IUPAC
ADVANCING WORLDWIDE CHEMISTRY

International Union of Pure and Applied Chemistry

President: Prof. Bryan R. Henry (Canada)
Past President: Prof. Leiv K. Sydnes (Norway)
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Treasurer: Dr. Christoph F. Buxtorf (Switzerland)

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2 July 2007

All statutory actions necessary for convening the 44th IUPAC General Assembly and Council Meetings in Torino during the period 4-12 August 2007 have been taken through the following e-mail messages:

re. Changes in Statutes and Bylaws

28 August 2006

re. Nominations of Candidates for Elections (Officers and Bureau)

5 September 2006

re. Official invitations to National Adhering Organizations and Associate National Adhering organizations

22 November 2006

re. Official invitation to Associated Organizations

22 November 2006

re. Members of IUPAC Bodies

22 November 2006

re. Items for Council Agenda

14 March 2007

re. Council Agenda

12 April 2007

re. Announcement of Candidates for Elections (Officers and Bureau)

15 June 2007

re. Documentation available for Council Agenda Items

2 July 2007

John W. Jost
Executive Director

IUPAC
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International Union of Pure and Applied Chemistry

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* VOTING PROCEDURES IN IUPAC COUNCIL
(as of 2 July 2007)

There are 45 Delegations eligible to vote with a total of 142 assigned votes. The number of assigned votes may be changed on the day of the Council depending on the number of NAOs in arrears at that time. A Table of assigned votes as of 2 July 2007 follows this.

1. Scientific Matters (Bylaw 2.11)

   Voting by individual Delegates present at time of voting - simple majority on show of hands (72 if all assigned votes are cast).

2. Non-scientific Matters (Bylaw 2.2)

   Voting by Delegation Cards - simple majority of votes cast is mandatory for all election matters, but see 2.4 below (72, if all assigned votes are cast).

   (each Delegation must cast all of its votes in the same sense)

2.1 Admission and Removal of Members (Bylaw 2.21)

   2.1.1 Admission - simple majority of Delegation Card votes cast (72, if all assigned votes are cast)

   2.1.2 Removal - 75% of Delegation Card votes cast (107, if all assigned votes are cast)

2.2 Election of Officers (Bylaw 2.222)

   Secret ballot by Delegation Voting Slips - simple majority of votes cast (72, if all assigned votes are cast)

   (see second paragraph of Bylaw 2.222 for elimination procedure in case of lack of simple majority of votes)

2.3 Election of Bureau Members (Bylaw 2.222)

   Secret ballot by Delegation Voting Slips - simple majority of votes cast per Bureau Member
   (72, if all assigned votes are cast)

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* BASED ON VOTING ASSIGNMENTS APPROVED AT GUILDFORD

(see third paragraph of Bylaw 2.222 for elimination procedure in case of lack of simple majority of votes for necessary numbers of candidates)

2.4 Other Non-scientific Matters (Bylaw 2.23)

At the discretion of the Council, such matters may be adopted without a formal vote, for example, by a show of hands.

3. Change of Bylaw (Bylaw 6.2)

Voting by Delegation Cards – more than 50% of assigned votes (72)

4. Change of Statute (Statute 14.3)

Voting by Delegation Cards - 66.6% of assigned votes (95).

Note. Abstentions (Statute 5.32): In all Council voting procedures, abstentions shall not be recorded as votes.

Delegation Vote Assignments, IUPAC Council
11-12 August, Torino

NAO	Votes
China/Beijing	6
Germany	6
Japan	6
USA	6
Belgium	5
France	5
Italy	5
Korea, Republic of	5
Spain	5
UK	5
Canada	4
China/Taipei	4
India	4
Ireland	4
Netherlands	4
Puerto Rico	4
Sweden	4
Switzerland	4
Australia	3
Austria	3
Denmark	3
Finland	3
Norway	3
Poland	3
Russia	3
South Africa	3
Turkey	3

NAO	Votes
Czech Republic	2
Egypt	2
Greece	2
Hungary	2
Israel	2
New Zealand	2
Pakistan	2
Portugal	2
Slovakia	2
Slovenia	2
Ukraine	2
Bangladesh	1
Bulgaria	1
Croatia	1
Jamaica	1
Jordan	1
Kuwait	1
Serbia	1
Argentina	0
Belarus	0
Brazil	0
Chile	0

Official Delegations of National Adhering Organizations
at 44th IUPAC Council Meeting
11-12 August, 2007, Torino, Italy
(as of 27 June 2007)

ARGENTINA (0)*

AUSTRALIA (3)

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BELARUS (0)

BELGIUM (5)

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BRAZIL (0)

BULGARIA (1)

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CHILE (0)

* Number in parentheses is number of votes assigned to the delegation

Official Delegations of National Adhering Organizations
at 44th IUPAC Council Meeting
11-12 August, 2007, Torino, Italy
(as of 27 June 2007)

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at 44th IUPAC Council Meeting
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(as of 27 June 2007)

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* Number in parentheses is number of votes assigned to the delegation

Official Delegations of National Adhering Organizations
at 44th IUPAC Council Meeting
11-12 August, 2007, Torino, Italy
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Official Delegations of National Adhering Organizations
at 44th IUPAC Council Meeting
11-12 August, 2007, Torino, Italy
(as of 27 June 2007)

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Official Delegations of National Adhering Organizations
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Official Delegations of National Adhering Organizations
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Delegation Leader

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* Number in parentheses is number of votes assigned to the delegation

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11-12 August, 2007, Torino, Italy
(as of 27 June 2007)

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Bureau Members not included in Delegations of
National Adhering Organizations
at 44th IUPAC Council Meeting
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(as of 27 June 2007)

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Observers from National Adhering Organizations
at 44th IUPAC Council Meeting
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(as of 27 June 2007)

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Observers from Associate National Adhering Organizations
at 44th IUPAC Council Meeting
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(as of 27 June 2007)

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Observers from Associated Organizations
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(as of 27 June 2007)

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Young Observers
at 44th IUPAC Council Meeting
11-12 August, 2007, Torino, Italy
(as of 27 June 2007)

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Observers from Other Organizations
at 44th IUPAC Council Meeting
11-12 August, 2007, Torino, Italy
(as of 27 June 2007)

INTERNATIONAL COUNCIL FOR SCIENCE (ICSU)

GUDYANGA, Prof. Francis
Research Council of Zimbabwe
Executive Board Member, ICSU
E-MAIL: fpgudyanga@zarnet.ac.zw

STRATEGIC APPROACH to INTERNATIONAL CHEMICALS MANAGEMENT (SAICM)

KOCH, Dr. Rainer

Deceased IUPAC Colleagues

(As of 26 June 2007)

Argentina	Dr. Daniel Alberto Batistoni – National Representative, Commission on Spectrochemical and other Optical Procedures for Analysis, 1988-2001; National Representative, Analytical Chemistry Division, 2004-2005.
Canada	Prof. James E. Guillet – Macromolecular (currently Polymer) Division: Co-opted Member, 1987-1989; Member, 1989-1993; Secretary, 1994-1997; Titular Member, 1996-1997. (23 September 2005).
Denmark	Prof. Anders Björkman – IUPAC Treasurer, 1984-1991
France	Dr. Jacques-Emile Dubois – Member, Working Party on Molecular Characterization of Commercial Polymers, 1998-1999. (02 April 2005) Prof. Guy Ourisson – IUPAC Secretary General, 1975-1983; Chairman, Committee on Publications, 1973-1975; Organic Chemistry Division: President, 1971-1973; Vice-President, 1961-1971; Secretary, 1965-1969; Member, 1961-1965; Member, Commission on Chemical Taxonomy, 1965-1973. (03 November 2006) Prof. J. Rigaudy – Commission on Nomenclature of Organic Chemistry: Associate Member, 1981-1985; Vice-Chairman, 1975-1977; Titular Member, 1971-1975; Member, 1967-1971; Member, Interdivisional Committee on Nomenclature and Symbols, 1975-1979. (10 December 2005)
Germany	Prof. Hans-Peter Thier – Associate Member, Commission on Pesticide Chemistry, 1975-1983.
Hungary	Prof. Ernö Pungor – Chairman, Hungarian National Committee for IUPAC. (15 June 2007)
Japan	Prof. Hitoshi Ohtaki – Member, Union Advisory Committee, 2004-2005; Bureau, Titular Member, 1996-2003; Executive Committee, Titular Member, 1998-2003; National Representative, Commission on Equilibrium Data, 1985-1991, Member, Inorganic Chemistry Division Committee, 1987-1991; Co-opted Member, Analytical Chemistry Division Committee, 1987-1989; Member, Subcommittee on Stability Constants. (05 November 2006)
Russia	Prof. Nikolay A. Platé – National Representative, Commission on Macromolecular Nomenclature, 1983-1998. (16 March 2007)
Switzerland	Dr. Robert Zender –Task Group Member, Internationally agreed terminology for observations in scientific communication. (12 December 2005)

Deceased IUPAC Colleagues

(As of 26 June 2007)

United States	Prof. Thedford P. Dirkse – Member, Subcommittee on Solid Solubilities, 2000-2001; Associate Member, Commission on Solubility Data, 1987-1993; Member, Subcommittee on Solid Solubilities, 1981-1993. (23 October 2006) Prof. Nelson J. Leonard – President, Organic Chemistry Division, 1991-1993; Member, Editorial Advisory Board, 1983 - 1991. (09 October 2006)

(deceased date in parentheses, if known)

44th IUPAC COUNCIL MEETING
Torino, Italy 11-12 August 2007
AGENDA

1. Introductory Remarks and Finalization of Agenda
2. Approval of Minutes of 43rd Council Meeting and Matters Arising
3. Ratification of Decisions Taken by Bureau and Executive Committee since 43rd General Assembly
4. Announcement of Nominations for Union Officers and Bureau Members
5. Announcement of Time of Elections
6. Statutory Report of President on State of the Union
7. Report of Secretary General
8. Report of Committee on Streamlining IUPAC Operations
9. Report of Committee on Revision of Statutes and Bylaws
10. Adoption of Recommendations on Nomenclature and Symbols
11. Reports of Division Presidents (Written reports will be received and 10 minutes allowed for questions and discussion on each)
12. Reports of Standing Committee Chairmen (Written reports will be received and 10 minutes allowed for questions and discussion on each)
    - 12.1. Committee on Printed and Electronic Publications
    - 12.2. CHEMRAWN Committee
    - 12.3. Committee on Chemistry and Industry
    - 12.4. Committee on Chemistry Education
    - 12.5. Project Committee
    - 12.6. Evaluation Committee
    - 12.7. Interdivisional Committee on Terminology, Nomenclature and Symbols
13. Financial Reports
    - 13.1. Biennial Report of Treasurer
    - 13.2. Report of Finance Committee
    - 13.3. Accounts for 2005-2006
    - 13.4. Appointment of Auditors for 2007 and 2008

44th IUPAC COUNCIL MEETING
AGENDA

14. Budget Proposal
    14.1. Proposed Budget for 2008-9
    14.2. National Subscriptions for 2008-9
15. National Adhering Organizations in Arrears
16. Change of National Adhering Organization for Korea
17. Applications for National Adhering Organization Status
18. Proposals Formally Received from National Adhering Organizations
19. Organizational Changes in Existing IUPAC Bodies, Proposals for New and Reconstituted Bodies/Terms of Reference
    19.1. New Division Rules
20. Election of Union Officers and Bureau Members and Approval of Elected Officers of Divisions
21. Plans for 45th General Assembly and 42nd Congress (Glasgow, 2009)
22. Approval of Dates and Sites of 46th General Assembly and 43rd Congress (2011)
23. Reauthorization of Commissions.
24. Important Matters Referred to Council by Bureau at 44th General Assembly not Covered by Items on Council Agenda
25. Reports from Round Table Discussions
26. Any Other Business (discussion only)
27. Closing Remarks, Adjournment

Guidelines for Discussion and Debate in Council

Most discussion in the Council meeting is informal, with decisions often made by voice vote or show of voting cards without an official count. However, for nonscientific matters that may require extended debate and a formal vote by delegations [Bylaw 2.2], the procedures for carrying out formal business have sometimes not been entirely clear. The Statutes and Bylaws do not prescribe detailed procedures for conduct of meetings, but they do assign to the President the responsibility for ruling on matters that are not clear or decisive. Under that authority, the President proposes to use the following guidelines for formal consideration of nonscientific matters in Council. The terminology and concepts in these guidelines are based on "Robert's Rules of Order, Newly Revised," a comprehensive and widely used authority on parliamentary procedure.

1. Business is formally brought before Council by a *motion*. A motion may be made by a delegation and seconded by another delegation, or made by an Officer or other individual presenting a report or recommendation from the Bureau or IUPAC committee. This latter type of motion does not require a second because the matter has already been formally considered and approved by the IUPAC body.
2. When a motion has been accepted by the President, it becomes the *pending business* and is considered the *main motion*. No other independent motion may be accepted until action on the pending main motion has been completed. However, *subsidiary motions*, such as amendments to the pending motion, may be considered. Also, under certain circumstances, the pending business may be interrupted to consider another, usually urgent, matter.
3. The motion should be clearly stated so that the intent is unambiguous. The wording of the motion may be modified by agreement with the maker of the motion before it is formally accepted by the President as pending business. After it becomes pending business, the wording may be modified by unanimous consent or through the amendment process.
4. In the course of debate on the motion, one or more *amendments* may be offered as motions that formally change the wording or even the intent of the pending motion. A motion to amend must be germane [relevant] to the main motion and must be stated clearly so that its effect on the main motion is clear. Usually the amendment will propose to make specific modifications in the language of the main motion or to substitute new language. The President will rule on the admissibility of an amendment in terms of clarity and relevance.
5. A proposed amendment requires a second. Once accepted by the President, the motion to amend becomes the pending business and must be debated and resolved before proceeding to consideration of the main motion. A *secondary amendment* may be offered to a pending *primary amendment*, but the secondary amendment may not be further amended because the parliamentary situation would become too confusing. [Normally, in such circumstances, it is preferable to quickly reject the amendments and main motion with the understanding that an alternative motion will be offered to handle the issue.]
6. The President will make efforts to ensure that all interested delegations have an opportunity to speak on a question and will attempt to avoid repetition or to recognize a given delegation several times. However, he may give the maker of a motion the

Guidelines for Discussion and Debate in Council

opportunity to respond as often as necessary to questions or to explain points that are not clear.

7. When the President believes that debate has brought out the salient points, he will ask whether Council is ready to vote on the pending matter. Alternatively, any delegation may make a motion for the *previous question* [or "the question"]. This motion is *not* debatable but requires a 2/3 affirmative vote for approval. If approved, debate is terminated, and Council proceeds to vote on the pending motion or amendments in sequence.
8. Once a matter has been decided formally, it may normally not be brought up again for discussion and action. However, when subsequent actions or new information make it desirable to reconsider the matter, a motion [with second] may be accepted to *rescind* or *amend something previously adopted*. The motion is debatable and requires either a 2/3 affirmative vote or a majority of assigned votes for approval.
9. During debate on a main motion, a motion is in order to *refer* the matter to a standing or *ad hoc* committee, usually with instructions to carry out a particular analysis or to report at a specific time. Such a motion takes precedence over pending amendments. It is debatable. If approved, consideration of the main motion ceases, but the matter may be automatically raised again as specified in the motion to refer.
10. Debate on a motion may be interrupted by a *privileged motion*, such as a *point of order* that objects to the procedure or a *point of information*, raising an inquiry on a matter of fact.
11. The President will augment these guidelines as needed.

43rd IUPAC COUNCIL MEETING
Beijing, China 20-21 August 2005
Minutes

43rd IUPAC COUNCIL MEETING
Beijing, China 20-21 August 2005
Minutes

1. Introductory Remarks and Finalization of Agenda.

   President Sydnes welcomed the delegates of the National Adhering Organizations to the 43rd IUPAC Council meeting. He then asked the delegates to stand and observe a moment of silence for IUPAC colleagues deceased since the Ottawa General Assembly. President Sydnes thanked the organizers of the General Assembly for their kind hospitality and the provision of excellent facilities. The President drew the attention of the Delegates to the Guidelines for Discussion provided in their Agenda materials.

2. Approval of Minutes of 42nd Council Meeting and Matters Arising.

   The President asked if there were any corrections, comments, or matters arising from the Minutes of the 42nd Council that were not on the agenda. The UK delegate asked that the paragraph on page 22 of the minutes be rephrased to include the words to the effect that "However, it was the sense of the meeting that the candidates should be asked to express their views." There was some discussion of this proposed change and while it was agreed that the minute as written was correct, the revision better expressed the overall sense of the discussion. The President moved that the minutes be approved as revised. The motion was approved unanimously.

3. Ratification of Decisions Taken by Bureau and Executive Committee since 42nd General Assembly.

   President Sydnes moved that the decision taken by the Bureau and Executive Committee since the 42nd General Assembly be ratified. The motion was approved unanimously.

4. Announcement of Nominations for Union Officers and Bureau Members.

   Secretary General Black announced the candidates for Vice President and Bureau as the following: for Vice President: Prof. S. Chandrasekaran (India), Prof. K. Matsumoto (Japan), Prof. N. Moreau (France); for Elected Members of the Bureau: Prof. C. Bai (China), Prof. D. Berek (Slovakia), Prof. S. Chandrasekaran (India), Prof. P. De Bièvre (Belgium), Prof. A. Mahmood (Bangladesh), Prof. K. Matsumoto (Japan), Prof. S. Penczek (Poland), Dr. E. Reichmanis (USA), Prof. I. Schopov (Bulgaria), Dr. A. Smith (UK), Prof. M. van Dam-Mieras (The Netherlands). Prof. Black reminded the delegates that there were six openings for Elected Members of the Bureau. He also noted that if Prof. Moreau were elected Vice President, there would be seven openings, while if either Prof. Chandrasekaran or Prof. Matsumoto were elected Vice President, there would be one fewer candidate for the Bureau.

5. Announcement of Time of Elections.

   Secretary General Black announced that the elections would be held at 10 AM on Sunday, irrespective of the then current business being discussed.

6. Statutory Report of President on State of the Union.

   President Sydnes reported that the overall State of the Union was good. His complete report and a copy of his presentation at Council are available on the IUPAC web site at: http://www.iupac.org/news/archives/2005/43rd_council/Item_06.pdf

   The Polish delegate asked the President to comment on IUPAC's position on open access. The President asked the Executive Director, Dr. Jost, to describe IUPAC's position. The Executive Director noted that all IUPAC reports and recommendations published in *Pure and Applied Chemistry* are freely available from the IUPAC web site. In addition, all issues of *PAC* for the years preceding the most recent complete volume, are freely available online.

   There was then a brief discussion of the part of the President's report that dealt with improving communication with the NAOs. There was a consensus that this continued to be a problem and could not be solved only by actions on the part of IUPAC.

   The Korean delegation suggested that IUPAC might be the appropriate organization to lead an international campaign to increase the public appreciation of chemistry. It was noted that the Committee on Chemistry Education in cooperation with the Committee on Chemistry and Industry had issued a report on a possible niche for IUPAC in this subject of great interest to members of the chemistry community in many parts of the world. Now that the analysis has been done, action plans are being formulated.

   There followed a general discussion of the IUPAC Prize and the role of the NAOs in publicizing it in their national chemical communities. Various obstacles to applicants were noted, such as theses written in languages other than English. It was observed that there was no requirement to submit the actual thesis, only a 1000 word essay describing the work done and its significance. The suggestion was made that the number of prizes should be proportional to the number of applications. The issue of a lack of communication in those cases when the NAO is not a national chemical society can be significant, but the President urged the delegates to take it as a personal responsibility to help publicize the IUPAC prize in their national chemical communities.

   The Korean delegate noted the great success of the physics community in promoting 2005 as the year of physics. This was done by capitalizing on the existing iconic status of Albert Einstein. The President noted that this was a concept that was occasionally discussed, but that he had not seen any viable proposals. Unfortunately, chemistry does not have anyone with similar international recognition.

   The Korean delegate then asked about the relationship, if any, between IUPAC and the Chemistry Olympiad. The President replied that there was no formal relationship, but informal contacts existed. The Korean delegate then noted that the next Chemistry Olympiad would be held in Korea and invited the IUPAC President at that time to participate in the award ceremony.

7. Report of Secretary General.

   Secretary General Black gave a concise overview of the work of the Secretariat and also gave a brief introduction to the project system for those delegates who were unfamiliar with its operation. His complete report is available on the IUPAC web site at: http://www.iupac.org/news/archives/2005/43rd_council/Item_07.pdf.

The delegate from Slovakia commented that his experience with the lay press had led him to the conclusion that if chemists wished to see coverage of chemistry, they would have to generate stories that emphasized disaster avoided, and that raised the question: “What would happen without chemistry?”

8. Adoption of Recommendations on Nomenclature and Symbols.

   The delegates unanimously approved the motion to adopt the Recommendations on Nomenclature and Symbols published by the various bodies of the Union since the last General Assembly. The list of approved Recommendations can be found on the IUPAC web site at: http://www.iupac.org/news/archives/2005/43rd_council/Item_08.pdf.

9. Reports of Division Presidents.

   The complete reports of the Division Presidents are available on the IUPAC web site at: http://www.iupac.org/symposia/conferences/ga05/council_agenda.html.

   The delegate from Russia commented that the Subcommittee on Photochemistry seemed to have a very narrow subject. The President of Division III replied that this Subcommittee was very active.

   The delegate from Australia commended Division V for its excellent project monitoring system. The delegate from Belgium noted the importance of evaluated data as one of the significant activities of Division V and of IUPAC in general.

   The President of Division VII reported that agreement had been reached with G. Richter and Co, to establish an IUPAC-Richter Prize in Medicinal Chemistry. This prize would be awarded every two years at an IUPAC sponsored conference on medicinal chemistry and would be for USD 10 000. Richter had agreed to fund the prize for ten years for a total of USD 50 000. The efforts of the Hungarian NAO to create this prize were gratefully acknowledged.

   The President described the upcoming conference on “Frontiers of chemical sciences: research and education in Middle Eastern countries” to be held in Malta November 2005. This is the second conference of this kind, and it is supported by various organizations and institutions, including IUPAC, the American Chemical Society, the Gesellschaft Deutscher Chemiker, and the Royal Society of Chemistry."

10. Reports of Standing Committee Chairmen.

    The complete reports of each Standing Committee Chairman are available on the IUPAC web site at: http://www.iupac.org/symposia/conferences/ga05/council_agenda.html. Please note that the Chairmen of the Project and Evaluation Committees, and of ICTNS were not required to present an oral report.

    10.1. Committee on Printed and Electronic Publications.

    10.2. CHEMRAWN Committee.

    10.3. Committee on Chemistry and Industry.

    10.4. Committee on Chemistry Education.

10.5. Project Committee (written report only).

10.6. Evaluation Committee (written report only).

10.7. Interdivisional Committee on Terminology, Nomenclature and Symbols (written report only).

11. Report of the Vice-President: Critical Assessment of IUPAC.

The complete report by Vice President Henry is available on the IUPAC web site at: http://www.iupac.org/news/archives/2005/vpca_henry.html. These minutes will not attempt to summarize the report, but only the subsequent discussion.

The comment was made that the need for face-to-face meetings to improve progress on projects implied the need to increase the funding for individual projects to allow more meetings. The Vice President suggested that this could be accomplished most inexpensively by arranging project meetings at scientific conferences already being attended by most of the members of a Task Group. He noted that this was in fact already being done in many instances.

There was then a general discussion of how to improve involvement by chemical industry in the work of IUPAC. The Delegate from Japan ascribed the success of the Japanese NAO in recruiting Company Associates to the fact that the NAO has influence with the chemical industry in Japan and that the representative from Japan on COCI was an influential member of the industry. He noted that Japan holds an annual meeting of Company Associates to keep them informed of the work of IUPAC and that they make extensive use of the informational material provided by IUPAC. The French Delegate noted that in order to improve the awareness of IUPAC among the French chemical companies, a meeting of R&D directors of ten companies had recently been held in Paris. A general lack of awareness of what IUPAC does was apparent. The meeting focused on participation rather than on money. The attendees were asked to consider submitting projects to IUPAC.

12. Proposal to Replace Executive Committee and Bureau with an Executive Board.

President Sydnes introduced the subject by reviewing the background material provided to the delegates before the meeting. A copy of the material provided to the delegates before the meeting, can be found on the IUPAC web site at: http://www.iupac.org/news/archives/2005/43rd_council/Item_12.pdf. The President also indicated that the Bureau did not recommend acceptance of the motion. The subsequent discussion was extensive and covered many aspects of the proposal and can therefore only be summarized here.

Prof. Erhardt spoke in the name of the other Division Presidents to declare that they were unanimously opposed to this motion. They felt that as the Division Presidents represented those who did the technical work of the Union they should not be disenfranchised.

Dr. Kallner showed an organogram of the Union’s governance. He pointed out that it had a number of areas of duplicated or uncertain responsibility and these led to delays in decision-making. He believed that the changes that would result from approval of this motion would remove these duplications and uncertainties and result in more efficient and effective governance of the Union. A number of delegates spoke in support of the position that had

been expressed by the Division Presidents. There were a number of suggestions made to modify the motion to defer the composition of the Executive Board for further discussion, including a motion to replace "an" before "Executive Board" by the phrase “a fully representative” in the motion. After some discussion, the proposed amendment was ruled out of order, as the composition of the Executive Board was not part of the motion. The delegate from Denmark noted that since the details of the proposal for an Executive Board and the reasons for the proposed composition had been described in the papers presented at Ottawa and at this meeting, that this was not the occasion to revisit the work of the Governance Strategy Committee. After some further discussion the motion was put to a vote with the following result: Yes: 15; No: 69; Abstain: 40.

The Vice President announced the intention to create an ad hoc committee to revise the Bylaws and a second ad hoc committee to examine ways to improve the operational efficiency of IUPAC governance.

13. Financial Reports

13.1. Biennial Report of Treasurer

The Treasurer reported that the overall financial situation of the Union continued to be strong. He noted that while some National Adhering Organizations continue to have difficulty in paying their National Subscriptions, the change to billing in national currency approved by Council at Ottawa seems to have had the desired beneficial effect for many of the NAOs. The Treasurer also noted that while income from the Union’s publications, almost entirely from institutional subscriptions to the Union’s journal, *Pure and Applied Chemistry*, was expected to remain unchanged for the next biennium, this was due to regular increases in the subscription rate to offset declining numbers of subscribers. He warned that the Union faced a time in the near future when it would no longer be possible to fund all worthy projects. The complete report of the Treasurer can be found on the IUPAC web site at: http://www.iupac.org/news/archives/2005/43rd_council/Item_13.pdf. There was no discussion on this item.

13.2. Report of Finance Committee.

The Treasurer noted that the Chairman of the Finance Committee, Dr. Przybylowicz, was unable to attend the Council meeting and sent his regrets. The Treasurer then noted that the Union’s portfolio had continued to perform well over the past biennium, this performance being in part due to a timely shift to fixed income securities for a greater part of the portfolio and a shift of some assets to Euro denominated securities. A motion was moved, seconded, and unanimously approved to give a vote of thanks to the Finance Committee, and especially to its retiring Chairman, for their excellent management of the Union’s portfolio. There was no further discussion of this item.

13.3. Accounts for 2003-2004.

This item was presented for information only. The complete report of the Auditors can be found on the IUPAC web site at:

http://www.iupac.org/news/archives/2005/43rd_council/Item_13.pdf. There was no discussion on this item.

13.4. Appointment of Auditors for 2005 and 2006.

Council unanimously approved a motion to appoint Batchelor, Tillery & Roberts, LLP, of Raleigh, North Carolina, USA as IUPAC Auditors for 2005 and 2006.

14. Budget Proposal

14.1. Proposed Budget for 2006-7.

The Treasurer noted that the budget for the coming biennium was very similar to the budget for the current biennium. The increase in total National Subscriptions being proposed was 1 %. This is less than the OECD inflation rate and is possible only because of the Union's strong financial position and the increasing contribution to current income by the Union's portfolio. The motion to approve the budget, including a 1 % increase in total National Subscriptions was approved unanimously. The complete budget proposal can be found on the IUPAC web site at: http://www.iupac.org/news/archives/2005/43rd_council/Item_14_rev.pdf.

14.2. National Subscriptions for 2006-7.

The Treasurer noted that the individual National Subscriptions shown in the table provided for information before the meeting were based on calculation using the method approved by the Council and did not require separate approval.

15. National Adhering Organizations in Arrears.

Council unanimously approved, with one abstention, the suspension of NAO status for those NAOs that have not paid their 2003 and earlier National Subscriptions by 31 December 2005 until such time as the 2003 and earlier National Subscriptions are paid. This action currently applies to the National Adhering Organizations for Argentina, Egypt, and Chile.

16. Applications for National Adhering Organization Status

Council unanimously approved motions to grant National Adhering Organization status for the following organizations:
The Caribbean Academy of Sciences – Jamaica Chapter;
The Jordanian Chemical Society;
The National Academy of Sciences of Ukraine;
The National Academy of Sciences of Belarus.

17. Proposals Formally Received from National Adhering Organizations

There were no proposals received from National Adhering Organizations.

18. Organizational Changes in Existing IUPAC Bodies, Proposals for New and Reconstituted Bodies/Terms of Reference

18.1. New Division Rules

Council unanimously approved new Division Rules for Divisions I, II, III, and VIII. The Division Rules can be found on IUPAC web site at: http://www.iupac.org/symposia/conferences/ga05/council_agenda.html.

18.2. Standing Order and Membership of Editorial Advisory Board of PAC

Council unanimously approved the Standing Order and Membership of the Editorial Advisory Board of *Pure and Applied Chemistry*. The Standing Order and members of the Editorial Advisory Board can be found on IUPAC web site at: http://www.iupac.org/news/archives/2005/43rd_council/Item_18-2_PAC_EAB.pdf.

19. Election of Union Officers and Bureau Members and Approval of Elected Officers of Divisions

Elections for Vice President were held at 10:00 on 21 August 2005. The results were as follows (total valid votes cast: 128):
Prof. S. Chandrasekaran (India) 8
Prof. K. Matsumoto (Japan) 78
Prof. N. Moreau (France) 42

Prof. Matsumoto received more than 65 votes and will therefore be IUPAC Vice President and President elect for 2006-7.

Elections for the Bureau were held after the elections for Vice President. The results of the election for Members of the Bureau for the term 2006-9 by Council 21 August 2005 were as follows (total valid votes cast: 128):

Prof. C. Bai (China) 109
Prof. D. Berek (Slovakia) 44
Prof. P. De Bièvre (Belgium) 71
Prof. S. Chandrasekaran (India) 98
Prof. A. Mahmood (Bangladesh) 37
Prof. S. Penczek (Poland) 74
Dr. E. Reichmanis (USA) 105
Prof. I. Schopov (Bulgaria) 14
Dr. A. Smith (UK) 95
Prof. M. van Dam-Mieras (The Netherlands) 103

There were seven candidates with the required majority of 65 votes; the six candidates with the highest vote totals were therefore elected as Members of the Bureau for 2006-9:

Prof. C. Bai, Prof. S. Chandrasekaran, Prof. S. Penczek, Dr. E. Reichmanis, Dr. A. Smith, Prof. M. van Dam-Mieras.

Biographical information on the candidates for Vice President and Members of the Bureau can be found on the IUPAC web site at:
http://www.iupac.org/news/archives/2005/43rd_council/index.html.

20. Plans for 44th General Assembly and 41st Congress (Torino, 2007)

Prof. Della Gatta described the plans for the General Assembly and Congress to be held in Torino in 2007 (General Assembly: 4-12 August 2007; Congress: 5-11 August 2007). His presentation can be found on the IUPAC web site at: <http://www.iupac.org/symposia/congress07.html>.

21. Approval of Dates and Sites of 45th General Assembly and 42nd Congress (2009)

    The Royal Society of Chemistry presented a proposal to host the General Assembly and Congress in Glasgow, Scotland (General Assembly: 1-9 August 2009; Congress: 2-7 August 2009). The invitation from the Royal Society of Chemistry can be found on the RSC web site at: http://www.rsc.org/ConferencesAndEvents/RSCConferences/IUPAC2009/.

    Council unanimously approved the proposal for the dates and location of the General Assembly and Congress for 2009 as proposed by the Royal Society of Chemistry.

22. Official Language of IUPAC (Statute 5.405)

    Council unanimously approved a motion that the official language of IUPAC should continue to be English.

23. Reauthorization of Commissions.

    Council unanimously approved the continuation of Commission I.1: Commission on Physicochemical Symbols, Terminology, and Units and Commission II.1: Commission on Isotopic Abundance and Atomic Weights.

24. Important Matters Referred to Council by Bureau at 43rd General Assembly not Covered by Items on Council Agenda

    The Vice President reported that the Bureau at its meeting on 17-18 August had approved two motions regarding Associate National Adhering Organizations. The first motion would limit the time an organization could continue as an Associate National Adhering Organization to four years, beginning 1 January 2006. The second motion would increase the amount of the membership fee for Associate National Adhering Organizations from USD 50 to USD 250, effective 1 January 2006.

    Council unanimously approved both motions.

25. Any Other Business (discussion only)

    The President introduced one of the Young Observers to the General Assembly, Dr. Andrea Jackson of the UK. Dr. Jackson thanked IUPAC on behalf of herself and the other Young Observers for the opportunity to participate in the General Assembly and to see IUPAC at work. She reported that she and the other Young Observers were impressed not only with the great variety of the work being done but the openness of the Committees to new proposals, even from people such as herself who were new to the work of the Committees.

26. Closing Remarks, Adjournment

    The President thanked the delegates for their work and participation during the meeting. He reminded them that part of their role as delegates was to communicate what had been done at

the General Assembly to their National Adhering Organizations and national chemical communities. He noted that while his term of office continued until the end of the year, this would be his last Council meeting as President and he wished to take the occasion to thank all of the officers for their support and assistance during his term as President, to thank John Jost and the staff at RTP for their helpful and efficient operational management of IUPAC, and to wish the incoming President success during his term.

The Vice President then expressed the thanks of all of the delegates to the President for his exemplary leadership in the past biennium.

The meeting was then adjourned.

Item 3: Ratification of Decisions Taken by Bureau and Executive Committee

All decisions taken by the Bureau and Executive Committee, since those approved by the Council at Beijing (Minute 3, 43rd Meeting), are contained in the following Minutes, which were distributed to National Adhering Organizations as shown:

81st Bureau	7 December 2005
82nd Bureau	7 December 2005
83rd Bureau	2 January 2007

133rd Executive Committee	21 June 2006
134th Executive Committee	5 May 2007

Council is asked to ratify these decisions.

Item 4: Announcement of Nominations for Union Officers and Bureau Members

The situation for each position is set out below:

President – Vacancy

Due to the resignation of Prof. K. Matsumoto (Japan), Vice-President and President-Elect, there will be an election for President at this Council meeting (Statute 7.5). The candidate elected will become President on 1 January 2008 and serve through 31 December 2009.

Nominations Received

Prof. Jung-Il Jin (Korea)
Dr. Anders Kallner (Sweden)
Prof. Nicole J. Moreau (France)

Past-President – Prof. B. R. Henry (Canada), President, becomes Past-President on 1 January 2008 and remains an officer (Statute 6.1) and a member of the Bureau for a period of two years (Statute 7.2).

Vice-President – Vacancy.

The Vice-President to be elected at the 44th Council will be President-Elect, and will become President on 1 January 2010.

Nominations Received

Prof. Jung-Il Jin (Korea)
Prof. Nicole J. Moreau (France)

Secretary General – Vacancy

Prof. David StC. Black (Australia) was elected to a four-year term at the 42nd General Assembly and is eligible to serve a second term.

Nominations Received

Prof. David St.C. Black (Australia)

Treasurer – Vacancy

Dr. Christoph F. Buxtorf (Switzerland) was elected to a second four-year term at the 42nd General Assembly and is not eligible to serve another term as Treasurer.

Nominations Received

Prof. John Corish (Ireland)
Dr. David Schutt (USA)

Bureau - Four Vacancies (minimum).

According to Statute 7.2 the Bureau consists of the Officers, the Division Presidents, and no less than ten other members elected by Council, who are known as "Elected Members". Elected Members are elected for a four-year term, and are eligible for re-election to a second four-year term. No National Adhering Organization shall have more than one Elected Member on the Bureau. Statute 7.2 also states that: "the principle of fair geographical representation of Members shall be taken into account".

At the conclusion of the 43rd Council at Beijing, there were ten Elected Members on the Bureau. At the 44th Council, the Bureau will make recommendations to Council as to the number of Elected Members (ten or more) who should be on the Bureau for the

Item 4: Announcement of Nominations for Union Officers and Bureau Members

succeeding two years. At least four Elected Members will be elected at the 44th Council in Torino, *i.e.*, the minimum number of ten Elected Members (Statute 7.2) less the six Elected Members who continue in office until 2009.

Elected Members of Bureau whose terms end in 2009:

Prof. Chunli Bai (China/Beijing)
Prof. S. Chandrasekaran (India)
Prof. Stanislaw Penczek (Poland)
Dr. Elsa Reichmanis (USA)
Dr. Alan Smith (United Kingdom)
Prof. Maria C.E. van Dam-Mieras (Netherlands)

Elected Members of Bureau, whose terms end in 2007 and who are eligible for re-election to a second four-year term:

Dr. Anders Kallner (Sweden)
Prof. Werner Klein (Germany)

Elected Members of Bureau, whose terms end in 2007 and who are not eligible for re-election, but may be nominated for another office:

Prof. Nicole J. Moreau (France)
Prof. Oleg M. Nefedov (Russia)

Nominations Received
Prof. Dusan Berek (Slovakia)
Prof. Giuseppe Della Gatta (Italy)
Prof. Vladyslav Goncharuk (Ukraine)
Prof. Minoru Isobe (Japan)
Dr. Anders Kallner (Sweden)
Prof. Venceslav Kaucic (Slovenia)
Prof. Werner Klein (Germany)
Prof. Ram S. Lamba (Puerto Rico)
Prof. Natalia Tarasova (Russia)

Item 6: Statutory Report of President on State of the Union

It is both a privilege and pleasure to report to you on what has happened within IUPAC in the last two years. There have been many developments and in this written report I will outline some of these. The Secretary General will address other issues so that between the two reports we can provide you with an oversight of the General State of the Union. This written report will be in the nature of an outline, and I shall expand on some of these issues in my oral report to Council.

Let me begin by being somewhat introspective. In order to achieve our mission and our six goals, many of our stakeholders believed that we needed to follow up our successful introduction of the project system with a revision of IUPAC structures in order to streamline IUPAC governance. Such revisions were debated but not accepted at our last two General Assemblies, however there were significant expressions of support to make IUPAC operations more efficient. An ad hoc committee for streamlining IUPAC operations was created and I will report on the results of their deliberations under item 8 on the agenda. Let me just note here that much of what the committee recommended has already been put in place. One aspect of their deliberations involved changes in the conduct of Council in order to allow us to deal more expeditiously with routine matters, and to free up time for Council to think strategically and to engage in matters of real importance to the Union and its members.

A recurring concern of IUPAC officers and member organizations is how to allow everyone to get their issues "on the table." To address this problem, the Executive Committee approved a proposal at its April 2006 meeting to hold a series of round table discussions in Torino. These discussions are intended to allow small groups of Council delegates to discuss subjects of mutual interest in a setting conducive to the easy exchange of ideas. By the time I give my oral report, these round tables will have occurred, and we will receive a report on them in the latter part of the Council meeting.

Our principal strength within IUPAC lies in the talent, knowledge and commitment of the more than 1000 scientists worldwide who are involved in the IUPAC project system. The reports at the Beijing GA of the Division Presidents and Standing Committee Chairs were both impressive and inspirational, and I am sure that will be no less so in Torino. These reports contain key information about IUPAC activities and I very much look forward to reading them. My VPCA provided an overview of the project system at the conclusion of the second biennium of its full operation. In summary I concluded that the project system is an overwhelming success. In financial terms alone there has been a very significant increase in project commitments from the transition years of 2000-01 to the present. These increases have occurred while maintaining a strong financial position within the Union. You will have had the pleasure of reading the report of the Evaluation Committee. They have done an outstanding job in analyzing whether the project system is meeting our strategic goals and is delivering value for our investment. Please study the report on your own but let me paraphrase their conclusions by stating that they find our modest investment has been worthwhile, and indicates the success of the project system.

I could easily fill this report with individual successes within the project system. Rather arbitrarily, let me just highlight a few with apologies to the numerous excellent projects that I will not mention. The ThermoML standard for thermochemical and physical property data, the International Chemical Identifier, InChI, which expresses chemical structures in a standard machine-readable format, the phenomenal continued success of

Item 6: Statutory Report of President on State of the Union

the atmospheric reference database for atmospheric modelers with 6500 hits per week, the publication of a book on *Analogue Based Drug Discovery*, analytical capacity building in Africa, the Stability Constants Database, the revision of Standard Atomic Weights, a very successful series of workshops on crop protection chemistry in Asia and Latin America, the IUPAC-UNESCO-UNIDO safety training program, the leading role of IUPAC in a multi-organization project on Harmonization of Quality Assurance, the major role played by IUPAC in the revision of the *International Vocabulary of Basic and General Terms in Metrology* (VIM), and many more are all achievements which make significant contributions to world wide chemistry.

IUPAC is a diverse and multifaceted organization, which successfully addresses a number of important global issues within the chemical sciences. However we are still best known for our authoritative leadership in the fields of nomenclature and terminology. We continue to excel in that role and I wanted to note the appearance, or future appearance, of the *Red Boo*k in 2005, the *Gold Book* in 2006, the *Green Book* in 2007, and the Blue and Purple books in 2008. In summary, these authoritative publications are characterized by the following properties. The *Red Book* presents an extensive revision of Inorganic nomenclature. It introduces material to deal with newly discovered classes of compounds, and provides agreement between organic and inorganic approaches to compounds of mutual interest. The online version of the *Gold Book* is now available in XML format. This powerful tool enhances searchability, and provides a convenient and efficient way to organize data, and to group related terms and concepts. The *Green Book* has also undergone extensive revision and provides an invaluable source of information on units and revised values of fundamental universal scientific constants. The *Blue Book* has continued to grow in size and scope. It has undergone a radical change in philosophy in that for the first time it will provide preferred names for organic compounds. The *Purple Book* has undergone a general revision to give an up to date guide to the rapidly changing field of polymer terminology.

Aside from the excellent work occurring in IUPAC Divisions, I would like to draw your attention to increases in activity among our Operational Standing Committees. Aside from the safety training program, COCI has attempted to increase the number of Company Associates through several strategies, and has been active in the organization of the WCLM. CCE has taken an active role in promoting the public appreciation of Chemistry, and has been responsible for a major event at the Torino Congress, the presentation of Roald Hoffmann's play "Should've". Recently we have assigned CCE the task of pursuing the concept of an International Year of Chemistry. Meetings have occurred with UNESCO to enlist their help in obtaining UN General Assembly approval for 2011 as an International Year of Chemistry. Planning is underway and steps have been identified to achieve this goal. CHEMRAWN has continued to promote and sponsor conferences and to publish associated reports on issues of global importance. Through their Chair, they have produced an in depth analysis of the effects of CHEMRAWN conferences since their inception in 1978.

One of our goals is to foster communication among individual chemists and scientific organizations, with special emphasis on the needs of chemists in developing countries. An IUPAC project that relates directly to those goals is the Malta III Conference "Frontiers of Chemical Scientific Research and Education in Middle Eastern Countries".

Item 6: Statutory Report of President on State of the Union

This is the third such conference and they have all been sponsored by ACS, RSC, GDCh and IUPAC. IUPAC has been designated the Principal Sponsor for Malta III, and has been asked to facilitate its organization. The participants in these conferences include most Middle Eastern countries including Palestine and Israel. It is anticipated that scientists in the Middle East will develop working relationships and cooperative programs that will have long range positive effects on the dissemination and exchange of scientific knowledge by scientists and engineers of the Middle East and their students. The long-range effects of this Conference and the follow-up activities which result from the Conference should aid in the economic development of each participating country, will address the problems associated with the local and global environments, and will add to the material prosperity of their peoples.

IUPAC has been successful in raising money for a number of prizes. An existing prize, the Thieme-IUPAC Prize, is sponsored by Georg Thieme Verlag. It consists of Euro 5 000, and is awarded every two years on the occasion of IUPAC's International Conference on Organic Synthesis to a scientist under 40 years of age, whose research has had a major impact on the field of synthetic organic chemistry. In the past two years, one endowment has been increased and a new prize has been introduced. Samsung has recently donated USD 25 000 to the IUPAC Polymer Division. The donation will be added to the Samsung Total Petrochemical Company Endowment fund that was originally funded with a USD 125 000 donation from Samsung in 2003. The income from the Endowment Fund is used by the Polymer Division to support excellent researchers and students in polymer science. In 2006 a generous donation from Richter Pharmaceuticals, Ltd. (Budapest, Hungary) has led to the IUPAC-Richter Prize in Medicinal Chemistry. The award will recognize one scientist every two years who will receive a cash prize of USD 10 000 at an IUPAC-associated scientific meeting wherein they will be expected to deliver a lecture about their work.

I will leave the Secretary General to give you the complete story but I simply have to mention an exciting development that relates to our website and web capabilities. I have signed a Memorandum of Understanding between IUPAC and Fachinformationzentrum fur die Chemie Berlin to provide web-based services to IUPAC bodies through the IUPAC website.

IUPAC has never been directly involved in the International Chemistry Olympiad. This is a competition with all the excitement and camaraderie that characterizes the Olympics and involves young people in their final year of high school. In July 2006, thanks to a gracious invitation from the organizing committee, I had the great privilege of participating in this event, speaking about IUPAC at their closing ceremonies, and, most importantly, presenting IUPAC *Gold Books* to the 28 gold medalists in a competition that involved more than 70 countries. As a result of that interaction, I have recently signed a Memorandum of Understanding between IUPAC and the International Chemistry Olympiad that will make IUPAC a permanent sponsor of this event and lead to our direct involvement in the competition.

One of IUPAC's priorities is to nurture relationships with organizations whose aims and activities are in harmony with those of the Union. One such organization is the European Association for Chemical and Molecular Sciences, EuCheMS. I had the opportunity to present a brief address at the opening ceremonies of their 1st European Chemical

Item 6: Statutory Report of President on State of the Union

Congress. This historic meeting was a great success, and in my talk I had an opportunity to inform the more than 2 000 conferees about the breadth of IUPAC activities. Hopefully we will continue to collaborate with mutual benefit to both organizations.

Another such organization is the International Council for Science (ICSU). Chemistry has played an important role in ICSU from its founding in 1931, with IUPAC being one of its original members, yet IUPAC has not been fully involved with ICSU over the last few years. Increasingly many of our own programs have a worldwide outreach. If we are to maximize our global opportunities, the IUPAC Executive believes that we need to work more closely with ICSU. As a first step, we became involved with the ICSU strategic planning process by providing input to many of their planning documents. We have been more actively involved in nominating members for ICSU bodies. Recently the chair of CCE became a member of the ICSU committee on Freedom and Responsibility in the Conduct of Science. We have actively participated in a committee to revise the ICSU dues structure. At their General Assembly in October 2005, I was elected as a Scientific Union member of the ICSU Executive for three years. I am hopeful that an IUPAC officer as a member of the ICSU Executive will provide an exciting opportunity to enhance the global aspects of IUPAC's programs. In this regard ICSU has recently opened regional offices for Africa, Asia and the Pacific, and Latin America and the Caribbean. IUPAC participated in the opening conferences at all three sites: Pretoria, Kuala Lumpur and Panama. Our hope is to use the contacts within these regional offices to help IUPAC become more involved with underdeveloped countries and to extend our programs more effectively to these regions.

These are exciting times for IUPAC. I am looking forward to our Council meeting where we celebrate our achievements, and continue our search for effective ways to contribute to the application of chemical sciences to improvements in our global environment and to human conditions.

Bryan Henry

Item 7: Report of the Secretary General

According to the Statutes, the Secretary General "shall carry out the business of the Union as specified by the Council, by the Bureau, by the Executive Committee, or by the President, and be responsible for keeping its records and for the administration of the Secretariat". The focus of my report is therefore all those aspects of IUPAC that particularly involve the Secretariat staff, and this will give an overview of current and developing policy areas.

The Secretariat

The current staffing component is six positions, but one is currently unfilled. Since the last General Assembly there has only been one change, namely the resignation of Erin Slagle Carter as of 1 May 2007. Erin was the communications specialist responsible for the administration of the conference sponsorship and financial support programs. Erin left the Research Triangle area last year and was working from home, but she decided that this arrangement did not suit her needs. Since May, Erin's work portfolio has been dispersed to the other Secretariat members. Paul LeClair has taken over the handling of conference sponsorship and financial support applications. Linda Tapp is now responsible for communications with regard to the Affiliate Membership and Company Associates programs, as well as a variety of issues with NAOs and ANAOs. Enid Weatherwax has added the IUPAC Prizes to her portfolio. The management of the Secretariat continues in the very capable and experienced hands of the Executive Director, John Jost, who also carries a wide range of specialist administrative and financial tasks. He also continues to play a central role in the Manuscript Central submission and refereeing process for *Pure and Applied Chemistry*. Fabienne Meyers is responsible for all electronic publishing, and is guiding the implementation of website improvements. Fabienne is involved in many aspects of IUPAC work, the most visible of which is that of editor of the excellent *Chemistry International* magazine. She is also responsible for administration of the Project System, IUPAC's major work area, and the Young Chemist and Young Observer awards programs, as well as being proactive in many other ways. Fabienne continues to work from an office generously provided by the Boston University Department of Chemistry, whose support is again gratefully acknowledged. Paul LeClair continues to maintain and develop a wide range of databases that provide information about all those people who interact with IUPAC, and plays a key role in the Division election process. Linda Tapp and Enid Weatherwax smoothly handle a wide variety of administrative matters, in particular those concerned with the monitoring of projects and their finances and the processing of financial claim forms. Despite an increasing array of tasks, the Secretariat continues to function well within its budget.

The staffing situation will be monitored before a replacement for Erin is made. Given the increase in website activities, it is likely that a different job description will be more appropriate.

Web site improvements

The situation regarding the web site functions and utility will always be fluid. Information technology developments are so rapid that we need to have access to the latest expertise so that we can maximise the value of the web site to all users. It is not possible for IUPAC to provide the full human resource requirements within the

Item 7: Report of the Secretary General

Secretariat. Therefore the recent strategic alliance established with the Fachinformationszentrum für die Chemie Berlin (FIZ CHEMIE Berlin) is an exciting development. FIZ CHEMIE Berlin is Germany's Chemistry Information Centre, responsible for the provision of information services relating to the chemical sciences and chemical engineering to scientists in industry, academia, and government. It is funded by the German Federal and State Governments as a non-profit information agency. Since 26 June 2006, the IUPAC server has been located at FIZ CHEMIE Berlin, and the support provided there now enables the modernization of the technology underpinning the web site from HTML to XML. A Memorandum of Understanding was signed by the FIZ-CHEMIE Manager and the IUPAC President on 1 March 2007, and covers cooperation to provide web-based services to IUPAC bodies and the worldwide chemistry community through the IUPAC web site. On behalf of IUPAC, I wish to acknowledge the generous support of FIZ CHEMIE Berlin, who will implement these services on the IUPAC web site using its staff and at its own cost. The relevant FIZ-CHEMIE staff are collaborating with the Prague group, which has been instrumental in the transfer of the "colour" books and *Pure and Applied Chemistry* on to the web. So far, all existing systems have been transferred to the FIZ-CHEMIE computers, and a new IUPAC site search system has been developed and will be introduced by the Prague group to the new server in the coming months. Further work will lead to the development of an IUPAC bulletin board, and the implementation of a facile system for the storage of materials and data files with authenticated entry. Work with major databases still presents serious challenges, but they are being addressed. The alliance between IUPAC and FIZ-CHEMIE will also require some human resource developments in the Secretariat, so that we can maximize the cooperation.

The Project System and Strategic Opportunities Fund

IUPAC's major output is generated by the Project System, through which the Union's unique global perspective can be put to work: modest amounts of money can be used to great effect through the efforts of many volunteers. As the President has indicated, the Project System is very successful, and numerous worthwhile outcomes are generated. Most projects are initiated through budget allocations to the Divisions and Standing Committees, and the Project Committee, and there currently is also a "last resort" project reserve fund at the discretion of the Secretary General and Treasurer. Following the current President's Critical Assessment (while Vice-President), which focused on the Project System, further discussions led to a proposal from the Finance Committee, and this was accepted by the Executive Committee in 2006. This proposal requested the Treasurer to budget a Strategic Opportunities Fund, which for 2008-2009 would be USD120,000. This fund will be used by the Executive Committee to allocate funds to projects judged to be of strategic importance to the Union: it would replace the reserve fund. In practice, the Project Committee would first review all major projects applying for funding from the Project Fund. The Secretary General would then decide if a project should be considered by the Executive Committee for funding from the Strategic Opportunities Fund. A further recent decision has been made to recover unspent funds by more careful auditing of projects well past their completion dates, and any recovered amounts would be added to the Strategic Opportunities Fund.

Item 7: Report of the Secretary General

Validation of New Elements

Late in 2005, claims were received concerning the discovery of new elements of atomic number >111. The chair of the previous working group - that dealt with roentgenium - was asked to nominate members of a new working group to investigate these claims. Recent news indicates that the working group will submit two reports, the first, later this year, dealing with element Z=112, and the second dealing with elements Z>112, after further work is done into 2008. So this Council meeting will have an opportunity to act with respect to element 112. The working parties charged with the validation of claims for new elements are jointly representative of IUPAC and IUPAP. During negotiations to appoint the current joint working group, it was felt useful to compile some guidelines in order to facilitate the appointment of future groups. These guidelines have now been drafted and agreed by Secretaries General of both IUPAC and IUPAP, and now need formal approval by the respective Unions. Under these guidelines, each Union would put forward five nominees, so as to achieve a ten member panel of "Standing Nominees" from whom a joint working group of five would be chosen, such that each Union would be represented by at least two members.

Pure and Applied Chemistry

Pure and Applied Chemistry has been providing data to CrossRef, a consortium of scientific publishers, for more than a year now. This means that users of journals participating in CrossRef can link directly from references in an article to *Pure and Applied Chemistry* and from *Pure and Applied Chemistry* to references in other journals participating in CrossRef. Another pleasing feature of *Pure and Applied Chemistry* is the continued rise in its impact factor, presumably as the result of careful article selection by the Scientific Editor. There is still a special niche for publications arising from plenary, keynote and oral presentations at IUPAC conferences, and organizers of sponsored conferences should find *Pure and Applied Chemistry* a highly desirable vehicle for publication. The application of Manuscript Central is working smoothly to facilitate all aspects of the publication process.

Sponsorship of Conferences

This remains one of IUPAC's most important roles and results in much of its current visibility. It should be noted again that IUPAC sponsorship is not financial, but simply an accreditation of quality. However, this is a serious factor in attracting participants and results in significant revenue accruing to the host country. Thus the decision to allow sponsored conferences to be held only in NAO countries provides a very tangible benefit to full membership commitment.

In September 2006, the First International IUPAC Conference on Green-Sustainable Chemistry (ICGC-1) was held in Dresden, and very successfully inaugurated what will become a major two-yearly series arranged by the Sub-Committee on Green Chemistry. This is an area of rapidly-growing importance, and IUPAC is at the forefront in promoting it with the highest quality science.

Financial Support of Conferences

Applications for conference financial support must come via the relevant Division, which must present a strong case to the Project Committee. Typically for IUPAC, quite small

Item 7: Report of the Secretary General

amounts of money are involved to add value to a conference already adequately financed. The Project Committee considers applications twice a year. The aim of this scheme is to encourage Divisions to be proactive in supporting emerging scientific regions, or emerging fields of chemistry. Applications in the former category are not restricted to NAO countries, and award of financial support in such cases also automatically confers IUPAC sponsorship.

David Black

Report of the ad hoc Committee for Streamlining IUPAC Operations

The *ad hoc* Committee for **Streamlining IUPAC Operations** was established to look at operational efficiencies within the existing IUPAC Structures.

Committee Membership

Bryan **Henry** <chmhenry@uoguelph.ca> - IUPAC President and Committee Chairman
Michael **Jaffe** <jaffe@adm.njit.edu>
Anders **Kallner** <anders.kallner@kirurgi.ki.se>
Venceslav **Kaucic** <kaucic@ki.si>
Fabienne **Meyers** <Fabienne@iupac.org> - IUPAC staff and Secretary
Kook Joe **Shin** <statchem@plaza.snu.ac.kr>

The following message was send to IUPAC National Adhering Organizations, Associate National Adhering Organizations, Bureau Members, Division Secretaries, Standing Committee Chairmen.

> *At our last two GA's, we have debated changes in the operational structure of IUPAC. In both cases changes in structure were not accepted. However there were significant expressions of support for measures to streamline IUPAC operations and make them more efficient. For this reason a committee was created to examine the possibility of streamlining IUPAC operations, (CSIO).*
>
> *After the committee has completed its task, a second committee chaired by the Secretary General, Dr. David Black, will examine any changes needed in our statutes and by laws to accomplish the recommendations of the CSIO.*
>
> *In order for the committee to have as wide a perspective as possible, input was sought from all segments of the IUPAC community.*
>
> *The mandate for the committee was to find efficiencies within the existing IUPAC structure. Thus in making our suggestions the only real constraint was to suggest streamlined procedures without altering the current structure.*

The Committee gratefully acknowledges input from several members of the Union.

In the following paragraphs we outline the core responsibilities of the Executive Committee (EC), Bureau, and Council. The purpose is not to reproduce the

responsibilities of these bodies as outlined in the Statutes and Bylaws, but rather to emphasize what we see as their key roles.

EC

EC1. Make decisions on operations
EC2. Bring policy and strategic initiatives forward to the Bureau for decision
EC3. Establish and appoint *ad hoc* groups to address and give advice on specific issues as necessary
EC4. Advise the President on the appointment of Standing Committee Members and Chairs
EC5. Meet at the conclusion of the Bureau meetings to review and implement pending actions (resulting in 2 meetings of the EC per year)

Bureau

B1. Extend voting rights on the Bureau to include Operational Standing Committee Chairs (CCE, COCI, and Chemrawn)*
B2. Elect the three Elected Members of the EC
B3. Make decisions on policies to be ratified by the Council
B4. Identify and monitor strategic issues for in depth discussion by the EC in at least one Bureau meeting every 2 years
B5. Review and identify the role of the Bureau and the tasks of the members at the first meeting of the Bureau directly following Council
B6. Fill casual vacancies on Divisions and Standing Committees, as well as temporary vacancies among Officers
B7. Ratify decisions of the EC

Council

C1. Conduct elections
C2. Receive financial reports and discharge the Treasurer of fiscal responsibilities
C3. Approve the budget
C4. Receive for information reports from Divisions and Standing Committees, and accept questions and clarifications subject to time constraints
C5. Ratify technical recommendations, e.g. the naming of an element
C6. Ratify decisions of the Bureau
C7. Approve changes in Statutes and Bylaws
C8. Approve the dates and places of future GAs

Improving Communication

1. Division Titular and Associate Members should liaise with NAOs and provide information (acting as pseudo NRs).
2. Member listings per country should be made available to NAOs and members, and be freely accessible on the website.
3. The Secretariat should determine if parallel communication channels would be helpful in bringing information to NAOs and to the attention of chemical and other relevant national groups.
4. Each Elected Member of the Bureau should be given responsibility to liaise with one or more ANAOs to encourage them to become NAOs and to report any results to the Executive Director.
5. Each Elected Member of the Bureau should be given responsibility to liaise with NAOs not otherwise represented on the Bureau regarding input for up-coming Bureau meetings and to report any results to the Executive Director.

Additional Initiatives, Guidelines, etc.

1. Have a more detailed annotated agenda for the Council with proposed time allocations for each item, references and links to any supporting documentation, and a series of expected actions and possible motions. All agenda items should be identified as 'for discussion', 'for decision', or 'for information'.
2. 'Information' items will generally consist of reports received from other IUPAC bodies. In general, written reports will be received for information without repeating orally what is written. Discussion will be restricted to questions and clarifications.
3. The Secretary General (DB), the Executive Director (JJ), and Publication Manager (FM) should meet to reconsider the GA schedule in time so that any suggested changes could be implemented in Glasgow.
4. The EC should consider to what degree access should be controlled for web versions of agenda documentations and minutes for the EC, Bureau, and Council.
5. IUPAC should constantly monitor the utility of web and related tools to make communication more efficient and to reach more potentially interested parties.

* Refer to item that might require revisions in the Statutes and Bylaws

(version last revised 26 January 2007)

Item 9: Task Force to Revise Statutes and Bylaws

The members of the Task Force, Prof. Black (Chairman), Prof. Brett, Dr. Cesa, Prof. Somsen, Dr. Jost (staff support), have collected a number of items which either require change or might clarify the existing Statutes and Bylaws. The lead times for changes to be approved by Council are respectively ten months for Statutes and eight months for Bylaws, so no proposals will go to Council in Torino. The Task Force on Efficiency made one recommended a change that has now been approved by the Executive Committee. The revision of Statutes and Bylaws will now proceed with the compilation of a draft and further discussions to refine that carefully. It is planned to have the proposed changes available for review by the NAOs in late 2008 prior to submission to Council at the 2009 meeting in Glasgow.

David Black

Item 10: Adoption of Recommendations on Nomenclature and Symbols

The recommendations approved by the Interdivisional Committee on Terminology, Nomenclature, and Symbols and published, or scheduled to be published, in *Pure and Applied Chemistry* from July 2005 through October 2007 are listed below. Also listed are two books, the *Red Book* and the *Green Book.*

Council is asked to approve these Recommendations.

1. XML-based IUPAC~Standard for Experimental, Predicted and Critically Evaluated Thermodynamic Data Storage and Capture (ThermoML) (Frenkel - CPEP). *Pure Appl. Chem* **78**, 541-612 (2006). 72 pp.
2. JCAMP-DX for EMR (Lancashire - CPEP). Pure Appl. Chem **78**, 613-631 (2006). 19 pp.
3. Graphical Representation of Stereochemical Configuration (Brecher - Div. VIII). Pure Appl. Chem **78**, 1897-1970 (2006), 73 pp.
4. Terminology of Polymers Containing Ionizable or Ionic Groups and of Polymers Containing Ions (Kubisa - Div. IV). Pure Appl. Chem **78**, 2067-2074 (2006), 8 pp.
5. Glossary of Terms Relating to Pesticides (Stephenson - Div. VI). Pure Appl. Chem **78** , 2155-2168 (2006), 14 pp.
6. Guidelines for Potentiometric Measurements in Suspensions. Part A. The Suspension Effect. (Oman - Div. V). Pure Appl. Chem **79** 67-79 (2007), 11 pp.
7. Glossary of Terms Used in Photochemistry (Braslavsky - Divs. I, III). Pure Appl. Chem **79**, 293-465 (2007), 173 pp.
8. IUPAC Glossary of Terms Used in Toxicology - Expanded and Revised (Duffus - Div. VII). For Pure Appl. Chem **79** [7].
9. IUPAC Explanatory Dictionary of Key Terms in Toxicology (Nordberg - Div. VII). For Pure Appl. Chem **79** [9].
10. Definitions of Terms Related to the Structure and Processing of Inorganic and Polymer Gels and Networks, and Inorganic-polymeric Materials (Jones - IV). For Pure Appl. Chem **79** [10].
11. Nomenclature of Inorganic Chemistry (Revised “Red Book”) (Connelly, N.G, Damhus, T., Hartshorn, R.M., and Hutton, A.T.). RSC Publishing (2005)
12. Quantities, Units and Symbols in Physical Chemistry, 3rd ed. (“Green Book”) (E Richard Cohen, Tomislav Cvitaš, Jeremy G Frey, Bertil Holmström, Kozo Kuchitsu, Roberto Marquardt, Ian Mills, Franco Pavese, Martin Quack, Jürgen Stohner, Herbert L Strauss, Michio Takami, Anders J Thor - Div. I). In press. RSC Publishing.

IUPAC DIVISION I: PHYSICAL AND BIOPHYSICAL CHEMISTRY

REPORT TO COUNCIL: 2005-7

Professor Christopher Brett
President

June 2007

TABLE OF CONTENTS

I. EXECUTIVE SUMMARY AND HIGHLIGHTS

The Objectives of the Physical and Biophysical Chemistry Division, as stated on the Division web page, are to organize and promote the international collaboration between scientists in physical and biophysical chemistry and related fields in order to

- address problems and formulate recommendations on nomenclature, symbols, units, terminology and conventions in physical and biophysical chemistry, disseminate the recommendations, encourage their translation as well as monitor their acceptance by the chemical community;
- establish and stimulate the use of methodologies, standards and reference materials in physical and biophysical chemistry;
- encourage the compilation and documentation of critically evaluated physical chemical data;
- recognize new developments in physical and biophysical chemistry and its fields of applications; and
- promote future oriented activities important for the contribution of physical and biophysical chemistry to science and technology and to the needs of the world community.

The Physical and Biophysical Chemistry Division (PBCD) has continued its activities in both physical and biophysical chemistry, with regard to the aims of the division. The composition of the Division Committee is designed to cover all the different areas of physical and biophysical chemistry and identify topics in which the division can make new contributions.

For the biennium 2006-07, the Division has 26 projects running, which include five nearing completion and five interdivisional. This total compares with 28 for the 2004-05 biennium, representing a slight reduction as the Division continues to focus its efforts on fewer projects but with more financial support for each of them. These projects encompass different areas of physical and biophysical chemistry. Each project has a monitor who is a member of the Division Committee and is responsible for overseeing its running, if it adheres to the timeline and helping to solve any difficulties which may arise. Many of the projects have resulted in publications even before they are completed and new and on-going projects have been described in articles in Chemistry International. In general, dissemination of the results of projects is through web pages, Pure and Applied Chemistry and other journals such as J. Phys Chem. Ref. Data (see Publications in Section IV).

Details of the current state of the projects are to be found in Section III of this report.

Work on establishing databases has continued. Of particular note are those on evaluated kinetic data for atmospheric chemistry for which there is a website in the USA to mirror the parent site in Cambridge, UK. This is an on-going project for which a new project proposal has been recently submitted. A second database regards the new field of ionic liquids. This database was officially launched during the American Chemical Society Meeting in March 2006 and was well received.

The Third Edition of the Green Book [Quantities, Units and Symbols in Physical Chemistry], will be finally published at the end of July 2007, in time for the 2007 General Assembly. The Division has contributed to the final stages of its revision through its membership in the ICTNS. This new edition addresses many of the questions which were raised after the second edition. It is planned to place part or whole of the third edition on the Web and to translate it into several languages. Additionally, "light" versions are intended to be produced which will be aimed at High School and Undergraduate level students. This work is the primary concern of Commission I.1 Physicochemical Symbols, Terminology, and Units, the only commission in the division.

The Division remains active with its chemical thermodynamics component, in part through its link with the International Association of Chemical Thermodynamics [IACT] which is an Associated Organisation of IUPAC since 2003. The IACT held its biennial meeting, the 19th IUPAC International Conference on Chemical Thermodynamics, in Boulder, Colorado, USA, during August 2006 with symposia covering a variety of topics related to different phases, theoretical and biophysical aspects.

The International Society of Electrochemistry is also an Associated Organization of IUPAC with a direct link to members of the Division Committee, and has had a direct input in areas such as electrochemical terminology and nomenclature and in one of the division projects.

The number of Division Committee Members that are clearly specialists in the area of biophysical chemistry has increased to three in the current biennium, and a thorough investigation of the possible contributions that the Division can make is being undertaken, including IUPAC-sponsored sessions at a Biological symposium or conference. A recently approved project is in the area of biophysical thermodynamics and the Division is collaborating in examining the possible the interdivisional and interdisciplinary activities within IUPAC in the area of biological chemistry.

Members of the Division Committee are actively collaborating in several symposia in the IUPAC 2007 Congress as co-chairs, namely in the symposia devoted to Chemistry Protecting the Natural Environment, Materials Chemistry and Nanotechnologies, Theoretical Chemistry and Computer Chemistry, Inorganic Chemistry and Biological and Biophysical Chemistry. It is hoped and expected that these symposia in which the Division is actively involved will lead to new ideas for projects in the next biennium.

The Advisory Subcommittee currently consists of 42 international distinguished scientists and engineers, some of whom are drawn from industry and who cover all the areas of physical chemistry and related areas of interest. The members of the subcommittee are all IUPAC Fellows. The role of the subcommittee is to suggest and identify areas that need to be dealt with by the Division, drawing attention to the need for experimental protocols in specific subject areas, taking part in IUPAC conferences, and acting as expert referees for IUPAC proposals. The immediate benefit to the Division from the subcommittee is the reduction of the period needed for assessment of project proposals to a period of weeks rather than months.

The division recognises the interdisciplinary nature of its activities and for this reason has representatives on the Committee for Chemistry Education, the Committee for Chemical Industry and the Subcommittee for Green Chemistry. Additionally, a number of projects being carried out are interdivisional which provides a forum for the exchange of ideas in

different areas of chemistry. The division also has representatives on two commissions of IUPAP. The first is on Commission on Statistical Physics to reflect the strong relation between statistical physics and physical and biological chemistry. The second is on Commission on Symbols, Units, Nomenclature, Atomic Masses, and Fundamental Constants (SUNAMCO).

As stated in previous reports from the Division, it is important to realise that the responsibility for leading and guiding the Division and to encourage and support all its growing activities lies on the shoulders of a relatively few individuals, who also have heavy responsibilities in their work place and who undertake IUPAC work for public service and service to their profession. The network created by the establishment of our Advisory Subcommittee has been helpful in this regard as well as by the IUPAC Secretariat, the membership of which is reviewed biennially.

II. ACTIVITIES OF DIVISION I WITHIN THE SIX GOALS IN THE IUPAC STRATEGIC PLAN

The activities of Division I in relation to the six long-range goals are as follows:

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

Scientific leadership is evident through all the Division's projects through the recommendations which are being established and the technical reports which are produced. The databases which have been implemented are unique and serve as a reference point for all colleagues working in this field, being a good example of how IUPAc has taken a leading role.

The Division continues to exert a strong role through the Interdivisional Committee on Terminology, Nomenclature and Symbols. Its current major project is the production of the 3rd edition of the Green Book, whose influence has been and will continue to be very significant in education, research, industry, and publishing through the world. This activity has involved the Division consistently during the last ten years.

Leadership is also seen through the cooperation with the Committee of Chemical Education, and a joint project has recently been commenced, which deals with innovative ways to present experiments to undergraduates in a way which is applicable in many countries in a harmonised way.

The Division is represented on the Green Chemistry Subcommittee which addresses the important points of sustainable chemistry which is of increasing concern to society as a whole, and not just to the chemical community.

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

This is a core aim of the Division. The majority of the Division's projects are geared towards international standardization in the proposal of standard nomenclature and terminology and formats and standard methods for presentation of data. All the projects involve extensive scientific discussion and promote the advancement of chemical sciences through recommendations, technical reports or books.

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

Its projects, particularly in the area of thermodynamics promote connections to chemistry-related industry via workshops and communications among individuals. Several projects involve members of the task force from industry and the Division is represented on COCI.

The Division is also represented on the Green Chemistry Sub-Committee and is actively involved in the organisation of the recently-established series of IUPAC Green and Sustainable Chemistry Conferences.

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

The members of the Committee and Advisory Sub-Committee are taken from a wide geographical base as well as topic areas with Physical and Biophysical Chemistry seeks to identify and address the needs of the world-wide chemistry community and give all the tools in an equal way which can help them in their research and communication with each other, by providing a common language and common conventions, through the projects which the division has and is carrying out. The division sponsors conferences all over the world, which includes the needs of chemistry and applied chemistry in developing countries.

Additionally, the Division fosters communications with other associations such as the International Association of Chemical Thermodynamics and the International Society of Electrochemistry, both of which are Associated Organizations of IUPAC. The former is directly associated with the IUPAC Conferences on Chemical Thermodynamics.

The division has a representative on the Green Chemistry Subcommittee which is concerned with the important problem of green and sustainable chemistry, and which includes the particular needs of developing countries.

d. 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.

The Division has always welcomed Young Observers and encourages them to become involved in Division activities. Two of the Division Committee members in the current biennium were recruited in this way. The Division's Advisory Subcommittee seeks to redress any remaining imbalances. Chemical education is a concern in all the projects involving recommendations for terminology and data presentation and in the publishing of books and monographs. Joint projects with the CCE are important for standardising protocols for experimentation. The public appreciation of chemistry is inherent in most of the Division's activities.

e. 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 Division has actively sought to have a membership in its committee which reflects IUPAC as a global organisation in terms of geography, gender and age. In the last biennium these efforts have borne more fruit than previously and so this has been more successfully achieved. Nevertheless, it remains a difficulty to attract interested younger colleagues, who are often at crucial points in their career, to agree and to be able to devote time to IUPAC activities.

In their totality, the projects of Division I embody all of the six long-range goals of IUPAC. Some projects support certain goals more strongly than other projects depending on the nature of the project

III. PROJECTS WITH UPDATED PROGRESS REPORTS

This section contains the list of all projects underway together with their current brief progress reports. These include the 17 Current Projects, the four projects nearing completion, the five other interdivisional projects and the single project in review at the time of writing this report.

A. CURRENT PROJECTS

1. 1999-037-2-100 - Evaluation of kinetic data for atmospheric chemistry

The objectives of this project are to enhance the accessibility and availability of the evaluated kinetic database, to develop and implement a way to update material on the website to include various linkages and the creation of a mirror website at IUPAC in North Carolina.

By the end of 2006 the data base was migrated to the Website (http://www.iupac-kinetic.ch.cam.ac.uk/) and comprises now more than 900 data sheets including gas phase, photochemical and heterogeneous reactions of atmospheric interest. Two new subcommittee panel members have been taken on board (M. Ammann (PSI, Switzerland), T. Wallington (Ford Motor Co., USA)) in order to compensate for the retirement of R. F. Hampson (NIST, USA). The work of the panel continues along two lines: (a) continuous update of the whole data base whereby all panel members are assigned several tens of reactions, (b) new organisation and representation of the heterogeneous data base that will also include recommendations. Before it was rather a compilation and did not include an evaluation. Four panel members are heavily involved in this effort (R. A. Cox, J. Crowley, M. Ammann and M. J. Rossi). At the same time the mirror site at Research Triangle Park, N.C., is being migrated to a server elsewhere in the US under IUPAC control. This will require the full cooperation of staff in Cambridge (UK) in order to guarantee a flawless transfer of data. The mirror site is visible on the home page of the project. This project seems on track and will continue for some time until the updating routine of all reactions will be in place and successfully handled by new members before the “old guard” begins to retire one-by-one, probably at some time beginning in 2008.

2. 2001-015-1-100 - Standard potentials of radicals*

The aim of this project is to evaluate critically the standard potentials of inorganic and organic radicals in the literature, to recommend values, and to identify reduction potentials for further experimentation. There are two compilations which are now both more than ten years old and in need of updating. The project has compiled new data that has been published since 1989, set up a thermodynamic network and develop in this fashion values for standard potentials that are internally consistent. Data sheets have been prepared for each radical as found in the JANAF tables.

One set of evaluations and eight summary tables have been prepared, including: Inorganic Standard Potentials, Organic Standard Potentials, Gibbs Energies of Formation for Radicals, Inorganic Radical pK_as, Hemicolligation Equilibrium Constants, Inorganic Radical Equilibrium Constants and Radical Henry's Law Constants,. Linked to these tables are individual evaluation sheets which are being prepared.

One particularly challenging task is to obtain a least-squares optimisationfor a thermo-chemical network that links the properties of about 50 radicals, primarily inorganic. Evaluations are complete for most of these radicals and a robust method has been developed for performing the least squares. A confidential web site for the project was created; this web site does not display all of the work conducted by the task group, but it does indicate the general form of the results as they are developing.

The task group met in early June 2007 for the fourth and final time and is now at ~80% completion of the project, with a clear vision of the remaining 20%. One very important benchmark achieved is a consensus on the values of a set of about 10 important reference radical potentials; essential in order to establish final recommendations for the majority of the other recommended potentials. The final set of recommended potentials will consist of several hundred values. A deadline of Dec. 31, 2007 has been set for completion of the first draft of the report. The publication will consist of a few pages of text and several Tables of recommended data. The recommended data will consist of standard potentials involving radicals in aqueous solution, radical pKa's, and related equilibrium constants. This publication will be web-enhanced; the web version will be identical to the printed version, except that each recommendation will have a link to the underlying references, comparisons, and discussion.

3. 2001-028-1-100 - Electrochemical impedance spectroscopy - terminology, nomenclature and data exchange formats

The aim is to summarize, standardize and disseminate the nomenclature of fast developing new fields of application of electrochemical impedance spectroscopy. It seeks to standardize conventions of formats for experimental data exchange and analysis.

The main work has been completed and the paper is now written for two of the three items, namely the aspects of nomenclature and data exchange formats. Terminology is still under discussion. Reductions in the size of the first draft are still being finalised. The first draft of the paper for terminology or definitions aspect resulted in 70 pages, which is currently being reduced to about 20 pages.

4. 2001-030-1-100 - Recommendations on the measurement and analysis of results obtained on biological substances with isothermal titration calorimetry

The aim has been to prepare recommendations for measurement procedures for isothermal titration calorimetry applied to biological substances, the calibration procedures. The recommendations include analysis and reporting of the results in order to facilitate universal comparability of isothermal titration calorimetry (ITC) data from different laboratories.

Measurements have been done for a working standard NAD/NADH binding to a protein, lactate-dehydrogenase for checking the performance of isothermal titration calorimeters. The ‘round-robin’ ITC results from 12 laboratories on the binding of 4-carboxybenzene sulfonamide to carbonic anhydrase were carried out and were evaluated for inclusion in the IUPAC Recommendations.

Draft recommendations have now been prepared including all these aspects and are being finalised.

5. 2002-005-1-100 - Thermodynamics of ionic liquids, ionic liquid mixtures, and the development of standardized systems

The aims of this project are to initiate systematic studies of thermodynamic and thermo-physical properties of Ionic Liquids (IL) based on the needs of industrial chemical processes, to establish a reference system of IL's and (IL + liquid mixtures) with reliable stability and purity and well defined thermodynamic properties, and to define guidelines regarding where research activities and future cooperation should be directed.

Extensive measurements for the standard reference materials have been completed at ten different laboratories around the world, regarding the viscosity, density, thermal conductivity, heat capacity, electrical conductivity, enthalpy of dilution, gas solubility at high pressure, and speed of sound over the temperature range from 238 K to 378 K. The project is going well and should be near completion.

6. 2003-006-1-100 - NMR chemical shifts: updated conventions*

The objectives are to update IUPAC Recommendations 2001: NMR Nomenclature, Nuclear Spin Properties and Conventions for Chemical Shifts [*PAC* 73, 1795 (2001)] by addressing several issues in setting standards for chemical shifts, including temperature variation of the NMR signals of reference compounds, the use of magic-angle spinning for both solutions and solids, solvent effects, and magnetic susceptibility corrections.

Recommendations are given for reporting chemical shifts under most routine experimental conditions and for quantifying effects of temperature and solvent variation, including the use of magnetic susceptibility corrections and of magic-angle spinning (MAS).

This document provides the first IUPAC recommendations for referencing and reporting chemical shifts in solids, based on high-resolution MAS studies. Procedures are given for relating ^{13}C NMR chemical shifts in solids to the scales used for high-resolution studies in the liquid phase. The notation and terminology used for describing chemical shift and shielding tensors in solids is reviewed in some detail, and recommendations are given for best practice.

The provisional recommendations have been in the public review stage until 31 May 2007.

7. 2003-020-2-100 - Ionic liquids database

The aim is to create an open-access, free, on-line, comprehensive database for storage and retrieval of metadata and numerical data for ionic liquids, including their syntheses, structure, properties, and uses.

The collection of data has been assigned among the seven participating laboratories along with the assignment of the development of the WEB outlet for the system and the storage and retrieval system. The database, storage and retrieval systems have been developed at the Thermodynamics Research Centre at NIST. A meeting of the Task Group took place in Beijing, P.R. China in August 2005. The website was officially launched in March 2006 at the American Chemical society Meeting and the database can be accessed at http://ilthermo.boulder.nist.gov/ILThermo/mainmenu.uix. The web site is divided into pure ionic liquids, binary and ternary mixtures and further chemical information.

8. 2003-024-1-100 - Selected free radicals and critical intermediates: thermodynamic properties from theory and experiment

The objective of this project activity is the compilation and critical evaluation of published thermodynamic properties, including the computation of accurate thermo-chemical data for selected free radicals that are of importance in atmospheric and combustion chemistry.

In September 2006 a no-cost extension for this project was requested from IUPAC in order to compensate for the long delay of publication of volume I (*J. Phys. Chem. Ref. Data* **2005**, *34(2)*, 573-656) of the projected three volumes on the thermochemistry of free radicals. This was the reason for the long inactivity of the panel. This no-cost extension until September 30 2007 was granted in November 2006. A meeting of the full panel (except R. Janoschek and Phil Westmoreland) was held in Budapest on 9 and 10 December 2006 in order to resume the activity and regain the initial momentum. Several free radical data sheets were finalized and discussed, however, it seems that several data sheets are still missing for submission. From the Website of the panel (http://atct.anl.gov/IUPAC/assignments.html) it appears that 7 free radical data sheets are ready for submission. The website also displays two additional sections, one for "perennial references" and the other for "project publications" of the group. It should be mentioned that the thermochemistry of several smaller free radicals are being calculated using sophisticated methods in parallel to the compilation of experimental and theoretical literature results. This dual methodology is somewhat delaying the compilation of both experimental and theoretical results for the corresponding free radicals. However, it seems that the original plan of submitting the data sheets of all 32 free radicals of set I will not be on schedule as of September 30 2007 although the data sheets with the most information are in the process of publishing.

9. 2003-036-2-100 - Thermodynamics and non-equilibrium criteria for development and application of supplemented phase diagrams

The aim of the project is to establish rational links between thermodynamic aspects of phase diagrams supplemented by the non equilibrium curve of the glass transition temperature for mixtures of water with vitrifying agents used in the cryo- and dehydro-preservation of natural (foods, seeds, etc.) and synthetic products (pharmaceuticals).

The update and literature classification on supplemental phase diagrams for relevant aqueous systems for food and pharmaceuticals has been completed. The initial critical evaluation of this database to includes the shortcomings of current practice. The information produced so far is available on http://www.iupac.org/publications/cd/phase_diagrams/index.htm.

A technical report will be prepared on how to construct supplemented phase diagrams when there is not enough experimental infomation on a given system. Asecond technical report will dela with the use of such diagrams for different particular cases.
The final review of the drafts will be done at the task group meeting in September 2007.

10. 2004-010-3-100 - Heat capacity of liquids: critical review and recommended values for liquids with data published between 2000 and 2004

The aims are to update and to extend two publications that contained recommended data on liquid heat capacities for almost 2000 mainly organic compounds, "Heat Capacity of

Liquids: Critical Review and Recommended Values", and its "Supplement I" by M. Zábranský, V. Ruzicka, V. Majer (1st work only), and E.S. Domalski published in *Journal of Physical and Chemical Reference Data* in 1996 and 2001. The publications were the product of IUPAC Projects 121/11/87 and 2000-031-1-100.

Updating the databases of experimental data has been completed. New data on calorimetrically measured liquid heat capacities of compounds having their melting temperature below 573 K published in 193 primary literature sources between 1999 and 2006 were entered into computer readable databases.

Compounds were divided into several families (see the previous report). New data for 411 compounds were entered, out of them 202 compounds being new additions, not covered in the previous work. That represents 479 new data sets, each data set consisting of a table of heat capacity and the corresponding temperature. The new additions include data for 3 inorganic compounds and for 50 ionic liquids. Most of the new data cover organic substances (408 compounds, 202 of them new additions).

Data for all compounds from the current databases including the new data are presently being correlated.

At present the timetable is as follows:

1. July 2007: completion of critical assessment of data, correlation
2. December 2007: preparation of manuscript for publication in J.Phys.Chem.Ref.Data
3. Optionally (not part of the 2004-010-3-100 IUPAC project): an amendment and extension of estimation methods for heat capacity of liquids utilizing the updated database of recommended data (Zábranský, M.; Růžička, V. Estimation of the Heat Capacities of Organic Liquids as a Function of Temperature Using Group Additivity. An Amendment. *J. Phys. Chem. Ref. Data* **2004,** *33,* 1071-1081; Kolská, Z.; Kukal, J., Zábranský, M., Růžička, V. Estimation of the Heat Capacity of Organic Liquids as a Function of Temperature by a Three-Level Group Contribution Method, in preparation for *Ind. Eng. Chem. Res.* **2007**).

11. 2004-026-2-100 - Categorizing hydrogen bonding and other intermolecular interactions

The aims are to provide a modern definition of the hydrogen bond by examining comprehensively the various intermolecular interactions in the light of all current experimental and theoretical information. Hydrogen bonded systems both in gaseous and condensed phases in chemical and biological systems will be examined.

The Task Group met in Pisa, on 5-9 September 2005 in the form of a workshop. Eleven out of the fourteen task group members participated in the meeting. All task group members and 10 invited speakers gave talks in the area of hydrogen bonding and molecular interactions. A core-group met in Bangalore between 18 and 22 September 2006. with a one-day discussion including talks by the core-group members and some outside experts. The final report is now being prepoared. A report on the project was published in *Chem. Int*. Mar-Apr 2007, p. 16

12. 2004-035-1-100 - A database of water transitions from experiment and theory

The aims are a critical compilation, experimental determination and validation, and theoretical verification and extension of accurate frequency, energy level, line intensity, line width, and pressure effect spectral parameters of water and all of its major isotopologues.

The present collaborative effort is aimed at devising and constructing a database comprising, eventually, the complete linelist of all major isotopologues of water for studies at all temperatures. To achieve this goal this project will bring together researchers from around the globe who are active in studying the rovibrational spectra of water as well as experts in related data handling. The linelist to be compiled will include theoretical and (where available) experimental values of transition frequencies, intensities, and pressure broadening parameters for all major isotopologues. Emphasis will be on validation, comparisons, and test of the database. To achieve the stated goals of this project requires a concerted effort of experimental and theoretical chemists and physicists, spectroscopists, and computer scientists.

13. 2004-036-1-100 - Establishing recommended data on thermodynamic properties of hydration for selected organic solutes

The objectives are to establish a database of thermodynamic properties of hydration for approximately 200 selected organic solutes at reference conditions of T = 298.15 K and 0.1 MPa and as a function of temperature and pressure up to the near critical region of water, to calculate from the reliable experimental data the values of hydration properties for solutes covering different molecular structures, to use the established database as a standard for testing and deriving new physico-chemical models and methods of molecular simulation to include the development of semi-theoretical prediction schemes for chemical engineering, environmental chemistry and geochemistry.

A first draft paper concerning gaseous solutes has been prepared.

14. 2006-021-2-100 - Liquid intrusion and alternative methods for the characterization of macroporous solids

The aim of this project is to analyse the various liquid intrusion techniques available today to assess the pore-size of materials (with special attention to the pores above 50 nm width), together with other alternatives, in order to provide (i) a critical and comparative appraisal and (ii) an appreciation about the ways which should be favoured and developed to solve the issue described hereafter.

A first step will be made towards satisfactory answers, by listing, examining and evaluating all trials already made in the field. These include the intrusion of safer liquids (other molten metals, water, organics…) and also the extension of the analysis of capillary condensation data up to the macropore range where, for technical reasons it was, until recently, considered inapplicable. In any case, the need of improvement and/or of alternative methods is urgent. By clarifying the situation, this project should help selecting and developing the most promising approaches. The issue concerns most scientists and industrialists working with porous materials (catalysts, pharmaceuticals, building materials, stones of ancient monuments to be restored or protected, adsorbents for chromatography, liquid purification or gas separation …) and it needs an evaluation accepted and used by all persons involved all over the world.

It is planned to present the main conclusions in a conference in May 2008.

15. 2006-023-3-100 - Recommendations for nomenclature and databases for biochemical thermodynamics

The aim is to revise IUPAC Recommendations for Nomenclature and Tables in Biochemical Thermodynamics 1994*. Update these recommendations and increase their usefulness by providing more about computers and databases that have been developed since 1994. Describe the connection between the thermodynamics of enzyme-catalyzed reactions and the kinetics of enzyme-catalyzed reactions that is provided by Haldane relations. These Recommendations will be published as IUPAC-IUBMB Joint Commission on Biochemical Nomenclature (JCBN).

The Sections to be drafted include:
1 Preamble; 2 Introduction; 3 Basic Thermodynamics,4 Thermodynamics of Chemical Reactions; 5 Legendre Transform to Introduce the pH as an Independent Variable in Biochemical Thermodynamics; 6 Equations for the Standard Transformed Formation Properties of a Reactant; 7 Thermodynamics of Biochemical Reactions; 8 Stoichiometry; 9 Standard Apparent Reduction Potentials for Half Reactions of Enzyme-Catalyzed Reactions; 10 Building a Database; 11 Relations Between Biochemical Thermodynamics and Biochemical Kinetics; 12 Nomenclature.
It is expected that the first draft will be completed by the end of 2007.

16. 2006-050-3-100 - Wet surface vibrational spectroscopy experiments*

The aim of this project is to promote the application of wet surface vibrational spectroscopies (ATRIRS, SEIRAS, SERS) to problems in interfacial chemistry by selecting, testing, and disseminating to universities a collection of experiments suitable for undergraduate teaching laboratories and able to be performed with inexpensive equipment.

Undergraduate experiments in interfacial chemistry are presently dominated by measurements of macroscopic quantities such as surface tension and amount adsorbed when increasingly spectroscopic and microscopic data are presented in the corresponding lectures. IUPAC can take a lead in encouraging a more modern molecular approach to interfacial physical chemistry through international collaboration of leading expertise to compile and test a series of appealing experiments which can be readily carried out in undergraduate laboratories with relatively inexpensive equipment.

This project brings together leading physical chemists in the fields of attenuated total reflection infrared spectroscopy (ATRIRS), surface enhanced infrared spectroscopy (SEIRAS), and surface enhanced Raman spectroscopy (SERS), to select practicable experiments which can be carried out in teaching situations throughout the world. Both SERS and SEIRAS employ finely divided metal surfaces while the ATRIRS particle film approach can be applied to any solid. All of the chosen surface spectroscopies are applicable to solid/aqueous interfaces that are of considerable interest in studies of natural and technological systems.

The experiments will be tested and refined in their laboratories of origin, followed by testing in at least two university undergraduate laboratories elsewhere under normal laboratory conditions.

This project has just begun. A meeting of the Task Group is planned for September 2007.

17. 2007-002-1-100 - Guidelines for modulated-temperature differential scanning calorimetry (MTDSC)

Modulated-temperature differential scanning thermal analysis techniques are widely used in many fields. Particularly in pharmaceutical, food and polymer studies where first order transitions, glass transitions and polymorphism are key issues. All sorts of relaxation phenomena as well as coupled thermal and kinetic contributions can advantageously be investigated and selectively studied with such techniques. Typically, calorimetric measurements are subject to systematic errors especially when they depend upon the choice of physical parameters such as amplitude and period of modulation and the temperature scanning rate. Not only the instrument used plays an important role but the sample itself to investigate requires the parameters to be tuned to optimize the response of the instrument in order to eliminate systematic errors and get full unambiguous information. It has to be recognized that whatever the instrument and the associated methodology used the same quantitative information must be obtained on a given sample.

Extension will be made to thermal analysis techniques, where a modulation is superimposed to the temperature ramp, underlying the basic principles and the derived mathematical description of the data treatment. The different methods of measurement and calculation of the main thermodynamic quantities, such as specific heat capacities, first order transitions and glass transitions, will be carefully analyzed. On the different typical aspects associated to the techniques clear description will be made of the operating procedures and methodologies. The project should bring a consistent set of recommendations to be internationally accepted for the use of modulated-temperature calorimetry.

The first meeting of the task group is scheduled for August 2007.

* *Interdivisional project*

B. PROJECTS NEAR COMPLETION OR IN PRESS

1. 110/2/81 - Revision of "Quantities, Units and Symbols in Physical Chemistry" and the Appendices (3rd edition)

The objective is to revise the 2nd edition of "Quantities, Units and Symbols in Physical Chemistry" and the Appendices.

This Commission I.1 project consists of preparation of the third edition planned. The draft version was circulated at the GA held in Brisbane in 2001. After a period of little progress the momentum was regained in 2005. A meeting held in Beijing in 2005 enabled final decisions to be made with respect to public review of the text of the new edition. The public review was completed in March 2006, all suggestions were considered at a Commission meeting in August 2006 and necessary alterations made. The index was prepared and the final text has recently been sent in April 2007 to the Royal Society of Chemistry for printing. Publication is expected by the end of July 2007 before the Torino General Assembly.

2. 120/15/95 - Thermochemistry of chemical reactions: nomenclature, symbols and experimental methods for bond energies

The Technical Report describing this project has been submitted, reviewed and accepted by the ICTNS with recommended change in the organisation of the report to reflect both Recommendations and content of a Technical Report. The revisions are being considered.

3. 150/24/95 - Spectroscopy under extreme conditions of temperature and pressure

The objectives are to obtain international agreement on methods and standards and to prepare documents to guide workers in the field of spectroscopy under extreme conditions. Initially vibrational and electronic spectroscopy will be considered, but the project may be extended to NMR, Mossbauer, and other spectroscopies if the early work reveals interest in these areas. The main issues to be pursued come under the three general headings Instrumentation, Pressure Calibration, and Temperature Calibration. Instrumentation includes the consideration of cell design, the use of membranes with diamond anvil cells, the properties of optical windows under extreme conditions, the design of spectrometers and microscopes, the use of optical fibres for safe access to difficult experimental situations, and the simultaneous generation of high pressure and low temperature in an optical cell. The calibration issues include methods and standards for the calibration of hydrostatic and very non-hydrostatic pressures. Emphasis will be on calibration through the spectroscopic properties, with the intention to make recommendations in the final report of standard substances, inorganic, organic and biological, whose spectroscopic properties can be used for calibration and for establishing the performance of apparatus.

After a period without progress reports, the latest information is that this project will be completed.

4. 2000-026-1-100 - Critical compilation of vapour liquid critical properties

The objective is to review all measurements of vapour-liquid critical properties for pure organic compounds containing **nitrogen**, **halogen**(s), and **sulphur** and **silicon** and to recommend values for critical temperature, critical pressure and critical densities, with uncertainties.

To date, the project has resulted in nine review papers (Parts 1 to 9) published in the *Journal of Chemical and Engineering Data*.

Part 10. Organic Compounds containing Halogen. A draft manuscript on this extensive set of compounds has been sent out for final review, with submission to the Journal of Chemical and Engineering Data planned for next month.

Part 11 on Multifunctional Organic Compounds, and Miscellaneous Compounds for which Data had been published since the earlier Items in this Series.
Work on this is well advanced, with recent assistance from Alan Abramson, who has a very comprehensive collection of critical property data, and who was not previously involved.

The proposed Part 12, on Inorganic Compounds and Elements, has not progressed for some time but steps are being taken to include new members of the task force so that this can move ahead.

C. PROJECTS RECENTLY COMPLETED

1. 2003-005-1-100 - Recommended values of the viscosity of molten iron and aluminum

The widely different data obtained for the viscosity of molten iron and aluminum will be critically reviewed via an interlaboratory comparison and recommended values will be proposed.

The available experimental data for the density and viscosity of liquid aluminum and iron were critically examined with the intention of establishing a density and a viscosity standard. All experimental data were categorized into primary and secondary data according to the quality of measurement specified by a series of criteria. The proposed standard reference correlations for the density of the aluminum and iron are characterized by standard deviations of 0.65 and 0.77% at the 95% confidence level respectively.

The final manuscript was approved by ICTNS in June 2005. The report was published in *J Phys. Chem. Ref. Data,* Vol. 35, No. 1, pp. 285-300, 2006> doi:10.1063/1.2149380

2. 2005-016-1-100 - Developments and applications in solubility*

A book "Developments and applications in solubility" ed. T.M. Letcher was published by the Royal Society of Chemistry in February 2007.

Solubility is one of the most basic and important of thermodynamic properties, and a property which underlies most industrial processes. This book is a collection of 24 chapters involving recent research works, all related to solubility. The objective brings together research from disparate disciplines which have a bearing on solubility. The book highlights the Theory, Techniques, interesting and new Results, Modeling and Simulation, and Industrial Applications related to solubility.

The book has its origins in committee meetings of the International Association of Chemical Thermodynamics. It is a project produced under the auspices of the International Union of Pure and Applied Chemistry (IUPAC). In true IUPAC image, the authors, which represent some of the most important names in their respective fields, come from many countries around the world, including: Australia, Austria, Finland, France, Germany, Ireland, Netherlands, New Zealand, Portugal, Slovenia, South Africa, Switzerland, Poland, United Kingdom and the United States of America.

3. 2005-048-2-100 - Solubility and thermodynamic properties related to environmental issues*

A book "**Thermodynamics, Solubility and Environmental Issues**" ed. T.M. Letcher was published by Elsevier in April 2007.

Environmental problems are becoming an important aspect of our lives as industries grow apace with populations throughout the world. Thermodynamics, Solubility and Environmental Issues highlights some of the problems and shows how chemistry can help to reduce these them. The unifying theme is Solubility – the most basic and important of thermodynamic properties. This informative book looks at the importance and applications of solubility and thermodynamics, in understanding and in reducing chemical pollution in the environment. Written by experts in their respective fields and representing the latest findings in this very important and broad area. A collection of twenty-five

chapters cover a wide range of topics including; mining, polymer manufacture and applications, radioactive wastes, industries in general, agro-chemicals, soil pollution and biology, together with the basic theory and recent developments in the modelling of environmental pollutants.

* Interdivisional project

D. OTHER INTERDIVISIONAL PROJECTS

1. 2001-036-1-300 - Glossary of terms in photocatalysis and radiation catalysis (Division III)

2. 2003-056-2-500 - Standard definitions of terms relating to mass spectrometry (Division V)

3. 2004-005-2-500 - Comparable pH measurements by metrological traceability (Division V)

4. 2004-021-1-300 - Reference methods, standards and applications of photoluminescence (Divisions III and V)

5. 2005-042-1-300 - Chemistry for Biology - an inventory of interdivisional and interdisciplinary activities within IUPAC in the field of biological chemistry (Division III)

E. PROJECTS IN REVIEW

1. 2007-001-02 Evaluated Kinetic Data for Atmospheric Chemistry (supplement to 1999-037-2-100)

2. 2007-015-1 Future energy: Sustainable and clean energy alternatives for our planet*

* Interdivisional project

Other projects in the final stages of preparation for submission are (as of June 2007) :

- A “light” version of the Green Book and translations of the Green Book from English to other languages
- physical chemistry of the actinides

IV PUBLICATIONS AND PROJECT LIST

IV.1 LIST OF PUBLICATIONS SINCE 2000

A.1 REPORTS

Evaluated kinetic and photochemical data for atmospheric chemistry: Volume III - gas phase reactions of inorganic halogens
Atmos. Chem. Phys. **7**, 981-1191 (2007**)**

Evaluated kinetic and photochemical data for atmospheric chemistry: Volume II - gas phase reactions of organic species
Atmos. Chem. Phys. **6**, 3625-4055 (2006**)**

Standards, calibration, and guidelines in microcalorimetry. Part 2. Calibration standards for differential scanning calorimetry
(IUPAC Technical Report)
Pure Appl. Chem. **78**(7), 1455-1476 (2006)

Vapor-Liquid Critical Properties of Elements and Compounds. 9. Organic Compounds Containing Nitrogen
J. Chem. Eng. Data; **51**(2), 305-314 (2006)

Reference data for the density and viscosity of liquid aluminum and liquid iron
J. Phys. Chem. Ref. Data, **35**(1), 285-300 (2006)

Atomic force microscopy and direct surface force measurements
(IUPAC Technical Report)
Pure Appl. Chem. **77**(12), 2149-2170 (2005)

Evaluated kinetic data for combustion modeling: supplement II
J. Phys. Chem. Ref. Data, **34**(3), 757-1397 (2005)

Measurement and interpretation of electrokinetic phenomena
(IUPAC Technical Report)
Pure Appl. Chem. **77**(10), 1753-1805 (2005)

IUPAC Critical Evaluation of Thermochemical Properties of Selected Radicals: Part I.
J. Phys. Chem. Ref. Data **34**, 573-656 (2005)

Practical guide to measurement and interpretation of magnetic properties
(IUPAC Technical Report)
Pure Appl. Chem. **77**(2), 497-511 (2005)

Electrochemistry at the interface between two immiscible electrolyte solutions
(IUPAC Technical Report)
Pure Appl. Chem. **76**(12), 2147-2180 (2004)

Evaluated kinetic and photochemical data for atmospheric chemistry: Volume I - gas phase reactions of O-x, HOx, NOx and SOx species
Atmos. Chem. Phys. **4**, 1461-1738 (2004**)**

Quantities, terminology, and symbols in photothermal and related spectroscopies
(IUPAC Recommendations 2004)
Pure Appl. Chem. **76**(6), 1083-1118 (2004)

Measurement of pH. Definition, standards, and procedures
(IUPAC Recommendations 2002) (V, I)
Pure Appl. Chem. **74**(11), 2169-2200 (2002)

Definitions, terminology and symbols in colloid and surface chemistry
Pure Appl. Chem. **31**, 579-638 (1972)
Web Version 2001

Heat capacity of liquids: Critical review and recommended values. Supplement I
J. Phys. Chem. Ref. Data, **30**(5), 1199-1689 (2001)

NMR nomenclature. Nuclear spin properties and conventions for chemical shifts (I.5)
Pure Appl. Chem. **73**(11), 1795-1818 (2001)

Standards in isothermal microcalorimetry (I.2)
Pure Appl. Chem. **73**(10), 1625-1639 (2001)

Quantum chemical B3LYP/cc-pvqz computation of ground-state structures and properties of small molecules with atoms of *Z* £ 18 (hydrogen to argon) (I.5)
Pure Appl. Chem. **73**(9), 1521-1553 (2001)

Use of Legendre transforms in chemical thermodynamics (I.2)
Pure Appl. Chem. **73**(8), 1349-1380 (2001)

Nomenclature of Structural and Compositional Characteristics of Ordered Microporous and Mesoporous Materials with Inorganic Hosts
(IUPAC Recommendations 2001) (I.6)
Pure Appl. Chem. **73**(2), 381-394 (2001)

Vapor-Liquid Critical Properties of Elements and Compounds: Part 8. Organic Sulfur, Silicon and Tin Compounds (I.2)
J. of Chem. and Eng. Data **46**, 480-485 (2001)

Guidelines for presentation of methodological choices in the publication of computational results. B. Semiempirical electronic structure calculations (I.5)
Pure Appl. Chem. **72**(8), 1449-1452 (2000)

Evaluated Kinetic and Photochemical Data for Atmospheric Chemistry. Supplement VIII (Halogen Species) (I.4)
J. Phys. Chem. Ref. Data **29**, 167-266 (2000)

A.2 BOOKS

Developments and applications in solubility, ed. T.M. Letcher
Royal Society of Chemistry, February 2007.
(from 2005-016-1-100 - Developments and applications in solubility*

Thermodynamics, solubility and environmental issues, ed. T.M. Letcher
Elsevier, April 2007.
(from 2005-048-2-100 - Solubility and thermodynamic properties related to environmental issues*

Revision of "Quantities, Units and Symbols in Physical Chemistry" and the Appendices (3rd edition)
(continuation of 110/2/81). The 3rd Edition will be published by the Royal Society of Chemistry /IUPAC in July 2007.

A.3 DATABASES

Kinetics database on http://www.iupac-kinetic.ch.cam.ac.uk/**. More than** 9000 dfata sheets have been published.

Standard potentials of radicals. Data are availbale on
http://atct.anl.gov/IUPAC/assignments.html and are being increased in size.

Ionic liquids datbase. Thers data are availbale on
http://ilthermo.boulder.nist.gov/ILThermo/mainmenu.uix

Supplemental phase diagrams
http://www.iupac.org/publications/cd/phase_diagrams/index.htm

A.4 CHEMISTRY INTERNATIONAL 2006-7

"The project place"

Categorizing hydrogen bondiong and other intermolecular interactions
Chem. Int., March-April 2007, 16.

"Making an Impact"

Evaluated kinetic data for combustion modelling
Chem. Int., Jan-Feb 2006, 30.

Atomic force microscopy and direct surface force measurements
Chem. Int., March-April 2006, 32-33.

Reference data for the density and viscosity of liquid aluminium and liquid iron
Chem. Int., May-June 2006, 20-21.

“Tools of the trade”

Using InChI, J.G. Frey
Chem. Int., Nov-Dec. 2006, 14-15.

Evaluated kinetic and photochemical data for atmospheric chemistry, M.J. Rossi
Chem. Int., Jan-Feb. 2007, 15-16.

“Conference call”

Chemical thermodynamics, J.H. Dymond, M. Frenkel
Chem. Int., March-April 2007, 24-26.

B. LIST OF PROJECTS

B.1 CURRENT PROJECTS

1. 1999-037-2-100 - **Evaluation of kinetic data for atmospheric chemistry**
2. 2001-015-1-100 - **Standard potentials of radicals***
3. 2001-028-1-100 - **Electrochemical impedance spectroscopy - terminology, nomenclature and data exchange formats**
4. 2001-030-1-100 - **Recommendations on the measurement and analysis of results obtained on biological substances with isothermal titration calorimetry**
5. 2002-005-1-100 - **Thermodynamics of ionic liquids, ionic liquid mixtures, and the development of standardized systems**
6. 2003-006-1-100 - **NMR chemical shifts: updated conventions***
7. 2003-020-2-100 - **Ionic liquids database**
8. 2003-024-1-100 - **Selected free radicals and critical intermediates: thermodynamic properties from theory and experiment**
9. 2003-036-2-100 - **Thermodynamics and non-equilibrium criteria for development and application of supplemented phase diagrams**
10. 2004-010-3-100 - **Heat capacity of liquids: critical review and recommended values for liquids with data published between 2000 and 2004**
11. 2004-026-2-100 - **Categorizing hydrogen bonding and other intermolecular interactions**
12. 2004-035-1-100 - **A database of water transitions from experiment and theory**
13. 2004-036-1-100 - **Establishing recommended data on thermodynamic properties of hydration for selected organic solutes**
14. 2006-021-2-100 - **Liquid intrusion and alternative methods for the characterization of macroporous solids**
15. 2006-023-3-100 - **Recommendations for nomenclature and databases for biochemical thermodynamics**
16. 2006-050-3-100 - **Wet surface vibrational spectroscopy experiments***
17. 2007-002-1-100 - **Guidelines for modulated-temperature differential scanning calorimetry (MTDSC)**

* Interdivisional project

B.2 PROJECTS NEAR COMPLETION OR IN PRESS

1. 110/2/81 - **Revision of "Quantities, Units and Symbols in Physical Chemistry" and the Appendices (3rd edition)**

2. 120/15/95 - **Thermochemistry of chemical reactions: nomenclature, symbols and experimental methods for bond energies**

3. 150/24/95 - **Spectroscopy under extreme conditions of temperature and pressure**

4. 2000-026-1-100 - **Critical compilation of vapour liquid critical properties**

B.3 PROJECTS RECENTLY COMPLETED

1. 2003-005-1-100 - **Recommended values of the viscosity of molten iron and aluminum**

2. 2005-016-1-100 - **Developments and applications in solubility***

3. 2005-048-2-100 - **Solubility and thermodynamic properties related to environmental issues***

* Interdivisional project

B.4 OTHER INTERDIVISIONAL PROJECTS

1. 2001-036-1-300 - **Glossary of terms in photocatalysis and radiation catalysis** (Division III)

2. 2003-056-2-500 - **Standard definitions of terms relating to mass spectrometry** (Division V)

3. 2004-005-2-500 - **Comparable pH measurements by metrological traceability** (Division V)

4. 2004-021-1-300 - **Reference methods, standards and applications of photoluminescence** (Divisions III and V)

5. 2005-042-1-300 - **Chemistry for Biology - an inventory of interdivisional and interdisciplinary activities within IUPAC in the field of biological chemistry** (Division III)

B.5 PROJECTS IN REVIEW

2007-001-02 **Evaluated Kinetic Data for Atmospheric Chemistry (supplement to 1999-037-2-100)**

2007-015-1 **Future energy: Sustainable and clean energy alternatives for our planet***

* Interdivisional project

Division II Report to Council and Bureau

Highlights

The activities of Division II are grouped into three broad areas:

Atomic Weights and Isotopic Abundances;
Molecular Inorganic Chemistry;
Solid State Inorganic and Materials Chemistry.

The Atomic Weights and Isotopic Abundances activities are very well coordinated and are thriving, in part through continuation of the original IUPAC Commission II.I "Commission on Isotopic Abundances and Atomic Weights", but also with a sequence of highly-focused and funded IUPAC projects in this area, leading to important publications such as Revision of the Table of Atomic Weights. This work is vital to the Division and to IUPAC and has recently been extended to include a joint Task Force involving the Geological Union, IUGS, concerning resolution of discrepancies in the half-lives of long-lived radioactive nuclides, which are of direct relevance for geochronological dating purposes.

The molecular inorganic activities, which previously were, in part, responsible for the creation of the new Division on Nomenclature, are now witnessing a resurgence of activities associated with increased Division membership in this area, including important representation for the Division on the Federation of European Chemical Societies.

Solid state high-temperature materials chemistry has long been an activity of Division II and this is now broadened to encompass the much wider range of activities under the umbrella of Materials Chemistry. Several projects have been funded in this area, often in collaboration with other Divisions, together with workshops and conferences. The sub-committee on Materials Chemistry is run largely by Division II, with representation from other Divisions and represents an area that is evolving and expanding rapidly.

An extremely important activity for Division II, is the cross-union working party with IUPAP, on validation of the claims for, and naming of, new elements. In recent years we have seen the authentication and naming of elements 110 and 111; at the moment, the joint IUPAC/IUPAP Working Party is considering claims for seven new elements with atomic numbers in the range 112 to the widely-mooted island of stability at 118. At the moment, the Working Party has no formal recommendations to make, but a verbal update may be presented in Torino.

Overall, the Division is in excellent shape, with an enthusiastic membership, including new Titular Members who have already demonstrated much interest in the involvement of IUPAC activities. The age distribution of the Division membership is excellent, with almost everybody in the category of active researchers; geographical distribution is also excellent. The portfolio of projects held by the Division is good, with several completed projects, a significant number that are progressing well and a number that have only just started. A significant percentage of Division II projects are joint with other Divisions or with other Unions.

Discovery and Naming of New Elements

The joint IUPAC-IUPAP working party on the discovery and naming of new elements has been re-activated following a considerable number of publications concerning new elements with atomic numbers in the range 112 to 117. Currently, the working party is evaluating the literature to establish the authenticity of the claims for discovery of new elements.

Materials Chemistry Sub-Committee

Members of the Materials Chemistry Sub-Committee met in Seattle on August 14th 2006 – in conjunction with the Division II Committee Meeting. The Sub-Committee accepted a report from Project 2005-001-1-200. "Towards Defining Materials Chemistry" on a day-long meeting that had been held in London organised by the Royal Society of Chemistry. The Task Group will meet with members of the Sub-Committee at Turin prior to the meeting of the Sub-Committee and it is anticipated that the project will be concluded at that time.

The Sub-Committee also considered, and initiated, a project to produce a glossary of terms used in Materials Chemistry and nano-related terminology and explored means to bring an earlier project on experiments in solid-state chemistry to a conclusion.

The Sub-Committee noted that HTMC-XII the twelfth in the High Temperature Materials Chemistry Conference series would take place in September 2006 in Vienna and was already a success in terms of registrations. The next in the series HTMC-XIII will take place at Davis in the USA in 2009 organised by Alexander Navrotsky. The Sub-Committee accepted a bid from Thailand to host the Workshop in Advanced Materials WAM IV in August 2008: the status and location of WAM-IV is currently under review (June '07).

Finally the Sub-Committee requested that the Division II Committee consider its future in light of its progress since it was formed at the General Assembly at Brisbane.

Sub-Committee for Isotopic Abundance Measurements, SIAM

The Subcommittee on Isotopic Abundance Measurements (SIAM) recognizes that there are a number of elements for which significant publications need scrutiny. These include Zn, Ca, Mg, and Si, for which significantly different, high precision publications have recently been assessed by SIAM.

The task group will evaluate recently published isotope ratios and resulting atomic-weights. Detailed discussions and calculations will be carried out on any chemical element for which new isotope ratio information exists. Particular attention will be paid to authors' evaluations of uncertainty, the selection of materials for analysis, and the variability of isotope ratio measurements in these materials. The task group will than present their recommendations for adoption of best isotopic ratios and new standard atomic weights to the Commission on Isotopic Abundances and Atomic Weights at the General Assembly in Torino.

SIAM has a project that can be found at http://www.iupac.org/projects/2005/2005-027-1-200.html and whose objective is to evaluate isotope ratio publications between 2005 and early 2007, to determine "best isotope ratio measurements" for compilation and publication in a 2009 TICE, recommend "new" standard atomic weights, and publish "Atomic Weights of the Elements 2007" in Pure and Applied Chemistry, which will also include a table of relative atomic masses and half-lives of selected radionuclides.

Celebrating the Centenary of Mendeleev´s Death

The Periodic Table is at the core of the activities of Division II and a universal icon of Chemistry. This year we celebrate the centenary of the death of its father, the great Russian chemist, Dimitri Ivanovich Mendeleev (Tobolsk, Siberia, February 7, 1834 – Saint Petersburg, February 2, 1907).

The Spanish Government named 2007, as the Year of Science. On this occasion, the Spanish Royal Society of Chemistry organized numerous activities to promote Mendeleev and its Periodic Table. Dr. Javier Garcia-Martinez, Associate Member of Division II, had an active role in this initiative designing a commemorative stamp, below, to celebrate Mendeleev´s genius. 5 million stamps were issued by the Spanish Mail on February 2007.

From July 11 to 13, 2007, Universidad de La Rioja, Spain, is organizing the first History of Chemistry Summer School. As part of this activity, Prof. Pascual Roman Polo will present the lecture, *Mendeleev, Principles of Chemistry and the Periodic Table*. He will also review the activities carried out during the Year of Mendeleev.

The official journal of the Spanish Royal Society of Chemistry, Anales de Química, dedicated its first issue of 2007, to Mendeléev and Javier wrote a review paper on Philately and Chemistry, with special attention to Mendeléiev [J. Garcia-Martinez, J.M. Salas Peregrín, *La Química através de sus sellos. Un estudio comparativo de la filatelia dedicada a Mendeleiev*. An. Quim., 103, 53-57 (2007)] and designed the front cover of the magazine.

To promote the Periodic Table among young people, the University of La Rioja (Spain), organized the Periodic Table Design Competition open to any person worldwide. Both scientific and artistic aspects will be considered. One first prize and two runner-up prizes will be presented at the University in July 2007.

The book *Nomenclature of Inorganic Chemistry* (the IUPAC "Red Book") Translated into Spanish

Profs. Pascual Román Polo and Miguel A. Ciriano translated the "Red Book" into Spanish. It is expected that the book will be available from June 7, 2007. This book contains the recommendations published by IUPAC at the end of 2006, and replaces the previous version

Nomenclatura de Quimica Inorgánica. Recomendaciones de 1990, by Luis F Bertello y Carlos Pico Marin.

News and Articles

The Periodic Table: Its Story and Significance *by Herbert D. Kaesz, Chemistry International* March-April 2007, pg 22, review of the book "The Periodic Table: Its Story and Significance" by Eric Scerri
The Periodic Table at a Glance by G.J. Leigh *Chemistry International* March-April 2007, pg 23. review of the book "The Periodic Table at a Glance" by Mike Beckett and Andy Platt
"High Temperature Materials Chemistry" by Herbert Ipser and Adolf Mikula *Chemistry International* March-April 2007, pg 27
"Priority Claims for the Discovery of Elements with Atomic Number Greater than 111" by John Corish *Chemistry International* January-February 2007, pg 18
"Teaching High-Temperature Materials Chemistry at the University Level" by Giovanni Balducci *Chemistry International* November-December 2006, pg 26
"Definitions of Terms Relating to the Structure and Processing of Inorganic and Polymeric Gels and Networks", *Chemistry International* July-August 2006, pg 23
"Inorganic Chemistry-Metal-Nucleic Acid Interactions" *Chemistry International* July-August 2006, pg 37
Javier Garcia Martinez Wins Silver Medal of the European Young Chemist Award, IUPAC Wired *Chemistry International* March-April 2007, pg 13.
"Calibration of Organic and Inorganic Oxygen-Bearing Isotopic Reference Materials" by Tyler B. Coplen *Chemistry International* March-April 2006, pg 29
Priority Claims for the Discovery of Elements with Atomic Number Greater than 111 by John Corish *Chemistry International* January-February 2007, pg 18

Conferences and Workshops

The IUPAC conference series on High Temperature Materials Chemistry continues with number HTMCXII held in Vienna in September 2006. Plans are already in-hand for the next conference, HTMCXIII to be held in Davis, California in 2009.
The third workshop in advanced materials WAMIII was held in Stellenbosch, South Africa in September 2005 and was regarded as a great success. Division approval has just been given for the next workshop, WAMIV to be held in Thailand, probably, in 2008.

Projects related to Education and Public Awareness

Teaching high temperature materials chemistry at University

The proposed project will provide a resource book of topics in the area of properties and behaviour of high temperature materials for those teaching materials science or physical or inorganic chemistry at various levels. The recommended topics will be accompanied with a bibliography of helpful references and a short introduction or explanation, including the areas of application.

The development of high temperature materials chemistry (HTMC) as an increasingly important field of scientific and technological research is due to the continuous demand for new materials and the need for systematic knowledge of their physical and chemical behaviour under the conditions required by the new technologies, for example in space and energy technologies. These materials, such as oxide and non-oxide modern multifunctional ceramics, intermetallics, etc which offer interesting technical applications for surface coatings, electronic components, advanced turbines

etc, are prepared through high temperature processing (e.g. transport reactions, CVD, combustion synthesis, laser ablation and deposition) and must be stable under extreme thermal and chemical conditions. HTMC now encompasses many fields of science and technology and its advancement has seen a synergic interchange between basic and applied research with the application of thermodynamics, kinetics and a variety of physical, chemical and modeling techniques to investigate processes and behaviour of materials at temperatures as high as 3000K and even up to 5000K. The results of over than 50 years of studies demonstrated that the general behaviour of materials and reactions at high temperatures differ, often dramatically, from those we are educated to expect at near room temperature. HTMC topics are rarely addressed in chemistry and materials science programs at university. Therefore, to fill the gap it is important to introduce the concepts underlying the behaviour of materials and chemical bonding at high temperatures to students of chemistry and materials science

IUGS-IUPAC Task Group

The Inorganic Chemistry Division has established a link with geochemists via a joint Task Group (that was approved and funded in October 2006) between the International Union of Geological Sciences (IUGS) and IUPAC. The objective of this Task Group is to resolve discrepancies in the values of decay constants (reciprocals of radioactive half-lives) of long-lived radioactive nuclides that are used by geo-chronologists for the dating of geological materials with those decay constant values that were previously recommended by IUPAC.

In preliminary work to the major objectives, the Task Group has had an article accepted for publication in the journal, Quaternary Science Review, entitled "Convention on the use of Systeme International (SI) units in Earth Sciences" by Renne et al. This paper attempts to correct the inconsistent use of Systeme International (SI) units that deal with age determinations used in the geological sciences.

Membership of European Association for Chemical and Molecular Sciences EuChemS

The European Association for Chemical and Molecular Sciences (EuCheMS) takes over the role and responsibilities of the Federation of European Chemical Societies and Professional Institutions, founded in 1970. This European Association for Chemical and Molecular Sciences promotes co-operation in Europe between non-profit-making scientific and technical societies in the field of chemistry whose membership consists largely of individual qualified chemical and molecular scientists and whose interests include the science and/or practice of chemistry.

This European organization of chemists had his first meeting (the 1st European Chemical Congress) on August 27-31, 2006 in Budapest. Over 3,000 participants from more than 50 countries worldwide attended the very successful 1st EuCheMS Chemistry Congress. Among the plenary presentations were talks by Jim Feast, President, RSC, on Chemistry Research in Europe and Dieter Jahn, President, GDCh on The future of chemical research in Europe.

The 2nd EuCheMS Chemistry Congress will be held in Torino, 16-20 September 2008 and its aims are: i) to promote chemistry and chemical sciences at the cutting edge; ii) to foster collaboration among scientists in research, industry, education in support of chemistry in the European Research Area and worldwide; iii) to enhance the image of chemistry .
The EuCheMS has also creates an EuCheMS Working Party on Inorganic Chemistry and Division II has nominated Luis Oro as IUPAC representative.

Industry relationships

The major Industrial links of Division II and IUPAC with the Chemical Industry run via the standing committee: COCI (Committee on Chemistry and Industry) which deals with issues of importance in chemistry-related industries. COCI emphasizes sharing best practice globally and focuses on capacity building in the developing world.

(1) Meetings
COCI normally holds two meetings each year: strategic and program planning meeting (2006:North Carolina, 2007:Lyndhurst UK); annual meeting (2006:Chicago, 2007:scheduled for Turin).

(2) Programs
The Health, Safety and Environmental Program: Safety Training Program (STP) funded by IUPAC-UNESCO-UNIDO has been running since 1993. In 2005-6 eight trainees were accepted and trained at AstraZeneca. COCI collaborated in organizing a conference on Occupational Health and Safety in East Africa held September 2006 in Nairobi, Kenya.

In the program Public Appreciation of Chemistry COCI provide industrial perspective on the activity of IUPAC. In 2006 an article was published in Chemistry International. A CD-ROM on educational material has been prepared in the Chinese language. The NAO/Company Associates Recruitment and Retention Program has continued in collaboration with the Secretariat to recruit company associates and national representatives. It has given recommendations for actions. New company associates have been successfully recruited in USA, UK and Kuwait. In the Trade Association Program, the participants are making connections with trade associations, government and non-government organizations like UNESCO and ICCA to assist NGO and IGO in collaboration with these organizations. Division and Standing Committee Collaboration Program aims at recruiting representatives from divisions and committees to COCI and vice versa.

(3) New projects
Two new projects have recently been accepted by IUPAC:
a. Chemistry in a Changing World – New Perspectives Concerning the IUPAC Family (Jonas Unger)
b. Responsible Application of Chemistry (Bernhard West)

(4) Conference
A conference entitled Chemistry in a Changing World – New Perspectives Concerning the IUPAC Family was held in March 2007 in Gothenburg, Sweden (no details available as yet). The World Chemistry Leadership Meeting will be organized in Turin 2007 with COCI participation.

(5) Other COCI and Industrial Issues
A new “COCI Corner” column in Chemistry International has been started and will continue. The latest issue of “IUPAC Projects of Interest to Industry” has been published and sent to NAOs and CAs worldwide.
In most International Conferences of inorganic chemical nature, industrial delegates participate on an equal basis, and in some cases – at the discretion of the local organizers – special sessions on industrial aspects are organized, such as at the 2006 ICCC in Cape Town.

Division II Project Update (April 2007)

(i) Live Projects

1999-049-1-200 Voronin *Thermodynamic characterization of high-temperature superconductors in the yttrium-barium-copper-oxygen system*

Hope to receive a final report this year.
2000-024-1-200 Balducci *Teaching High Temp Materials Chemistry*
Planned end date changed to 31-Dec-07
2001-015-1-100 Stanbury *Standard potentials of radicals*
No change since August 2006.
2001-019-1-200 Walczyk *Guidelines for mass spec measurements*
Planned completion is by the end of 2007.
2003-031-1-200 Berglund *Isotopic Compositions of Selected Elements*
Planned completion date, Sept 2007.
2003-033-1-200 Wieser *Determination of Atomic Weights Using New Analytical Techniques*
On schedule. Planned end date is 1-May-2008.
2003-034-1-200 Kniep *Classification, Terminology and Nomenclature of Borophosphates*
Project may be terminated.
2005-001-1-200 Day *Towards Defining Materials Chemistry*
Second Task Group meeting in Torino, August 2007.
2005-022-1-200 Brand/Coplen *Calibration of Organic and Inorganic Oxygen-bearing Isotopic Reference Materials*
On schedule; a progress meeting planned in Prague in May 2007.
2005-027-1-200 Berglund *Evaluated Published Isotope Ratio Data (2005-2007)*
On schedule. First meeting planned for July 2007, Pisa.
2005-043-2-400 Ober *Terminology for self-assembly and aggregation of polymers*
No change since August 2006
2006-016-1-200 Renne *Recommendations for Isotope Data in Geosciences*
On schedule--recently funded.
2006-025-1-200 Holden *Assessment of fundamental understanding of isotopic abundances and atomic weights of the chemical elements*
On schedule--recently funded.
2006-028-1-400 Ober *Terminology for conducting, electroactive and fieldresponsive polymers*
On schedule--recently funded.
2006-046-1-200 Karol *Priority claims for the discovery of elements with atomic number greater than 111*
On schedule.

(ii) Abandoned Projects

Four projects were abandoned (generally because of illness or death of project leaders):
2000-02-2-100 Yi Hua Ma
Standardization of methods for the characterization of inorganic membranes
2000-020-2-200 Prof. Meral Kizilyalli
Collecting, Testing and Dissemination of Experiments in Solid State and Materials Chemistry
2000-022-1-200 Prof. Hans-Peter Boehm
Characterization of carbon materials
2001-042-1-200 Prof. Ebihara
Review of Isotopic Abundances in Extraterrestrial Materials: Part 1.

(iii) Projects close to completion.

The following four projects have been or will be completed by December 31, 2007. Additional project(s) may be completed this year.

2001-019-1-200	Walczyk	*Guidelines for mass spec measurements*
2002-049-2-200	Loss (Taylor)	*A new comprehensive report on the isotopic compositions of the elements for global users communities (RICE phase I)*
2003-031-1-200	Berglund	*Isotopic Compositions of Selected Elements*
2005-022-1-200	Brand/Coplen	*Calibration of Organic and Inorganic Oxygen-bearing Isotopic Reference Materials*
2003-006-1-100	Harris	*NMR Chemical Shifts: Updated Conventions.* Completed.

June 2007

ARW/CAP/18.6.07

Report of the IUPAC Organic and Biomolecular Chemistry Division (III)

August 2007

Minoru Isobe, President

I. Executive Summary and Highlights

Division of Organic and Biomolecular Chemistry aims at promoting the goals of IUPAC in the field of organic and biomolecular chemistry in the broadest sense. Division III consists of a Division Committee and 6 Subcommittees, which promote the formulation and execution of various Projects on relevant chemical problems, the staging of chemical conferences on important areas of chemistry, the education and professional development of chemists worldwide, the advancement of chemical industry, and the application of chemistry to meet the world's needs. The Division is committed to utilizing the talents of chemists from around the world in these activities, and promoting diversity in our membership.

Division III covers such a broad area of multidisciplinary aspects, and stimulates the fundamental and applied organic synthesis as the top edge science. It includes asymmetric synthesis of Natural Products, Process Chemistry with Molecular Catalysts, and Organometallic Chemistry. Chemical Biology or post genomic chemistry is the key sciences for the biomolecules, and it is also close to Biotechnology. Physical chemistry has been the fundamental mechanistic science, and it is also important in the spectroscopy and/or organic analysis. Photochemistry is of worldwide significance in the standardization for analytical chemistry as well. Green and sustainable chemistry are increasingly recognized as important environmental and limited organic materials from the global scale. This Division coordinates these subjects to be interdivisional activities as well as among the following Subcommittees.

Subcommittee on Organic Synthesis (Chair: Frank McDonald, USA)
Subcommittee on Biomolecular Chemistry (Chair: Michael Blackburn, UK)
Subcommittee on Green Chemistry (Chair: Pietro Tundo, Italy)
Subcommittee on Photochemistry (Chair: Silvia Braslavsky)
Subcommittee on Structural and Mechanistic Chemistry (Chair: T. Marek Krygowski)
Subcommittee on Biotechnology (Chair: Francesco Nicotra)

The Subcommittees have been dealing with the IUPAC sponsored conferences in the various location of the world with quite success. Some of them are recognized as the conference series and planned long time in advance with adjusting the period of time and place for the similar conferences to be held.

The following report style is slightly different from the instruction, since the subcommittees are

differently active to fit making this report for the six goals in the current IUPAC Strategic Plan.

II. An overall report of Division activities during 2006 and the first part of 2007

a) IUPAC will provide leadership as a worldwide scientific organization that objectively address global issues involving the chemical sciences. Organic Synthesis Subcommittee has long time the tradition as the worldwide leadership in the synthetic chemistry communities; thus, asymmetric synthesis of natural products, new reactions catalyzed by organometallic compounds. In the Biomolecular Subcommittee, it is also recognized as the world leading level for the elucidation of the molecular structures in trace amount and/or complexity and/or biochemical mechanism. These have been indicated in the division-supported series of conferences collecting over 1000 participants as Organic Synthesis, Biodiversity and Natural Product Chemistry, and OrganoMetallic Chemistry.

b) IUPAC will facilitate the advancement of research in the chemical sciences through the tools that it provides for international standardization and scientific discussion. Photochemistry is a good example for the standardization since it has been widely applied to various kind of spectroscopy on the basis of physical chemistry such as NMR, Photoluminescence, and Chemical Actinometry. It should be noted that Photochemistry Subcommittee is in good collaboration with major photochemical societies in the world.

c) IUPAC will assist chemistry-related industry in its contribution to sustainable development wealth creation, and improvement in the quality of life. Green Chemistry Subcommittee has contributed to this subject in worldwide starting from South East Asia, India, Arab region, Latin America, Russia, Africa in the strong connection with the economical growth and chemical industry activity.

d) IUPAC will foster communication among individual chemists and scientific organizations, with special emphasis on the needs of chemists in developing countries. Biomolecular Subcommittee has established a new project of Chemistry for Biology, which is chaired by Prof. T. Norin and is focusing on – an inventory of interdivisional and interdisciplinary activities within IUPAC in the field of biological chemistry (2005-042-1-300). Organic Synthesis Subcommittee has launched a project on Strategic Planning for a new East Asian Network for Organic Chemistry, which is chaired by Prof. M. Isobe (2005-039-2-300). This project occasionally organize Workshops, which are jointly conducted with Asian Core Project among 7 countries/regions in East Asia.

e) 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. IUPAC prizes have been awarded to young chemists in the ICOS-15

and -16 and ICB-5 and ICCNP-25 meetings as well as Poster Prize to 3 presentators.

f) 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 Division has been committed to these goals for some time, as witnessed by our current 31 members (11 TM, 6 AM, 12 NR, 2 PR), who are from 29 countries (Asia 8), (Europe 15), (North America 3), (South America 3), and (Africa 2). Only 4 are female but we expect to increase this representation. We are always conscious of the need to recruit younger chemists, but recognize their carriers; In addition our Subcommittee include 73 additional individuals, many of them younger chemists.

Division Committee Meeting

As is the scattering location of the big scientific conferences, we had the off-year committee meeting at 3 different places; (1) June 13 (17.00-18.30) at Hotel Fiesta Americana, Santa Lucia Room, Merida, Mexico in the occasion of IUPAC ICOS-16; (2) July 24 (16.15-18.15) at Room 552, Kyoto International Conference Hall, Kyoto, Japan in the occasion of IUPAC ICB5/ISCNP25; (3) September 10 (16.30-18.30) at Room Side, Porto Bello Hotel, Antalya, Turky in the occasion of 9-Eurasia Conference on Chemicl Sciences partly supported by IUPAC. We had Division President, Vice President, Secretary, Titular Members x 3, Associate Members 3, Subcommittee Members 6, Advisors (former Division Presidents 3, IUPAC body 1).

SUBCOMMITTEES:

Subcommittee on Organic Synthesis

Synthesis covers a central part of the organic chemistry spectrum and ethos. The mission of the Sub-committee on Organic Synthesis is to provide a focus for the dissemination of current knowledge and the development of future directions in all aspects of organic synthesis, including: 1) The development of new molecular transformations; 2) The development of new reagents; 3) The development of environmentally benign synthetic processes; 4) The synthesis of new types of organic structures; 5) The synthesis of target molecules for specific applications; 6) The total synthesis of natural products; 7) Combinatorial and high throughput techniques.

IUPAC International Conference on Organic Synthesis (ICOS-16, organizer Eusebio Juaristi) was held in Merida, Mexico from June 11-15. 2006, which was quite successful with nearly 1000 participants. IUPAC Prize was awarded to Prof. David MacMillan (Caltech), and next Prize nomination has just opened since June 20 by co-sponsor with Theme. It will be awarded in ICOS-17, which will be held in Daejeon in Korea during June 22-27, 2008 organized by collaboration of Profs. Sunggak Kim and Sung-Ho Kang. Further ICOS-18 (2010) in Bergen by Prof. Leiv Sydnes, Norway; ICOS-19 (2012) and later plans are to be discussed.

Heterocyclic Chemistry (FHC-7) was held in Gainesville Florida, USA in March 12-15, 2006; and FHC-8 was done at the same place by Prof. Alan Katritzky. Another series of Heterocyclic Chemistrty, ICHC-21 was held in Sydney, Australia during July 15-20, 2007, which was organized by Dr. Kate Jolliffe..
Organometallic Chemistry has joined as Division supported symposia and OMCOS-14 will be held in Nara, Japan during Aug. 2-6, 2007.

Subcommittee on Biomolecular Chemistry

The Subcommittee will seek to deliver the long-range goals of IUPAC, particularly within the vital interfacial area of molecular science that lies between organic chemistry and biology. It will support the application of the powerful methods of chemistry to current and emerging problems in biology to achieve understanding and, where appropriate, modification of the systems of living organisms at the molecular level. To that end, the Sub-Committee will provide a focus for the dissemination of current knowledge and the development of future directions in the following fields: 1) Structure, function and applications of biomolecules and their analogues; 2) Molecular mechanisms of biological processes and their modulation; 3) Molecular engineering via chemo-enzymatic processes; 4) Analysis, manipulation and application of biomolecular information systems.
International Conference on the 5th Biodiversity and 25th Natural Products: Chemistry and Medical Applications was held in Kyoto, Japan in July 23-28, 2006 by organizer D. Uemura with ca. 1200 participants. Five Satellite symposia on natural product chemistry were held in Sapporo, Sendai, Tokyo, Nagoya, Osaka and Tokushima. The 7th International Symposium on Biomolecular Chemistry (ISBOC-7) was held at the University of Sheffield, UK in July 2004, which was masterminded by Professor Michael Blackburn in collaboration with the Royal Society of Chemistry. IUPAC sponsored 9th Eurasia Conference on Chemical Sciences - Innovations in Chemical Biology at the Bridge of Eurasia was held in September 9-13, 2006 in Antalya, Turkey by Prof. Bilge Sener, and conference report appeared in *Chem. Int.* 2007, 29(2).

In the Subcommittee meeting in Sheffield, the proposal (# 2004-013-1) submitted by Prof. Mosihuzzaman was recommended to modify the organization of a Symposium in Print. Progress reports of the projects on Post-genomic chemistry (#2001-005-1-300) and Fighting microbial resistance through development of new antimicrobial agent, directed against new specific targets (#2002-030-1-300) was reported by Koomen.

Subcommittee on Photochemistry

Implementation of the overall goals and objectives of IUPAC in the multidisciplinary area of photochemistry and its links to the photosciences (e. g., materials sciences, photobiology, photolithography, photography) can be accomplished only with the inputs of a broad spectrum of experts in the field, including those with ancillary interests in areas covered by all Divisions within IUPAC. 1) Renewable energy sources; 2) Green

chemistry; 3) Atmospheric photochemistry; 4) New analytical methods in the biosciences including trace analysis of proteins, nucleic acids, and small bioregulators, both in vivo and in vitro; 5) Industrial photochemistry; 6) Advanced spectroscopic methods in ultra-fast time and ultra-small space resolution; 7) Methods for identifying material fatigue and temporal changes.

The Subcommittee works in close contact with the three major Photochemical Societies of the world, i. e., the Inter-American Photochemical Society, IAPS, The European Photochemical Association, EPA, and the Japanese Photochemical Association.

Miguel Miranda organized a meeting of the Sub-Committee on Photochemistry, plus colleagues participating in or chairing projects, during the XX-IUPAC Sponsored symposium of Photochemistry in Granada, Spain in July 2004. The 21 Symposium is planned to be held in Kyoto, Japan in April 2006 (Masahiro Irie).

Project on Chemical Actinometry (#2002-008-1-300) has been published in *Pure Appl. Chem. 79*, 293-465 (**2007**) by S. E. Braslavsky. The scope of this work is not only limited to the theoretical field in single molecule fluorescence, but also applicable to the material sciences and biology through fluorescence microscopy, etc.

Subcommittee on Structural and Mechanistic Chemistry

The Subcommittee should handle problems concerning the many aspects of structural and mechanistic organic chemistry. Specific examples include: 1) Environmentally friendly chemical processes and degradative pathways of organic contaminants; 2) Reactions in solution, gas phase, and solid state; 3) Solvents for organic reactions; 4) Acidity and basicity of organic compounds; 5) Supramolecular chemistry. The 18th IUPAC Conference on Physical Organic Chemistry (ICPOC-18) was held in Warsaw, Poland in August 20-25, 2006 organized by Prof. T. M. Krygowski, and Conference report appeared in *Chem. Int*. 29(2), 2007. The next ICPOC-19 will be in Santiago, Spain (Galicia) in 2008. Next group conference will be held in Essen, Germany in 2007 (Roland Boese).

Subcommittee meeting in Shanghai approved the name of "Correlation Chemistry" to change to "Correlation and Modeling in Chemistry). This change aims at fostering research in all aspects of the modeling of the structure-property quantitative relationship (SPQR); thus, between structural variations and measurable properties as equilibrium constants, (enzyme catalyzed) reaction rates, etc.

Subcommittee on Green Chemistry

The aim of this Subcommittee is to develop actions devoted to the cause of green chemistry for its wider benefit to the future of chemistry and society as whole.

Activities are introduced in *Chemistry International, Vo. 26, No. 2, March-April, 2004* by Pietro Tundo and Mohamed Tawfic Ahmed as follows. "Green Chemistry is an emerging field concerned with the safe practice of chemistry—a goal that people all over the world are interested in attaining. Green chemistry

addresses some of our most precious values; human well-being, environmental sustainability, integrity, and safety, and the worldwide need for green chemistry practices should allow human development and property, along with environmental ethics. The IUPAC working party on Synthetic Pathways and Processes in Green Chemistry defined Green Chemistry (2000) as *The invention, design, and application of chemical products and processes to reduce or to eliminate the use and generation of hazardous substances.*

Projects of the Green (Sustainable) Chemistry are of south East Asian (#2002-028-1-300), IUPAC coordinated web page (#2002-029-1-300), in the Arab region (#2003-043-1-300), are still in progressing; and Green Chemistry in Russia (#2003-026-1-300) and in Latin America (#2002-064-1-300) have been completed. There has been a proposal for the translation and dissemination of a monograph for secondary schools on 'Global Climate Change" by Tundo (#2005-015-1).

Green Chemistry

10-15 September 2006

First International IUPAC Conference on Green-Sustainable Chemistry was heald in Dresden, Germany during Sep. 10-15, 2006 organized by Prof. Pietro Tundo, and Conference report appeared in *Chem. Int.* 29(3), 2007.

Subcommittee on Biotechnology

In designing the program, the goal has been to focus on work at the interface of biotechnology and biomolecular chemistry from which many key industrial and academic advances have sprung. The program embraces a variety of topics ranging from novel drug discovery, biosynthesis, biocatalysis, and organic synthesis through artificial enzymes and other emerging biotechnological applications. Attention will be devoted to the industry's experience in drug research and in biotechnological production.

New IUPAC symposium, Chem-Bio-Tech-2007 is going to be organized as a joint meeting of the IUPAC 1st Symposium on Chemical Biotechnology (ISCB-1) and the IUPAC 8th Symposium on Bioorganic Chemistry (ISBOC-8) in Torino, Italy during August 8-11, 2007. Organized by collaboration between Prof. Francesco Nicotra and Prrof. Mary Garson.

III. Any other substantive information

Budget of Division III for 2006-2007 is allocated to the 6 Subcommittees in part, and the rest are available for projects. Further funding is available for good proposals. The generation of new projects remains the most urgent business of the Division.

Many potential proposals have been discussed among the subcommittee meetings to generate most important and timely projects.

IV. Tabular material

List of publications

Current Projects

2001-036-1-300 - Glossary of terms in photocatalysis and radiation catalysis*

2002-029-1-300 - A IUPAC coordinated web page on Green/Sustainable Chemistry

2002-030-1-300 - Fighting microbial resistance through development of new antimicrobial agents, directed against new specific targets

2003-043-1-300 - Green chemistry in the Arab region

2004-021-1-300 - Reference methods, standards and applications of photoluminescence*

2005-015-1-300 - "Global Climate Change" - Translation and dissemination of a monograph for secondary schools

2005-034-1-300 - Development of methodologies and protocols for documentation, evaluation of safety and efficacy and standardization of herbal medicine

2005-039-2-300 - Strategic Planning for a new East Asian Network for Organic Chemistry

2005-042-1-300 - Chemistry for Biology - an inventory of interdivisional and interdisciplinary activities within IUPAC in the field of biological chemistry*

* Interdivisional project

OTHER INTERDIVISIONAL PROJECTS

2001-043-1-800 - Preferred names in the nomenclature of organic compounds

2003-006-1-100 - NMR chemical shifts: updated conventions

PROJECTS NEAR COMPLETION / IN PRESS

301/1/93 - Development of guidelines for the transmission of information on organic synthesis (Abbreviation guidelines and glossary of terms for protecting groups in synthesis)

Representation on other IUPAC Bodies

Committee on Chemical Education (CCE) M. Fatima d. G. F. da Silva.

Interdivisional Committee on Nomenclature, Terms, and Symbols (ITCNS) Amelia Rauter.

Subcommittee on Materials Chemistry Shunichi Fukuzumi and Istvan Horvath.

Recent Reports from ORGANIC AND BIOMOLECULAR CHEMISTRY DIVISION (III)

Glossary of terms used in photochemistry, 3rd edition (IUPAC Recommendations 2006)
Pure Appl. Chem. **79**(3), 293-465, 2007

Postgenomic chemistry (IUPAC Technical Report)
Pure Appl. Chem. **77**(9), 1641-1654 (2005)

Chemical actinometry (IUPAC Technical Report)
Pure Appl. Chem. **76**(12), 2105-2146 (2004)

Phane nomenclature. Part II. Modification of the degree of hydrogenation and substitution derivatives of phane parent hydrides (IUPAC Recommendations 2002) (III)
Pure Appl. Chem. **74**(5), 809-834 (2002)

Molecular basis of biodiversity, conservation, and sustained innovative utilization
Pure Appl. Chem. **74**(4), 697-702 (2002)

Nomenclature for the C60-*I*h and C70-*D*5h(6) fullerenes (IUPAC Recommendations 2002) (III.1)
Pure Appl. Chem. **74**(4), 629-695 (2002)

Critical evaluation of proven chemical weapon destruction technologies
Pure Appl. Chem. **74**(2), 187-316 (2002)

Organic photochromism (IUPAC Technical Report) (III.3)
Pure Appl. Chem. **73**(4), 639-665 (2001)

Figures-of-merit for the technical development and application of advanced oxidation technologies for both electric- and solar-driven systems (IUPAC Technical Report) (III.3)
Pure Appl. Chem. **73**(4), 627-637 (2001)

Synthetic Pathways and Processes in Green Chemistry. Introductory Overview (III.2)
Pure Appl. Chem. **72**(7), 1207-1228 (2000)
That is the *Introductory Overview* to the *PAC* special topic issue on Green Chemistry.

IUPAC POLYMER DIVISION (DIVISION IV)

Report to Council for 2006 – 2007

Structure of Report

1. Objective

The objective of this report is to highlight and summarize activities of the Polymer Division (Division IV) for the past two years. In particular, new developments in 2006 – 2007 will be updated. The division presently has six subcommittees besides the Division Committee.

2. Off – Year Meeting, August 2006

The Off – Year Meeting was held in Rio de Janeiro, Brazil, 15 – 16 August 2006. It was attended by 7 TMs, 4 AMs, 2NRs, 12 Subcommittee Members and 1 Observer. The minutes will be posted on the web after being approved by the next Division Committee meeting scheduled on 4 – 5 August 2007, Torino, Italy.

3. Subcommittees and New Responsibilities

During the past two years two new subcommittees were formed in addition to the existing four subcommittees. There are now six subcommittees in Division IV.

DIVISION SUBCOMMITTEES (2006 – 2007)		
1. Polymer Terminology	Chairman	**R. G. Jones**
2. Structure and Properties of Commercial Polymers	Cochairman	**R. S. Bailey**
		S. C. Kim
3. Modelling of Polymerisation, Kinetics, and Processes	Chairman	**M. Buback**
	Co-Vice Chairman	**G. T. Russell**
		R. Hutchinson
4. Developing Polymer Materials Systems	Cochairman	**C. K. Ober**
		J. Stejskal
5. Polymer Education	Chairman	**J.-P. Vairon**
6. Molecular Characterisation of Polymers	Cochairman	**J. Pasch**
		T. Chang

All the TMs and AMs have been involved in the activities of the 6 Subcommittees. In addition there were small groups of Division members responsible for the initial evaluation of the Application of Sponsored Conferences, study of divisional Strategy and recruiting New Members, and Division Web Page and Electronic Publication. In light of the necessity to strengthen the Division's activities connected to Industrial and International Relations, this new responsibility has been decided to be added. It also was agreed that after the next Division Election, either one TM or AM will be assigned for the initial evaluation of Project Applications. This responsibility will be combined with Strategy.

4. Projects

Division IV is one of the most active divisions in attracting and handling projects. Some of the projects are interdivisional especially with Division II and III. Presently, 16 projects (some of them are extensions of earlier projects) with

2005 –, and 2006 – numbers are proceeding (**Appendix I**). It is expected that several projects with 2007 – numbers will soon be included in the list.

5. Conferences

In the last year 9 conferences including the World Polymer Congress – 2006 (41st IUPAC International Symposium on Macromolecules, earlier IUPAC MACRO) were sponsored by the division. This year 7 conferences have been granted sponsorship and some more are on pending.

In particular, Division is deeply involved in organizing the IUMACRO, New York City, 10 – 13 June 2007, which is the second international conference sponsored by IUPAC together with a local society. The meeting is coorganized by Division IV and the ACS Polymer Division and Polymeric Materials Engineering and Science Division with the theme of 'Macromolecules for a Sustainable, Safe and Healthy World'.

The Division has been working very closely in finalizing the Congress Program of the Torino meeting related to polymer science. This was the first serious attempt by the Division to cooperate with the local organizers in formulating polymer sessions in IUPAC Congress.

The World Polymer Congress (Aug 2006, Brazil. Organizer: Prof. Ailton de Souz Gomes) attracted more than 1,200 participants from 50 different countries. The next WPC (WPC 2008) is scheduled on 29 June – 4 July 2008, Taipei, Taiwan. WPC – 2010 is going to be held in Glasgow, U.K., in 2010.

6. Samsung-IUPAC Fund and Award

The Samsung Total Chemical Co. (President: Mr. Hong-Sik Ko) donated additional USD 25,000 to IUPAC to increase the Fund to USD 150,000, for which we are very much thankful.

During the last World Polymer Congress (Aug. 2006, Rio do Janeiro, Brazil), the 2nd Samsung – IUPAC Young Polymer Scientist Award (USD 2,000 and award plaque) was given to Prof. Greg. Tew of the Polymer Science and

Engineering Department, University of Massachusetts, Amherst, U.S.A..

The WPC – 2006 Organizing Committee was given USD 5,000 to help students of the economically disadvantaged countries to attend the conference and to defray the cost of plenary speakers. The short Course in Polymer Characterization associated with POLYCHAR – 15 (April, Brazil) was given USD 4,000 to help South American students to take the course.

7. Division Election

Division election is in progress to electronically elect 5 TMs and 6 TMs. Christopher K. Ober (Division VP) is chairing the Nominating Committee. The Division Secretary also has to be elected anew. It is expected that all the vacancies will be filled before the Torino GA.

8. Others

i) The DSM company of Netherlands approached IUPAC in order to establish a special program in Division IV by which we can award the DSM Performance Materials Award during each World Polymer Congress. Div. IV and DSM have been working out details and an agreement is expected to be signed soon. The first Award will be given in the next WPC, June 2008, Taiwan.

ii) The following Macromolecular Symposia volumes have been published as of May 1, 2007 by Wiley – VCH in 2006 – 2007, based on the presentations in the sponsored conferences.

◦ Volume 233 (2006), Fillers, Filled Polymers and Polymer Blends ed. By P. Dubois, G. Groeninekx, R. Jerome and R. Legras
◦ Volume 235 (2006), Recent Advances and Novel Approaches in Macromolecule – Metal Complexes ed. by R. Barbucci, F. Ciardelli and G. Ruggeri
◦ Volume 237 (2006), Molecular Mobility and Order in Polymer Systems ed. by A. A. Darinskii
◦ Volume 239 (2006), Advanced Polymers, Composites and Technologies ed. by Giy. J. Marosi and T. Czigany

◦ Volume 240 (2006), Recent Trends in Ionic Polymerization ed. by D. Baskaran and S. Sivaram
◦ Volume 242 (2006), Polychar-14 World Forum on Advanced Materials ed. by M. Matsuo, K. Tashiro and Y. Bin
◦ Volume 245-246 (2006), World Polymer Congress – MACRO 2006 ed. by A. de Souza Gomes
◦ Volume 248 (2006), Radical Polymerization: Kinetics and Mechanism ed. by M. Buback and A. M. V. Herk
◦ Volume 249 – 250 (2007), Advanced Polymers for Emerging Technologies ed. by B. C. Kim and K. D. Ahn

Appendix I

Projects with 2005 – , 2006 –, and 2007 – numbers

2005-005-2-400
Definitions of terms relating to individual macromolecules, their assemblies, and dilute polymer solution (Chang, Planned end date: 31/12/08)

2005-007-1-400
Guide to macromolecular terminology and nomenclature (Wilks, Planned end date: 31/12/05)

2005-009-3-400
Efficiency and reproducibility of temperature rising elution fractionation (TREF) (Brüll, Planned end date: 01/07/08)

2005-011-3-400
Repeatability and reproducibility of sample preparation and analysis in high-temperature SEC (Grumel, Planned end date: 31/12/08)

2005-021-3-400
Accuracy and reproducibility of functionality type analysis of Poly (ethylene oxide) homo and copolymers by LC-CC (Ritting, Planned end date: 31/12/07)

2005-023-2-400
Micro-Structural, melt processing and mechanical properties of compatibilised PA 6/ABS blends (Steiminger, Planned end date: 31/12/08)

2005-043-2-400
Terminology for self-assembly and aggregation of polymers (Ober and Jones, Planned end date: 01/04/09)

2006-002-1-400
Extension of 2002-006-2-400 (Jekins and Moad, Planned end date: 31/12/07)

2006-003-1-400
Short Course in Polymer Characterization associated with POLYCHAR-14 (Matsuo, Planned end date: 30/06/06)

2006-004-1-400
Recommendations on the abbreviated terms of polymers (He, Planned end date: 01/05/09)

2006-005-1-400
Extension of 2002-014-1-400 Glossary of class names of polymers based on

their chemical structure and molecular architecture (Vohlidal, Planned end date: 30/06/07)

2006-006-1-400

Extension of 1999-051-1-800 nomenclature for chemically modified polymers (Kitayama, Planned end date: 30/06/09)

2006-007-1-400

Extension of 2003-019-2-400 Definitions of terms relating to crystalline polymers revision of IUPAC Recommendations 1988 (Allegra, Planned end date: 30/09/08)

Projects in Review

2006-018-2

Infrared spectroscopy of conducting polymer nanotubes (Trchova)

2007-007-1

Terminology Relevant to Biorelated Polymer Science and Applications (supplement to 2004-043-1-400) (Vert)

2007-008-1

Development of a multilingual encyclopaedia of polymer terminology (dos-Santos)

2007-004-1-

Guidelines for shear rheometer calibration and performance check (Ruellmann)

2007-009-1

Nomenclature for rotaxane polymers (Vohlidal)

Jung-Il JIN
President of Div. IV

Report to Council (January 2006 - June 2007)

IUPAC Analytical Chemistry Division (V)

Ryszard Lobinski, President

Contents

I. Highlights and executive Summary

- The Division is continuing to maintain and to extend a portfolio of good projects.
- A contestable project selection process for funding (two rounds per year) is working satisfactorily.
- The Division supports actively the maintenance and updating of two key IUPAC publications, *The Compendium of Analytical Terminology (Orange Book)* and the *IUPAC Stability Constant Database (SCDB).*
- A consultative team is working with Academic Software to ensure the on-going maintenance of *SCDB* when Academic Software relinquishes this role in the near future. This currently involves a generic IUPAC arrangement with FIZ-Chemie (Berlin) to take over the management of the IUPAC website and its eventual management of a web version of *SCDB.*
- The Division has selected a small number of priorities for the biennium and is focusing its energy on these. To cultivate a spirit of "collective responsibility" it has restructured in six Teams each of which has responsibility for one priority area.
- Communication within the Division and with other officers of the Union is maintained through the newsletter "Teamwork". Project progress reports are in the public domain since they are appended to the webpage devoted to each project.
- The Division has been coordinating two series of articles for CI on the topics of "Emerging needs of developing countries" (series completed) and "Tools of the Trade".
- The Division is building bridges (a) with chemists in "developing countries", (b) with sister organizations that have field experience in developing countries (IAEA, UNIDO, IOCD), (c) with other unions and expert bodies (IUPAP, BIPM).

II. Report of Activities since January 2006 (organised by the goals of the IUPAC strategic plan)

II.1. Addressing global issues in analytical chemistry sciences

This item addresses the IUPAC goal to provide leadership as a worldwide scientific organisation that objectively addresses global issues involving the chemical sciences.

Project initiation and management

The ACD has confirmed the six core activities for the biennium: *(i)* communication, *(ii)* critical evaluation of data, *(iii)* quality assurance, *(iv)* electronic resources/terminology, *(v)* emerging analytical communities, and *(vi)* emerging analytical issues. Each of these activities has been assigned a team of 4-6 members (TM + AM + NR) with the priority task of project initiation and management in the relevant areas. Each team has a collective responsibility and is encouraged to:

- Determine the scope of its responsibility and activities;
- Develop a strategy for effective communication between and by its members;
- Identify activities that advance the goals of IUPAC in its designated area;
- Achieve at least one significant output each year (e.g. letters to Editors; an IUPAC or ACD presentation at a conference; an article for CI; a Project Proposal; etc.);
- Accept responsibility for leading Division activities in its designated area;
- Facilitate a 'roll-over' of its activities at the end of the current biennium.

Communication

The role and responsibility of the ACD members is to increase the visibility of the ACD to the outside world and to promote the IUPAC project oriented approach. The Division maintains communication with all its members, and officers of other Divisions and Operational committees, through its newsletter Teamwork http://www.iupac.org/divisions/V/Teamwork/, edited by the Division VP.

The Division interacts with all Task Groups on an eight-monthly basis via a Project reporting system. The reports are read by all Division members and are reviewed at Division (or Division Officers') meetings. They provide an "early warning system" for any projects that are struggling, alert the Division to the need for reviewers and allow re-assessment of dissemination plans as the projects near completion. These reports are appended to the respective Project pages on the IUPAC website, so that project progress is in the public domain.

Global issues

One global issue being addressed is the measurement of pH, through the project: *Comparable pH measurements by metrological traceability. Part I: Water quality monitoring and assessment; Part II: Clinical and biochemical matrices.* This project sees a continuation of work by the "pH task group" [*Measurement of pH. Definition, Standards and Procedures. 2002*] and it has the financial and professional backing of three Divisions and COCI. Another global issue addressed is the concept of *'fair trade'*. Fair trade can only arise between nations when all have adequate and quality-assured laboratories and their methodology meets the current requirements for metrological traceability. These issues are particularly relevant to the less developed nations. These concepts were the basis of a successful joint project proposal with IOCD which includes two Division V members, titled: "*Standardisation of analytical approaches and analytical capacity building in Africa*". This project involves a melding of IUPAC technical expertise with IOCD appreciation of geopolitical issues in developing countries.

II.2. Providing tools for international standardisation

This item addresses the IUPAC goal to facilitate advancement of research in the chemical sciences through the tools that it provides for international standardisation and scientific discussion.

The Analytical Chemistry Division actively pursues these goals through its program of critical evaluations of data, the establishment of guidelines for Quality Assurance in chemical methods and associated sampling, and by the updating of analytical terminology and making it readily available via the web.

(a) The Orange Book: http://www.iupac.org/publications/analytical_compendium/

The route for updating terminology in the OB is via formal publication in PAC. Examples of issues being currently addressed through projects are: Glossary of Terms related to Solubility; Revision of terminology in separation science; Terminology, quantities and units concerning production and applications of radionuclides in radiopharmaceutical and radioanalytical chemistry; Internationally agreed terminology for observations in scientific communications; Standard definitions of terms relating to mass spectrometry. The text will be progressively converted to ICTNS-accepted format; it will also be aligned with the Gold book version, so that there is only one version of terminology within the IUPAC database.

(b) The IUPAC Stability Constants Database (SCDB)

This is the most comprehensive compilation of stability constants available, covering the years 1877 to 2004+. It is the primary source of data for the Critical Evaluations of Stability Constants that are published on a regular basis by Division V. It is a major research tool for those involved in the equilibrium modelling of environmental, biological and industrial systems.

Division V has in place a Project to continue the evaluation, collection and entry of data through to 2008. To minimise risk the data collection team will be expanded from one site to involve experts in up to four countries (currently two).

The future of SCDB was the subject of a Division V presentation to the Bureau meeting in 2004. All aspects of the management of the database – program development, data conflation, advertising, marketing – have for the last 16 years been undertaken on behalf of IUPAC by the developers of the current database, Academic Software. This company has now signalled that it wishes to transfer the responsibility for management and maintenance of SCDB to IUPAC within about 2 years.

Division V formed a consultative team to work with Academic Software to achieve a successful transition of management of *SCDB* from Academic Software to IUPAC or an alternative external systems manager. Further, the Division was represented by Kip Powell on the Secretary-General's *ad hoc* committee that had as its Terms of Reference: "To explore requirements to achieve a modernized interactive IUPAC web site and an ability for IUPAC to provide large databases of value to chemists". The work of this committee led to the current developing arrangements with FIZ-Chemie.

(c) Recommendations concerning quality assurance

The Working Party on Harmonisation of Quality Assurance continues to produce publications that are of value to chemists in analytical laboratories; e.g. Revision of the IUPAC/ISO/AOAC protocol for proficiency testing; Harmonised guidelines for single-laboratory validation of methods of analysis; and Terminology for soil sampling. The WPHQA will make a major presentation at the GA on "Metrological Traceability of Measurement Results in Chemistry"

(d) Critical evaluation of solubility and solution equilibrium data

The Division's Solubility and Solution Equilibrium Data sub-committee (SSED) has an active portfolio of projects. They embrace the critical evaluation of solubility data related to (a) mobility of metals in the environment, (b) industrial processes, and (c) human health. The outputs appear as review papers (Solubility Data Series) in the Journal of Physical and Chemical Reference Data and are thence transferred to the NIST-IUPAC Solubility Database: http://srdata.nist.gov/solubility/, or are published as book volumes, such as, e.g. *Biomineralization – Medical Aspects of Solubility*, E. Königsberger and L-C. Königsberger (eds.), John Wiley & Sons, Chichester, England, 2006. Significant "umbrella" projects include a 25-chapter book volume on "*Solubility for industry*" and "*Chemical speciation of environmentally significant heavy metals with inorganic ligands"*.

(e) Tools of the Trade
The Division's Communications Team has worked with Dr Meyers to organise a new series of articles for CI that emphasises the advancement of research in the chemical sciences through the tools that IUPAC provides. This series commenced in September and features articles from several Divisions and OCs.

II.3. Assisting chemical industry

This point reflects the IUPAC goal to assist chemistry-related industry in its contribution to sustainable development, wealth creation, and improvement of the quality of life.

Chemistry-related industry is served by the active program of critical evaluations of solubility data and of solution equilibrium data, and by the continuance of data compilation (and subsequent evaluation) for the IUPAC Stability Constant Database. The current projects on pH (*Comparable pH measurements by metrological traceability*) and metrological traceability (*Metrological Traceability of Measurement Results in Chemistry*) are highly relevant to industry. The SSED were joint organisers of the 12th International Symposium on Solubility Phenomena (Freiberg, 2006) at which there was significant emphasis on industrial issues and involvement of industrial chemists.

II.4. Fostering communication among scientific organisations
This point reflects the IUPAC goal to foster communication among individual chemists and scientific organisations, with special emphasis on the needs of chemists in developing countries.

Analytical Chemistry in developing countries. "Emerging needs in developing countries" is one of the Division's priority areas and is the responsibility of one Team "Emerging Analytical Communities". The Division is fortunate in having several members with established professional links with Africa (Jan-Åke Jönsson, Walter Lund and Roger Smith). Nelson Torto (Botswana) serves the ACD as a Provisional Member representing the IUPAC Associate Organisation, SEANAC. To increase awareness of the needs of developing countries the Division arranged a series of articles for Chemistry International. These articles on Emerging issues in developing countries commenced in the March 2005 issue. The Division is significantly involved in the project with IOCD: "Standardisation of analytical approaches and analytical capacity building in Africa". The division seeks actively to assure the representativeness of emerging analytical countries at the associate or titular member level and generate links to countries not represented by a NAO.

Building bridges with other organisations. The ACD is formally represented in the following organizations: EURACHEM, the Inter Agency Meeting (IAM), the International Committee on Weights and Measures/Consultative Committee for Amount of Substance - Metrology in Chemistry (CIPM/CCQM), the International Committee on Weight and Measures/Joint Committee for Guides in

Metrology (CIPM/JCGM), the International Organization for Standardization - Committee on Reference Materials (ISO REMCO), and Co-operation on International Traceability in Analytical Chemistry (CITAC).

The IWPHQA organised, together with the Italian Environmental Protection Agency (APAT), which also hosted the event, an international workshop on Combining and Reporting Analytical Results - The Role of (metrological) Traceability and (measurement) Uncertainty for Comparing Analytical Results. The Workshop was sponsored by the Centre for Materials Development, Italy, the International Atomic Energy Agency (IAEA), the Consultative Committee for Amount of Substance - Metrology in Chemistry (CCQM), the International Bureau of Weights and Measures (BIPM), the Co-operation on International Traceability in Analytical Chemistry (CITAC), the ISO Committee on Reference Materials (ISO REMCO) and UNIDO. It reflected a very good co-operation of the WPQA and ACD with listed organizations. The workshop was attended by 120 participants from 35 countries. The workshop can be considered as confirmation of the new dynamics set in motion by the joint ACD – IAEA- WPQA meeting in Vienna and opening towards IUPAP and UNIDO. Proceedings of the workshop were published by the Royal Society of Chemistry as a special series book.

The Division is actively involved (3 out of 6 TG members) in an inter-Union project "*Recommendations for Isotope Data in Geosciences*" (RIDIG) which draws on complementary expertise present in IUGS and IUPAC.

Improving communication. Dissemination of project outcomes is a crucial issue for improving the impact of our work in the chemistry community. This is overseen by the "Communications" team. Owing to efficient collaboration with Dr. Meyers, the WEB page is better attuned to the perception of those who are not familiar with the IUPAC system and processes. Improved lines of communication between TG chairs and the Division have been facilitated by the establishment of an 8-monthly Project reporting system in which the TGC responds to questions re progress, milestones, difficulties, opportunities for further work, etc. These progress reports are appended to the respective project pages. The Division has been pro-active in recommendations for improved IUPAC representation at conferences. It considers that there is scope for enhanced involvement of IUPAC representatives at IUPAC-sponsored conferences. This could be aided if conference organisers were required to discuss the nomination of an IUPAC representative with the relevant Division ahead of submitting the AIS.

II.5. Broadening national membership base

This item addressed the IUPAC goal to broaden its national membership base and will seek the maximum feasible diversity in membership of IUPAC bodies in terms of geography, gender and age.

Division V has in place a strategy, which is communicated to the Nominations' Committee, to ensure the widest possible geographic representation. The Division actively sought participation of N. Torto as a Provisional Member representing the ANO, SEANAC. Within its own structures, the Division works to ensure **active** involvement of all AM, TM and NR.

III. Challenges and solutions

The principal challenges to the ACD include:

a) The breadth of its portfolio. The Division is aware of its limited resources and has identified a manageable number of priorities for the biennium (*cf.* II.1)
b) The need to extend the base of recruitment of new projects and task group chairmen from outside IUPAC. The Division initiated a system of mini-symposia to bring in external expertise. A

workshop on Future opportunities and challenges for the ACD Division was organised at the GA in Beijing.

c) The generation of members' collective responsibility for the goals of the Division, the needs of countries not represented, and the long-range goals of IUPAC. The Division is answering this challenge by having formed Teams, each with collective responsibility for one priority area. The Division finds important to maintain active communication among members through the newsletter, Teamwork.
d) Maintaining momentum through the biennium and with the change of biennia. The team system and maintenance of extensive Division records and archives (WEB site, Teamwork) are expected to facilitate the smooth roll-over with the change of biennia.
e) Effort focused on the needs of developing countries and on links with other agencies (*cf.* II.4)

IV. TABULAR MATERIAL

IV.1. Publications 2006 – 2007

Chemical speciation of environmentally significant metals with inorganic ligands Part 2: The Cu^{2+}-OH^-, Cl^-, CO_3^{2-}, SO_4^{2-}, and PO_4^{3-} systems (IUPAC Technical Report)
Pure Appl. Chem. 79(5), 895-950, 2007

Guidelines for potentiometric measurements in suspensions Part B. Guidelines for practical pH measurements in soil suspensions (IUPAC Recommendations 2006)
Pure Appl. Chem. 79(1), 81-86, 2007

Guidelines for potentiometric measurements in suspensions Part A. The suspension effect (IUPAC Technical Report)
Pure Appl. Chem. 79(1), 67-79, 2007

The International Harmonized Protocol for the proficiency testing of analytical chemistry laboratories (IUPAC Technical Report)
Pure Appl. Chem. 78(1), 145-196, 2006

Guidelines for NMR measurements for determination of high and low pKa values (IUPAC Technical Report)
Pure Appl. Chem. 78(3), 663-675, 2006

Uncertainty estimation and figures of merit for multivariate calibration (IUPAC Technical Report)
Pure Appl. Chem. 78(3), 633-661, 2006

The International Harmonized Protocol for the proficiency testing of analytical chemistry laboratories (IUPAC Technical Report)
Pure Appl. Chem. 78(1), 145-196, 2006

Parts 9-12 in IUPAC-NIST Solubility Data Series 81, Hydrocarbons with Water and Seawater – Revised and Updated, A. Mączyński, Volume Editor, 2006

C_{10} Hydrocarbons with Water, *J. Phys. Chem. Ref. Data*, Vol. 35 (1), pp. 93-151, 2006
C_{11} and C_{12} Hydrocarbons with Water, *J. Phys. Chem. Ref. Data*, Vol. 35 (1), pp. 153-203, 2006

C_{13}–C_{36} Hydrocarbons with Water, *J. Phys. Chem. Ref. Data*, Vol. 35 (2), pp. 687-784, 2006
C_5–C_{26} Hydrocarbons with Seawater, *J. Phys. Chem. Ref. Data*, Vol. 35 (2), pp. 785-838, 2006

Book: T. M. Letcher (ed.), *Thermodynamics, Solubility and Environmental Issues*, Elsevier, Amsterdam, 2007.

IV. 2. Current portfolio of projects

a) Recent projects (started after Jan 1st, 2006)

2006-010-1-500 - Adjustment, estimation and uses of equilibrium reaction constants in aqueous solution
2006-022-1-500 - Spectrochemical Analysis - Conversion of Orange Book Chapter 10 to Glossary Format
2006-037-1-500 - Metal-focussed -omics: guidelines for terminology and critical evaluation of analytical approaches
2006-032-1-500 - Solubility data related to industrial processes. Mutual solubility of ethers and ketones with water **(SSED project)**
2006-033-1-500 - Solubility data related to industrial processes. Rare earth metal chlorides (Sc, Y, lanthanoids) in water and aqueous systems **(SSED project)**
2006-034-1-500 - Solubility data related to industrial processes. The solubility of oxygen in all solvents **(SSED project)**
2006-016-1-200 - Recommendations for isotope data in geosciences **(Interdivisional)**
2006-039-2-600 - Extraction and fractionation methods for exposure assessment related to trace metals, metalloids and hazardous organic compounds in terrestrial environments **(Interdivisional)**

b) Other projects
1999-050-1-500 - Chemical speciation of environmentally significant heavy metals and inorganic ligands
2001-041-2-500 - Recommendation on the use of countercurrent chromatography in analytical chemistry
2001-072-1-500 - Low activation materials for fusion technology: State and prospects
2002-002-2-500 - Recent advances in electroanalytical techniques: characterization, classification and terminology

2002-003-2-500 - Performance evaluation criteria for preparation and measurement of macro and microfabricated ion-selective electrodes
2002-009-2-500 - Optical spectrochemical analysis using waveguides and optical fibers; Series on Nomenclature, Symbols, and Units in Spectrochemical Analysis
2002-058-1-500 - Definitions and fields of application of the terms robust and rugged and the characteristics or qualities of robustness and ruggedness in analytical chemistry
2003-015-2-500 - Terminology, quantities and units concerning production and applications of radionuclides in radiopharmaceutical and radioanalytical chemistry
2005-014-1-500 - IUPAC stability constants database - completion of data collection up to 2006
2005-017-1-500 - Glossary of terms related to solubility - updates and revisions to the Orange Book
2005-035-2-500 - Trace elements analysis: role of grain size distribution in solid reference materials
2005-041-2-500 - Determination of selenomethionine in selenized yeast supplements

Interdivisional Working Party on Harmonization of Quality Assurance (IWPHQA) projects
2001-010-3-500 - Metrological traceability of measurement results in chemistry
2005-019-2-500 - Selection and use of proficiency testing schemes for limited number of participants
2005-024-2-600 - Establishment of guidelines for the validation of qualitative and semi-quantitative (screening) methods by collaborative trial: a harmonized protocol*

Subcommittee on Solubility and Equilibrium Data (SSED) projects
2002-025-1-500 - Solubility data of compounds relevant to mobility of metals in the environment. Inorganic actinide compounds
2002-031-1-500 - Solubility data of compounds relevant to mobility of metals in the environment. Alkaline earth metal carbonates
2002-032-1-500 - Solubility data of compounds relevant to mobility of metals in the environment. Metal carbonates
2002-035-1-500 - Solubility data of compounds relevant to human health. Solubility of substances related to urolithiasis
2002-036-1-500 - Solubility data of compounds relevant to human health. Solubility of hydroxybenzoic acids and hydroxybenzoates
2002-037-1-500 - Solubility data of compounds relevant to human health. Solubility of haloganated aromatic hydrocarbons
2002-043-1-500 - Solubility data related to industrial processes. Carbon dioxide and the lower alkanes at pressures above 2 bar: methane to butane
2002-044-1-500 - Solubility data related to industrial processes. Carbon dioxide in aqueous non-electrolyte solutions
2002-045-1-500 - Solubility data related to industrial processes. Solids and liquids in supercritical carbon dioxide
2002-050-1-500 - Solubility data related to industrial processes. Acetonitrile: ternary and other multicomponent systems
2005-006-1-500: Mutual solubility of alcohols and water (update of SDS Vol 15)
2005-033-1-500 - Transition and 12 to 14 main group metals, lanthanide, actinide and ammonium halates

Division participation in interdivisional projects
2003-060-2-400 - Terminology on separation of macromolecules
2003-056-2-500 - Standard definitions of terms relating to mass spectrometry
2004-021-1-300 - Reference methods, standards and applications of photoluminescence
2004-023-1-700 - Internationally agreed terminology for observations in scientific communication
2004-005-2-500 - Comparable pH measurements by metrological traceability
2004-017-1-500 - Standardization of analytical approaches and analytical capacity-building in Africa

IV3. Division representation at conferences

- International Congress on Analytical Sciences (ICAS 2006), Moscow, Russia, June 2006
- 12th International Symposium on Solubility Phenomena and Related Equilibrium Processes, Freiberg, Germany, July, 2006
- International Symposium on Metallomics, Nagoya, November 2007

International Union of Pure and Applied Chemistry

A member of the International Council of Scientific Unions

Division of Chemistry and the Environment (DCE - VI)

Report of Activities

January 2006 – June 2007

Kenneth D. Racke

1. HIGHLIGHTS

1.1 Terms of Reference

Through its internationally recognized membership and project teams, the Division of Chemistry and the Environment (DCE) will provide unbiased and timely authoritative reviews on the behavior of chemical compounds in food and the environment. The DCE will undertake both fundamental and applied evaluations that contribute to solving environmental problems and enhancing the quality of food on a global scale.

1.2 People

The Division Committee (DC) is currently comprised of 10 TM's, 7 AM's, and 7 NR's.

The membership (24) of the DC for the current biennium includes representatives of 20 countries, with each region of the globe well represented with the exception of Latin America. The DC includes 5 women and 2 representatives from scientifically emerging countries.

The Division recently held the balloting process for open TM positions and future officers, and Prof. Nicola Senesi has been chosen as the new Division President for a term to begin in January 2008. He will succeed existing DP Dr. Kenneth Racke, who will move to the Past President role. The DC is currently in the process of selecting AM's and NR's for the 2008-2009 biennium, and expects to complete the process prior to the Torino GA.

The work of the Division Committee is assisted by the efforts of several sub-committees, which help identify new priority project areas, stimulate proposals and recruit potential project leaders, and facilitate external communication encompassing the broad areas of environmental and food chemistry:

- Biophysico-Chemical Processes in Environmental Systems (Chair: Prof. Nicola Senesi)
- Chemistry of Environmental Compartments (Chair: Dr. Yehuda Shevah)
- Crop Protection Chemistry (Chair: Dr. Ken Racke)
- Food Chemistry (Chair: Open)

1.3 Projects

Projects sponsored by the DCE generally fall into three broad categories. First, state-of-the-art **authoritative reviews** of a particular area of environmental chemistry are developed and published in book form. To this end, the Division has a long-standing working partnership with Wiley Press. Second, **technical evaluations** focus on critical assessment and development of specific recommendations for an area of environmental or food chemistry so as to assist and influence research and public policy. Primary areas of emphasis include definitions, methodologies, and regulations. Third, **outreach** activities help move IUPAC project outcomes outside the small circle of specialists and into the broader scientific and regulatory arena, with a strong emphasis on technology transfer to developing countries. These outreach activities include both regional workshops and international congresses that maintain a high level of IUPAC involvement and serve to highlight ongoing and completed IUPAC projects.

At the beginning of the 2006-2007 biennium there were 22 active projects, including 4 that were interdivisionally sponsored (Appendix I). Of these 22 projects, 7 have been completed with reports published or in-press, 2 moribund projects have been or will be soon abandoned, and 4 projects are nearing completion. Most of the 9 remaining projects are demonstrating good progress, although 2 of these have asked for formal extensions.

Since January of 2006 a total of 10 new project proposals have been approved, and an additional 2 project proposals are under review with funding decisions expected by the time of the Torino GA (Appendix II)

2. DIVISIONAL ACTIVITIES

Examples of some of the project activities of DCE during the reporting period are provided below in relation to several of the long-range goals established by IUPAC. This is only a sampling, but should provide insight into the project areas of greatest involvement for the Division.

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

- ***Remediation Technologies for Removal of Arsenic from Water and Wastewater*** (2003-017-2-600). The impetus for this project is the already apparent toxicity of water supplies in several regions through natural arsenic contamination affecting the health of millions of residents. There is an urgent need to reduce arsenic levels in drinking water supplies and, in some areas, irrigation waters. Although several technologies have been proposed, there has not been sufficient in-depth evaluation especially for routine treatment of large volumes of water, and agreement on assessment criteria is also lacking. This project is addressing these important issues and includes collaboration with WHO and other IUPAC initiatives in this area including CHEMRAWN. A final report outlining the issue, providing a critique of remediation technologies, and containing case studies for Bangladesh and Thailand has been completed and is soon to be published as a special volume in the series *Reviews of Environmental Contamination and Toxicology*.
- ***Impact of Transgenic Crops on the Use of Agrochemicals and the Environment*** (2001-24-2-600) and ***Evaluation of Food and Feed Safety Implications of Altered Residues of Pesticides Applied on Transgenic Crops*** (2006-015-3-600). Production of a sustainable global food supply has for the past 60 years relied upon a combination of cultural, biological, and chemical

pest management tools. The recent introduction of transgenic crops containing genetic modifications for pest resistance or pesticide tolerance across millions of hectares of agricultural land has raised worldwide interests and significant differences of views between countries as relates to potential environmental and human health impacts. These two active projects are providing unbiased and authoritative international views to these areas of concern based on scientific assessment methodology, and provide an opportunity for IUPAC to take an important leadership role in promoting the importance of chemistry in applied molecular biology. The first project, emphasizing environmental impacts was initiated during 2002 and final report is in press. The second, follow-up project was initiated during 2007 to address primarily human health aspects.

- ***Air Pollution Models in Environmental Management and Assessment*** (2003-058-1-600). The Division has had a historical strength related to atmospheric chemistry and air pollution considerations. Air pollution models are powerful and necessary tools in environmental management programs, and allow predications. The aim of this project is to describe the methodology behind application of mathematical models in various assessments of air pollution impacts. The outcome of the project will be a technical guidance book describing key approaches and providing guidelines for avoiding incomplete or even incorrect answers when models are applied.
- ***XII International IUPAC Symposium on Mycotoxins and Phycotoxins, Istanbul, Turkey*** *(May 2007).* Although much scientific and public attention is directed at chemistry and human exposure aspects of synthetic chemicals in food, natural toxins are far more prevalent and potentially impactful for the majority of the world's population. IUPAC has had a long-standing interest in mycotoxins and phycotoxins, and this symposium was only the latest in a series that has become the premiere forum for exchange of research results and methodologies related to these important naturally occurring toxins. The traditional strength of IUPAC as related to the chemistry aspects of these biotoxins has been an important factor in the success of this series. A report of the outcome of this XII symposium held in Istanbul, Turkey will be available by the time of the GA in Torino, and plans are being discussed for location and timing of the XIII symposium.

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

- ***Glossary of Pesticide Chemistry*** (2004-002-1-600) and ***Global Availability of Information on Agrochemicals*** (2001-022-1-600). Availability of standardized definitions of key terms and ready access to the latest technical information regarding pesticides and other agrochemicals are critical for supporting both research and regulatory evaluation activities. The recently published "pesticide glossary" provides an authoritative update of an IUPAC report of 10 years earlier, and it was developed with the collaboration of scientists from WHO, FAO, and OECD to ensure the broadest acceptance and applicability. The "global availability" project is aimed at increasing global availability of information on the chemistry of agrochemicals, including methods for testing and evaluation, summaries of properties for individual pesticides, and regulatory standards for pesticides. An internet-based approach developed in cooperation with the FAO-IAEA INFOCRIS program has been pursued, and a web-site launch is anticipated by the end of 2007.
- ***Terminology and Measurement Techniques of Starch Components*** (2004-022-3-400) and ***What are Dietary Fibres?*** (2007-017-1-000). During the past several years the Division has

been reinvigorating activities related to food chemistry and has launched several new projects. The "starch" project is aimed at providing internationally needed guidance on the terminology for these very important food components of the complex carbohydrate class. Starches present a number of difficult issues relating to both terminology and methods for determination which are of importance to nutrition, food quality and international trade. The soon-to-be-initiated "dietary fibres" project will characterize the nature of dietary fibres and how they are altered as a result of food processing, and plans to offer a clear set of internationally accepted definitions.

- ***Use of Reference Soils for Testing Fate and Effects of Chemicals*** (2001-026-1-600). There is difficulty comparing results of environmental tests on the behavior of chemicals due to the use of different soils with various physical, chemical, and biological characteristics. This project aims to develop recommendations related to selection of standardized, reference soils so as to allow greater comparability of tests conducted on different chemicals and in various laboratories. This project is nearing completion.
- **Wiley-IUPAC book series *"Analytical and Physical Chemistry of Environmental Systems".*** Professor Nicola Senesi provides the impetus at the Divisional level for the continuing publication of this series of multi-chapter critical-reviews (Series Editors: J. Buffle and H. Van Leeuwen). No. 9 in the series "*Physicochemical Kinetics and Transport at Chemical-Biological Membranes*" was published in 2004. Two current projects are producing volumes No. 10 "*Environmental Colloids: Behaviour, Structure and Characterisation*" (2004-015-1-600) and No. 11 "*Biophysico-Chemistry of Fractal Structures and Processes in Environmental Systems*" (2003-014-2-600). A new **Wiley-IUPAC book series on "Physico-Chemical Processes in the Soil Environment"** has recently been initiated. The first volume will be produced by the end of 2007 based on the project *"Biophysico-Chemical Processes of Heavy Metals and Metalloids in Soil Environments"* (2004-003-2-600). A second volume is now being initiated via the project *"Biophysico-Chemical Processes Involving Natural Nonliving Organic Matter in Environmental Systems."* (2006-014-1-600). The highest academic standards are being maintained in both these book series through the careful selection of the chapter authors and thorough review and editing procedures. This ensures the credibility of IUPAC remains in these areas of environmental physico-biological chemistry.
- ***Combination of Chemical Analytical Measurements and Remote Sensing Techniques for Coastal Water Monitoring***. (2006-049-2-600). The objectives of this recently initiated project are to record the state of the art in remote sensing techniques and methods used for marine environment monitoring, and to assess the potential combination of remote sensing data with in situ and laboratory monitoring. Case studies based on the Eastern Mediterranean and Black Sea regions will be developed.

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

- ***Standardization of Analytical Approaches and Analytical Capacity-Building in Africa*** (2004-017-1-500). This is a cooperative project with the IUPAC Analytical Chemistry Division, the International Organization for Chemical Sciences in Development (IOCD), and the Association of Official Analytical Chemists International (AOAC). Uganda and Kenya are the initial focus, with Nigeria, South Africa, and Mozambique of future interest in conjunction with an ongoing World Bank project. The project aims to build regional analytical laboratory capabilities in relation to monitoring and enforcement of international trade standards. Key activities will

involve lectureships, local workshops, visiting scientist apprenticeships, and laboratory equipment procurement initiatives.

- ***Development of Simplified Methods for Ecological Risk Assessment of Pesticides*** (2004-011-1-600) and ***Environmental Risk Assessments for the Registration of Pesticides used in Rice Paddy Fields*** (2006-044-2-600). Risk assessment involves integration of chemical exposure information with effects data to determine the likelihood of adverse effects. Scientists and regulatory authorities in developing regions increasingly wish to rely on this advanced approach in order to make informed risk management decisions related to the use of pesticides, and IUPAC is developing guidance on application of these principles within the agricultural context and level of information available in these countries. The "simplified methods" project addresses a critical gap that now exists between the highly sophisticated and resource-intensive approaches to risk assessment practiced in some developed countries with the unreliable or non-scientific consideration of exposure and risk that plagues many developing countries. A project team consisting of leading government, industry, and academic modellers and risk assessment experts has been assembled to make rapid progress. The recently initiated "pesticides in rice" project aims to develop a specific framework for assessment of pesticides for use in this highly important crop.
- The ***IUPAC International Symposium on Mycotoxins and Phycotoxins*** has been hosted for more than 30 years. The XI IUPAC International Symposium on Mycotoxins and Phycotoxins, was held in Maryland, USA, during May 2004 and the XII Symposium was just completed in Istanbul, Turkey during May 2007. These symposia typically attract more than 300 participants from 40+ countries, and are only the latest in a long-standing series that has become the premiere forum for exchange of research results and methodologies related to these important naturally occurring toxins. The traditional strength of IUPAC as related to the chemistry aspects of these biotoxins has been an important factor in the success of this series.
- ***IUPAC Regional Crop Protection Chemistry Workshops*.** During the past 15 years the Division has sponsored a series of regional workshops focused on broadening the adoption of harmonized, international approaches to crop protection chemistry research and regulation in developing countries. The workshops create a forum where IUPAC project outcomes as well as recommendations from other international bodies can be discussed and applied within the context of local environmental problem areas. Following successful sessions in China, Thailand, Taiwan, Brazil and Korea, the 6th workshop was held in San Jose, Costa Rica during February 2005 as part of the project *Crop Protection Chemistry in Latin America: Harmonized Approaches for Environmental Assessment and Regulation* (2003-013-1-600). Follow-ups to the 2005 workshop (250 attendees from 28 countries) have included smaller training sessions (20-30 experts) during 2006 and 2007 on priority topics (human and environmental risk assessment, establishment of product quality standards), and a Latin-Americanized, Spanish version of the influential text "*Pesticides in the Environment*" is being prepared for release in 2008. The 7th workshop is planned for Beijing, China during October 2007 as part of the project "*Crop Protection Chemistry in Asia: Harmonized Approaches for Safety Evaluation, Regulation, and Protection of Trade"* (2006-017-2-600).
- ***Lecturers on Environmental Chemistry Topics.*** The Division is becoming more active in identification of important conferences for IUPAC sponsorship and planning for involvement of IUPAC Lecturers. The objectives for involving the IUPAC Lecturers are to publicize relevant findings of recently completed IUPAC Projects and to recruit new project proposals and task group members from scientifically emerging regions. Two IUPAC lecturers from Canada and

New Zealand have been selected by the Division for presentation of plenary lectures at the *International Symposium of Interactions of Soil Minerals with Organic Components and Microorganisms* to be held in Pucón, Chile during November 2008. The lecturers will also visit local universities to provide more detailed presentations. Three IUPAC lecturers from Australia and USA have been proposed by the Division for presentation of plenary lectures at the *First International Conference on Agrochemicals Protecting Crop, Health, and Natural Environment* planned for Delhi, India during January 2008. Additional lectures at universities would follow.

- The ***IUPAC International Congress of Pesticide Chemistry*** has been hosted for more than 40 years. The 11th IUPAC International Congress of Pesticide Chemistry was held during August 2006 in Kobe, Japan, and it was co-organized with the Pesticide Science Society of Japan (PSSJ). More than 1100 chemists from 52 countries participated in the Congress, which was organized around the theme "Evolution for Crop Protection, Public Health, and Environmental Safety". The core of the scientific program consisted of welcoming speeches on behalf of PSSJ and IUPAC, 5 keynote addresses, more than 100 invited lectures, and nearly 600 posters. The Congress included an outreach program to consumer groups and the media which drew nearly 400 additional, non-chemist participants. Two strong bids for future Congress locations were received, and the Division recently agreed to organize the 12th IUPAC International Congress of Pesticide Chemistry for July 2010 in Melbourne, Australia in cooperation with the Royal Australian Chemical Institute.

3. BUDGET (as of 1 June 2007)

For the 2006-2007 biennium the Division was granted $68,000 total budget. Of this, $18,916 or 27.8% has been spent on operations, mostly to subsidize travel of AM's and NR's to attend the annual DC meeting in 2006. So far, a total of $36,750 or 54.0% has been committed to funding of newly approved projects. It is anticipated that most of the remaining Divisional funds of $12,334 or 18.1% will be committed to new projects or project extensions by the time of the Torino GA.

In addition to the biennial Divisional budget, active projects have attracted $6,000 of supplemental funding from the IUPAC Project Committee and $21,800 of matching funds from external organizations during 2006 and 2007. Finally, book royalties of $2,264 have been granted to the Division for new project development by John Wiley and Sons based on the ongoing book contract.

4. FUTURE OPPORTUNITIES AND DIRECTION

To remain effective and maintain relevance, the Division will need to pay attention to both current strengths and weaknesses of the IUPAC approach, and seek a way forward that takes advantage of the opportunities while avoiding looming threats. The Division Committee recently took the first steps toward development of a long-range Division activities plan in alignment with the IUPAC long-range goals. Key future areas of interest for the Division in its operations are listed briefly below, and these are expected to be the subject of intense discussions during the Torino GA.

- Maintenance of a diverse membership and participation for Divisional activities – The membership (24) of the DC for the current biennium includes representatives of 20 countries, with each region of the globe well represented with the exception of Latin America. The DC includes 5 women and 2 representatives from scientifically emerging countries. It will be important for the health of the Division to continue to maintain diversity of representation for areas of disciplinary emphasis, affiliation, geographic origin,

age, and gender. This need for diversity also applies to the activities of Division-sponsored sub-committees and project task groups. There is in particular a need to increase participation in Divisional programs from Latin American, Middle Eastern, and African nations. There is also a tendency for an under-representation of IUPAC contributors from the industrial sector, and greater efforts are needed to ensure adequate participation of industry chemists.

- Continued generation of project proposals – A continued flow of high quality project proposals is critical to the future effective contributions of the Division. Although a number of new proposals have been received during the current biennium for consideration, the overall rate of submission of new proposals has been decreasing during each of the past several years. In addition, although conference proposals come from many quarters, project proposals primarily originate from those with some familiarity with IUPAC. Today's chemists face many choices for project involvement at the national and regional levels. The Division needs to find creative ways to continue to identify relevant new project topics and solicit proposals from interested and enthusiastic chemists willing to lead and serve on IUPAC task groups.

- Timely completion of ongoing projects – More than 20 active projects are now supported by the Division, and the Division collects regular progress reports so as to allow monitoring of project progress. It is important that IUPAC projects are completed within a reasonable time so as to produce relevant and useful findings. Decisions to accelerate (e.g., top-up funding) or abandon several of the older, slower-moving projects will be needed in near future.

- Continued ramp-up of food chemistry activities – Following an idea-generating workshop at the Beijing GA, food chemistry activities are slowly increasing following a lull of several years. Two active projects on food chemistry are now supported and a third proposal is anticipated to be approved in near future. Identifying a new leader for the Food Chemistry Sub-Committee will be an important step in solidifying an active future program.

APPENDIX I. EXISTING PROJECTS (active as of January 2006)

630/24/95 - Solute movement in soils with potential rapid by-pass transport (completed and report in-press)

1999-041-1-600 - Bioavailability of xenobiotics in the soil environment (nearing completion)

1999-014-2-600 – Airborne and remote monitoring of water quality: evaluation of remote sensing techniques for water quality control in surface water bodies (abandoned based on lack of progress)

2001-022-1-600 - Global availability of information on agrochemicals (ongoing – extension under consideration)

2001-023-1-600 - Agrochemical spray drift: Assessment and mitigation (nearing completion)

2001-024-2-600 - Impact of transgenic crops on the use of agrochemicals and the environment (completed and report in-press)

2001-026-1-600 - Use of reference soils for testing fate and effects of chemicals (ongoing)

2001-039-1-600 - Pest management for small-acreage crops: a cooperative global approach (nearing completion)

2002-013-2-600 - Determination of trace elements in oils and fats by inductively coupled plasma optical emission spectroscopy - evaluation of a method by collaborative study (nearing completion)

2003-011-3-600 - A critical compendium of pesticide physical chemistry data* (ongoing)

2003-013-1-600 - Crop protection chemistry in Latin America: Harmonized approaches for environmental assessment and regulation (ongoing)

2003-014-2-600 - Fractal structures and processes in the environment (completed and report in-press)

2003-017-2-600 - Remediation technologies for the removal of arsenic from water and wastewater (completed and report in-press)

2003-030-1-600 - Glossary of atmospheric chemistry (to be abandoned based on lack of progress)

2003-058-1-600 - Air pollution models in environmental management and assessment (ongoing)

2004-002-1-600 - Glossary of terms related to pesticides (completed and report published)

2004-003-3-600 - Biophysico-chemical processes of heavy metals and metalloids in soil environments (completed and report in-press)

2004-005-2-500 - Comparable pH measurements by metrological traceability* (ongoing)

2004-011-1-600 - Development of simplified methods and tools for ecological risk assessment of pesticides (ongoing – extension under consideration)

2004-015-1-600 - Environmental colloids: behavior, structure and characterization (completed and report published)

2004-017-1-500 - Standardization of analytical approaches and analytical capacity-building in Africa* (ongoing)

2004-022-3-400 - Terminology and measurement techniques of starch components* (ongoing)

* Interdivisional project

APPENDIX II: NEW *AND PROPOSED* PROJECTS (since January 2006)

2005-024-2-600 - Establishment of guidelines for the validation of qualitative and semi-quantitative (screening) methods by collaborative trial: a harmonized protocol* (continued as 2006-027-1-600)

2005-042-1-300 - Chemistry for Biology - an inventory for interdivisional and interdisciplinary activities within IUPAC in the field of biological chemistry*

2005-048-2-100 - Solubility and thermodynamic properties related to environmental issues*

2006-011-1-600 - Critical review of available methods to predict VOC emission potentials for pesticide formulations

2006-014-1-600 - Biophysico-chemical processes involving natural nonliving organic matter in environmental systems

2006-015-3-600 - Evaluation of food and feed safety implications of (altered) residues of pesticides applied on transgenic (GM) crops

2006-017-2-600 - Crop protection chemistry in Asia: harmonized approaches for safety evaluation, regulation, and protection of trade

2006-039-1 - Extraction and fractionation methods for risk assessment related to trace metals, metalloids and hazardous organic compounds in terrestrial environments*

2006-044-2-600 - Environmental risk assessments for the registration of pesticides used in rice paddy fields

2006-049-2-600 - Combination of chemical analytical measurements and remote sensing techniques for coastal water monitoring. The cases of Eastern Mediterranean and Black Sea

*2007-015-1-000 - Future energy: sustainable and clean energy alternatives for our planet**

*2007-017-1-000 – What are dietary fibres?**

* Interdivisional project *or proposed interdivisional project*

APPENDIX III. RECENT AND PENDING PUBLICATIONS

Technical Reports and Recommendations

Garelick, H. "Remediation technologies for the removal of arsenic from water and wastewater." *Rev. Environ. Contam. Toxicol.* (**2007**) *in press*.

Kleter, G.A.; Bhula, R.; Bodnaruk, K.; Carazo, E.; Felsot, A.S.; Harris, C.A.; Katayama, A.; Kuiper, H.; Racke, K.D.; Rubin, B.; Shevah, Y.; Stephenson, G.R.; Tanaka, J.; Unsworth, J.; Wauchope, D.; Wong, S.S. "Altered pesticide use on transgenic crops and the associated general impact from an environmental perspective." *Pest Manag. Sci.* (**2007**) *in press*.

Kördel , W.; Egli, H.; Klein, M.; "Transport of pesticides via macropores." *Pure Appl. Chem.* (**2007**), *in-press*.

Stephenson, G.R.; Ferris, I.G.; Holland, P.T.; Nordberg, M. "Glossary of terms relating to pesticides." *Pure Appl. Chem.* (**2006**), 78:2075-2154.

Books

Ohkawa, H.; Miyagawa, H.; Lee, P.W. *Pesticide Chemistry: Crop Protection, Public Health, Environmental Safety.* Wiley-VCH, Berlin (**2007**) *in press*.

Senesi, N. *Biophysical Chemistry of Fractal Structures and Processes in the Environment.* John Wiley and Sons, New York (**2007**) *in press*.

Stephenson, G.; Solomon, K.; Carazo, E. *Pesticides in the Environment*. University of Costa Rica Press, San Jose (**2007**) *in press*.

Violante, A.; Huang, P.M.; Gadd, G.M. *Biophysico-Chemical Processes of Metals and Metalloids in Soil Environments.* John Wiley and Sons, New York (**2007**) *in press.*

Wilkinson, K.; Lead, J. *Environmental Colloids and Particles: Behavior, Separation, and Characterization.* John Wiley and Sons, New York (**2007**) 672 pages.

Other Reports

Kördel, W.: Klein, M. "Prediction of leaching and groundwater contamination by pesticides." *Pure Appl. Chem.* (**2006**) 78:1081-1090.

Loffredo, E.; Senesi, N. "Fate of anthropogenic organic pollutants in soils with emphasis on adsorption/desorption processes of endocrine disruptor compounds." *Pure. Appl. Chem.* (**2006**), 78: 947-961.

Racke, K.D. "Pesticide chemistry - report of the 11th IUPAC international congress." *Chem. Int.* (**2007**) 29: 30-32.

Chemistry and Human Health Division (VII)

IUPAC General Assembly Report (August 2007)

Submitted by Paul Erhardt, President Div. VII

Executive Summary

This report provides an update about Division VII's (DVII's) activities since the last General Assembly in Beijing, 2005. A proactive approach taken by our Subcommittee on *Public Relations and Elections* (PRE) allowed DVII to have a very successful TM election process followed by finalization of our NRs, designation of our administrative officers, and selection of our AMs. The resulting membership of DVII is shown in Attachment 1 wherein it can be noted that nineteen (19) different nations are now represented among our twenty-four (24) active participants. The recent election of new TMs for 2008 has also gone very smoothly with the nominees again representing a high diversity in expertise, geography and gender. Two of the three winners are experts in the NPU discipline (see definitions below) and the other winner an expert in toxicology. On a different note is the problem created by Brazil's lapsed payment of its National Subscription because this will bar DVII's President Elect from assuming office in 2008. If this has not been resolved by the time of the GA, DVII will be forced to exercise a backup plan so as to prevent a gap from occurring in this key post. Backup plans are already being discussed among the administrative officers.

DVII's technical diversity is organized within three Subcommittees, namely *Medicinal Chemistry and Drug Development* (MC), *Nomenclature, Properties and Units in Laboratory Medicine* (NPU), and *Toxicology and Risk Assessment* (SOT). Together, these Subcommittees were involved in thirty (30) IUPAC Projects, six (6) of which were completed during this period while another six (6) were initiated [five (5) from DVII's 2006-7 allotted budget and one (1) from extramural funding]. Detailed reports from each of the technical and PRE Subcommittee's are appended as Attachments 2 to 5. Publication lists can be found therein. In total, three (3) books, fourteen (14) technical papers, six (6) news articles and one (1) Web database were released by DVII during this period.

DVII held two meetings since the Beijing GA, the first occurring in the U.S., and a more recent one in Belgium. Given that the first meeting drew ca. 25% of DVII's 2006-7 allotted budget, a decision was made to meet every nine (9) months rather than every six (6) months with one of our meetings to coincide with a GA. As a result, our meetings are now scheduled for one-and-a-half days rather than for one day. Due to budgetary constraints, however, it now appears that we will only be able to meet formally once between the GAs. Backup plans, such as adoption of a teleconference between each of our formal meetings, so as to allow DVII's healthy momentum to be maintained, will be discussed during the GA. It should be noted that DVII is heavily involved with organizing and participating in the GA's accompanying WCC. Six (6) of our members are either chairing the entire Session or specific Symposia, or delivering Keynote lectures within the overall program designated as *Chemistry Protecting Health* (Attachment 6). We are also assembling a portfolio of DVII posters which we hope to display as a block during one of the WCC Sessions, although these programmatic details have not been finalized. Major highlights for DVII during this reporting period are further conveyed within the following six (6) IUPAC Goals. Each of the latter is set-off as a bold-font header.

Leadership in Addressing Global Chemical Issues

The critical need for standardization of properties and units associated with human toxicology assessment was recently addressed by DVII's NPU and SOT Subcommittees' report entitled *"Properties and Units in the Clinical Laboratory Sciences: Part XX. Properties and Units in Clinical and Environmental Human Toxicology* [PAC, **79**, 87-152 (2007)].

Provision of Tools

The NPU's generic database, now published on the net under the URL: <http://dior.imt.liu.se/cnpu/>, represents an electronically available tool that can be used in a variety of clinical-related analytical settings. The SOT's *"Glossary for Chemists of Terms Used in Toxicology," "Glossary of Terms Relating to Pesticides"* and *"Explanatory Dictionary of Terms in Toxicology"* were published in PAC, as well as being made available electronically for review on the IUPAC website. Several MC-sponsored glossaries are likewise nearing completion: *"Combinatorial Chemistry Terms;" "Drug Metabolism Terms;" "Pharmaceutical Technology;" "Pharmaceutical Process Chemistry;" "Biomolecular Screening;"* and, an all-encompassing *"Compendium of Glossaries."*

Assist Chemical Industry in Sustainable Development, Wealth Creation and Improving Quality of Life

The MC Subcommittee, in particular, has strong ties with the industry. It's following projects demonstrate some of the ongoing activities that DVII is involved with in this area: *"Prototype Analysis of Molecular Biomarkers in Cancer;" "Natural Products with Medicinal and Nutritional Value;"* and, *"Latin American Plants as Sources for Nutraceuticals."* Leading additional efforts to connect IUPAC with industry, the PRE has become active in COCI. In this regard, the PRE's list of DVII activities (Attachment 7) is being used by COCI as a model for all of the other IUPAC Divisions.

Foster Communication

The following projects from the NPU Subcommittee pertain, in particular, to this IUPAC goal: *"Global Use of the SC-NPU Concept System for Properties in Toxicology;" "Internationally Agreed Terminology for Observations in Scientific Communication;"* and, *"Translation of the SC-NPU Database Elements and Properties Into French."* Similarly, the SOT project entitled *"Explanatory Dictionary of Concepts in Toxicokinetics"* and the MC project entitled *"Biological Context by Data Mining"* directly relate to enhancing communication among chemists within the specific context of using some of DVII's tools, as well as fostering communication in general.

Education

Two stellar efforts relevant to educational projects include the recently published text entitled *"Fundamental Toxicology, 2nd Edition"* by the SOT Subcommittee, and the recently published text entitled *"Analogue-based Drug Discovery*" by the MC Subcommittee. Specific training projects include: *"Training of School Children on Pesticides and Health"* (a SOT activity); *"Research and Training in Medicinal Chemistry in the Indian Subcontinent;"* and,

"Practical Studies for Medicinal Chemistry Students" (the latter two projects being MC activities).

Membership and Public Relations

In addition to DVII's efforts to diversify its membership via the IUPAC election and selection process as already discussed in the Executive Summary, the PRE produced a DVII poster that was displayed at the last EFMC Meeting in Istanbul and at the last ACS meeting in San Francisco. This poster is being further upgraded and it, along with several DVII Subcommittee and specific project-related posters are being organized for possible presentation as a 'block' or 'row' at the upcoming GA in Torino.

Also of particular note in this category is that the first *"IUPAC-Richter Prize"* has been awarded to Professor Malcolm Stevens, Nottingham University, UK, for his work on heterocyclic anticancer drugs. This prize of US $10,000 was presented at the EFMC-organized International Symposium on Medicinal Chemistry held in September at Istanbul, Turkey. Recognition of Dr. Stevens and this prestigious award will again be provided at the next GA (see Attachment 6).

List of Attachments

1. Division VII Members and Roles During 2006-2007 [**page 4**]
2. Subcommittee Report: Medicinal Chemistry and Drug Development (R. Ganellin) [**pages 5 to 8**]
3. Subcommittee Report: Nomenclature, Properties and Units in Laboratory Medicine (F. Pontet) [**pages 9 to 11**]
4. Subcommittee Report: Toxicology and Risk Assessment (J. Duffus) [**pages 12 to 15**]
5. Subcommittee Report: Public Relations and Elections (T. Perun) [**page 16**]
6. World Chemistry Congress Program for Session 2: *Chemistry Protecting Health* [**page 17**]
7. List of Division VII Activities for use by COSI's Interactions with the Private Sector [**page 18**]

Attachment 1

IUPAC Division of Chemistry and Human Health
2006-2007 Membership

Name	Desig.	Role	Term	NAO
Ole Andersen	AM	SOT	06-07	Denmark
Sergey Bachurin	NR	MC	06-07	Russia
Georg Becher	NR	S TBD	06-07	Norway
Derek Buckle	AM	MC	06-07	UK
Mukund Chorghade	TM	Secretary; CCE Rep; MC	(Sec.)	US
Rita Cornelis	NR	SOT	06-07	Belgium
John Duffus	TM	Chair SOT; ICTNS & "SOT" Rep	04-07	UK
Paul Erhardt	TM	President; USNC & PAC Rep; MC	04-07	US
Janos Fischer	TM	IUPAC-Richter Prize Rep; MC	04-07	Hungary
Robin Ganellin	AFM	Chair MC	(Chair)	UK
So-Yeop Han	NR	"AFMC" Rep; MC	06-07	Korea
Javed Iqbal	NR	MC	06-07	India
Mike Liebman	TM	MC	06-09	US
Kari Mattila	NR	S TBD	06-07	Finland
Grzegorz Mlosten	NR	MC	06-07	Poland
Peter Nedekov	NR	MC	06-07	Bulgaria
Monica Nordberg	TM	SOT	06-09	Sweden
Tom Perun	AFM	Chair SOPRE; COCI & "ACS" Rep; MC	(Chair)	US
Francoise Pontet	AFM	Chair NPU; "IFCC" Rep	(Chair)	France
Ferran Sanz	TM	"EFMC" Rep; MC	06-09	Spain
Pedro Soares de Araujo	TM	Vice President; NPU	04-07	Brazil
Doug Templeton	TM	"Can. MRC" Rep; SOT	06-09	Canada
Henk Timmerman	TM	"IUPHAR" & "ISSX" Rep; MC	04-07	Netherlands
Mario Varasi	AM	MC	06-07	Italy

Abbreviations

Desig. pertains to IUPAC membership designation wherein: **AFM** = Affiliate Member; **AM** = Associate Member; **NR** = National Representative; and, **TM** = Titular Member.

Role pertains to Division-related responsibilities and primary technical expertise wherein for the latter: **MC** = Subcommittee on Medicinal Chemistry and Drug Development; **NPU** = Subcommittee on Nomenclature, Properties, and Units in Laboratory Medicine; **SOT** = Subcommittee on Toxicology and Risk Assessment; and, **S TBD** = Subcommittee To Be Determined. For responsibilities, liaison relationships with non-IUPAC-associated organizations are indicated by placement of the latter's codes within quotation marks and: **"ACS"** = American Chemical Society; **"Can. MRC"** = Canadian Medical Research Council; **CCE** = Committee on Chemistry Education; **COCI** = Committee on Chemistry and Industry; **"EFMC"** = European Federation of Medicinal Chemistry; **ICTNS** = Interdivisional Committee on Terminology, Nomenclature and Symbols; **"IFCC"** = International Federation of Clinical Chemistry; **"ISSX"** = International Society for the Study of Xenobiotics; **"IUPHAR"** = International Union of Pharmacology; **PAC** = Journal of Pure & Applied Chemistry; **SOPRE** = Subcommittee for Public Relations and Elections; **"SOT"** = Society of Toxicology; and, **USNC** = U.S. National Committee for IUPAC.

IUPAC Bylaws On Division Composition

Maximum membership: 10 Titular Members (TMs); 6 Associate Members (AMs); 6 + 4 (by Bureau & Council Amendment) = 10 National Representatives (NRs); and, Unlimited Affiliate Members (AFMs).

Attachment 2

Report from the Subcommittee on Medicinal Chemistry and Drug Development for the period August 2005 to August 2007

Meetings: Since the last IUPAC General Assembly (in Beijing, August 2005) the Subcommittee on Medicinal Chemistry and Drug Development has held three meetings (Modena, Italy, 11 September 2005, Atlanta, Georgia, USA, 26 March 2006 and London, U.K., 7 October 2006). They were attended respectively by 8, 10 and 14 members. The next meeting will be held in Turin, Italy, 3 August 2007.

Minutes have been posted on the IUPAC web-site for all of the above meetings.

Membership: Core membership continues as before. The National Representative (NR) for Russia has changed (from Nikolay Nifantiev to Sergey Bachurin). We have also picked up 10 new medicinal chemists either as new NR's, as new Division VII Committee Members, or as having been involved in the Division Committee election, or through personal contact (David Alker, Derek Buckle, A. Ganesan, So-Yeop Han, Javed Iqbal, Brigitte Lesur, Yvonne Martin, Grzogorz Mloston, Giorgio Tarzia and Mario Varasi).

Honorary Membership: The Subcommittee wishes to honour the IUPAC services of four past members of the Medicinal Chemistry Section with an "Honorary Fellowship" which is more than the usual "IUPAC Fellowship". This is being pursued by the Division President.

Projects: As previously, no new projects have arisen from proposals outside of the Subcommittee membership. One project has been completed, one project has been cancelled, and four new projects have been formally proposed and approved. Several projects involving glossaries were thought to be complete but have required additional work because ICTNS changed the format requirements so that the Gold Book is no longer the appropriate format to follow. They are very close to being completed.

Individual Projects:

Nomenclature and Terminology

2003-044-1-700 Glossary of Combinatorial Chemistry Terms. The project leader has been changed because of his work commitments (from Derek Maclean to A. Ganesan). Derek stays on as a team member.

2000-009-1-700 Glossary of Drug Metabolism Terms. (Paul Erhardt)
Definitions are being adjusted to IUPAC format.

2002-001-1-700 Compendium of Glossaries. (Robin Ganellin)
Definitions are being adjusted to IUPAC format.

2001-049-2-700 Glossary of Terms in Pharmaceutical Technology. (Eli Breuer)
Definitions are being adjusted to IUPAC format.

2001-049-2-700 Glossary of Terms in Pharmaceutical Process Chemistry. (Mukund Chorghade)
Definitions are being adjusted to IUPAC format.

2005-050-1-700 Prototype Analysis of Molecular Biomarkers in Cancer. (Michael Liebman)
Molecular Biomarkers have become a major focus of disease management and drug development, particularly in oncology. This prototypic study will identify the existing biomarkers in breast cancer and

classify them in terms of disease progression and also as to their clinical vs. research use. The project is underway.

2004-025-1-700 Compendium of Molecular Targets for Drugs. (John Proudfoot)
The Project has been terminated because it was discovered that a substantial proportion of the anticipated material for this project was already available on the world-wide web. A short article was written by John Proudfoot for CI.

2004-019-3-700 Glossary of Terms for Biomolecular Screening. (John Proudfoot)
Glossary sections were prepared by three sub-teams and recompiled into one document. This is undergoing internal review by the team members and contains draft definitions of approximately 150 terms related to biomolecular screening. Reviewers for the final glossary have been identified.

Training and Development

2001-048-2-700 Research and Training in Medicinal Chemistry in the Indian Subcontinent. (Mukund Chorghade)
Medicinal chemistry and drug discovery are currently key growth areas in India. Mukund is in the late stages of organizing the first of two projected four day workshops on the basic aspects of Medicinal Chemistry to take place in India in late 2007. The workshops will be sponsored by the Indian government with additional funding and facilities provided by some of the leading Indian pharmaceutical companies and the ACS. Some of the subcommittee members will participate in the workshops as lecturers.

2004-028-1-700 Practical Studies for Medicinal Chemistry Students. (Antonio Monge)
The purpose of this project is to provide experimental studies for training medicinal chemistry students regardless of the academic level of the university. To this end, expensive chemical material and reagents, and the most highly sophisticated instrumentation have been avoided. The various experiments and studies have been combined into a book which provides developing countries with a practical text for studying medicinal chemistry. A draft printed version has been produced containing 41 experiments contributed by academic teachers from ten countries. All are written in English; most are also in Spanish or Portuguese. Considerable help was provided by Cheryl Wurzbacher (through the IUPAC Secretariat) to refine the English version and a final editing was carried out by Robin Ganellin. Since January 2007 an electronic version has been made freely available via IUPAC on the World-Wide Web, entitled “Practical Studies for Medicinal Chemistry” eds, A. Monge and C.R. Ganellin.

New Technologies and Special Tools

2000-010-1-700 Project on Human Drug Metabolism Database. (Paul Erhardt)
The project is on hold pending the procurement of additional funding.

2001-050-2-700 Natural Products with Medicinal and Nutritional Value. (Mukund Chorghade)
Document is being edited and adjusted to IUPAC format.

2005-031-2-700 Latin American Plants as Sources for Nutraceuticals. (Antonio Monge)
The objective is to provide possible commercial opportunities for local industry in Latin American countries. Contributors have been identified from most Central and South American countries and they have provided lists of locally used potential nutraceutical plants. The assessment of which are appropriate for inclusion in the project is in progress.

2002-051-1-700 Analogue-based Drug Discovery. (Janos Fischer)
This project metamorphosed into a book which was published by VCH-Wiley in January 2006. The book was edited by J. Fischer and C.R. Ganellin. It has been described in Chemistry International 2005, vol 27 (6), 26. It has received almost 40 positive reviews to date including one in J Med Chem 49 (15), 4799, 2006 where it was highly acclaimed. Sales are sufficiently robust that the publisher has contacted Janos

to propose a 2nd edition for 2009. It is now sold out and being reprinted. Janos proposed that a second volume would be more appropriate than a revised or updated edition. A project proposal will be submitted to support work on this next volume.

2005-032-1-700 Stand-Alone Drugs. (Janos Fischer)
The project will study drugs having no structural and pharmacological analogues with the intention of providing a perspective on situations where it has not proven possible to improve an existing drug with an analogue-based approach. There was a spirited debate among the members on the nature and scope of structural and pharmacological "analogy" and the ultimate scope of the project is still under discussion.

2005-049-1-700 Biological Context by Data Mining. (Michael Liebman)
To extend the usefulness and applicability of the glossaries, it would be worthwhile to explore methods for identifying the various contexts in which the terms appear in the scientific literature. In the ideal situation, this project can transcend the three Subcommittees of the Division to incorporate activities of each.

2005-042-1-300 Working Party on Chemistry for Biology. (Robin Ganellin representative)
An interdivision feasibility study jointly with the Organic and Biomolecular Chemistry and the Physical and Biophysical Chemistry Divisions. Progress unknown.

New Projects under discussion:

Update of Glossary of Terms in Medicinal Chemistry.

Research and Training in Medicinal Chemistry in Latin America.

Trends in Patenting Drug-Related Technologies.

Prize: The IUPAC-Richter Prize of US $ 10,000 to be awarded 5 times over the next 10 years has been established by a generous gift from Gedeon Richter Ltd, Budapest, Hungary.
The Prize will recognise a prominent scientist for outstanding contributions in medicinal chemistry and drug discovery. The first Prize has been awarded to Professor Malcolm Stevens, Nottingham University, UK, for his work on heterocyclic anti-cancer drugs, and was presented to him at the time of his lecture at the EFMC International Symposium on Medicinal Chemistry, Istanbul, Turkey on 1st September 2006. The lecture is to be repeated at the IUPAC World Chemistry Congress in Turin, Italy, August 2007. The selection committee was chaired by Robin Ganellin and included Janos Fischer as a non-voting member and representative of Gedeon Richter.

41st IUPAC World Chemistry Congress (Turin,Italy)

Janos Fischer and Robin Ganellin helped set up and will chair two symposia on Analogue-based Drug Discovery and Cancer Chemotherapy respectively for Session 2 "Chemistry Protecting Health."

External Contacts: Continue with the European Federation for Medicinal Chemistry (EFMC) and the Asian Federation for Medicinal Chemistry (AFMC).

Bibliography:

Books

Analogue-based Drug Discovery, Eds. J. Fischer and C.R. Ganellin,
Wiley-VCH, Weinheim, 2006.

Practical Studies for Medicinal Chemistry, Eds A. Monge and C.R. Ganellin
IUPAC, 2007, as a web edition
(http://www.iupac.org/publications/cd/medicinal_chemistry/index.html)

Chemistry International articles

Antonio Monge. "Natural Products, a Possibility for the R&D of Drugs for Developing Countries."
C.I. 2005, 27 (6), 21-22.

Chemistry International News Items

"Practical Studies for Medicinal Chemistry".
C.I. 2007, 29 (2).

The 6th International Medicinal Chemistry Symposium (AIMECS 07) will be in Istanbul, Turkey, 8-11 July 2007.
C.I. 2007, (1).

Malcolm F.G. Stevens is Awarded the First IUPAC-Richter Prize.
C.I. 2006, 28 (6).

IUPAC-Richter Prize in Medicinal Chemistry.
C.I. 2005, 27 (6).

Analogue-Based Drug Discovery.
C.I. 2005, 27 (6).

Subcommittee Members Teach Short Course on Medicinal Chemistry.
C.I. 2005, 27 (3).

C. Robin Ganellin
Subcommittee Chair
26 May 2007

Attachment 3

SC-NPU, IFCC-IUPAC,
Activity report for the period August 2005 - August 2007

Membership:
Urban Forsum, Chair, (2005)
Francoise Pontet, Chair (starting 2006-01-01)
Pedro Soares de Araujo, Secretary (2005)
Gunnar Nordin, Secretary (starting 2006-01-01)
René Dybkær (proposed Distinguished Fellow)
Ivan Bruunshuus
Jarkko Ihalainen
Daniel Karlsson
Xavier Fuentes-Arderiu
Gunther Schadow
Ulla Magdal Petersen
Wolf Külpmann
Henrik Olesen (proposed Distinguished Fellow)
Antonin Jabor

Meetings:
SC-NPU
Rome Italy 2005-10-07 – 10-09
Paris, France 2006-04-08 – 04-10
Brussels, Belgium 2006-12-03 – 12-05
Meeting with the Estonian Society for Laboratoryy Medicine (U. Forsum)
Taagepera Estonia 2005-09-26
Meeting with representatives (John Zlockie and co-workers) of the CLSI on the future of the C-NPU data base. (U. Forsum, I Bruunshuus)
Wayne Pa USA 2005-11-14
C-NPU active participation at the Workshop on "Quantities, numbers and parts" IFOMIS University of Saarbrücken (U. Forsum, D. Karlsson)
Saarbrücken Germany 2005-12-01 – 02
CEN TC 251 wg 2 meeting (ENV 1614 standard) (D. Karlsson)
Rome Italy 2005-10-08
Symposium "Aktuelles zu medinische Klassifikationen und Terminologien. GMDS- project group "Standardisierte Terminologien in der Medizin". (W. Külpmann)
Freiburg Germany 2005-09-15

SC-NPU generic database
The SC-NPU generic database is, as of 2002-04-25, published on the net under the URL: <http://dior.imt.liu.se/cnpu/>. The database is published on the IFCC homepage (Scientific division) and IUPAC (Division of Chemistry and Human Health.) homepage with a link to the server Dior, and to the Danish National Board of Health server. During the meeting in Wayne Pa USA with representatives of the CLSI (former NCCLS) it was agreed that the C-NPU and CLSI should seek a permanent hosting of the database probably as part of the CLSI website and server. Unfortunately, this collaborative project of hosting this database on the CLSI website had to be dropped because of CLSI board decision of declining IFCC offer, the support of C-NPU database not being aligned with CLSI mission.
The IFCC SD has thus proposed that the database be hosted on the IFCC website. The cost of such a management has been communicated to IFCC officers, so that IFCC SD could finalize its decision. A meeting in Amsterdam, at Euromedlab IFCC-FESCC congress is scheduled on June 6th, 2007.

Ongoing projects

1. Properties and units for function examinations (IUPAC: 2001-067-1-700). An updating has been undertaken.
2. Properties and units for urinary calculi (IUPAC: 2001-070-1-700). A full reformating of the manuscript is being done.
3. Global use of the SC-NPU concept system for properties in toxicology (IUPAC:2001-066-1-700). Published in Pure and Applied Chemistry, in January 2007.
4. Internationally agreed terminology for observations in scientific communication. (IUPAC 2004-023-1-700) Chair : Françoise Pontet. Two drafts have been circulated and discussed during the last Sub-Committee meetings.
5. Mapping of IFCC-IUPAC laboratory coding system to SNOMED CT (IUPAC 2006-008-1-700) Chair : Ulla Magdal. Has just started on 2006-07-01.Abstract is on IUPAC website.
6. Securing and structural updating of information in the NPU coding system and its environment (IUPAC 2006-012-1-700) Chair : Ulla Magdal. Has just started on 2006-07-01.Abstract is on IUPAC website.
7. Recent advances in Nomenclature, Properties and Units : strategy for promoting SC-NPU achievements (2006-048-1-700) Chair : Françoise Pontet. Has just been accepted, budget pending.
8. Translation of SC-NPU database elements and properties into French (F. Pontet). Is being updated in 2007.
9. German translation of the SC-NPU data base (W Külpmann) done during 2005-2006 and is under review in the SC-NPU.
10. The Portuguese translation of the SC-NPU data base has been updated in 2005.
11. Paper on IFCC WG-HbA1c name and units (G. Nordin). This manuscript on the impact of systematic nomenclature on the naming of this particular important property has been agreed on by a ballot in IFCC. It is now submitted to Clinical Chemistry and Laboratory Medicine.
12. Revision of ENV 1614 has been done in collaboration with CENT C 251. It is now published.
13. The final draft of the 3rd edition of VIM is under editorial revision and will be sent to ISO in early June for final publication, due in the 2nd half of 2007.

Future projects

Silver Book revision. Georges Férard has accepted to chair this project and will present his proposal soon.

The SC-NPU is currently working on a number of other projects to become work items during 2006. One proposal is under discussion as draft, and two are in preparation.

Representation in other committees.

IFCC Scientific Division : Françoise Pontet
ICTNS of the IUPAC : Urban Forsum (2005)
JCGM of the BIPM (WG2-VIM), IFCC : René Dybkær, Françoise Pontet
JCGM of the BIPM (WG1-GUM), IFCC, ILAC, CCQM : René Dybkær
CEN TC 251 wg2 : Daniel Karlsson

Publications 2005-2006 :

1. Nordin G, Klinteberg B, Persson B, Forsum U. Får en laboratorieundersökning kallas vad som helst? ”NPU-systemet” reder upp i begreppsröran och ger systematisk stringens. Läkartidningen, 2005, 102: 1308 – 1315 (in Swedish).
2. Forsum U, Hallander HO, Kallner A, Karlsson D. Impact of qualitative analysis in laboratory medicine. TrAC-Trends in Analytical Chemistry, 2005, 24: 546 -555.
3. Forsum U, Karlsson D. Terminology, categories and representation of examinations in laboratory medicine. Clin. Chem. Lab. Med. 2005;43.344-345.
4. Külpmann. W Das NPU-System (IFCC, IUPAC) de Messgrössen und Einheiten in der Laboratoriemedizin. J Lab Med 2005, 29:2-5 (in German).

5. D'Orazio P, Burnett RW, Fogh-Andersen N, Jacobs E, Kuwa K, Külpmann W, Larsson L, Lewenstam A, Maas AHJ, Mager G, Naskalski J, Okorodudu AO; the IFCC SD WG on Selective Electrodes and Point of Care Testing. Clin Chem 2005, 51,9:1573-1576.
6. Fuentes-Arderiu X. Description of examinations and their results and the standard ISO 15189. Clin Chem Lab Med 2006;44: (to be published in september 2006).
7. Fuentes-Arderiu X. Vocabulary of terms in protometrology. Accred Qual Assur 2006; 11:640–643.
8. Magdal U, IFCC-IUPAC Committee of Nomenclature, Properties and Units. Mapping laboratory codes. Semantic mining conference on SNOMED CT 2006. Poster presentation.
9. Duffus J. , Bruunshuus I., Cornelis R., Dybkær R., Nordberg M., and Kuelpmann W. Properties and Units in the Clinical Laboratory Sciences, Part XX. Properties and Units in Clinical and environmental human toxicology. *Pure and Applied Chemistry.* **79** (2007) 87-152

Françoise Pontet
SC-NPU Chair

Attachment 4

Subcommittee on Toxicology and Risk Assessment

Report, May 2007

1. Projects completed or in progress - August 2005 to May 2007

1.1 **2001-053-2-700C - Fundamental Toxicology, 2nd Edition**
This project was completed with the publication of the textbook by the Royal Society of Chemistry in January 2006.
Reference:
J.H.Duffus and H.G.J.Worth Eds.
Fundamental Toxicology - 2nd Edition.
Royal Society of Chemistry, 2006.

1.1 **2001-066-1-700 - Global use of the C-NPU concept system for properties in toxicology**
This project has been completed with the report, "Properties and Units in the Clinical Laboratory Sciences: Part XX. Properties and Units in Clinical and Environmental Human Toxicology. Technical Report (IFCC-IUPAC 2006)". The report was revised to satisfy PAC requirements and subsequent reviewers' comments and was published in PAC.
Reference:
J.H. Duffus, I. Bruunshuus, R. Cornelis, R. Dybkær, M. Nordberg, and W. Kuelpman
Properties and units in the clinical laboratory sciences Part XX. Properties and units in clinical and environmental human toxicology (IUPAC Technical Report)
Pure Appl. Chem. 79(1), 87-152, 2007.

1.2 **2003-001-2-700 - Explanatory dictionary of concepts in toxicokinetics**
This project has been completed and revised to satisfy PAC requirements and should be published in PAC shortly. The Royal Society of Chemistry has reviewed the PAC paper in draft and has decided that it could be the basis for a successful book. A contract has been signed between the authors of the PAC paper, IUPAC and the RSC to prepare this book. It is thought by the working group and the RSC that it should have twice as many entries to be eligible for publication as a book of a reasonable length. Monica Nordberg has submitted to IUPAC a second project, "Explanatory Dictionary, part 2", to cover the the expanded definitions of about 20 more terms. Together with the completed project, this should provide the basis required for a book to be entitled "Concepts iin Toxicology".
Reference;
M. Nordberg, J.H. Duffus, D.M.Templeton
IUPAC Explanatory Dictionary of Key Terms in toxicology (IUPAC Recommendations 2006)
Pure Appl.Chem., Vol.79, *in press*, 2007.

1.3 **1999-047-1-700 - Immunochemistry of metal sensitization**
Two papers resulting from this project have already been published. During the period which this report covers, a further paper (see below) has been published in PAC. Two additional manuscripts on "Lymphocyte Subpopulations" and "Immunological Effects of Mercury" are currently in draft form and were discussed by the authors at the recent meeting in Edinburgh. Doug Templeton, the project leader, is considering further activities within the scope of this project which may be carried out with the remaining part of the budget.
References:
R. Klein, M. Schwenk, D. M. Templeton
Cytokine profiles in human exposure to metals (IUPAC Technical Report)
Pure Appl. Chem. 78(11), 2155-2168, 2006

1.4 **2004-045-1-711 - Training of school children on pesticides and health**
The working group for this project met in Prague in April, 2006 and in Athens in May 2007. The dose response experiment teaching module has been successfully tested in Malawi. The project should be finalized by the end of this year. It is proposed to discuss the draft material with the Committee on the Teaching of Chemistry in Torino. The project will be presented By Dr Besbelli at the 4th International Conference on Children's Environmental Health. www.inchesnetwork.net in Vienna: 10th of June – 12th of June 2007.

1.5 **2003-028-1-700 - Glossary for chemists of terms used in toxicology – revision and updating**
Every term was considered and possible changes were assessed at the Subcommittee Meeting in March 2006. This took up most of the time allotted to the meeting of the Subcommittee. Consensus was reached on the terms discussed and the text has been revised accordingly. The resultant draft, version 12, was submitted to Pure and Applied Chemistry for publication as an IUPAC Recommendation, superseding the existing glossary of 1993. Following the review period on the IUPAC website, the Glossary was amended to take into account all the comments received. In this form, the Glossary was accepted for Publication.
Reference:
J.H. Duffus, M. Nordberg, D.M.Templeton
Glossary of Terms Used in Toxicology, 2nd Edition (IUPAC Recommendations 2007)
Pure Appl.Chem., Vol.79(7), pp.1153- *in press*, 2007
The revised glossary has been incorporated with acknowledgment to IUPAC in the U.S. National Library of Medicine TOXNET portal to the toxicology literature. This portal incorporates toxicology tutorials under the title ToxLearn. ToxLearn is a series of presentations designed for self study and these are being hyperlinked to the IUPAC glossary on the TOXNET site.

1.6 **2004-002-1-600 - Glossary of Terms Relating to Pesticides**

Monica Nordberg contributed to the 'Glossary of Terms Relating to Pesticides' which has been published in PAC.
Reference:
G.R. Stephenson, I.G. Ferris, P.T. Holland, and M. Nordberg
Glossary of terms relating to pesticides (IUPAC Recommendations 2006)
Pure Appl. Chem. 78(11), 2075-2154, 2006

1.7 **2005-047-1-700 - Glossary of Terms Used in Ecotoxicology**
A list of appropriate terms was compiled and current definitions collected and compared. New definitions were prepared as appropriate. The draft glossary was reviewed at a meeting of the working group in Edinburgh. Professor Mike Schwenck attended this meeting and helped with this revision. Following the meeting a new draft has been prepared and is currently being circulated among the working group. Some problematic terms have been identified and are being given special attention.

2. New projects

2.1 **Explanatory dictionary - part 2**
A project proposal has been submtted and is currently still under consideration for funding. A contract for a subsequent book has been signed with the RSC (see above under 1.2 **2003-001-2-700**).

2.2 **Supplementary modules on Essential Toxicology**
Howard Worth and John Duffus are planning to submit a project with the aim of producing presentations of educational material in clinical chemistry to supplement those already available on the IUPAC website with the title "Essential Toxicology".

3. Other Activities

The activity related to human biomonitoring, initiated from contacts with Rick Becker, Senior Director - Public Health Team, American Chemistry Council (ACC), has led to a Workshop on "Human Biomonitoring". John Duffus was involved in planning this Workshop and Monica Nordberg is attending it as an active participant. The Workshop will consider a draft proposal for methodology to establish appropriate reference values for human biomonitoring. Four important environmental toxicants will be considered as case studies and the methods examined critically. Assuming the Workshop is successful, the methodology will be published and further meetings may be held which may justify IUPAC support of relevant projects.

PUBLICATIONS CITED ABOVE

J.H.Duffus and H.G.J.Worth Eds., Fundamental Toxicology - 2nd Edition. Pub. Royal Society of Chemistry, 2006.

G.R. Stephenson, I.G. Ferris, P.T. Holland, and M. Nordberg. Glossary of terms relating to pesticides (IUPAC Recommendations 2006). *Pure Appl. Chem.* 78(11), 2075-2154, 2006

J.H. Duffus, I. Bruunshuus, R. Cornelis, R. Dybkær, M. Nordberg, and W. Kuelpman. Properties and units in the clinical laboratory sciences Part XX. Properties and units in clinical and environmental human toxicology (IUPAC Technical Report). *Pure Appl. Chem.* 79(1), 87-152, 2007.
R. Klein, M. Schwenk, D. M. Templeton. Cytokine profiles in human exposure to metals (IUPAC Technical Report). *Pure Appl. Chem.* 78(11), 2155-2168, 2006

J.H. Duffus, M. Nordberg, D.M.Templeton. Glossary of Terms Used in Toxicology, 2nd Edition (IUPAC Recommendations 2007). *Pure Appl.Chem.*, Vol.79(7), pp.1153- *in press*, 2007

M. Nordberg, J.H. Duffus, D.M.Templeton. IUPAC Explanatory Dictionary of Terms in Toxicology (IUPAC Recommendations 2006). *Pure Appl.Chem.*, Vol.79, *in press*, 2007.

PRESENTATION AT SOCIETY OF TOXICOLOGY ANNUAL CONGRESS, SAN DIEGO, MARCH 2006

Workshop at U.S. Society of Toxicology Annual Congress, San Diego, U.S.A., March 6, 2006. "Distance learning in toxicology." J. H. Duffus

PRESENTATIONS TO BE GIVEN IN TURIN, AUGUST 2007

Third IUPAC-UNESCO-Unido Safety Training Program, 2007. "Distance learning in toxicology: the IUPAC contribution". J. H. Duffus

IUPAC General Assembly World Chemistry Leadership Meeting, "Regulatory Toxicology - A Need For Better Science,". J. H. Duffus

Attachment 5

Report of the Public Relations and Elections Subcommittee

Public Relations

Following the Beijing meeting, the material in the poster for the Chemistry and Human Health Division displayed at the meeting, was updated and modified. A draft version was presented to the Division Committee in Atlanta, and members of the DC made suggestions on the content and organization. The final version contained sections on Mission, Organization, Membership, Publications and Selected Current Projects. The Publications were divided into Books, Glossaries and Others. The Selected Current Projects were categorized into the three subcommittees sponsoring them. Also added was a section on submitting a project proposal, and a description of the IUPAC Richter Prize in Medicinal Chemistry. This revised material was presented at the COCI Annual Meeting in July. It was well received, and generated a healthy discussion on the merits of collaborating on joint projects. Some of the goals and activities of COCI are similar to those of Division VII, so there is the possibility of sharing resources where appropriate. It was recognized that the interaction between the two organizations should be two-way, and a representative of COCI (Alex Pokrovsky) was identified to attend the next Division Committee meeting. This will complement my representation of Division VII with COCI The organization and presentation of the Recent Activities of Division VII was selected as a model for presentations by other IUPAC Divisions that were not represented in person at the COCI meeting. The poster material was sent to the Secretariat who developed a new poster for Division VII. This was presented for the first time at the International Symposium on Medicinal Chemistry (ISMC) held in Istanbul, August 29- September 2, 2006. A Power Point version of the material was also prepared, and it can be made available to any members of the Division Committee who have an opportunity to use it as a PR vehicle at meetings they attend. Likewise, the poster has also been prepared in both portrait and landscape formats for use in appropriate settings by DC members.

Elections

The election of new Titular Members (TMs) for the Division Committee in 2008 went smoothly. The nominees represented a diversity in expertise, geography and gender. Two of the three winners are experts in the NPU discipline (one being the current Chairperson of this Subcommittee), and the other winner an expert in toxicology. Two years ago, two of the new members were toxicology experts and one involved medicinal chemistry. Four years ago, two new members were medicinal chemists, one a toxicologist, and one was involved in NPU activities. These results demonstrate the healthy technical-diversity of the Division as it continues to evolve from the former merger of these three distinct but inter-related disciplines. The candidates who did not receive enough votes to become TMs have agreed to become Associate Members (AMs) of the Division, and one candidate is a National Representative. These additional new members will further increase Division VII's overall geographical representation, as well as contributing new expertise.

Tom Perun
Subcommittee Chair

Attachment 6

IUPAC General Assembly and World Chemistry Congress
Torino, Italy August 5-11, 2007

Scientific Program Session 2: *Chemistry Protecting Health*

Co-Chairs: Giuseppe Ronsisvalle (Universita di Catania)
Paul Erhardt (University of Toledo, USA)

Symposia

1. *Analog-Based Drug Design*
   Chair: Janos Fischer
   Keynote: Joerg Senn-Bilfinger

2. *Multi-Target Drugs*
   Chair: Giuseppe Ronsisvale
   Keynote: Albert Gasco

3. *Cancer Chemotherapeutic Agents*
   Chair: Robin Ganellin
   Keynote: Malcolm Stevens (IUPAC-Richter Prize recognition event)

4. *Prodrugs and Soft Drugs*
   Chair: Howard Ando
   Keynote: Nicholas Bodor

5. *Clinical Laboratory Nomenclature, Properties and Units*
   Chair: Francoise Pontet
   Keynote: Rene Dybkaer

Attachment 7

RECENT ACTIVITIES OF DIVISION VII — CHEMISTRY AND HUMAN HEALTH

BOOKS

Medicinal Chemistry for the 2 Century (1992) (1994)
Fundamental Toxicology for Chemists (1996)
Drug Metabolism: Databases and High Throughput Testing During Drug Design and Development (1999)
Handbook of Pharmaceutical Salts: Properties, Selection and Use (2002)
Analogue-based Drug Discovery (2005)
Fundamental Toxicology, 2' Edition (2006)

GLOSSARIES

Glossary of Terms in Quantities and Units in Clinical Chemistry (1996)
Glossary of Terms Used in Computational Drug Design (1997)
Glossary of Terms Used In Medicinal Chemistry (1998)
Glossary of Terms Used in Combinatorial Chemistry (1999)
Glossary of Terms Used in Toxicokinetics (2004)
Glossary of Terms Used in Pharmaceutical Technology
Glossary of Terms Used in Pharmaceutical Process Chemistry
Glossary of Drug Metabolism Terms
Glossary of Terms Used in Toxicology

OTHER RECENT PUBLICATIONS

Essential Toxicology — Educational Modules in PDF Format on IUPAC Website
Natural and Synthetic Substances Related to Human Health (2002-2003)
Mechanisms of Immunosensitisation to Metals (2004)
Properties and Units in the Clinical Laboratory Sciences (2004)
Impact of Qualitative Analysis in Laboratory Medicine (2005)
Postgenomic Chemistry (2005)
Guidelines for Terminology for Microtechnology in Clinical Laboratories (2006)
Surveys of Research and Training in Medicinal Chemistry
- United States
- Europe
- Japan
- India, Pakistan and Sri Lanka

Explanatory Dictionary of Concepts in Toxicology

SELECTED CURRENT PROJECTS

Medicinal Chemistry and Drug Development
- Human Drug Metabolism Database
- Chemical and Pharmacological Aspects of Natural Products with Medicinal and Nutritive Value
- Compendium of Terms Associated with Drug Discovery and Development
- Glossary of Terms Used in Biomolecular Screening
- Practical Studies or Medicinal Chemistry — An Integrating Approach for Developing Countries
- Plants as Sources for Nutraceuticals in Latin America
- Prototype Analysis of Molecular Biomarkers in Cancer

Toxicology and Risk Assessment
- Quantifying the Effects of Compound Combinations
- Educational Material for Teaching Toxicology
- Training of School Children on Pesticides and Health
- Distance Learning in Toxicology; Effective Teaching through Technology

NPU/Clinical Chemistry
- Recommendations for the Use of Nanotechnology in Clinical Laboratories
- Concepts and Structure for Requests in Clinical Laboratories
- Global Use of the C-NPU Concept System for Properties in Toxicology
- Internationally Agreed Terminology for Observations in Scientific Communication
- Immunochemistry of Metal Sensitization

THE IUPAC RICHTER PRIZE IN MEDICINAL CHEMISTRY

Acknowledges the key role that medicinal chemistry plays toward improving human health. Awarded every two years to an internationally recognized scientist whose accomplishments demonstrate an outstanding level of contribution to the practice of medicinal chemistry or drug discovery.

International Union of Pure and Applied Chemistry

Division VIII

Chemical Nomenclature and Structure Representation

1. Highlights

Since the last report there has been the publication of one of the colour books, the *Nomenclature of Inorganic Chemistry - IUPAC Recommendations 2005*, by N.G. Connelly, T. Damhus, R.M. Hartshorn and A.T. Hutton, The Royal Society of Chemistry, 2005 [ISBN 0 85404 438 8]. Often referred to a the Red Book this is a revision of the previous edition of 1990, incorporating some parts of *Nomenclature of Inorganic Chemistry II, IUPAC Recommendations 2000* (Red Book II). The organisation of the Red Book has been changed to improve clarity. An important addition to this edition is the chapter on organometallic compounds expanding a brief section previously under coordination compounds.

The IUPAC International Chemical Identifier (InChI) is making steady progress. This is a character string unique to any chemical structure, generated algorithmically by a software programme. Unlike other unique identifiers, such as the CAS registry number, it has the property that the structure can be regenerated from the InChI with a success rate of over 99%. The InChI is now being used by at least 16 major internet databases (~25 million structures) and 3 primary journals. Software developers are providing the identifier in their output. A recent proposed extension is InChI Hash, developed primarily to facilitate use of the InChI by web search engines, which break a long InChI string in unpredictable ways. It will probably be 19 characters including a check character. Although close to unique (97% probability of no collisions in 100 million structures) it cannot be converted back to the structure (see www.iupac.org/inchi/).

Another project which has been published is "Graphical representation of stereochemical configuration (IUPAC Recommendations 2006)" *Pure Appl. Chem*. **78**(10), 1897-1970, 2006. This is the first part of the work on structure representation. The importance of clear depiction of stereochemistry is obvious. The document provides recommendations on how to unambiguously show stereochemistry and warns about other ways which may result in ambiguity.

A major project of the Division is the revision of the *Nomenclature of Organic Chemistry (*Blue Book). This has proved harder than anticipated. It is not just a revision and extension of the

existing books (*IUPAC Nomenclature of Organic Chemistry*, 1979, and *A Guide to IUPAC Nomenclature of Organic Compounds*, 1993) but also incorporates more recent recommendations published since 1993. However, for the first time, it also aims to provide, for those users who require it, a preferred IUPAC name out of the alternatives that are possible. Guidance on alternative methods of naming compounds are retained.

A number of projects are nearing completion. The "Extension of IUPAC rules for stereo descriptors to include coordination numbers 7-12" came to the conclusion a single recommendation could not be made and so it presented alternative appropriate methods for indicating the stereochemistry.

"Graphical representation standards for chemical structure diagrams" is the second part of the project on structure representation (for part 1 see above). It covers the drawing of structure excluding stereochemistry.

"Nomenclature of phosphorus-containing compounds of biochemical importance" is the revision of a 1976 document, improving presentation and adding a number of extensions to reflect recent developments. It is being supervised by the IUPAC-IUBMB Joint Commission on Biochemical Nomenclature, a sub-group of Division VIII. They provide chemical advise to the IUBMB work on enzyme nomenclature. They are also involved with "Recommendations for nomenclature and databases for biochemical thermodynamics", a revision of the 1994 document.

There are a number of projects which are joint with division IV. "Nomenclature of rotaxanes" is the first half of an old project. It deals with the discrete molecules, i.e. not including polymeric components. "Terminology and structure-based nomenclature of dendritic and hyperbranched polymers" and "Terminology and nomenclature of macromolecules with cyclic structures" are both nearly ready for publication.

An objective of the division is to extend the provision of a preferred IUPAC name from organic compounds to other compounds. The inorganic project has started work and it is hoped that a macromolecular project can be established.

The 1998 book intended for educational use *Principles of Chemical Nomenclature a Guide to IUPAC Recommendations* is to be revised to update it with changes arising from the new Red Book and draft Blue Book.

Other projects that the Division are involved with are listed in section 4.

2. Report on the work of the Division for the IUPAC Strategic Plan Long Range Goals

a. Chemical nomenclature has implications in a wide range of disciplines. Unambiguous chemical names should be used in medicine, legal work, etc., as well as all sciences outside chemistry. Providing clear instructions for naming compounds, and which are available world wide to anyone who requires them, is an object of Division VIII.

b. Nomenclature is fundamental to the communication of research. The clear, unambiguous naming of compounds or drawing of their structures is a prerequisite for understanding. The Division is addressing both aspects. Representation of chemical databases on the Division committee help to ensure the widespread use of IUPAC nomenclature

c. Patents and other registration requirements often require preferred IUPAC names. The procedure for organic compounds has now been established, and there is a similar project for inorganic compounds. It is hoped to extend it to macromolecular compounds also.

d. Most nomenclature recommendations are available from the web. This has enabled world wide access even where the original publication is not readily available. The web version has then been used to translate recommendations into the local language.

e. The educational needs are particularly addressed by *Principles of Chemical Nomenclature a Guide to IUPAC Recommendations*, 1998. A revised edition is in preparation.

f. It is difficult to broaden the membership base of the division, as it is rare for a nomenclature expert in a special area to also have a broad knowledge of chemical nomenclature. However we do try to encourage the involvement of as wide a range of chemists as possible. Individual documents are of course very widely reviewed at the provisional stage.

3. Other substantive information.

Since the last Council meeting the InChI project has been publicised by a number of presentations in Germany, Japan, Spain, UK and USA.

4. Tabular Material

Publications

Nomenclature of Inorganic Chemistry - IUPAC Recommendations 2005, by N.G. Connelly, T. Damhus, R.M. Hartshorn and A.T. Hutton, The Royal Society of Chemistry, 2005 [ISBN 0 85404 438 8]

Graphical representation of stereochemical configuration (IUPAC Recommendations 2006), *Pure Appl. Chem*. 78(10), 1897-1970, 2006

Projects

1999-051-1-800 Nomenclature for chemically modified polymers

2000-037-1-800 Nomenclature for macromolecular rotaxanes

2001-043-1-800 Preferred names in the nomenclature of organic compounds

2001-081-1-800 Terminology and structure-based nomenclature of dendritic and hyperbranched polymers

2001-082-1-800 Terminology and nomenclature of macromolecules with cyclic structures

2002-007-1-800 Nomenclature of rotaxanes

2003-025-1-800 Extension of IUPAC rules for stereo descriptors to include coordination numbers 7-12

2003-042-1-800 Source-based nomenclature of single-strand organic polymers

2003-045-3-800 Graphical representation standards for chemical structure diagrams

2004-024-1-800 Nomenclature of cyclic peptides

2004-039-1-800 IUPAC International Chemical Identifier (InChI): promotion and extension

2006-019-1-800 Nomenclature of phosphorus-containing compounds of biochemical importance

2006-029-1-800 Revision of "*Principles of Chemical Nomenclature*"

2006-038-1-800 Preferred IUPAC Names (PINs) for Inorganic Compounds

2006-023-3-100 Recommendations for nomenclature and databases for biochemical thermodynamics

IUPAC Committee on Printed and Electronic Publications

Report to Council for 2005-2006

I. Highlights

Three major developments of significance to IUPAC as a whole have occurred over the recent biennium. The first is the movement of the IUPAC Website (http://www.iupac.org) to FIZ-Chemie in Berlin at most favourable terms. This change permits greater control of the operations of the Website, enhancing both content and interactivity. The second is the publication online and on CD-ROM of the "Gold Book" (IUPAC Compendium of Chemical Terminology) in an enhanced, interactive XML version (http://goldbook.iupac.org). The third is the availability online of *Pure and Applied Chemistry*, now from vol. 45 (1976); the format of the most recent online volumes (from 2007) represents major enhancements of their usability, now including 'out-bound linking' of the references to their sources, through IUPAC's membership of CrossRef.

II. Overall Report

b) IUPAC provides research tools
The new version of the "Gold Book" is an important resource for the chemical community in providing ready access to definitive information on chemical terminology.

d) IUPAC fosters communication
The enhanced Website and the provision of ready access to *PAC* and *CI* enhance the IUPAC image.

III. Other Information

CPEP met in Beijing in 2005 and in Berlin on 14-16 July, 2006. On each occasion, the publication parameters (content, schedules, self-publication, prices and currency) of the IUPAC publications, *Chemistry International* and *Pure and Applied Chemistry*, and of books, were considered. Publication of the periodicals has been eased by the process of electronic submission and control through Manuscript Central. Control by the Scientific Editor, Prof. James Bull, of the contents of *PAC* has seen an enhancement of the appropriateness of material submitted, and of the speed of publication. In acknowledgement of the movement towards open access, it has subsequently been agreed that pdf copies of articles in *PAC* could be made available on author's own sites without any delay following publication.

A proposal was made in Beijing that the Divisions be requested to review their published numerical data collections and identify which should be considered for digitization

to make them available electronically. This review should then be reported back to CPEP so that a common procedure can be instituted. However, no response has been received as yet.

JCAMP (Joint Committee on Atomic and Molecular Physical Data) is the acronym under which IUPAC is developing and refining standard spectrometric data formats. CPEP's Subcommittee for Electronic Data Standards (SEDS) has oversight within IUPAC for all activities in either the JCAMP-DX sphere or the XML in Chemistry area. The website under which it formerly operated (jcamp.org) has recently been "high-jacked", and the relevant SEDS files have been transferred to the IUPAC website at http://www.iupac.org/jcamp/. The information contained therein is, however, not yet fully updated.

IV. Tabular Material

CPEP is responsible for four recent projects (one still in progress), two new projects, and for the publications of IUPAC.

Project #1999-046-2-024: Data exchange standard for electron paramagnetic resonance data types (incl. ESR EMR etc.). Chair: R. J. Lancashire – completed 2006.

Project #2002-022-1-024: Standard XML data dictionaries for chemistry (Gold Book). Chair: Steve Stein – completed 2007.

Project #2002-055-3-024 - XML-based IUPAC standard for experimental and critically evaluated thermodynamic property data storage and capture (ThermoML) Chair: M. Frenkel – completed 2006.

Project #2002-020-2-024: Data exchange standard for near infrared spectra and general spectroscopic calibration data types Chair: G. Downey – in progress.

Two new projects dealing with the conversion of Colour Books to interactive XML versions have been submitted by members of the team which produced the XML version of the "Gold Book" and subsequently approved:

2007-016-1	Enhancement of the electronic version of the IUPAC Compendium of Chemical Terminology		
024	Bedrich Kosata	**Date submitted:**	18-Apr-07

This project aims to maintain the currency of the Gold Book, to ease electronic access to individual entries, and to publicise its availability.

2007-014-1	Software framework for transformation of IUPAC Color Books to XML		
024	Bohumír Valter	**Date submitted:**	06-Apr-07

This project is intended to provide a common basis for conversion of the Colour Books to XML, thus easing the conversion processes.

CPEP's Subcommittee on Electronic Data Standards is working with ASTM International Committee E13.15 on an XML standard for analytical data—the Analytical Information Markup Language (AnIML). It is expected that this group will meet in Torino, ahead of the CPEP meeting.

Publications 2005-6

Subcommittee on Electronic Data Standards (R. Lancashire)

"JCAMP-DX for electron magnetic resonance (EMR)" (IUPAC Recommendations 2006)
Pure Appl. Chem. 78(3), 613-631, 2006
http://dx.doi.org/10.1351/pac200678030613

"Spectroscopic Data: The Quest for a Universal Format", by Robert Lancashire and Tony Davies Chem. Int. Jan-Feb 2006, p. 10 - see the many links therein.
http://www.iupac.org/publications/ci/2006/2801/3_lancashire.html

ThermoML Project (M. Frenkel)

"ThermoML - an XML-based IUPAC Standard for storage and exchange of experimental thermophysical and thermochemical property data",
Pure Appl. Chem., 2006, 78, 541-612.
http://dx.doi.org/10.1351/pac200678030541

Leslie Glasser
Chair, CPEP
May, 2007

Report on CHEMRAWN Committee Activities - 2007

I. Highlights

Since the CHEMRAWN conferences began in 1978, fifteen conferences and a number of workshops have been held addressing important aspects of the global theme: **CHEM**ical **R**esearch **A**pplied to **W**orld **N**eeds. A meeting of the CHEMRAWN committee was held at Queen's University, Kingston, Ontario on August 23-24, 2006. The minutes of that meeting are posted on the committee's Webpage.

Updated activities: Members and associates of the committee have been engaged in the following:

- ***Summary of CHEMRAWN - History and Efficacy.*** A thorough summary of the CHEMRAWN conferences has been prepared is now available on the committee's webpage at http://www.iupac.org/standing/chemrawn/history.html

- ***Guide to Producing CHEMRAWN Conferences***. An outline of procedures and a timeline to follow in producing a CHEMRAWN conference is in preparation. Currently it is available in draft form.

- ***CHEMRAWN XII: Chemistry, Sustainable Agriculture and Human Well-Being in sub-Saharan Africa*** is scheduled to be held at Stellenbosch University, South Africa from 3-6 December 2007. Prof. Piet Steyn has convened an organizing committee, a program has been organized and funds are being raised. Details are available on the conference Website at http://www.chemrawn.co.za,

- ***CHEMRAWN XIV: Toward Environmentally Benign Products and Processes***. After this conference, held in 2001, the Future Actions Committee met regularly and dispensed funds to support international workshops, exchanges of personnel and contributions to green chemistry programs. By agreement with American Chemical Society, matching funds that originated and still remain with ACS are being employed to support programs of the Green Chemistry Institute.

- ***CHEMRAWN XV: Chemistry for Water***. The Perspectives and Recommendations volume for the conference has been published and is available on request. It can be found in .pdf form on the IUPAC Website at http://www.iupac.org/publications/books/author/ACE06.html

- ***CHEMRAWN XVII: Greenhouse Gas Mitigation Strategies***. The conference was held at Queen's University during 8-12 July 2007. Results, perspectives and recommendations will be published. The conference Website is www.chem.quesnsu.ca/greenhouse/ .

II. Support for the Six IUPAC Goals

Strategic Planning. The CHEMRAWN committee continues to focus upon strategic objectives in concert with IUPAC's six overall goals as follows.

Address global issues:

Each CHEMRAWN conference focuses on a major issue. Specific examples are: chemistry as a tool for sustainable development; food security; mitigation of greenhouse gases; sources of cleaner energy; pollution prevention through the redesign of chemical processes; and adequacy of supply of pure water and sanitation.

Advance research through scientific discussion:

The findings and recommendations arising from each conference usually include instances where advances in research have made significant contributions and where further work is warranted. CHEMRAWN XIV, for example, highlighted the advances being made in Green Chemistry and proposed areas for further research. CHEMRAWN XV described numerous research advances relevant to purification of water. CHEMRAWN XVI outlined how innovation takes place productively in the chemical industry.

Assist industry toward sustainable development, wealth creation, and improvement of the quality of life.

Starting with CHEMRAWN I: *Future Sources of Organic Raw Materials,* CHEMRAWN conferences on advanced materials, ocean resources, health, atmosphere, sustainable development, greener manufacturing processes, innovation in industry, and chemistry and water have all focused on the needs of industry and have been attended or anticipated to be attended and supported by major chemical firms. This has continued through the most recent conference, *CHEMRAWN XV: Chemistry for Water* and will be emphasized in the planned *CHEMRAWN XVII: Greenhouse Gases: Mitigation and Utilization.*

Foster communication among chemists and organizations with special emphasis on needs in developing countries.

Virtually all CHEMRAWN conferences have emphasized issues of major import to the developing world, most recently through (1) the CHEMRAWN XII workshops on soil fertility and food supplies in Africa and (2) a workshop dealing with the problem of arsenic contamination of groundwater in Bangladesh.

Enhance education and the appreciation of chemistry globally.

One of the most challenging conferences to develop and hold was focused on educational issues (CHEMRAWN X); examining particularly the education of chemists who will work for "trans-national" companies. The committee seeks to include an education component in all future conferences.

Increase the diversity in IUPAC bodies.

The CHEMRAWN Committee works continually to include underrepresented minorities in its membership and also to organize its conferences with diverse partners worldwide.

III. Other Substantive Issues.

A. The Committee continues to be engaged by strategic issues of

1) Obtaining funding of major conferences and finding less costly ways to carry out our mission.

2) Increasing the impact of conferences, workshops and studies through practical and actionable recommendations by the Future Actions Committee, many of which can be implemented by the Committee or individuals and organizations which it can directly influence.

3) Formulating activities that complement the organization of traditional CHEMRAWN conferences. This includes fostering scientific exchanges and small workshops, carrying out studies, and drafting position papers.

4) Reaching out to cooperate with other IUPAC Committees and Divisions as well as with international organizations such as the International Council for Science (ICSU).

5) Obtaining adequate publicity and recognition for the results of CHEMRAWN conferences, which will be essential in securing the resources necessary for future activities.

B. Members of the Council and Bureau can help support the work of the CHEMRAWN Committee by

- Recommending individuals to serve on the Committee or act as "friends" in organizing conferences or carrying out a CHEMRAWN study or workshop.
- Calling upon the Committee to participate in a "Future Actions Committee" for one of your conferences where major issues are discussed

and a set of findings and recommendations should be developed and disseminated and

- Urging the Committee to address a particular issue with a conference or workshop where there is broad interest throughout the chemical community.

IV. Tabular material

Titular members

John M. Malin	USA	Chair
Fedor A. Kuznetsov	Russia	Associate Chair
Stanley Langer	UK	Secretary
Kew-Ho Lee	Korea	
Norma S. Nudelman	Argentina	
Yukihiko Suematsu	Japan	
Ayhan Ulubelen	Turkey	
Gary van Loon	Canada	

Ex Officio

Christoph Buxtorf	Switzerland

Associate Members

Venelin G. Marinov	Bulgaria
Nthabiseng A. Ogude	South Africa
M. Anwar Panezai	Pakistan
Jean-Marc Paris	France
Carlos Tollinche	Puerto Rico

Recent Publications

(1) I. Onyido, "Exploring Solutions to Africa's Food Crisis," *Chemistry International*, 2005, 27 (3), 8-10
(2) M. Freemantle, "Chemistry for Water", *Chemical and Engineering News*, July 19, 2004, p. 25-30.
(3) A. Smith, "Chemistry for Water – CHEMRAWN XV Conference," *Chemistry International*, 2004, 26 (5)
(4) J.A. Kopytowski, "Innovation in the Chemical Industry," *Chemistry International*, 2004, 26 (5)
(5) J. M. Malin, "Frontiers of Chemical Science – Research and Education in the Middle East," *Chemistry International*, 2004 26, (3)
(6) Frontier Science in the Middle East, *Chemistry International*, 2006, 28 (2)

(7) "Analysis and Remediation of Arsenic Contamination in Groundwater", *Chemistry International*, May-June 2006, pp 14-18
(8) J. M. Malin, "On the Effectiveness of CHEMRAWN," *Chemistry International*, 2007, 29 (2), pp 4-7.

Current and Recent Projects

2001-086-1-021 – CHEMRAWN XII – Chemistry, Sustainable Agriculture and Human Well Being in Sub-Saharan Africa

2003-003-1-021 – CHEMRAWN XVI – Innovation in the Chemical Industry: the Way from Pure to Applied Chemistry

2003-050-1-021 – Solving the Problem of Arsenic Contamination in Water in Bangladesh

List of CHEMRAWN Conferences

I. Toronto, Canada (1978). *Future Sources of Organic Raw Materials*

II. Manila, Philippines (1982) *Chemistry and World Food Supplies: The New Frontiers*

III. The Hague, the Netherlands (1984) *Resources Material Conversion*

IV. Keystone, Colorado, USA (1985) *Modern Chemistry and Chemical Technology Applied to the Ocean and its Resources*

V. Heidelberg, Germany (1986) *Current and Future Contributions of Chemistry to Health*

VI. Tokyo, Japan (1987) *Advanced Materials for Innovations in Energy, Transportation , and Communications*

VII. Baltimore, Maryland, USA (1991) *The Chemistry of the Atmosphere: Its Impact on Global Change*

VIII. Moscow, Russia (1992) *Chemistry and Sustainable Development*

IX. Seoul, Korea (1996) *Advanced Materials and Sustainable Development*

X. Budapest, Hungary; Washington, DC, USA; Honolulu, Hawaii; and Brisbane, Australia (1999-2000) *The Globalization of Chemical Education – Preparing Chemical Scientists and Engineers for Transnational Industries*

XI. Monteviedo, Uruguay (1998) *Latin American Symposium on Environmental Analytical Chemistry*

XII. Stellenbosch University, South Africa (2007) *Chemistry, Sustainable Agriculture and Human Well-Being in sub-Saharan Africa*

XIV. Boulder, Colorado, USA (2001) *Toward Environmentally Benign Processes and Products*

XV. Paris, France (2004) *Chemistry for Water*

XVI. Ottawa, Canada (2003) *Innovation and the Chemical Industry*

XVII. Kingston, Ontario, Canada (2007) *Greenhouse Gases – Mitigation and Utilization*

John M. Malin, Chair
CHEMRAWN Committee

IUPAC Committee on Chemistry and Industry
Report to the Bureau and Council – 2007

Mark C. Cesa
Chair, COCI
6 June 2007

I. Executive Summary

The Committee on Chemistry and Industry (COCI) is the focal point in IUPAC for issues of importance in chemistry-related industries. COCI emphasizes sharing best practices globally and focuses on capacity building in the developing world. In 2006-7 COCI organized its activities into five Program Areas and initiated interactions with the IUPAC Divisions and Standing Committees. We have established new collaborative projects consistent with COCI's terms of reference and within the framework of IUPAC's strategic goals.

Highlights of the biennium include:

- Three new COCI projects have been approved for IUPAC and COCI funding, including a regional conference and workshop entitled, "Chemistry in a Changing World – New Perspectives Concerning the IUPAC Family;" a project for preparation and publication of the first in a series of monographs entitled, "Responsible Application of Chemistry. An Introduction to Responsible Care;" and the most recent in a series of workshops in conjunction with the Safety Training Program, "IUPAC-UNESCO-UNIDO Safety Training Program Workshop, Turin, Italy."

- A new "COCI Corner" column in *Chemistry International* has been inaugurated, with articles appearing in the July/August 2006, September/October 2006, and November/December 2006 issues of *CI*. In addition, articles on industrial aspects of the public appreciation of chemistry and on nanotechnology, authored by members of COCI, have also appeared in recent issues of *CI*.

- The World Chemistry Leadership Meeting at Torino has been organized with COCI participation. The topic will encompass the evolving international chemical regulatory environment.

- A mechanism is being implemented for a collaborative effort between COCI and the IUPAC Secretariat to recruit and retain Company Associates. In this biennium new Company Associates have been recruited in the USA, UK, Russia, and Kuwait.

- Eight new trainee candidates have been accepted into the IUPAC-UNESCO-UNIDO Safety Training Program (STP). One new STP Fellow was trained in October 2005 at AstraZeneca facilities in the UK, and two are being trained at Mitsui Chemical Co. facilities in Japan in June 2007. A Safety Training Program Workshop is being held in conjunction with the IUPAC Congress in Torino.

- The Conference on Occupational Health and Safety in East Africa was held in September 2006 in Nairobi, Kenya with IUPAC, COCI and UNESCO support. More than 110 safety professionals from Kenya and surrounding countries attended, along with speakers from Kenya, Tanzania, Uganda, the United Kingdom, and the United States.

- New Representatives to COCI have been nominated from each of IUPAC's Divisions and Standing Committees, and COCI representatives to each Division and Standing Committee have been identified.

II. Activities of COCI Toward the IUPAC Strategic Goals

The IUPAC Committee on Chemistry and Industry (COCI) strives to fulfill its objectives as set forth in its Terms of Reference. The principal objectives are paraphrased here:

- Advise the President and Executive Committee on options and actions by which IUPAC could become more attractive to increased participation by scientists in industry;
- Develop and maintain an active program to recruit, guide and inform Company Associates;
- Develop liaisons with national and international associations that represent chemical industries, chemical societies, and international bodies involved in scientific and industrial development; and
- Initiate and maintain a portfolio of projects with implications for industry.

All of these objectives are intended to contribute to the achievement of the IUPAC strategic goals. References cited in this section of the report can be found at the appropriate locations in Section IV below.

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

The NGO/IGO/Trade Associations Program in COCI is a focus for NGO status for IUPAC with groups involved in activities of industrial chemical interest and for collaboration with international groups that impact the chemical sciences. COCI is helping to organize the World Chemistry Leadership Meeting at Torino, whose topic will center on the evolving international chemical regulatory environment. COCI TM Colin Humphris and the COCI chair have consulted with IUPAC Past President Leiv Sydnes on the content of the 2007 WCLM. Included in the 2007 WCLM program are presentations on the impact of REACH and SAICM, and the scientific developments and issues impacting the chemical sciences from industrial and academic perspectives. COCI, through the NGO/IGO/Trade Associations Program, is also available to contribute to IUPAC efforts to become an NGO with organizations such as ICCA, UNEP, WHO, and others. *(Committee Information 9; Publications 13, 15)*

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

Two new IUPAC-funded COCI projects will facilitate scientific discussion between academic and industrial scientists and administrators. In the first, a regional conference and workshop entitled, “Chemistry in a Changing World – New Perspectives Concerning the IUPAC Family,” (Project No. 2006-030-1) will be organized under the leadership of TM Jonas Unger to solicit the views and needs of NAOs and CAs. Ideas and suggestions from the Conference will be gathered and addressed to foster new collaborations. Industrial financial support has been secured; we hope that this Conference will serve as a model for future regional meetings worldwide. *(Projects 3)*

The second new project recognizes the importance of Responsible Care in the development of best practice in the developed and developing world. Canadian NR Bernard West has secured a new project entitled, "Responsible Application of Chemistry. An Introduction to Responsible Care.” In this project the first in a series of case studies/monographs will be prepared on the responsible handling, manufacture and distribution of chemicals. *(Projects 4)*

A new “COCI Corner” column in *CI* has been started with an article on COCI activities in the July/August 2006 issue. Additional COCI Corner articles have appeared in the

September/October 2006, November/December 2006, May-June 2007, and July-August 2007 issues of *CI*. The COCI Corner will be a regular feature in *CI* and will be the place where COCI news, articles from and by Company Associates, and developments in industrially related chemistry will be communicated. *(Publications 8, 10, 12, 13, 15)*

New representatives to COCI from each of the IUPAC Divisions and Standing Committees have been recruited, and COCI representation on each Division and Standing Committee has been offered, as part of the Division/Standing Committee Collaboration Program's efforts to build new collaborative projects of industrial interest. These representatives will receive relevant communications on COCI activities and will be invited to COCI meetings. Possibilities for collaboration between CCE, Division VII, CHEMRAWN, and COCI are also being pursued. *(Committee Information 4)*

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

The IUPAC-UNESCO-UNIDO Safety Training Program has made several advances in this biennium. In October 2005 STP Fellow Prof. Said Bayomi of Egypt received training in AstraZeneca facilities in the UK. Mr. Godfred Nyarko of Ghana and Mr. Fabian Benzo Moreira of Uruguay received training at Mitsui Chemical Co. facilities in Japan in June and July 2007. *(Projects 1, Publications 5, 9, 10)*

Eight trainee candidates from among over ten new applicants have been accepted into the Safety Training Program and are awaiting assignment to Host Companies. The new trainee candidates are from Nigeria, Uruguay, Morocco, India, Tanzania, Zimbabwe, and Pakistan. There is a current shortage of Host Companies, and all COCI members have been asked to canvass the CAs in their home countries for interest in participation. The STP Brochure and application form have been updated. Information on the Safety Training Program can be found at the STP Web page. *(Committee Information 2)*

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

In addition to the projects described under Strategic Goal ***b*** above, COCI has organized workshops related to the Safety Training Program in 2005 and 2007. Following on a successful Safety Training Program Workshop in Beijing in 2005, a workshop is to be held in conjunction with the IUPAC Congress in Torino. Six STP Fellows and two international experts in environmental toxicology are scheduled to participate, with oral presentations, posters, and a panel discussion. *(Committee Information 2, 3; Projects 5)*

Most notably, COCI has collaborated with STP Fellow Kelvin Khisa to organize a Conference on Occupational Health and Safety in East Africa in September 2006 in Nairobi, Kenya. More than 110 participants from Kenya and surrounding countries participated in the Workshop, along with speakers from Tanzania, Kenya, Uganda, the United Kingdom and the United States. Topics of discussion focused on safe practices in the workplace in developing economies. *(Projects 2; Publications 6, 14)*

Through the efforts of United Kingdom NR and IUPAC Bureau Member Alan Smith, COCI now publishes a biennial summary of IUPAC Projects of Interest to Industry for circulation to NAOs and Company Associates. The most recent issue of this summary is scheduled for release before the 2007 General Assembly. *(Committee Information 4)*

e. 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.

The COCI program on Public Appreciation of Chemistry is working closely with CCE to provide industrial perspectives on this critical activity of the Union, and TM David Evans has published an entertaining article in *CI* on industrial aspects of public appreciation of chemistry. Also in preparation is a guide for chemists making presentations to members of the public on scientific issues. *(Publications 7, 16)*

CD-ROMs containing the DIDAC educational materials in Chinese have been prepared in collaboration between TM Alexandre Pokrovsky and Jinliang Qiao of Sinopec.

f. 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.

A mechanism is being implemented for a collaborative effort between COCI and the IUPAC Secretariat to recruit and retain Company Associates. This mechanism includes leadership by a Secretariat employee as Program Leader, who will have overall coordination responsibility for program, including CA recruitment with the proactive assistance of COCI and the NAOs. The Secretariat will be the key repository for information and records on the program, such as the CA database. COCI will appoint a TM (currently Evans) to assist the Program Leader directly. This person will coordinate personal regional contacts by all COCI members to both industry and NAOs and will coordinate preparation of materials for CA recruitment, including brochures, project lists, etc. This person will then be the focal point within IUPAC for communication of CA benefits and activities, and will communicate the results of project and program developments in COCI to enhance the perception of benefits to CAs. A draft of a revised CA Brochure has been completed and is now being edited for printing. *(Committee Information 7, 8)*

Very importantly, new Company Associates in the USA, UK, Kuwait, and Russia have been recruited since the Beijing Congress and General Assembly. Evans, AM Khalida Al-Dalama (Kuwait), the COCI chair, and Pokrovsky have been instrumental in securing these new CAs. *(Publications 1, 4)*

Communication with CAs is an important goal in the CA and NAO Program. In addition to the new regional Conference described in section b above, TM Akira Ishitani, Evans and Unger have all made personal visits to their NAOs and Company Associates to review activities in IUPAC and COCI and to recruit new Company Associates. Unger has visited companies and universities in Italy to recruit new CAs, an Italian NR, and participants in COCI activities at the 2007 Congress and General Assembly in Torino.

COCI continues to work toward increased diversity in its membership. COCI members now span seventeen countries, and three women are currently members of the Committee. COCI has instituted a new nominations subcommittee composed of the chair, secretary and a member from a Division or Standing Committee, which will be charged with identifying candidates for COCI membership encompassing diversity and breadth of experience in the chemical sciences. This subcommittee will recommend membership for 2008-9. *(Members)*

III. COCI Strategy, Structure and Function

COCI places strategic emphasis on projects that share best practices globally and focus on:

Capacity building
Public appreciation of chemistry
The authoritative role of IUPAC as an NGO
Reputation and trust
Enabling public and political debates.

To implement this strategy, COCI has a leadership team that oversees projects and budget along with Programs led by Titular Members and staffed by Members and National Representatives. This structure is designed to facilitate generation of new projects and to foster collaboration with IUPAC Divisions and Standing Committees and with the industrial chemical community. Industrial financial support is strongly encouraged for all COCI projects.

Finance and Budget are headed by COCI Secretary and Treasurer Michael D. Booth. This function is charged with managing the project and operating budgets, assisting with reimbursements of allowable expenses, and tracking spending on COCI projects and contracts with Projects Coordinator and TM Aldo Bologna Alles.

The Projects Coordination function, led by Alles, assists members in preparation and submission of project proposals, coordinates sources of funding inside IUPAC and externally, liaises with the IUPAC Projects Committee and Evaluation Committee, and monitors progress on and completion of projects.

The Health, Safety and Environmental Program is led by Cesa, with assistance from Booth, Alles, Al-Dalama, and AM Esma Toprak. This program administers the IUPAC-UNESCO-UNIDO Safety Training Program, along with regional workshops on Health, Safety and Environmental Management.

COCI's efforts on Public Appreciation of Chemistry are led by Evans. COCI works with CCE on its program in PAC and provides support and input from the industrial perspective, assuring coordination with and differentiation from the myriad efforts in PAC worldwide.

The NAO/Company Associates Recruitment and Retention Program is led by Ishitani, with Evans and Unger. Responsibilities include recruitment and retention of Company Associates in collaboration with the Secretariat, recruitment of National Representatives, and communication with NAOs and CAs on IUPAC matters of interest to industry.

The NGO/IGO/Trade Association Program is led by Humphris, with West and TM Alexandre Pokrovsky. The participants in this program build liaisons with trade associations such as CEFIC and ACC, make connections with government and non-governmental organizations such as UNESCO and ICCA, and assist IUPAC's establishment of NGO and IGO roles with relevant organizations. As such, this program provides access to IUPAC as the "Scientific Straight-edge" on urgent industrial/governmental issues.

Smith (UK) leads the Division and Standing Committee Collaboration Program. Responsibilities include recruitment of representatives from the Divisions and Standing Committees to COCI, and of COCI members as representatives of COCI on the Divisions and Standing Committees.

In 2006-7, COCI has held annual meetings of the Committee as a whole, as well as annual strategy and project planning/review sessions. At these sessions the strategy of the Committee was reviewed and re-established, and new ideas in nanotechnology and the environment, biomonitoring, and biofuels are being evaluated for feasibility as COCI sponsored or co-sponsored projects.

IV. Publications, Committee Information, Projects, Meetings, and Membership

Publications

1. "New CA's Join IUPAC," *Chemistry International*, November-December 2005, p. 19; http://www.iupac.org/publications/ci/2005/2706/iw4_newCAs.html.

2. A. Smith, "Nanotechnology – Does It Have a Sporting Chance?" *Chemistry International*, January-February 2006, 8-9; http://www.iupac.org/publications/ci/2006/2801/2_smith.html

3. D. A. Evans, "Division Roundup 2005 GA, Committee on Chemistry and Industry," *Chemistry International*, January-February 2006, 17; http://www.iupac.org/publications/ci/2006/2801/4_divroundups.html.

4. "Two New CA's Join IUPAC," *Chemistry International*, January-February 2006, 20; http://www.iupac.org/publications/ci/2006/2801/iw3_newCAs.html.

5. "Safety Training Program – Call for Applicants," *Chemistry International*, March-April 2006, 20; http://www.iupac.org/publications/ci/2006/2802/iw3_safety.html.

6. "Occupational Health and Safety Management – 27-29 September 2006, Nairobi, Kenya," *Chemistry International*, May-June 2006, 36; http://www.iupac.org/publications/ci/2006/2803/ca4_270906.html.

7. D. A. Evans, "The Irrationality of Being – Fear of All Snakes, Spiders, ...and Chemicals," *Chemistry International*, July-August 2006, 12-15; http://www.iupac.org/publications/ci/2006/2804/3_Evans.html; http://www.iupac.org/publications/ci/2006/2804/2804-pp12-16.pdf.

8. M. C. Cesa, "COCI Corner," *Chemistry International*, July-August 2006, 17-19; http://www.iupac.org/publications/ci/2006/2804/2804-pp17-19.pdf.

9. M. C. Cesa, "IUPAC-UNESCO-UNIDO Safety Training Program," CHAS-9, ACS National Meeting, San Francisco, CA, USA, 10 September 2006.

10. "Safety Training Program - Call for Host Companies," *Chemistry International*, September-October 2006, 21; http://www.iupac.org/publications/ci/2006/2805/2805-pp18-22.pdf.

11. A. Smith, "Nanotechnology – Lessons from Mother Nature," *Chemistry International*, November-December 2006, 10-11; http://www.iupac.org/publications/ci/2006/2806/3_smith.html; http://www.iupac.org/publications/ci/2006/2806/2806-pp10-11.pdf.

12. "Industry and IUPAC Meeting Halfway," *Chemistry International*, November-December 2006, 21; http://www.iupac.org/publications/ci/2006/2806/2806-pp20-23.pdf.

13. Dumitrescu, I., "The Chemical Industry and Sustainable Development: The Role of ICCA and SAICM," *Chemistry International*, May-June 2007, 8-11.

14. Khisa, K., "Occupational Health and Safety Management in East Africa: Report on the 3-Day Regional Conference on Occupational Health and Safety Management in East Africa, Nairobi, Kenya 27-29 September 2006," *Chemistry International*, May-June 2007, 32-33.

15. "Emerging Chemical Regulatory Environment – World Chemistry Leadership Meeting, IUPAC 2007 General Assembly, 10 August 2007, Torino, Italy: Conference Announcement," *Chemistry International*, May-June 2007, 34-35.

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Committee Information on the IUPAC Web Site, posted in 2006-7:

1. COCI Home Page: http://www.iupac.org/standing/coci.html.

2. IUPAC-UNESCO-UNIDO Safety Training Program: http://www.iupac.org/standing/coci/safety-program.html.

3. Safety Training Program Workshop in Torino, 10 August 2007: http://www.iupac.org/standing/coci/stp-07torino.html.

4. Summaries of IUPAC Projects of Interest to Industry: April 2006: http://www.iupac.org/standing/coci/Div-Projects-sum_04-2006.pdf. September 2006: http://www.iupac.org/standing/coci/Div-Projects-sum_09-2006.pdf.

5. COCI 2006 Annual Report: http://www.iupac.org/standing/coci/COCI_rpt2006.pdf.

6. COCI Terms of Reference: http://www.iupac.org/standing/coci/coci_ref.html.

7. Company Associates Brochure: http://www.iupac.org/standing/coci/COCIbrochure04.pdf.

8. List of Company Associates: http://www.iupac.org/links/ca.html.

9. World Chemistry Leadership Meeting, Torino: http://www.iupac.org/symposia/conferences/ga07/wclm07.html.

Projects

1. 2004-032-1-022, "IUPAC-UNESCO-UNIDO Safety Training Program 2004", M. C. Cesa; http://www.iupac.org/projects/2004/2004-031-1-022.html.

2. 2005-046-1-022, "Conference on Occupational Health and Safety Management in East Africa", K. Khisa; http://www.iupac.org/projects/2005/2005-046-1-022.html.

3. 2006-030-1-022, "Chemistry in a Changing World – New Perspectives Concerning the IUPAC Family," Jonas Unger; http://www.iupac.org/projects/2006/2006-030-1-022.html.

4. 2006-047-1-022, "Responsible Application of Chemistry. An Introduction to Responsible Care," Bernard West; http://www.iupac.org/projects/2006/2006-047-1-022.html.

5. 2006-051-1-022, "IUPAC-UNESCO-UNIDO Safety Training Program Workshop, Turin, Italy," Mark Cesa; http://www.iupac.org/projects/2006/2006-051-1-022.html.

Meetings

1. Strategy and Project Planning Meeting, Research Triangle Park, NC USA, April 2006; http://www.iupac.org/standing/coci/COCI_minutes060421.pdf.

2. COCI Annual Meeting, Naperville, IL USA, July 2006; http://www.iupac.org/standing/coci/COCI_minutes060720.pdf.

3. Strategy and Project Planning Meeting, Lyndhurst, UK, April 2007.

Members

Titular Members
Mark C. Cesa (United States) – Chair
Michael D Booth (South Africa) – Secretary and Treasurer
Aldo Bologna Alles (Uruguay)
David A. Evans (United Kingdom)
Colin Humphris (United Kingdom)
Akira Ishitani (Japan)
Alexandre Pokrovsky (Russia)
Jonas Unger (Sweden – Nordic Countries)

Associate Members
Khalidah Al-Dalama (Kuwait)
Jacek Kijenski (Poland)
Nedyalko T. Popov (Bulgaria)
Esma Toprak (Turkey)

National Representatives
Paul Baekelmans (Belgium)
Daniel Bernard (France)
Cao Xianghong (China)
Michael Droescher (Germany)
Hideyuki Ishida (Japan)
Weon Lee (Korea)
Carolyn Ribes (United States)
Alan Smith (United Kingdom)
Bernard West (Canada)

Ex Officio – Division and Standing Committee Representatives to COCI
Peter G. Mahaffy – Committee on Chemistry Education
John M. Malin – CHEMRAWN
John Dymond – Division I
Markku Leskala – Division II
Janine Cossy – Division III
William Work – Division IV
Ales Fajgelj – Division V
Keiji Tanaka – Division VI
Thomas Perun – Division VII
Alan McNaught – Division VIII

Acknowledgments

COCI recognizes with gratitude the new project and operating budgets granted to the Committee for the 2006-7 biennium. COCI also gratefully acknowledges the financial support of UNESCO in several of its projects.

COCI also acknowledges the leadership of past chair David Evans in 2004-5. Under his direction COCI developed an organizational structure that has facilitated significant achievements by the committee, and he has been a tireless contributor to COCI programs in public appreciation of chemistry and in recruitment and retention of Company Associates.

Finally, the Chair gratefully acknowledges the enthusiastic participation and noteworthy accomplishments of the members of COCI.

Mark Cesa
4 June 2007

mcc
6 June 2007

IUPAC Committee on Chemistry Education
Report on Activities 2006-2007
by
Peter Mahaffy, Chair

This report is organized as follows

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1. CCE Priority Areas and Activity for 2006-2007

CCE carries out its work through the dedicated efforts of 8 titular members, 8 associate members representing divisions, 21 national representatives and two ex officio members. That work is focused through projects; through two subcommittees - Public Understanding of Chemistry (PUC), chaired by NR Tony Ashmore (UK) and Chemistry Education for Development, chaired by NR Mei-Hung Chiu (Taiwan); and through the biennial International Conferences on Chemistry Education. In addition, educational activities are carried out in cooperation with IUPAC divisions and standing committees, coordinated by TM and division liaison, Eva Äkesson (Sweden).

Listed in italics below are the priority areas identified by CCE for the current biennium. Below each priority area, I have highlighted some of the activities and approaches used by CCE to address each area.

- *To foreground the importance of learner-centred chemistry curriculum, both in the developed and developing world. The extent to which this is done should be one criterion used to assess educational projects.*

This is an important, challenging, and long term goal. Strategies to raise awareness of and show best practices in learner-centred curriculum were the theme of presentations at the 19th International Conference on Chemistry Education (ICCE) held in Seoul, Korea, August 12-17, 2006. Modeling inquiry-based approaches with young learners is also integral to the highly successful Young Ambassadors for Chemistry (YAC) program, spearheaded by TM Lida Schoen (Netherlands). Highly visible YAC events have run in South Africa, Taiwan, Argentina, Korea, and Russia.

- *To give priority to initiatives that highlight the relationship between chemistry and sustainable development, consistent with the goals of the UN Decade for Sustainable Development.*

An example of a current CCE project, directed specifically at this relationship is led by TM Natalia Tarasova from Russia, Project #2006-043-3-050, *The Social Responsibility of Chemists: Responsible Stewardship*. This project will be carried out in conjunction with the symposium:

The Social Responsibility of Chemists: Green Chemistry, at the Mendeleyev Congress in Moscow, Sept 23-28, 2007.

- *To continue to support initiatives that highlight ethical concerns in chemistry, including the collaboration that has developed between IUPAC and OPCW.*

The CCE chair has worked with Torino IUPAC Congress organizers to put ethics on centre stage through a production of Roald Hoffmann's new play 'Should've' at the opening ceremony, following a plenary lecture on ethics by Hoffmann. A symposium, entitled: '*Beyond Should've: Ethics in Science and Education*,' will carry this important conversation further during the Congress. An example of a current CCE project that focuses on ethical concerns is led by Alastair Hay from the UK, Project 2005-029-1-050, *Educational Material for Raising Awareness of the Chemical Weapons Convention and the Multiple Uses of Chemicals*. Material covering four topics, taking a case-study approach, has been presented at workshops for secondary and tertiary chemistry teachers in Moscow, Leeds, Seoul, Bologna, and (scheduled) for the IUPAC Congress in Torino. Materials start with the beneficial use of chemicals, and raise awareness about the possible misuses of chemicals, including the production of chemical weapons. Students are encouraged to develop their own codes of responsible conduct. Web production of materials is underway, and they have been translated with the support of the Organization for the Prohibition of Chemical Weapons (OPCW) into the six official OPCW languages.

- *Increasing the public understanding of chemistry is of central importance to CCE. In this biennium we plan to work closely with COCI and divisions to obtain broad IUPAC approval for and implementation of our report proposing a niche for IUPAC in public understanding of chemistry. One measure of success will be for Public Understanding of Chemistry to be seen as everyone's responsibility, tied into all IUPAC projects and activities in appropriate ways*.

The report, entitled *"Chemists and the Public: IUPAC's Role in Achieving Mutual Understanding,"* has been completed, following the receipt of comments on the draft placed on the IUPAC web site. The report was approved by the IUPAC Bureau, and submitted to Pure & Applied Chemistry for dissemination. The half-day joint meeting of Chemrawn, COCI, and CCE at the General Assembly in Torino will be devoted to consideration of how to tie public understanding outcomes into all IUPAC projects and conferences, and will be facilitated by NR Mort Hoffman (USA). Public Understanding of Chemistry sub-committee chair, NR Tony Ashmore (UK) has organized a high profile symposium at the IUPAC Congress in Torino on the Public Understanding of Chemistry, and CCE has given leadership in mapping the way toward declaration of an International Year of Chemistry, as described more fully below.

- *The biennial International Conferences on Chemistry Education are flagship activities for CCE. We seek to more fully integrate ICCE activities into the work of CCE and use ICCE conferences to report the outcomes of CCE projects and bring participants together to implement CCE strategies and*
- *To build chemistry education networks, using fully the multicultural competence within CCE.*

TM Choon Do (Korea) served as the Chair of the Organizing Committee of the successful 19th International Conference on Chemistry Education, held Aug 12 -17, 2006, with the participation of over 300 chemistry educators from 37 countries. CCE projects were featured in symposia and workshops on public understanding of chemistry, multiple uses of chemicals, and responsible stewardship. In addition a CCE project on automated Japanese-English translation was reported by TM Masato Ito (Japan). Ito also serves as editor of Chemistry Education International. Conference coordinator Warren Beasley (TM, Australia) will report to the CCE

meeting in Torino on plans for the 20th ICCE, to be held in Mauritius, August 3-8, 2008, with a satellite conference in Kenya (http://www.uom.ac.mu/20icce.htm). CCE will liaise with both UNESCO and ICSU's regional office on ways to ensure that the conference brings benefits to sub-Saharan Africa. A decision on the site for the 2010 Conference will also be made at the CCE meeting in Torino.

The ICCE has spawned and supported other networks in chemistry education. One good example of such a regional network, which was the focus of a session at the 19th ICCE, is the Network for Inter-Asian Chemistry Educators (NICE). A second NICE symposium, with the purpose of sharing chemistry teaching strategies and materials between Asian chemistry educators, will take place in Taipei just before the IUPAC GA.

Local networks have been built in many regions through the efforts of ex-officio member John Bradley, who continues to hold workshops around the world on microscale chemistry for student laboratories.

- *To articulate clear directions for the Chemistry Education for Development subcommittee, and include the Flying Chemist Program as an integral part of the work of that subcommittee.*

Having reviewed successful FCP visits to India and Sri Lanka under the leadership of former CCE chair Peter Atkins and former CED subcommittee chair Ram Lamba, CED subcommittee chair, Mei-Hung Chiu, will bring to the CCE meeting in Torino recommendations for formalizing application procedures for the Flying Chemist Program. She will also propose mechanisms to develop a roster of expertise within and outside of CCE membership that can be tapped by new applicants. CCE is currently formalizing arrangements for its 3rd FCP visit in early 2008, which will focus on improving the teaching and learning of chemistry at the tertiary level in the Philippines.

2. Designation of International Year of Chemistry

One of the most significant contributions IUPAC will make to enhance public understanding of chemistry may result from the decision in principle for IUPAC to gather partners to launch an International Year of Chemistry. At the request of the IUPAC Bureau, CCE has given leadership to mapping out the necessary steps for designation. This has taken shape through a project (2007-011-1-050) led by the Committee on Chemistry Education with the mandate "to submit to IUPAC a plan to secure the UNESCO (and UN) designation of 2011 as the International Year."

A task group comprising CCE's Tony Ashmore (Chair – UK) and Natalia Tarasova (Russia), John Jost (Executive Director IUPAC), Nina McClelland (USA), and Stanley Langer (UK) visited UNESCO, Paris on 25 May 2007 to learn from the experience of UNESCO staff. Since the task group meeting was only a few days before submission of this report, an update on recommended steps for IUPAC and actions to date will be given at the Bureau and Council meeting in Torino.

At this point, we have the following understanding of what will be needed.

The earliest available year is 2011, the centenary of the award of the Chemistry Nobel Prize to Madame Curie and a year in which an IUPAC World Chemistry Congress will be held. An earlier suggestion to designate 2009 to commemorate the Mendeleyev Centenary leaves insufficient time for planning. However lessons learned from activity in Russia will be valuable, as will the experiences of other international years, such as physics and planet earth.

Formal designation by UNESCO will be essential and additional designation by the UN will be highly desirable if the International Year is to be global and supported by developing countries. These processes are separate. The added benefit of UN designation is that the resolution that is passed is communicated to all member governments and facilitates activity and access to funding in some countries. The decision making body is the annual UN General Assembly and would follow on from UNESCO decision. Decision making in UNESCO is via a recommendation from an Executive Board, meeting in October 2007, to a General Conference, meeting immediately after the Executive Board. UNESCO General Conference meetings are biennial so it is essential that IUPAC develops and carefully meets a timetable for next steps.

Within UNESCO, IUPAC can promote a resolution through:

- the secretariat
- ICSU, or
- a member state

As the General Conference of Member States is the decision making body we are advised that promotion by a member state, supported by others, is the most likely to succeed. Further, promotion by an African country, with support from elsewhere accords with UNESCO priorities. IUPAC should identify a country to take the lead with respect to bringing forward a recommendation for a UNESCO decision.

Member states have Permanent Representatives to UNESCO based in Paris and National Commission for UNESCO based at home. The support of these Representatives and Commissions in promoting and voting for the resolution is vital. This requires urgent action by IUPAC's NAOs and ANAOs and by national chemical societies.

The project group is preparing template letters to these bodies and template letters they can use in communicating with their representatives and commissions. The IUPAC Secretariat will prepare and dispatch individualized communications and monitor consequent activity. The Secretariat will need to follow up and ensure appropriate support is secured and is timely; otherwise designation will not be achieved.

IUPAC will need to submit an information document to the UNESCO Executive Board requesting the designation of an International Year, explaining its importance and showing how IUPAC and its associated organisations will deliver on a global basis.

The experiences of cooperation with UNESCO over the International Year of Physics will be most helpful. UNESCO hosted the launch event at its headquarters in Paris. This comprised a half-day gathering of government representatives, UN ambassadors, leading scientists and politicians, and included a two day conference for 1000 participants on the future of physics. The audience included 500 talented students from across the world selected in part from UNESCO schools and the International Physics Olympiad. Later in the year there was a World Congress on Physics for Sustainability. Both a highly visible launch and a year end closing event are important.

Challenges for IUPAC will include collaboration with others to obtain the necessary funding, obtaining global participation from national societies for activities, and the need to consider carefully the viability and risks inherent in a heavy reliance on volunteers.

3. Relationship Between CCE Priority Areas and IUPAC's Strategic Plan

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

Leadership in the areas of chemistry education and public understanding is evident from the International Year of Chemistry initiative, as well as placing high priority on fostering learner-centred curriculum. The work to define IUPAC's niche in the public understanding of chemistry has also been well received by national chemical societies.

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

Approaches to the development of curriculum and to the public understanding of chemistry must be informed by the extensive research literature in these areas, and this has been a significant focus of CCE's efforts in the past biennium.

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

CCE continues to build a strong relationship with the Committee on Chemistry and Industry (COCI), over topics of mutual interest, such as the public understanding of chemistry. Implementation of the goals of the UN Decade for Education for Sustainable Development has been the focus of CCE projects and activities.

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

The International Conferences on Chemistry Education (ICCE) are designed to bring chemists from around the world together to address common issues. Particular attention is paid to the needs of developing countries with the formation of the Sub-Committee on Chemistry Education for Development.

e. *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.*

This statement embodies significantly the mandate of CCE. One additional example of attention to the enhancement of chemistry education and the public appreciation of chemistry, not given above, is the launching of CCE's second global poster competition for young people. As with the YAC program, this initiative brought IUPAC into partnership with Science Across the World. TMs Lida Schoen and Choon Do coordinated the effort. Students from around the world were asked to visualize their ideas about "Chemistry for Humanity." Almost 1000 entries from 32 countries were submitted, and 54 posters were displayed at the 19th ICCE in Seoul. A selection of posters can be viewed in the January-February 2007 issue of Chemistry International.

f. *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.*

CCE has given a great deal of attention to diversity within its own membership, and has developed a new mechanism for membership renewal through the formation of an advisory committee on membership. The committee, chaired by CCE past-chair Peter Atkins, solicits nominations from members and others, and recommends to the CCE chair Titular Members and

National Representatives for the next biennium. This process is being piloted at present, and will result in recommendations for CCE membership for 2008-2009.

3. Current CCE Projects

- 2007-011-1-050 - International Year of Chemistry - Initial strategy planning
- 2006-043-3-050 - The Social Responsibility of Chemists: Responsible Stewardship
- 2005-029-1-050 - Educational material for raising awareness of the Chemical Weapons Convention and the multiple uses of chemicals
- 2005-002-2-050 - Micro-scale chemistry for student laboratories in India
- 2004-047-1-050 - Public understanding of science: identifying IUPAC's niche
- 2003-055-1-050 - Young Ambassadors for Chemistry (YAC)
- 2002-021-2-050 - A feasibility study of the scope and limitation of machine translations as a means of disseminating useful reading material for chemical education to be used on the internet
- 2001-016-1-050 - IUPAC chemical nomenclature for chemistry teachers at secondary schools

4. Other Activities and Projects of Interest

- The Flying Chemists Program
- *Chemical Education International* (the *e*-journal succeeding to the International Newsletter in Chemical Education)
- Chemical Education and Sustainable Development (2004 International Conference) ; *2000-event*
- DIDAC
- Virtual Chemical Education
- International Network for Locally Produced Low Cost Equipment
- Source Books for Teaching of Chemistry
- CHEMRAWN X - Chemical Education
- Teaching High Temperature Materials Chemistry at University
- Green Chemistry in Africa (a book meant for university students and with a focus on Africa)
- Global Climate Change - a monograph for secondary schools
- Medicinal Chemistry Curriculum
- The Science of Chemical Safety Essential Toxicology - an Educational Resource

5. Membership, Roles and Sub-Committees

Titular Members

Prof. Peter G. Mahaffy (Canada) - Chair
Prof. Eva Åkesson (Sweden) - Secretary - *Division Liaison*
Prof. Warren Beasley (Australia)- *Conference Coordinator*
Prof. Choon H. Do (Korea) - *Project Group Coordinator*
Prof. Masato M. Ito (Japan)
Prof. Ram S. Lamba (Puerto Rico)
Dr. Lida Schoen (Netherlands)
Prof. Natalia P. Tarasova (Russia)

Associate Members (Divisional Representatives)

- Prof. A. James McQuillan (New Zealand)
  Physical and Biophysical Chemistry
- Prof. Leonard Interrante (United States)
  Inorganic Chemistry
- Prof. Gerrit J. Koomen (Netherlands)
  Organic and Biomolecular Chemistry
- Prof. Jean-Pierre Vairon (France)
  Polymer
- Prof. Roger M. Smith (United Kingdom)
  Analytical Chemistry
- Dr. R. Donald Wauchope (United States)
  Chemistry and the Environment
- Dr. Mukund S. Chorghade (United States)
  Chemistry and Human Health
- Prof. Richard Hartshorn (New Zealand)
  Chemical Nomenclature and Structural Representation

National Representatives

- Prof. Ludo Brandt
  Belgium
- Prof. Alvaro Chrispino
  Brazil
- Prof. Borislav Toshev
  Bulgaria
- Prof. Qiankun Zhuang
  China/Beijing
- Prof. Mei-Hung Chiu
  China/Taipei
- Prof. Ameen Farouk M. Fahmy
  Egypt
- Prof. Terence N. Mitchell
  Germany
- Prof. Miklos Riedel
  Hungary
- Prof. Uday Maitra
  India
- Prof. Peter E. Childs
  Ireland
- Dr. Mordechai Livneh
  Israel
- Prof. Liberato Cardellini
  Italy
- Prof. Masahiro Kamata
  Japan

- Dr. Maryam Al-Wateed
  Kuwait
- Prof. Farzana Mahmood
  Pakistan
- Prof. Erica Steenberg
  South Africa
- Prof. Katrina Edström
  Sweden
- Prof. Phillippe Boesch
  Switzerland
- Prof. Hale Bayram - *Project Group Member*
  Turkey
- Dr. Anthony D. Ashmore - *Project Group Member*
  United Kingdom
- Prof. Morton Z. Hoffman - *Project Group Member*
  United States

Ex Officio

- Mark C. Cesa (*COCI Representative*)
- Prof. John D. Bradley
  South Africa; Consultant for Microscale Project/Programme

Subcommittee on Chemistry Education for Development

- Prof. Mei-Hung Chiu, Chair and *Project Group Member* (China/Taipei)
- Prof. Warren Beasley (Australia)
- Prof. John Bradley (South Africa)
- Prof. Bob Bucat (Australia)
- Prof. Masahiro Kamata (Japan)
- Prof. Ram Lamba (Puerto Rico)
- Dr. Mordechai Livneh (Israel)
- Dr. Lida Schoen (Netherlands)
- Dr. Erica Steenberg (South Africa)
- Prof. Natalia Tarasova (Russia)

Subcommittee on Public Understanding of Chemistry

- Dr. Anthony D. Ashmore, Chair, and *Project Group Member* (UK)
- Prof. Liberato Cardellini (Italy)
- Prof. Shu-Nu Chang (China/Taipei)
- Prof. Peter Childs (Ireland)
- Prof. Choon Do (Korea)
- Prof. Masato Ito (Japan)
- Dr. Lida Schoen (Netherlands)

Report of the Project Committee to IUPAC Council

Submitted by **Gus Somsen**, PC Chairman
21 May 2007

The Project Committee (PC) is tasked with two programs:

1. the project-driven system
   The PC reviews and evaluates requests for interdivisional/interdisciplinary projects, for large proposals (meaning requesting approximately more than 10% of the Division/Standing Committee project budget), or for proposals supported by a Standing Committee that has no budget for projects.

2. the financial support for conferences
   The PC assumes the responsibility for reviewing and recommending funding of proposals for Conferences in New Directions in Chemistry and Scientifically Emerging Regions.

Project-Driven System

Since its establishment in April 1999, the PC has been involved in two kinds of activities:

1. Reviewing of proposals and making decisions on funding as defined in the terms of reference of the committee.
2. Taking part in the discussions on the development and the implementation of the project review process.

These activities have reached a steady state where by the review and funding decisions of proposals are performed routinely and on a timely basis. The overall review process continues to benefit from smooth interactions between the PC, and the Division Presidents and the Chairmen of the Standing Committees. The PC relies on the expert opinion of these bodies for making the final funding decision. Such essential communication has been facilitated by the usage of an explicit document suggesting questions to be addressed by Officers of Divisions and Standing Committees when recommending a proposal to the Project Committee.

The projects that received financial support by the PC since the last report to Council dated 20 June 2005 and since the beginning of the current biennium are listed in the annex.
As of today, and out of its 2006-2007 budget of USD 110 000, the PC made commitments for a total USD 71 345, covering 8 projects. Out of these 8 approved projects, 1 was interdivisional.

Comparison with previous biennia

	$ PC budget	$ PC spending	# of projects supported
2000-01		152 500	10
2002-03	250 000	170 000	18
2004-05	110 000	110 000	12
2006-07	110 000	71 345*	8*

as of 16 May 2007

Financial Support for Conferences

As a result of a Bureau decision in 2002, the PC also assumes responsibility for the review of, and recommending funding for, proposals for Conferences in New Directions in Chemistry and Conferences in Scientifically Emerging Regions.

A review of the forms and guidelines was completed early January 2005 and again later in October after the General Assembly. The documents - FSC New Directions in Chemistry and FSC Scientifically Emerging Regions - clearly reflect the policy guidelines.

For the 2004-2005 biennium, the funding available for this program was USD 65 000. The PC reached this commitments limit in April 2005. At its meeting in Beijing (August 2005), the PC made plans to improve its evaluation procedure and to implement a review cycle to overcome the problem of having to turn down applications submitted later in the biennium because of shortage of budget. The guidelines for applications were basically unchanged, but the following points were implemented to clarify and facilitate the procedure:

1. A statement was added in the form clearly specifying that the FSC program is for modest financial support of typically of the order of USD 4 000.

2. A statement was added in the guidelines that clearly requested to submit the applications at least one year prior to the start of the conference in order to allow for careful evaluation.

3. A review cycle every 6 months was implemented. In each period a proportional part of the total budget is made available. This procedure opens the possibility to set up a ranking of the applications which makes the program more competitive.

   Practically, the Secretariat keeps acknowledging the applications when they are submitted and inform the submitter and the relevant Division officers of the next review cycle in which the specific application will be evaluated.
   On January 1 and on July 1, the PC is asked to review the applications. A decision is reached within a month. Such timing, together with the requirement of a submission date of one year prior to the event still allow for a decision from the PC to be communicated to the Organizer not less than 5 months prior to the event.

4. To reinforce/enforce the role and involvement of the Divisions and Committees, applicants should address themselves directly to the appropriate Division President or Committee Chairman as explained in the guidelines.
   The Secretariat should make sure that the applications that reach the PC have the necessary Division endorsement.

5. When funds are allocated to support the travel of young scientists, such payment should be made directly to the recipients, and the Secretariat should made arrangements directly with the organizers to cover travel expenses. If a lump sum is allocated, a report detailing the expense of IUPAC funds should be requested soon after the event.

Experiences gained while running the first cycles of review result in a closer and more regular consultation between the Secretariat and the Project Committee Chairman to avoid that filed applications stay unattended and to ensure that proper endorsement by the corresponding Division is completed in a timely manner.

For the 2006-2007 biennium, the funding available for this program is again USD 65 000. As of today, and in result of the 3 cycles of reviews performed in January and July 2006, and January 2007, the PC made approved support for 8 conferences for a total of USD 35 640.

Annex

Projects that received financial support by the PC between 20 June 2005 (date of the previous report to the Council) and 11 August 2006.
The dollars amount granted by the PC is highlighted as bold; for projects that are interdivisional, that amount is bold and underlined. In the period of 20 June – 31 December 2005, the total amount granted by the PC was USD 3 700:

IUPAC Stability Constants Database – completion of data collection up to 2006
2005-014-1-500 Kip Powell Div V
Date of decision *Amount granted (requested)*
19 September 2005 **3 700** (14 800) + Div V: 3 000 + SG: 8 100*

* Additional funds were supplied by the Secretary-General and the Treasurer in order to supplement the PC budget.

Projects that received financial support by the PC since 1 January 2006.
The total amount granted by the PC as of 16 May 2007 is USD 71 345:

Chemistry in a changing world – new perspectives concerning the IUPAC family

2006-030-1-022	Jonas Unger	COCI
Date of decisions	*Amount granted (/ requested)*	
11/16/2006	**6000** + COCI: 6000 (/ 12000)	

Crop protection chemistry in Asia: Harmonized approaches for safety evaluation, regulation, and protection of trade

2006-017-2-600	K.D. Racke	Div VI
Date of decisions	*Amount granted (/ requested)*	
11/30/2006	**6000** + Div VI: 3000 (/ 9000)	

Responsible Application of Chemistry. An Introduction to Responsible Care

2006-047-1-022	Bernard West	COCI
Date of decisions	*Amount granted (/ requested)*	
12/20/2006	**4500** + COCI: 4500 (/ 9000)	

Preferred IUPAC Names (PINs) for Inorganic Compounds

2006-038-1-800	Richard Hartshorn	Div VIII
Date of decisions	*Amount granted (/ requested)*	
12/26/2006	**9820** + Div VIII: 7000 (/ 30000)	

Principles of Chemical Nomenclature - revision

2006-029-1-800	G.J. Leigh	Div VIII
Date of decisions	*Amount granted (/ requested)*	
12/26/2006	**20325** + Div VIII: 10000 (/ 45000)	

Wet surface vibrational spectroscopy experiments

2006-050-3-100	J McQuillan	Div I, CCE
Date of decisions	*Amount granted (/ requested)*	
3/14/2007	**4200** + Div I: 2500 + CCE: 1500 (/ 8200)	

IUPAC-UNESCO-UNIDO Safety Training Program Workshop, Turin, Italy

2006-051-1-022	M. Cesa	COCI
Date of decisions	*Amount granted (/ requested)*	
3/14/2007	**17000** + COCI: 1500 (/ 21500)	

The Social Responsibility of Chemists: Responsible Stewardship

2006-043-3-050	Natalia Tarasova	COCI
Date of decisions	*Amount granted (/ requested)*	
4/17/2007	**3500** + CCE: 3500 (/ 7000)	

Conferences that received financial support by the Project Committee

FSC approved at the GA in Beijing (August 2005)

- Photodynamics, IVth International meeting [Emerging Region, Div I]
  Havana, Cuba, 6-10 February 2006 - support USD 5 000

FSC approved during the 1st review cycle of January 2006
The total amount granted in this cycle = USD 16 640

- New Directions in Teaching, Learning, and Evaluation of Chemical Sciences at Tertiary Level [Emerging Region, CCE]
  Colombo, Sri Lanka, 11-12 March 2006 - support USD 3 740

- Workshop on Biocalorimetry and Biological Thermodynamics (WBBT 2006) [Emerging Region, Div I]
  Rio de Janeiro, Brazil, 30 April-4 May 2006 - support USD 3 900

- Occupational Health and Safety Management in East Africa [Emerging Region, COCI]
  Nairobi, Kenya, 27-29 September 2006 - support USD 5 000

- Mycotoxins and Phycotoxins, XIIth International Symposium on (ISMP) [Emerging Region, Div VI]
  Istanbul, Turkey, 21-25 May 2007 - support USD 4 000

FSC approved during the 2nd review cycle of July 2006
The total amount granted in this cycle = USD 9 000

- Coordination Chemistry (37th ICCC) [Emerging Region, Div II]
  Cape Town, South Africa, 13-18 August 2006 - support USD 4 000

- Chemistry Education in the Information & Communication Technologies (ICT) Age (20th ICCE) [Emerging Region, CCE]
  Pointe aux Piments, Mauritius, 3-8 August 2008 - support USD 5 000

FSC approved during the 3rd review cycle of Jan 2007
The total amount granted in this cycle = USD 10 000

- 5th IUSS International Symposium of Interactions of Soil Minerals with Organic Components and Microorganisms [Emerging Region, Div VI]
  Pucón, Chile, 26-30 November 2008 - support USD 6 000

- International Workshop on Infrared Spectroscopy Applied to Biological and Biomimetic Systems (From the Isolated Molecule to the Cell) [Emerging Region, Div I]
  Buenos Aires, Argentina, 5-7 November 2007 - support USD 4 000

MEMORANDUM

10 June 2007

To: Professor Bryan Henry, President IUPAC

From: Ron Weir, Chair, Evaluation Committee

EVALUATION COMMITTEE REPORT TO IUPAC COUNCIL: TORINO GA

1. The Evaluation Committee (EvC) has completed its study as outlined in the plan communicated to the Bureau in Madrid (Oct 2006) and as presented in the full report to the Bureau here in Torino (Aug 2007). This memorandum to the IUPAC Council is an abbreviated summary of that full report without the Annexes and Tables. Extensive consultation and searching were done to provide an exhaustive background on which to base the statistics from which conclusions may be drawn. These background documents include thousands of journal references, the internal IUPAC report of Schneider to the Ottawa GA (summer 2003), the IUPAC colour books (Red for Inorganic, Blue - Organic, Gold - Chemical Terminology, Purple - Macromolecules, Orange - Analytical, White - Biochemical, Silver - Clinical Laboratory Science, Green - Units and Symbols), and the report by Bull and Valter (June 2006, PAC), as well as consultation with Task Group Chairs and others inside and outside IUPAC.

2. Our evaluation has been confined to the 26 completed reports tabled at the GA in Beijing (summer 2005) and confirmed for study at the Madrid meeting (Oct 2006). These 26 represent a convenient, although arbitrary, window on the project system and among these 26 are two projects that have risen from the ashes as ongoing, quite spectacular, projects. The EvC has assessed these 26 projects against the IUPAC Strategic Plan and conclude that *all meet the criteria set out in the Strategic Plan, a result that verifies the process by which these projects were approved at the outset.*

3. The 26 projects were categorised by the EvC as follows with the total number of citations as 4,076 up to May 07 shown in the square brackets: Recommendations 1 [4 citations], Technical Reports 5 [119], Policy/Strategic 5 [31], Nomenclature 1 [Colour books], Reference Data 6 [3,921 + 6,500 database hits per week], Books 3 [0], Courses 5 [1]. These projects have involved 132 voluntary scientists and engineers, who are from 76 countries. The average time to completion is 2.8 years per project with two ongoing projects as described below. The average IUPAC funding support is $4,400.

4. The work by the EvC has led to the following observations: (a*). the use of citations is an accurate measure of impact for some projects, but not for some other projects*; (b*). low profile projects characterised by a lack of citations may have high value via (i) their impact on nomenclature, terminology, units, as these documents are used throughout university instruction, scientific journal standards, often translated into other languages, and some have CD ROMs issued for sale, (ii) their impact on the scientific development of young scientists*; (c*) there is anecdotal information on the positive value of the conferences (projects), but quantitative data are lacking.*

5. To help the Council and Bureau further to assess the benefits of their investment, the EvC has selected two 'high profile' and two 'low profile' projects for more specific comment.

a. High Profile Projects
1999-037-2-100, Evaluated kinetic data for atmospheric chemistry.
REFERENCE DATABASE. IUPAC investment = $30k.

This reference database is accessed on the WEB site of Cambridge University (http://www.iupac-kinetic.ch.cam.ac.uk) and on the mirror site of IUPAC in North Carolina. The WEB site is attracting 6,500 connexions per week and over 370 subscriptions to the WEB mailing list for announcements. The 13+ peer-reviewed publications to date have drawn 3,570 citations with an increased number anticipated as the most recent manuscripts are read by the atmospheric community. New data are

continually added to the WEB database that allows for a near continuous update of the evaluation. The data are used by the atmospheric modellers to predict the effects of atmospheric change on climate that result in publications such as the United Nations Report of Climate Change. Proceedings at the United Nations indicate that the results of this project are influencing governments on their environmental policies.

2000-026-1-100, Critical compilation of vapour liquid critical properties.
REFERENCE DATA. IUPAC investment = $2k.

The milestones to publish the seven papers with the reference data have been met and the passage of time is permitting an assessment to be made of their impact as the data are used within industry, education and the research community. A total of 308 citations is on record and the number increases steadily.

b. Low Profile Projects
2002-027-1-400, 11th Annual Course on Polymer Characterisation & POLYCHAR-11 World Forum on Polymer Applications and Theory.
COURSE. IUPAC investment = $4.5k.

The following points address the effects of this Short Course, but the impact of any COURSE is difficult to measure as education is something consumed.
(i). Up-to-date knowledge was gained by students and by experienced researchers from university and industry on recent techniques of polymer characterisation that has had a major impact on their education (120 registered participants from 41 different countries).
(ii). The proliferation of knowledge was substantial in particular among participants from developing countries.
(iii). The IUPAC financial support led to free course material for the students and a waiver of their fees as far as possible.
(iv). Parallel sessions were not conducted.
(v). The success led to the decision to conduct an annual Short Course in various venues around the world.

2002-018-1-300, Green Chemistry in Africa (book for university students with a focus in Africa).
BOOK. IUPAC investment = $4k.

The following points that address the effects of this project.

(i). The book was presented on 29 Aug 02 at the *World Summit on Sustainable Development* (Johannesburg 26 Aug to 4 Sep 02). The event attracted several delegates who participated in the *Science Forum* running in parallel to the World Summit.
(ii). The book was reviewed in *The Medical Geology Newsletter* (by Professor T.C. Davies); in the *African Journal of Research in Mathematics, Science and Technology Education;* in the *International Journal of Biochemphysics* (by Professor G. Kamau in Kenya); in the *South African Journal Science*; in the website of the University of York (by Professor J. Clark).
(iii). Substantial E-mail feedback was received by Professor Mammino (TGC). The following is a quote from the message by Professor K. Prah in Cape Town '*I think it is a wonderful bit of work and carries a brilliant idea which needs to be broadcast as widely as possible. Indeed, I think the need to broadcast the idea is most crucial. I for one had no idea about the concept of 'green chemistry'. It makes a great deal of sense'*. Professor Prah then recommended that the book be '*propagated and fed into schools and universities*'.

6. In the view of the EvC, the outcomes are significant. All 26 projects have had important influence and the IUPAC investment has been very modest. The high profile projects are more easily quantified, but for the low profiles projects quantitative indices are more difficult to devise as a measure of effectiveness.

7. Among the other lessons learned by the EvC as a result of this detailed study are (i) *the modest IUPAC investment in these 26 projects has demonstrated the success of the project system,* (ii) *a lack of specific information on file about the CONFERENCES*. The EvC has asked the Secretariat to start gathering statistics to help assess sponsorship of conferences by IUPAC. Fabienne Meyers has started this task. Among the statistics suggested are the number of attendees, papers published, special issues of journals *etc*. The task of preparing some recommendations about how to evaluate conferences will be started after our meetings in Torino.

Ron D. Weir
Chair, Evaluation Committee

INTERNATIONAL UNION OF PURE AND APPLIED CHEMISTRY

Interdivisional Committee on Terminology, Nomenclature and Symbols (ICTNS) Biennial Report, August, 2005 to August, 2007

1. Executive Summary

During the biennium August, 2005 to August 2007, ICTNS continued its activities on behalf of IUPAC in reviewing and approving Technical Reports and Recommendations submitted to IUPAC. Most of these Technical Reports and Recommendations were, or are about to be, published in *Pure and Applied Chemistry*. A few comprise what are essentially research papers containing new results but emanating from IUPAC projects, and these have been reviewed with publication recommended in research journals. A few others emanated from publications in preparation or prepared by international bodies of which IUPAC is a member; these were reviewed in the usual way. Finally, several of the "color" books have undergone revision during the biennium, and these have been reviewed by ICTNS. They include:

- Nomenclature of Inorganic Chemistry (Red Book), 2005
- Compendium of Chemical Terminology, on-line XML version (Gold Book), 2006
- Quantities, Units and Symbols in Physical Chemistry (Green Book), 3rd ed. In press, 2007
- Terminology and Nomenclature in Polymer Chemistry (Purple Book), 2nd ed. Still under revision. Publication expected late 2007or 2008.

ICTNS monitored and was consulted on IUPAC's interactions with international metrological societies on which IUPAC has representation.

ICTNS acted as a resource for the Secretariat in answering many questions received from a wide variety of students and professionals on terminology, symbols, units and general scientific questions.

2. ICTNS Biennial Report, August, 2005 to 31 May, 2007 in Relation to Strategic Goals

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

The terms of reference of ICTNS include:

(a) To be responsible for submission to the Bureau/Council,…, for publication or otherwise, any IUPAC document concerned with terminology, nomenclature, symbols, and other conventions.

(b) Before recommending any material for publication as an IUPAC document, to ensure that full consultations have taken place, and the widest possible consensus has been reached among all Divisions and other bodies of the Union, and between IUPAC and other ICSU bodies, the international standardizing organizations, and the CGPM and its committees.

ICTNS is thus responsible for approving the content of IUPAC Recommendations and Technical Reports

for publication in *Pure and Applied Chemistry*, and also for approving, on behalf of IUPAC, publications emanating from international bodies on which IUPAC has representation. It carries out these tasks by very extensive review processes. For IUPAC Recommendations, a Public Comment Period of five months is required, with input from ICTNS members within four months. Both Recommendations and Technical Reports are carefully scrutinized for conformability with IUPAC-approved terminology and nomenclature, and are also edited carefully for scientific content. For documents whose source lies with international bodies, ICTNS also carries out careful reviews; editing in these cases is in the hands of the international body concerned. The overall goal in these activities is to continue and enhance IUPAC's reputation as a source of international standards in chemical terminology and nomenclature through publication of *Pure and Applied Chemistry* and continuing interaction with international organizations.

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

In its terms of reference, ICTNS is responsible for the official IUPAC comments on all documents on nomenclature, symbols, terminology and conventions sent to the Union for comment.

IUPAC Recommendations present traceable international standards for use by chemists or any scientist or engineer whose work involves chemistry. IUPAC Technical Reports present timely reviews of important subjects of general interest to scientists and engineers worldwide. Publication of the on-line version of the "Gold Book" provides an opportunity for almost continuous update of IUPAC-approved terminology, as well as corrections where necessary.

ICTNS also maintains up-to-date and detailed instructions of preparation of publications for *Pure and Applied Chemistry.*

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

See 2.2. This goal is addressed through internationally-recognized terminology and nomenclature.

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

The terms of reference require ICTNS to conduct, and advise the Executive Committee accordingly, all negotiations concerned with nomenclature and symbols with other ICSU bodies, with international standardizing organizations, and with CGPM and its committees. This measure ensures that IUPAC views carry the fullest possible weight among other international organizations. In practice, ICTNS maintains contact with IUPAC representatives on these organizations. For example, in 2005, ICTNS examined and sent a letter to BIPM in support of its efforts to re-define the kilogram in terms of atomic quantities. This action was also reported to the Executive Committee.

ICTNS membership includes representatives from Bureau International des Poids et Mesures

(BIPM), International Organization for Standardization (ISO), and the International Unions for Biochemistry and Molecular Biology (IUBMB), Crystallography (IUCr), Pharmacology (IUPHAR), and Pure & Applied Physics (IUPAP). Unfortunately, while there is a position available for a representative from the International Union of Nutritional Sciences (IUNS), this has not been filled for some years despite requests to that Union.

2.5 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.

ICTNS hopes to collaborate with the Committee on Chemical Education to prepare a series of articles on the science connected with the redefinition of the kilogram. ICTNS also acts as a consulting resource for the Secretariat in replying to queries from professionals and students on problems in terminology and nomenclature. ICTNS also deals with similar queries from other IUPAC bodies.

2.6 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.

Recommendations for membership on ICTNS by members to the President attempt to provide for a committee with broad scientific experience as well as good geographical and age distribution.

J. W. Lorimer, Chairman
B. J. Herold, Secretary
2007-05-28

APPENDIX

List of Publications for the Period August, 2005 to 31 May, 2007

Following the Manuscript Central reference number and the title, the name of the lead author(s) and the Division or other organization where the project originated are given.

3.1 Publications reviewed, edited and approved by ICTNS for publication in *Pure and Applied Chemistry*
Total pages published: 666

3.1.1 IUPAC Recommendations
Total pages published: 370

1. PAC-REC-04-12-04 Terminology of Polymers Containing Ionizable or Ionic Groups and of Polymers Containing Ions (Kubisa - Div. IV). PAC **78**, 2067-2074 (2006), 8 pp.

2. PAC-REC-05-03-01 Graphical Representation of Stereochemical Configuration (Brecher - Div. VIII). PAC **78**, 1897-1970 (2006), 73 pp.

3. PAC-REC-05-08-11 XML-based IUPAC~Standard for Experimental, Predicted and Critically Evaluated Thermodynamic Data Storage and Capture (ThermoML) (Frenkel - CPEP). PAC **78**, 541-612 (2006). 72 pp.

4. PAC-REC-05-09-13 JCAMP-DX for EMR (Lancashire - CPEP). PAC **78**, 613-631 (2006). 19 pp.

5. PAC-REC-06-01-01. Glossary of Terms Relating to Pesticides (Stephenson - Div. VI). PAC **78** , 2155-2168 (2006), 14 pp.

6. PAC-REC-05-07-05 Guidelines for Potentiometric Measurements in Suspensions. Part A. The Suspension Effect. (Oman - Div. V). PAC **79** 67-79 (2007), 11 pp.

7. PAC-REC-05-10-26 Glossary of Terms Used in Photochemistry (Braslavsky - Divs. I, III). PAC **79**, 293-465 (2007), 173 pp.

8. PAC-REC-06-01-06. IUPAC Explanatory Dictionary of Key Terms in Toxicology (Nordberg - Div. VII). For PAC **79** [9].

9. PAC-REC-06-04-02. IUPAC Glossary of Terms Used in Toxicology - Expanded and Revised (Duffus - Div. VII). For PAC **79** [7].

10. PAC-REC-06-02-01. Definitions of Terms Related to the Structure and Processing of Inorganic and Polymer Gels and Networks, and Inorganic-polymeric Materials (Jones - IV). For PAC **79** [10].

3.1.2 IUPAC Technical Reports
Total pages published: 296

11. PAC-REP-04-04-04 NMR for pKs (Popov - Div. V). PAC **78**, 663-675 (2006), 11 pp.

12. PAC-REP-04-05-06 The International Harmonized Protocol for the Proficiency Testing of Analytical Chemistry Laboratories (Ellison - Div. V). PAC **78**, 145-196 (2006), 50 pp.

13. PAC-REP-04-08-05 Standards, Calibration and Guidelines in Microcalorimetry. Part 2. Calibration Standards for Differential Scanning Calorimetry (Della Gatta - Div. I). PAC **78**, 1455-1476 (2006), 20 pp.

14. PAC-REP-05-05-03 Guidelines for Calibration in Analytical Chemistry. Part 3. Uncertainty Estimation and Figures of Merit for Multivariate Calibration (Olivieri - Div. V). PAC **78**, 633-661 (2006), 27 pp.

15. PAC-REP-05-09-16 Guidelines for Terminology for Microtechnology in Clinical Laboratories (Wilding - Div. VII). PAC **78**, 677-684 (2006), 6 pp.

16. PAC-REP-05-12-12. Cytokine Profiles in Human Exposure to Metals (Templeton - Div. VII). PAC **78** , 2155-2168 (2006), 14 pp.

17. PAC-REP-06-03-01. Atomic Weights of the Elements 2005 (Wieser - Div. II). PAC **78**, 2051-2066 (2006), 16 pp.

18. PAC-REP-06-05-06. Education, Outreach and Codes of Conduct to Further the Norms and Obligations of the Chemical Weapons Convention (Pearson, Mahaffy - CCE). PAC **78**, 2169-2192 (2006), 24 pp.

19. PAC-REC-05-07-05 Guidelines for Potentiometric Measurements in Suspensions. Part B. Guidelines for Practical pH Measurements in Soil Suspensions. (Oman - Div. V). PAC **79,** 81-86 (2007), 6 pp.

20. PAC-REP-04-10-25 Properties and Units in the Clinical Laboratory Sciences. Part XX. Properties and Units in Clinical and Environmental Toxicology (Duffus - Div. VII). PAC **79,** 87-152 (2007), 66 pp.

21. PAC-REP-06-05-09. Chemical Speciation of Environmentally Significant Ligands. Part 2. The Cu^{2+} - OH^-, Cl^-, CO_3^{2-}, SO_4^{2-} and PO_4^{3-} Systems (Powell - Div. V). PAC **79**, 895-950 (2007), 56 pp.

22. PAC-REP-06-04-09. Critically Evaluated Rate Coefficients for Free-radical Polymerization 6: Propagation Rate Coefficient of Methacrylic Acid in Aqueous Solution (Lacik - Div. IV). For PAC **79** [8].

23. PAC-REP-06-07-05. Representation of Configuration in Coordination Polyhedra and the Extension of Current Methodology to Coordination Numbers Greater than Six (Leigh - Div. VIII). For PAC **79** [10].

24. PAC-REP-06-01-06. Solute Movement if Soils with Potential Rapid By-pass Transport (Pesticide Movement in Soils) Actual title: Transport of Pesticides via Macropores (Kördel - VI). For PAC **80** [1].

3.2 Publications reviewed and approved by ICTNS for publication elsewhere than in PAC

3.2.1 Recommendations

25. PAC-REC-04-04-03. Nomenclature of Inorganic Chemistry (Revised "Red Book") (Connelly). RSC Publishing (2005).

26. PAC-REC-04-05-02 International Vocabulary of Metrology (VIM) (JCGM - BIPM Joint Committee on Guides to Measurement). Accepted on behalf of IUPAC 2006-10-16 for publication by ISO.

27. IUPAC. Compendium of Chemical Terminology, 2nd ed. (the "Gold Book"). Compiled by A. D. McNaught and A.Wilkinson. Blackwell Scientific Publications, Oxford (1997). XML on-line corrected version: http://goldbook.iupac.org (2006-) created by M. Nic, J. Jirat, B. Kosata; updates compiled by A. Jenkins.

28. PAC-REC-04-05-03 Guide to Expression of Uncertainty in Measurement (GUM), Supplement 1 (BIPM Joint Committee on Guides to Measurement - Working Group 1). Accepted on behalf of IUPAC 2007-04-26 for publication by ISO.

29. PAC-REC-05-11-10. Quantities, Units and Symbols in Physical Chemistry, 3rd ed. ("Green Book") (Quack - Div. I). In press. RSC Publishing.

3.2.2 Technical Reports (reviewed, edited and approved as noted)

30. Reference Data for the Density and Viscosity of Liquid Aluminum and Liquid Iron (Assael - Div. I). JPCRD **35**, 285-300 (2006), 14 pp.

31. PAC-REP-06-01-07. Structure and Properties of Polyester Elastomers Composed of poly(butylenes terephthalate) and poly(ε-caprolactone) (Takigawa - IV). Approved for publication elsewhere than in PAC 2006-10-30. (Contains new experimental work.)

32. PAC-REP-06-06-01. Structure and Properties of Polyamide-6 and 6/66 Clay Nanocomposites (Kim - IV). Approved for publication elsewhere than in PAC 2006-11-02. (Contains new experimental work.)

Item 13.1: Biennial Report of Treasurer

After eight years of service my term as Treasurer will be over at the end of this year. I have enjoyed a fine cooperation in IUPAC, I received much help from John Jost and his staff and last but not least from the Finance Committee. I would like to thank everyone who made my work fruitful and was so helpful in keeping our financial situation in "good health".

From the Report of the Finance Committee, Item 13.2, you will see that we have adequate reserves for the mid-term outlook.

After a slow start with the project system it seems that we have reached steady-state of new and completed projects. This can be seen in the increase in Program expenses from 2005 to 2006. This is an important step in the process of implementing the changes after 1999.

The Finance Committee proposed and the Executive Committee approved the recovery of commitments from completed and abandoned projects. The funds will be added to the newly approved Strategic Opportunities Fund. The Strategic Opportunities Fund will be used to fund projects submitted to Divisions and Standing Committees that are viewed as being especially significant for achievement of IUPAC's Strategic Plan.

Unfortunately some of our National Adhering Organizations could not fulfill their financial obligations and we regret that the Executive Committee has had to impose sanctions. This subject will be discussed in Item 15. The change to billing National Subscription in local currency has reduced the problems due to exchange rates but not eliminated problems of fund raising with third parties, specifically state organizations.

Some very generous grants such as the additional donation from Samsung Total Petrochemical Co., Ltd. and the donation to support the IUPAC-Richter prize, were very encouraging contributions.

Some of the Divisions have had problems with planning und budgeting and we are proposing small adjustments in the allocations for the next Biennium.

Unfortunately we cannot fund all the requests made, but we have the reserves to provide funding if strategic opportunities arise.

Income

National Subscriptions

As mentioned above, action was taken by the Executive Committee to sanction those NAOs more than two years in arrears in their National Subscriptions. As of 1 June 2007 Brazil and Argentina had not paid their 2005 National Subscriptions and Chile and Belarus have not paid their 2006 National Subscriptions in full. All National Adhering Organizations with overdue obligations are made aware of the consequences. We have to observe a normal payment cycle in the name of fairness. We are thankful that most of the National Adhering Organizations pay on time.

Publications and other income sources

Pure and Applied Chemistry: Despite the continued decline in the number of institutional subscribers, increases in the subscription rate have maintained the Union's net income from *PAC* at about the same level.

Item 13.1: Biennial Report of Treasurer

Income from Investments

This item consists of both dividends and interest and gains or losses on our portfolio. The latter component is of course highly variable. The performance of our investment portfolio will be discussed in Item 13.2.

Grants

This is a highly variable item and in 2004-6 was lower than in the immediately preceding years because of unusual events in the earlier years, namely the donation from Samsung Total Petrochemical and contributions to fund the Workshop on the impact of advances in science and technology on the Chemical Weapons Convention.

Expenses

As usual, expenses in 2006 were lower than the previous year due to the expenses of the General Assembly coming in 2005.

Summary and Conclusions

It is important to recall that it is not the purpose of IUPAC to accumulate reserves *per se.* Especially if we recognize the difficulties some of the NAOs experience in paying their contribution to our organization in time. However, it is in part the income from the investment of our reserves that has enabled IUPAC to keep the increases in total National Subscriptions to the low levels of the past few years.

In the past IUPAC has seen very difficult financial times. It is of high importance that IUPAC can now support the organizations, the project system, and have the financial flexibility to fund strategic opportunities.

Acknowledgement and Outlook

The work of the Treasurer was only possible thanks to the great cooperation and help of the Executive Director and the Finance Committee.

Setting priorities and making choices is important for the future. IUPAC will have to search for more contributions and grants from third parties to support specific activities for the benefit of a better Chemistry in a better world.

Christoph Buxtorf

Audited Financial Statements
2004-2006

	2004	2005	2006
Support			
Grants and contributions	83,478	49,132	63,435
National Subscriptions	726,650	715,034	730,032
Affiliate Membership Program	71,650	63,014	90,961
Total Support	881,778	827,180	884,428
Other Revenues			
Publications	838,462	775,927	826,490
Investment income	523,793	129,272	632,345
Other	3,050	5,177	-
Total Other Revenues	1,365,305	910,376	1,458,835
Total Support and Other Revenues	2,247,083	1,737,556	2,343,263
Expenses			
Program	919,768	1,327,689	1,059,579
Management and general	765,954	668,936	766,734
Total expenses	1,685,722	1,996,625	1,826,313
Increase (Decrease) in net assets	561,361	(259,069)	516,950
Net assets, beginning of year	4,985,772	5,547,133	5,288,064
Net assets , end of year	5,547,133	5,288,064	5,805,014

Item 13.2: Report of Finance Committee

The overall IUPAC portfolio performed well in 2006 with an overall return of almost 14 %. IUPAC's investments are invested in both Euro and USD denominated securities (equities and bonds) with a total value of USD 5 551 193. The split between USD denominated investments versus Euro denominated investments is 72.5 % USD vs. 27.5 % Euro. The split of equities vs. bonds is 28.6 % vs 71.4 %. This conservative posture has served us well in the past two years by minimizing the impact of the fall in equity prices in 2005. The Finance Committee has decided to move the portfolio closer to 30 % equities over the course of 2007. The IUPAC portfolio is not managed to maximize investment gains but rather to both generate current income and to preserve our capital. The graph on the next page shows the value of the portfolio for the years 1996 through 2006. The increase in the portfolio is due to both gains from investments and additions to the portfolio from operating income. The Investment Policy of the Union is specified in an Investment Policy document issued by the Finance committee and available on the IUPAC web site < http://www.iupac.org/standing/fc.html>.

For management purposes the investment portfolio is composed of a number of Designated and Special Funds. The table below shows the amounts in each Fund.

Designated and Special Funds	
Biennial Operating Reserve Fund	2,746,852
General Assembly Special Fund	200,000
Endowment Fund	2,400,000
Samsung Fund	147,559
Fransozini Fund	5,649
CHEMRAWN VII Future Actions Fund	51,133
Total Designated and Special Funds	5,551,193

The use of these Funds is specified in a Fund Policy document issued by the Finance committee and available on the IUPAC web site <http://www.iupac.org/standing/fc.html>

The Biennial Operating Reserve Fund is set at approximately twice the operating expenses of the Union for the current biennium, less publications expense.

The General Assembly Special Fund is used to pay for General Assemblies in high cost locations.

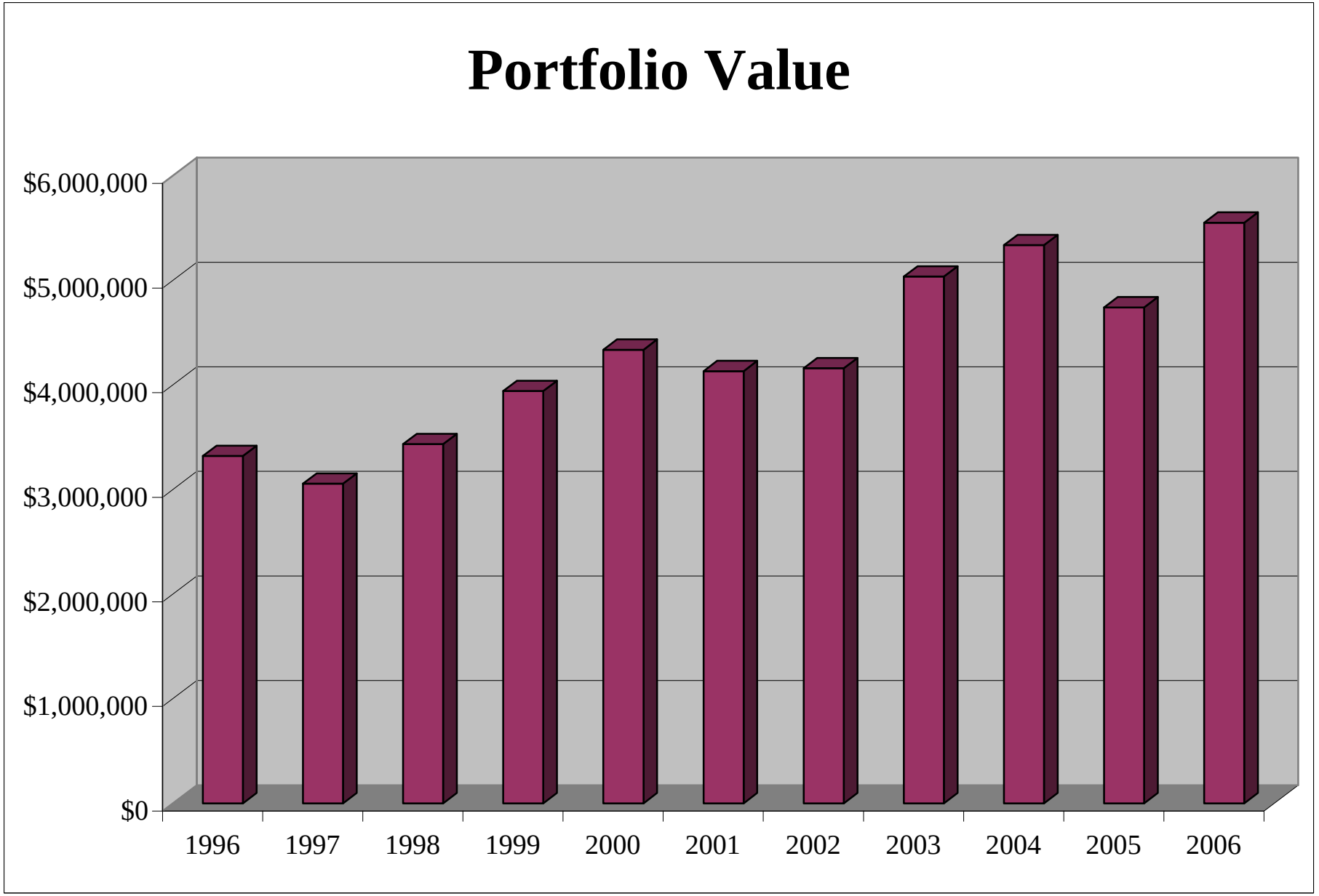
The income from the Endowment Fund is used pay for the IUPAC Prize and the support provided to Conferences in developing countries.

The Samsung Fund was contributed by the Samsung Total Petrochemical Co.; the income from this Fund supports the education activities of the Polymer Division.

The Fransozini Fund was donated by the will of Prof. Fransozini; the income from this Fund supports the Fransozini Awards of the Analytical Division.

The CHEMRAWN VII Future Actions Fund was funded by the surplus generated from CHEMRAWN VII; the income from this Fund supports the activities of the CHEMRAWN VII Future Actions Committee.

Hans-Luzius Senti


Portfolio Value
$6,000,000
$5,000,000
$4,000,000
$3,000,000
$2,000,000
$1,000,000
$0
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006

INTERNATIONAL UNION OF PURE AND APPLIED CHEMISTRY

Financial Statements

December 31, 2006 and 2005

(With Independent Auditors' Report Thereon)

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FACSIMILE (919) 783-6724

Independent Auditors' Report

The Executive Committee
International Union of Pure and Applied Chemistry:

We have audited the accompanying statements of financial position of the International Union of Pure and Applied Chemistry ("IUPAC") as of December 31, 2006 and 2005, and the related statements of activities, cash flows, and functional expenses for the years then ended. These financial statements are the responsibility of IUPAC's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of IUPAC's internal control over financial reporting. Accordingly, we express no such opinion. An audit also includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of IUPAC as of December 31, 2006 and 2005, and the changes in its net assets and its cash flows for the years then ended in conformity with accounting principles generally accepted in the United States of America.

Batchelor, Tillery & Roberts, LLP

April 24, 2007

INTERNATIONAL UNION OF PURE
AND APPLIED CHEMISTRY

Statements of Financial Position

December 31, 2006 and 2005

	2006	2005
Assets		
Current assets:		
Cash and cash equivalents	$ 808,140	831,906
Subscriptions receivable (net of allowance for doubtful accounts of $56,300 in 2006 and $48,000 in 2005)	88,558	89,338
Other receivables	1,832	6,099
Inventories	7,632	7,215
Prepaid expenses and other assets	10,815	16,181
Total current assets	916,977	950,739
Furniture, fixtures, and equipment, net	17,406	24,042
Investments, at market value	5,551,193	4,740,828
	$ 6,485,576	5,715,609
Liabilities and Net Assets		
Current liabilities:		
Accounts payable and accrued expenses	47,803	37,299
Unearned subscriptions	632,759	390,246
Total current liabilities	680,562	427,545
Commitments		
Net assets:		
Unrestricted	5,581,926	5,095,319
Temporarily restricted	30,731	13,388
Permanently restricted	192,357	179,357
Total net assets	5,805,014	5,288,064
	$ 6,485,576	5,715,609

See accompanying notes to financial statements.

INTERNATIONAL UNION OF PURE
AND APPLIED CHEMISTRY

Statements of Activities

Year ended December 31, 2006, with comparative totals for 2005

	2006				
	Unrestricted	Temporarily restricted	Permanently restricted	Total	2005
Support:					
Grants and contributions	$ 18,935	19,500	25,000	63,435	49,132
National subscriptions and service charges	730,032	-	-	730,032	715,034
Affiliate membership program	90,961	-	-	90,961	63,014
Net assets released from restrictions	26,484	(14,484)	(12,000)	-	-
Total support	866,412	5,016	13,000	884,428	827,180
Other revenue:					
Publications	826,490	-	-	826,490	775,927
Investment income, net	620,018	12,327	-	632,345	129,272
Other	-	-	-	-	5,177
Total other revenue	1,446,508	12,327	-	1,458,835	910,376
Total support and other revenue	2,312,920	17,343	13,000	2,343,263	1,737,556
Expenses:					
Program and publications	1,059,579	-	-	1,059,579	1,327,689
Management and general	766,734	-	-	766,734	668,936
Total expenses	1,826,313	-	-	1,826,313	1,996,625
Increase (decrease) in net assets	486,607	17,343	13,000	516,950	(259,069)
Net assets, beginning of year	5,095,319	13,388	179,357	5,288,064	5,547,133
Net assets, end of year	$ 5,581,926	30,731	192,357	5,805,014	5,288,064

(Continued)

INTERNATIONAL UNION OF PURE
AND APPLIED CHEMISTRY

Statements of Activities, Continued

Year ended December 31, 2005

	Unrestricted	Temporarily restricted	Permanently restricted	Total
Support:				
Grants and contributions	$ 49,132	-	-	49,132
National subscriptions and service charges	715,034	-	-	715,034
Affiliate membership program	63,014	-	-	63,014
Net assets released from restrictions	20,000	(20,000)	-	-
Total support	847,180	(20,000)	-	827,180
Other revenue:				
Publications	775,927	-	-	775,927
Investment income, net	122,447	6,825	-	129,272
Other	5,177	-	-	5,177
Total other revenue	903,551	6,825	-	910,376
Total support and other revenue	1,750,731	(13,175)	-	1,737,556
Expenses:				
Program and publications	1,327,689	-	-	1,327,689
Management and general	668,936	-	-	668,936
Total expenses	1,996,625	-	-	1,996,625
Decrease in net assets	(245,894)	(13,175)	-	(259,069)
Net assets, beginning of year	5,341,213	26,563	179,357	5,547,133
Net assets, end of year	$ 5,095,319	13,388	179,357	5,288,064

See accompanying notes to financial statements.

INTERNATIONAL UNION OF PURE
AND APPLIED CHEMISTRY

Statements of Cash Flows

Years ended December 31, 2006 and 2005

		2006	2005
Cash flows from operating activities:			
Increase (decrease) in net assets	$	516,950	(259,069)
Adjustments to reconcile increase (decrease) in net assets to net cash provided by (used in) operating activities:			
Depreciation and amortization		9,020	10,568
Bad debt expense		8,358	32
Realized gains on investments		(877,513)	(88,533)
Unrealized losses on investments		484,553	212,247
Changes in operating assets and liabilities:			
Subscriptions receivable		(7,578)	34,995
Other receivables		4,267	8,120
Inventories		(417)	4,285
Prepaid expenses		5,366	14,200
Accounts payable and accrued expenses		10,504	(23,702)
Unearned subscriptions		242,513	(301,164)
Net cash provided by (used in) operating activities		396,023	(388,021)
Cash flows from investing activities:			
Purchases of furniture, fixtures and equipment		(2,384)	(9,115)
Proceeds from sales of investments		2,376,032	622,002
Purchases of investments		(2,793,437)	(150,018)
Net cash (used in) provided by investing activities		(419,789)	462,869
Net (decrease) increase in cash and cash equivalents		(23,766)	74,848
Cash and cash equivalents, beginning of year		831,906	757,058
Cash and cash equivalents, end of year	$	808,140	831,906

See accompanying notes to financial statements.

INTERNATIONAL UNION OF PURE
AND APPLIED CHEMISTRY

Statements of Functional Expenses

Year ended December 31, 2006, with comparative totals for 2005

	2006			
	Program and publications	Management and general	Total	2005
Administrative costs	$ 72,421	17,152	89,573	193,742
Audit and accounting	-	33,614	33,614	23,648
Bad debts	-	8,358	8,358	32
Building operations	-	17,775	17,775	17,775
Contracted services	387,238	38,538	425,776	426,874
Contributions	25,499	-	25,499	30,521
Depreciation and amortization	-	9,020	9,020	10,568
Insurance	-	2,647	2,647	2,792
Maintenance	-	1,422	1,422	1,300
Office supplies and expenses	-	25,913	25,913	33,428
Payroll taxes and benefits	-	71,054	71,054	65,735
Postage	88,151	14,186	102,337	59,418
Printing and publications	47,135	22,990	70,125	49,029
Prizes and awards	1,414	-	1,414	38,081
Salaries	-	353,863	353,863	343,352
Travel and subsistence	437,721	129,298	567,019	682,110
Utilities	-	19,876	19,876	16,770
Miscellaneous	-	1,028	1,028	1,450
	$ 1,059,579	766,734	1,826,313	1,996,625

(Continued)

INTERNATIONAL UNION OF PURE
AND APPLIED CHEMISTRY

Statements of Functional Expenses, Continued

Year ended December 31, 2005

	Program and publications	Management and general	Total
Administrative costs	$ 177,721	16,021	193,742
Audit and accounting	-	23,648	23,648
Bad debts	-	32	32
Building operations	-	17,775	17,775
Contracted services	413,508	13,366	426,874
Contributions	30,521	-	30,521
Depreciation and amortization	-	10,568	10,568
Insurance	-	2,792	2,792
Maintenance	-	1,300	1,300
Office supplies and expenses	-	33,428	33,428
Payroll taxes and benefits	-	65,735	65,735
Postage	48,244	11,174	59,418
Printing and publications	24,157	24,872	49,029
Prizes and awards	38,081	-	38,081
Salaries	-	343,352	343,352
Travel and subsistence	595,457	86,653	682,110
Utilities	-	16,770	16,770
Miscellaneous	-	1,450	1,450
	$ 1,327,689	668,936	1,996,625

See accompanying notes to financial statements.

INTERNATIONAL UNION OF PURE
AND APPLIED CHEMISTRY

Notes to Financial Statements

December 31, 2006 and 2005

(1) Nature of Organization and Significant Accounting Policies

The International Union of Pure and Applied Chemistry (IUPAC), founded in 1919, is a voluntary nongovernmental, nonprofit association of forty-five national adhering organizations representing the chemists of their countries. Additionally, there are twenty associate national adhering organizations, thirty-three associated organizations, and more than one hundred ten company associates.

The objectives of IUPAC are to promote continuing cooperation among the chemists of the member countries, to study topics of international importance to pure and applied chemistry which need standardization or codification, to cooperate with other international organizations which deal with topics of a chemical nature, and to contribute to the advancement of pure and applied chemistry in all its aspects.

The significant accounting policies of IUPAC are as follows:

Support, Revenues, and Expenses

IUPAC derives its revenues primarily from national subscriptions, publication income, and investment income. Support, revenues, and expenses are recorded on the accrual basis of accounting, and revenue received for future subscriptions is deferred until the applicable year.

Contributions received are measured at their fair values and are reported as an increase in net assets. IUPAC reports contributions of cash and other assets as restricted support if they are received with donor stipulations that limit the use of the donated assets or if they are designated as support for future periods. When a donor restriction expires, that is, when a stipulated time restriction ends or purpose restriction is accomplished, temporarily restricted net assets are reclassified to unrestricted net assets and reported in the statement of activities as net assets released from restrictions. Donor restricted contributions whose restrictions are met in the same reporting period are reported as unrestricted support.

Cash and Cash Equivalents

Cash and cash equivalents include commercial checking and money market accounts. At year-end and throughout the year, IUPAC had on deposit with a financial institution amounts in excess of FDIC insurance limits. IUPAC has not experienced any losses in such accounts and believes it is not exposed to any significant credit risk on cash and cash equivalents.

Allowance for Doubtful Accounts

An allowance is provided for uncollectible receivables equal to the losses that are estimated to be incurred in the collection of all receivables. The allowance is based on historical collection experience combined with a review of the current status of the existing receivables.

(1) Nature of Organization and Significant Accounting Policies, Continued

Inventories

Inventories, consisting of various publications, are stated at the lower of cost or market, with cost determined on the weighted-average method.

Investments

Investments in marketable securities are stated at fair market value. Investment income (including gains and losses on investments, interest, and dividends) is included in the statement of activities as a change in unrestricted net assets, except for earnings on permanently restricted net assets which are reported as temporarily restricted.

Furniture, Fixtures, and Equipment

Furniture, fixtures, and equipment are recorded at cost. Depreciation is provided over the estimated useful lives of the assets using the straight-line method.

Income Taxes

IUPAC is exempt from federal and state income taxes under Section 501(c)(3) of the Internal Revenue Code and applicable state statutes.

Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Accordingly, actual results could differ from those estimates.

Reclassifications

Certain 2005 amounts have been reclassified to conform to the 2006 presentation. These reclassifications had no impact on total net assets or total decrease in net assets as previously reported.

INTERNATIONAL UNION OF PURE
AND APPLIED CHEMISTRY

Notes to Financial Statements, Continued

December 31, 2006 and 2005

(2) Furniture, Fixtures, and Equipment

Furniture, fixtures, and equipment consist of the following:

	2006	2005
Equipment	$ 54,828	52,444
Furniture and fixtures	48,877	48,877
Leasehold improvements	16,097	16,097
	119,802	117,418
Less accumulated depreciation and amortization	(102,396)	(93,376)
	$ 17,406	24,042

(3) Investments

IUPAC's investments were held by Merrill Lynch during most of 2005, until they were transferred to Wachovia Securities. The following table presents the fair market value of those investments (investments that represent five percent or more of net assets are separately identified):

	2006		2005
	Number of shares/par	Fair value	Fair value
Preferred fixed rate cap security (5.875%), matures June 2033	6,000	$ 144,000	-
Corporate bonds (3.5% - 7.375%), with various maturities through October 2016	$ 1,925,000	1,972,638	2,776,943
Foreign bonds (5.25%-5.75%), with various maturities through April 2015	$ 970,000	1,255,545	-
Government bond (4.75%), due January 2013	$ 100,000	136,705	-
Certificates of deposit (4.80% - 4.85%), with various maturities through February 2008	$ 245,000	244,154	-
Equity securities:			
Unit Investment Trust, S&P Midcap 400 Index	-	-	373,817
MLIIF European Value Portfolio, Class A2	-	-	442,131
MLIIF UA Basic Portfolio, Class A2	-	-	300,699
Other	-	1,798,151	847,238
Total equity securities		1,798,151	1,963,885
		$ 5,551,193	4,740,828

(3) Investments, Continued

The cost of investments totaled $5,337,648 and $4,042,729 as of December 31, 2006 and 2005, respectively.

Investment income, net, consists of the following:

	2006	2005
Dividends and interest	$ 239,385	252,986
Realized gains	877,513	88,533
Unrealized losses	(484,553)	(212,247)
	$ 632,345	129,272

(4) Leases

IUPAC leases its facilities under an operating lease, which began in March 1997. This lease has a term of ten years with options to extend the term of the lease for successive one-year periods not to exceed ten additional years. Building operating expenses totaled $25,168 and $21,861 in 2006 and 2005, respectively.

Future estimated minimum rental expenses consist of $22,575 for the year ending December 31, 2007.

(5) Net Assets

Temporarily restricted net assets as of December 31, 2006 and 2005 consist of interest earned on the Samsung General Chemicals Endowment Fund and several grants not fully expended as of those dates.

Permanently restricted net assets consist of the Paulo Fransozini Endowment Fund totaling $5,659, the CHEMRAWN VII Fund totaling $48,698, and the Samsung General Chemicals Endowment Fund totaling $138,000 and $125,000, as of December 31, 2006 and 2005, respectively. Income earned by the Paulo Fransozini Endowment Fund is restricted for awards to science students to attend particular IUPAC meetings. Income earned by the CHEMRAWN VII Fund is restricted for awards to support the work of the CHEMRAWN VII Future Actions Committee. Income earned by the Samsung General Chemicals Endowment Fund is restricted for awards to students and researchers in the field of polymer science and support of educational projects of the IUPAC Macromolecular Division. Such income is recorded as temporarily restricted when earned. Expenses of $12,000 were paid out of the Samsung General Chemicals Endowment Fund during 2006 in accordance with the grant agreement.

(6) Concentrations of Credit and Market Risk

Financial instruments that potentially expose IUPAC to concentrations of credit and market risk consist primarily of cash equivalents, investments, and subscriptions receivable. Cash equivalents and investments are held by Wachovia Bank, N.A. and Wachovia Securities, and no single investment exceeds ten percent of total investments. Subscriptions receivable are amounts due from national adhering organizations. Management provides for probable uncollectible amounts through a provision for bad debt expense and an adjustment to a valuation allowance based on its assessment of the current status of individual accounts.

Beginning in 2004, national adhering organizations were billed their annual national subscriptions in their national foreign currency. As a result, IUPAC has assumed the risk of changes in the foreign currency rates in relation to the United States dollar on these billings. IUPAC has made purchases of certain foreign currency-denominated investments in an effort to reduce the risk of foreign currency exchange losses on these billings when collected.

Item 13.4: Recommendation on Appointment of Auditors for 2007 and 2008

Bureau has recommended to Council the appointment of Batchelor, Tillery & Roberts, LLP, of Raleigh, North Carolina, USA as IUPAC Auditors for 2007 and 2008.

Council is asked to approve this recommendation.

Item 14.1: Budget Proposal 2008 – 2009
Item 14.2: National Subscriptions 2008-9

In recent Biennia, the increases in the total National Subscriptions were a low 1 % p.a. In the current Biennium we have received requests from the Divisions to recognize inflation and the low US Dollar as the base of the Subsistence Rates (used to calculate reimbursement for accommodation and meals).

For most of the NAOs the changes in National Subscription due to changes in Chemical Turnover are more significant than those due to the change in the total National Subscription. The increase in the number of NAOs had led to a decrease in many National Subscriptions since 2005. All these factors influence the National Subscription of an individual NAO. We propose for the next Biennium a 3% p.a. increase in the total National Subscription, which is very modest and in line with the OECD inflation rate. In addition, we propose to increase the Strategic Opportunities Fund (formerly the Division Reserve) to USD 120 000.

The changes in the allocations to IUPAC bodies are very moderate. For most of the Divisions and Standing Committees the Budget remains as in the previous Biennium. The exception is an increase for the Polymer, Analytical and Chemistry and Human Health Divisions by USD 2000 each along with a reduction for the Organic and Bimolecular Chemistry Division. We were only able to distribute of what we have received.

On the following pages you will find the proposed budget, the proposed allocations to Divisions and Standing Committees, and the National Subscriptions, calculated using our standard method assuming an increase of 3 % in total National Subscription from 2007 to 2008 and from 2008 to 2009. Argentina is not included in this table, as the NAO of Argentina has requested a change in status from NAO to ANAO, see item 15.

Council is asked to approve the proposed budget for 2008-9. Please note that approval of the proposed Budget implies approval of the calculated National Subscriptions.

Christoph F. Buxtorf

Amounts in thousands of USD

Sources and Uses Analysis of 2008-9 Budget

DRAFT

	Budget 2006-7	Budget 2008-9	Change Increase/ (Decrease)
National Subscriptions	$1,448.8	$1,522.1	$73.3
Dividends & Interest	$368.0	$480.0	$112.0
Other Income	$40.0	$40.0	$0.0
Publications	$890.0	$894.0	$4.0
Total Income	$2,746.8	$2,936.1	$189.3
AMP and CI	$119.0	$163.0	$44.0
Administrative	$914.0	$1,000.0	$86.0
General	$433.0	$456.8	$23.8
General Assembly	$350.0	$320.0	($30.0)
Advisory Standing Committees	$121.5	$164.4	$42.9
Operating Standing Committees (Operations)	$67.6	$67.6	$0.0
Division Operations	$148.3	$148.3	($0.0)
Projects (Commitments)	$593.4	$616.0	$22.6
Total Expense	$2,746.8	$2,936.1	$189.3
Net Income/(Expense)	$0.0	$0.0	$0.0

PROPOSED

IUPAC NATIONAL SUBSCRIPTIONS FOR 2008-9

NAO	Currency	2007	2008	2009
Argentina	ARS	11.4	19.0	19.6
Australia	AUD	12.6	13.7	14.1
Austria	EUR	4.4	5.3	5.4
Bangladesh	USD	1.0	1.9	2.0
Belarus	USD	4.0	4.1	4.2
Belgium	EUR	17.1	15.3	15.7
Brazil	BRL	61.6	49.1	50.6
Bulgaria	BGN	2.1	3.3	3.4
Canada	CAD	20.6	19.9	20.5
Chile	CLP	2,600.0	2,540.0	2,590.0
China/Beijing	CNY	364.0	362.0	374.0
China/Taipei	TWD	512.0	602.0	619.0
Croatia	USD	1.0	1.0	1.0
Czech Republic	CZK	91.6	101.0	105.0
Denmark	DKK	40.9	39.2	40.4
Egypt	EGP	23.4	21.7	22.2
Finland	EUR	4.4	4.4	4.6
France	EUR	28.5	28.0	28.8
Germany	EUR	39.2	38.1	39.2
Greece	EUR	2.7	2.6	2.7
Hungary	HUF	729.0	944.0	963.0
India	USD	19.9	21.8	22.4
Ireland	EUR	13.4	14.0	14.4
Israel	ILS	20.0	35.4	36.7
Italy	EUR	23.7	24.0	24.8
Jamaica	JMD	61.5	67.5	67.5
Japan	JPY	7,160.0	7,920.0	8,150.0
Jordan	JOD	0.7	1.1	1.2
Korea, Republic	KRW	23,100.0	27,400.0	28,300.0
Kuwait	KWD	0.3	0.3	0.3
Netherlands	EUR	15.0	15.0	15.4
New Zealand	NZD	5.9	3.9	4.0
Norway	NOK	32.1	31.2	32.4
Pakistan	PKR	178.0	189.0	195.0
Poland	PLN	21.8	22.2	22.8
Portugal	EUR	3.5	3.4	3.6
Puerto Rico	USD	15.8	20.5	21.1
Russia	USD	9.1	10.4	10.7
Serbia	USD	1.0	1.0	1.0
Slovakia	SKK	114.0	60.3	62.9
Slovenia	EUR	2.8	3.0	3.1
South Africa	ZAR	46.9	52.1	53.6
Spain	EUR	16.3	16.3	16.8
Sweden	SEK	70.7	71.5	73.6
Switzerland	CHF	26.1	24.4	25.2
Turkey	TRY	11.5	11.6	11.9
UK	GBP	14.4	16.8	17.3
Ukraine	USD	2.8	3.3	3.4
USA	USD	110.8	110.6	113.9

Item 15: National Adhering Organizations in Arrears

In addition to Argentina and Brazil, who are in arrears for 2005 and whose situation will be discussed below, two NAOs (Belarus and Chile) have not paid their 2006 National Subscriptions in full. These NAOs have been reminded that their delegates will not be able to vote at the Council at Torino if payment is not made.

Sanctions were approved for Argentina and Brazil by the EC at is meeting in March 2007. The guidelines were established by the EC at its meeting in 2006 and affirmed by the Bureau at its meeting in October 2006, see minute 18.6 from the Bureau meeting. According to these guidelines, the 2005 National Subscriptions became overdue on 1 January 2007. The NAOs of Argentina and Brazil were informed that the following sanctions would be applied:

a. Members of Division and Standing Committees from Argentina/Brazil cannot receive support to attend IUPAC Meetings in their capacity as members of a Division or Standing Committee; this includes the General Assembly;

b. Argentina/Brazil cannot submit nominations for membership of Division and Standing Committees;

c. Members of Division and Standing Committees from Argentina/Brazil cannot be nominated for election or appointed to Division and Standing Committees.

d. IUPAC sponsored conferences to be held in Argentina/Brazil cannot be approved.

A letter was received from the Asociacion Quimica Argentina (see following page) requesting a change in the status of the AQA from NAO to ANAO. It is proposed that the Council approve the following motions.

(1) Council approves the resignation of the Asociacion Quimica Argentina as the National Adhering Organization of Argentina, with the understanding that if the AQA reapplies for NAO status the total National Subscription currently owed, ARS 29 970.99, payable in USD at the then current exchange rate, must be paid before Council will consider such application.

(2) Council approves the application of the Asociacion Quimica Argentina for Associate National Adhering Organization status, to be effective when the annual fee of USD 250 is paid.

Council is also asked to approve the continuation of sanctions for Brazil until the full amount in arrears is paid.

David Black

ASOCIACION QUIMICA ARGENTINA

Buenos Aires, May 23, 2007

Dr. John Jost
Executive Secretary
IUPAC

Dear Dr. Jost:

As anticipated in the answer to your letter of April 24 regarding the membership situation of the AQA, the matter has been extensively discussed by our Board and we have come to the following conclusions.

In the first place we consider it quite impossible to be able to get together, in the very near future, the necessary funds to maintain our condition of full NAO organization. Therefore a possible period of four years of Associated NAO, at a much lower membership fee seems to be the best solution. It will give us the badly needed time to try to revert the situation.

In the second place we are very grateful for your most generous offer to have an IUPAC officer visit us and assist in our "persuasion efforts", as you so kindly name them. Of course such an initiative requires very careful and detailed organization, especially regarding timing and scope. Consequently we feel that the best would be to combine this visit with the next National Chemistry Congress to be held in September of 2008.

This ought to give us enough time to discuss details and make adequate planning in order to achieve as much as possible. We hope that you will find this satisfactory.

As for our change of status please be so kind as to let us know how we should proceed.

Thanking you for your kind interest, assistance and valuable suggestions we look forward to your early news and instructions.

Dr. Máximo Barón
Board Member

Dr. Carlos Azize
President

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(C1425DUI) BUENOS AIRES - ARGENTINA
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Internet: http://www.aqa.org.ar

Item 16: Change of National Adhering Organization for Korea

The Korean Chemical Society has requested that the NAO for Korea be changed to the Korean Federation of Science and Technology Societies. The letter from the Korean Chemical Society follows this page.

David Black

The Korean Chemical Society
635-4 Yeogsam-Dong, Kangnam-Gu
Seoul 135-703, Korea

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Fax: +82-2-3453-3785
E-mail: kcschem@kcsnet.or.kr

August 28, 2006

Prof. Bryan R. Henry, *President*
IUPAC

Dear President Henry:

RE: Change in the National Adhering Organization representing Korea

On behalf of Prof Eun Lee, President of the Korean Chemical Society, I would like to inform you that Dr. Yung Bog Chae, President of the Korean Federation of Science and Technology Societies, made an important decision that starting 2008 the Korean Federation of Science and Technology Societies would like to serve as the National Adhering Organization representing the Republic of Korea. Please have this request added to the Agenda of the IUPAC Council Meeting at Torino next August.

The relevant information regarding the Korean Federation of Science and Technology Societies, e.g. Statutes and Bylaws, summary of major activities, will be sent separately. Contact information for the KOFST is as follows:

Korean Federation of Science and Technology Societies
635-4 Yeogsam-Dong
Kangnam-gu
Seoul 135-703
Korea

kofst@kofst.or.kr
http://www.kofst.or.kr

I like to thank you in advance for your kind arrangement of our request.
Sincerely yours,

Youngkyu Do
Chairman, Committee of International Affairs, the KCS
Professor of Chemistry, KAIST

cc: Dr. Yung Bog Chae, President of the KOFST
Mr. You Hyun Moon, Secretary General, the KOFST
Dr. Eun Lee, President of the KCS
The KCS

Item 17: Applications for National Adhering Organization Status

Three organizations have applied for NAO status. These are: the Sociedad Cubana de Química, the Chemical Society of Ethiopia and the Programa de Desarrollo de Ciencias Básicas (Uruguay). Council is asked to approve these applications.

Council is also asked to approve the application of the Federación Latinoamericana de Asociaciones Químicas for Associated Organization status.

The application letters, bylaws, and descriptions of the activities of the societies follow this page.

David Black

SOCIEDAD CUBANA DE QUIMICA

Havana, January 18th, 2007

Dr. John Jost
Executive Director
IUPAC

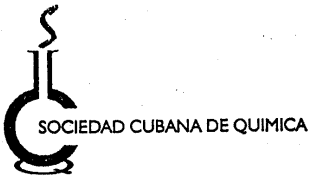
Dear Dr. Jost:

According to your indications, this is the Letter of Application of the *Sociedad Cubana de Química* (Cuban Chemical Society), Republic of Cuba, to become a NATIONAL ADHERING ORGANIZATION (NAO) of the International Union of Pure and Applied Chemistry (IUPAC). Therefore, we have paid in advance to IUPAC Accounting Office the sum of USD 1,000 (one thousand US dollars) for this purpose.

I hope that this application will be considered by the IUPAC General Assembly next August, 2007, Torino, Italy, to become effective for the year 2008.

Cordially

Prof.Dr. Alberto J. Núñez Sellés
President
Cuban Chemical Society



Cuban Chemical Society. Background

The Cuban Chemical Society (CCS) was founded in Havana, Cuba, in 1878 under the sponsorship of the *Instituto de Investigaciones Químicas* (Institute of Chemical Research), Faculty of Natural Sciences, University of Havana. Its first President was Prof. Alvaro Reynoso, worldwide known for its assay about sugar cane cultivation (*Ensayo sobre el Cultivo de la Caña de Azúcar*) which, at that time, was the scientific book more translated to foreign languages (26!). Chemistry development in Cuba was mainly based on agriculture, sugar cane processing, minerals composition, pharmaceuticals and a sound development of analytical chemistry. Many assays from distinguished chemists and pharmacists were presented at academic sessions of the CCS and the Royal Academy of Natural, Physical and Medical Sciences of Havana (founded in 1861) with a significant contribution to the development of the ancient Cuban science in XIX Century.

Social, cultural and scientific activities in Cuba were hampered severely after the beginning of the Independence War against Spain in 1895 and the Intervention of the U.S. Army in 1898. Most of intellectuals and scientists, including chemists, emigrated to Europe and the United States, overall after the country-side re-concentration of the population by the Spanish Army within the main Cuban cities (Havana, Santiago de Cuba, etc.), with the purpose to avoid support to rebels, leading to unemployment, hungry and massive population deaths.

That high social impact was not possible to be recovered during the first 50 years of the Republic, even after the formal Declaration of Independence in 1902. Science, education and culture were not priorities of the official Government until 1959, after the triumph of the Cuban Revolution lead by Fidel Castro.

Cuban Chemical Society. Today

CCS was re-found in 1978 after the inscription as a National Scientific Organization before the Ministry of Justice as a non-government association, including the presentation of its Statutes and the composition of its Board of Directors, lead by Prof. Ruth D. Henríquez (President Elect) and Dr. Luis A. Montero (Executive Secretary) under the sponsorship of the Academy of Sciences of Cuba. The initial affiliation was around 300 Members, which has been increased up to 1 500 in 2006. A full article entitled *Chemistry in Cuba* may be found in IUPAC´s website as it was published in *Chemistry International* in 1999, after the Third CCS International Congress.

First and Second CCS Scientific Congresses were hold in Havana (1982) and Santiago de Cuba (1985) and were re-started in Havana (1998, 2001, 2004 and 2006). The last CCS International Congress in 2006 was jointly organized with the Latinamerican Federation of Chemical Associations (FLAQ) with 1 300 participants from 43 countries. On that occasion, Cuba was elected for the FLAQ Presidency, according to FLAQ Statutes, for 2007-2008. Therefore, CCS has maintained and reinforced recently fluid exchanges with the latinamerican chemical community, overall with chemical associations from Puerto Rico, Panama, Colombia, Brazil, Mexico, Argentina, Chile and Peru. Also, through the University of West Indies in Jamaica and Barbados, CCS organized a Caribbean Conference on Chemistry and Chemical Engineering, together with the CCS IV International Congress on Chemistry in 2001.

Large Chemistry events in the country are organized on an annual and geographical basis in order to encourage and support the participation of Chemists from all Cuban provinces. Thus, after the CCS Congress in Havana (island west side), sponsored by the *Centro de Química Farmacéutica*, an International Meeting in Chemistry is organized in the middle of the island (Santa Clara) by the *Universidad Central de Las Villas* in the next year, and after that the International Conference on Chemistry is held in Santiago de Cuba (island east), sponsored by the *Universidad de Oriente*. Therefore, these scientific meetings are organized every year facilitating the participation of Chemists from the whole country. Other

small and more specific scientific meetings are organized every year as the Symposiums on Carbohydrates, and Biomaterials, Workshops on Chromatography, Natural Products Chemistry, Molecular Modelling, Protein Chemistry, Supramolecular Chemistry and, more recently, Nanotechnologies.

CCS elections of all bodies are organized every three years, where the CCS President, Specialized Sections and Province Coordinators are elected directly by more than 50 % of the votes. Candidates are nominated by scientific, academic, educational and industrial institutions under the basis of their individual merits and with the support of the institution which is supporting his/her candidateship. The list of candidates is published at least 3 months before the elections by electronic and post mails.

CCS has maintained since 1998 a fluid exchange of representatives with the American Chemical Society and several USA delegations have participated at Havana and Santiago de Cuba Chemistry Congresses since then, in spite of the US Government blockade against Cuba and the difficulties for US scientists and academicians to visit Cuba, thanks to a joint effort and the support of ACS to CCS activities. A cooperation agreement of CCS with the Royal Society of Chemistry (United Kingdom) was signed in 2006 by both CCS and RSC Presidents and a significant participation of British chemists in several Workshops and Meetings has been possible during 2006. RSC opened the access of Cuban chemists to RSC Journals free-of-charge as an example of its contribution to economically disadvantaged countries like Cuba being a significant contribution to Chemistry development in Cuba.

Participation of Cuba within the IUPAC Affiliation Programme has been possible since 1987, thanks to the efforts and support of Michael Freemantle, IUPAC Executive Secretary at that time, which has been maintained since then for 20 years. 25 Cuban chemists are affiliated as individuals to IUPAC receiving monthly IUPAC´s *Chemistry International* Journal, which are renewed every year in order to widespread the benefits of become an IUPAC Affiliate.

Cuba was one of the first countries to become an IUPAC National Associate since its beginnings until 1993, when the country economy was disrupted by a

breakdown, after the decay of the Soviet Union and 85 % of country trade was lost in less than 48 hours in 1992. It included the decision by the Academy of Sciences of Cuba to cancel almost all country payments to international organizations, including IUPAC. After the approval by IUPAC GA of the condition of Associated National Adhering Organization, CCS could afford that reduced payment with the contribution of accumulated IUPAC funds through the operation of the country Affiliation Programme and private donors from USA. Finally, CCS succeeded to find a sponsor to fulfil the fee to become a National Adhering Organization, with the approval of the national scientific authority, the Academy of Sciences of Cuba, which will be submitted to the consideration of IUPAC GA in Torino, Italy, 2007.

CCS Bodies and Regional Representatives

CCS works through 3 main directions:

1. The Board of Directors and the Associates General Assembly (AGA)

The Board of Directors meets every three months in order to check CCS functions

and activities. The AGA meets on an annual basis.

2. Specialized Sections

11 Specialized Sections are organized within the CCS namely:

- Chemical Education
- Analytical Chemistry
- Natural Products Chemistry
- Polymers and Biopolymers
- Biochemistry and Molecular Biology
- Carbohydrates Chemistry
- Chemical Engineering
- Theoretical Chemistry and Molecular Modelling
- Chromatography
- Environmental Chemistry
- Pharmaceutical Chemistry and Technology

Their Secretaries are Members by *officio* of the CCS Board of Directors.

3. Regional Organizations

6 Regional Organizations have organized in Cuban provinces in order to coordinate

the participation of Chemists from different geographical areas on and independent

basis namely:

- Santiago de Cuba
- Holguín
- Camagüey
- Villa Clara
- Sancti Spiritus
- Matanzas

These organizations have 2 thirds of CCS membership. Their Coordinators are members by *officio* of the CCS Board of Directors.

Date: January 31 st, 2007.

SOCIEDAD CUBANA DE QUIMICA

ESTATUTOS DE LA SOCIEDAD CUBANA DE QUIMICA

ESTATUTOS DE LA SOCIEDAD CUBANA DE QUIMICA

CAPITULO I : ***DEL NOMBRE Y OBJETO***

Artículo 1: El nombre del la Institución es el de Sociedad Cubana de Química (SCQ) y su domicilio social radicará en la Ciudad de La Habana.

Artículo 2: La Sociedad Cubana de Química agrupa al personal técnico cubano y extranjero residente en Cuba que desarrolle su trabajo científico y técnico en objetos relacionados con la Química, la Bioquímica y la Tecnología Química y acepte los Estatutos de la Organización y cumpla sus acuerdos.

Artículo 3: La Sociedad, por la afinidad de sus actividades se encuentra vinculada principalmente a la Academia de Ciencias de Cuba, así como a los Ministe- rios de Ciencia, Tecnología y Medio Ambiente, de la Industria Básica, Industria Alimenticia, Industria Sidero Mecánica, Agricultura, Salud Pública, Industria Azucarera, Educación y Educación Superior y a otros organismos e instituciones que utilicen y apliquen los métodos, análisis y resultados de la Química.

Artículo 4: La Sociedad mantendrá estrecho contacto con sus asociados, a los que debe su razón de existir. Las formas y medios de comunicación con los mismos serán las que determine el Comité Ejecutivo.

Artículo 5: Las actividades de la Sociedad serán consecuentes con los principios socia- listas e internacionalistas que rigen en el país.

Artículo 6: El objetivo principal de la Sociedad es la contribución al desarrollo del país en todo lo relacionado a la Química, incluyendo la investigación, desarrollo, la producción, la enseñanza y la formación de cuadros.

Los objetivos particulares son:

a) Promover la cooperación entre los miembros.
b) Estudiar los tópicos de importancia para el desarrollo del país relativos a la Química, coadyuvando a la uniformidad y efectividad en la solución de las problemáticas de estas disciplinas y hacer las recomen- daciones pertinentes a los organismos o instituciones competentes.
c) Cooperar con sociedades homólogas, especialistas y demás instituciones interesadas, de carácter nacional o internacional, que tengan como finalidad el progreso social y el bien del hombre.
d) Contribuir al avance de estas disciplinas para coadyuvar a la construc- ción de la sociedad socialista y comunista, que se basan en el dominio de la naturaleza y del desarrollo social por parte del hombre, con el logro de su plena libertad.
e) Divulgar y contribuir a generalizar los métodos, innovaciones y expe- riencias de avanzada.
f) Movilizar a los miembros en torno a las tareas específicas que le sean planteadas a la Sociedad mediante las directivas del Partido Comunista de Cuba.
g) Crear medios para el desarrollo de las relaciones humanas, la recreación colectiva y el descargo de los miembros, dentro de las posibilida- des del potencial económico de la Sociedad y el nivel de

desarrollo del país.

Artículo 7: Entre sus publicaciones, la Sociedad tendrá un órgano denominado Revista Cubana de Química. Al Comité Ejecutivo compete aprobar el reglamento interno que se dictará para la organización y fines de dicha publicación.

CAPITULO II : ***DE LOS MIEMBROS***

Artículo 8: La Sociedad comprenderá las siguientes categorías de asociados:
a) Miembros de Honor
b) Miembros Fundadores
c) Miembros Numerarios
d) Miembros Colectivos

Artículo 9: Son Miembros de Honor de la Sociedad aquellas personalidades nacionales o extranjeras, que por sus altos méritos científico-técnicos y aportes al campo de la Química, Bioquímica o la Tecnología, así como por haber ejecutado su labor profesional en servicio de la sociedad, sean acreedores de dicha distinción. Los Miembros de Honor serán aprobados por la Junta General de Asociados según reglamento creado para estos fines.

Artículo 10: Son Miembros Fundadores aquellas personas contempladas en el Artículo 2 de estos estatutos que se hayan inscrito en la Sociedad durante los primeros seis meses naturales a partir de la fecha de su constitución.

Artículo 11: Son Miembros Honorarios aquellas personas contempladas en el Artículo 2 de estos estatutos, no contempladas en las categorías anteriores.

Artículo 12: Pueden ser Miembros Colectivos todos los organismos, las empresas o unidades presupuestadas de cualquier nivel de subordinación en el país, así como cualquier entidad cubana o extranjera que abone la cuota de partici- pación que se convenga expresamente con el Comité Ejecutivo y que cumpla lo normado por la misma.

Artículo 13: La solicitud de admisión como miembro de la Sociedad podrá ser presenta- da por un miembro en activo, o solicitarla el interesado directamente al Comité Ejecutivo. Recibida la solicitud de admisión, la misma se someterá a la consideración y aprobación del Comité Ejecutivo y una vez aprobado por este, será admitido como asociado el solicitante y se le extenderá un certificado acreditativo de tipo carnet.

Artículo 14: La Sociedad, en reconocimiento a los méritos demostrados en el campo de la Química por determinadas personas, sean miembros o no, y organismos o instituciones, podrá acordar el otorgamiento a los mismos de diplomas, premios o cualesquiera otras distinciones. El Comité Ejecutivo queda encargado en estos casos de organizar y reglamentar tales reconocimientos.

CAPITULO III: ***DERECHOS Y DEBERES DE LOS MIEMBROS***

Artículo 15: Todos los miembros de la Sociedad tienen voz y voto en la Junta General de Asociados y tiene derecho a elegir y ser elegidos o designados para ocupar cargos dentro de la misma.

Artículo 16: Los miembros de la Sociedad tienen el derecho a participar en los eventos que la misma organice y disfrutar de las prerrogativas y facilidades que la Asociación obtenga.

Artículo 17: Todos los miembros están obligados a pagar la cuota de asociado y cumplir con los acuerdos y reglamentos de la Sociedad.

CAPITULO IV: ***DE LOS ORGANOS DE LA SOCIEDAD Y SUS FUNCIONES***

Artículo 18: La Sociedad está integrada por los siguientes órganos:
- La Junta General de Asociados
- El Comité Ejecutivo
- Las Secciones Especializadas
- Las Filiales Provinciales

Las facultades y funciones de cada uno de estos órganos serán los que se determinen en los presentes Estatutos y Reglamentos acordados por la Junta General de Asociados.

CAPITULO V: ***DE LA JUNTA GENERAL DE ASOCIADOS***

Artículo 19: La Junta General de Asociados estará integrada por los miembros en activo de la Sociedad y es su máxima representación y la autoridad suprema de ésta. Sus acuerdos y decesiones son por tanto de obligatorio cumplimiento para todos los miembros, individuales y colectivos.

Artículo 20: La Junta General de Asociados tendrá como funciones:

a) Recibir y aprobar o enmendar el informe del Presidente sobre el desenvolvimiento y resultados de las reuniones científico-técnicas y cuantos otros asuntos se relacionen con la Sociedad.
b) Recibir y aprobar o enmendar los informes del Comité Ejecutivo sobre la marcha de la Sociedad y el resultado de las gestiones del mismo.
c) Decidir sobre los aspectos relativos al destino de la Sociedad, sus bienes y su programa de acción.
d) Interpretar el alcance de los Estatutos, así como ratificar o enmendar las interpretaciones que de éstos hubiere hecho el Comité Ejecutivo.
e) Recibir proposiciones de modificación de los Estatutos y decidir sobre los mismos.
f) Analizar y someter a votación todas las proposiciones que se presentaren a discusión. Las proposiciones se presentarán siempre por escrito y aquellas que entrañen modificaciones de los Estatutos deberán circularse con no menos de 48 horas de antelación a la celebración de las sesiones de la Junta General de Asociados. Las restantes proposiciones podrán realizarse en cualquier momentos, incluso en la propia sesión.

g) Elegir al Presidente y a los miembros elegibles del Comité Ejecutivo, así como revocarlos o sustituirlos en el momento en que ello resultara necesario.
h) Conocer y aprobar el balance de la Tesorería de la Sociedad que será expuesto en cada período de sesiones de la Junta General de Asociados por medio de un informe escrito.
i) Aprobar la cuota de los miembros a propuesta del Comité Ejecutivo.

Artículo 21: Se considerará constituída la Junta General de Asociados cuando se cuente con la presencia física o representativa de la mitad más uno del cincuenta por ciento de los miembros y podrá tomar acuerdos o decisiones cuando una proposición realizada en su seno contare a su favor con la mayoría de los miembros presentes o representados en la sesión.

CAPITULO VI: ***DEL COMITE EJECUTIVO***

Artículo 22: El Comité Ejecutivo será el responsable de la dirección, administración y representación de la Sociedad entre una y otra sesión de la Junta General de Asociados y se reunirá cuatrimestralmente.

Artículo 23: El Comité Ejecutivo ejercerá su mandato en un lapso de dos años, coincidiendo su renovación o ratificación con el período de sesiones de la Junta General de Asociados.

Artículo 24: Los Miembros de Honor serán miembros permanentes del Comité Ejecutivo, pudiendo ser designados para ocupar cualquier cargo en el mismo.

Artículo 25: El Comité Ejecutivo estará integrado por treinta miembros elegibles en la Junta General de Asociados, delegados designados por los sectores productivos o de servicios y los Miembros de Honor y los Coordinadores de las Secciones Especializadas.

Artículo 26: Serán función del Comité Ejecutivo aplicar en todas sus partes los presentes Estatutos y velar por su cumplimiento, así como interpretar el alcance de los mismos, debiendo en este último caso informar de sus decisiones a la Junta General de Asociados de más próxima celebración.
Será función también del Comité Ejecutivo dar cumplimiento a los acuerdos o decisiones de la Junta General de Asociados tomando las medidas que resultaran a tal efecto necesarias, así como convocar, organizar y dirigir las sesiones de la Junta General de Asociados.

Artículo 27: Dentro de los miembros elegibles se escogerán aquellos que ocuparán los cargos en el Comité Ejecutivo de la Sociedad con la excepción del Presidente que es elegido directamente por los asociados. Estos cargos son:

- Vicepresidente Primero
- Vicepresidente para los Asuntos de la Química.
- Vicepresidente para los Asuntos de la Bioquímica
- Vicepresidente para los Asuntos de la Ingeniería Química
- Vicepresidente para los Asuntos de la Protección del Medio Ambiente
- Vicepresidente para los Asuntos de la Enseñanza de la Química

- Vicepresidente a cargo de las Relaciones Internacionales
- Vicepresidente a cargo de las Relaciones Públicas
- Director de la Revista Cubana de Química
- Secretario Ejecutivo
- Tesorero

Artículo 28: El Presidente del Comité Ejecutivo ostentará la máxima representación de la Sociedad ante los organismos cubanos y extranjeros. Sus funciones y responsabilidades vendrán únicamente limitadas por las disposiciones legales vigentes, los acuerdos de las Juntas Generales de Asociados y por lo dispuesto en los presentes Estatutos.

Artículo 29: El Vicepresidente Primero sustituirá al Presidente en caso necesario. Tiene, además, la función principal de atender a los a los delegados de los organismos económicos representados en el Comité Ejecutivo y servir como la autoridad cuya responsabilidad radica en la vinculación de la Sociedad con la problemática de los organismos productivos y de servicios, así como con el vínculo a las filiales territoriales.

Artículo 30: El Vicepresidente para los Asuntos de la Química atenderá, por delegación del Presidente, a las Secciones cuyos miembros trabajen en el perfil de la Química Fundamental y Aplicada. Su función es coadyuvar al desarrollo de la misma en el país, acorde con las necesidades de nuestra base productiva y de servicios y de nuestra cultura científica.

Artículo 31: El Vicepresidente para los Asuntos de la Bioquímica atenderá, por delegación del Presidente, a las Secciones cuyos miembros trabajen en el perfil de la Bioquímica Fundamental y Aplicada. Su función principal es coadyuvar al desarrollo de la misma en el país, acorde con las necesidades de nuestra base productiva y de servicios y de nuestra cultura científica.

Artículo 32: El Vicepresidente para los Asuntos de la Ingeniería Química atenderá, por delegación del Presidente, a las Secciones cuyos miembros trabajen en el perfil de la Ingeniería Química fundamental y Aplicada. Su función principal es coadyuvar al desarrollo de la misma en el país, acorde con las necesidades de nuestra base productiva y de servicios y de nuestra cultura tecnológica.

Artículo 33: El Vicepresidente para los Asuntos de la Protección del Medio Ambiente atenderá, por delegación del Presidente, a las Secciones cuyos miembros trabajen en el perfil mencionado. Su función principal es coadyuvar al desarrollo de esta rama en el país, acorde con las necesidades de nuestra base científico-técnica.

Artículo 34: El Vicepresidente para los Asuntos de la Enseñanza de la Química atenderá, por delegación del Presidente, a las Secciones cuyos miembros trabajen en el perfil de la enseñanza de la Química. Su función principal es coadyuvar al desarrollo de la misma en el país, acorde con las necesidades de nuestro sistema educativo y de nuestra cultura pedagógica.

Artículo 35: El Vicepresidente a cargo de las Relaciones Internacionales tiene como función principal la promoción del intercambio de experiencias y conocimientos con especialistas y sociedades similares de otros países,

especialmente del campo socialista y de Asia, Africa y América Latina. Debe además garantizar que se aprovechen las ventajas de la colaboración con sociedades similares en otros países desarrollados y a nivel internacional.

Artículo 36: El Vicepresidente a cargo de las Relaciones Públicas establecerá las coordinaciones adecuadas con vistas a promover actividades de carácter informativo o divulgación que propicie la superación técnica y a la vez garanticen el desarrollo de una labor sistemática con los asociados, incluyendo la organización de las reuniones científicas.

Artículo 37: El Secretario Ejecutivo tendrá conocimiento de los asuntos de la sociedad y dará cuenta oportunamente de las mismas; informará a los miembros de las actividades que se desarrollen; citará a las Juntas y auxiliará al Presidente y al Comité Ejecutivo en los asuntos que se le encomendaren.

Artículo 38: El Tesorero recibirá, guardará y, mediante aprobación del Presidente, desembolsará los fondos de la Sociedad; llevará cuenta detallada de los ingresos, egresos y fondos básicos y no básicos; rendirá informe al Comité Ejecutivo cuando este lo determine, y auxiliará al Presidente y al Comité Ejecutivo en los asuntos que se le encomienden.

Artículo 39: El Comité Ejecutivo podrá autorizar a los Vicepresidentes, al Secretario Ejecutivo y al Tesorero a simultanear sus cargos respectivos con otras funciones específicas dentro de la Sociedad, cuando por razones de conveniencia al buen desenvolvimiento de la misma así lo aconsejaran.

Artículo 40: Los Delegados de los Organismos de la Administración Central del Estado serán designados por cada uno de estos.

Artículo 41: Entre los Delegados mencionados en el Articulado del presente Capítulo se encuentran:

- Delegado a cargo de los asuntos de la Ciencia, la Tecnología y el Medio Ambiente
- Delegado a cargo de los asuntos de la Industria Básica.
- Delegado a cargo de los asuntos de la Industria Ligera.
- Delegado a cargo de los asuntos de la Industria Alimenticia.
- Delegado a cargo de los asuntos de la Industria Azucarera y Derivados.
- Delegado a cargo de los asuntos de la Agricultura.
- Delegado a cargo de los asuntos de la Construcción.
- Delegado a cargo de los asuntos de la Educación.
- Delegado a cargo de los asuntos de la Educación Superior.

Artículo 42: Cada uno de los Delegados tienen como funciones principales la de someter al estudio e investigación, entre los miembros de la Sociedad, de las problemáticas relacionadas con la Química en sus respectivos sectores productivos o de servicios y de sus centros de investigación y desarrollo correspondientes; así como será el enlace entre estos y la Sociedad.

Artículo 43: Los Vicepresidentes y Delegados a que se refieren los artículos que anteceden, además de las funciones que se expresan respectivamente, tendrán también las siguientes:

- Mantener estrecha coordinación y dentro del marco de todas las actividades de sus frentes con las Secciones que se refieren más adelante los

presentes Estatutos; mantener igualmente estrecha coordinación y cooperación con la impresión de la Revista Cubana de Química, así como con todos los aspectos relacionados con la organización y desarrollo de los eventos de la Sociedad y otras tareas afines.

Artículo 44: El Vicepresidente Primero podrá delegar la atención a otros Organismos de la Administración Central del Estado en miembros electos del Comité Ejecutivo si fuere necesario.

Artículo 45: Todos los restantes Organismos de la Administración Central del Estado podrán solicitar al Comité Ejecutivo la designación de un Delegado a ser del mismo.

CAPITULO VII: ***DE LAS SECCIONES ESPECIALIZADAS***

Artículo 46: La Sociedad Cubana de Química se organiza en Secciones a los fines de las especialidades o disciplinas. Los miembros de la Sociedad se inscriben en una o varias de las Secciones según su perfil especializado y su propio criterio, con dependencia de los intereses colectivos y personales y con independencia de que puede participar en cualquiera de las actividades de la Sociedad. Las Secciones constituyen colectivos por disciplinas, a través de las cuales se garantiza la información específica, incluyendo las reuniones científico-técnicas que se estimen.

Artículo 47: La Sociedad constituirá Secciones Especializadas, las cuales serán agrupadas en torno a las Vicepresidencias para los Asuntos de la Química, la Bioquímica, la Ingeniería Química, la Protección del Medio.

Artículo 48: Las Secciones Especializadas deben posibilitar un favorable intercambio de experiencias, de información científico-técnica sistemática sobre sus componentes, siendo un marco propicio para la presentación de trabajos relacionados con las especialidades en cuestión. Deben a su vez abordar asuntos y problemas que le fueren planteados por la Junta General de Asociados o el Comité Ejecutivo.

Artículo 49: Las Secciones están dirigidas por un Coordinador que se designa por acuerdo del Comité Ejecutivo y el cual pertenece y responde al mismo por el trabajo desarrollado.

Artículo 50: Los Coordinadores de Secciones Especializadas cesaran en sus funciones en la primera sesión del Comité Ejecutivo, después de su constitución, el que elegirá entonces a los Coordinadores para el mismo período.

Artículo 51: El Coordinador de Sección Especializada tiene como función garantizar el exitoso cumplimiento de los objetivos para los cuales fue creada aquella, representa los intereses de su Sección ante el Comité Ejecutivo.

CAPITULO VIII: ***DE LA CONVOCATORIA A LA JUNTA GENERAL DE ASOCIADOS Y DE LAS ELECCIONES***

Artículo 52: La Junta General de Asociados será convocada en períodos no mayores de 2 años, en forma ordinaria, por el Comité Ejecutivo.

Artículo 53: La Junta General de Asociados, en forma ordinaria, convocará a las elecciones para renovar o ratificar total o parcialmente al Comité Ejecutivo.

Artículo 54: La Junta General de Asociados podrá ser convocada, de forma extraordinaria, por el Comité Ejecutivo o por solicitud escrita entregada al Presidente en que así lo demanden la tercera parte de los miembros.

Artículo 55: La Junta General de Asociados, en sesión extraordinaria, podrá constituirse en elecciones generales antes del período fijado; si las circunstancias así lo exigiesen, siempre que se dé cumplimiento a lo establecido en el Reglamento de la Ley 1320 de 1976.

Artículo 56: La Candidatura que se proponga a la Asamblea para integrar el Comité Ejecutivo no será inferior a 30 compañeros, ni mayor de 60.

Artículo 57: Para crear la Candidatura previamente cada Filial, así como las Secciones Especializadas enviarán sus proposiciones por escrito, la cual quedará finalmente integrada por la aprobación del Comité Ejecutivo a recomendación de una Comisión de Candidatura que este elija.

Artículo 58: Todos los miembros de la Junta General de Asociados podrán hacer nuevas proposiciones para integrar la Candidatura, la cual deberán argumentar. Esta nueva proposición pasará a formar parte por aprobación de la mitad más uno de los miembros de la Junta General de Asociados.

Artículo 59: Los miembros de la Junta General elegirán, por voto directo y abierto, una Comisión Electoral, encargada de contar los votos y hacer el Acta con los resultados de las elecciones. Esta Comisión estará integrada por un Presidente, un Secretario y dos o más vocales que no hayan sido nominados en la Candidatura.

Artículo 60: El voto secreto será expresado por cada miembro a través de una boleta donde se distinguen dos categorías: Presidente y Miembro, pudiéndose votar por un Presidente y hasta 30 miembros del Comié Ejecutivo.

Artículo 61: Será proclamado Presidente aquel que más votos alcance en esta categoría, siguiéndose el mismo criterio para los restantes miembros.

Artículo 62: Los Miembros electos para constituir el Comité Ejecutivo deberán reunirse en su primera sesión y elegir por voto directo y abierto cada cargo de este, del seno de dicho colectivo o designar otro compañero fuera del mismo en los casos en que no resulten electos miembros representativos en alguna Sección Especializada.

Artículo 63: Los que no ocupasen un cargo específico quedarán en calidad de Miembro del Comité Ejecutivo.

Artículo 64: La forma en que el Comité Ejecutivo queda finalmente integrado deberá ser aprobado por la Junta General de Asociados.

CAPITULO IX: ***DE LA DESIGNACION DE OTROS CARGOS***

Artículo 65: El Comité Ejecutivo designará el Secretario Asesor Jurídico de la Sociedad. Serán funciones principales del Secretario asesorar legalmente al Presidente y el Comité Ejecutivo en cuanto a los acuerdos tomados y su relación con las disposiciones vigentes.

Artículo 66: El Comité Ejecutivo designará igualmente al Administrador de la Sociedad, quien dirigirá las oficinas de la misma administrativamente, auxiliará al Tesorero en sus funciones, rendirá cuenta de su gestión al Comité Ejecutivo cuando se le solicite y auxiliará al Presidente y alos

órganos de la Sociedad en las tareas que se le encomendaren.

Artículo 67: Tanto el Secretario Asesor Jurídico como el Sadministrador asistirán con carácter permanente a las Juntas del Comité Ejecutivo.

Artículo 68: El Comité Ejecutivo queda facultado para hacer designaciones a otros cargos y miembros para estos, que resultaren necesarios al buen desenvolvimiento de la Sociedad en cuanto a la consecución de los objetivos para los cuales fue creada, así como, en el caso específico de los cargos y miembros referidos en el presente artículo, revocarlos o sustituirlos.

Artículo 69: Se faculta al Comité Ejecutivo para la creación de comisiones temporales de trabajo para abordar asuntos especiales, multidisciplinarios o no, que en virtud de los objetivos para los cuales fue creada la Sociedad resultasen necesarios, decidiendo también cuál o cuáles Secciones Especializadas resultarán vinculadas operativamente en cuanto a miembros a participar y demás aspectos, así como de especialistas que los encabezarán.

Artículo 70: Con el propósito de viabilizar el cumplimiento de las funciones del Comité Ejecutivo existirá un Buró Coordinador, el cual estará integrado por el Presidente, los Vicepresidentes, el Secretario, el Tesorero y los Delegados de la Administración Central del Estado, el cual se reuniá periódicamente para adoptar cuantas medidas operativas resultaren necesarias para el cumplimiento de los acuerdos del Comité Ejecutivo y preparar sus reuniones.

Artículo 71: Todos los miembros del Buró Coordinador tienen los mismos deberes y derechos, dentro del marco de sus respectivas funciones, y ejercerán el derecho de voz y voto en las sesiones de aquel.

CAPITULO X: ***DE LAS FILIALES***

Artículo 72: Por decisión del Comité Ejecutivo y previa solicitud se constituirán Filiales locales, de cuya organización se informará a **l**a Junta General de Asociados, los que en sentido general tendrán todos o parte de las funciones homólogas a las Sociedades en sus respectivas instancias.

CAPITULO XI: ***DE LAS MEDIDAS DISCIPLINARIAS***

Artículo 73: Cualquier miembro de la Sociedad puede ser dado de baja por acuerdo del Comité Ejecutivo, cuando su conducta sea inconsecuente con los objetivos de la Sociedad, por faltar a la verdad científica, al pago de la cotización o al cumplimiento de cualquiera de los deberes y obligaciones que le vienen impuestos por los presentes Estatutos.

Artículo 74: Cualquier directivo cuya actuación sea igualmente inconsecuente con los objetivos de la Sociedad podrá ser suspendido o relevado del cargo para el cual fue elegido.

CAPITULO XII: ***DE LA MODIFICACION DE LOS ESTATUTOS***

Artículo 75: Estos Estatutos solo podrán ser modificados en Junta General Extraordinaria de Asociados, especialmente convocada al efecto, a

propuesta del Comité Ejecutivo o a solicitud de cincuenta o más miembros de la institución, según lo establecido y por votación de la mitad más uno de los miembros asistentes a la sesión. En la convocatoria deberán consignarse los artículos que se pretenden modificar y la forma en que quedaran redactados. La Junta General de Asociados, al considerar la proposición de modificación podrá a su vez aprobarla tal como ha sido propuesta o en la forma en que quede producto de discusión, y las mismas comenzarán a surtir efecto a partir del momento de su aprobación.

CAPITULO XIII: ***DE LA DISOLUCION DE LA SOCIEDAD***

Artículo 76: La Sociedad podrá ser disuelta cuando así lo acuerde la Junta General de Asociados, en sesión extraordinaria expresamente convocada a su efecto y con el voto favorable de las dos terceras partes de sus miembros o por infracción de lo dispuesto en la Ley de Asociaciones, tal como aparece en la Gaceta Oficial de la República de Cuba.

CAPITULO XIV: ***DE LOS FONDOS***

Artículo 77: Los fondos de la Sociedad estarán constituidos por las cuotas de los asociados, la venta de publicaciones de la Sociedad, por los aportes de los miembros colectivos, así como cualquier otra fuente de ingresos que resultaren de su actividad.

Artículo 78: En caso de disolución de esta Sociedad, todos sus fondos y medios básicos pasarán al Estado cubano.

DISPOSICIONES FINALES

PRIMERA: El Comité Ejecutivo queda facultado para reglamentar todos y cada uno de los aspectos contenidos en los presentes Estatutos, que a su juicio lo requieran.

DISPOSICIONES TRANSITORIAS

PRIMERA: El Comité Ejecutivo electo en la constitución de la Sociedad tendrá carácter provisional y sus integrantes deberán ser ratificados o renovados en el período de un año posterior a su elección.

SEGUNDA: El Comité Ejecutivo, en un plazo de seis meses, aprobará las reglas de representación en la Junta General de Asociados, así como el mecanismo de aprobación de los acuerdos por los miembros representados.

TERCERA: El Comité Ejecutivo, en un plazo máximo de seis meses, aprobará las Secciones Especializadas, de acuerdo a lo establecido en el Capítulo VII, así como las reglas de inscripción en las mismas por parte de los

miembros.

Aprobado y refrendado en el Ministerio de Justicia, República de Cuba
Diciembre, 1978

Dr. Luis A. Montero Cabrera
Secretario Ejecutivo

MODIFICACION DE ESTATUTOS
SOCIEDAD CUBANA DE QUIMICA
(APROBADOS EN LA JUNTA DE ASOCIADOS, DICIEMBRE, 1998)

No. Artículo a modificar	Tipo de modificación	Nueva redacción
25	Cambio	El Comité Ejecutivo estará integrado por doce miembros elegibles en la Junta General de Asociados, los Miembros de Honor y los Coordinadores de las Secciones Especializadas.
27	Cambio	Dentro de los Miembros elegibles se escogerán aquellos que ocuparán los cargos del Comité Ejecutivo de la Sociedad, con la excepción del Presidente que es elegido directamente por los asociados. Estos cargos son: -Vicepresidente -Secretario de Relaciones Internacionales y Públicas -Secretario de Afiliación Nacional y de la IUPAC -Secretario de Actividades Científicas

		-Secretario de Integración de Proyectos -Secretario para el trabajo de las Secciones Especializadas -Delegado ante Redes Internacionales -Delegado para las Provincias Centrales (Cienfuegos, Villa Clara, S. Spiritus, Ciego de Avila y Camagüey) -Delegado para las Provincias Orientales (Tunas, Holguín, Granma, S. de Cuba y Guantánamo) -Secretario Ejecutivo -Secretario de Finanzas y Tesorero
29	Cambio	El Vicepresidente sustituirá al Presidente en caso necesario. Tiene además la función principal de atender a los delegados que representan a las Provincias y servir como autoridad cuya responsabilidad radica en la vinculación de la Sociedad con la problemática de los Organismos productivos y de servicios, así como con el vínculo a las filiales territoriales.
30	Sustituir	(Funciones del Secretario de Afiliación Nacional y de la IUPAC)
31	Sustituir	(Funciones del Secretario de Actividades Científicas)
32	Sustituir	(Funciones del Secretario de Integración de Proyectos)
33	Sustituir	(Funciones del Secretario para el trabajo de las Secciones Especializadas)
34	Sustituir	(Funciones del Delegado ante Redes Internacionales)
35	Cambio	El Secretario de Relaciones Internacionales y Públicas tiene como función principal la promoción del intercambio de experiencias y conocimientos con especialistas y sociedades similares en otros países y promoverá actividades de carácter informativo o divulgación que propicien el desarrollo de una labor de información sistemática a los Asociados.
36	Sustituir	(Funciones de los Delegados para la atención a las Provincias centrales y orientales)

No. Artículo a modificar	**Tipo de modificación**	**Nueva redacción**
38	Cambio	El Secretario de Finanzas y Tesorero recibirá, guardará y, mediante aprobación del Presidente, desembolsará los fondos de la Sociedad; llevará cuenta detallada de los ingresos, egresos y fondos básicos y no básicos; rendirá informe al Comité Ejecutivo cuando este lo determine y auxiliará al Presidente y al Comité Ejecutivo en los asuntos que se le encomendaren.
39	Cambio	El Comité Ejecutivo podrá autorizar a sus Miembros a simultanear sus cargos respectivos con otras funciones específicas dentro de la Sociedad, cuando por razones de conveniencia al buen desenvolvimiento de la misma así lo aconsejaran.
40	Eliminar	Fundamentación: Eliminar cargos por designación.
41	Eliminar	Fundamentación: Igual al Artículo 40.
42	Eliminar	Fundamentación: Igual al Artículo 40.
43	Cambio	Los Miembros del Comité Ejecutivo, además de las funciones que se expresan respectivamente, tendrán también la de mantener estrecha coordinación y dentro del marco de todas las actividades de sus frentes con las Secciones Especializadas, mantener estrecha coordinación y cooperación con la impresión de la Revista Cubana de Quimica, así como con todos los

		aspectos relacionados con la organización y desarrollo de los eventos de la Sociedad y otras tareas afines.
44	Cambio	El Vicepresidente podrá delegar la atención a los Organismos de la Administración Central del Estado en Miembros electos del Comité Ejecutivo si fuese necesario.
45	Eliminar	Fundamentación: Igual al Artículo 40.
47	Cambio	La Sociedad constituirá Secciones Especializadas, las cuales serán agrupadas en torno al Secretario destinado para la atención de este trabajo, según reglamento que se dictará al efecto.
49	Cambio	Las Secciones están dirigidas por un Coordinador que se elegirá por la mitad de los votos más uno de los miembros de la Sección y responde ante el Comité Ejecutivo por el trabajo desarrollado.
50	Eliminar	Fundamentación: Sólo válido para la constitución de la Sociedad, lo cual ya fue hecho.
56	Cambio	La Candidatura que se proponga a la Asamblea para integrar el Comité Ejecutivo no será inferior a 20, ni mayor de 30 candidatos.
60	Cambio	El voto secreto será expresado por cada Asociado a través de una boleta donde se distinguen dos categorías: Presidente y Miembro; se podrá votar por 1 Presidente y hasta 11 Miembros del Comité Ejecutivo.
63	Eliminar	Fundamentación: No procede según propuesta 25 y 27.
70	Cambio	Con el propósito de viabilizar el cumplimiento de las funciones del Comité Ejecutivo existirá un Buró Coordinador, el que estará integrado por el Presidente, el Vicepresidente, el Secretario Ejecutivo y el Secretario de Finanzas y Tesorero, que se reunirá de forma periódica para adoptar cuantas medidas operativas resultaren necesarias para el cumplimiento de los acuerdos del Comité Ejecutivo y preparar sus reuniones

CSE
Founded in 1983

The Chemical Society of Ethiopia
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CSE
Founded in 1983

P.O. Box 32934
Addis Ababa, Ethiopia
Tel. 251-011-1234293, 1234294 **Fax: 251-011-1234296** E-mail: **cse@chem.aau.edu.et**
Website: http://www.sc.aau.edu.et/cse/home.html

Our ref. CSE/04/13- 23/7

26 January 2007

President
IUPAC
P.O Box 13757
Research Triangle Park
NC 27709-3757, USA

Dear Sir / Madam,

This is a formal application of the **Chemical Society of Ethiopia** for **National Adhering Organisation Status in IUPAC.**

The Chemical Society of Ethiopia (CSE) is a non-profit, non-governmental professional association of chemistry in Ethiopia that was founded in 1983. It is run by an Executive Committee (EC) that is elected by members during the Annual Congress of the Society. The EC consists of a president, vice president, secretary, finance head, treasurer, editor-in-chief, and an additional member. The secretariat at present consists of a program officer, editorial assistant, secretary, accountant and two office assistants.

The Society have been working hard in the last two decades to achieve its objectives by organising chemical sciences research findings and information exchange fora, publishing and disseminating findings. The Society enjoys excellent relations with national and international institutions whose responsibilities are in line with its objectives such as that of IUPAC for many years. Many of the CSE activities are, therefore, planned in consultation with many of these institutions. Indeed, these interaction helped the Society took the initiative in establishing the **Federation of African Societies of Chemistry** (FASC) together with sisterly associations of other African countries last year in Ethiopia, which we are grateful.

The Chemical Society of Ethiopia

Please find attached herewith:

1. The completed form, "Application for IUPAC Adhering Organizations";
2. Our bylaw;
3. A brief description of the goals of the association and its significant activities.

Yours faithfully,

Berhanu Gizaw (Ph.D)
President, The Chemical Society Of Ethiopia

A BRIEF DESCRIPTION OF THE GOALS AND SIGNIFICANT ACTIVITIES OF THE CHEMICAL SOCIETY OF ETHIOPIA

The CSE traces its origin to November 1982 when some 40 chemists from various schools, Regional Education Offices, the Addis Ababa University, the Central Laboratory and Research Institute and the Ethiopian Science and Technology Commission attended a UNESCO-sponsored workshop organized by the Ministry of Education on "Modernization of Chemistry Education in Ethiopia". It was officially founded in 1983.

THE OBJECTIVES OF THE SOCIETY ARE: -

- To develop and promote chemistry education and research;
- To provide fora for the exchange of ideas through publication and meetings;
- To popularize chemistry, especially in schools;
- To enhance the participation and collaboration of chemists in matters pertaining to policies in curriculum development and training of chemists;
- To establish close relationships among chemists and other professionals engaged in chemistry-related fields so as to increase the role of chemistry in national development;
- To promote the improvement and the qualifications of members; and
- To establish and strengthen links with other societies, national and international, which pursue similar aims.

ACTIVITIES

The main activities of the Society are organising chemical sciences research findings and information exchange fora; publishing; and disseminating findings and information through:

a) Annual Scientific Congresses;
b) Workshops;
c) Panel Discussions;
d) Seminars;
e) Lectures;
f) Symposiums;
g) Anniversaries;
h) Chemistry Open day Competitions; and
i) Other CSE Sponsored Activities.

Neither its Annual Congresses nor its publications have ever been interrupted, which helped the Society to give a good image in Africa. The Society enjoys excellent relations with national and international institutions whose responsibilities are in line with its objectives such as that of IUPAC. Many of the CSE activities are, therefore, planned in consultation with many of these institutions.

CSE enjoys excellent relations with national institutions whose responsibilities are in line with its objectives and hence, many of the CSE activities are, therefore, planned in consultation with many of these institutions. Indeed, the Society took the initiative in establishing the Federation of African Societies of Chemistry (FASC) together with sisterly associations of other African countries recently here in Ethiopia. In accomplishing that the Society had benefited from its international links.

CSE is always in close contact with:

- The Department of Chemistry, AAU and other Departments of Chemistry across the nation;
- The Ethiopian Science and Technology Commission;
- The Ministry of Education;
- The Ministry of Mines and Energy;
- The Ministry of Trade and Industry;
- The Ethiopian Quality and Standard Authority;
- The Federal Environmental Protection Authority;
- All institutional members of the Society;
- Professional Associations Joint Secretariat;
- Professional Associations;
- Other Non-Governmental Organisations;
- IUPAC;
- UNESCO;
- International Chemistry Conference in Africa (ICCA); and
- Some of the sister societies like the American Chemical Society (ACS), Royal Society of Chemistry (RSC), and the Natural Product Research Network for Eastern and Central Africa (NAPRECA).

For administrative use only	*Submitted January 25 2007*
1 **Check One**	✓ Applying for National Adhering Organisation Status _____ Applying for Associate National Adhering Organisation Status
2 **Organization Name**	The Chemical Society of Ethiopia
3 **Country/Region that the Organization Represents**	Ethiopia
4 **Address**	P.O Box 32934; Addis Ababa, Ethiopia
5 **Organization Contact to IUPAC** *Will be published if application is approved*	Dr. Berhanu Gizaw President The Chemical Society of Ethiopia P.O Box 32934; Addis Ababa, Ethiopia Tel. 00 251-(0)11-1-234293/4 Fax. 00 251-(0)11-1-234296 Email: cse@chem.aau.edu.et Website: http://www.sc.aau.edu.et/cse/home.html
6 **Name of the person submitting this form** *if not the Responsible Person*	
7 **Approximately how many members does the organization serve?**	1208 registered members
8 **Please list any publications that the organization produces**	➢ Bulletin of the Chemical Society of Ethiopia, a peer-reviewed biannual journal of the Society since 1987. Indexed and abstracted by ➢ Chemical Abstracts ➢ Chemistry Citation index ➢ Environmental abstracts http://www.ingentaselect.com; http://www.ajol.info ➢ Newsletter of the Chemical Society of Ethiopia – "Solutions" since 1984. ➢ News update flyer of the Chemical Society of Ethiopia (quarterly) since January, 2005
9 **How does the organization plan to relay the benefits of IUPAC membership to its membership?**	Relay through emails and using our website; and during Annual Congresses.

THE CHEMICAL SOCIETY OF ETHIOPIA

CONSTITUTION AND BY LAWS

NOVEMBER 1983

Part 1 Establishment of the Associate

ARTICLE 1. There is hereby established a chemical Society of Ethiopia, hereinafter referred to as "The Chemical Society" according to the following articles of the constitution

Part 2 OBJECTIVES

ARTICLE 2. In order to develop, serve and assist the principles and programs of the country and specifically to make concrete contributions in the field of chemistry, the objectives of the Chemical Society are:

2.1 To promote and develop chemical education and research in Ethiopia and also to provide forum for discussions through meetings and publications.

2.2 To popularize chemistry kin Ethiopia in general and specifically to disseminate chemical information and knowledge to the various schools in the nation.

2.3 To enhance the role and participation of professionals in curriculum development and in the training of chemistry teachers.

2.4 To promote inter-and intra-disciplinary cooperation among professionals (e.g. with professionals in Natural Sciences chemical engineering etc.) in order to effectively assist in the development of Ethiopia.

2.5 To encourage members achieve a greater level of competence

2.6 To establish and strengthen links with other societies, national or international which pursue similar aims.

Part 3 MEMBERSHIPS

ARTICLE 3. The chemical Society shall have tow categories of memberships.

3.1 Full membership

Full membership shall be open to those persons who have

3.1.1 A first degree or above in chemistry from a University or College, or

3.1.2 A diploma in Chemistry form a University or College, or

3.1.3 A minimum or 2 years University education in Chemistry, and engaged in professional work.

3.2 Associate membership

Associate membership shall be open to those persons who have not fulfilled the criteria provided under 3.1 above but, who at least fulfil one of the criteria below.

3.2.1 One who is engaged in a field related to chemistry.

3.2.2 One who is a student of a Higher Educational institution majoring in chemistry.

3.2.3 One who is interested in chemistry and whose interest is well demonstrated or acknowledged by members of the Society.

ARTICLE 4. Application for membership

4.1 Any person who wishes to become a member shall submit to the Secretary of the chemical society his/her application together with supporting documents that would qualify him/her to become a member.

4.2 Any applicant, upon receiving from the Secretary the necessary document certifying acceptance for membership by the Society will become a full or associate member of the Society.

ARTICLE 5. Rights and duties of members

5.1 Members shall support and carry out the objectives of the Chemical Society.

5.2 Only full members shall be eligible to or be elected for the executive Committee of the Chemical Society.

5.3 Without prejudice to article 5/5.2 members shall be eligible to elect and be elected in the various committees of the Chemical society.

5.4 Without prejudice to article 17, 15 and 5/5.2 each member shall have one vote regarding matters presented for decision at the general assembly.

5.5 With the exception of student members, each member shall pay a registration fee of 5 birr when his membership is approved. A student member shall pay fifty cents only.

5.6 With the exception of student members, every member shall pay a monthly fee of 1 birr. However, a student member shall pay 25 cents per month.

5.7 Every member is duty bound to pay the monthly fees on time.

ARTICLE 6. Termination of membership

Membership shall be terminated on any one the following grounds.

a. When the member voluntarily withdraws his membership from the Chemical Society.
b. When, after notified by the executive committee that a six month arrears of monthly subscriptions are due and when he, negligently fails to pay the arrears on the subsequent month or the executive committee decides not to exempt the member from payment of the arrears.
c. When two thirds of the general assembly votes for the termination of the member from his membership.
d. A member whose membership is terminated pursuant to article 6 (a) and (c) may reapply for membership to the general assembly after a lapse of three years. However, a member whose membership is terminated under 6 (a) shall reapply for membership after paying the arrears.

Part 4. MEMBERS AND THE EXECUTIVE COMMITTEE

ARTICLE 7. General assembly

7.1 Without prejudice to article 17 all members of the general assembly shall be members of the Chemical Society.

7.2 The general assembly is the main executive body.

7.3 Duties and responsibilities of the general assembly

7.3.1 The general assembly shall draw out and determine general directives and work activities of the Chemical Society.

7.3.2 Without prejudice 5/5.2, the general assembly shall elect the executive committee.

7.3.3 It shall approve the annual budget of the Society.

7.3.4 In accordance with article 17, it can amend the constitution of the Chemical Society.

7.3.5 40% of the members shall constitute a quorum.

7.3.6 If the vote in the general assembly is equally divided into two the president shall have the decisive vote.

7.3.7 The general assembly shall convene an annual meeting of the Society.

7.3.8 An extra-ordinary general meeting shall be convened when any of the following conditions prevail.

a. When a decision is made to convene the meeting by the executive committee.

b. When 10% of the total members of the Society request, in writing, for the convening of the meeting of the general assembly.

7.3.9 The general assembly shall elect an auditor committee to examine the financial status of the Chemical Society.

7.3.10 Without prejudice to article 15, 17 and 5/5.2 all issues raised in the meeting of the general assembly shall be decided by simple majority vote.

ARTICLE 8. The executive committee

8.1 The executive committee shall consist of the following members. The president, the vice president, the secretary general, the editor-in-chief, the treasurer and other three full members of the Chemical society.

8.2 Every member of the executive committee shall be full member of the Chemical Society and be elected by the general assembly's simple majority vote.

8.3 The term of office of any executive committee member shall be two years. However, he can be re-elected for another term.

8.4 51% of the executive committee members shall constitute a quorum in the committee's meeting.

8.5 All issues raised by the executive committee shall be decided by a simple majority of the members present.

8.6 If the vote in the meeting of the executive committee is equally divided into two, the president shall have the decisive vote.

8.7 The executive committee shall, at least, meet once in two months.

ARTICLE 9. Responsibilities of the executive committee

9.1 Examines applications of prospective members and makes decisions as to who shall be full or associate member.

9.2 It directs and runs the functions of the Society.

9.3 It has full power, duty and responsibility to executive the decisions of the general assembly.

9.4 Appoints on editorial committee chaired by the editor kin-chief.

9.5 Exempts or prolongs the period of payment of the arrears of a member provided that the member has sufficient reason.

9.6 In case, any member of the executive committee ceases to be a member by termination or resignation, an acting executive committee member shall be elected from the full members of the general assembly. However, the number of such nominees in a year shall not be more than two.

9.7 Receives contributions provided that such contributions are not contrary to the objectives of the Chemical Society.

9.8 Approves annual reports to be made by the President to the General Assembly.

9.9 The committee shall decide to form close relationship or be a member of national and international organizations that pursue similar objectives.

9.10The committee shall have its own terms of reference and also forms sub-committees as and when necessary.

ARTICLE 10. Responsibilities of executive committee members

10.1 The president

10.1.1 Shall be the executive officer

10.1.2 Represents the Society on all occasions.

10.1.3 Can convene the meeting of the executive committee.

10.1.4 He shall be responsible for submitting the annual report and budget of the Chemical society for approval.

10.2 Vice president

10.2.1 Works in close collaboration with the president.

10.2.2 Shall function in place of the president when the latter is in a position not to run and direct the normal operations of the Chemical Society.

10.3 Secretary general

10.3.1 He shall record the general assembly's and the executive committee[s minutes.

10.3.2 In accordance with the guidance of the executive committee, he shall make all correspondences concerning the Chemical Society.

10.3.3 He shall keep the society's seal, documents and books.

10.3.4 He shall function kin place of the Chairman and the Vice-chairman in their absence.

10.4 Treasurer

10.4.1 He shall keep the accounts of the Society and shall also be responsible for the financial and related documents of the society.

10.4.2 He shall assure all duties related to a treasurer.

10.5 Editor in-Chief

10.5.1 He shall be the chairman of the editorial committee and the editor in-chief of the publications published by the Chemical Society.

10.5.2 In collaboration with the editorial committee he shall give directions for the Society's publications in accordance with the guidance of the executive committee.

Montevideo, 12th March 2007

Prof. Dr. Bryan R. Henry
President of IUPAC

Hereby we would like to present the application of PEDECIBA-QUÍMICA (Programa de Desarrollo de Ciencias Básicas) for the National Adhering Organization status in IUPAC, representing Uruguay.

PEDECIBA-Química is an organization that joins most of the active researchers in Chemistry in our country together with master and doctoral students. It has as main goals the contribution of the development of basic and applied Chemistry as well as the improvement of human resources formation at post-graduate level.

PEDECIBA-QUIMICA has been part of IUPAC from 2002 as Associate National Adhering Organization and although we have always understand the importance of being a IUPAC full member it is only now that we have reached the conditions to apply for this change of category.

I really hope that our application can be favorably considered.

Thank you in advance.

Sincerely,

Dr. María H. Torre
COORDINATOR OF PEDECIBA- Química

International Union of Pure and Applied Chemistry

Secretariat: P.O. Box 13757, Research Triangle Park, NC 27709-3757, USA
TEL: 1-919-485-8700 FAX: 1-919-485-8706 EMAIL: secretariat@iupac.org

Application for IUPAC Adhering Organization Status

The formal Members of IUPAC are the National Adhering Organizations, and this document sets out the information required for application. The Council is the governing body of IUPAC, and meets every other year (odd numbered years) at the IUPAC General Assembly. Council must review all applications and is responsible for approving admission. An application may be submitted at any time: however, an application received no later than 01 February of the year in which a Council meeting is to be held (usually in August) will enable a decision to be made at that Council meeting.

Guidelines/Information for becoming an IUPAC National Adhering Organization:

(i) According to the IUPAC Statutes, a country may join the Union through only one national organization representing its chemists. This National Adhering Organization may be a national chemical council, a national society representing chemistry, a national academy of science, or any other institution or association of institutions representative of national chemical interests.

(ii) For countries in which there is not a single body that represents all chemists, a National Chemistry Committee for IUPAC may be formed to act as the NAO. This committee should represent all members of the various chemical societies.

(iii) The word country may include a specific geographic territory that is widely recognized as having the cultural and administrative characteristics usually associated with an independent state but without necessarily having complete independence or sovereignty.

(iv) NAOs pay National Subscriptions annually to IUPAC. The amount of the National Subscription is based on the chemical turnover for that country, with a minimum National Subscription of USD 1 000. The chemical turnover is the value of chemical products produced in a country as reported by UNIDO and/or CEFIC.

(v) The National Adhering Organizations are the Members of the Union.

IUPAC also offers the possibility of Associate National Adhering Organization (ANAO) status.
The Associate National Adhering Organizations have “observer” status only and are not voting members of IUPAC. There is a time limit of four years for ANAO status. Over that four-year period, it is anticipated that ANAOs will progressively engage in IUPAC activities and become, at the end, full members with NAO status. It is not however required that an organization first become an ANAO, and it may become an NAO directly.

Organizations applying for ANAO status may also submit an application at any time. The application will be reviewed by the Executive Committee, which is responsible for approving admission.

Guidelines/Information for becoming an IUPAC Associate National Adhering Organization:

Guidelines (i), (ii), and (iii) above apply also to the composition of ANAOs.

(iv) ANAOs pay annual dues to IUPAC of USD 250.

(v) The Associate National Adhering Organizations are not Members of the Union but have Observer status.

Please visit this link: http://www.iupac.org/general/hints.html for further information regarding the benefits and duties of National Adhering Organizations and Associate National Adhering Organizations. For example, IUPAC-sponsored conferences generally can only be held in countries with NAO status.

When submitting this application, the following items should be included:

Application for IUPAC Adhering Organizations

(i) A letter from the organization addressed to the President of IUPAC formally applying for Associate National Adhering Organization status or National Adhering Organization Status in IUPAC.
(ii) A copy of the Statutes & Bylaws of the organization, if they are available in English, or a summary in English if the originals are available only in another language.
(iii) A brief description of the goals of the organization and its significant activities.

Please return an electronic copy of the completed application and enclosures to the IUPAC Secretariat by e-mail to secretariat@iupac.org. Printed materials should be submitted to the above address.

For administrative use only	*Submitted* _____
1 Check One	_X__ Applying for National Adhering Organization Status ___ Applying for Associate National Adhering Organization Status
2 Organization Name	PEDECIBA-QUIMICA (Program for the Development of Basic Science)
3 Country/Region that the Organization Represents	URUGUAY
4 Address	GENERAL FLORES 2124 C.C. 1157 MONTEVIDEO, URUGUAY
5 **Organization Contact to IUPAC** *Will be published if application is approved*	DRA. MARÍA TORRE COORDINATOR OF PEDECIBA-QUÍMICA General Flores 2124. C.C. 1157,Montevideo, Uruguay mtorre@fq.edu.uy
6 **Name of the person submitting this form** *if not the Responsible Person*	GABRIELA GARCÍA General Flores 2124, C.C. 1157, Montevideo, Uruguay gabig@fq.edu.uy
7 Approximately how many members does the organization serve?	180
8 Please list any publications that the organization produces.	------
9 How does the organization plan to relay the benefits of IUPAC membership to its membership?	Informing and discussing topics of interest from IUPAC activities Promoting contacts between scientists in Uruguay and in other IUPAC members

INSTITUTION´S GOAL AND ACTIVITIES

PEDECIBA-QUIMICA is a scientific net formed by approximately 110 active researchers and 70 post-graduate students in Chemistry, working in about 30 different laboratories of the following areas: Organic Chemistry, Inorganic and Analytical Chemistry, Physical Chemistry and Biochemistry.
All academic staff members are honorary and they are organised in three levels, which result of an internal and external evaluation developed by a group of recognised scientists in the area.

The main goal of the Institution is to contribute to the development of research in Chemistry and to the training of human resources at postgraduate level promoting their insertion in the academic community and the productive sector.

The main activities of PEDECIBA-QUIMICA include:

- Promotion of the development of chemistry through financial support to researchers
- Support of a postgraduate program in chemistry (master and doctoral studies) including bursaries
- Organisation and support of postgraduate courses
- Support of specialised training fellowships in high academic level international centres
- Organisation of extension activities for high school teachers and students
- Promotion of regional and international co-operation in areas of interest

SUMMARY OF STATUTES

PEDECIBA, Program for the Development of Basic Sciences, was established in 1986 as a joint venture of the Ministry of Education, the National University, and UNESCO. The organization comprises five main Areas, representing the biological, chemical, physical, mathematical, and computational sciences. One of these areas is PEDECIBA-Química (Chemical area).
All active scientists in Chemistry are encouraged to apply to PEDECIBA- Química and are incorporated after evaluation of their curricula vitae by a special commission integrated by recognised national and/or international scientists.

PEDECIBA- Química has a honorary standing committee elected each two years by the scientific community, formed by a coordinator, four scientific researchers and one representative of the postgraduate students. It decides on policies and programs to be developed and calls for an annual registration of new members. The honorary academic staff members (ASMs) are in categories similar to those of the national university as full and associate professors and assistants, none of whom receive a salary from the PEDECIBA. Other members include doctoral and master's students, who can hold PEDECIBA bursaries. The ASMs are periodically re-evaluated to ascertain their continued activity and productivity.
The national government took up the funding of PEDECIBA and established a yearly budget.

PEDECIBA-Química has in this moment about 100 ASMs and 70 post-graduate students from 29 different laboratories, comprising the following sub-areas: Organic Chemistry, Inorganic and Analytical Chemistry, Physical Chemistry and Biochemistry.

FLAQ

Havana, January 18th, 2007

Dr. John Jost
Executive Director
IUPAC

Dear Dr. Jost:

According to IUPAC bylaws, this is the Letter of Application of the *Federación Latinoamericana de Asociaciones Químicas* (Latinamerican Federation of Chemical Associations), to become an ASSOCIATED INTERNATIONAL ORGANIZATION (AIO) of the International Union of Pure and Applied Chemistry (IUPAC). Therefore, we are in the position to pay the sum of USD 100.00 (one hundred US dollars) for years 2008 and 2009.

I hope that this application will be considered by the IUPAC General Assembly next August, 2007, Torino, Italy, to become effective for the year 2008.

Cordially

Prof.Dr. Alberto J. Núñez Sellés
President Elect
FLAQ

FLAQ INTEGRATION AND OBJECTIVES (Statute Summary)

1. The *Federación Latinoamericana de Asociaciones Químicas* (Latinamerican Federation of Chemical Associations), FLAQ, was founded during the VII Latinamerican Congreso on Chemistry, México D.F., March 29th to April 3rd, 1959.
2. FLAQ is a regional organization which represents the scientific and/or professional associations on Chemistry and related fields from the following 20 countries in Latin America:

Argentina	Honduras
Brazil	México
Bolivia	Nicaragua
Colombia	Panamá
Costa Rica	Paraguay
Cuba	Perú
Chile	Puerto Rico
Ecuador	Dominican Republic
El Salvador	Uruguay
Guatemala	Venezuela

3. FLAQ objectives and goals are as follows:

a) To promote the organization of Chemistry Associations at local levels for the Chemistry professionals.
b) To promote the adoption of a Professional Ethics Code for the Chemistry professionals in Latin America.
c) To stimulate the exchange between High Education institutions, encouraging the cooperation in Science and Technology, in order to answer urgent development needs in Latin America.
d) To promote the organization of Latinamerican Congresses on Chemistry.
e) To participate at international meetings about problems connected to Chemistry and related fields.
f) To promote studies about chemical problems.
g) To organize Working Task Forces to afford permanent studies about latinamerican chemical problems.
h) To contribute to the dissemination of new Chemistry knowledge by all pertinent means.

FLAQ ACTIVITIES

Main FLAQ activities have been the organization of Latinamerican Congresses on Chemistry (LACC), with a participation of near 1,000 participants on each meeting. These meetings are considered as the most significant scientific meetings on Chemistry and related fields in Latin America, with a large tradition.
The list or Congresses organized by FLAQ is as follows:

- VIII LACC, Buenos Aires, Argentina, September 16th-22nd, 1962
- IX LACC, San Juan, Puerto Rico, October 1st-8th, 1965
- X LACC, San José, Costa Rica, February 2nd-9th, 1969
- XI LACC, Santiago de Chile, Chile, January 5th-11th, 1972
- XII LACC, Quito, Ecuador, September, 19th-24th, 1976
- XIII LACC, Lima, Perú, October 15th-20th, 1978
- XIV LACC, San José, Costa Rica, February 1st-7th, 1981
- XV LACC, San Juan, Puerto Rico, October 24th-29th, 1982
- XVI LACC, Rio de Janeiro, Brazil, October 14th-20th, 1984
- XVII LACC, Bogotá, Colombia, October 12th-19th, 1986
- XVIII LACC, Santiago de Chile, Chile, January 11th-15th, 1988
- XIX LACC, Buenos Aires, Argentina, November 5th-9th, 1990
- XX LACC, Santo Domingo, Dominican Republic, May 17th-23rd, 1992
- XXI LACC, Panama City, Panama, July 31st-August 5th, 1994
- XXII LACC, Concepción, Chile, January 7th-12th, 1996
- XXIII LACC, Río Grande, Puerto Rico, July 25th-28th, 1998
- XXIV LACC, Lima, Perú, October 15th-19th, 2000
- XXV LACC, Cancún, México, September 22nd-26th, 2002
- XXVI LACC, Salvador de Bahia, Brazil, May 30th-June 6th, 2004
- XXVII LACC, Havana, Cuba, October 16th-20th, 2006

XXVIII LACC is scheduled for San Juan, Puerto Rico, in 2008.
FLAQ Board of Directors and General Assembly are held on the occasion of LACC Congresses, when the President, Executive and Pro Tempore Secretaries are elected. Also the selection of the next Congress venue, by secret vote, is done by the Board of Directors during the LACC.

FEDERACION LATINOAMERICANA DE ASOCIACIONES QUIMICAS

ESTATUTO Y REGLAMENTO
DE LA FEDERACION LATINOAMERICANA
DE ASOCIACIONES QUIMICAS

Secretaría Ejecutiva
Av. Nicolás de Araníbar # 696
Casilla 14-0576

LIMA 14- PERU

Ultima modificación: 1998, San Juan, Puerto Rico
Actualización del Consejo Directivo: Enero, 2007

FEDERACION LATINOAMERICANA DE ASOCIACIONES QUIMICAS

FLAQ

Presidentes Honorarios

Dr. Gabriel Infante
Lic. Oscar Mendez
Dr. Leonidas Unzueta

Consejo Directivo
(2007- 2008)

Dr. Alberto J. Núñez Sellés
Presidente

Dr. Paulo Cesar Vieira
Presidente Anterior

Dra. Irma Castro Méndez
Secretaria General

Lic. Rebecca Soler
Secretaria Pro-Tempore

Secretaria Ejecutiva
Dr. Olga Lock Sing
Secretario
Dra. Nadia Gamboa
Tesorera

Consejeros

Dr. Isaías Camacho
Dr. Juan Jaén
Dr. Gabriel Infante
Lic. Madeline Pardo
Dr. Bernabé Rivas
Dr. Mario Silva
Dr. Mario Suwalsky

Lic. Carmen L. Velásquez
Dra. Olga Lock
Dr. Leónidas Unzueta
Dr. Jaime Noriega
Dr. Jorge Keller
Dr. Paulo C. Vieira
Dr. Jailson Bitencurt de Andrade

ESTATUTO DE LA FEDERACION LATINOAMERICANA DE ASOCIACIONES QUIMICAS – FLAQ

Estatuto de la Federación Latinoamericana de Asociaciones Químicas – FLAQ, fundada en el VII Congreso Latinoamericano de Química, celebrado en la ciudad de México, en 1959.

Este Estatuto entró en vigor en el VIII Congreso Latinoamericano de Química celebrado en la ciudad de Buenos Aires, Argentina en 1962.

Durante el IX Congreso Latinoamericano de Química celebrado en San Juan, Puerto Rico en 1965, en el X Congreso de Química celebrado en San José, Costa Rica en 1969, en el XII Congreso Latinoamericano de Química celebrado en Quito, Ecuador en 1976, el XIII Congreso Latinoamericano de Química celebrado en Lima, Perú en 1978, en el XIV Congreso Latinoamericano de Química celebrado en San José, Costa Rica en 1981, en el XVIII Congreso Latinoamericano de Química celebrado en Santiago de Chile, en 1988, en el XXII Congreso Latinoamericano de Química celebrado en Concepción – Chile, en 1996 y en el XXIII Congreso Latinoamericano de Química celebrado en Río Grande – Puerto Rico, en 1998, se acordaron modificaciones a este Estatuto.

Introducidas las modificaciones, el Estatuto de la FLAQ es el siguiente:

DECLARATORIA

I. Definición

Art. 1°. – "La Federación Latinoamericana de Asociaciones Química" es el organismo que representa a las asociaciones científicas y/o profesionales de la Química en las siguientes naciones de América Latina:

Argentina	Honduras
Brasil	México
Bolivia	Nicaragua
Colombia	Panamá
Costa Rica	Paraguay
Cuba	Perú
Chile	Puerto Rico
Ecuador	Rep. Dominicana
El Salvado	Uruguay
Guatemela	Venezuela

Art. 2°. – La Federación Latinoamericana de Asociaciones Químicas (que en adelante se denominará como FLAQ) quedó fundada en el VII Congreso

Latinoamericano de Química, realizado en la ciudad de México, del 29 de marzo al 3 de abril de 1959.

II. Objetivos

Art. 3°. – Los fines para los cuales fue creada la FLAQ son los siguientes:

a) Promover el establecimiento de Asociaciones Químicas al nivel local de profesionales de la Química.
b) Promover la creación de un Código de Ética Profesional para que sea adoptado por los profesionales de la Química en Latinoamérica.
c) Estimular el intercambio entre Centros de Educación Superior favoreciendo el intercambio de ciencia y tecnología que respondan a posibilidades urgentes de desarrollo en Latinoamérica.
d) Promover la Organización de Congresos Latinoamericanos de Química.
e) Participar de las reuniones internacionales sobre problemas químicos y afines.
f) Promover los estudios sobre los problemas químicos.
g) Establecer Comités de trabajo que estudien en forma permanente los problemas químicos Latinoamericanos.
h) Contribuir a difundir por los medios a su alcance los nuevos conocimientos de la química.

III. Sede

Art. 4^{0}.- La FLAQ estará donde reside su Presidente. La secretaria Ejecutiva estará en Lima- Perú.

IV. Patrimonio

Art. 5^{0}.- La FLAQ recibirá aportaciones de cada una de las Asociaciones miembros, así como donativos y subvenciones.

DE LOS MIEMBROS:

V. Calidad

Art. 6^{0}.- La FLAQ estará constituida por las Asociaciones Latinoamericanas de Química que representan a cada una de las naciones Latinoamericanas. Será miembro de la FLAQ una entidad de cada país. En el caso de que en algún país hubiese más de una entidad, será necesario que constituya una sola Asociación o Directorio o Federación Nacional que los represente ante la FLAQ.

Tendrá categoría de Miembro Asociado la Asociación Química de cualquier país americano que no este incluido en el Art. 1^0 o la del país de la Península Ibérica que desee participar de la FLAQ y cuya solicitud de ingreso haya sido aprobada por mayoría. Las Asociaciones que actualmente representan a sus países ante la FLAQ mantendrán ese carácter mientras constituyan los medios de representación propuestos por este Artículo.

VI. Obligaciones y Derechos

Art. 7^0.- Cada Asociación miembro nombrara un representante.

Art. 8^0.- Cada Asociación miembro tendrá derecho a un voto que será emitido por su representante.

Art. 9^0.- Las Asociaciones miembro extenderán a sus representantes las credenciales correspondientes, toda vez que ello sea necesario y les suministrarán las instrucciones pertinentes para actuar en su nombre.

Art. 10°- Las Asociaciones integrantes de la FLAQ asistirán por intermedio de sus representantes a las sesiones ordinarias a que fueren citadas con la debida anticipación, a fin de tratar los puntos que se establezcan en el temario.

Art. 11°- Todos los miembros de la FLAQ tendrán por obligación velar por el buen nombre de la Federación y por el cumplimiento de este Estatuto.

Art. 12°- Cada Asociación miembro de la FLAQ deberá cubrir una cuota de mínima anual, cuyo monto será fijado por la Asamblea General.

DE SU ORGANIZACIÓN

VII. Órganos de Gobierno

Art. 13°- La FLAQ está conformada por los organismos siguientes:

a) La Asamblea General
b) El Consejo Directivo
c) La Secretaria Ejecutiva
d) Las Divisiones
e) Las Comisiones

Art. 14°- La Asamblea General está compuesta por los Miembros del Consejo Directivo, los representantes de las Asociaciones miembros de la FLAQ y la Secretaria Ejecutiva, pero solamente tendrán capacidad de voto los representantes de las Asociaciones presentes.

Art. 15°- La Asamblea General se reunirá durante la realización de los Congresos Latinoamericanos de Química.

Art. 16°- La Asamblea General requerirá de un quórum de la mitad más uno de los representantes acreditados por las Asociaciones que integran la FLAQ.

Art. 17°- La Asamblea General tendrá las siguientes atribuciones:

a) Resolver todos los asuntos concernientes a la Federación y podrá delegar en el Consejo y en las Divisiones y las Comisiones todas las tareas que juzgue convenientes.
b) Reglamentar la forma de elegir a los miembros del Consejo Directivo, las Divisiones y las Comisiones.
c) Estudiar las modificaciones al Estatuto de la Federación, así como a las del reglamento del Consejo Directivo.
d) Discutir proposiciones de los miembros de la Federación, así como las del Consejo Directivo.
e) Fijar la sede del próximo Congreso.
f) Recibir el Informe del Presidente y del Secretario Ejecutivo sobre el estado de la Federación.

Art. 18°- El Consejo Directivo estará integrado por los siguientes miembros:

a) El Presidente de la Federación, que actuará también como Presidente del Consejo Directivo.
b) El Presidente Anterior, que actuará como Consejero en razón de su experiencia en el cargo.
c) El Secretario General será del mismo país y reemplazará al Presidente en su ausencia.
d) El Pro-Secretario será del país sede del próximo Congreso.
e) Consejero permanente.

Art. 19°- El nombramiento del Presidente y del Secretario General de la Federación será formalizado en la primera reunión de la Asamblea General de la FLAQ que se efectúe durante la celebración de un Congreso con los representantes oficiales presentes, disponiéndose que se designe como Presidente al Presidente del Comité Organizador del Congreso, quien deberá ser miembro de la Asociación correspondiente del país en el cual se reunirá la Asamblea General y asumirá el cargo de Presidente en la Segunda Asamblea General de la FLAQ.

Art. 20°- El Pro-Secretario será designado por la Asamblea de la FLAQ ante el Comité Organizador de la Asociación encargada de la organización de un Congreso Latinoamericano de Química y formará parte de dicho Comité hasta la culminación de sus funciones. Su selección se hará en armonía con el inciso d) del Art. 18° y en lo posible deberá tener alguna experiencia en el funcionamiento de la FLAQ.

Art. 21°- Presidente Honorario es el científico o profesional que por su labor a favor de la FLAQ merece tal distinción. Es designado por la Asamblea General y actúa en el Congreso Directivo como Consejero Permanente. Los ex Presidentes y los ex Secretarios Generales de la FLAQ son Consejeros Permanentes por derecho propio y no requieren ser confirmados como tales por la Asamblea, pero pierden la distinción por inasistencia a tres Congresos consecutivos.

Art. 22°- El Consejo Directivo guiará sus actividades para el mejor cumplimiento de sus fines indicados por este Estatuto.

Art. 23°- El Consejo Directivo sesionara ordinariamente durante la realización de cada Congreso Latinoamericano de Química, en el lugar sede del Congreso y celebrará tantas sesiones como considere necesario.

Art. 24°- Las obligaciones de cada uno de los miembros del Consejo Directivo quedarán establecidas en el reglamento correspondiente que fijará la Asamblea General.

Art. 25°- El Consejo Directivo someterá a la aprobación de la Asamblea General, proyectos de todos los reglamentos mencionados en el presente Estatuto.

Art. 26°- La Secretaría Ejecutiva es el organismo que centraliza y canaliza los aspectos administrativos de la FLAQ y esta encargada de promover y fomentar las actividades de la Institución. Apoya a la Asamblea General, al Consejo Directivo, a las Divisiones y Comisiones y a todo otro organismo que designe la Asamblea General, emitiendo dictamen y absolviendo consultas. Normaliza y revisa el Estatuto y Reglamento, proponiendo a la Asamblea General a través del Consejo Directivo las modificaciones que estime conveniente. Su sede permanente es la Ciudad de Lima, quedando encargada la Sociedad Química del Perú de su ubicación.

Art. 27°- La Secretaría Ejecutiva estará integrada por los siguientes miembros:

a) Un Secretario Ejecutivo
b) Un Tesorero

Art. 28°- El Secretario Ejecutivo y el Tesorero serán designados por la Asamblea General a propuesta de la Sociedad de Química del Perú, por un periodo de dos años, pudiendo ser reelegidos en sus funciones.

Art. 29°- Las Divisiones son organismos técnicos encargados del estudio de problemas generales existentes. Su creación será acordada por el Consejo Directivo y estarán integradas por una Mesa Directiva constituida por un Director y dos o mas Vocales propuestos por este al Consejo Directivo de la FLAQ para su ratificación.

Art. 30°- Las Comisiones son organismos de apoyo de las Divisiones para el estudio de los problemas específicos que estas juzguen pertinente. Serán creadas directamente por el Consejo Directivo de la FLAQ o por ésta a pedido de las Divisiones.

Art. 31°- Los Congresos Latinoamericanos de Química se realizaran cada dos años. Son obligaciones de la Asociación encargada de su organización:

a) Otorgar pasaje aéreo, estadía e inscripción al Congreso al Presidente de la FLAQ y al Secretario Ejecutivo o su representante.
b) Otorgar el derecho de inscripción al Presidente de las Asociaciones miembros o a su representante oficial y a los consejeros permanentes.

DISPOSICIONES GENERALES

VIII. De la modificación del Estatuto

Art. 32°- Cualquier proposición, modificación o modificaciones a este Estatuto, habrán de ser sometidas a la Secretaría General de la FLAQ, con anticipación a la celebración de la Sesión Ordinaria en la cual habrán de discutirse.
Para aprobar dicha modificación o modificaciones se requerirá la aceptación de un mínimo de a mitad mas uno de los representantes ante la FLAQ, presentes en la reunión en que estas sean discutidas.

Art. 33°- Los cargos de la FLAQ no tendrán derecho a compensación económica.

Art. 34°- La FLAQ no interferirá en la jurisdicción de sus miembros.

Art. 35°- Los casos no previstos por este Estatuto, serán resueltos por el Consejo Directivo, con la obligación de rendir informe en la próxima Asamblea General.

FEDERACION LATINOAMERICANA DE ASOCIACIONES QUIMICAS FLAQ:

REGLAMENTO

ANTECEDENTES

Este reglamento esta basado en el Estatuto de la FLAQ, aprobado el 15 de febrero de 1981 durante la realización del XIV Congreso Latinoamericano de Química, celebrado en la ciudad de San José, Costa Rica. Ha sido elaborado por la Secretaria Ejecutiva en virtud del mandato recibido en el referido Congreso y tiene por finalidad nombrar disposiciones, así como fijar y limitar atribuciones y responsabilidades. Sus disposiciones no pueden sobrepasar en su alcance a los dispositivos del Estatuto y en caso de duda es este último el que se tomará como referencia. Entro en vigencia por mandato de la Asamblea reunida el 28 de octubre de 1982 durante la realización del XV Congreso Latinoamericano de Química, en San Juan, Puerto Rico y desde entonces ha sufrido modificaciones paralelamente a los cambios efectuados en el Estatuto.

DE SUS OBJETIVOS

1.0 La FLAQ es una asociación de las Asociaciones Científicas y/o profesionales de la Química de América Latina, tiene una duración indefinida y solo podrá disolverse en Asamblea General por acuerdo de la mayoría de sus miembros afiliados. Su objetivo es el que le señale el Estatuto en su Art. 3^0.

DE LOS MIEMBROS AFILIADOS

2.0 Son miembros de la FLAQ las Asociaciones de Química que representan a cada una de las naciones latinoamericanas y que hayan solicitado su incorporación. Será miembro de la FLAQ una entidad por cada país y en el caso de que hubieran varias, serán invitadas a designar colectivamente a una de ellas para que actué en nombre de todas.

3.0 La solicitud de incorporación de un nuevo miembro será dirigida por la Asociación interesada al presidente del Consejo Directivo, quien lo derivará a la Secretaria Ejecutiva para su dictamen, basado en el Art. 6^0 del Estatuto, a fin de que el Consejo Directivo actúe en consecuencia. Cuando la admisión de un nuevo miembro es aceptada, su incorporación es inmediata y el Consejo Directivo dará cuenta a la Asamblea General en la primera oportunidad. Las solicitudes para la incorporación de un miembro asociado seguirán el mismo tramite señalado antes, pero el Consejo Directivo deberá someter la solicitud, con el informe de la Secretaria Ejecutiva a la Asamblea General, para su decisión, por mayoría simple. En este evento no podrá participar ningún representante del recurrente, ni en calidad de observador.

Cuando la solicitud es aprobada la incorporación será inmediata, y la Asociación asume la obligación del pago de una cuota de ingreso equivalente a no menos de dos cuotas ordinarias. La incorporación de una Asociación a la FLAQ se pierde cuando deja de cubrir su cuota anual por un periodo de 4 años, pudiendo solicitar su reincorporación por una sola vez, haciendo efectiva una cuota de no menos de 2 años adeudados. En caso de reincidencia tendrá que abonar todas las cuotas pendientes para lograr su reincorporación.

4.0 Los miembros de la FLAQ están obligados a notificar al Consejo Directivo y a la Secretaria Ejecutiva la designación de sus representantes ante la Asamblea General, así como todo cambio que se produzca en su propio directorio.

DE LA ORGANIZACIÓN

5.0 La FLAQ se gobierna con el concurso de todos sus miembros, los que tienen la obligación de velar por la mejor marcha de la Institución. Sus órganos de gobierno son los señalados en el Art. 13^0 del Estatuto.

DE LA ASAMBLEA

6.0 La Asamblea General es el órgano superior de Gobierno y está constituida por los miembros del Consejo Directivo, los representantes de todas las Asociaciones afiliadas, sin ninguna distinción, y los miembros de la Secretaria Ejecutiva. Cada Asociación solo podrá acreditar un representante con derecho a voto.

7.0 La Asamblea General se reunirá ordinariamente cada dos años, por lo menos tres veces, durante la realización de los Congresos Latinoamericanos de Química, pudiendo reunirse en otra oportunidad en forma extraordinaria a solicitud de no menos de 5 de sus miembros. La solicitud será dirigida al Presidente del Consejo Directivo, con copia a la Secretaria Ejecutiva, para su tramitación. La convocatoria a la Asamblea General la hará la Secretaria Ejecutiva por un encargo del Presidente, indicándose su objetivo. En su reunión ordinaria los puntos a tratar en cada sesión, sin ser limitaciones se referirán:

1ra. Sesión:

- Memoria del Presidente
- Informe del Presidente del Comité Organizador del Congreso
- Informe de la Secretaria Ejecutiva
- Designación del próximo Presidente y Secretaria General

2da. Sesión:

- Entrega del cargo de Presidente y Secretario General
- Designación del Secretario Ejecutivo y Tesorero
- Elección del país sede del próximo Congreso

- Designación del Pro- Secretario

3ra. Sesión:

- Aprobación de Acuerdos y Recomendación del Congreso

8.0 Las atribuciones de la Asamblea General son las que fija el Art. 17^0 del Estatuto.

9.0 La Asamblea General requiere para su funcionamiento de un quórum constituido por la mitad más uno de los representantes de las Asociaciones presentes y con derecho a voto siempre que cumpla con los requisitos del Art. 8^0 del Estatuto. Los acuerdos se toman por mayoría simple de los representantes acreditados en la Asamblea. En el caso de empate no se aceptará debate ni formula sustitutoria, salvo cuando se trate de la designación de sede para la realización de un Congreso Latinoamericano de Química. En cualquier caso se efectuará una nueva votación, que será pública o secreta, cuyo resultado tendrá carácter definitorio. Un nuevo empate se aceptará como moción no aceptada.

10.0 Las resoluciones de la Asamblea General, se sentarán en un Libro de Actas de Asamblea General, rubricado por el Presidente de la Asamblea y el Secretario Ejecutivo.

DEL CONSEJO DIRECTIVO

11.0 El Consejo Directivo es el órgano de gobierno encargado de dirigir las actividades de la FLAQ, de acuerdo con los objetivos de la institución señalados en el Art. 3^0 del Estatuto. Su constitución y los mecanismos para la elección de sus miembros están fijados en los Arts. 18^0, 19^0, 20^0 y 21^0 del Estatuto. Los miembros del Consejo Directivo recibirán del Comité Organizador de un Congreso los siguientes beneficios en armonía con el Art. 31^0 del Estatuto.

11.1 Pasaje, estadía e inscripción para el Presidente de la FLAQ.

11.2 Pasaje, estadía e inscripción para el Secretario Ejecutivo o su representante.

12.0 El Consejo Directivo propenderá a reunirse por lo menos una vez al año, por convocatoria del Secretario General por encargo del Presidente y las sesiones se realizarán por lo menos con siete de sus miembros, tomándose las decisiones por la mitad más uno de los presentes, incluido el Presidente, cuyo dirimirá los casos de empate. Las decisiones del Consejo Directivo, serán firmadas por el Presidente y el Secretario General y comunicadas a todos los miembros de la Asociación, incluyendo una copia al Secretario Ejecutivo, para su mantenimiento en un archivo especial.

13.0 El Presidente del Consejo Directivo es el personero de la FLAQ y como tal la representa en todos sus actos con las facultades que se le otorga y las limitaciones que le señala el Estatuto y Reglamento.
Son sus atribuciones:

13.1 Convocar a las reuniones ordinarias y extraordinarias de la Asamblea General y del Consejo Directivo.
13.2 Presidir la Asamblea General, el Consejo Directivo y las reuniones de las Divisiones y las Comisiones en las que participe.
13.3 Cumplir y hacer cumplir el Estatuto y Reglamento, los acuerdos de la Asamblea y los del Consejo Directivo, así como realizar gestiones por propia iniciativa olas que le encomienden estos organismos de gobierno.
13.4 Suscribir el acta y demás documentos de la Asamblea, del Consejo Directivo, y en general de la Institución, salvo aquellos que le sean encomendados directamente a la Secretaria Ejecutiva.
13.5 Dirimir la decisión de un acuerdo en el caso de empate en las sesiones del Consejo Directivo, mas no de la Asamblea, cuya decisión se someterá a lo dispuesto en el Art. 9.0 de este Reglamento.
13.6 Someter a la decisión de la Asamblea todo punto que comprometa a la marcha de la Institución y los que a su juicio escapan a la autoridad del Consejo Directivo.
13.7 Presentar Memoria Bianual de su gestión a la Asamblea General reunida durante la realización de un Congreso Latinoamericano de Química.
13.8 Efectuar gastos a la cuenta de la cuota anual de su Asociación, con el encargo de rendir cuenta de los mismos.

14.0 El Secretario General es el asesor inmediato del Presidente y lo reemplaza en su ausencia. Actúa como coordinador de todas las actividades del Consejo Directivo y son sus atribuciones:

14.1 Recibir y dar trámite a toda la correspondencia del Consejo Directivo.
14.2 Dar inmediata respuesta a la correspondencia dirigida al Presidente o a él mismo, salvo aquellos casos que demanden consulta a la Presidencia o al Consejo Directivo, en cuyo caso se limitará a acusar recibo.
14.3 Coordinar con la Secretaria Ejecutiva las acciones que a su juicio o del Presidente merezcan su conocimiento y/o intervención.
14.4 Clasificar y conservar el archivo de correspondencia, actas, documentos y otros del Consejo Directivo y hacer entrega de los mismos a la Secretaria Ejecutiva al término de su mandato.
14.5 Preparar las actas de las reuniones del Consejo Directivo o de la Asamblea General, actuando en este ultimo caso como colaborador del Secretario Ejecutivo.

14.6 Notificar a la Secretaria Ejecutiva, con el visto bueno del Presidente, los gastos en los que hubiera incurrido el Consejo Directivo para su cancelación.

15.0 El Pro-Secretario es designado por la Asamblea General y deberá ser ciudadano del país encargado de un Congreso Latinoamericano de Química. El periodo de duración de sus funciones concluye con el Comité Organizador del certamen y en lo posible deberá tener alguna experiencia en las labores de la FLAQ. Son sus atribuciones:

15.1 Formar parte del Comité Organizador del Congreso Latinoamericano de Química, representando al Consejo Directivo y constituye un nexo entre ambos organismos.

15.2 Informar al Consejo Directivo de los avances de la organización del Congreso, de sus necesidades y sus requerimientos.

16.0 Los Consejos Permanentes son los asesores del Consejo Directivo en virtud de sus méritos y experiencia a favor de la FLAQ. Son los Presidentes Honorarios, los ex Presidentes y los ex Secretarios Generales de la FLAQ. Los Presidentes Honorarios son designados por la Asamblea General a pedido de uno o más de sus miembros y en armonía con el Art. 21^0 del Estatuto. Los ex Presidentes y los ex Secretarios Generales de la FLAQ son Consejeros Permanentes por derecho propio y no requieren ser confirmados como tales por la Asamblea, pero pierden tal distinción por inasistencia a tres Congresos consecutivos. Son sus atribuciones:

16.1 Contribuir a la mejor marcha de la FLAQ, prestando su colaboración en todo lo relacionado a los asuntos que se sometan a su consideración a los que a su juicio considere necesaria su intervención.

16.2 Llevar a cabo las comisiones y trabajos que le encomiende la Asamblea General o el Consejo Directivo.

DE LA SECRETARIA EJECUTIVA

17.0 La Secretaria Ejecutiva es el órgano de gobierno de la FLAQ encargada de garantizar y centralizar los aspectos administrativos, así como de promoción y fomento de la Institución. Actúa como órgano de apoyo a la Asamblea General y del Consejo Directivo, emitirá dictamen y resolverá consultas. Normará y revisará el Estatuto y el Reglamento, proponiendo a la Asamblea General las modificaciones que estime convenientes para su mejor marcha. Es el custodio natural del patrimonio de la Institución y su sede es la ciudad de Lima, Perú. Son sus atribuciones:

17.1 Canalizar la información y mantener un archivo central, recabando la correspondencia y archivo de los demás órganos de gobierno al término de las funciones de sus titulares.

17.2 Administrar los bienes, promover las cotizaciones de los asociados, buscar fuentes de ingreso y fiscalizar el gasto.

17.3 Recomendar normas, así como revisar el Estatuto y Reglamento, proponiendo a la Asamblea General las modificaciones que crea convenientes y que tengan origen en su propia iniciativa o por recomendación de alguno de los miembros.

17.4 Brindar asesoría para la mejor marcha de la Institución, emitiendo dictamen, resolviendo consultas y preparando informes sobre los temas que se sometan a su consideración.

17.5 Fomentar el intercambio de información entre las Asociaciones miembros y notificarlas para que designen sus representantes ante la Asamblea General.

17.6 Estudiar y propiciar la organización de eventos científicos, así como fomentar la investigación científica en las Asociaciones miembros.

17.7 Propiciar y alentar la participación de las Asociaciones afiliadas a los Congresos y reuniones científicas o técnicas relacionadas con la Química.

17.8 Propiciar y alentar la formación de Asociaciones Químicas en los países del área Latinoamericana que aun no cuentan con ellas.

17.9 Custodiar el acta de Asamblea General, preparada por el Secretario General del Consejo Directivo y rubricada por el Presidente y Secretario Ejecutivo.

18.0 El Secretario Ejecutivo es el coordinador de todas las actividades de la FLAQ y como tal recibe y mantiene correspondencia, organiza y mantiene archivos. Es asesor de la Asamblea General, del Consejo Directivo, del Presidente, de las Divisiones y Comisiones y en general de todo otro organismo que designe la Asamblea General, para la mejor y oportuna aplicación de los acuerdos y sugerencias. Su mandato es de dos años, pudiendo ser reelegido indefinidamente para períodos consecutivos. Son sus atribuciones:

18.1 Cuidar y mantener las buenas relaciones entre las Asociaciones afiliadas, manteniéndolas oportunamente informadas de las actividades de la Institución.

18.2 Recibir y dar trámite a la correspondencia, centralizar, clasificar y conservar el archivo de correspondencia, documentos, actas y otros de los organismos que componen la FLAQ y que le hayan sido remitidos para su custodia.

18.3 Recabar la correspondencia, archivo y actas del Secretario General y de los demás organismos o funciones al término de su misión.

18.4 Asesorar a la Asamblea General, al Consejo Directivo y otros organismos, emitiendo informe y prestándole las facilidades que le soliciten para el mejor cumplimiento de su misión.

18.5 Propenderá a la creación de un organismo informativo de la FLAQ y propiciara la publicación de información científica en las distintas revistas sostenidas por los afiliados, principalmente en el Boletín de la Sociedad Química del Perú, que para tal fin actuara como "Órgano Oficial", en cuanto se crea la revista propia, cuidando su posterior distribución en las Asociaciones afiliadas.

18.6 Concordar, anotar y sistematizar la legislación institucional, dándole el trámite correspondiente.

18.7 Elevar al Presidente, informe sobre las actividades de la FLAQ para la preparación de la Memoria Bianual que debe presentar a la Asamblea General.

18.8 Autorizar y visar, conjuntamente con el tesorero, todo gasto en que incurra para el funcionamiento de la Secretaria Ejecutiva u otro órgano institucional.

18.9 Comunicar por escrito a las entidades de crédito con los que mantiene relación financiera, indicando expresamente el nombre de las personas elegida como Secretario Ejecutivo y Tesorero. Esta comunicación estará refrenada por las firmas del Secretario Ejecutivo y Tesoreros cesantes y electos.

18.10 Alentar la formación de Asociaciones Químicas en los países del área Latinoamericana que aún no tengan y propiciando su afiliación.

18.11 Cumplir las demás tareas que le sea encomendadas y que no estén expresamente contempladas en el presente Reglamento.

19.0 El Tesorero tiene bajo su dirección la recaudación y administración de todos los fondos de la FLAQ y es custodio de su patrimonio. Su mandato es de dos años pudiendo ser reelegido en el cargo indefinidamente para períodos consecutivos. Son sus atribuciones:

19.1 Efectivizar las cuotas de las Asociaciones afiliadas, proponiendo las formas mas adecuadas para conseguirlo y extendiendo el comprobante respectivo.

19.2 Depositar en instituciones de crédito, a nombre de la FLAQ, el dinero recaudado, manteniendo en su poder –si es necesario- una cantidad mínima, cuyo monto se fijara de acuerdo con el Secretario Ejecutivo, para los gastos menores.

19.3 Girar mancomunadamente con el Secretario Ejecutivo, contra los depósitos en cuanta corriente, mantenidos e instituciones de crédito, para lo cual ambos registraran su firma, según el procedimiento señalado en el Art. 18.9 de este Reglamento.

19.4 Abonar los gastos, deudas u obligaciones contraídas por la FLAQ, que lleven el visto bueno del Secretario Ejecutivo, incluyendo los efectuados por el Consejo Directivo.

19.5 Vetar el gasto que a su juicio sea anormal y pedir la decisión del Consejo Directivo o de la Asamblea, según la instancia que juzgue apropiada, para efectuar la cancelación.

19.6 Presentar informe escrito al Secretario Ejecutivo sobre la administración de los fondos, para ser elevados al Presidente en ocasión de la preparación de su Memoria Bianual o en cualquier otra circunstancia que el Secretario Ejecutivo o el Presidente lo soliciten.

Elaborado por: Dania Cremata, Oficinista
Actualizado por: Olga Lock Sing, Secretaria Ejecutiva
Revisado por: Alberto J. Núñez Sellés, Presidente
Fecha última revisión: Enero, 2007

Item 18: Proposals Formally Received from National Adhering Organizations

No proposals were received from National Adhering Organizations.

Item 19: Organizational Changes in Existing IUPAC Bodies, Proposals for New and Reconstituted Bodies/Terms of Reference

Item 19.1: New Division Rules

There are no proposed organizational changes in existing IUPAC Bodies or proposals for new and reconstituted Bodies/Terms of Reference.

There are no new Division Rules.

David Black

Item 21: Plans for 45th General Assembly and 42nd Congress (Glasgow, 2009)

The 45th General Assembly and 42nd Congress will be held on 1-9 and 2-7 August 2009 at Glasgow, Scotland. The Theme of all IUPAC Congresses is “Frontiers in Chemistry”. This title was chosen not only as a reminder that the subject of an IUPAC Congress is new science at the unexplored frontier of chemistry, but also of the importance of the interaction of chemistry with other disciplines at the frontiers between sciences.

A presentation by the organizers of the Glasgow Congress and General Assembly will be given to the Council.

Item 22.2: 46th General Assembly and 43rd Congress (2011)

Proposals have been received from the Colegio de Quimicos de Puerto Rico and the Turkish Chemical Society to host the General Assembly and Congress in 2011. The letters from each Society announcing their proposal follows this page. The Executive Director has visited each of the proposed venues and determined that the proposed facilities are suitable. Prof. R. Lamba will present the proposal from Puerto Rico and Prof. M Mahramanlioglu will present the proposal from Turkey.

David Black

Colegio de Químicos de Puerto Rico

52 Hatillo Street
San Juan, PR 00919
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Email: cqpr@cqpr1941.org
Web page: www.cqpr1941.org

January 25, 2007

Dr. John W. Jost, Executive Director
International Union of Pure and Applied Chemistry
P. O. Box 13757
RTP, North Carolina 27709-3757

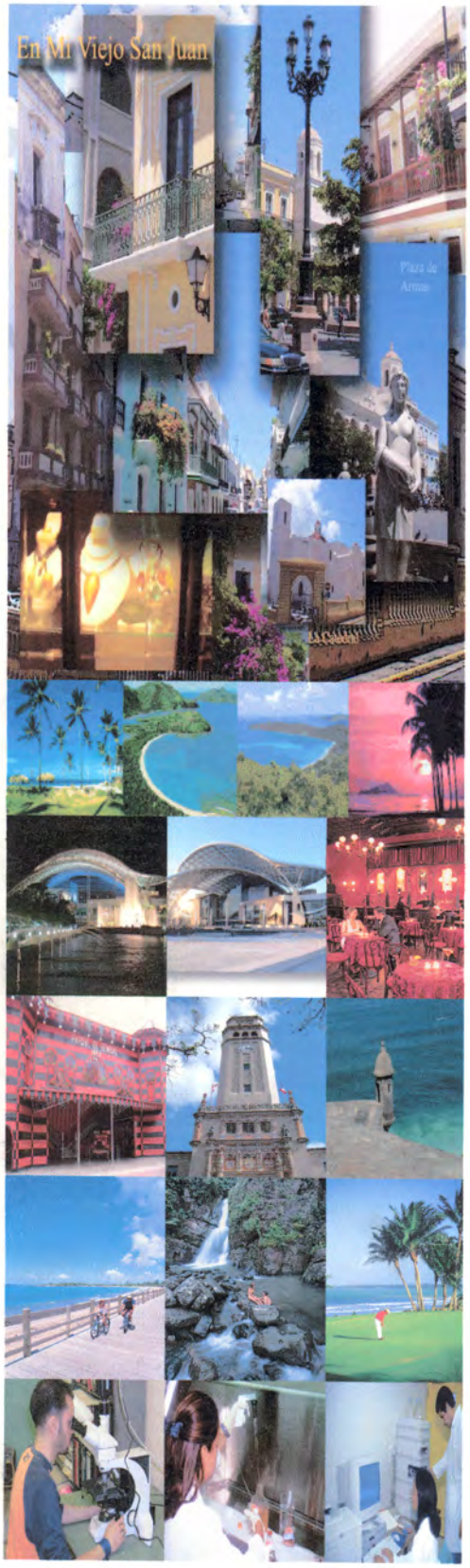
Dear doctor Jost:

Encloses you will find the Colegio de Quimicos de Puerto Rico Proposal to celebrate the 43rd IUPAC International Congress and 46th IUPAC Assembly in San Juan Puerto Rico July 30 – August 7, 2011.

If you need additional information please do not hesitate to contact us.

Sincerely,

Dr. Gabriel A. Infante



43rd Congress

INTERNATIONAL UNION OF PURE AND APPLIED CHEMISTRY

CHEMISTRY BRIDGING INNOVATION AMONG THE AMERICAS AND THE WORLD

70th Annual Conference and Exhibition

COLEGIO DE QUIMICOS DE PUERTO RICO

and

46th General Assembly

International Union of Pure and Applied Chemistry

July 30 – August 7, 2011

San Juan, Puerto Rico

Invitation submitted by the Colegio de Químicos de Puerto Rico

43rd Congress
INTERNATIONAL UNION OF PURE AND APPLIED CHEMISTRY

CHEMISTRY BRIDGING INNOVATION AMONG THE AMERICAS AND THE WORLD

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And

46th General Assembly
International Union of Pure and Applied Chemistry

July 30-August 7, 2011

San Juan, Puerto Rico

Invitation submitted by the
Colegio de Químicos de Puerto Rico

Dear Jost

Turkish Chemical Society has been founded in 1919 in Istanbul. At present, it has more than 2000 members who are chemists, chemistry teachers and chemical engineers. Our society has organized various national and international conferences. 35th IUPAC Congress and 18th ICCE were some of the important meetings organized by Turkish Chemical Society with very successful outcomes.

We would like to announce that we are keenly interested in hosting the IUPAC General Assembly and Congress in 2011.

Turkish Chemical Society accepts complete financial responsibility for both the Congress and the General Assembly. We are proud of being able to provide all the facilities needed for the IUPAC General Assembly and Congress listed by IUPAC. We can also guarantee to organize the IUPAC General Assembly and the Congress from the plenary session to the closing ceremonies using the latest technology.

We have selected the general Conference theme as “BETTER AND CLEANER ENERGY THROUGH CHEMISTRY”

Istanbul has many conference and exhibition areas. Because of the better, more centralized location and more accommodation alternatives, we believe that the Conference Valley in Istanbul would be the best choice for IUPAC General Assembly and Congress.

This district combines leading international and Turkish 3-, 4- and 5-star hotels within walking distance from the Conference Valley. Our choice in the Congress Valley is the Hilton Hotel& Exhibition Center.

The capacities and sizes of the meeting rooms are given below:

HILTON HOTEL CONVENTION & EXHIBITION CENTER

Meeting Room	Capacity	Area in m2
Convention Upper Hall	1500	1344
Convention Lower Hall Section 1	400	464
Convention Lower Hall Section 2	450	544
Convention Lower Hall Section 3	400	470
Ballroom 1	180	253
Ballroom 2	180	268
Ballroom 3	70	84
Sadirvan A	250	346
Sadirvan B	300	347
Altin Kubbe	200	408
Sedir	75	93
Fatih 1	40	80
Fatih 2	80	100
Mercury 1	40	45
Mercury 2	30	35
Mercury 3	30	35
Saturn	60	85
Neptune	50	98
Jupiter	70	99
Venus	12	34
Hyde Park	20	48
Central Park	10	28
Macka Park	20	59
Orman Park	30	46

Except all these meeting rooms, Hilton also offers 3 garden areas for opening or banquet. Since it is going to be a nice summer period for Istanbul, the garden areas will be used for many purposes such as opening, coffee breaks, lunches and banquet dinner.

HILTON HOTEL CONVENTION & EXHIBITION CENTER
Garden Areas

Area	Capacity	Area in m2
Ballroom Terrace	1000	Garden Area
Outdoor Pool	2000	1965
The Gardens	450	Garden Area

The last 14 rooms(except venus and central park)will be used for the General Assembly. Convention Lower Hall Section 1 can be divided by sound isolated seperator systems and used for the General Assembly as additional rooms. Venus and central park can be used for secretariat and IUPAC officers.The Hilton Hotel 'll aso provide some additional rooms(bigger than 30 m^2 , at least 5 rooms) for secretariat and IUPAC officers.

Convention Lower Hall Section 2 will be used for poster sessions. Convention Lower Hall Section 3 can also be be used for exhibition. The rest of the rooms in Hilton Hotel& Exhibition Center such as Ballrooms1,2,3 and Sadirvan A,B and Altin Kubbe can be used for the parallel session in the Conference.

As you can see the number and sizes of the meeting rooms are suitable to host IUPAC General Assembly and the Congress. Besides, latest technology, internet access, computer facilities and space for IUPAC secretariat and offices for IUPAC officers are also available. In addition to that, using the latest technology we will also provide online registration system, online abstract and poster application system and self registration system for IUPAC General Assembly and the Congress.

Participants attending the IUPAC General Assembly and Congress in 2011 will be offered a wide range of accommodation from 5 star hotels to dormitories.

Istanbul is a cultural, dynamic and modern city and set squarely between two continents. Istanbul has also cultures and traditions that blend East with the West and Mediterranean with Anatolian. With one foot in Europe and another in Asia, vibrant atmosphere rooted in history while facing toward the future, Istanbul is truly as much a crossroad of ideas and cultures today as ever. Each civilization that has made its home in Istanbul has left its mark in some way.

Istanbul's outstanding infrastructure, including modern, luxurious accommodation, state-of-the-art conference and exhibition venues and experienced conference professionals, makes it a logical choice for meeting. When combined with the city's fabulous history and stunning natural beauty, not to mention cultural riches, exciting shopping, sophisticated night life and world-class dinning, it is not hard to figure out why top international associations choose Istanbul.

Nesrin Emekli

President of Turkish Chemical Society

Item 23: Reauthorization of Commissions.

Bylaw 4.302 states: “At each General Assembly, the Council shall, in the light of the Division or Section President’s report and on the recommendation of the Bureau, decide whether or not to continue each Commission.” Council is asked to approve the continuation of Commission I.1: Commission on Physicochemical Symbols, Terminology, and Units and Commission II.1: Commission on Isotopic Abundance and Atomic Weights.

David Black

Item 25: Reports from Round Table Discussions

This year the Bureau has inaugurated a new feature of the General Assembly, Round Table discussions for Council Delegates. This will allow small groups of Council delegates to discuss subjects of mutual interest in a setting conducive to the easy exchange of ideas.

Each Round Table was limited to no more than 40 participants. When registering for the Council, delegates interested in participating in a discussion were asked to prioritize their interest in the discussion topics. Assignments to the various round tables were based as much as possible on these priority interests.

In each case, two members of the Bureau chaired and mediated the discussion. The following topics were chosen for this inaugural set of Round Table Discussions:

Topic A

How can we attract more students to chemistry? Do we need to modify the curriculum? Can IUPAC play a role?

Chair: Maria C.E. van Dam-Mieras (Netherlands)

Moderator: David StC. Black (Australia)

Topic B

How can we help regions and small countries to have a more effective voice within IUPAC?

Chair: Christoph F. Buxtorf (Switzerland)

Moderator: Stanislaw Penczek (Poland)

Topic C

How can we interact more effectively with governments and other decision makers? How can we improve our interactions with industry, other unions, ICSU, UNESCO, etc.?

Chair: Bryan R. Henry (Canada)

Moderator: Nicole J. Moreau (France)

Topic D

How can we increase the global visibility of chemistry, enhance public understanding of chemistry, and improve its public image? How can we improve the visibility and image of IUPAC?

Chair: Peter G. Mahaffy (Canada)

Moderator: Leiv K. Sydnes (Norway)

Short reports on the outcome of these discussions will be presented to Council on Sunday morning, 12 August.

David Black