

IUPAC DIVISION-III

MINUTES OF THE DIVISIONAL MEETING, ORGANIC & BIOMOLECULAR CHEMISTRY, GLASGOW AUGUST 1 2009 AND AUGUST 3 2009

Crowne Plaza Conference Centre and Hotel, Glasgow

1. **THE MEETING** convened at 0900 h. on August 1.

PRESENT: DIVISIONAL MEMBERS AND/OR SUB COMMITTEE

REPRESENTATIVE. Professor P.R. Tundo (Div-III President), Professor G.J. Koomen (Vice President & President Elect), Professor M.J. Garson (Secretary), Professors M. Isobe (Past President), Profs N. A. Al-Awadi (TM, Kuwait), G.M. Blackburn (Chair Biomolecular S/C, AM, United Kingdom), K.N. Ganesh (TM, India), B. Han (Chair Green Chemistry S/C, China), M. Kocevar (NR, Slovenia), C.C. Liao (AM, China/Taipei), M. Mozihuzzaman (Bangladesh), F. Nicotra (Chair Biotechnology S/C), T. Norin (invited, Sweden), A. Pilar Rauter (NR, Portugal); E. Uggerud (Norway), **OBSERVERS** Drs A. Amal Al-Aboudi (Jordan), O. Demchuk (Poland), M. Rogers (USA), Dr P. Thamyongkat (Thailand), Professor E. Keinan (Israel).

APOLOGIES FROM DIVISIONAL OR SUB COMMITTEE MEMBERS AND NATIONAL REPRESENTATIVES were received from Professors S. Braslavsky (Germany), J. Cossy (France), F. McDonald (USA), V. Milata (Slovakia), N. Nifantiev (Russia), L. Zhang (China).

2. **MINUTES OF PREVIOUS MEETINGS**

- (i) Torino August 2007; these minutes (agenda papers pp 4-8) had previously been reviewed at the Madrid (2008) off-GA meeting, and were now formally approved.
- (ii) Madrid August 2008; (agenda papers pp9-14): approved (Professor Ganesh – proposed; Professor Al-Awadi –seconded)

3. **COMMUNICATIONS**

Professor Tundo commented that approval was previously granted by the IUPAC Treasurer for the Division to allocate its 2008-2009 Operating Budget of \$54.4k using a breakdown of \$25k for Operations and \$29.4k for Projects (that is close to a 45:55 breakdown rather than the standard 30:70 breakdown). This had enabled the Division to hold an off-year meeting in Madrid in 2008, and had further enabled the President to attend a meeting of Divisional President held in Rome on 11 June 2008. As of July 2009, Operational funds were close to fully committed, but there remained >\$30k to spend on projects. Professor Tundo commented that the Division needed to be more pro-active in projects, and in subsequent publications and technical reports linked to these projects.

4. **RESULTS OF 2009 ELECTION FOR TITULAR MEMBERS**

In accordance with IUPAC rules, a ballot for continuation of TMs and the election of new TMs was held by email in 2009. Existing TMs Professors Al-Awadi, Ganesh, Griesbeck and McDonald were re-appointed, and three new TMs, Professors Brimble (New Zealand),

Fukuzumi (Japan), and Liao (China/Taipei) were duly elected. Two new AMs (Professors Cesa (USA) and Choudhary (Pakistan) were appointed. This Divisional membership was endorsed at the 87th Bureau meeting of IUPAC (Bratislava, April 2009).

It was observed that few responses were received in response to requests for nominations, and that the majority of the nominations were made by NAOs rather than by Divisional members. One colleague who was nominated was ineligible since his country is not an NAO.

Response by Divisional members was poor when provided an opportunity to vote in the ballot for new TMs; only 28 colleagues voted. This was about 20% of the wider Divisional membership, including members of the various Sub Committees. It was noted that TM ballots are also poorly supported in other Divisions. Given the significance attached to the role of TMs and AMs, both within IUPAC and generally in the chemistry community, Divisional members and national representatives are urged to respond to future election calls so that the composition of the Divisional committee can be fully representative.

Other membership matters were then discussed. Professor Isobe suggested that Thailand, scheduled to become an NAO at the Glasgow Council meeting, should be invited to contribute to Divisional membership in the next biennium.

Professor Koomen commented that it was important to have as NRs a group of colleagues who were willing to contribute to the business of the Division. Professor Tundo indicated that NRs should come from countries other than those that provide TMs and AMs. It was subsequently noted (August 3) that the list of Division III members circulated with the minutes only included the names of 9 NRs. Professor Tundo advised that at the 87th Bureau meeting, Professor Abdul Hashem was included as an NR for Bangladesh, bringing the NR membership up to the allowed number of 10. It was noted that Professor Dagne (Ethiopia), currently listed as a PM for the 2008-2009 biennium, could in future be considered for full membership since the Chemical Society of Ethiopia was now an NAO.

The Division moved a Vote of Thanks to Professor Norin and members of his Nominations Committee (Professors Anastas, Isobe, Mehta, and Tidwell) for their work.

5. ELECTION OF OFFICERS FOR 2010-2011 BIENNIUM

This item was deferred to item 20 (Other business) and was considered on August 3.

6. PRESIDENT'S REPORT from Professor Pietro Tundo.

Professor Tundo tabled the report (refer agenda papers pp 15-19, and reproduced in Appendix One of the current document at p. 10-14) that he had prepared for Council, and gave an oral summary that covered both this, and an earlier report to the 87th Bureau meeting (agenda papers pp 20-21), dealing with major items of business including projects. He highlighted the six major goals of IUPAC, briefly leadership in global issues affecting chemical sciences, research advances through standardization and measurements, engagement with industry, networking among chemists, involvement of young chemists and with the general public, and diversification of the membership base. He expressed the need for Division III to be focused on these goals, and for better coordination between the six existing sub-committees to achieve these goals, especially given the current poor budget situation. He expressed the view that the Division should consider holding a Divisional conference that brought together the range of topics covered by the Division.

7. REPORTS OF SUB-COMMITTEES

(a) Organic Synthesis. Report –see agenda papers pp 2 or Appendix Two p 15. In the absence of Professor McDonald, Professor Isobe reported briefly on projects that involved organic synthesis, such as the current project involving six countries in strategic planning for an East/SouthEast Asian organic chemistry network. The meeting was reminded that it would be timely to review membership of the Organic Synthesis subcommittee (ACTION: FMc/MG)

(b) Biomolecular Chemistry. Report – see agenda papers pp 23 or Appendix Two p16. Professor Blackburn talked to his report on the S/C. The membership of this S/C had been under review, with the need to co-opt Asian members noted. While Professor Rauter was confirmed as Secretary, Prof Blackburn indicated that he intended to step down as from his role as Chair at the end of 2009, and noted that a new Chair was required. He was of the view that Committee Chairs should be TMs, a position that was supported by Professors Norin and Nicotra. Professor Koomen agreed and added that this would be a way to better engage TMs in Divisional business.

(c) Photochemistry. Report – see agenda papers pp 24-25 (2008 report) and or Appendix Two pp 17-19 (2009 report). It was noted that Professor Braslavsky has agreed to continue as Chair.

(d) Green Chemistry. Report –see Appendix Two pp 20-21. Professor Han spoke to this report and about the S/C business conducted via meetings at ICGC-2 (September 2008 Moscow) and in Glasgow. There had been a special issue of *Pure Appl. Chem* on the Moscow meeting. The CHEMRAWN VII Prize for Atmospheric and Green Chemistry had been launched in Moscow and the inaugural prize would be awarded at ICGC-3 in Canada. The prize would be awarded every two years to a young investigator (<45 yrs) from a developing country, beginning in 2010.

(e) Structural and Mechanistic Chemistry. Report – see agenda papers p26 or Appendix Two p 22. Professor Uggerud, the new Chair of this S/C, spoke to the two major objectives of the group: firstly to secure confirmation of the IPOC series of meetings and to assist the organizers of these meetings. IPOC20 is scheduled to be held in Busan, Korea in 2010; secondly, to come up with new projects. He noted the groups involvement in the project “Glossary of Physical Organic Chemistry”, and indicated that a project proposal on aromaticity was under development. He expressed the need for active members, and for rotation of members.

(f) Biotechnology. Report – see agenda papers pp 27-28 or Appendix Two pp 23-24. Professor Nicotra commented on the successful International Biotechnology Symposium held in Dalian, China with >2000 participants from over 80 countries. This meeting has generated a good connection to biology, and would now be held every two years. The next meeting is scheduled for 2010 and will be held in Rimini, Italy with Prof Nicotra involved in the arrangements for the meeting. It was hoped to publish conference proceedings in the *Journal of Biotechnology*. The membership of the biotechnology S/C is under review.

The various S/C reports were received with enthusiasm, and the work and commitment of the six S/C Chairs was warmly acknowledged.

8. REVISION OF THE MEMBERSHIP OF SUB COMMITTEES

Details of this item relating to individual S/Cs had been covered under item 7. In general discussion, it was felt that there was a need for some guidelines about S/C membership.

In later discussion (August 3) on S/Cs, it was recalled that the Photochemistry S/C is shared with Division I. Professor Tundo suggested that the Biomolecular and Biotechnology S/Cs

might consider merging, given the successful fusion apparent through the joint hosting of the CHEMBIOTECH meeting in Torino in 2007. Several members commented on the slightly different aims of the two S/Cs, but noted that Division III has overall responsibility for “bio” matters within IUPAC. Professor Nicotra was not able to be present at the August 3 continuation of the Divisional meeting, and it was acknowledged that his views on the matter were needed. Professor Tundo counselled that the Division was perceived as fragmented, and that other Divisions might choose to occupy the “bio” space if our Division did not maintain a strong profile in the area.

(At 11.30am, the meeting welcomed visits from CCE (Peter Mahaffy, and Eve Åkesson), then from *Chemistry International* (Fabienne Meyers), from COCI (Dave Evans, Mark Cesa), and finally from Bryan Pearson (IUPAC Discussion Board) while at 2.00pm the meeting welcomed a visit from CHEMRAWN (Lief Sydnes). Notes on these various discussions are included in Appendix Three (p25 of this document).

9. DIVISION GOALS

These had been addressed by Professor Tundo under items 3 and 6.

10. DIVISION BROCHURE AND NEWSLETTER

A Divisional newsletter had been prepared and circulated by Professor Koomen in November 2008. As a follow up, it was agreed that all S/Cs should write a short report, suitable for a newsletter and also for publication in *Chemistry International*. Future newsletters could publicize scientific publications and project technical reports from the Division.

11. IUPAC PRIZES

The CHEMRAWN VII prize for Atmospheric and Green Chemistry had recently been launched, and would be awarded for the first time at the ICGC-3 meeting in Ottawa, Canada in 2010. The Division congratulated Professor Tundo for his work in developing the prize.

12. INTERNATIONAL YEAR OF CHEMISTRY (IYC)

The IYC Committee is scheduled to meet on August 4. Members should note the IYC website (www.chemistry2011.org) and could sign up individually to this site. Professor Luis Oro (Chair, European Association for Chemical and Molecular Sciences) has advised that EuChemS will be the responsible partner for IYC in Europe. Thailand is promoting 2011 through its hosting of the Asian Chemical Congress.

Division members need to reflect on what organic chemistry is doing for society – the public, schoolchildren, and university groups – and to become involved in IYC activities. It was agreed that there should be a phone hook up after the General Assembly in order to propose topics of relevance to the goals of the Division.

13. INTERDIVISIONAL COMMITTEE ON GREEN CHEMISTRY

Professor Tundo advised that Past IUPAC President Bryan Henry (Canada) had initiated a proposal to establish an Interdivisional Committee in Green Chemistry. The Presidents of Divisions I, III, V and VI had met at the 87th Bureau meeting in Bratislava, and each had agreed in principle immediately, and enthusiastically to this idea, which was thus followed up by a joint letter written to various members of the IUPAC Executive supporting the establishment of the Committee. The matter was to be discussed further by the Executive at

its October 2009 meeting. It was considered that the new interdivisional committee could add value to projects in the key area of green chemistry.

Members of the Division commented that the initiative to develop Green Chemistry had first arisen in Division III, through the work of the Sub Committee on green chemistry (and the former working party in Green Chemistry established on in the late 1990's in Seoul) because early research often focused on green organic synthesis, and therefore they still viewed the Division as the natural home of the topic. However the scientific background of green chemistry has expanded over the last decade and the definition of green chemistry has now changed to a more general one that encompasses many branches of chemistry. Professor Blackburn described the origins of a Working party on Biomolecular Chemistry, established earlier by IUPAC and which was intentionally set up with a limited lifetime. He asked if this was also the intention for the proposed Inter Divisional Committee. Professor Tundo indicated that this was the intention, and asked the meeting to support the proposal.

Various members expressed reservations about the proposal and requested some additional time to reflect on it. Concerns raised included: (i) that the Committee might have too much overlap with CHEMRAWN or might cover topics of variable scientific quality; (ii) whether the S/C would also continue; (iii) when the new interdivisional committee might start, how it would be funded, and a query as to which IUPAC body the new committee might report to; (iv) the precedent for subsequent establishment of other InterDivisional Committees.

Professor Tundo advised that the intention was that the new Committee could operate under the divisional guidance of Division III, and that he understood that additional funding would not be forthcoming initially as it would be an experimental grouping. Some preliminary information was already available via his tabled report to Council (see item 3 reproduced on p.12 of these minutes).

Professor Blackburn expressed the view that the Divisional Committee, having discussed at length the proposal to establish an InterDivisional Committee on Green chemistry, still had insufficient information on funding and other administrative matters, and requested that the matter come back to the Division at a later date for further discussions.

Professor Han, Chairman of the Green Chemistry Sub Committee, spoke in favour of the proposal.

In view of the range of opinions presented, Professor Tundo informed the meeting that Divisions I, V and VI were also discussing the matter in their divisional meetings, and he agreed to prepare a briefing paper for circulation to members of the Division. He indicated that the next meeting of the IUPAC Executive Committee would discuss the proposal.

[Secretarial note for clarification: a briefing paper was subsequently circulated to members of the Division by email on 16 August. For convenience, this is reproduced in Appendix Four (pp.26-27) of this document]

14. INTERNATIONAL DISCUSSION ACS-IUPAC (WASHINGTON)

This is a new initiative originating from the ACS. Owing to the unavailability of other Divisional Executive members, Professor McDonald had agreed to represent Division III at this meeting on August 15. Additionally Professor Nifantiev (AM 2008-2009; 2010-2011) was attending the meeting, and had indicated his willingness to speak on behalf of the Division. In particular the Division should seek interactions with the Division of Organic chemistry of ACS.

15. DISCUSSION OF EXISTING PROJECT PROPOSALS AND DISSEMINATION OF RESULTS

Projects in progress (2007-2007 biennium, allocation shown)

- a. 2007-025-1; Biomass burning in Sub-Saharan Africa (Mammino; \$8k);
- b. 2007-035-1; Translation in Romanian and Dissemination of a monograph for Universities and Secondary Schools on "Global Climate Change" (Pascariu; \$4.5k);
- c. 2007-051-1; Workshop for finalizing the project proposal document for setting up International Center for Natural Product Research (ICNPR) (Mozzihuzamann, \$6k);

Approved during 2008-2009 biennium (total to date \$14.3k; note the previously circulated agenda papers incorrectly gave this figure as \$14.8k)

- d. 2008-016-1-300; Making the online journal of green chemistry: Green Rapid Internet Communications (Tundo; \$3.5k);
- e. 2008-026-1-300; Strategic planning for a new East and SouthEast Asian Network for Organic Chemistry (Isobe; \$5k);
- f. 2008-006-3-100; Thermodynamic Study on Hydrogen Storage Materials: Metal Organic Frameworks and Metal or Complex Hydrides (Sun, China; \$1k)
- g. 2009-002-1-300; Update of IUPAC Glossary of Physical Organic Chemistry (Perrin, USA; \$4.8k);

Projects currently in review at the time of the Divisional meeting

- h. 2008-1-017-4; Green Chemistry – creation and implementation of international cooperation in teaching and investigations. THE GREAT GREEN WAY (Lunin; \$10k requested; Div. recommendation to PC to fund \$5k; this project had been approved for funding);
- i. 2008-018-1; Translation in Greek and dissemination of a monograph for secondary schools on Global Climate Change (Siskos, \$7.5k requested);
- j. 2008-037-1; Standard photochemical processes (Griesbeck, \$15k requested; to be resubmitted);
- k. 2009-007-1; Evaluation of measurement methods and QA/QC for PCDD/F, PCB and PAHs in environmental matrices (air quality, soil, sediments and wastes) used in estimation of global pollution (Raccanelli, \$9.9k requested of which \$3.3k requested from Div III);
- l. 2009-014-1; Green Chemistry: Sustainable Education and Environmental Development (**SEED**) in Latin America (Vasquez, \$10k requested from various IUPAC Divisions);
- m. 2009-017-1; Workshop for preparing guidelines for initiating practical work of ICNPR (International Centre for Natural Product Research) (Mosihuzzamen; continuation of 2007-051-1-300, \$10k requested).

Professor Mozihuzzamen was advised that his recently submitted project now fell outside guidelines for funding of projects, and was encouraged to prepare a different proposal. Generally, projects needed to be international in scope. It was agreed that Professor Norin and Garson would work with Professor Mozihuzzamen to draw up a proposal.

There was insufficient time to discuss each project in detail (a matter which needs to be addressed in future Divisional meetings).

Professor Garson noted that members of the Division seemed reluctant to become involved in reviewing projects, and this was a contrast to other Divisions in which members were energetic in responding to requests for reviews. Noting that it is Divisional money that is being spend on these projects, she encouraged members to respond to requests for reviews or comments, and thereby to ensure that high quality projects were funded.

16. DISCUSSION OF NEW PROJECT PROPOSALS

Professor Rauter indicated that she had recently submitted a project on the nomenclature of flavones through Division VIII (Nomenclature) Suggestions for new projects included (i) biofuels (Professor Rauter); (ii) organic ligands (Demchuk); (iii) natural products and neglected diseases (Professor Garson).

It was noted that Divisions VI (Environmental) and VII (Macromolecular) co-publish projects with the publisher Wiley. However not all projects would be suitable for publication in this way.

17. BUDGET ALLOCATIONS

Including the Lunin project, the Division had already committed \$19.3k to projects in the 2008-2009 biennium, leaving approx \$15k to allocate for additional projects.

It was agreed to allocate this as follows: Raccanelli (2009-007-1) - \$3.5 k; Vasquez (2009-014-1) \$5k from Division III with other moneys likely to be approved from IUPAC project committee; Griesbeck (2008-037-1) \$4k; and the Siskos project (2008-018-1) to be allocated the remaining (approx) \$3k.

[Secretarial note for clarification: The Raccanelli funding request was originally listed as \$3.3k in the agenda papers; this figure was revised to \$3.5k following interdivisional correspondence. Later advice was received that project costs had increased from \$9.9k to \$15k, and that the amount requested from the Division would therefore increase.]

18. CONSIDERATION OF FUTURE SYMPOSIA AND CONGRESSES

(ii) Planning for future symposia

- a. ICOS-18 (Norway, August 2010), website url not yet available;
- b. ISCNP27/ICOB7 (Brisbane: July 10-14, 2011); website at www.griffith.edu.au/.../Biodiversity-and-natural-products-conference-2011.pdf;
- c. ISBOC (to be advised by Biomolecular S/C);
- d. International Biotechnology Symposium (Rimini, Italy, September 2010); a one page flyer is available, and see the website at www.ibs2010.org;
- e. Green Chemistry (ICGC-3 Canada 15-19 August 2010); website http://www.icgc2010.ca/about/about_icgc_2010.html;
- f. The next GA/Congress will be in Puerto Rico in 2011 with proposals from Turkey and from Korea to host 2013 and 2015 respectively under consideration.

19. PLANS FOR THE FUTURE

There was no additional discussion of this matter which had been addressed through S/C reports, and further through items 12, 15, 16 and 18.

20. ANY OTHER BUSINESS

Election of Divisional Officers. Professor Blackburn asked the meeting to consider item 5 (Election of Officers 2010/2011) in accordance with the Divisional rules available from the IUPAC website.

Professor Tundo reported that the Division Officers had previously explored the matter by an exchange of email and had agreed to support Professor Liao's nomination.

Professor Blackburn nominated Professor Ganesh (seconded Professor Al-Awadi) for the position of President-elect. The nomination of Professor Liao by Professor Isobe (seconded Professor Tundo) that had been made earlier was acknowledged. At this point of time (1830h on August 1), the meeting was adjourned so that members could attend the State of the Union address by the President. It was agreed to reconvene on Monday August 3 to finalise the divisional election.

(Secretarial note: continuation on August 3 at 1200h) In accordance with the Divisional rules, an election was held by secret ballot. Professor Tundo declared that the electorate for the ballot should be those TMs, AMs and NRs present at the meeting (August 3). This was because it was not feasible to hold an email election, given that the outcome would need to be ratified at Council on August 5-6 2009. Consequently ten members who were present (Tundo, Liao, Ganesh, Kocevar, Al-Awadi, Isobe, Blackburn, Rauter, Koomen, Garson) were eligible to vote. Dr Demchuk acted as scrutineer, and provided the marked ballot papers to the President.

Professor Ganesh was then declared elected to the position of President-elect.

An election for Division Secretary was then held. Professor Garson was nominated and was elected unopposed.

Divisional Representatives to other IUPAC Bodies. The following divisional representatives were confirmed: Prof Tundo (COCI), Prof Garson (CCE); Prof Al-Awadi (CHEMRAWN); Prof Rauter (Nomenclature); Prof Ganesh (Macromolecular Division); Prof Koomen (Human Health Division); Prof Greisbeck (Physical Division). Divisional representatives were still needed for Divisions II (Inorganic Division), V (Analytical Division), and VI (Environment Division).

[Secretarial note for clarification: subsequent to the Glasgow meeting, Professor Tundo advises that he was asked by Professor Lorimer to be the Division III representative to ICTNS (InterDivisional Committee on Terminology, Nomenclature, and Symbols)]

The President thanked all concerned for their attendance at the Divisional meeting and for their good work on behalf of Division-III. Professor Koomen, as incoming President, expressed the Division's thanks for the service of the departing members, including Professor Isobe (Past President and TM), Blackburn (Chair, Biomolecular S/C, and AM) and Cossy (as TM).

21. DATE AND TIME OF NEXT DIVISIONAL MEETING

Date and time of off-GA year annual meeting (2010) be decided, but venue likely to be in Europe or Middle East.

It was agreed that the next GA Divisional meeting would be held in Puerto Rico during the General Assembly (August 2011).

There being no further business, the meeting closed at 1315h on August 3.

Prof M.J. Garson
Secretary Division-III
10 October 2009.

For reference, the following documents are attached to these Minutes

APPENDIX ONE:

p. 10-14 Report of Division President to Council (August 2009)

APPENDIX TWO: Updated Sub Committee reports

p. 15 Report of Sub Committee for Organic Synthesis

p. 16 Report of Sub Committee for Biomolecular Chemistry

pp. 17-19 Report of Sub Committee for Photochemistry

pp. 20-21 Report of Sub Committee for Green Chemistry

p. 22 Report of Sub Committee for Structural and Mechanistic Chemistry

pp. 23-24 Report of Sub Committee for Biotechnology

APPENDIX THREE

p. 25 Notes and comments from meetings with other IUPAC groupings

APPENDIX FOUR

pp. 26-27 Transcript of email sent by Professor Tundo on August 16 providing additional information on the proposed InterDivisional Committee for Green Chemistry

APPENDIX ONE:**DIVISION III REPORT FOR THE COUNCIL
(AUGUST 2009)****1. Executive Summary**

The current and future Divisional funding is dependent on more advanced plans and therefore the importance of developing relevant project is decisive. The number of Projects (active, submitted and to be submitted) was increased during the last biennium.

The Division administers the CHEMRAWN VII prize for Atmospheric and Green Chemistry. The prize will be awarded every two years to a young investigator from a developing country, beginning in 2010. The Selection Committee is composed by the President of the Organic and Biomolecular Chemistry Division as Chair, the Chair of the Subcommittee on Green Chemistry, and the Chair of CHEMRAWN

2. Division III Activities

Division III is characterized by a large number of Sub-Committees, S/Cs, who are very active in six specific sectors. They organize biannual International Conferences and Workshops, promote and manage Projects, publish the results on Special Issues of PAC. They are:

Sub-committee on Organic Synthesis;
Chairman, Frank McDonald, USA

Sub-committee on Biomolecular Chemistry;
Chairman, Mike Blackburn, UK

Sub-committee on Photochemistry;
Chairman, Sylvia Braslavsky, Germany

Sub-Committee on Green Chemistry;
Chairman, Buxing Han, China

Sub-committee on Structural and Mechanistic Chemistry;
Chairman, Einar Uggurud, Norway

Sub-committee on Biotechnology;
Chairman, Francesco Nicotra, Italy

Revised S/C membership will be carried out in the occasion of the Glasgow IUPAC Congress.

Goal 1: IUPAC will provide leadership as a worldwide scientific organization that objectively addresses global issues involving the chemical sciences.

The Conferences organized by the S/Cs are always carried out with the support of the National and International Organizations. A new series of Conferences on Green Chemistry is now established. The second event was carried out in Moscow-S. Petersburg on September 2008. The third one will be in Ottawa on August 2010.

Goal 2: IUPAC will facilitate the advancement of research in the chemical sciences through the tools that it provides for international standardization and scientific discussion.

Three projects are presently addressing this aim:

1. Glossary of Physical Organic Chemistry (Perrin, USA);
2. Standard photochemical processes (Griesbeck, Germany) and
3. Evaluation of measurement methods and QA/QC for PCDD/F, PCB and PAHs in environmental matrices (air quality, soil, sediments and wastes) used in estimation of global pollution (Raccanelli, Italy);

Goal 3: IUPAC will assist chemistry-related industry in its contribution to sustainable development, wealth creation, and improvement in the quality of life.

The Division is administering the **CHEMRAWN VII prize for Atmospheric and Green Chemistry**. The prize of USD 5000 will be awarded every two years to a young investigator from a developing country, beginning in 2010. The nominees should be <45 years, since many young chemists from developing countries require some years to develop the appropriate track record of accomplishment. The prize was announced at the Moscow ICGC-2 Conference, and that nominations for the prize would close on December 31st of the year preceding the Green Chemistry conference at which each prize would be awarded.

We are pleased to announce that the CHEMRAWN VII Future Actions Committee and the Organic and Biomolecular Chemistry Division have agreed to establish the title Prize, to be awarded biennially at the IUPAC Conference on Green Chemistry.

The first award will be given at the IUPAC ICGC-3, Ottawa, August 15-19 2010. Nominations for the prize would close on December 31st of the year preceding the Green Chemistry Conference, that is on December 31st, 2009. Each nomination should include a CV and two letters of support plus a brief summary of research, emphasizing the contribution of the applicant in the field of green chemistry and emphasizing atmospheric chemistry.

The Selection Committee is composed by the President of the Organic and Biomolecular Chemistry Division as Chair, the Chair of the Subcommittee on Green Chemistry, and the Chair of CHEMRAWN

Goal 4: IUPAC will foster communication among individual chemists and scientific organizations, with special emphasis on the needs of chemists in developing countries.

Professor Liliana Mannino, University of Venda, South Africa, is managing the project: Biomass burning in Sub-Saharan Africa.

Goal 5: IUPAC will utilize its global perspective and network to contribute to the enhancement of chemistry education, the career development of young chemical scientists, and the public appreciation of chemistry.

Particularly active at this regards are the Translation in Romanian and Dissemination of a monograph for Universities and Secondary Schools on "Global Climate Change". A new request is now in evaluation concerning its translation in Greek.

Under evaluation are also two Projects concerning dissemination, workshops, media:

1. Green Chemistry – creation and implementation of international cooperation in teaching and investigations. THE GREAT GREEN WAY (Lunin) and
2. Green Chemistry: Sustainable Education and Environmental Development in Latin America. SEEDS (Vasquez).

Goal 6: IUPAC will broaden its national membership base and will seek the maximum feasible diversity in membership of IUPAC bodies in terms of geography, gender, and age.

The present Membership of the Division, S/Cs, Projects and Conferences takes care of that.

3. Additional Information

Divisions I, III, V and VI intent to propose the institution of an **Interdivisional Committee on Green Chemistry**.

The importance of establishing this Committee on Green Chemistry is based upon the relevance that this field has acquired during the last years. In fact Green Chemistry involves not only the educational aspects, but more importantly represents a joint endeavour of numerous Projects carried out by the sub-Committee on Green Chemistry of the Division III. In fact the above-referenced Divisions were in the past often involved in various aspects of Green Chemistry ranging from fundamental (Division I), specific systematic (Division III) and analytical (Division V) as well as general environmental (Division VI) implications, so much so that we propose this Interdivisional Committee in order to realize the synergy and cohesion that this topic naturally commands. This new organization will enable the debate on ideas and concepts, provide a forum for discussion and facilitate the formulation of projects in this rapidly advancing field that is intimately connected to global sustainability issues. In a sense, the proposed Commission should be the voice of chemistry in the climate change debate. As a case in point, the importance of fundamental and applied chemistry in this field was recently confirmed by numerous research projects financed worldwide by several countries and agencies.

It should highlight these aspects as they will be useful to increase the visibility of Chemistry in the scientific community also in view of the forthcoming International Year of Chemistry; IYC. The coordination afforded by the four proposing Divisions may increase the visibility of IUPAC by approaching projects that involve a larger context and may reach a wider public.

International Year of Chemistry. This topic will be fully discussed in the occasion of the Divisional meeting in Glasgow, taking the advantage of the presence of the Sub-Committee presence and their active Chairmen. Particular importance will be devoted to the organization of joint Festivals or/and Olympic Chemical Games, involving the multiform actors in Organic and Biomolecular Chemistry Division.

4. Tabular Material

CONFERENCES AND MEETINGS OF SUB-COMMITTEES

Organic Synthesis. ICOS-17 (Daejeon, Korea: June 22-27, 2008)

Biomolecular Chemistry. The CHEMBIOTECH meeting in Torino (August 2007) and ISCNP26/ICOB6 in Charlottetown, PEI, Canada (July 2008) were successfully.

Green Chemistry. ICGC-2; Moscow, Russia: September 14-20, 2008; a special issue of Pure Appl. Chem. is linked to this meeting.

Photochemistry. 22nd IUPAC Symposium on Photochemistry (Gothenburg, Sweden: July 28-1 August 2008)

Structural and Mechanistic Chemistry. ICPOC-19, Santiago de Compostela, Spain: July 13-18, 200 during the International Symposium on Physical Organic Chemistry.

Biotechnology. 13-IBS; Dalian, China: October 12-17, 2008

PROJECTS

Projects in progress (2007-2007 biennium, allocation shown)

- a. 2007-025-1; Biomass burning in Sub-Saharan Africa (Mammino; \$8k);
- b. 2007-035-1; Translation in Romanian and Dissemination of a monograph for Universities and Secondary Schools on "Global Climate Change" (Pascariu; \$4.5k);
- c. 2007-051-1; Workshop for finalizing the project proposal document for setting up International Center for Natural Product Research (ICNPR) (Mozzihuzamann, \$6k);

Approved during 2008-2009 biennium (total to date \$14.8k)

- d. 2008-016-1-300; Making the online journal of green chemistry: Green Rapid Internet Communications (Tundo; \$3,5k);
- e. 2008-026-1-xxx; Strategic planning for a new East and SouthEast Asian Network for Organic Chemistry (Isobe; \$5k);
- f. 2008-006-3-100; Thermodynamic Study on Hydrogen Storage Materials: Metal Organic Frameworks and Metal or Complex Hydrides (Sun, China; \$1k)
- g. 2009-002-1-300; Update of IUPAC Glossary of Physical Organic Chemistry (Perrin, USA; \$4.8k);

Projects currently in review

- h. 2008-1-017-4; Green Chemistry – creation and implementation of international cooperation in teaching and investigations. THE GREAT GREEN WAY (Lunin; \$10k requested; Div. recommendation to PC to fund \$5k);
- i. 2008-018-1; Translation in Greek and dissemination of a monograph for secondary schools on Global Climate Change (Siskos, \$7.5k requested);
- j. 2008-037-1; Standard photochemical processes (Griesbeck, \$15k requested; to be resubmitted);
- k. 2009-007-1; Evaluation of measurement methods and QA/QC for PCDD/F, PCB and PAHs in environmental matrices (air quality, soil, sediments and wastes) used in estimation of global pollution (Raccanelli, \$9.9k requested of which \$3.3k from Div III);

1. 2009-014-1; Green Chemistry: Sustainable Education and Environmental Development (**SEED**) in Latin America (Vasquez, \$10k requested from various IUPAC Divs);

PLANNING FOR FUTURE SYMPOSIA

ICOS-18 (Bergen, Norway, August 1-6 2010; organizer L. Sydnnes), and **ICOS-19** (Melbourne, Australia, 2012).

ICPOC -20: (Korea, August 2010)

ISCNP27/ICOB7 (Brisbane: July 10-14, 2011)

ISBOC-8 (North America, Townsend/Vederas, 2010) and then in Europe in 2012.

Biotechnology The 2010 meeting will take place in Italy, Bologna, while an application from Korea to host the meeting in 2012 has been accepted.

ICGC-3, 3rd Int. Conference on Green Chemistry (Ottawa, Canada, 15-19 August 2010).

Pietro Tundo
President of Division III

APPENDIX TWO: UPDATED SUB COMMITTEE REPORTS**REPORT TO DIVISION III FROM THE SUB-COMMITTEE
ON ORGANIC SYNTHESIS**

The major activity of the past year has been the occasion of ICOS-17, in Daejeon, South Korea, during June 22 – 27, 2008. The conference featured over 1000 attendees from more than 40 countries, approximately 50 invited lecturers, and over 500 poster presentations. The next ICOS conference (ICOS-18) will be held in Bergen, Norway, from August 1 – 5, 2010. Furthermore, the synthesis subcommittee has recommended Melbourne, Australia for ICOS-19 in 2012.

In the second half of 2009, the subcommittee will solicit bids for ICOS-20 in 2014. Interest has already been expressed by synthetic organic chemists in Shanghai, Budapest, and Singapore. We will also be canvassing the international synthetic organic chemistry community to solicit nominations of candidates for the Thieme-IUPAC prize in synthetic organic chemistry, to be awarded in Bergen in August 2010.

In other respects, the subcommittee has not been terribly active with regard to projects. While the chairman and the other members of the subcommittee are quite active with their local and national professional circles, it is hoped that the coming year will see more activity with regard to IUPAC, particularly the development of important and innovative project proposals.

Frank McDonald

July 14, 2009

REPORT TO DIVISION III FROM THE SUB-COMMITTEE ON BIOMOLECULAR CHEMISTRY

MEMBERSHIP

The present membership list (taken from the IUPAC Web site on 18 June 2009) is:

Chair: Blackburn, G. Michael

Secretary: Ganesh, Krishna N.

Members: Carell, Thomas, Chibale, Kelly, Garson, Mary J., Lasalde, José A., Marquet, Andrée, Norin, Torbjörn, Parmar, Virinder S., Salem, Ezz-Eldin M., Scott, A. Ian, Sener, Bilge, Taira, Kazunari, Townsend, Craig A., Waldmann, Herbert, Yuthavong, Yongyuth, Zhang, Li-He

This is very up to date in some respects and very out of date in others. Ian Scott is, sadly, deceased. Kazunari Taira, Andrée Marquet, Herbert Waldemann and Yongyuth Yuthavong have left the committee, and José Lasalde joined us last Autumn. I also invited Alexander Gabibov (Moscow, President of the Russian Biochemical Society), Amélia Pilar Rauter (Lisboa, NR Portugal, and long time representative of Division-III on the IUPAC Nomenclature Commission), and Zaman Mosihuzzaman (Director, International Center for Natural Product Research, Dhaka) to become members. Krishna Ganesh resigned his position as Honorary Secretary earlier this year and I am glad to tell you that Amélia Rauter has agreed to be Secretary with effect from March 1st 2009. So the present committee is:

Chair: Blackburn, G. Michael

Secretary: Rauter Amélia P.

Members: Carell, Thomas, Chibale, Kelly, Ganesh, Krishna N., Garson, Mary J., Gabibov, Alexander, Lasalde, José A., Mosihuzzaman Md., Norin, Torbjörn, Salem, Ezz-Eldin M., Sener, Bilge, Townsend, Craig A., Zhang, Li-He

ANNUAL GENERAL MEETING

Our Annual Committee Meeting will be held at the Glasgow GA on July 31st at 09.00.

PROJECTS

It is a clear need for Division-III that we generate new Projects, not least because we lag behind other Divisions and budgetary allocations are linked to productivity in this activity. SO, please bring proposals for New Projects to the S/C Meeting.

UPDATE to Division-III

This has been a quiet year for the Div-III Biomolecular S/C primarily because we took a strategy decision in Torino in August 2007 not to seek to hold Symposia/Conferences in 2009 that would be competitive with the excellent program (especially "Chemistry of the Cell") organised for the Congress by the Royal Society of Chemistry.

FUTURE

I have held the office of Chair of this Sub-Committee for 4 years and now propose to step down with effect from December 31st 2009. I am sure that the Officers of Division-III will welcome suggestions from within the S/C itself for my successor.

G. Michael Blackburn

18 June 2009

REPORT TO DIVISION III FROM THE SUB-COMMITTEE ON PHOTOCHEMISTRY

The Sub Committee met during the 24th International Conference on Photochemistry held in Toledo, Spain from 19-14 July 2009, and the minutes are below :

Toledo, July 21st, 2009

Sub-committee on Photochemistry of IUPAC

The Sub-committee on Photochemistry of IUPAC, dependent on Division III of IUPAC (Organic and Biomolecular Division), met for a working lunch on July 21st within the frame of the XXIV Conference on Photochemistry (ICP2009) which took place in Toledo (Spain) in the period July 19th-24th. The following colleagues were present: Cornelia Bohne (Canada), Silvia E. Braslavsky (Germany, Chairwoman), Fred Brouwer (The Netherlands), Axel Griesbeck (Germany, Titular member in Division III), Johan Hofkens (Belgium, new member), Hiroshi Miyasaka (Japan), Massimo Olivucci (Italy), Guillermo Orellana (Spain), Robert Pansu (France), Enrique San Román (Argentina), Masaki Terazima (Japan), David Worrall (United Kingdom).

The meeting started with a discussion about the need for the existence at large of the Sub-Committee, in view of the fact that any chemist (or any non-chemist as well) can propose a new project within the present IUPAC structure. The general view was that the Sub-Committee was a very good structure in order to discuss personally once a year (on the occasion of the International Conference on Photochemistry the odd years and of the IUPAC- Sponsored Symposium on Photochemistry the even years), as well as through e-mail, the progress of the initiated projects and the need for new projects, whereas the presence of the "Photosciences" within the IUPAC structure is maintained through the Sub-Committee.

The Sub-Committee understands itself as a control and source of new ideas for all projects concerned with the interaction of light and matter. It should also connect with the three Societies on Photochemistry, the Inter-American (Inter-American Society on Photochemistry, IAPS), the European (European Photochemical Association, EPA), and the Asian (Asian Society on Photochemistry, ASP). This was a fruitful discussion during which several ideas for new projects came to the surface (see below).

The undersigning, Silvia Braslavsky, was convinced by the Sub-Committee to keep the chair based on her experience with the writing of various documents and her knowledge of the photosciences community. I accepted and thank very much my colleagues for the confidence deposited in my work and "pushing" abilities.

Information was provided on the progress of various projects as follows:

1. **"Glossary of Terms on Photocatalysis and Radiocatalysis"** (Silvia Braslavsky).

The almost finalized draft has been sent for a last round of comments to the working party and to the members of the Sub-Committee on Photochemistry. **Comments on the draft should be sent to Silvia Braslavsky before the end of August 2009.** The draft was also sent to the officers of Division I of IUPAC (Physical and Biophysical Chemistry) and Division III for their information on the progress of this long-standing project, as well as to the Interdivisional Committee on Terminology, Nomenclature and Symbols (ICTNS), asking for their help with the formatting, although the document is NOT yet officially submitted to IUPAC. Some comments have already been received and we hope to submit officially the document to IUPAC by September 2009.

2. **"Reference Methods, Standards and Applications of Photoluminescence"** (Enrique San Román and Fred Brouwer). Three documents (from the 6 planned documents within the frame of the project) are at different levels of completion:

- The 1st document in the series, “**Fluorescence Standards: Classification, Terminology and Recommendations on their selection, use and production** (Technical Note)” whose status is defined as provisional in the sense that it passed all the filters within the Task Group and is ready to be submitted to IUPAC for internal and external review.
- The 2nd document, “**Characterization of photoluminescence measuring systems** (Technical Note)” which is a draft version intended for internal use, as a last review - revision step is still pending.
- The 3rd document is also a draft version: “**Reference Methods, Standards and applications of photoluminescence**” It contains a notice to be sent accompanying the first document and should also be posted at the IUPAC web page. Opinions about this notice will be welcome.

Anyone wishing to see and comment on the documents should request them to Enrique San Román <esr@qi.fcen.uba.ar> or **Fred Brouwer** <a.m.brouwer@uva.nl>

3. A project has been submitted to IUPAC by **Axel Griesbeck** <aco01@uni-koeln.de> <griesbeck@uni-koeln.de> on “Photochemical Synthetic Methods”. The project is in the process of evaluation within IUPAC.

4. A new project has been proposed to the Sub-Committee by **Guillermo Orellana** (orellana@quim.ucm.es) on “**Long-lived Emission Standards**”. Guillermo will submit the project to IUPAC by October 2009. Robert Pansu and Stephan Landgraff are members of the Sub-Committee working in the field. Guillermo will suggest a series of names as members of the working party.

5. A suggestion was made to ask **Tito Scaiano** (Ottawa) to provide the series of transient spectra of triplet states and radical species he has measured and collected over many years for inclusion in a sort of extended collection of transient species. **Trevor Smith** had agreed in 2008 to initiate this project, that should be written and submitted to IUPAC. Johan Hofkens <johan.hofkens@chem.kuleuven.be> and Hiroshi Miyasaka <miyasaka@chem.es.osaka-u.ac.jp> are ready to participate in this project and provide spectra of excited singlet state species.

6. There is a need for actinometer standards in the UV. Jim Bolton has measured the quantum yield of the ferrioxalate actinometer following a strict protocol and has arrived to the conclusion that the value 1.25 for the quantum yield upon excitation at 254 nm is definitively wrong. It should be about 1.40 at 254 nm. The protocols are available from Jim Bolton <jbolton@boltonuv.com>. This is a question that members of the Sub-Committee should think about. **David Worrall** has agreed to initiate some consultations. In the mean time Marta Liras at Tito Scaiano’s research group in Ottawa is applying some actinometers for wavelengths in the UV region (190 nm). It would be advisable to propose a project to IUPAC on this subject, since these wavelengths are and will be more and more used in important applications such as water remediation.

Axel Griesbeck informed that the **Glossary of Terms used in Photochemistry** (<http://media.iupac.org/publications/pac/2007/pdf/7903x0293.pdf>) will be included in the CRC-Handbook of Photochemistry and Photobiology, edition 3, which is very advanced in its preparation. The Sub-Committee suggested enhancing the information about the work of the Sub-Committee by distributing a leaflet about its activities and the possibilities of members of the photochemical community(ies) to participate in these activities, during the photochemistry meetings around the world. Silvia Braslavsky and Enrique San Román will write such a leaflet.

The Sub-Committee will meet again during the IUPAC-sponsored Symposium on Photochemistry to be held in Ferrara, Italy, at the end of July 2010.

Membership of IUPAC (Div. III) Sub-Committee on Photochemistry (2009-2011)

Waldemar Adam, Puerto Rico, <wadam@chemie.uni-wuerzburg.de>

Cornelia Bohne, Canada, bohne@uvic.ca

Andre Braun, Germany, Brasil, Andre.Braun@ciw.uni-karlsruhe.de

Silvia E. Braslavsky (chairwoman), Germany, braslavskys@mpi-muelheim.mpg.de

Fred Brouwer, The Netherlands, a.m.brouwer@uva.nl
Axel Griesbeck, Germany, Titular Member of Div. III, griesbeck@uni-koeln.de, aco01@uni-koeln.de
Johan Hofkens, Belgium, johan.hofkens@chem.kuleuven.be new member
Andrei Kutateladze, USA, akutatel@du.edu,
Alexander Krasnovsky, Russia, phoal@mail.ru
Stephan Landgraff, Austria, landgraf@tugraz.at new member
Marta Litter, Argentina, litter@cnea.gov.ar,
Hiroshi Miyasaka, Japan, miyasaka@chem.es.osaka-u.ac.jp
Massimo Olivucci, Italy, olivucci@unisi.it
Guillermo Orellana, Spain, orellana@quim.ucm.es
Robert Pansu, France, Robert.Pansu@ppsm.ens-cachan.fr
Luca Prodi, Italy, luca.prodi@unibo.it
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David R. Worrall, UK, D.R.Worrall@lboro.ac.uk

Silvia E. Braslavsky
Chairwoman
Sub-Committee on Photochemistry
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REPORT TO DIVISION III FROM THE SUB-COMMITTEE ON GREEN CHEMISTRY

(Submitted to Division III)

From Buxing Han, Chairman of the Subcommittee

Some activities and ideas related with the Subcommittee on Green Chemistry are in the following.

1. The 2nd International IUPAC Conference on Green Chemistry

The 2nd International IUPAC Conference on Green Chemistry was held in Russia during September 14-20 of 2008. The chairmen of the conference were Professor V. V. Lunin (M. V. Lomonosov Moscow State University) and Professor Pietro Tundo. Many chemists, industrial representatives and students attended the conference. This conference was an important event for green chemistry community. It provided an excellent opportunity for the practitioners in the field of green chemistry to report their achievements and exchange ideas. We also held a successful Subcommittee Meeting during the conference.

2. The 3rd International IUPAC Conference on Green Chemistry

The 3rd International IUPAC Conference on Green Chemistry will be held in Ottawa, Canada, August 15-19, 2010. Professor Philip Jessop, one of the subcommittee members, is the main organizer. Many VIPs including Minister of Environment, Minister of Research and Innovation, Mayor of Ottawa City, Chair of Chemical Institute of Canada, and some famous professors in Canada, wrote letters to Prof. Pietro Tundo and the Subcommittee on Green Chemistry to support holding the conference in Canada. Our Subcommittee will do our best to help the organizers of this conference.

3. The IUPAC Prize on Atmospheric and Green Chemistry

The CHEMRAWN VII Future Action Committee has awarded 5k US \$ for a prize in Atmospheric and Green Chemistry to be administered by Division III. The prize will be awarded every two years, beginning in 2010 at the 3rd International IUPAC Conference on Green Chemistry. Our Subcommittee would like to do our best to help the Division on this.

4. About IUPAC Projects

Some professors (e.g. Professors Lunin, 2008-1-017-4; Professor Vasquez, 2009-014-1) are applying for projects that are related with the Subcommittee of Green Chemistry. Our Subcommittee considers these projects are of great importance. We would like to thank Division III for the strong support. We will encourage more professors to apply for projects related with green chemistry.

5. Invitation of some new members

Green chemistry is an interdisciplinary field. Some committee members suggested that we should invite new experts of different areas to join the subcommittee. We have invited the new members that were selected at the Subcommittee Meeting on September 16 of 2008 in Russia.

6. Others

The 4th International Conference on Green and Sustainable Chemistry will be held in Beijing during August 20-24. Professor Buxing Han is the chairman of the conference. Many members of IUPAC Subcommittee on Green Chemistry have been invited to be the International Advisory Broad Members of the conference and/or give lectures at the conference.

The Subcommittee will try best to make contribution to the development of green chemistry. We will contact the President of the Division if we have other ideas and plan.

REPORT TO DIVISION III FROM THE SUB-COMMITTEE ON STRUCTURAL AND MECHANISTIC CHEMISTRY

Report for the period 2007–2009

Members

Uggerud, Einar (Chair), Allende, J. J. Eduardo Humeres, Bohne, Cornelia, Edlund, Ulf G., Egorov, Mikhail P., Fukuzumi, Shunichi, Grabowski, Slawomir J., Ji, Guo-Zhen, Juaristi, Eusebio, Kim, Sung Soo, Krygowski, Tadeusz Marek, Leis, J. Ramón, Louw, Robert, Ludwig, Miroslav, Micheau, Jean-Claude, Nudelman, Norma S., Onyido, Ikenna, Pagani, Giorgio, Perrin, Charles L., Pojarlieff, Ivan, Siehl, Hans-Ullrich, Tundo, Pietro R.

Subcommittee meetings

There have been two subcommittee meetings in this period.

- Torino 2007 in connection with the IUPAC general assembly.
- Santiago de Compostela 2008 in connection with ICPOC 19.

ICPOC-series of meetings

The 19th International Conference of Physical Organic Chemistry (ICPOC19) was held at the University of Santiago de Compostela in association with the University of Coruña and the University of Vigo in the period June 13–18 2008.

Organizing committee:

José R. Leis, University of Santiago de Compostela
Luis García-Río, University of Santiago de Compostela
Arturo Santaballa, University of Coruña
Moisés Canle, University of Coruña
Juan C. Mejuto, University of Vigo

The very well organized meeting was a great scientific success with a good mix of topics, and a fine balance between invited and international contributors.

The 2008 business meeting of the S/C in Santiago approved a proposal that the 20th International Conference of Physical Organic Chemistry (ICPOC20) will be held in Busan (Korea) in the period August 23 – 28, 2010. Conference fee for participants will be at the same level as in Santiago and Warsaw with price reduction for students. Dae-Dong Sung of Dong-A University, Saha-Gu chairs the local organizing committee. On June 3, 2009 he reported a preliminary list of plenary speakers who have accepted invitations. It appears that preparation is *en route*.

Projects

At the business meeting of the S/C in Santiago the following topics (responsible person) were suggested.

1. Revision of The Glossary of Physical Organic Chemistry (C. Perrin)
2. Aromaticity (T.M. Krygowski)

A project application has been sent to IUPAC for the former but yet not the latter.

Einar Uggerud

Oslo, June 18, 2009

REPORT TO DIVISION III FROM THE SUB-COMMITTEE ON BIOTECHNOLOGY

Reports of Sub-Committee on Biotechnology for the period 2007-2008 and 2009

As chairperson of the S/C of Biotechnology since the beginning of 2006 Prof. Francesco Nicotra had the mandate to “revitalize” the activities and in particular organise a meeting in 2007, possibly as satellite of the IUPAC General Assembly and Meeting in Torino.

Different possibilities have been considered, and discussed within the subcommittee, and with the organisers of the IUPAC Conference of Torino, and Committees of other international organisations devoted to biotechnology. In particular, members of the European Society of Applied Biocatalysis (ESAB) and of BIOTRANS (international symposia on biotransformations) have been contacted.

The idea was to involve as much as possible already structured groups and organisations, under the auspices of IUPAC, in order to take advantages on “already working engines” and avoid competitions, overlaps and conflicts.

Contacts with the organisers of BIOTRANS 2007 (Oviedo, Spain, July 2007) in order to join the efforts, were not fruitful. After a long negotiation with the chairperson, Vicente Gotor, which was in principle open to this possibility, the committee has decided to maintain their “autonomy”.

Contacts with the chair of the IUPAC subcommittee of Biomolecular Chemistry, Prof. Michael Blackburn, resulted in the idea to join the efforts of the two subcommittees, that have large common interests, to reach a critical mass in order to organise a joint-session (CHEM-BIOTECH 2007) within the 41st IUPAC Conference in Torino,

CHEM-BIOTECH 2007 is a combined Biomolecular-Biotechnology Symposium as a major component of the 41st IUPAC Congress in Torino, Italy, August 5-11, 2007. This four-day CHEM-BIO-TECH Symposium comprises IUPAC’s 1st Symposium on Biotechnology held jointly with IUPAC’s 8th ISBOC meeting.

In designing the program, the goal was to focus on work at the interface of biotechnology and biomolecular chemistry from which many key industrial and academic advances have sprung. The program embraced a range of topics ranging from novel drug discovery, biosynthesis, biocatalysis and organic synthesis through artificial biomolecules and other emerging biotechnological applications. Attention was also devoted to industrial experience in drug research and in biotechnological productions.

The special topics discussed during the symposium included:

- Natural products synthesis, biosynthesis and isolation
- Industrial application of Bio-organic chemistry and Biotechnology
- Bioorganic and Bioinorganic chemistry, Biosynthesis, Biocatalysis
- Analytical methods applied to molecular recognition

An agreement has been reached on the Conference programme with the chairs of the sessions of Organic Chemistry (Prof. Ottorino De Lucchi) and of the session of Biological and Biophysical Chemistry (Prof. Mario Fasano) in order to avoid overlaps. These sessions will end when our joint-session starts. Therefore a higher participation is expected.

2008

The main event organised by the sub-committee of biotechnology in 2008 is the **13th International Biotechnology Symposium (IBS-2008), 12-17 October 2008, Dalian, China, www.ISB2008.org**
Chair Prof. Shengli Yang, Co-chair Prof. Fengwu Bai, Prof. Francesco Nicotra.

The IBS-2008 had 9 theme sections with 45 sessions included in: I) Systems Biology, II) Tissue Engineering and Cell Cultivation, III) Medical Biotechnology, IV) Agricultural Biotechnology, V) Industrial Biotechnology, VI) Marine Biotechnology, VII) Environmental Biotechnology, IIIV) Food Biotechnology; IX) Biosafety and Bioeconomy.

In addition to those scientific sessions, 3 special sessions for international collaboration, education, and biotech industry development were also organized in conjunction with the IBS-2008.

The IBS-2008 had 1858 officially registered participants, and among them, 1146 were international delegates from about 80 countries across the world. If about 700 participants from the local universities and research institutes included, the total participants were about 2500. The IBS-2008 had 207 speakers: 8 for the plenary lectures, 57 for the keynote lectures, 126 for the invited lectures and 16 for the three special sessions. Among the 207 speakers, 153 were international scientists from about 40 countries. About 1800 abstracts were accepted and published in Journal of Biotechnology as a supplement by Elsevier.

The subcommittee meeting (14th of October, present: F. Nicotra, M. Moo-Young, F. Bay, F. Kolisis), discussed possible projects and the organisation of future meeting.

The **14th IBS 2010** will be organised by the University of Bologna, at the convention centre of Rimini (15-19 September 2010, Chair Prof. Fabio Fava, Co-chair Prof. Francesco Nicotra, www.ibs2010.org). A special effort is needed to make the scientific content more suitable and attractive for chemists, although the biological and biomedical characterisation is needed to have a wide auditorium. For this purpose a plenary session on the “contribution of Chemistry to develop a biotechnology based economy is planned” and the European platforms on Sustainable Chemistry (www.suschem.org) have been involved .

The **15th IBS 2012**, will take place at **Daegu, Korea**, Reference person, Secretary General of the KSBB, Prof. Tai Hyun Park

Francesco Nicotra

10 July 2009

APPENDIX THREE: NOTES AND COMMENTS FROM MEETINGS WITH OTHER IUPAC GROUPINGS

Committee for Chemical Education (CCE)

Discussion with Peter Mahaffy and Eve Åkesson.

This group wants to ensure that its activities are genuinely global. There are two S/Cs: firstly the Public Understanding of Chemistry currently tasked with looking after IYC2011; and secondly Chemistry in developing Countries. Other priorities of the CCE committee included chemistry and sustainable development (overlap with CHEMRAWN), supporting initiatives re ethical issues, supporting the biannual conference on chemical education (ICCE series), and the building of networks through the multicultural competencies of IUPAC.

There are currently two Outreach programs: firstly, Young Ambassadors in Chemistry, and secondly the Flying Chemists program (further details see CCE website).

Chemistry International

Discussion with Fabienne Meyers who requested items and reports, and general ideas for use in the magazine. Fabienne was congratulated for the high quality of this publication.

CHEMRAWN (Chemical Research applied to World Needs)

Discussion with Lief Sydnés.

Membership of this committee is by appointment by the President. A task group is developing a Code of Conduct.

IUPAC Discussion Board

Bryan Pearson gave a demonstration of the use of the IUPAC Discussion Board, in particular on how to reply to a message, or setting up a new thread, or uploading a file. Members of the Division are automatically enrolled, but need to assign a username and password to access the system.

Committee on Chemical Industry (COCI)

Discussion with Dave Evans, Mark Cesa and Michael Booth.

The committee is committed to being involved in projects that share best practise globally, and which transfer knowledge to developing countries. Current activities include the HSE program, and the Public Appreciation of Science. Members may be interested to note that there is a SpeakerPak available for industrial chemists. Generally the Committee works to ensure that industry values IUPAC's core business of standards, nomenclature, and measurement etc.

Dave Evans observed that IUPAC had lost the central ground in general debates on chemical topics to organisations such as Greenpeace, and recommended a reading of the book *Bad Science* by Ben Goldacre in order to gain an appreciation of the public view of science. He further recommended a look at the website with 2 minute videos on the elements that had been developed by Professor Martyn Poliakoff, and which receives a large number of hits worldwide.

APPENDIX FOUR: TRANSCRIPT OF EMAIL ON INTERDIVISIONAL COMMITTEE FOR GREEN CHEMISTRY SENT ON AUGUST 16 BY PROFESOR TUNDO:

Dear Colleagues,

as agreed in Glasgow, here underlined are additional informations on the Interdivisional Committee on Green Chemistry. They do not intend to be complete, but report the situation as it is now. In fact, they follow the discussion and the approval also by the other Divisions, the further agreements I had with their Presidents, and the preliminary introduction that Prof. Michel Rossi presented to the Council on Thursday 6th. These reports are related to:

- 1. scientific content*
- 2. management and budget*
- 3. membership*

1. Scientific content

The scientific basis has been reported in the past on the IUPAC Symposium in Print published on PAC, 2000, **72**, No. 7, 1207-1228 (P. Anastas, D. Black, J. Breen, T. Collins, S. Memoli, J. Miyamoto, M. Polyakoff, W. Tumas and P. Tundo: "Synthetic pathways and processes in green chemistry. Introductory overview").

This will be updated taking in consideration the recommendations of OECD (OECD Workshop on Sustainable Chemistry, Venice, October 15-17, 1998):

- Use of Alternative Feedstocks: The use of feedstocks which are both renewable rather than depleting and less toxic to human health and the environment.
- Use of Innocuous Reagents: The use of reagents that are inherently less hazardous and are catalytic whenever feasible.
- Employing Natural Processes: Use of biosynthesis, biocatalysis, and biotech-based chemical transformations for efficiency and selectivity.
- Use of Alternative Solvents: The design and utilization of solvents which have reduced potential for detriment to the environment and serve as alternatives to currently used volatile organic solvents, chlorinated solvents, and solvents which damage the natural environment.
- Design of Safer Chemicals: Use of molecular structure design – and consideration of the principles of toxicity and mechanism of action – to minimize the intrinsic toxicity of the product while maintaining its efficacy of function.
- Developing Alternative Reaction Conditions: The design of reaction conditions that increase the selectivity of the product and allow for dematerialization of the product separation process.
- Minimizing Energy Consumption: The design of chemical transformations that reduce the required energy input in terms of both mechanical and thermal inputs and the associated environmental impacts of excessive energy usage.

The significant contributions more recently achieved, particularly by the other Divisions, will be considered.

2. Management and budget

We, the presidents of Divisions I, III, V and VI, suggest to constitute a Foundation Group of eight persons composed by two Titular (preferentially) Members from each Division; Additional funding at the moment will not be necessary, since each Division could use its respective

resources dedicated to projects and activities, according to their respective regulations. We trust that additional value and financial support will be provided by the Project Committee.

3. Membership

The membership of the Interdivisional Committee will be constituted starting from the existing S/C on green chemistry of Division III. These members will be requested to reconfirm their adhesion, while additional members (also outside the proposing Divisions) will be asked to join this membership. After its approval by the Executive Committee, the Foundation Group will nominate the chairman; the final asset and number of the membership will be settled by the Foundation Group before the formal starting of the Interdivisional Committee on Green Chemistry.

In order to make this Interdivisional Committee operational by 2010 - the year before the IYC - and to make it ready to give contribution and proposals for this engaging event, we ask to consider to establish the Committee by January 1st 2010.

For all these matters the Executive Committee will be asked to give guidelines and support.

Please give me your further comments, if any.

will keep you informed on the evolvement, confident that the coming Executive Committee will discuss the proposal.

Sincerely yours, Pietro