ENERGY MATERIALS GROUP (EMG) ANNUAL REPORT FOR 2015

1. Board membership (merged boards of EMG and Mat UK Energy Materials Working Group)

- Prof. Stuart Irvine (Chairman), OpTIC Centre, Glyndwr University
- Peter Flewitt (Vice-Chairman), University of Bristol
- Ian Warrington (Group coordinator), IOM3
- Derek Allen, Innovate UK
- Keith Barnes, Chairman, Packaging Society
- Keith Harrison, Chairman, Surface Engineering Division Board
- Emma Leighton, Taylor & Francis
- Vic Kearley, Representing I Wood Soc
- John Kilner, Imperial College
- Paul Mummery, Manchester University
- John Oakey, Cranfield University
- Philip Sargent, Dept Energy and Climate Change
- Allan Walton, University of Birmingham
- Barry Burdett, WB Burdett Associates (resigned November 2015)
- Professor Scott Lockyer, E.ON Technologies
- Roger Morrell, NPL - EMWG
- Chris Bagley, Energy KTN - EMWG
- David Hodgson, UKTI Energy - EMWG
- Peter Barnard, Babcock Doosan - EMWG
- John Rothwell, TWI - EMWG
- Robert Quarshie, Materials KTN - EMWG
- Lien Ngo, Innovate UK - EMWG
- Rachel Thompson, Loughborough University - EMWG
- Tony Fry, NPL - EMWG
- Gordon McColvin, Alstom Power - EMWG
- Alan McLelland, NAMRC - EMWG
- Mike Gorley, CCFE
- Mohammed Adeel Shaikh, Amec Foster Wheeler

Corresponding
- Faye Smith, UKTI
- Melanie Boyce, IOM3
- Viki Taylor, IOM3

The board has grown in the past year to 28 plus 3 corresponding members. The growth in board membership is due to the merger of the EMG board with the MATs UK Energy Materials Working Group (EMWG). This merger has gone smoothly and new members were welcomed to the June and November meetings of the EMG. The former member of EMWG are indicated in the list above. Two Board members (Derek Allen and Scott Lockyer were members of both boards).
2. Board meetings
The same format of three board meetings a year have been held as in previous years with the following location, dates and attendance numbers: 1CHT 22/01/15 (6), 1CHT 3/06/15 (12) and ER 4/11/15 (10)

3. Activities during 2015

3.1. Technical programme
The 2015 Annual lecture was given by Professor Steven Cowley FRS, Director of the Culham Laboratory on Fusion Energy who gave a captivating lecture on the challenges for materials under extreme conditions in the new ITER fusion reactor. This was one of the last events to be held at 1CHT and drew a broad audience from industry academia and the public sector. The topic for the EMG annual lecture will be Energy Storage and will be given by Professor Peter Hall, Sheffield University. EMG also supported the Parsons conference in Loughborough which attracted a wide range of talks on energy materials for large power generation. An experimental approach was taken to organising a symposium on Energy Materials at the EUROMAT conference in Warsaw (September 2015). This was a success and drew together talks and posters on a diversity of energy materials, including nuclear, energy storage, solar PV and magnetic materials. Targets for 2016 are to hold at least one joint meeting with another division, hold the EMG Annual Lecture in June, hold another Sustainable Materials for Emerging Energy Storage (SMEET) workshop and hold a joint conference on Design for Energy Materials Sustainability.

3.2. Web-site developments
While we find a new web master the EMG micro-site has been kept up to date by the IOM3 coordinator, Ian Warrington migration to the new site has been successful and is an effective channel to keep EMG members informed about EMG board activities.

3.3. Engagement with technical community and/or local societies,
Welcome letters are provided to new EMG members through the membership department. An EMG newsletter will be introduced in 2016. The EMG have been active in providing material to Materials World as a means to inform members. The September issue of MW was a themed Energy materials issue and EMG featured in “Divisional Focus”.

3.4. Contributions to IoM3 house journals
The EMG Board has continued to take an active interest in selection of Energy Materials themed papers from Materials Research Innovations (MRI) for the virtual
Energy Materials Journal (EMJ). A special issue of MRI was published in December 2015 containing selected papers from the Photovoltaic Science and Technology (PVSAT) conference held at Leeds University in April 2015.

The EMG Chair and Vice Chair, Professors Stuart Irvine and Peter Flewitt, act as guest editors for MRI and work with the wider energy materials community to seek topics for future special issues.

3.5. Other,
The EMG board will continue to review the most resource efficient methods for conducting business and delivering a high quality service to IOM3. Increasing use is being made of telephone conferencing on themed issues to increase the activity and impact of the EMG board without increasing the number of contact meetings requiring travel.

4. Strategy and Objectives for 2016 and Beyond

4.1. Opportunities and constraints
The major opportunity for 2016 is to deliver an update of the Energy Materials Strategic Research Agenda (SRA) which will be used to inform R&D funding bodies of priorities in energy materials. Potential constraints would be to resource the effort to project manage the process and ensure that an appropriate consultation takes place with the energy materials industry and key players.

4.2. Specific targets for 2016
- Hold at least 1 Board meeting outside of London
- Introduce EMG Newsletter
- Hold the Third EMG Annual Lecture in June
- Hold 2 joint events with other divisions
- Hold a SMEET 3 workshop
- Identify international events for future EMG participation
- Update Energy Materials SRA
- Seek additional links to other professional institutes and societies
- Facilitate 2 themed special issues on energy materials with an IOM3 journal

4.3. Specific targets for the 3 years beyond 2016
The strategic targets for future years will be reviewed by the EMG Board in 2016. Future targets on the current plan include the following:
- Further development of membership communications
- Identify further opportunities for joint conferences to stimulate topical technical themes with both internal and external links
- Continue to develop the EMG Annual lecture as a high profile event
- Develop Journal Publication link to achieve high quality themed issues on energy materials
- Develop UK and International strategic links.

5. Other matters

Appendix: Technical Programme as of December 2015
<table>
<thead>
<tr>
<th>Date</th>
<th>Status</th>
<th>Title</th>
<th>Location</th>
<th>Organising Division(s)/Committee(s)/Collaborators</th>
<th>Financial Underwrite r (IOM3/Local/Other)</th>
<th>100% Target No’s</th>
<th>Actual No’s</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/6/2015</td>
<td>Held</td>
<td>Nuclear Fusion Energy – Annual EMG lecture</td>
<td>1 CHT</td>
<td>EMG</td>
<td>IOM3</td>
<td>80</td>
<td>67</td>
</tr>
<tr>
<td>14/9/2015</td>
<td>Held</td>
<td>Parsons Conference</td>
<td>Loughborough</td>
<td>HTM, SED EMG</td>
<td>IOM3</td>
<td>86 budget</td>
<td>90</td>
</tr>
<tr>
<td>20/9/2015</td>
<td>Held</td>
<td>Energy Materials Symposium at EUROMAT</td>
<td>Warsaw, Poland</td>
<td>EMG</td>
<td>EUROMAT</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>2-3/6/2016</td>
<td>Planned</td>
<td>Low Temperature Ductility Workshop</td>
<td>Loughborough</td>
<td>HTM</td>
<td>IOM3</td>
<td></td>
<td></td>
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<tr>
<td>22/6/2016</td>
<td>Planned</td>
<td>EMG Annual lecture on Energy Storage</td>
<td>297ER</td>
<td>EMG</td>
<td>IOM3/EMWG</td>
<td>80</td>
<td></td>
</tr>
<tr>
<td>Oct 2016</td>
<td>Planned</td>
<td>Design for Energy Materials Sustainability</td>
<td>297ER</td>
<td>EMG/SDG/SED</td>
<td>IOM3</td>
<td>100</td>
<td></td>
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