



Member Networks Annual Report Form

Reporting events held in 2018 and those planned for 2019

In line with the rules for member networks and to enable us to better support our networks and their activities all member networks (Local Sections, Interest Groups and Analytical Division Regions) are asked to complete this form and return it to networks@rsc.org or by post to: Networks Team, Royal Society of Chemistry, Thomas Graham House, Science Park, Milton Road, Cambridge, CB4 0WF.

Deadlines

Deadline for receipt of Financial Accounts by RSC Finance Team: **8th February 2019**
 Deadline for receipt of Annual Report by Networks Team: **25th February 2019**

If there is any reason that your committee will **not** be able to meet either or both of these deadlines please inform networks@rsc.org as soon as possible.

This report will be uploaded to your web page to share with the members of your network. Staff will also share a digest of all member networks activities taken solely from these annual reports with appropriate staff and governance boards and committees including Division Councils with similar interests.

Committee	Energy Sector
Completed by	Michael Harrington (Feb 2019) and subsequently corrected and updated by Stephen Preece (May 19)
Date	Wednesday, 01 May 2019

Please list below the dates of all of your planned committee meetings and, if held, AGM.

Annual General Meeting (if being held)

Date	Click or tap to enter a date.
Venue	Click or tap here to enter text.

Proposed Committee Meetings Dates

Date	Venue	
30 Jan 2019	Burlington House, London	The Networks Team helped the Energy Sector to refresh the committee in late 2018. New officers were in place from 30 th Apr 2019.
30 April 2019	Burlington House, London	
17 Sept 2019	Burlington House, London	
3 Dec 2019	On-line meeting	

2018 Events

Please report below on activities undertaken in the past year. Please select the type of event and target audience from the drop-down menus. For example, a workshop for Early Career members can be categorised as “Training/ Workshop” for “Early Career Members”.

The categories are as follows:

Event Types:

- Award Lecture
- Education Event
- Networking Event
- Outreach Event
- Public Lecture
- Scientific Meeting (half-day, one-day or multi-day)
- Social Event
- Training/ Workshop
- Other

Audience:

- Academics
- Consultants
- Early Career
- Industrialists
- Members of the public
- Postgraduates & PhD students
- Retired members
- School students
- School teachers
- Technicians & Support staff
- Undergraduates

If you wish to include more detailed information about any particularly successful events or advice to share please do so in the provided space. Please append electronic copies of any meeting reports, newsletters or relevant materials to this report.

For additional events please copy and paste the table and continue as necessary.

Event Name	Next Generation Materials for Solar Photovoltaics Symposium 2018
Event Type	Scientific Meeting - One-day
Audience	Academics
Start Date	17 January 2018
End Date	17 January 2018
No. Attendees	50-100
Comments	Hosted and underwritten by the RSC Energy Sector interest group, this was the third 1-day symposium held on the topic of Solar Photovoltaics (PV) - the previous meetings being held 15 Jan 2014 and 13 Jan 2016. The meeting attracted 70 delegates who enjoyed scientific presentations given by six guest and seven contributory speakers (selected from submitted abstracts) and 21 poster presentations. The programme covered organic, inorganic and hybrid chemistries with high quality topical presentations. This was

an opportunity for delegates to hear what colleagues were doing in related areas just outside their area of primary focus.

Professor Lars Samuelson (University of Lund, Sweden) gave the opening guest presentation on the Growth of III-V Nanowires for Photovoltaics Applications. As well as being the Director of NanoLund, the primary centre for nanosciences in Sweden, Prof Samuelson is a founder and Chief Scientific Officer of SolVoltaics, a company founded to commercialise III-V compound semiconductor nanowires in solar cell applications. Dr Tom Aernouts (Leader of the Thin Film Photovoltaics group at IMEC, Belgium) gave a lecture on Perovskites for Photovoltaics: from materials to applications. As well as his work at IMEC, Dr Aernouts is Project Manager for Perovskite-based solar research at Solliance that in November 2017 achieved a world record efficiency for large area perovskite device using a roll-to-roll production process.

Four presentations were given in the field of organic photovoltaics (OPV). Prof Paul Meredith (Swansea U) discussed Transport and Electro-Optical Considerations in Organic Solar Cells and Dr Abby Casey presented work on the Optoelectronic Properties of New Conjugated Materials for use in solar cells for which she won of the RSC Energy Sector Award in 2015 for her PhD work at Imperial College London. Alexander Gillet (Cambridge) spoke on Intramolecular Charge Transfer States for Non-Radiative Voltage Losses in Organic Photovoltaics and Anne Guilbert (ICL) presented work on Predicting Crystal Structures for Organic Semiconductors.

Perovskite solar cells are a hot topic in PV development attracting a lot of research attention in the UK. In addition to the presentation by Tom Aernouts above, three other presentations were given on this material by Bart Roose (Cambridge), Bethan Charles (Bath) and Jenny Baker (Swansea).

In the field of Kesterite solar cells, Prof David Fermin (Bristol) spoke on the Origin of Voc Deficiency in solution-processed Kesterite cells and Theodore Hobson (Liverpool) described the growth and characterisation of crystalline CZTSSe. A promising area for increasing the efficiency of solar PV conversion is intermediate band gap (IB) materials and Denise Montesdeoca (Lancaster) presented work on increasing the stack density in type II GaAs/GaAs quantum ring IB solar cells.

All thin film photovoltaics depend on transparent conducting electrodes and existing materials limit the performance of PV

devices. Dr Ross Hatton (Warwick) described exciting new metal window electrodes for solar applications.

The RSC Energy Sector was grateful for a grant from the RSC Environment, Sustainability & Energy Division (ESED) that contributed to overseas guest travel costs and to SuperGen SuperSolar for advanced purchase of student tickets. We also gratefully acknowledge the contribution of three commercial sponsors who subsidised the student fee; Bentham Instruments, Merck Chemicals and Semimetrics. Thanks also go to the organising committee comprising; Prof Jenny Nelson (ICL), Prof Neil Robertson (Edinburgh), Dr Trystan Watson (Swansea) and Dr Nigel Mason (PV Consulting).



Awards and Bursaries

Please list any awards or bursaries presented by your committee in the past 12 months and indicate any that will be open for nomination/application in the next calendar year.

Please also include information about the application/nomination and selection processes.

Please ensure that **all** members of your network are notified of any awards or bursaries for general application. These notifications can be sent via e-alert through networks@rsc.org.

Award	RSC Energy Sector PhD Thesis Award Competition 2017
Award Type	Award
Audience	Postgraduates & PhD students
Nomination/ application deadline	31/12/2017 (Award announced in March 2018)
Number of nominations/ applications	5
Award winner(s) and institution(s)	Dr Franky Bedoya-Lora, Department of Chemical Engineering, Imperial College London
Comments	<p>The award is given for an outstanding PhD Thesis completed at a UK university in the calendar year 2017 in the field of Chemistry for the Energy Sector and assessed by a panel of experts drawn from the RSC Energy Sector Committee. This is the fifth consecutive year that the competition has been held. Winner: Dr Franky Bedoya-Lora for his PhD Thesis entitled Photo-Electrochemical Reactors with Hematite Photo-anodes for Water and Hydrogen Sulfide Splitting. His work concerned the development of a photo-electrochemical process for the treatment of hydrogen sulfide to produce hydrogen. Hydrogen sulphide is a toxic gas produced as a product of hydrodesulfurisation to remove sulfur from gas and petroleum products. Dr Bedoya-Lora optimised the separation and size of perforations in tin(IV)-doped hematite (α-Fe₂O₃) photo-anodes together with ion-permeable membranes to maximise hydrogen yields under safe operating conditions. The performance was demonstrated in an “up-scaled” reactor and his work is currently being used in the design and engineering of reactors with a large oil and gas company. This work offers the opportunity to produce solar fuel from a toxic waste product. Dr Bedoya-Lora completed his PhD studies at Imperial College London under the supervision of Professor Geoffrey H Kelsall. The purpose of the award is to spotlight UK PhD research in the energy sector. The competition is judged largely on the content and quality of an Executive Summary submitted by the candidate and considers the following criteria: (i) the level to which the</p>

	work addresses a clear identified need in UK or global energy requirements, (ii) the level to which the work adds significant new understanding to an aspect of the energy sector and (iii) the level to which the work contributes to quantifiable environmentally sustainable energy provision.
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Award	RSC Energy Sector Knowledge-Exchange Travel and Subsistence Bursary
Award Type	Bursary
Audience	Postgraduates & PhD students
Nomination/ application deadline	Ongoing
Number of nominations/ applications	1 application in 2018
Award winner(s) and institution(s)	Dr. Yeshui Zhang, Department of Chemical Engineering, Imperial College London
Comments	The bursary was awarded to allow Dr. Zhang to present his PhD results as a poster presentation to the Pyro Conference 2018, in Japan.

Other information/comments:

N/A

Other forms of Recognition provided by your committee:

N/A



Future Activities

When planning any activities please remember to ensure that all events are logged on our events database and ensure that all contracts are sent to our Legal Team with enough time for amendments and, where necessary, approval by the Board.

Please outline any activities already in planning for the next calendar year. Please include the type of event and the target audience.

For additional events please copy and paste the table and continue as necessary.

Event Name	Next Generation Materials for Solar Photovoltaics Symposium 2020
Event Type	Scientific Meeting - One-day
Audience	Academics
Proposed Date	15 Jan 2020
Comments	Please include additional information here.



Committee

This information will be used to update our membership database and your web page. Please ensure that any changes to the committee are sent to networks@rsc.org as soon as possible.

Position	Name	Dates on committee (20xx – 20xx)
Chair	Nigel Mason	Nov 2010 – P Jan 2019 – P (as Chair)
Secretary	Stephen Preece	Nov 2014 – P Jan 2019 – P (as Secretary)
Treasurer	Stuart Norman	Nov 2014 – P Apr 2015 – P (as Treasurer)
Ordinary Members	Alissa Cotton Lesley Sloss Brian Shelley Susana Garcia-Lopez Trystan Watson	Apr 2015 – P Jul 2015 – P Jul 2015 - P Nov 2014 – P Jul 2015 – P
Chemists' Community Fund Representative (if relevant)	N/A	
Co-opted member(s) and their affiliation(s)	N/A	



Diversity & Inclusion

Please ensure this section is completed

Our trustees are aiming to embed diversity and inclusion in all of our activities and networks. Section 8 of our [online network handbook](#) contains more information to support our networks in achieving this and our Diversity team have [online Guides for Networks](#) that include actions and considerations for committees, and guides for inclusive communications and running inclusive events.

Please comment on how your group is showing that it has embraced Diversity and Inclusion within its practices. If you have diversity data from your events or activities, please include this information above.

Statement:

After a period of Energy Sector Committee inactivity (mid-2017 to end-2018), new officers were appointed on 30 Jan 2019 with a remit to re-vitalise the committee. New committee members have now been recruited and the first meeting of the new committee was held on 30 April 2019. Diversity and inclusion has not yet been specifically discussed by the committee but we will cover this item in 2019.