

IUPAC

SUB-COMMITTEE ON MATERIALS CHEMISTRY

12th August 2003

Ottawa

Present:- J. Corish (Chairman) [II], A.V. Chadwick (Secretary) [III], G.M. Rosenblatt [II], A.R. West [II], L.V. Interrante [II], R.G. Jones [IV], J. Maier [I], T.M. Krygowski [III], S. Mathur [Observer, II], D.S. Moore [V], T. Tidwell [III], T. Coplen [II]

1. Chairman's Introduction

The Chairman reviewed the background to this inter-divisional Sub-committee. It originated from an *ad hoc* committee that had last met at the Brisbane General Assembly in 2001 (the minutes of the Brisbane meeting are attached). The Chairman pointed out that although materials chemistry had a high profile at recent IUPAC congresses the visibility of the subject within IUPAC itself was low. One aim of the Sub-committee was to substantially raise this visibility.

At Brisbane the topics of interest to chemists in the materials area were listed as a result of a general 'brainstorming' at the meeting and there was an enthusiasm to progress the materials chemistry area. After that General Assembly Corish and Rosenblatt talked to IUPAC Officers and had been encouraged to set up the Sub-committee which, due to a variety of circumstances, had been unable to meet during the intervening years. A meeting of the executive of the Sub-committee had been held in Sheffield (September, 2002) as an adjunct to the Inorganic Chemistry Division Committee meeting (the minutes of this Sheffield meeting are attached). Attempts to arrange a full meeting of the Sub-committee prior to the Ottawa General Assembly were unsuccessful and requests for contacts in academic and commercial communities had elicited little response.

The Chairman completed his review by pointing out that there were a number of materials chemistry IUPAC projects in progress (materials chemistry is a tickbox on the project proposal form) and that this Sub-committee would in future have responsibility for the series of Workshops on Advanced Materials (WAM).

2. Discussion of the Objectives of the Sub-committee

Following the Chairman's introduction there was a general and wide-ranging discussion. This began by considering the need to define what it was that was meant by materials chemistry as well as the desirability to place this definition on the Sub-committee's website. In particular it was essential to clearly

distinguish between materials science and materials chemistry. Others saw such definitions as leading to the setting up of barriers and felt that this was in direct opposition to the aspirations of people working in materials chemistry.

It was agreed that definitions of the subject needed to be inclusive and that exclusive definitions would be counter-productive. The best way to define the subject could be a list of topics in materials chemistry and the role the chemist has to play in these areas and it was suggested that a good IUPAC project could be the defining of materials chemistry along these lines. ARW pointed out that the ACS and RSC had done this to some extent when they constructed the editorial policies for the Journal of Materials Chemistry and the Chemistry of Materials. Within the areas of activity of IUPAC, as outlined at Brisbane, the role of this project would be one of education and it would, for example, be helpful to have the definition of materials chemistry for teachers planning courses on this topic as part of chemistry programmes.

3. Future Strategy

The Chairman outlined the three areas that required decisions:

- (a) the future of the Sub-committee;
- (b) the initiation of good IUPAC projects in materials chemistry; and
- (c) the continuation of the WAM series of workshops.

(a) The Chairman reminded the meeting that the Sub-committee was formed with a long-term aim of establishing a new materials chemistry division. He asked the meeting two questions. Firstly, should the Sub-committee continue? Secondly, should there be a new division?

There was a general agreement that the Sub-committee should continue and that it should seek to clearly establish itself as an inter-divisional body. There were projects spread across all the divisions that were concerned with materials chemistry. Many of these were also inter-divisional. At this stage there was no justification to press for a new division but it should remain a long-term aim of the Sub-committee.

(b) New flagship projects will be needed in the materials chemistry area. It was agreed that the members of the Sub-committee would be pro-active in encouraging the initiation and submission of projects in this area.

(c) It was agreed that this Sub-committee would be responsible for future workshops in the WAM series. GMR also reminded the meeting of the IUPAC scheme of sending lecturers to conferences as speakers and to publicise IUPAC activities. The Sub-committee should also consider the best ways of utilising this scheme.

4. Actions in the Next Biennium

The Chairman reminded the meeting of the three areas of action; projects, the IUPAC Lecturer scheme and the WAM series of meetings.

LVI re-iterated his interest in the project defining materials chemistry. ARW agreed to his involvement with the project. JM told the meeting that he had just completed a book on the chemical physics of solids that would be helpful to the project team.

Action (LVI): It was agreed that a project proposal should be submitted to IUPAC to define materials chemistry by the end of this year. LVI would prepare a draft to start the proposal. He agreed to oversee the initiation of the project but he would not be the task group leader. Members of the sub-committee should supply LVI with names of suitable members of the task group.

The project intended to finally produce web pages on materials chemistry sited on the IUPAC web site.

There was some discussion of web sites from which two points emerged. Firstly there should be a web site for this Sub-committee, which could be arranged relatively quickly with the help of Fabienne Meyer. Secondly, a more detailed web site for materials chemistry would emerge from the proposed project.

Action (AVC and RGJ): It was agreed that a web site be established for this Sub-committee. It would contain the list of members of the Sub-committee and a list of materials chemistry projects.

SM suggested another area for a new project. This would be on the terminology used in materials chemistry. There was general agreement and encouragement for this proposal. A glossary would be very useful. However, it is a large topic and it might be advantageous to break it down, dealing firstly with solids, then liquids, then gases/vapours. The proposal should be submitted by the end of this year.

Action (SM): It was agreed a proposal should be submitted for a glossary of terms used in materials chemistry. SM should receive assistance from the members of the Sub-committee in drafting the proposal.

It was agreed that this Sub-committee should submit a bid to run the next Workshop on Advanced Materials WAMIII. WAMII had been held in Bangalore, during February 2002, and had 20 invited external speakers and about 50 local speakers. The local speakers were young workers in the field. The topics were aspects of nanomaterials. The funding from IUPAC was \$25k.

It was agreed that WAMIII might be kept more general and an interim title 'New Developments in Materials Chemistry' was proposed and accepted. The sub-title might be 'Synthesis, characterisation and applications'. The application should be made to the Secretariat for \$30k and WAMIII would be in the first half of 2005.

Three possible venues were discussed along with possible local organisers names. These were:

- (i) South Africa (the President of IUPAC, as a South African could possibly suggest a local organizer);
- (ii) Chile/Argentina (ARW suggested that Jaime Llanos as a possible local organiser)
- (iii) Egypt (M. El-Sayed had indicated this as a possible site at WAMII)

After discussion there was a preference for South Africa and JC offered to discuss this with the President.

Action (JC): Discuss WAMIII with President Steyn to seek suitable venue and contact with local organiser. It would also be necessary to try to arrange some local matching funding.

Offers to help with the organisation of WAM3 came from LVI, ARW, JC, AVC, JM and SM. It was noted that with the exception of JM all were from Division II. Other possible names suggested were Lobinski and Roos. Division Presidents will need to be contacted at a stage when the planning is firmer.

The Chairman suggested that it would be useful to assemble a list of eminent scientists in the materials chemistry field to attend conferences and profile IUPAC. They would, as part of IUPAC sponsorship, also visit universities in the country of the conference. It was agreed that this should be achieved by contacting the Division Presidents, but it should be done after the web site is established.

5. Future Membership

The current membership of the sub-committee is:-
Corish, Rosenblatt, West, Interrante, Jones, Chadwick, Maier, Adams, Weir, Chatillon, and Reichmanis. It was agreed that Mathur and Krygowski should be immediately added to the membership. It was also agreed that Division Presidents (from divisions with no representative) should be asked for nominations.

Finally, West was nominated and accepted an appointment as Vice-chairman.

6. Future Meetings

It was agreed that a meeting should be held, preferable early in 2004. A meeting in conjunction with a conference was discussed but no suitable conference was identified. In view of the geographical distribution of the sub-committee a meeting in Europe would be the most practicable.

7. Any other business

There was no other business. The Chairman thanked the participants for a very fruitful meeting.

Alan V. Chadwick
Canterbury, Tuesday, August 12, 2003