

42nd IUPAC COUNCIL MEETING
Ottawa, Canada, 16-17 August 2003
Minutes

1.	Introductory Remarks and Finalization of Agenda	1
2.	Approval of Minutes of 41 st Council Meeting and Matters Arising.....	1
3.	Ratification of Decisions Taken by Bureau and Executive Committee since 41 st General Assembly.....	1
4.	Announcement of Nominations for Union Officers and Bureau Members	1
5.	Announcement of Time of Elections	1
6.	Statutory Report of President on State of the Union.....	1
7.	Report of Secretary General.....	3
8.	Financial Reports	4
8.1.	Biennial Report of Treasurer.....	4
8.2.	Report of Finance Committee.....	5
8.3.	Accounts for 2001-2002.....	5
8.4.	Appointment of Auditors for 2003 and 2004	5
9.	Adoption of Recommendations on Nomenclature and Symbols	5
9.1.	Approval of a Recommended Name of Element 110.....	5
10.	Reports of Division Presidents	6
11.	Reports of Standing Committee Chairmen.....	15
11.1.	Committee on Printed and Electronic Publications	15
11.2.	CHEMRAWN Committee.....	16
11.3.	Committee on Chemistry and Industry	17
11.4.	Committee on Chemistry Education.....	18
11.5.	Project Committee (written report only).....	19
11.6.	Evaluation Committee (written report only)	19
11.7.	Interdivisional Committee on Terminology, Nomenclature and Symbols (written report only)	19
12.	Report of the Vice-President: Critical Assessment of IUPAC	19
13.	Report from Governance Structure Committee.....	20
14.	Budget Proposal.....	23
14.1.	Report of Working Party on National Subscriptions	23
14.2.	Proposed Budget for 2004-5	23
14.3.	National Subscriptions for 2004-5.....	23
15.	Proposal to Invoice National Subscriptions in National Currencies.....	23
16.	IUPAC Programs	24
16.1.	IUPAC Prize	24
16.1.1.	IUPAC Prize 2002-3.....	24
16.1.2.	Reapproval of IUPAC Prize Program.....	24
16.2.	Conferences in Developing Countries and on New Directions in Chemistry.....	24
17.	Proposals Formally Received from National Adhering Organizations	25
18.	Organizational Changes in Existing IUPAC Bodies, Proposals for New and Reconstituted Bodies/Terms of Reference	26

42nd IUPAC COUNCIL MEETING

Minutes

18.1.	Continuation of the Joint Commission on Biochemical Nomenclature	26
18.2.	New Division Rules.....	26
19.	Applications for Associated Organization Status.....	27
20.	Election of Union Officers and Bureau Members and Approval of Elected Officers of Divisions	27
21.	Plans for 43 rd General Assembly and 40 th Congress (Beijing, 2005)	28
22.	Approval of Dates and Sites of 44 th General Assembly and 41 st Congress (2007)	28
23.	Important Matters Referred to Council by Bureau at 42 nd General Assembly not Covered by Items on Council Agenda	29
24.	Any Other Business (discussion only).....	29
25.	Closing Remarks, Adjournment	30

42nd IUPAC COUNCIL MEETING
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Minutes

1. Introductory Remarks and Finalization of Agenda

President Steyn welcomed the delegates to the 42nd Council meeting. He thanked the Chemical Institute of Canada for their generous hospitality and the excellent arrangements.

Prof. Steyn introduced Dr. S. Hofmann of the Gesellschaft für Schwerionenforschung mBH in Darmstadt, Germany, leader of the group that had synthesized the element of atomic number 110.

Prof. Steyn then asked the delegates to stand for a moment of silence in honor of deceased colleagues.

2. Approval of Minutes of 41st Council Meeting and Matters Arising

The Minutes of the 41st Council were approved with no changes and no matters arising.

3. Ratification of Decisions Taken by Bureau and Executive Committee since 41st General Assembly

Council ratified the decisions taken by the Bureau and Executive Committee since the 41st General Assembly.

4. Announcement of Nominations for Union Officers and Bureau Members

Dr. Becker reviewed the procedures as presented in the material provided to the delegates. He described in detail the procedures specific to the election of Officers and Bureau Members. He noted that if Prof. Gilbert or Prof. Henry were elected Vice President there would be as many candidates as vacancies for the Bureau. Dr. Becker also reported that the Bureau had made no recommendations for additional candidates and had not made any recommendations for or against any candidate.

Prof. Steyn reported that the Bureau had recommended the following persons to act as tellers for voting: Mr. S. Langer (UK) and Dr. C. I. Ratcliffe (Canada). The tellers were accepted unanimously by the Council.

5. Announcement of Time of Elections

Prof. Steyn announced that the elections would be held at 10 AM, Sunday, 17 August 2003.

6. Statutory Report of President on State of the Union

Prof. Steyn began his report by noting that this biennium had been the first in which IUPAC operated completely under the new project system. He then briefly reviewed the new Mission and Vision Statements. He noted that the Vision Statement emphasized the role of chemistry in improving the welfare of mankind, a role that has been emphasized by a number of recent reports published by groups such as the Federation of European Chemical Societies, the United States National Academy and the American Chemical Society. He then briefly described the changes to

42nd IUPAC COUNCIL MEETING

Minutes

the governance of the Union proposed by the Governance Structure Committee. This will be discussed in more detail in Item 13 of the Agenda.

He reported that the finances of the Union were in a strong position due to the work of the Treasurer and the Finance Committee, as would be seen when they reported in Item 8. He noted that the Finance Committee had prepared policy guidelines for the conduct of the Union's investments and for the handling of its endowment. He then described the proposal of the ad hoc Working Party on National Subscriptions to bill National Subscriptions in national currencies. This proposal addresses the concerns raised at the Brisbane Council meeting that many NAOs had difficulty in paying their National Subscriptions. Prof. Steyn then noted the proposal from the Working Party that the expenses of one delegate from each NAO be paid to attend the Council. He congratulated the Working Party on its work and thanked the members for their active participation in this important effort.

Prof. Steyn then reviewed the accomplishments of the Union as measured against the long-range goals as recently revised and approved by the Bureau. Some highlights of these accomplishments include:

- Advice to the Organization for Prevention of Chemical Weapons on the impact of scientific advances on the Chemical Weapons Convention.
- The International SCOPE/IUPAC Symposium on Endocrine Active Substances Yokohama, Japan.
- The naming of elements: name, darmstadtium, and symbol, Ds, of element 110.
- A Training Program for Safety and Environmental Protection.
- Workshops on Safety in Chemical Production.
- DIDAC Project, sponsored by COCI, CCE and UNESCO, for teaching of chemistry in developing countries.
- Conferences on New Directions in Chemistry:
 - Conference on "Biophysical complexity", April 2003, Southampton, UK
 - "CHEMRAWN on Innovation in the Chemical Industry: The Way from Pure to Applied Chemistry", August 2003, Ottawa.
- Four special topic issues and articles recently published in *PAC*:
Natural Products, Nanostructured Advanced Materials, The Science of Sweeteners, and Medicinal Chemistry in the New Millennium.

Prof. Steyn then drew the attention of the Council to the improved content and appearance of *Chemistry International*; new design, better editing, more news, he emphasized that more input from members is needed, reminding the Council that *CI* is their newsletter. He then noted that the IUPAC web site had become not only a major means of communication within IUPAC but also with the wider chemical community and the public. He reminded the Council of the many new

42nd IUPAC COUNCIL MEETING

Minutes

features available on the web site, including: the *IUPAC Handbook*, the *Gold*, *Orange*, and *Purple* books, Minutes of Council, Bureau, and EC Meetings, and an on line naming service.

Prof. Steyn then reviewed the many programs the Union has initiated in the past few years to aid young scientists. These include: Young Scientists Program, IUPAC Young Observers Program, and the IUPAC Prize for Young Chemists. He noted that the Young Scientists Program had helped more than 85 young scientists from 45 countries to attend the Congress at Ottawa. He then mentioned the session at the Congress devoted to the Public Understanding of Chemistry. This session had been organized by the Committee on Chemistry Education in cooperation with the Canadian Society of Chemistry.

Prof. Steyn then listed the following challenges faced by IUPAC:

- to ensure the effective functioning of the new project system in IUPAC,
- to effectively involve the chemical industry in IUPAC,
- to improve the public understanding and perception of chemistry,
- to broaden the geographic base of the Union.

Prof. Steyn concluded by emphasizing that IUPAC takes enormous pride in the achievements of its members and their service to the discipline of chemistry. He then thanked all his colleagues in the Union and in particular the Officers, members of the Bureau and the Executive Director, Dr John Jost and his team at RTP. He especially thanked Dr Alan Hayes, Past President, Dr Ted Becker, Secretary General, Prof Leiv Sydnes, President-elect, and Dr. Christoph Buxtorf, Treasurer, for their assistance during his term as President.

7. Report of Secretary General

Dr. Becker in his remarks discussed a few highlights from his written report. He noted that while the Secretariat staff remained at five, as it was two years ago, three of the members are new. The Executive Director had used the opportunity given by the need to hire new staff to reorganize the work done so as to better handle the work, based on the experience gained since the original staff assignments were made in 1997 and 1998. He then noted the many contributions made to IUPAC by Dr. Fabienne Meyers, including the operation of the Project Approval system, the improved content and appearance of *Chemistry International*, and the continued development of the IUPAC web site as a resource not only for the IUPAC community but for chemists and those interested in chemistry around the world.

Dr. Becker commented on the successful operation of the project system, noting, however, that new projects continue to come from people who are familiar with the work of IUPAC. He urged the delegates to make IUPAC's interest in new projects from scientists not previously connected with IUPAC known to their colleagues. He noted that there had not been any financial constraints on funding new projects. He then went on to describe the project to provide advice to the Organization for Prohibition of Chemical Weapons. An initial allocation by IUPAC of USD 10,000 [much of it still unspent] was leveraged to a budget of USD 110,000 with support from foundations, government and industry, plus other cash and in-kind support from the US National Academies. The final report of the Workshop organized in Bergen has been widely distributed to interested parties.

42nd IUPAC COUNCIL MEETING

Minutes

Dr. Becker noted that the Fellows program, initiated at the Berlin General Assembly has been very successful, with the former members of IUPAC bodies very appreciative of the recognition that the program offers them. He then commented that the number of Affiliates in the Affiliate Membership Program has fluctuated over the past few years, mainly due to fluctuations in the number of Affiliates joining through the American Chemical Society. However, the number of Affiliates from other parts of the world has steadily decreased. He stressed that he felt that there is still untapped potential for growth of the program, but this will require continued efforts by the IUPAC Officers, the Secretariat, and especially the NAOs and national chemical societies. With the improved content and appearance of *Chemistry International*, we can provide a better tangible product to Affiliates.

Prof. De Bièvre (Belgium) asked two questions:

What actions have been taken to benefit developing countries?

Has the funding provided to one delegate from each NAO increased attendance at the Council?

Dr. Becker replied by noting that over 400 Affiliates are sponsored by IUPAC, that is, they pay no membership fee. He also noted the program to fund conferences in developing countries. It is too early to tell if the funding offered to delegates had had a significant effect on attendance of delegates at the Council.

Prof. Lamba (Puerto Rico) asked who should be contacted at IUPAC about chemical weapons.

Dr. Becker replied that the Secretary General should be contacted.

Prof. De Bièvre (Belgium) then asked if governments could address questions to IUPAC.

Dr. Becker replied that governments could address questions to IUPAC, even though IUPAC may not always be in a position to respond.

8. Financial Reports

8.1. Biennial Report of Treasurer

Dr. Buxtorf briefly reviewed his written report. The Union is on plan and the reserves are in good shape. He commented that he and the Finance Committee continue to be aware of the world economic situation, which remains difficult for many NAOs. He then discussed IUPAC's major sources of income: the National Subscriptions, publications, and grants and donations. He noted that publications income continues to be under pressure from the gradual decline in the number of institutional subscribers to IUPAC's journal, *Pure and Applied Chemistry*. Outside sources of funding while important, have not in the past been a significant factor in IUPAC's revenue. He urged that all those involved in IUPAC make greater efforts to generate funding from outside sources. This will require doing a better job of demonstrating the value of IUPAC's work to potential sources of funding. He then noted that he had asked the Divisions to adhere to a 25 % / 75 % split between operations and projects in the current and coming biennia. The reserves set aside in the budget have provided the flexibility to fund good projects when Divisions did not have the resources available.

42nd IUPAC COUNCIL MEETING

Minutes

Prof. De Bièvre (Belgium) asked if there was an “orange light” on the future financial position of the Union.

Dr. Buxtorf replied that there was no “orange light”; the proposed budget for 2004-5 is very moderate.

8.2. Report of Finance Committee

Dr. Przybylowicz noted that the financial environment had been difficult for the past two years; however, the Union’s balanced portfolio has insulated the investments from major losses. The shift to a portfolio with a higher ratio of bonds to equities two years ago was a major factor in the good performance of the Union’s investments as compared to the overall market. Dr. Przybylowicz pointed out that in order to hedge the Union’s portfolio against currency fluctuations, part of the bond portfolio had been invested in Euro denominated bonds.

8.3. Accounts for 2001-2002

This item was for information only and there was no discussion.

8.4. Appointment of Auditors for 2003 and 2004

Council approved the appointment of Batchelor, Tillery & Roberts, LLP, of Raleigh, North Carolina, USA as IUPAC Auditors for 2003 and 2004.

9. Adoption of Recommendations on Nomenclature and Symbols

Council approved the Recommendations on Nomenclature and Symbols that had been published since the last General Assembly.

9.1. Approval of a Recommended Name of Element 110

Dr. Rosenblatt reviewed the procedure for assigning a name to a newly discovered element. He noted that the joint IUPAC-IUPAP (International Union of Pure and Applied Physics) Working Party (JWP) had confirmed the discovery of element number 110. In accord with IUPAC procedures the discoverers, at the Gesellschaft für Schwerionenforschung mbH (GSI) in Darmstadt, Germany, have proposed a name and symbol for the element. The Inorganic Chemistry Division Committee now recommends this proposal for acceptance. The proposed name is *darmstadtium* with symbol *Ds*. This is now a Provisional Recommendation, which has been available on the IUPAC web site for more than the five-month period specified in Bylaw 2.11. All comments received have been positive, and no controversy has arisen. He also noted that the Joint Working Party has issued a new report confirming the discovery of the element of atomic number 111 by researchers at the Gesellschaft für Schwerionenforschung mbH. The report also reviewed the evidence for the discovery of the elements of atomic number 112, 114, and 116; the discovery of these elements has not been confirmed. Dr. Rosenblatt thanked the member of the Joint Working Party, Prof. P. Karol (Chairman), Prof. H. Nakahara, Dr. B. W. Petley, and Dr. E. Vogt for their excellent and thorough work.

42nd IUPAC COUNCIL MEETING

Minutes

Council approved the recommended name darmstadtium and symbol, Ds unanimously.

Dr. Becker noted that the process of selecting and approving a name for the element of atomic number 111 would now begin. He requested that Council delegate to the Bureau the approval of the name and symbol for this element, if there is no controversy regarding the proposed name and symbol.

Prof. Koch (Germany) asked what is the definition of controversy in this case.

Dr. Becker replied that the judgment must be made by the Bureau.

Council approved the proposal unanimously.

10. Reports of Division Presidents

Physical and Biophysical Chemistry Division

Prof. Ralston reported that the Division has now moved into a project-based organization that is completely different from the past IUPAC structure. In September 2000 the name of the Division was changed to embrace Biophysical Chemistry, recognizing that many areas of bioscience are underpinned by physical chemistry. The Division was actively involved in an innovative conference on Biophysical Complexity, held in Southampton in April 2003. One successful aim of the meeting was to actively engage young researchers in the early stages of their research careers. An outstanding group of plenary speakers took part, drawn from Departments of Chemistry, Medicine, Bioengineering, Cell Biophysics, Anthropology and Human Genetics. A Report will be published in *Chemistry International* in the near future.

Another activity in the Biophysical Chemistry area is a major international workshop on the Physical Chemistry of Biointerfaces to be held in the Barossa Valley near Adelaide, South Australia from May 23 to May 26, 2004. This is a satellite workshop that will be held immediately following the Seventh World Biomaterials Congress [Sydney, Australia, May 17-21 2004]. This workshop is aimed at providing fundamental insights into topics such as interfacial forces and properties involved in protein/surface interactions and the molecular kinetics of drug delivery, to give just two examples. Advances in materials science, molecular biology, surface and interface analysis methods and theoretical and modeling approaches to biological systems will be key foci. It is intended that this workshop will be supported in part by IUPAC as an innovative conference under the banner of New Directions in Chemistry. Additional support is anticipated from private industry and from the Australian Government. It is expected that these conferences are the harbingers of future larger scale activities in the area of Biophysical Chemistry by the Division.

The Division's very important work in establishing databases in key areas continues. Of particular importance is the work on evaluated kinetic data for atmospheric chemistry. The website development has been very successful and there is now a mirror site at the IUPAC site at the University of North Carolina as well as the parent site in Cambridge. The site attracts about 2000 accesses per week, a very respectable figure indeed. Substantial numbers of downloads occur in areas covering heterogeneous reactions, thermodynamic data and guides to data sheets. There are over 300 subscriptions to the mailing list for announcements. All databases will in future be physically located at the server in North Carolina from the outset of the project. The Secretariat will

42nd IUPAC COUNCIL MEETING

Minutes

provide service whilst maintenance will be the responsibility of the Division; both will be addressed at the proposal stage for any project. Presently a significant proposal to develop a database for ionic liquids, whose development was actively encouraged by this Division, is being assessed for support.

The Division has been very active in chemical thermodynamics for many years. Following the restructuring of IUPAC at the end of 2001, the International Association of Chemical Thermodynamics [IACT] was established and, in April 2003, the IUPAC Executive recommended that the IACT be granted Associated Organization status within IUPAC, and that this recommendation be approved by Council at the August meeting in 2003 (see Item 19). The IACT has been very active, covering topics as diverse as electrolyte solution data and microcalorimetric standards to new areas such as the thermophysical properties of polymers.

Prof. Ralston reported that the Third Edition of the *Green Book* would be completed and sent to the publisher, the Royal Society of Chemistry, by the end of 2003. It is expected the revised *Green Book* will in part or in total be placed on the Web and also translated into foreign languages.

Prof. Ralston commented that there has been a conscious effort by the Division to complete projects and to focus on larger, better-resourced activities that can be completed within acceptable time frames. It is notable that seven projects are interdivisional, a clear demonstration of the central role that the Division plays in Chemistry.

Prof. Ralston then described the Advisory Group of 61 distinguished international scientists, a small proportion of whom are drawn from industry. The role of this Advisory Group is to act as a sounding board to the Division Committee, suggesting areas that might be dealt with by the Division, drawing attention to the need for experimental protocols in certain areas, taking part in IUPAC conferences and acting as one source of critical referees for IUPAC proposals. Networks of "IUPAC sensitive" scientists are invaluable in terms of support, as is the superb role played by the Secretariat. The membership of the Advisory Group will be reviewed on a biennial basis.

Prof. Collins (Brazil) asked when the new edition of the *Green Book* would be published.

Prof. Ralston replied that the Editor, Prof. Martin Quack of the ETH-Zürich, planned to send the manuscript to the publisher by the end of September.

Prof. De Bièvre (Belgium) asked if the Division had considered means to persuade editors of journals and books to promote the use of IUPAC recommendations regarding quantities, units, and symbols by their authors.

Prof. Ralston commented that the Division had worked on this issue and had had some success, but he agreed that there was much more to be done.

Prof. Kratochvil (Czech Republic) commented that it was important for important reference books such as the *Green Book* and the *Purple Book* to be available on the market.

42nd IUPAC COUNCIL MEETING

Minutes

Inorganic Chemistry Division

Dr. Rosenblatt's report discussed the following points:

- Generation of projects
 - How can projects be generated?
 - Where will they come from?
- Progress on projects
 - What can be done to facilitate projects being completed in a timely and exemplary manner?
- People
 - How can IUPAC locate and develop new volunteers and project participants?
- Workload
 - 2-3 hours/day for Division President is not sustainable.
- Internal motivation and communication
 - Gap between executive bodies and scientific volunteers.
- E-mail communication and the "reward" structure
 - Is there a need for more face-to-face communication and interpersonal relations in motivating volunteers?
- Support of core efforts in atomic weights
 - How can we fund meetings of Commission II.1?
- Communication with the inorganic chemistry and materials chemistry communities

Dr. Rosenblatt noted that the Division's work was in three areas, Elements, Molecules, and Materials. The work in Elements included the naming of new elements and the compilation of validated atomic weight and isotopic abundance data. The Molecules area was one that in the past had dealt mainly with nomenclature; this was now the responsibility of Division VIII. While the Division continues to participate in the work of Division VIII in this area, it is necessary to develop new projects that are not nomenclature related. To accomplish this the Division has been actively recruiting members for the Division Committee who are experts in relevant subjects. The Materials area has been active with a Subcommittee formed with members from Divisions I, IV, and V in addition to Division II. The Subcommittee has taken responsibility for the Workshops on Advanced Materials and is working towards the possible creation of a Materials Division. Dr. Rosenblatt noted that the series of Conferences on High Temperature Materials continues to be a major activity of the Division.

Dr. Rosenblatt concluded by emphasizing that if the project system is to work, ways would have to be found to generate new projects and to involve new people in the work of IUPAC. He urged the Bureau and especially the Officers to work on closing the perceived gap between those who do the work of IUPAC and those who manage IUPAC.

Prof. Collins (Brazil) asked why the naming of the elements was a responsibility of Division II and not of Division VIII.

42nd IUPAC COUNCIL MEETING

Minutes

Dr. Rosenblatt replied that the expertise on elements was in Division II. Dr. Becker then commented that Division VIII's mandate covered systematic nomenclature, the names of the elements being a good example of non-systematic nomenclature.

Prof. Shani (Israel) asked if there were any principles for choosing new names for the elements.

Dr. Rosenblatt replied that there were no principles; the only rule is that previously used names cannot be used again. Prof. Corish referred anyone who was interested in the details to an article by Prof. W. H. Koppenol. "*Naming of new elements*", *Pure Appl. Chem.* **74**, 787–791, (2002).

Prof. De Bièvre (Belgium) expressed his concern about the funding of the Commission on Isotopic Abundance and Atomic Weights. He commented that while the work of this Commission was important to IUPAC the uncertain funding situation under the project system was demoralizing the members of the Commission.

Dr. Becker replied that this was an issue that should be looked into to be sure that the Commission members understood the situation and to determine if any special arrangements needed to be made to facilitate the work of the Commission. Prof. Sydnès promised to investigate and discuss the issue with the Commission officers.

Organic and Biomolecular Chemistry Division

Prof. Tidwell noted that the work of the Division was managed by six Subcommittees:

1. Subcommittee on Organic Synthesis (Chair: David Black, Australia)
2. Subcommittee on Biomolecular Chemistry (Chair: Vadim Ivanov, Russia)
3. Subcommittee on Green Chemistry (Chair: Pietro Tundo, Italy)
4. Subcommittee on Photochemistry (Chair: Sylvia Braslavsky, Germany)
5. Subcommittee on Structural and Mechanistic Chemistry (Chair: Marek Krygowski, Poland)
6. Subcommittee on Biotechnology (Chair: In process of selection)

A major activity of the Division continues to be the organization of major conference series. In 2002, there were five such conferences with a major organizational role by the Division, in Physical Organic, Synthesis, Photochemistry, Natural Products, and Biomolecular, and their successors in 2004 are already being organized.

Prof. Tidwell then briefly reviewed the current projects of the Division. He commented that in common with other Division, Division III is concerned about the issue of generating new projects. He noted that it is clear that many potential proposers of projects are not sufficiently informed or motivated to present proposals, and better communication with our members and those outside IUPAC is needed to encourage the formulation of creative and worthwhile projects. The Division hopes to utilize IUPAC sponsored conferences more effectively to publicize its work and the opportunities for chemists worldwide to contribute to IUPAC. One way to do this is with a new brochure to be distributed at meetings describing the Division's work.

Prof. Tidwell reported that the Subcommittee on Organic Synthesis now coordinates the Thieme-IUPAC Prize in Organic Synthesis. He also commented that the IUPAC Prizes for the best Ph. D. theses have proven to be valuable for enhancing chemistry worldwide. It appears desirable to promote other comparable international awards, and the Division is seeking sponsors of IUPAC

42nd IUPAC COUNCIL MEETING

Minutes

awards in such areas as Structural and Mechanistic Organic Chemistry, Biomolecular Chemistry, and Green Chemistry.

Macromolecular Division

Prof. Stepto reported that, following the IUPAC restructuring, the Division took the opportunity to reorganize so that the Associate and Titular Members all have defined, coordinating roles to play. This approach has functioned well and all areas of activity are moving forward with vigor.

The areas of activity of the Division and the associated coordinators are:

1. Structure - Property Characterization of Commercial Polymers (Coordinator H. M. Laun)
2. Molecular Characterization of Polymers (Coordinator D. Berek)
3. Polymerization Kinetics Characterization (Coordinator M. Buback)
4. Subcommittee on Macromolecular Terminology (Coordinators M. Hess (Chairman) and M. Barón (Secretary))
5. Developing Polymer Materials Systems (Coordinators J. Vohlídal and W. J. Work)
6. Education (Coordinators J.-I. Jin, A. R. Khokhlov, D. Tabak)
7. Conference Sponsorship (Coordinators P. Kubisa and S. Penczek)
8. Recruitment at Conferences (Coordinator R. G. Gilbert)
9. Electronic Publications and Communications (Coordinators R. G. Jones and W. J. Work)
10. Division Strategy (Coordinators K. Horie, J.-I. Jin, Wang Fosong)

Prof. Stepto noted that the Division web site has been changed so that the new structure and activities can clearly be seen. The Division is also actively pursuing a policy of having all its reports and recommendations available on the web site.

Prof. Stepto then reviewed the work of the various Subcommittees. He also reported that linked with its work in Education, the Division is pleased to announce a USD 125 000 endowment from the Samsung General Chemicals Company of South Korea. The interest from the endowment will be used for awards, prizes and bursaries for educational courses and young scientists. Prof. Jung-II Jin, the Vice-President of the Division, was instrumental in obtaining the endowment.

Prof. Stepto reported that the Division has made a special effort to increase the number of sponsored Conferences. A total of 21 IUPAC-sponsored polymer conferences have been and will be held in 2002 and 2003. Every effort is being made to maintain this level during the coming biennium.

Eight conference volumes have resulted in 2002 and 2003 from this increased activity. More than half of the issues of *Macromolecular Symposia* are presently devoted to IUPAC-sponsored conferences, representing a significant income to IUPAC. This year, for the first time, the journal was unable to accommodate all the IUPAC conferences it was offered.

The IUPAC World Polymer Congress of 2002, organized through the Division, was held in Beijing. It is generally recognized that the biennial IUPAC World Polymer Congress, with over 1000 participants, is the main event in the international polymer conference calendar. The Division also helped to organize a very successful Strategic Polymer Conference in Kyoto in December 2002 and

42nd IUPAC COUNCIL MEETING

Minutes

a second is planned for New York in 2005. It has also launched a strategic study of future developments in polymer science.

Prof. Stepto noted that active steps are being taken in recruitment at Conferences. A Division Brochure has been prepared and is distributed at all IUPAC-sponsored conferences. In addition, the PowerPoint presentation issued by the Secretariat has been augmented to emphasize Macromolecular Division activities. Electronic versions of the brochure and the presentation are given to all conference organizers and IUPAC representatives.

Prof. Stepto concluded by noting that the Division will seek to expand its profiles in Molecular Characterization and Developing Polymer Materials Systems and maintain its high level of activity and throughput in all project areas and in Conference Sponsorship. The Division will seek to play a strategic role in defining the important areas of world polymer research through its strategic study and conferences.

Analytical Chemistry Division

Dr. Moore noted that the Division has completed the transition from a Commission-based to a Task Group-based project system, and has added several new managerial tools to enable efficient project acquisition and management. He reported that 14 projects had been published since January 2002; 17 projects are either with ICTNS or in the queue for publication.

Dr. Moore noted that the Division has the same concern as many other Divisions; new project proposals are not arriving at a high enough rate. At present, all the project proposals come from former Commission or Division members. To improve this situation, projects are being solicited via a four-pronged effort. First, the new Division web pages prominently display a call for proposals, with dates for selection and links to further information on the process. Secondly, each Division Committee TM has established a list of advisors to help them solicit new projects or identify needs for projects (although these have been difficult to establish and few results have been achieved to date). Thirdly, Division Committee members are presenting overviews of IUPAC with details on the project system at several international conferences. Fourthly, we have established plans for focus meetings with targeted industry groups, beginning with a focus meeting on Proteomics at the Ottawa GA.

Dr. Moore reported that the Division is using a competitive project approval system, with ranking of project proposals according to specific guidelines. The Division Committee has used this system twice in 2002 and once in 2003. Some projects that need more expedient action are approved outside the cycle via e-mail discussion and voting.

Internal and external communication deficiencies have been addressed via 1) a newsletter, "Teamwork," which has been implemented to keep Committee members and others apprised of their responsibilities, upcoming events, new project proposals, and deadlines, and 2) a new mechanism to oversee projects and their dissemination plans.

Dr. Moore reported that a major activity of the Division in past biennium was the development of an on-line version of the *Compendium of Analytical Nomenclature (Orange Book)*; this is now available on the IUPAC web site (http://www.iupac.org/publications/analytical_compendium). To judge the impact, according to "hits" on the directory, the *Orange Book* accounts for 1/6 (99432)

42nd IUPAC COUNCIL MEETING

Minutes

of the total hits (578399) on the IUPAC publication folder (during the first three months of 2003)! A process to update the *Orange Book* has been implemented, beginning with the electrochemical analysis and separation methods chapters, to be followed by the other chapters systematically over the next few years. The Division is involved in the IUPAC XML project to decide on a plan for eventual conversion of the *Orange Book to XML*.

Prof. Collins (Brazil) asked if the changes to the online edition of the *Orange Book* would be approved in the usual way.

Dr. Moore commented that no changes would be incorporated in the online *Orange Book* until they were part of an IUPAC recommendation or report published in *Pure and Applied Chemistry*.

Prof. Kratochvil (Czech Republic) commented that gel-permeation chromatography is a major analytical method but there is no mention of it in the *Orange Book*.

Dr. Moore replied that a Task Group with a Chairman had been set up to develop a project in this area.

Chemistry and the Environment Division

Prof. Klein noted that the work of the Division, projects and other activities, are targeted to provide authoritative information and judgments on issues of chemicals in the environment. The major part of the projects is directly customer oriented dealing with actual problems of several branches of industry and of international environmental and human health protection organizations and agencies. The second area of activity is on communicating advanced concepts and state of the art assessments by extension workshops and conferences between scientists, especially in developing countries.

He then noted that the Division's strategy for new projects is to further enhance customer orientation by consistently involving the parties interested in the work at the project development stage and by reacting proactively to issues raised by society within the mandate of the Division. Thus, dissemination of the outcome of the Division's projects is not only through the traditional scientific channels but also by direct transfer, i.e. workshops and seminars. This ensures optimal use of the work of experts and also gives them status and motivation.

In the reporting period, 10 projects were completed or terminated and 6 new projects were launched.

Prof. Klein noted that cooperation with other International Organizations is an important aspect of the Division's work. Cooperation is successful on a project basis (state of the art and workshop) and through eminent Division and sub-committees members with scientific organizations and customers. These include, for example: IOCD (International Organization for Chemical Sciences in Development), WHO (World Health Organization), Codex Alimentarius (Food and Agriculture Organization/WHO), the European Union Commission. In addition, there is a long-standing cooperation with ICSU/SCOPE (International Council for Science/Scientific Committee on Problems of the Environment) and SCOR (Scientific Committee on Oceanic Research) due to the partial overlap of interests. Activities have been initiated to increase this type of cooperation with OECD (Organization for Economic Cooperation and Development), IFCS (Intergovernmental

42nd IUPAC COUNCIL MEETING

Minutes

Forum on Chemical Safety) and with industry via ICCA (International Council of Chemical Associations).

Prof. Klein then described the extraordinary large project initiated by Division on “*Environmental Implications of Endocrine Disrupting Chemicals*”. This is a joint IUPAC/SCOPE project, sponsored and co-financed by industry and several national and international organizations. The final report of the project will be published in *PAC* and a preliminary version of the Executive Summary has been distributed to the Council. Cooperation with OECD is at present mainly on Green Chemistry through the joint Subcommittee with Division III. However, the successful case-by-case interactions will be expanded and intensified as needed.

Prof. Klein commented that apart from the green chemistry activities with Division III, there is still insufficient interdivisional cooperation. The difficulties in expanding interdivisional work largely relate to different approaches and concepts of work, not in a lack of interest on either side.

Prof. Berek (Slovakia) asked if cooperation with other Divisions on environmental projects was still insufficient.

Prof. Klein replied that this was due to a shortage of people to provide the links. Meetings at this General Assembly had led to the initiation of a number of interdivisional projects.

Prof. De Bièvre (Belgium) asked if industry had contributed to the joint SCOPE/IUPAC project on *Endocrine Active Substances*.

Prof. Klein replied that industry had supported the project both financially and by encouraging its development and completion.

Dr. Wright commented that his perception was that industry appreciates the work that was done on this project.

Prof. Klein noted that this project was path breaking by finding consensus in what is viewed as a highly controversial subject.

Chemistry and Human Health

Prof. Kallner noted that the Division had formed by combining the former Clinical Chemistry Division and the Medicinal Chemistry Section. The Division had, since its formation, been making efforts to move beyond its traditional areas of activity to include chemistry involved in all aspects of human health. He pointed out that the Division had many international collaborations, including those with the IFCC (International Federation of Clinical Chemistry), the European Federation and ACS Division of Medicinal Chemistry. He especially noted its work on the ICSU Monograph on Genetically Modified Organisms as Food and an ICSU project on Health and Wellbeing. One of the Divisions objects is to promote the idea that when you “Think Chemistry – Think IUPAC”. Prof. Kallner noted that the Division had formal representation on committees of the World Health Organization (WHO), ISO (International Standardisation Organisation), and CEN, the European Standardisation Committee.

42nd IUPAC COUNCIL MEETING

Minutes

Chemical Nomenclature and Structure Representation Division

Dr. McNaught explained that in setting up the new Division every effort had been made to ensure broad representation of all those who were interested in nomenclature. To accomplish this an Advisory Committee with 45 members had been created to provide advice to the Division Committee. He also emphasized that the work of the Division included activities other than traditional systematic nomenclature, especially in the area of computer recognition of chemical structure. He described a Web Discussion Board that was used to promote discussion of draft documents by all members of the Division. The Web Discussion Board was hosted by the Royal Society of Chemistry.

Dr. McNaught then discussed the IUPAC Chemical Identifier (IChI) project. This project has been very productive. The object of the project is to develop a unique ASCII text string that can be used to identify any chemical compound. He summarized the results of the project to date in the following table:

IUPAC Chemical Identifier

- Unique computerized representation of any chemical structure
- Test algorithm for organic structures March 2002
- Chemical Abstracts Service/IUPAC Conference July 2002
- Inorganic and organometallic structures included mid-2003
- Review meeting in Washington, November 2003
- Future work on polymer representation

The Division is working on three other major projects:

1. Organic Preferred IUPAC Names (PINs)
New Blue Book draft (1086 pages) undergoing expert review
Publication expected late 2004
2. Revision of "Nomenclature of Inorganic Chemistry"
Revised Red Book undergoing expert review
Publication expected 2004
3. Alignment of Organic and Inorganic Preferred Names
Rationale agreed; Inorganic Preferred Names project to be developed

The following six projects are also nearing completion: Rotaxanes, first draft under review, Fullerene nomenclature Part II, Extension of Part I (published) to larger and more complex molecules, approaching completion, Cyclic macromolecules, Macromolecular rotaxanes, Dendrimers, Chemically modified polymers.

Dr. McNaught commented that no project proposals had been received from the community and therefore the Division is developing proposals through scoping exercises to establish needs and feasibility in the following areas: stereochemistry, proposed book covering all chemical disciplines; structure representation, report under consideration; inorganic nomenclature, working group meeting April 2003, identified areas requiring development:

- Preferred names for inorganics and organometallics

42nd IUPAC COUNCIL MEETING

Minutes

- Boron nomenclature
- Nomenclature of metallacycles
- Organometallic stereochemistry
- Stereodescriptors for seven-coordination +

Dr. McNaught reported that the Joint IUPAC-IUBMB Commission on Biochemical Nomenclature (JCBN) would be reconstituted from January 2004 (see item 18.1). The Number of Titular Members will be reduced from 8 to 4 and a mechanism for review and funding of proposals established. The principal activities of the Commission are:

- Advice on updating of the Enzyme List
- Maintenance of specialized naming systems (steroids, peptides, carbohydrates etc.)
- Advice on chemical names for compounds of biochemical importance

Dr. McNaught concluded by pointing out that the work of the Division had included publicizing its activities by publications in general interest magazines, both print and electronic, such as *C&E News*, *Nature*, and the *Alchemist*, in addition to the usual publication of reports in *PAC*.

11. Reports of Standing Committee Chairmen

11.1. Committee on Printed and Electronic Publications

Dr. Warr briefly reviewed her written report. She noted that CPEP is responsible for three projects:

- 1999-046-2-024 - Data exchange standard for electron paramagnetic resonance data types (incl. ESR, EMR etc.) (Task Group Chairman: Prof. Lancashire, completion date 2003)
- 2002-020-2-024 - Data exchange standard for near infrared spectra and general spectroscopic calibration data types (Task Group Chairman: Prof. Downey, completion date 2005)
- 2002-022-1-024 - Standard XML data dictionaries for chemistry (Task Group Chairman: Dr. Stein, completion date 2005)

The first two projects continue the work of the previous Working Party on Spectroscopic Data Standards. A Subcommittee under Tony Davies (Secretary of CPEP) has been formed to act as the reporting body for Task Groups working in this field.

The third project will result in data dictionaries that can be used by chemists when developing XML documents so that the data in those documents can be easily searched using IUPAC definitions from the *Gold Book* or symbols as defined in the *Green Book*. The *Gold Book* has been converted to XML and the *Green Book* will be converted as soon as the revised edition is available.

CPEP represents IUPAC on ICSTI, the International Council for Scientific and Technical Information, an ICSU committee, and represents the views of IUPAC to the Committee on subjects such as electronic publishing and Open Access initiatives.

42nd IUPAC COUNCIL MEETING

Minutes

The subscription prices for the print edition of *PAC* were raised in 2003 from USD 1200 to USD 1300 for institutions and from USD 892 to USD 900 for the electronic-only service. The Bureau at Ottawa approved an increase to USD 1400 for print subscriptions for institutions while the electronic only subscription price remained at USD 900. The price increases for the print edition of *PAC* are in line with those of other publishers. The price of *CI* subscriptions and personal subscriptions to *PAC* remain the same, USD 45 and 99 respectively.

Dr. Warr noted that the ranking (27) and impact factor (1.758) of *PAC* improved between 1999 and 2002 and has now reached a level above that of the previous high in 1998. She also reported that Prof. James Bull had been appointed Scientific Editor of *PAC*, as one result of the report from the Conference Policy Development Committee.

Dr. Warr commented that Dr. Meyers was to be congratulated on the enhancements she has been able to make in *CI* within strict budget constraints. Her job would be made much easier if members of IUPAC Divisions and Committees (and others) were more willing to submit short articles to the Union's news magazine.

Dr. Warr pointed out that *PAC Online* has abstracts for all content and full text PDF versions of recommendations and technical reports. The full content of *PAC* for the volume before the current volume is freely available. Dr. Meyers has done excellent work in making the IUPAC Web site a significant source of information for the worldwide chemistry community. Her email news alerts are also much appreciated.

Dr. Warr concluded by thanking two long serving members of the Committee, Dr. Heller and Prof. Wolman, who will be retiring from the Committee at the end of 2003.

11.2. CHEMRAWN Committee

Dr. Norling reported that four conferences were in the planning stages, with one conference held in conjunction with the Ottawa General Assembly. These are:

1. CHEMRAWN XII–Senegal or South Africa (2005) Chemistry, Sustainable Agriculture, and Human Well Being in Sub-Saharan Africa
2. CHEMRAWN XIII–Pune, India (2003-2004) Cleaner Energy
3. CHEMRAWN XV–Paris, France (June 2004) Chemistry and Water
4. CHEMRAWN XVI–Ottawa, Ontario, Canada (August 2003) Forum: Innovation–from Pure to Applied Chemistry
5. CHEMRAWN XVII-Kingston, Ontario, Canada (2004-2005) Greenhouse Gas Mitigation

Dr. Norling emphasized that the Committee continues to deal with the issues of:

1. obtaining funding of major conferences or finding less costly ways to carry out its mission
2. increasing the impact of conferences, workshops and studies through practical and actionable recommendations by the Future Actions Committee, many of

42nd IUPAC COUNCIL MEETING

Minutes

which can be implemented by the Committee or individuals and organizations that it can directly influence.

Dr. Norling urged Members of the Council and Bureau to 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 provide a “Future Actions Committee” for IUPAC sponsored 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.

11.3. Committee on Chemistry and Industry

Dr. Wright discussed the following highlights from the Committee’s work in the biennium.

- The "Training Program for Safety and Environmental Protection", joint with UNESCO/UNIDO (United Nations Industrial Development Organization) and funded by COCI and UNESCO, was extended in 2002 to three trainees (including for the first time one from China) and the host base was extended from the U.S.A. to Company Associates in South Africa and Japan. In 2003, COCI plans to train five, including for the first time trainees from India and Uruguay. Host companies will include companies from Sweden and perhaps Belgium. A Poster Session in Ottawa featured recent trainees and the effects of their training on their countries.
- "Workshops on Safety in Chemical Production" continue their success with a workshop in Senegal in 2001 followed by a major one in Beijing in 2002. Co-sponsored by COCI, UNESCO, and SINOPEC, the Chinese National Petrochemical Company, the workshop drew an audience of >150, including managers of "safety and environment" from SINOPEC plants throughout China.
- "DIDAC", a joint Project with CCE and UNESCO for the teaching of chemistry especially in developing countries, has been successful beyond all expectations. This Belgian-developed teaching tool has now been translated into many languages including Arabic, Japanese, Korean, and Russian and distributed to over 47 countries, with a UNESCO goal of > 100 by the end of 2003. The transparencies have been extended to color posters for use in countries with minimal electricity, and the system will soon be available in free CD ROMs and "books". This contribution to the developing world was reviewed in detail by all participants in Ottawa at a Special Session on Aug. 15th.
- Co-sponsorship of CHEMRAWN XVI, “Innovation in the Chemical Industry”, in Ottawa, Aug. 9 and 12

42nd IUPAC COUNCIL MEETING

Minutes

Dr. Wright then reported that as result of a study of COCI new Standing Orders have been approved and would take effect in 2004, with a biennial budget to begin in 2004 as approved in Brisbane; Dr. David A. Evans of the U.K. has been appointed Vice-Chair and Chair-elect. The Committee expects an increasing emphasis on "Public Perception of Chemistry" along with greater efforts to involve the Company Associates in the work of the Committee.

Dr. Wright noted that the Committee had publicized its work in *CI* and expected to continue to provide news articles for *CI* on its work in the future.

11.4. Committee on Chemistry Education

Prof. Atkins reported that the Committee had established guidelines for the types of projects that it would seek to encourage in order to fulfill its terms of reference. It has decided to pursue the following criteria:

1. Projects that contribute to the flow of ideas.
2. Projects based on ideas that emerge within a country and are perceived to have regional or global significance.
3. Projects that encourage curriculum development within a region, where local requirements have indicated a demand.
4. Projects that contribute to the distribution of good practice and information within a region, using the appropriate language.
5. Projects strongly urged by Divisions and Standing Committees that have an educational dimension or are perceived as relevant to the public understanding of chemistry.
6. Projects that reach into regions that are currently under-represented in IUPAC activity.
7. Projects based on innovations within a country that are perceived by those outside the country as having potential regional or global significance.
8. Projects encouraging inter-Union collaboration.
9. Projects that are innovative in the realm of the public understanding of chemistry.
10. Projects that are a response to an explicitly demonstrable demand within a region or sub-region.
11. Projects that encourage collaboration between countries in a region or between regions (and sub-regions).
12. Projects where IUPAC seed money is helpful to gain access to other sources of funding.

Prof. Atkins noted that in order to facilitate the generation of projects, the CCE has established two subcommittees, the Subcommittee on Chemistry Education for Development (CED) and the Subcommittee on the Public Understanding of Chemistry (PUC), and appointed two chairmen, Prof. Bradley and Prof. Mahaffy, respectively. Projects are coordinated by Prof. Pestana, who is also Secretary of the CCE.

42nd IUPAC COUNCIL MEETING

Minutes

Prof. Atkins noted that the CCE is responsible for the program of the International Conferences on Chemical Education (ICCE). The 17th was held in Beijing in August 2002, the 18th will be in Istanbul in August 2004, and the 19th will be in Seoul in August 2006.

He then commented that special attention had been paid to the generation of links with other scientific unions and with COCI. There is now a representative of COCI on the CCE and COCI has established a small group to advise the CCE on items of mutual interest, particularly projects that COCI would regard as appropriate to its interests and which could be developed by the CCE.

Prof. Henry commented that a Symposium on the Public Understanding of Chemistry had been organized at the Congress with the cooperation of CCE. The Symposium was open to the public and had attracted over 200 people to the morning session.

11.5. Project Committee (written report only)

There was no discussion of this report.

11.6. Evaluation Committee (written report only)

There was no discussion of this report.

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

There was no discussion of this report.

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

Prof. Sydnos noted that the subject of the Vice President's Critical Assessment, as set forth in Statute 6.32, was "...the programs and the projects of all IUPAC bodies." This was obviously a major task and the three most recent Vice President's had chosen an area on which to focus. He had decided to focus on communication, especially with the National Adhering Organizations and the chemical societies that were not National Adhering Organizations. He then referred the Council to his written report for the details of what he had found and continued by discussing the five proposals made at the end of his report. These are:

1. Improve the Visibility of the Member Countries on IUPAC's Homepage
2. Make IUPAC News Stories More Useful for National Chemical Magazines
3. Appoint National Contacts (NCs) to all Divisions
4. Appoint National Contacts (NCs) to Project Task Groups
5. Establish the IUPAC Poster Prize

He noted that the Secretariat had begun to address this area by the appointment of Ms. Abernathy to be responsible for communications with IUPAC's various constituencies, including the NAOs and chemical societies. One immediate result has been the creation of an electronic newsletter, called e-Press, providing information suitable for publication by national chemistry magazines. This addresses point 2 above.

42nd IUPAC COUNCIL MEETING

Minutes

Point 1 requires both more attention by the Secretariat to the links for the NAOs and chemical societies on the IUPAC web site and more information from the NAOs as to what they would like to see in the way of links from IUPAC.

Points 3 and 4 are useful only if the NAOs make use of the opportunity. That is, they must appoint National Contacts who will be active both in following the work of the IUPAC Committees and Task Groups to which they have been assigned and in communicating that work to the members of their national chemical community. Point 5 requires that the NAOs and chemical societies take the initiative to create these Prizes.

Prof. Sydnes concluded by asking that the delegates send him, directly or via the Secretariat, their comments on these five proposals. Prof. Steyn asked that this feedback be provided by the end of October.

Prof. Shani (Israel) commented that the information on who is participating in IUPAC activities from a country is often not sent to the chemical society by the NAO. He suggested that lists of members of IUPAC bodies, by NAO, be made available on the IUPAC web site.

A general discussion followed Prof. Sydnes's report. The discussion covered a number of subjects that had been raised directly or indirectly in his report. The following is a summary of the suggestions and comments made during the discussion.

- While the web is a useful means of communication, access is difficult in some places, especially Africa.
- Communication with Company Associates should also be a priority.
- COCI has set up a Task Group to review the company Associates program.
- Should the number of National Representatives on Division Committees be increased? (Note: the Bureau approved an increase in the number of National Representatives on Division Committees from six to ten for the 2004-5 biennium.)
- To attract younger people, projects must be moved more rapidly to completion.
- Young Observers had positive comments about their experience but felt the need for mentoring.
- It takes energy on the part of the members of Division Committees to encourage Young Observers.
- It is important to enumerate for Young Observers the benefits to their career of participating in the work of IUPAC.
- Should chemical societies be automatically copied on all correspondence with NAOs?
- The recommendation for the formation of the Union Policy Committee (Note: the name of this committee was changed to Union Advisory Committee, see Item 13.) addresses the issue of the NAO as a black hole for communication.
- IUPAC could send a representative to each national chemical society meeting.

13. Report from Governance Structure Committee

Prof. Sydnes began by noting that the Governance Structure Committee was formed by the Bureau in response to a proposal from the Nordic countries that the governance of the Union be examined with the goal of improving the speed of decision making and increasing the involvement of the

42nd IUPAC COUNCIL MEETING

Minutes

NAOs. The Bureau in forming the Committee had charged it with providing a report for consideration by Council at Ottawa. The draft report had been widely circulated, including to all the NAOs. The responses received from the NAOs, although few, had been generally supportive. The final report of the Committee was discussed at the Bureau meeting on 13-14 August. The discussion was mixed with a number of members expressing reservations or serious concerns about the proposals of the Committee.

The proposals of the Committee are as follows:

- A new body, the Executive Board would replace the current Executive Committee and Bureau. The membership of the Executive Board would be the five Officers plus four members elected by Council.
- A new body, the Union Policy Committee would be formed to advise the Executive Board on policy issues facing the Union. Each NAO would be asked to name one member to this Committee.

The Executive Board would have the same responsibilities regarding the management of the Union as the current Bureau and Executive Committee without the confusion of the divided responsibilities of the current structure. The composition of the Executive Board is a compromise between the desire to have a small, efficient body and one that is representative of the various constituencies of the Union, especially the NAOs. The Committee feels that the creation of the Union Policy Committee addresses the issue of the representation of the NAOs and therefore felt that a small Executive Board was acceptable. The lack of representation of the Division Presidents on the Executive Board is addressed by requiring that the Executive Board meet jointly with the Division Presidents. This can easily be done by scheduling the fall meeting of the Executive Board to coincide with the annual meeting of the Division Presidents. The advantage to the Division Presidents in this arrangement is that the joint meeting can focus on subjects of common interest. The Bureau discussed the issue of the membership of the Executive Board, but did not arrive at a consensus.

Prof. Sydnes emphasized that for the Union Policy Committee to function properly, its members should be senior members of the chemical community in their NAO and would be expected to serve for a number of years so that they become familiar with IUPAC and its work. The proposed joint meeting of the UPC and the EB would occur during the General Assembly, either before or after the Council meeting. The meeting of the UPC and the EB would not be devoted to the issues before the Council, since these would have been discussed in advance by correspondence. The meeting would instead focus on issues to be considered in the coming biennium. That is, the joint UPC/EB meeting would be definitely oriented to the future, not the current issues before Council.

The Bureau has expressed its support of the proposal to create the UPC. The UPC can be established by Council as an ad hoc Committee without the need to modify the Statutes or Bylaws. If the decision is made to replace the Executive Committee and Bureau with the Executive Board, a committee to draft the necessary revisions to the Statutes and Bylaws would be appointed and the final decision on the new governance structure would be made at the 2005 Council meeting in Beijing.

42nd IUPAC COUNCIL MEETING

Minutes

Prof. Kallner commented that the proposals of the GSC were responsive to the original proposal made by the Nordic countries.

Prof. Steyn then suggested that the discussion of this important issue should be conducted in three phases, first a general discussion, then consideration of the proposal to create the Union Policy Committee, and finally consideration of the proposal to replace the Executive Committee and Bureau with an Executive Board.

The discussion that followed was wide ranging with a large number of delegates making comments in support of or in opposition to the two proposals. There were also a number of comments made of a general nature about the governance of the Union and requests for clarification of the two proposals. What follows is a summary of the discussion with no attempt to reproduce verbatim all the comments made.

One point of clarification was the relation between the UPC and the World Chemistry Leadership Meeting. The WCLM includes many representatives from organizations other than NAOs and is intended to discuss subjects of interest to the worldwide chemistry community, subjects not necessarily directly related to IUPAC and its work.

A number of delegates commented that the perceived problems with the operation of the current governance could be addressed by better management of the agendas of the EC and Bureau. It was pointed out that too much time is spent in reviewing reports that could be taken as read. By eliminating time spent on these reports the Bureau meetings could be made more productive. The comment was also made that the General Assembly is already too long and the addition of another meeting would make an already congested schedule even more so – the principal point being that the current structure is not incorrect, is only ill used.

A number of delegations expressed support for both proposals with some suggesting that the first assignment of the UPC should be to thoroughly study the proposal to create the Executive Board.

A number of delegations felt that the proposal to create an Executive Board diminished the influence of the NAOs and the Divisions in the governance of the Union. There was also a feeling that there had been insufficient time to study the proposal and its consequences. Some delegates suggested that the Executive Board should have more elected members, perhaps eight to ten.

A proposal was made to ask the candidates for Vice President to express their views on the two proposals. It was decided not to do this as it was against the traditions of the Union to have speeches by candidates for office.

Prof. Steyn then suggested that since there seemed to be general support for the creation of the UPC a motion be made to establish it as an ad hoc Committee for the coming biennium. He also suggested that the Council approve in principle the formation of the Executive Board with composition to be determined before the final proposal is presented to Council at Beijing.

The motion from the chair for the creation of the UPC was then put to the Council. The Australian delegation proposed an amendment changing the name of the Committee to Union Advisory Committee. The motion was seconded and in accord with the rules of procedure was voted on first. The amendment passed with 97 votes for, 22 against and 12 abstentions.

42nd IUPAC COUNCIL MEETING

Minutes

Prof. Koch (Germany) then asked if the Council should now agree on Terms of Reference for the UAC. Dr. Becker replied that it was the usual practice for the Executive Committee to write the Terms of Reference of Committees. The motion as amended was then voted on and passed with 118 votes for, 9 against and 6 abstentions.

Dr. Hayes then commented that there was no need for a motion regarding the Executive Board. The sense of the meeting was that further consideration of this proposal was necessary and that was a task for the Executive Committee and Bureau as part of their normal responsibilities. There was no further discussion of this issue.

14. Budget Proposal

14.1. Report of Working Party on National Subscriptions

Dr. Buxtorf reviewed the work of the Working Party on National Subscriptions. The Working Party had been established by Council at Brisbane in response to concerns raised by the Czech and French NAOs regarding the method of calculation of National Subscriptions and the ability of some NAOs to meet their obligations. He noted that of the three recommendations made by the Working Party, two had been implemented by the Bureau, while the third required Council action and was on today's agenda as Item 15. The two proposals that have been implemented are:

1. to calculate National Subscriptions using the average of the five most recent available years of chemical turnover data and
2. to provide travel support for one delegate from each NAO to attend Council.

Dr. Buxtorf expressed his thanks to members of the Working Party who had worked hard to develop these proposals.

14.2. Proposed Budget for 2004-5

Dr. Buxtorf reviewed the proposed budget for 2004-5. He noted that the National Subscriptions shown would be superseded by those proposed in Item 15 if that proposal were approved. There was no discussion of this Item and it was moved to approve the budget as presented and the National Subscriptions as calculated. The motion was approved with 129 votes for, none against, and 4 abstentions.

14.3. National Subscriptions for 2004-5

The National Subscriptions were approved by the same vote that approved the budget, see Item 14.2 above.

15. Proposal to Invoice National Subscriptions in National Currencies

Dr. Buxtorf described the proposal as presented in the Agenda Book. He noted that this proposal is intended to address two situations. The first occurs as a result of normal fluctuations in exchange rates when an NAO budgets for the National Subscription in its national currency, but when payment is made the budgeted amount is no longer sufficient to pay the amount due in USD. The second occurs when the currency of an NAO falls suddenly with respect to the USD and the

42nd IUPAC COUNCIL MEETING

Minutes

amount due in USD represents a much greater amount in national currency. The underlying concept of this proposal can be simply expressed as that the amount of National Subscriptions due is calculated and invoiced in each national currency. When payment is made it is made in USD at the then current exchange rate for the amount due in national currency.

There was no further discussion of this proposal. The motion was made to approve the proposal, and the motion was approved with 104 votes for, 11 against, and 12 abstentions.

16. IUPAC Programs

16.1. IUPAC Prize

16.1.1. IUPAC Prize 2002-3

Dr. Hayes thanked the members of the Prize Committee for their work in selecting the winners from so many worthy applicants. He commented that he was impressed by the overall high standard of work contained in the applications.

Prof. Collins commented that when introducing the winners at the Congress it would have been preferable to indicate the country in which the doctoral work was done since many of the winners had moved subsequent to finishing their degrees. This would have better indicated the diversity of the countries represented by the winners.

16.1.2. Reapproval of IUPAC Prize Program

Dr. Becker commented on the success of the program and noted that the original authorization of the IUPAC Prize program had been for a period of four years with reauthorization required by Council. He then asked that the Council reauthorize the program with no end date. This motion was passed by an overwhelming majority.

16.2. Conferences in Developing Countries and on New Directions in Chemistry

Dr. Becker reviewed the history of the Conferences in Developing Countries program and New Directions in Chemistry conferences. He commented that while the Conferences in Developing countries program had provided financial support for a number of conferences over the past four years, it was felt that the benefit to IUPAC from the program had been minimal. The conferences supported had in general been members of well-established conference series that happened to be held in a developing country. The Bureau had decided that in order to increase the benefit to IUPAC the program should be refocused in a number of ways.

- Try to relate the supported conferences to programs within the Divisions and Standing Committees. Applications for support will come from these IUPAC bodies, rather than conference organizers directly.
- Aim support to conferences that have some innovative aspect that relates to IUPAC interests and/or to benefits for the host country.
- Provide part of the support funds in the form of IUPAC Lecturers – senior scientists who agree to speak at a conference and preferably also to visit nearby

42nd IUPAC COUNCIL MEETING

Minutes

universities or other institutes for seminars, discussions and development of potential long-range collaborations.

- Expand eligibility to Associate NAOs, as well as NAOs, in order to broaden contacts with scientists in developing countries.

The refocused program will require additional proactive efforts on the part of IUPAC Divisions and Operational Committees, but there should be significant benefits to IUPAC in fostering a more coherent activity and in receiving greater recognition for its investment.

Dr. Becker noted that a pilot program, with a budget of USD 25,000 per biennium was established in 1999 at the initiative of President Jortner to permit IUPAC to initiate occasional conferences on cutting-edge research topics as a complement to the Union's sponsorship of a number of well-known series of conferences in established fields. Bureau approved the continuation of this program, but on a more formal basis with clear guidelines and with applications made by Divisions and Standing Committees for support of conferences in innovative areas.

Dr. Becker reported that the Bureau had approved consolidation of the funding for these two programs into a USD 65 000 allocation, as included in the proposed budget for 2004-2005. The Project Committee was charged with review of applications and funding decisions.

Dr. Becker concluded by noting that no action was required by the Council and this item had been placed on the agenda for information only.

17. Proposals Formally Received from National Adhering Organizations

The only proposal received was from the NAO of the United Kingdom. The proposal was as follows:

One of the most important issues for the future of chemistry and the long-term success and sustainability of the chemical industry, and therefore worldwide economic stability, is the decline in the number of young people being attracted into the subject. The importance of this issue has already been recognized by industry, trade associations, learned societies and academe. To address the problem, IUPAC should encourage and facilitate the coordination of the variety of initiatives proposed, with a view to enhancing the importance of chemical education at all levels, and to utilize younger chemists to promote the subject and its achievements. It is recommended that IUPAC collaborate with all these bodies to discuss how best to achieve these aims and, if considered appropriate, to solicit new financial resources to achieve them.

Prof. Atkins of the UK delegation then reviewed the intent of the proposal. He noted a two-stage program was envisioned:

1. The Union should establish a task Force to study the problem on a global basis.

42nd IUPAC COUNCIL MEETING

Minutes

2. The Task Force should raise funds from industry to finance the implementation of its proposals.

Prof. Atkins then suggested that the Task Force should include representatives from CCE, COCI, CHEMRAWN, CEFIC (Confederation of European Chemical Federations), and other industrial representatives.

A general discussion of this proposal followed. The discussion indicated that it was unclear what financial commitment from the Union was entailed by this proposal. Prof. Atkins clarified the proposal by noting that the intent was to provide funds for the initial study by the Task Force. Further discussion emphasized that approval of this proposal was not an open ended grant of funds and that funding would be determined by the Executive Committee.

Council then approved the proposal by a large majority.

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

18.1. Continuation of the Joint Commission on Biochemical Nomenclature

Dr. Becker noted that the status of this Commission had been deferred pending discussions with the International Union of Biochemistry and Molecular Biology. These discussions had led to the proposal in the Agenda Book. He asked the Council to approve the continuation of the Joint Commission and its new Terms of Reference.

Council approved the motion by a large majority.

18.2. New Division Rules

Dr. Becker commented that the Division rules had become outdated and in many cases were no longer in agreement with the Statutes and Bylaws of the Union. He had developed, in cooperation with the Division Presidents a set of Model Rules that could be used as a basis for Division Rules. The Macromolecular and Analytical Chemistry Divisions had written new Division Rules and the Council was asked to now approve these rules. He also asked that Council authorize the Executive Committee to approve minor changes in the Division rules in future.

Prof. De Bièvre (Belgium) noted the use of the term nomenclature in the Terms of Reference of the Macromolecular Division. He commented that he understood that all work on nomenclature was the responsibility of the Chemical Nomenclature and Structure Representation Division.

Dr. Becker replied by noting that in this case nomenclature referred to work that was not the kind of systematic nomenclature as defined in the Terms of Reference of Division VIII, but was more akin to termininology.

Council approved the proposed Division Rules by a large majority.

19. Applications for Associated Organization Status

Dr. Becker referred the Council to the written material in the Agenda Book and asked for the Council's approval of the requests contained therein.

Prof. Schneider (Germany) noted with regret that the International Plasma Chemistry Society and the International Association of Chemical Thermodynamics were former IUPAC Commissions and commented that the Union should give them a home rather than an umbrella.

Council approved by a large majority the following requests:

- The new Constitution of the International Association of Catalysis Societies.
- Associated Organization status for: International Plasma Chemistry Society, International Association of Chemical Thermodynamics, Southern and Eastern Africa Network of Analytical Chemists.

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

Dr. Becker reviewed the voting procedures for officers and members of the Bureau.

The results of the first ballot for Vice President were as follows:

Prof. Gilbert: 32 votes

Prof. Henry: 60 votes

Prof. Ohtaki: 40 votes

The results of the second ballot for Vice President were as follows:

Prof. Henry: 85 votes

Prof. Ohtaki: 45 votes

There were no abstentions in either ballot, however, one delegation did not cast its two votes in the second ballot; Prof. Henry was declared the winner of the election for Vice President and President elect.

Dr. Becker reviewed the situation for the election of the Secretary General and the Treasurer.

The results of the ballot for Secretary General were as follows:

Prof. Black: 71 votes

Prof. Corish: 60 votes

Abstain: 1 vote

Prof. Black was declared the winner of the election for Secretary General.

The results of the ballot for Treasurer were as follows:

For: 125 votes

Against: 0 votes

42nd IUPAC COUNCIL MEETING

Minutes

Abstain: 7 votes

Dr. Buxtorf was declared the winner of the election for Treasurer.

Dr. Becker then explained that with the election of Prof. Henry, there were now four candidates for four positions. He asked that the four candidates be approved by the Council by unanimous consent. Council approved this proposal by a show of cards with no negative votes and approved the election of the following Bureau members with no negative votes.

Prof O Nefedov (Russia)

Prof. A. Kallner (Sweden)

Prof. W. Klein (Germany)

Prof. N. Moreau (France)

Prof. Tidwell noted that a replacement for Prof. Black as President of the Organic and Biomolecular Chemistry Division would be named later.

21. Plans for 43rd General Assembly and 40th Congress (Beijing, 2005)

Prof. Bai reviewed the plans for the 40th Congress in 2005. The theme of the Congress was *Innovation in Chemistry*. The Congress will be held on 14-19 August 2005 and the General Assembly on 13-21 August 2005. The Congress and General Assembly will be held in the Beijing International Convention Center and the adjacent Beijing Grand Hotel.

Prof. Bai noted that the Division Presidents and Standing Committee Chairmen had been asked to suggest contributions to the planned program. He then pointed out that participants would need visa letters from the organizers to obtain visas at Chinese Embassies or Consulates. It was advisable to allow sufficient time to complete the paper work.

22. Approval of Dates and Sites of 44th General Assembly and 41st Congress (2007)

Prof. Della Gatta reviewed the proposal of the Italian National Adhering Organization to host the IUPAC Congress and General Assembly at Torino in 2007. The proposed theme of the Congress is *Chemistry Protecting Health, Natural Environment and Cultural Heritage*. The proposed dates are 5-11 August for the Congress and 4-12 August for the General Assembly. The proposed venue is the Lingotto Conference Centre. Prof. Della Gatta reviewed the facilities available, including the Agnelli auditorium with a capacity of over 2000, 14 meeting halls, and a large exhibit hall of over 46 000 m².

He then described the large number of hotel rooms available in the city of a wide range of price classes. The center of the city will be accessible by subway at the time of the Congress. Torino is readily accessible by air, train, and car. He noted the many sites of historic interest in the city and the proximity to both the Alps and the Mediterranean coast.

Prof. Nefedov (Russia) commented that the theme of the Beijing Congress and that proposed for the Torino Congress were very similar. He proposed adding Education and the Public Understanding of Chemistry to the proposed theme. Prof. Della Gatta noted that these topics fit well into the proposed theme for the Congress.

42nd IUPAC COUNCIL MEETING

Minutes

Council approved the application of the Italian NAO to host the 2007 Congress and General Assembly at Torino on the dates proposed by a large majority.

23. Important Matters Referred to Council by Bureau at 42nd General Assembly not Covered by Items on Council Agenda

Dr. Becker noted that the application of the Bangladesh Chemical Society for National Adhering Organization status had been received too late to be included in the Agenda Materials. While the Bureau had not discussed the application, it had discussed the general topic of the desirability of encouraging more countries joining IUPAC as NAOs. He moved that Council approve the application.

Council approved the application of the Bangladesh Chemical Society for National Adhering Organization status by a large majority.

Prof. Mosihuzzamann, President of the Bangladesh Chemical Society, was present at the Council meeting and expressed his appreciation of the Council action.

Dr. Becker then noted that the Mauritius Chemical Society had submitted an application for Associate National Adhering Organization status. This application was received too late for consideration by the Bureau and while Council approval was not necessary for ANAO status, he proposed that Council approve the application in order that approval not be delayed.

Council approved the application of the Mauritius Chemical Society for Associate National Adhering Organization status by a large majority.

24. Any Other Business (discussion only)

Dr. Przybylowicz briefly reviewed for the Council a project that had been approved by Bureau at Ottawa to investigate the feasibility of creating a web site on the *Contributions of Chemistry to Society*. The purpose of the project is to present in one location information on the contributions of chemistry to society. Much of the ground work has been done by various chemical societies, such as the American Chemical Society; but, there was a need for a centralized presentation of this information that was readily available to anyone searching for information on the internet and that was organized in such a way as to be useful for different groups of users, from students to decision makers to the press.

Prof. De Bièvre (Belgium) again raised the issue of the financial support of the Atomic Weights activity of the Union. He emphasized the importance of this work to the Union and his concern that it was not being properly supported. Prof. Steyn commented he would do his best to be sure that this activity is properly supported. Prof. Sydnes then noted that he would look into this issue and discuss their concerns with the Commission members. He had already asked the Commission Chairman to provide him with written comments.

Prof. De Bièvre (Belgium) noted that the IUPAP Commission SUNAMCO (Symbols, Units, Nomenclature, Atomic Masses and Fundamental Constants) included names and atomic masses in its terms of reference. He then moved to commend the Bureau on its implementation of the decision of Council on the creation of the Chemical Nomenclature and Structure Representation Division and

42nd IUPAC COUNCIL MEETING

Minutes

the new Division on its active program. The Council voted its appreciation to the Bureau and the Division.

Prof. De Bièvre (Belgium) then asked the Council to congratulate the Treasurer and the Finance Committee on their handling of the Union's financial matters. Council applauded this motion.

Dr. Sweeney (UK), a Young Observer, thanked the Union for the invitation to participate in the General Assembly and he suggested that other NAOs institute similar programs for their young scientists to encourage them to participate in IUPAC. He expressed the feeling of the other Young Observers that the time had been well spent and thanked the Royal Society of Chemistry for providing funding to enable him to participate.

Dr. Damhus (Denmark) commented that the CVs provided by the candidates for Officer and Bureau did not include a statement of policy if elected. Dr. Becker noted that this issue had arisen in the past and that oral presentations had been discouraged because of the language issue. Dr. Damhus made a motion that written statements from the candidates be included in the material for the Council. The motion was seconded by the US and approved by a large majority.

Dr. Damhus (Denmark) asked if the proposed plan for the governance of the Union would provide any financial savings. Dr. Becker commented that the Governance Structure Committee had considered the financial implications of the plan and concluded that there would be a small saving due to the smaller number of Elected Members, but that this was a minor consideration. There was no plan to fund the meeting of the Union Advisory Committee.

Prof. Cvitas (Croatia) commented that the work on databases seems to have been neglected. He asked that the Bureau address this issue.

Prof. De Bièvre (Belgium) asked if the Union was losing competence in this area. He then provided the Council with some information regarding the *International Vocabulary on Metrology*. The revised version of this document, VIM 3 includes for the first time terms from chemistry. The document will be mailed to IUPAC for comment in the near future and he asked that IUPAC approve VIM 3.

Prof. Shani (Israel) reported that there had been an increase of 40-50 % in chemistry students in Israel. Many computer science students have changed to chemistry as a result of the high tech bust. Israeli Universities are actively recruiting the best students.

25. Closing Remarks, Adjournment

Prof. Steyn congratulated the new Officers of the Union, new elected Members of the Bureau and the new Officers of Divisions and Standing Committees. He thanked the Council, Division Committees, Standing Committees, and Task Groups for their work in support of the Union. He also thanked all those who are ending their IUPAC service, especially Dr. Hayes the Past President and Dr. Becker the Secretary General for their work over the past years. Prof. Steyn then offered his best wishes to Prof. Sydnes and the new team leading IUPAC.

42nd IUPAC COUNCIL MEETING

Minutes

Prof. Sydnes thanked Prof. Steyn for his leadership as President and said that he looked forward to working closely with the NAOs to continue to make IUPAC an organization that made a valuable contribution to the global chemistry community and to society.

The meeting was then declared adjourned.