

Dear Members,

You will find below the latest of our Newsletters which contains articles on:-

1. RSC Burlington House new Chemistry Centre
2. Membership Activities
3. Sponsorship work
4. Innovation questionnaire and conclusions

The Innovation report is substantially longer than our usual pieces but we considered this necessary to give a balanced view of a complex issue.

The other articles are short information pieces to help keep you up to date.

We hope the balance works for you and we, of course, welcome comments.

Ideas for events, either centrally or locally that we can organise or support would also be most welcome as always.

Please respond to the committee secretary, Alan Keasey at [alank@biofuels-technology.com](mailto:alank@biofuels-technology.com).

### **1. RSC Burlington House new Chemistry Centre**

Due to open in September 2009, the Chemistry Centre will help to celebrate the excitement of chemistry past, present and future. The stimulating blend of the latest in modern facilities within a historic venue in the heart of London will make the Chemistry Centre a place to remember.

The Chemistry Centre will include the newly refurbished Library as well as the Council Room, Hinshelwood Room, Priestly Room and Fish Room. The RSC hopes that many members will be able to make use of the facilities.

New in-built member's facilities will be on offer, such as an office space dedicated for member's use with computers, internet and printing/copying facilities. Wireless internet will be available to all visitors with a laptop, allowing access to RSC research materials and the internet wherever you are in the building.

The Library will be open at set times throughout the week so that it can be used for research purposes, space for small business meetings or simply as a quiet relaxing place to read a book. Even when the Library is booked for an event the coffee area next door will often be available as space for members to relax and enjoy a free tea and coffee.

The Library will become the focus of engaging the public on scientific issues, with special facilities to enable events in this space to be broadcast live over the internet to interact with a more global audience. Events can also be digitally recorded and archived for future use, for example as education resources. Several events are already planned, for example a monthly series of interactive lectures for the public on various aspects of chemistry and a packed calendar of exciting events for Chemistry Week.

**Lucy Sandbach    RSC    July '09**

## **2. Membership Activities**

Membership numbers finished on a high at the end of last year with over 46k members. We are now at the end of the renewal cycle which runs for the first few months of the new year until lapsed members are finally taken off the register in May. Currently there are just under 43k members on the system. With a target figure of 46.5k members by the end of 2009 we therefore have a busy recruitment period ahead! The peak time for recruitment remains the autumn term when our recruitment executive Fiona McMillan will be extremely busy with visits to about 65 universities where chemistry is taught at degree level. This year we are also running a test series of 6 summer symposia for PGs and Post-Docs which will better position the RSC in this area and boost recruitment as well.

The RSC Partnership Programme continues to grow slowly but surely with 12 organisations now registered as RSC Partners and a number of others in the pipeline. However, there is much further to go with this scheme and I would be delighted to follow-up any further organisations that members of the management group can identify.

RSC ChemNet goes from strength to strength with 4500 members at present and every likelihood of growing this number to over 6000 by the end of this year. ChemNet is now present in over 940 schools, representing some 28% of those schools and colleges teaching "A" level chemistry (or equivalent) and with over 1000 teachers involved.

We are continually trying new ways of recruiting chemists into the RSC, currently running schemes involving conferences, teachers, students, academics, industrialists and leading figures from chemistry overseas. Some of these schemes work well and others are much less successful but we remain flexible, responsive and ready to use any different avenues that present themselves. The outlook for the year remains very positive.

**Andrew Scott    July '09**

### **3. Sponsorship Activities**

The Management Group supports a small range of activities, usually relatively small in financial terms (typically around £1000 per year per item) and related to our items of focus. We have written a few words below on our current main items.

#### **MG Support for the Widcombe Wrobotiers**

The “Wrobotiers” are from a primary school in the Bristol area who excel in building model robots and this year, as their theme was “The Environment”, we responded positively to their request for some financial support.

Following our support for the team to compete in the international competition held in Norway in 2008 we again provided funds to enable the team to compete in the final of the competition held in Copenhagen in May this year having previously won at the national competition held in Birmingham.

Fifty six teams from 29 countries competed. Assessments of robot performance, technical and teamwork demonstrations were included as well as presentations on climate change. The team gave an account of the flood problems experienced in Bath and the solution adopted. They were nominated for a Innovative Solution award.

A highlight of the trip was meeting the Crown Prince of Denmark who watched the team’s robot perform.

#### **MG Support for Bristol Explorer Dome**

We have continued to support the programme of visits to the schools in the Bristol area run by Dr Mike Coles. This year the following schools have had demonstrations:

Bedminster Down, Broadlands twice, Amesbury, Minety, Monks Park, St Edmunds, Westfield Primary, Llandaff twice, Clifton College twice, Bishop Road Primary, High Down Junior, Farmborough, Blaise Primary, Broadoak, Bedminster Down, Ralph Allen, Bristol Grammar and Monkton Senior.

Unfortunately Mike has had a serious accident involving a hot air balloon and is at present in hospital. We wish him a speedy recovery and a resumption of his stalwart work in promoting chemistry in the local schools and colleges.

#### **MG Support for Bath University Outreach Programme**

The programme run by Dr Simon Bedford of Bath University has continued with teachers of local schools being invited to demonstrations at the University Laboratories and final year Chemistry degree students spending part of their final year at local schools in the Bath area.

**Edward Norton      July’09**

## **4. Innovation Questionnaire Results and Conclusions**

### **Introduction**

Chemistry Innovation, a Knowledge Transfer Partnership funded by the Technology Strategy Board, has a national role to help drive and support innovation in the chemical-using sector.

Chemistry Innovation focuses on priorities for the sector that have been identified by its Industrial Innovation Board. Understanding how to and actually supporting SMEs which stand a good chance of developing our future high value economy is one such priority area. We work closely with companies on a direct basis but prefer, as in this case, to work with and through our partners.

The Royal Society of Chemistry is a leading professional body in the UK and international chemistry using sector. Its Management Group (which has some 1600 members) identified innovation as an important topic and approached Chemistry Innovation for assistance in understanding the innovation challenges within its membership.

Chemistry Innovation made an “Innovation Fitness Test” available on line for members of the Management Group. This report summarises the findings and suggests areas for further activity.

### **The Innovation Fitness test**

The Innovation Fitness Test was developed by CENTRIM (The Centre for Research in Innovation Management - Freeman Centre, University of Brighton). Based upon substantial research into the innovative capacity of organisations it enables the relative strengths and weaknesses of organisations to be assessed across five key areas that were found to underpin a “capacity to innovate”.

<b>Strategy</b>	The vision of an organisation that captures imagination, engages with all parties, builds a sense of confidence and accomplishment and enables progress towards shared objectives.
<b>Organisation</b>	The culture (the way things are done around here) that define the innovative enterprises.
<b>Learning</b>	The capacity and discipline to review past actions and to learn from third parties as important components in planning new activities.
<b>Linkages</b>	The mechanisms that enable existing relations to be fully explored and the forging of new and different (perhaps transient) relationships beyond the existing value chain while continuing to derive maximum benefit from established contacts.
<b>Processes</b>	The process of identifying new ideas, reviewing and selecting potential ‘winners’ and resourcing them to fruition, or ‘fast failure’.

The test is a relatively simple tool that seeks to provide organisations with some challenging questions and offers an insight into the relative strengths of the organisation with respect to its propensity for innovation. The output contributes towards an understanding of what actions might usefully be taken to improve innovation performance. It relies upon the responder having a good understanding of the company's performance and characteristics as a whole and is best performed with a cross section of managers and employees

This simple self-assessment tool focuses attention on some of the important areas of innovation management. The questionnaire provides a number of statements which describe 'the way the company does things around here' - the pattern of behaviour which describes how the organisation handles the question of innovation. For each statement simply they representative of the company was requested to put a score between 1 (= not true at all) to 7 (=very true).

By plotting the results onto a simple spider graph it may be used to identify broad areas (the five characteristics) where there may be relative weaknesses in a company.

Drilling down into the answers to those questions which contribute to areas of relative low scoring can provide guidance on what specific issues might usefully be addressed within the unit under review and/or by the individual concerned.

Ultimately, excelling at innovation means being good at all five areas. However, what is most important is that organisations recognise their weaknesses and address those most relevant to the situation and mission.

## Results

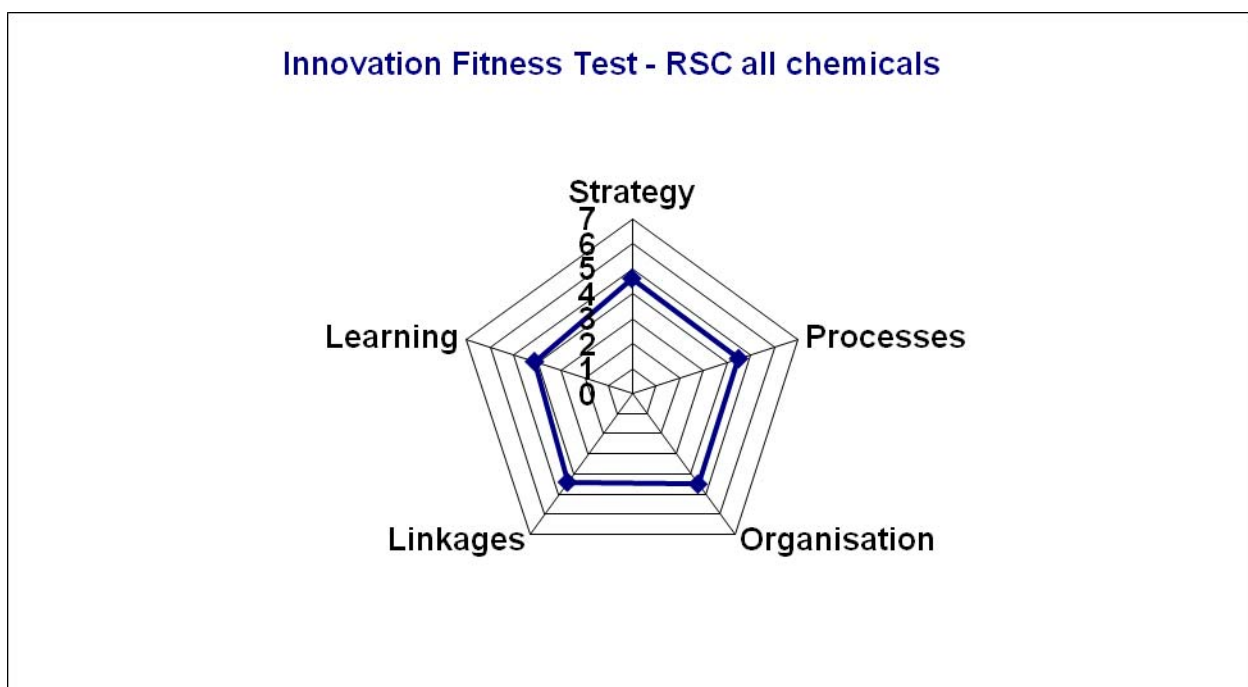
61 members responded to the email invitation to participate (sent out by the RSC), of which 43 were judged to be truly “chemistry using”. Of these:

- 25 employed >1000 people (Large)
- 10 employed 250-999 people (Medium)
- 8 employed <250 people (Small)

The results for individual organisations will be held confidential and can be discussed on an individual basis should the respondents require such feedback.

This report looks at the major findings, trends and identified actions for the group as a whole (n=43).

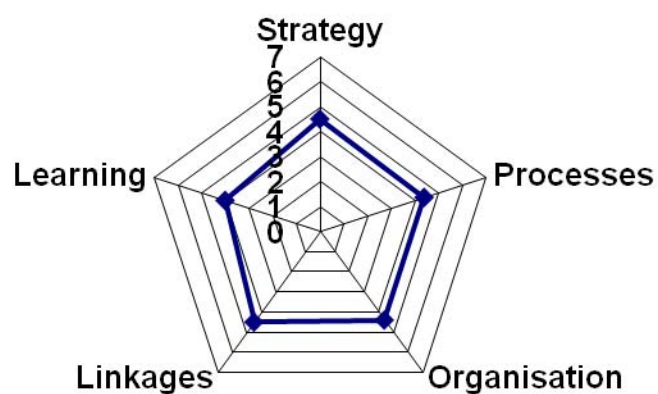
The spider graph below is an amalgamation of the results obtained for all the companies surveyed:



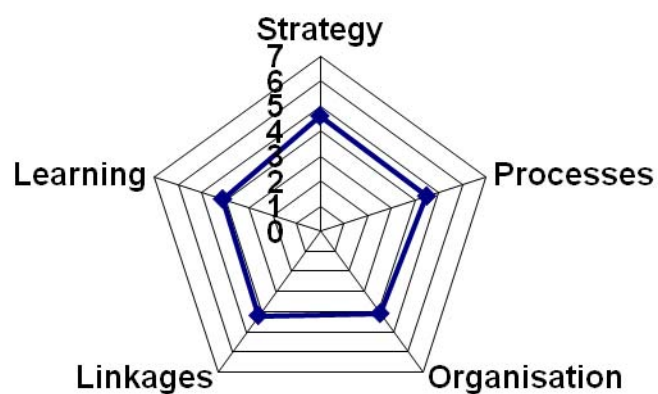
Averaging results is not very revealing as it tends to even out the variation within individual organisations. However it can reveal significant areas for attention within a group, in the case of this group learning would appear to be consistently weak.

Looking within the group at the profiles of different organisation sizes we find the following profiles:

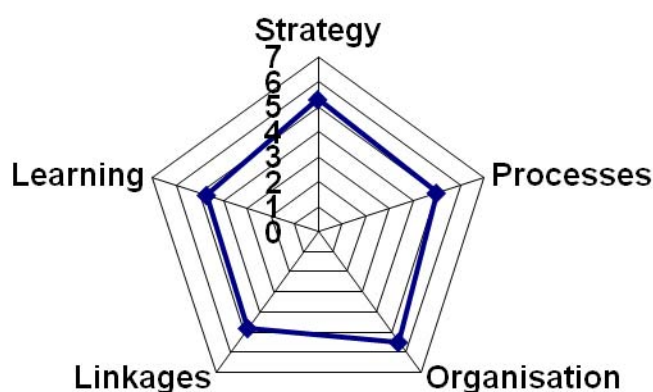
### Innovation Fitness Test - RSC Lge chemicals



### Innovation Fitness Test - RSC Med chemicals



## Innovation Fitness Test - RSC Small chemicals



There is no significant difference in the large and medium organisation average profiles but small organisations showed a marked improvement in all areas. This probably reflects the sample size for small organisations (8) and desire for excellence in those who participated (factors against which all results should be considered) as it is not a trend observed in similar studies by Chemistry Innovation to date.

### **Comment on average scores:**

Given that no organisation has a perfect profile one could conclude that average scores of 4 to 5 are acceptable. However, this is a relative tool and responses will vary significantly according to interpretation and whether the scores reflect a wide opinion within the organisation. We need to be careful making any conclusion at this stage, the purpose of this study was to identify areas for potential performance improvement and further more detailed study will be necessary.

Another approach is to identify areas that were consistently scored low (3 or less):

	ALL	AII	LGE	LGE	MED	MED	SML	SML
	Total scores	%	Total scores	%	Total scores	%	Total scores	%
	3 or below		3 or below		3 or below		3 or below	
Strategy	90	26%	58	29%	26	33%	13	20%
Process	108	31%	60	30%	24	30%	11	17%
Organisation	89	26%	54	27%	30	38%	10	16%
Linkages	101	29%	56	28%	23	29%	25	39%
Learning	119	35%	70	35%	31	39%	18	28%
Pooled	507	29%	298	30%	134	34%	77	24%

This analysis reveals:

- Nearly 30% of all scores were rated 3 or below (considered poor rating)
- Overall weaknesses were spread over the 5 areas with a few notable differences
- Learning was consistently rated poorly, more so in medium sized organisations
- Medium sized organisations scored more areas poorly
- Small organisations scored less areas poorly
- Small organisations rated linkages as the weakest area

**Comment on more detailed area analysis:**

These findings are consistent with other studies by Chemistry Innovation, learning and linkages are consistently the weaker areas.

Individual Question Analysis:

Responses to individual questions are most revealing. Those questions most frequently rated with an average score of 3 or below are detailed here:

1. Our innovation projects are usually completed on time and within budget

2. We have effective mechanisms to make sure everyone (not just Marketing) understands customer needs)
3. We work well with universities and other research centres to help us develop our knowledge
4. We look ahead in a structured way (using forecasting tools and techniques) to try and imagine future threats and opportunities
5. Our structure helps us to take decisions rapidly
6. We systematically compare our products and processes
7. Communication is effective and works top down, bottom up and across the organization
8. We collaborate with other firms to develop new products or processes
9. We meet and share experiences with other firms to help us learn
10. Our reward and recognition system supports innovation
11. We are good at capturing what we have learned so that others in the organization can make use of it
12. We have processes in place to review new technological or market developments and what they mean for our firm's strategy
13. We work closely with the local and national education systems to communicate our needs for skills
14. We are good at learning from other organisations
15. We use measurement to help identify where and when we can improve our innovation management

### **Discussion of findings:**

In the overall analysis of the data I am mindful that this is a snapshot assessment and also that responses are very much dependent upon who responded from each organisation. Over analysis of the results, especially with such a relatively small survey could well be misleading and I remind the RSC and companies involved that the principal aim was to gain an understanding of how both individual companies and the chemistry using companies in general can be assisted with their innovation performance.

One question that is not answered by this initial study is "how does innovation performance in the chemistry using sector compare to other UK and international sectors?". Another way of putting this is "is an average score of 4 to 5 good enough to succeed in the current market environment?" Chemistry Innovation has set out to understand this in a separate study, initial data would suggest that innovation performance in the sector is rarely world class in UK organisations.

### **Recommendations**

I have already stressed the importance of viewing the innovation fitness test as a qualitative tool to identify major areas for innovation performance improvement and facilitate engagement. No two companies are the same and this applies to how they go about innovation. Profiles can vary according to the population size, personnel involved and other factors, this is why we place emphasis upon the big picture findings and most importantly by engaging with individual companies by way of follow up.

Suggested follow up actions are:

1. ***Follow up the output with each company specifically focussing upon:***
  - i. ***Progress of actions identified***
  - ii. ***Major areas of potential weakness***
  - iii. ***Their principle needs in order to achieve their objectives***
2. ***Assess the identified areas of weakness with regard to how the RSC can provide further support and assistance to its members, prioritise the output with an action plan.***
3. ***Agree a structured plan for the continual support of these companies through the RSC.***
4. ***Consider making a similar assessment available to all RSC members.***
5. ***Encourage local networking/knowledge sharing events to include the following suggested topics:***
  - i. ***Team communication***
  - ii. ***Commercial risk assessment***
  - iii. ***Attracting and retaining talent***
  - iv. ***Planning for expansion***
  - v. ***Developing local “buddy” networks***
  - vi. ***Innovation through the supply chain***
  - vii. ***Opportunity assessment***
  - viii. ***Project planning and management***
6. ***Develops and provide “How to” guides to help companies improve their innovation ability especially in the areas of weakness identified in this study.***

#### **Acknowledgements**

I would like to thank the RSC Management Group for their vision in instigating this vital study and support in performing it.

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