DIAMOND DAYS

The British Carbon Group is a lively, growing community that discusses the many aspects of carbon

THE BRITISH CARBON GROUP

The British Carbon Group (joint with the IOP and SCI) promotes the science or technology of graphite and carbon materials (including diamond and fullerenes), composites, fibres, deposits and any other relevant carbon science topics. It provides a forum for scientific discussion, and represents the interests of UK carbon scientists in relation to learned societies worldwide.

It has over 300 members, meets regularly at least twice a year, and publishes a lively newsletter. It awards the Brian Kelly award, which takes the form of a travel grant for students or young researchers to attend the annual international carbon conference, and grants a number of travel bursaries.

www.britishcarbon.co.uk

As chemists, our interests span the whole of the Periodic Table, but there is one element that, even for non-organic chemists, attracts much attention. Carbon.

What other element can span such different forms as diamond, graphite and now of course, the fullerene family? Add to that all the possible variants of carbon-containing materials like coal and coke, carbon fibres, carbon nanotubes and active carbons, and you can see why so many scientists and engineers find the element totally indispensable.

With the very recent isolation of single layers of graphite, graphene, with its fascinating electronic properties, interest can only grow.

The British Carbon Group (BCG) provides a lively interdisciplinary community for those wishing to discuss the many exciting developments in carbon research.

Current activities

The BCG is unique in that it is supported by no fewer than three sponsoring organisations: the RSC, the Institute of Physics and the Society of Chemical Industry. This tri-partite support resides in the history of the group (see box: A Brief History of the Carbon Group). But what about the BCG's functions today? Gareth Neighbour, the group's current chairman, thinks that this is a very exciting time to become involved in carbon research, as new developments make it a cutting edge area.

"Carbon has a broad repertory of extraordinary physical, mechanical and chemical properties, but it has seldom had a starring role in the science world. It has supported metal clusters which perform feats..."
Originally there were two carbon groups, the Industrial Carbon and Graphite Group, supported by the SCI, and the Carbon and Graphite Group, supported by the then Chemical Society and the IoP. The SCI group established the famous London Carbon and Graphite conferences, held every four years from 1960 onwards, while the Chemical Society/IoP group concentrated more on the research aspects of the subject. However, then as now, it was impossible to separate the purely research from the industrial side, so relations between the two groups were always close, with something of an overlap in membership. In the early 1990’s, it was agreed that a merger would not only be desirable but easily achieved. The tri-partite aspect could potentially have caused problems, so a constitution was drawn up and agreed with our sponsors, the administration passing to the RSC, as having the largest membership of the three bodies. This arrangement continues in force today, with the British Carbon Group coming under the care of the RSC Interest Groups Manager, Anne Bennett.

Meetings
The group has regular meetings, generally at least two a year. These include the now world-renowned NanotEC series, organised by the University of Sussex in conjunction with the BGC. But it also undertakes much bigger meetings such as those that formed part of the World Carbon Conferences held at Newcastle in 1996 and at the Robert Gordon University in Aberdeen in 2006. This latter meeting attracted over 550 participants and was rated a huge success in every way, both scientific and social. It included the first AR Ubbelohde lecture sponsored by the group, given by Sir Harry Kroto, and we have just had the second, given by Steve Tenison, at our last AGM in London in December.

The next meeting will be in Manchester in April 2009 on Carbon in the Environment, Health and Energy (see box).

Besides being interdisciplinary, the group is very international in its outlook. We are founder-members of the European Carbon Association which links the major carbon groups in Europe. The aim is to have a Continent-wide co-ordination of activities, especially of course, for conferences and courses. The ECA, for example, is responsible for the European input to the annual World Carbon Conferences, of which the SCI London Conferences were a forerunner.

Joining up
If you would like to join the group, then it only costs £5 for the year. Tick the box on your subscription or contact the RSC membership department: Tel: +44 (0) 1223 432141; membership@rsc.org

As the group’s chairman, Gareth Neighbour, says: “The future of carbon materials is bright. If you are interested in carbon, become a member of the BCG today!”

FORTHCOMING MEETING
Carbon in the Environment, Health and Energy
31 March – 1 April 2009
Manchester Conference Centre

This meeting provides an excellent opportunity for cross fertilization of ideas and knowledge from many fields with a strong interest in carbon science. Papers are invited from any aspect of carbon science in health, the environment and energy.

Sessions within the meeting will be organised along these lines with invited speakers on topics related to carbon emissions from combustion, biological effects of carbon and nanocarbon materials and predicting the role of carbon in the energy markets. Intending authors can submit an abstract no later than the 28 February 2009.

For more information or to register visit www.britishcarbon.org/spring09

A BRIEF HISTORY OF THE CARBON GROUP

of catalysis, lined fusion reactors, provided electrodes in large scale steel furnaces, enabled lithium-ion battery technology, moderated neutrons in fission reactors, provided exceptional 'cutting' tools, the list is endless.

"But in recent times carbon has moved into the limelight. It was discovered that single sheets of graphite could be produced curved by pentagons into cage molecules (fullerenes) or rolled into carbon nanotubes. In the last decade, finite single and double sheets of graphene have been produced. It turns out that the dynamics of charge carriers in mono-layer and bi-layer graphene have extraordinary properties, deriving largely from the fact that they have zero effective mass."

Carbon is also very much in the news because of the contribution of CO₂ to climate change. Many members of the group have expertise in areas such as coal technology, so the group has begun discussing the environmental impact of carbon in energy production.