

Interdivisional Sub-committee on Materials Chemistry (Draft)

Notes of the meeting held during the 45th IUPAC G.A., 10/08/2015, Busan, BEXCO, Room 217

Attendees: Milan Drabik (II), Marrku Leskala (II), Savio Moniz (YO), Elizabeth Mansfield (YO), Shelley Claridge (YO), Rai Kookana (VI), Frank van Veggel (I), Jeanne Bolliger (YO), Natalie Stingelin (IV), Christopher Ober (IV), Vladimir Gubala (VII), Linda Johnston (VII), Clara Majalhas (V), Ilya Zharov (ISMC)

Executive Summary:

- 1) There was agreement that there will be a rotation of chairs at the next GA and a representative of Division I (Physical and Biophysical Chemistry), one of the founding divisions, will take on a 4-year term.
- 2) The ISMC will serve not only to foster materials chemistry within IUPAC but will also act to catalyse interdivisional activities.
- 3) The MC education website will receive input from all present at the ISMC meeting and update the content before the next meeting of the ISMC.
- 4) The ISMC meeting will be held once at the GA and 3 times electronically (e.g. Skype) during the next biennium.
- 5) All present will be solicited for interdivisional terminology and other projects during the next 2 months
- 6) One or more interdivisional workshops will be planned for the next GA/WCC to foster a better understanding of the activities between divisions that might cooperate on ISMC projects.

Ober welcomed all attendees and after a brief period for introductions, gave his personal view of the history of ISMC. It was founded by division I (Physical and Biophysical Chemistry), II (Inorganic Chemistry) and IV (Polymers) to look for areas of interdivisional cooperation. The first chair, Len Interrante, also pushed for an independent budget but was unsuccessful. As an interdivisional sub-committee, ISMC has no budget and instead depends on 1) occasional project related funding from the founding divisions and 2) funding that can be provided by the projects committee for project proposals. At the moment, ISMC only has support for one funded project, the Materials Chemistry Education Website.

Ober presented a proposed agenda for the meeting. (See meeting slides)

The last meeting of ISMC was arranged for the 2014 San Francisco ACS meeting based on interest by those in attendance at the GA held in Istanbul 2013. Unfortunately, only attendees from Divisions I and IV were present. For this reason it was proposed that the meeting schedule be changed in future (see later in the minutes). Items discussed in San Francisco included the lack of diversity among speakers at the Busan WCC, the need for new projects, progress on the ISMC Educational website, participation from other divisions and better reporting to interested divisions, and better engagement of Young Observers.

In response to the lack of diversity in the preliminary program (many American and Korean men), the organizer of the Materials Chemistry session at the Busan WCC was contacted and a list of 20 potential women speakers from a diverse set of countries was provided. A number of these people were eventually added to the final scientific program at Busan.

Division presidents outside the 3 founding organizations were contacted and representatives from 8 divisions (I, II, III (YO), IV, V, VI, VII, VIII (YO)) attended the IMC meeting as a result. In addition, a general invitation to Young Observers was made and 5 were in attendance.

Ober also pointed out that the IUPAC Centenary (2019). The IUPAC 100 Committee met for the first time in Busan and will work on establishing a set of goals and actions for IUPAC. Possible goals that ISMC might focus on in its future activities include:

- Creating a common language of chemistry
- Better reaching the developing world
- Exciting the public about chemistry and its benefit to society (materials chemistry in particular is excellent for that)
- Use the Centenary to grow resources for ISMC

ISMC Materials Chemistry website (Project No. 2013-037-1-200):

The website project was funded as special project with modest contributions by divisions. A dummy website is up and running thanks to Ilya Zharov and his students. Ilya Zharov was unable to attend in person and was brought in to the meeting using Skype. The website is populated with areas where materials chemistry is important. This project is looking for new content and input on how it is organized. All attendees will be contacted and asked to provide input. It is our expectation that this website will go live before the next GA.

The current website address is: <http://iupac-materials.chem.utah.edu>

Discussion covered organization of the way materials are divided into several categories and subcategories, by now not a part of IUPAC website. Initial thoughts were that there needs to be traditional materials (ceramics, metals, semiconductors and polymers) health needs to be increased in content, catalysts and other categories need more prominence.

A suggestion for new links to the materials chemistry series of articles in PAC (Milan Drabik) could be included and new books should be added.

What videos should this website link to?

And importantly, what should the website NOT do?

All attendees will be contacted for input on the website.

New projects:

In order to move forward, the ISMC needs new projects. They should involve 2 or more divisions. Topics suggested at the last meeting of ISMC at the ACS meeting in San Francisco include: energy, sustainability, health, electronics or nanotechnology

Ideas put up for discussions include:

- i. ionic liquids – it was noted that similar project already exists
- ii. polymer inorganic devices (II,IV)
- iii. Biomedical materials (IV, VII)
- iv. Nanocomposites and hybrids (I,II, IV)
- v. Time release materials
- vi. Toxicology, nano and health effects
- vii. Div. VIII: mentioned projects on nomenclature project of basic terminology of materials such as carbon nanotubes (ongoing)
- viii. Organization of materials according to their “service properties/functions/applications” – proposed
- ix. An important question is: How to manage a project proposal?

Concrete proposals included: 1) workshops to be held between divisions to improve an understanding between divisions on areas of interest and cooperation and 2) scientific workshops/symposia on of topics common interest. A goal will be to hold this in Brasil in two years. Ober and Gubala will work on this.

An important discussion was held to include short guides and terminologies of i) polymers (published), ii) inorganic materials - “small red book” about to appear, and iii) to grow the languages available on the educational website. For the short term any website will likely be in English but in the long term the project should be expanded to involve a choice of other languages.

Ober will contact all attendees to get additional thoughts on possible projects and to foster several new proposals.

Staying in contact:

Ober proposed that given the poor attendance at the last ISMC meeting that in future, face to face meetings would take place at the GA, and that “WebEx” be used for off GA meetings going forward. ISMC would meet twice per year (once at GA and 3 times until following GA via electronic means) A likely time for these electronic meeting would be during the July-August period and the January-February period each year. Those present agreed to this.

Rotation in leadership:

When founded, the chair was Len Interrante (Division II). Subsequently, Ober (Division IV) was elected. Ober suggested that ISMC establish a period of 4 years for ISMC chair and that initially the next chair come from the 3rd founding division, Division I. This was agreed to by those present. Therefore Ober will continue as chair until the Brasil GA in 2017 and will arrange for an election to take place prior to the 2017 meeting.