second work: "Synthesis of photoluminescent organic-inorganic ureasil nanoparticles for imaging applications" was featured in

the "Design and hierarchical assemblies of nanomaterials (nanoparticles, carbon materials, molecules)" symposium. Both symposia were extremely applicable to my projects and the poster sessions were a valuable opportunity to present and discuss my research with peers. I received many questions and had a good feedback on my work together with useful advices and ideas to further improve it. I would like to acknowledge the Macro Group UK and my supervisor, Dr Rachel C. Evans, for giving me the support without which I would have not be able to attend such a rewarding meeting .

Ilaria Meazzini (Trinity College Dublin)

Bursaries and Conference Reports

Macro Group Young Researchers' Meeting

June 19th-20th 2017, University of Edinburgh, Edinburgh, UK

The MacroGroup Young Researcher's Meeting is intended to provide PhD students and post-doctoral researchers working in the area of Polymer Chemistry, Physics and Engineering with an opportunity to present a talk or poster at a conference. It is an event which improves communication skills, revitalises research ideas, and is an opportunity for networking with students from across the UK.

This year, the YRM was held at Edinburgh. The event featured over 150 attendees, three plenary lectures with a focus on career progression, 32 student lectures and over 60 student posters. Both talks and posters were of an incredibly high standard. Prizes for top talks and posters were very tough to choose, with many deserving candidates (see included photo of the winners). We are incredibly grateful to all of our kind sponsors (Gold: University of Edinburgh, Infineum; Silver: Malvern, Merck-Sigma-Aldrich, RSC Materials Science; Bronze: Synthomer, TA Instruments, ICE Science) without whom the event would not have been possible. The YRM events are an essential opportunity for our young researchers, helping build the polymer community across the UK.

Mike Shaver (University of Edinburgh)



Bursaries and Conference Reports**16th European Student Colloid Conference**

June 2017, Florence, Italy

International Polymer Colloids Group (IPCG) Conference

June 2017, Spain

With the generous support of the D.H. Richards Memorial Bursary, awarded to me by the Macro Group UK, I was lucky enough to attend two superb colloidal science conferences this June - the first in Florence, Italy and the second in the Basque Country, Spain - and was given the chance to give an oral presentation at both.

The first stop of my tour was the European Student Colloid Conference, a student run event with over 150 attendees, 40 talks from PhD students, and a number of masterclasses from world leading professors. The quality of research (and indeed cutting questions) from this student body was astounding, demonstrating a bright future for colloid science. Topics ranged from fundamental academic research to the forefront of industrial application, with speakers from across the globe. As I'm sure you can imagine, Florence made for a brilliant location, with a conference dinner in the heart of the city and an inspiring tour of its history and architecture.

My next stop was the Basque Country in Spain (a switch from sweltering heat to periodic thunder storms), where we spent a week hearing from the boldest researchers in the field of colloids. The conference started with a two-day student-only conference, at which I was awarded a prize for my oral presentation (sponsored by the ACS), followed by 5 days of talks, poster sessions, wine tasting, many pintxos (a delicious Basque appetizer) and lots of 'networking' (always at the bar, for some reason). Again, research topics were wonderfully varied, and featured a balance of traditional and emerging applications for polymer colloids. This included morphology and film formation, hybrid colloids, colloids for life and biotechnological applications, and engineering colloids.

My thanks go to the Macro Group UK and to the D.H. Richards memorial bursary fund for their support, allowing me to attend these two weeks of great science.

**Ross Jagers (University of Warwick)**

Bursaries and Conference Reports**GRAPOL 1-day conference on polymer nanocomposites****April 2017, London, UK**

On 12th April 2017, more than 40 delegates gathered for the one-day conference on polymer nanocomposites sponsored by the Polymer Physics Group. The meeting took place in the elegant surroundings of 28 Portland Place in London, a short distance from the IoP's headquarters. This event brought together invited speakers from academia and industry on this highly topical area, covering the challenges of dispersing and characterising nanomaterials within polymers, the synthesis of advanced functional nanocomposites with tailored properties, and the real-world applications of nanocomposites in industry and commerce. During the conference we heard talks from Professor Karl Coleman (Durham, pictured above), Dr Benni Li (representing Professor Ian Kinloch, Manchester), Dr Joao Cabral (Imperial), Dr Biqiong Chen (Sheffield), Professor Dr Philippe Dubois (National Composite Centre of Luxembourg), and Dr Matthew Thornton (Haydale CS). In addition to the programme of talks, the conference included ample time for networking and a full, open poster session. The day was a great success with excellent interest in the talks and excellent questions from the audience. One of the meeting's aims was to build bridges between academia and industry and the audience contained a good mixture of representatives from both, and also an excellent representation from research students. Prizes for outstanding posters were awarded to Stephen Boothroyd (Durham) and David Hughes (Bristol). The academic committee would like to extend their thanks to Dawn Stewart and Laura Carrer from the IoP for their excellent organisation and to all delegates for attending to make such a successful day.

Dr Michael P. Weir (Sheffield) and Dr Richard L. Thompson (Durham).

Bursaries and Conference Reports

American Physical Society March Meeting

13th-17th March 2017, New Orleans, Louisiana, USA

First of all I was truly bowled over to be the winner of the Polymer Physics exchange lecturer award 2017. This was a real honour, as it was an award from the IOP group with which I have the strongest connection and have done throughout my career thus far. So after accepting the opportunity from Professor Keddie and the committee I was focussed on the American Physical Society meeting 2017. I must confess that I have never attended this meeting before, I have attended similar large parallel session meetings, such as the MRS in Boston and so could imagine the scale, breadth and need to walk/jog/run between talks. Colleagues had told me lots about the APS meetings but I was excited to find out what it was truly like for myself.



I arrived in New Orleans a few days before the start of the meeting, having booked one of the conference hotels near the French Quarter, which happened to be on Bourbon Street. This was an amazing place from which to sample this melting pot of a city, with its strong and distinctive colonial past, amazing architecture and frenetic energetic inhabitants and the excitable visitors who more often than not come to party.

I spent the afternoon prior to my invited talk visiting the Audubon insectarium, this had marvellous displays of insects, with a few that displayed wonderful structural colour, including an exhibit with live free flying butterflies.

My talk was scheduled for the Monday afternoon, so in the morning I attended a number of the DPOLY

sessions, in particular the symposium in honour of Professor Ed Kramer, I heard talks from Prof. Fredrickson on toughened bricks and mortar block copolymers phases, coacervates by Prof. Rubinstein and some work firing projectiles at ultrathin polymer films by Prof. Ned Thomas to examine failure modes.

My talk was scheduled in the joint DPOLY DBIO session, and I was pleased to see the familiar face of Prof. Darrin Pochan in the same session, who gave an inspirational talk on designing peptides to create hierarchically self-assembling structures. I was introduced by Prof. Olsen, himself a former DPOLY exchange lecturer who was at the Surrey Biennial meeting. The title of my talk was **self-assembled structural color in nature** and highlighted the many different structures that are used in the natural world to generate colour, from highly vivid iridescent reflector Bragg stacks, to the more subtle unidirectional sponge like pore structures found in the feathers of the Jay. It also included our ongoing work looking at the ultra white beetle structures, often claimed to be the whitest structures in existence. My aim was to highlight the role of self-assembly in creating these structures and how we can begin to think of ways to create artificial ways of generating such colours synthetically. I am grateful to the organisers for putting me at the end of the session as it allowed a good cross section of questions. One of which was from Dr Katherine Wright on our as yet unpublished work looking at the colour of the Dodo and led to her coming to visit us in Sheffield very recently. This was to discuss our outreach work using the theme of structural colour, and also meet with our artist in residence Paul Evans.

In the evening on the day of my talk I was invited to have dinner with the DPOLY committee, and it was a truly great evening of Cajun food, dancing and a rather odd musical display on what looked like a washboard! The committee could not have been more hospitable and welcoming for which I am very grateful.

Bursaries and Conference Reports

The rest of the week flew by, with session on session on many different areas of polymers and biopolymers but I must mention the excellent talk by Prof. Segalman on marine anti-fouling coatings using polypeptoid coatings, this was a remarkable scientific piece of work by a multi-disciplinary team using a combinatorial approach.

This meeting has made a lasting impression on me and it has left me thinking about many possible areas of future work. I very much look forward to attending future APS meetings. I must say thank you to the Polymer Physics Group and its members for all the support, comradeship and intellectually stimulating talks and discussions over the past ten years!

Dr Andrew Parnell, University of Sheffield

UK Colloids

July 2017, Manchester, UK

On the 10th – 12th July, I attended UK Colloids, in the wonderful city of Manchester. I feel incredibly fortunate to have been awarded a Research Student Conference Bursary but the Institute of Physics, which contributed to the travel and accommodation costs associated with the conference.

The conference brought together leading academics and scientists from Industry, to share and discuss the latest advances in colloidal science. The conference had four plenary lectures, all of which were engaging and enjoyable for the audience. A particular highlight for me was my work being featured in the 'Thomas Graham Lecture' by my supervisor, Professor Joseph Keddie. The Thomas Graham Lecture is awarded to those who are in the prime of their research careers, have established an international reputation in colloid science, have already made distinguished contributions to the field of colloid science, and have the prospect of a further 15+ years of active research to come. Another highlight for me was Professor Vinodhan Manoharan's plenary lecture 'Understanding and Harnessing Entropy in Colloids'. The balance of academic and industrial speakers/attendees was excellent, as well as the largest student body the conference has ever seen. As a PhD student, coming to the end of my PhD studies, the opportunity to discuss career opportunities with those from academia and a range of industries was invaluable to me.

I also had the opportunity to present my poster, titled 'Stratification and Ordering in Colloidal Films: Effect of Size Ratio'. The poster session was well organised, with conference attendees taking the time to read all the posters, while I had many in-depth conversations with academics, industrial scientists and students about my work. It was also a wonderful opportunity to publicise a forthcoming publication, based on the work in the poster, which received a lot of interest.

Outside of the conference itself, the conference dinner was held in the fantastic setting of Old Trafford Football Stadium. As a Manchester United fan myself, to experience the museum and eat in the stadium restaurant, overlooking the pitch, was wonderful. I am incredibly grateful to the IOP for awarding me this bursary, which supported my attendance at a fantastic conference.

David Makepeace, University of Surrey

Bursaries and Conference Reports

European Polymer Congress 2017

2-7 July 2017, Lyon, France



The European Polymer Federation's biannual conference the European Polymer Congress boasts one of the largest polymer science conferences in the world. The 2017's conference celebrated the 30th anniversary of this prestigious conference and was hosted in the majestic Centre Congrès de Lyon located between the river Rhone and the Parc de la Tête d'Or. The conference aimed to illustrate everything "From last trends in polymer science to cutting-edge industrial innovations". The conference catered for all divisions throughout polymer science with parallel sessions running throughout each day, including the future for the polymer industry.

Launching the conference chemistry Nobel Prize winner 1987 Prof. Jean-Marie Lehn of Strasbourg University presented a lecture titled 'Dynamers: Toward Adaptive Dynamic Polymers' followed by Prof. Dr. Rolf Mülhaupt talking about synthesising ultra-high molecular weight polyethylene. The ensuing conference was made up of some very intriguing plenary, keynote and contributed talks. Poster sessions made for energetic discussions with very enthusiastic scientists representing both academia and industry. The standout speaker of the conference was Dr. Jean-François Lutz of Institut Charles Sadron, who gave a presentation master class in both style and delivery. His engaging lecture 'Digital Polymers: A New Class of Man-made Macromolecules' borrowed from well-established biochemistry synthesis to define a new method for molecular information storage and tandem mass spectrometry was utilised as the main resource to read the encoded information.

I am extremely thankful to the MacrogroupUK for awarding me the DH Richards memorial grant, without it I would have not have had the opportunity meet such interesting and likeminded scientists. With the grant I was able to present my contributed talk titled 'Aliphatic Polyesters Prepared From 1,3-dioxolan-4-ones'. Many audience members engaged following the talk by asking questions, and discussing the work with me throughout the rest of the conference.

Stefan Cairns (University of Edinburgh)

Advance polymers via Macromolecular Engineering 2017

21-25 May 2017, Ghent, Belgium



The 12th international conference on advance polymers via macromolecular engineering (APME 2017) began with a whistle-stop summary of the progress in polymers by Prof. M. Sawamoto, who concluded with some thought provoking questions and challenges for the field of macromolecular engineering. With over 500 attendees from 43 countries around the world, it was a perfect opportunity to see novel synthetic methods/routes from engineers with a diverse range of applications in mind. The content covered everything from self-assembled structures to information-encoded polymers and multiblock copolymers to vitrimers. Attendees were treated to an abundance of historic Flemish architecture in the picturesque Ghent. There was also ample opportunity to network over the local beers. I appreciate

the opportunity to present my work and discuss my research with other scientists in my area and complementary fields. I would like to thank the Macro Group UK for awarding the travel bursary and making it possible to attend this conference.

Dean Carroll (Imperial College London)

Forthcoming Meetings and Conferences

Medal Winners Symposium



We are pleased to announce our annual Macro Group Medal Winners Symposium will be held at Aston University, Birmingham, UK on Fri 10th November 2017.

Our medal-winning speakers will be:

[Professor Ian Hamley \(2016 Macro Group UK Medal\)](#)

[Dr Theoni Georgiou \(2016 Young Researchers Medal\)](#)

[Professor Nikos Hadjichristidis \(2016 Medal for Outstanding Achievement\)](#)

[Dr Giovanna Sicilia \(2015 Jon Weaver PhD Prize\)](#)

[Dr Charalampos Pappas \(2016 Jon Weaver PhD Prize\)](#)



Date: Friday 10th November 2017

Location: G8, Main Building, Aston University

Time: 9am - 5pm

For more information and to register please contact:

Elena Patyukova,
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Contact us: e.patyukova@aston.ac.uk

Forthcoming Meetings and Conferences

IOP Institute of Physics

Physical Aspects of Polymer Science 2017

13–15 September 2017, Swansea University, Bay Campus, Swansea, UK



The 28th biennial meeting of the Polymer Physics Group will be held at Swansea University. This event will provide an opportunity for researchers from both academia and industry to discuss the latest innovations in understanding and manipulating the physical behaviour of a wide range of polymeric systems.

Invited Speakers and Prizes

Founders' Prize Lecture

Mark Warner (Cavendish Laboratory, University of Cambridge, UK)
Responsive polymers in the solid state

Ian Macmillan Ward Prize Lecture (Best Student Paper)

Charalampos Pappas (University of Groningen, The Netherlands)
Dynamic peptide libraries for the discovery of supramolecular nanomaterials

APS-DPOLY Exchange Lecture

Michael Hore (Case Western Reserve University, USA)
Investigations of Star, Cyclic, and Concatenated Polymers with Neutron Scattering

Invited speakers

Tatiana Budtova (MINES, ParisTech, France)
Bio-aerogels

Nigel Clarke (University of Sheffield, UK)
Fundamental polymer physics in nanocomposites

Rumiana Dimova (Max Planck Institute of Colloids and Interfaces, Potsdam, Germany)
Lipid membranes exposed to aqueous two-phase systems: Membrane wetting, vesicle budding and spontaneous tubulation

Andreas Walther (Freiburg University, Germany)
Adaptive and autonomous bioinspired self-assembled material systems

Alexei Likhtman Poster Prize

Early Career Researchers (ECRs) who present a poster at the meeting are eligible for the Alexei Likhtman poster prize. The winner will receive £150 and there are two runner-up prizes of £75. An ECR may be an undergraduate or postgraduate student, or a researcher who has been awarded a PhD degree within the five years preceding the date of the meeting.

For further details, see the IOP conference website; <http://paps17.iopconfs.org/Home>.

Forthcoming Meetings and Conferences



International Symposium on Ionic Polymerization – IP 2017

September 17th – 22nd 2017

Durham University

Online registration is open!

We are pleased to announce that online registration for IP 2017 is now open. IP 2017 - the 12th International Symposium on Ionic Polymerization will be held at Durham University in the UK from 17th to 22nd September 2017, organised and hosted by the Durham Centre for Soft Matter and endorsed by IUPAC*. IP 2017 will be the latest in a series of successful meetings, the most recent of which were held in Bordeaux (France, 2015), Awaji (Japan, 2013), Akron (USA, 2011) and Krakow (Poland, 2009).

IP 2017 has its roots in the series of international symposia on Cationic, Anionic, and Ring-Opening Polymerizations, which were merged into the inaugural International Symposium on Ionic Polymerization, held in Istanbul (Turkey, 1995).

The focus of IP 2017 will be on academic and industrial research in the areas of anionic, cationic and ring-opening polymerization mechanisms. Contributions related to other methods of living/controlled polymerization (catalytic, controlled free-radical and step-growth polymerizations) are welcome.

CALL FOR ABSTRACTS

We invite all participants to **submit an abstract** for contributed oral presentations (20 minutes), short talks for younger researchers (15 minutes) or posters. The deadline for the submission of abstracts is 31st May 2017.

For further information and to register online, visit conference the website <https://www.dur.ac.uk/soft.matter/ip2017/>
To be added to the mailing list to receive updates, please contact l.r.hutchings@durham.ac.uk

Palatinate Sponsor



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Silver Sponsors



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*IUPAC endorsement implies that entry visas will be granted to all bona fide chemists, provided application is made not less than six months in advance. If a visa is not granted two months before the meeting, the Organizers and the IUPAC Secretariat should be notified by the applicant.



MacroGroup UK Young Researchers Meeting

MacroGroup UK YRM 2018

July 2018

Royal College of Surgeons Ireland (RCSI), Dublin ,Ireland

Opportunity to exhibit your work (oral and poster presentations) and network with peers from around the UK and Ireland.

Invited Speakers TBA

Registration (**€40/£37**) includes scientific sessions, refreshments, lunch, wine reception and BBQ

Registration and Abstract submission opens **31st January 2018**

For more details contact Shona O'Brien/Dr Ruairí Brannigan *via* MacroGroupYRM2018@gmail.com

Date(s)	Title and Location	Organiser
6-8 September 2017	2nd Edwards Symposium. Challenges and Opportunities in Soft Matter, University of Cambridge, UK	https://www.turing-gateway.cam.ac.uk/event/tgmw43
6-8 September 2017	18th Annual Recent Appointees in Polymer Science meeting, University of East Anglia, UK	http://www.raps.org.uk/raps-meetings
11-12 September 2017	Recent Appointees in Materials Science Conference 2017, University of Exeter, UK	http://rams2017.org/
13-15 September 2017	Physical Aspects of Polymer Science, Swansea University, UK	http://www.iop.org/calendar
17-22 September 2017	International Symposium on Ionic Polymerization, Durham University, UK	https://www.dur.ac.uk/soft.matter/ip2017/
10 November 2017	MacroGroup UK Medal Winners Symposium, Aston University UK	e.patyukova@aston.ac.uk
13-16 November 2017	International Saint Petersburg Conference of Young Scientists: Modern Problems of Polymer Science	http://young.macro.ru/en/
8 December 2017	Innovations in Encapsulation 17, Royal Society of Chemistry, London, UK	http://www.rsc.org/events/detail/26400/innovations-in-encapsulation-17
July 2018	MacroGroup UK YRM 2018, Dublin, Ireland	MacroGroupYRM2018@gmail.com