POLYMER SOCIETY ANNUAL REPORT FOR 2016

1. Board membership

There were no changes in the Board Membership during 2016. The active representation and participation from the British Plastics Federation is still unresolved but still being sought.

The Board members, fifteen in total, are currently Dr A Wood (Chairman), Mr M Bennett, Prof J Busfield, Prof P D Coates, Mr J Czerski, Mr J Dorken, Dr Farai Carter, Dr M Hodgson, Dr A Gill, Ms M Ingle, Mr P Law, Mr S Patrick, Dr I Robinson, Ms K Satterthwaite, Dr A Tinker and Mr S Taylor (a corresponding member representing the IOM3 Southern Africa Section).

2. Board meetings

We continued to have three meetings in the year.

- 16th January at IOM3 London – 57% attendance.
- 16th May at the University of Bradford – 60% attendance.
- 4th October at Artis, Melksham – 33% attendance.

3. Activities during 2016

3.1. Technical programme

The Society continued to have an active technical programme during 2016. The ‘Rubber in Engineering Group’ (RIEG) continued to mount successful seminars and conferences.

The Manchester Polymer Group held two one day seminars. The first of these was in collaboration with the RIEG and was titled ‘Rubber – Resilient Future 3’. The second was titled ‘Plastics – The Future, Updates and Recent Developments’ at which Stuart Patrick delivered the Swinburne Lecture.

A joint meeting was held with the East Midlands Packaging Society at Birmingham University concerning the sustainability of polymer packaging.

Summary
Further details of these and future events can be found in the Appendix.

3.2. Web-site developments

The Polymer Society and the RIEG continue to maintain a high position in the league table of home page views of all the technical divisions and committees. Clearly, the activity relating to the PVC microsite would be expected to increase in the run-up to PVC2017. The number of hits on the ‘Polymer Processing and
Engineering’ (PPE) microsite is very low due to the relatively low activity in this area coupled with the fact that PPE is no longer selectable on the list of communities when setting up preferences on the IOM3 website.

3.3. Engagement with technical community and/or local societies,

The relationship with the Polymer Processing Society (PPS), whilst formally acknowledged, still needs to be developed further. Good links continue to be maintained with the KTN through the Polymer Industry Advisory Group. The Chairman currently sits as a member on the Industrial Advisory Board at Queen Mary University of London. Links have been developed with the Museum of Design in Plastic (MoDIP), sited at the Arts University of Bournemouth, and a member of Polymer Society Board sits on the Board of MoDIP. We continue to have difficulties ensuring that the British Plastics Federation takes up its seat on the Polymer Society Board. There have been numerous communications with the employees of the BPF which have all been very positive but unfortunately they have failed to attend meetings to date. The Society published two newsletters in the year, the latter achieving a hit rate of 30% which is believed to be very good.

3.4. Contributions to IoM3 house journals

**Materials World**
Direct contributions to Materials World have been made over the year.

**Plastics, Rubber and Composites: Macromolecular Engineering**
PRC:ME continues to have a good impact factor, publishing excellent papers related to polymers. Free access to the Journal is available on-line to members.

3.5. Other

- **Sustainability**

  Stuart Patrick continues to represent us on the SDG but it is recognised that the trade associations in our sectors are already working extensively in the area of sustainability and so we confine ourselves to working within the aims of the Institute’s Sustainability Policy.

- **Awards and Prizes**

  Awards in 2016 included:

  **Swinburne Medal**
  Awarded to Stuart Patrick whose industrial career spanned nearly 50 years within the PVC industry. Stuart has also made significant contributions to the Institute, the Manchester Polymer Group and the Institute’s PVC Committee, during a period when the PVC conferences have been amongst the most well-attended and successful technical
conferences ever held by the Institute. Stuart spent eight years as chairman of the Polymer Society Board.

**Hancock Award**
Awarded to Martyn Bennett. Martyn is responsible for all aspects of the business, managerial, financial and technical of ARTIS which was set up in 2007 as the materials development centre at Avon Polymers. Prior to this, Martyn was the R&D Manager at Avon Polymers. Martyn has been the most regular contributor to the RIEG Technical Afternoon Discussion Meetings for more than a decade. In addition, since 2010 he assumed a position on the Polymer Society board. Martyn has made significant contributions in a wide range of disparate fields to develop new products, processes and seek out new applications for rubber materials. He has also contributed significantly academically through sitting on advisory boards at a number of establishments including Trowbridge College, Loughborough University is currently a visiting lecturer at Queen Mary, University of London.

**James S Walker Award**
This Award is giving for a specific project on the study of polymers and in 2016 as awarded to Anna Constantinou from Imperial College. Anna’s project concerned the development of novel thermos-responsive polymers that can be used as injectable gels for tissue engineering as well as for 3-D printing. The title of her project was Thermo-responsive Gels based on ABC Triblock Copolymers: Effect of Composition and Hydrophobicity’.

**Alan Glanville Award**
This was awarded for the following paper in PRC:ME.
D. Li, T. Zhai, Q. Gong, G. Fei, H. Xia, Effect of processing temperature on structure and properties of microinjection moulded thermoplastic polyurethane/multiwalled carbon nanotube composites.

Further information on the awards can be found at http://www.iom3.org/iom3-awards-2016.

- **Student Design Innovation in Plastics (DIP)**
The Worshipful Company of Horners and Institute continue to jointly sponsor the DIP Award with the focus of encouraging plastics design innovation and best practice in future product designers in the UK and Ireland. Established in 1985, Design Innovation in Plastics is the longest running student plastics design award in Europe. In 2016 the theme was Products for Pets and the winner was Annabel Burton from Nottingham Trent University. Her development was the Surcingle Buckle, a new quick release buckle on the strap that fastens round a horse’s girth. Further information can be found at http://www.designinnovationplastics.org/previous_winners.htm.
• Polymer Study Tours

The Tours were more successful than in 2015 with the Edinburgh event being full with 20 attendees. The Manchester and London events had 13 and 15 attendees respectively, some of those attending the Manchester event having been transferred from Edinburgh. The programme will carry on for 2017 and the Worshipful Company of Horners will continue to support it financially along with considerable industrial support as well as from the Institute’s Education department.

• Education in the Polymer Industries

Dialogue has been continuing with the Elastomer Training Action Group (ELTAG), the group looking at training in the rubber industries with a view to developing training programmes. ELTAG has been facilitating the continuation of a BTEC Course on Rubber Technology which it had been hoped to run in the latter half of 2016 but will now take place in the first half of 2017 and it is expected will be repeated in the second half of the year. Linking such courses to the Institute has been explored and seems possible. It is generally acknowledged that educational provision for the polymer industries is lacking and the Polymer Society will continue to support educational activities relevant to the rubber and plastics industry and, where appropriate, seek to link such training to technician/professional membership of the Institute.

4. Strategy and Objectives for 2017 and Beyond

4.1. Opportunities and constraints

The main constraint still remains the need for improved ongoing contact between the Institute and the industries in the polymer sector.

Discussions continue regarding the educational provision within the rubber industry with a view to the organisation of some form of formal training provision at a range of levels. This is seen as an opportunity to engage both the industry and the employees in the industry with the Institute and develop better relationships. The Board engages directly with discussions within the rubber industries, ELTAG, and Ian Bowbrick sits on the BPF Skills and Education Committee, the equivalent body for the plastics industry and so good links are maintained in order to make progress in that sector.

The Polymer Society Board would like to acknowledge the administrative and technical support provided by Dr Keith Watkinson to both the Board and the Rubber in Engineering Group.

4.2. Specific targets for 2017

PVC2017 is a major conference for the Institute and the primary target for 2017 will be to make sure that the conference continues the success enjoyed in previous years.
2017 will see the continued development of the educational provision for the polymer industries and the close linking of this with the Institute. There are considerable synergies to be had in developing courses for the plastics and rubber industries and hopefully these can be exploited to limit the effort required to develop resources.

The relationship between the Board and the Polymer Industry Advisory Board of the Materials KTN needs to be maintained and strengthened in order to ensure strong links between the Institute, the KTN and Innovate UK. Strong links to the KTN and Innovate UK are required so that the Institute can be seen by the industries to be a significant contributor to research and development activities within the sector.

Further efforts will be made to engage the BPF who seem prepared to collaborate.

Joint activities with the Packaging Society were developed during 2016 and the RIEG continues to organise joint meetings with both local societies, the MPG, and other societies within the Institute, for example the SAA. It is hoped that these collaborations will continue and extend to other Divisions within the Institute.

The RIEG has a strategy to draw in new audiences by collaborating with other organisations, running events away from London and to run larger events that are international in outlook on a two or three year cycle. The afternoon technical discussions organised by the RIEG are currently sponsored by Artis and are thus free to attend.

It is intended that the Board explore the possibility of organising similar sponsored events with a more generalised polymer theme. Discussions are underway with potential speakers and sponsors.

**Specific targets for the 3 years beyond 2017**

Outline plans for the following four years would include:

- Maintain conference and meeting activities to ensure the revenue stream into the Institute.
- Progress the training agenda which is under development and attempt to link this closely with the Institute.
- Maintain and develop closer links with other Divisions within the Institute.
- Attempt to develop closer links with the few remaining local polymer societies.
- International Rubber Conference (IRC) 2019 is a large conference and will require considerable planning by the Institute and the Society. This will commence in earnest during 2017.
## Appendix: Technical Programme as of December 2016

<table>
<thead>
<tr>
<th>Date (YY/MM/DD)</th>
<th>Status (Held /Progressing /Planned)</th>
<th>Title</th>
<th>Location</th>
<th>Organising Division(s) /Committee(s) /Collaborators</th>
<th>Financial Underwriter (IOM3/ Local/ Other)</th>
<th>100% Target No’s</th>
<th>Actual No’s</th>
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<tbody>
<tr>
<td>16th March 2016</td>
<td>Held</td>
<td>Pack to the future</td>
<td>University of Birmingham</td>
<td>East Midlands Packaging Society/ Polymer Society/ University of Birmingham</td>
<td>Local</td>
<td>55</td>
<td>70</td>
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<tr>
<td>8th April 2016</td>
<td>Held</td>
<td>Rubber Sustainability</td>
<td>IOM3, 297 Easton Road</td>
<td>RIEG</td>
<td>IOM3</td>
<td>45</td>
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<td>16th May 2016</td>
<td>Held</td>
<td>Rubber – Resilient Future 3</td>
<td>Old Trafford Cricket Ground, Manchester</td>
<td>RIEG and MPG</td>
<td>Local</td>
<td>86</td>
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<tr>
<td>1st July 2016</td>
<td>Held</td>
<td>Rubber Manufacturing</td>
<td>Nottingham University</td>
<td>RIEG/ University of Nottingham</td>
<td>Local</td>
<td>44</td>
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<tr>
<td>16th September 2016</td>
<td>Held</td>
<td>Tour of the Weir factory</td>
<td></td>
<td>RIEG</td>
<td></td>
<td>22</td>
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<tr>
<td>28th November 2016</td>
<td>Held</td>
<td>Plastics – The Future, Updates and Recent Developments</td>
<td>Old Trafford Cricket Ground, Manchester</td>
<td>MPG</td>
<td>Local</td>
<td>38</td>
<td></td>
</tr>
<tr>
<td>7th – 8th December 2016</td>
<td>Held</td>
<td>Innovations in Rubber Products</td>
<td>Royal Aeronautical Society, London</td>
<td>RIEG</td>
<td>IOM3</td>
<td>100</td>
<td>115</td>
</tr>
<tr>
<td>7th April 2017</td>
<td>Progressing</td>
<td>Adhesives</td>
<td>IOM3, 297 Easton Road</td>
<td>RIEG and Society or Adhesion and Adhesives</td>
<td>IOM3</td>
<td></td>
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<tr>
<td>15th May 2017</td>
<td>Progressing</td>
<td>Rubber and Elastomers – Sustainability meeting tomorrow’s challenges</td>
<td>Old Trafford Cricket Ground, Manchester</td>
<td>MPG</td>
<td>MPG</td>
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<tr>
<td>25th – 27th April 2017</td>
<td>Progressing</td>
<td>PVC 2017</td>
<td>Brighton</td>
<td>PVC Committee</td>
<td>IOM3</td>
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<td>30th June 2017</td>
<td>Progressing</td>
<td>Rubbery Robotics</td>
<td>Bristol Robotics Centre</td>
<td>RIEG</td>
<td>IOM3</td>
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<tr>
<td>25th – 27th July 2017</td>
<td>Progressing</td>
<td>PPE 17</td>
<td>University of Bradford</td>
<td>University of Bradford</td>
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<td>September 2017</td>
<td>Progressing</td>
<td>Factory visit - details to be confirmed</td>
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<td>Dec 2017</td>
<td>Progressing</td>
<td>Self-Healing Polymers</td>
<td>IOM3, 297 Easton Road</td>
<td>RIEG</td>
<td>IOM3</td>
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<td>10th – 12th September 2019</td>
<td>Progressing</td>
<td>IRC 2019</td>
<td>Kia Oval, London</td>
<td>RIEG/ Polymer Society</td>
<td>IOM3</td>
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<td>2023</td>
<td>Progressing</td>
<td>RubberCon</td>
<td>TBD</td>
<td>RIEG plus others</td>
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