
41st IUPAC General Assembly and 38th IUPAC Congress, 29 June–8 July 2001, Brisbane, Australia

The 41st IUPAC General Assembly took place in Brisbane, Australia from 29 June to 8 July 2001. Meetings were held at the Queensland University of Technology (Bureau, Standing Committees, and Commissions) and the Old Customs House Building (Council). The 38th IUPAC Congress was held from 1–6 July at the Brisbane Convention Centre. This year was the first time that the General Assembly and Congress were held simultaneously. The schedule of the General Assembly was arranged to allow most participants to attend the Congress. This occasion was the last General Assembly at which all of the Commissions would meet. As a result of the motion adopted at the Berlin General Assembly in 1999, all existing Commissions will terminate at the end of 2001. IUPAC's scientific work will now be carried out by Task Groups working on specific projects; these Task Groups will end with the completion of their projects.

The President's State of the Union Report, the Secretary General's column, and reports from the Treasurer and Chairman of the Finance Committee follow this report. Reports from the Division Presidents and Chairmen of the Operating Standing Committees and the Committee on Printed and Electronic Publications can be found online at <http://www.iupac.org/news/archives/2001/41st_council/agenda.html>.

The total attendance at the General Assembly was 483, as compared to 642 in 1999 at Berlin. Of this total, 384 were members of IUPAC bodies (518 at Berlin), 45 were invited Observers (82 at Berlin), and 94 were Council delegates (100 at Berlin), 40 of whom were also members of IUPAC bodies. The effect of the distance from the bulk of the members of IUPAC's Commissions can be seen in the reduced participation in this General Assembly compared to that at Berlin.

Major actions taken at the General Assembly are described below, especially the results of the elections for IUPAC officers.

Sydnes Elected IUPAC Vice President

Dr. Leiv K. Sydnes, Professor of Chemistry at the University of Bergen, Norway, was elected Vice President (President-elect) by the Council at the General Assembly in Brisbane. Prof. Sydnes will serve two years as Vice President and will assume the Presidency in January 2004. Prof. Pieter S. Steyn

(South Africa), current Vice President, will become President in January 2002.

Six Members of the Bureau were also elected by the Council. Dr. Edwin P. Przybylowicz (USA) and Prof. Gus Somsen (Netherlands) were reelected to second four-year terms. Newly elected to four-year terms were Prof. Chunli Bai (China), Prof. S. Chandrasekharan (India), Prof. Robert G. Gilbert (Australia), and Dr. Alan Smith (UK). Continuing elected members of the Bureau are Prof. Nicole J. Moreau (France), Prof. Oleg M. Nefedov (Russia), Prof. Hitoshi Ohtaki (Japan), and Prof. Gerhard Schneider (Germany). Biographical sketches of the Bureau candidates appeared in the May 2001 issue of *CI*, Vol. 23, No. 3, pp. 72–79, and are online at <http://www.iupac.org/news/archives/2001/41st_council/index.html>.

In addition, six new Division Presidents joined two continuing Division Presidents as members of the Bureau. Division Presidents beginning 1 January 2002 are Prof. John Ralston (Physical and Biophysical Chemistry), Dr. Gerd M. Rosenblatt (Inorganic Chemistry), Prof. Thomas T. Tidwell (Organic and Biomolecular Chemistry), Prof. Robert T. Stepto (Macromolecular), Dr. David S. Moore (Analytical Chemistry), Prof. Werner Klein (Chemistry and the Environment), Dr. Anders Kallner (Chemistry and Human Health), and Dr. Alan D. McNaught (Systematic Nomenclature and Structure Representation).

Prof. Nefedov was elected to the Executive Committee by the Bureau at its meeting on 8 July.

New Division and Commissions Established

At the General Assembly in Brisbane, the Council approved the formation of an eighth Division of IUPAC—Systematic Nomenclature and Structure Representation. The new Division will consolidate systematic chemical nomenclature activities in organic, inorganic, and macromolecular chemistry, which were carried out by three separate Commissions, and will assume responsibility for the IUPAC–IUBMB Joint Commission on Biochemical Nomenclature. In addition, a major focus of the Division will be the increasingly important area of computer-based nomenclature and structure representation.

Responsibility for assignment of names to newly created elements remains with the Inorganic Chemistry Division, and all Divisions will continue to deal with terminology relevant to their disciplines.

Council also approved the establishment of a Commission on Physicochemical Symbols, Units, and Terminology and a Commission on Isotopic Abundances and Atomic Weights. These Commissions will continue the work of current Commissions with new and expanded responsibilities. Both were formed only after careful study by special committees, which reported to the Bureau on the desirability of continuing this work at the Commission level.

Ohtaki to Head New Membership Development Committee

An *ad hoc* Membership Development Committee [MDC] was established by the Executive Committee at the conclusion of the General Assembly. The MDC will encourage expansion in the Membership of the Union by undertaking and coordinating activities aimed at soliciting new National Adhering

Organizations and Associate National Adhering Organizations.

Prof. Hitoshi Ohtaki (Japan) has been named by President Alan Hayes to chair the new committee. As a member of the IUPAC Bureau and Executive Committee, Prof. Ohtaki has been particularly concerned about potential expansion of the Union in Asia and will now coordinate aggressive efforts to develop IUPAC's global character. The other members of the Committee are Prof. Berhanu Abegaz (Botswana), Prof. Robert G. Gilbert (Australia), and Dr. John Malin (USA).

***Chemistry International* to Get New Look**

A redesigned *Chemistry International* (CI), the IUPAC news magazine, will appear in the coming months under a program approved by the Bureau. (See President's Report on the State of the Union, p. 133.)

President's Report on the State of the Union

This article is an abridged version of the President's State of the Union report presented by IUPAC President Dr. Alan Hayes at the 41st IUPAC Council meeting on 7–8 July 2001 in Brisbane, Australia.

Introduction

The two years since our last General Assembly have been very active for IUPAC. The approval by the Council at Berlin of the reorganization of the management of IUPAC's scientific work, changing the Union's scientific structure from one based on permanent commissions to one based on projects, has led to changes in the responsibilities of the Division Presidents and Division Committees, and the establishment and implementation of project approval and evaluation processes.

We have implemented two new programs that were also approved by Council at Berlin—the IUPAC Prize for Young Chemists and the support of conferences in developing and economically disadvantaged countries. Both programs address important needs and provide high visibility to IUPAC.

We have undertaken comprehensive reviews of the Union's activities in three important areas: systematic chemical nomenclature, chemistry education, and interaction with the chemical and pharmaceutical industry. We are now prepared to recommend organizational changes and strategies for pursuing future work in these areas.

The Union's regular activities in contributing to the language and scientific–industrial framework of chemistry continued with the publication in 2000 of 21 recommendations and reports in our official

Journal, *Pure and Applied Chemistry* (PAC), publication of 3 books, and the publication of two special issues of PAC, one on the topic of “Nanostructured Materials”, the other on “Green Chemistry”. In dissemination of information, the bimonthly newsmagazine *Chemistry International* (CI) highlights current activities and general policy issues, and the informal IUPAC *e-News* provides timely updates. The IUPAC web site continues to be a major source of information for members of IUPAC bodies. It is also becoming the public face of IUPAC and is regularly accessed for information about all aspects of chemistry by scientists and students worldwide. A strategy for CI has been developed that will better integrate these three approaches and improve the readability of CI.

For the first time, IUPAC has published its *Biennial Report* using the goals of the Strategic Plan and in an attractive format. We have also recently developed an information brochure with particular emphasis on the Union's interactions with industry.

The report that follows is intended to highlight activities and actions that are important to the Union as a whole. Please see the complete text of my State of the Union Report and the individual reports of the Division Presidents and Standing Committee Chairmen, available online, for details not included in this summary.

The Strategic Plan

The IUPAC Strategic Plan, adopted initially in 1998, is intended to be reviewed biennially and revised as needed. The 2000–2001 Strategic Plan included only



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a small number of changes in Strategic Thrusts to update it. The next revision of the Strategic Plan is expected to be more significant.

To facilitate the revision process, I have appointed a small *ad hoc* committee, chaired by Dr. Edwin P. Przybylowicz, with membership drawn from IUPAC bodies and other chemists interested in IUPAC and with broad geographic representation. The Executive Committee has scheduled a special session for the end of 2001 to consider the revised Strategic Plan and other strategic issues and to prepare a final version of the Strategic Plan for approval by the Bureau. The goal of the meeting will be to bring more focus to the work of the Union and to ensure that the Union does what is wanted and what it can best do. It is expected that by considering the revised Strategic Plan, as proposed by the *ad hoc* Committee, and other inputs, such as those from NAOs, the Executive Committee will be able to decide on a set of actions to continue moving the Union forward.

Changes in Organization and Management of IUPAC's Scientific Work

Council approved at Berlin a policy and an operational program based on the conceptual framework that the Union represents and which serves the entire world chemistry community. The objective is to improve quality, relevance, international impact, and effectiveness of the Union's scientific work. The integrated program has required major changes in the responsibilities of the Division Presidents and Division Committees, in the election procedures on the Division level, and in project approval.

One of the major objectives of the new program is to solicit ideas for IUPAC projects from the worldwide chemistry community and to set up short-term Task Groups to carry out the projects, with membership open to the entire community. In line with this objective, representatives of the Division Committees met during the General Assembly to share experience on soliciting project proposals from the wider global chemical community. Emphasis will continue to be placed in the coming biennium on this outreach effort.

IUPAC Congresses

The recently completed Congress in Brisbane has joined the last two Congresses, in Geneva and Berlin, as a successful scientific conference. I extend deep thanks and appreciation to the Royal Australian Chemical Institute (RACI), its Board, President, National Director, and enthusiastic staff for the superb organization of the Congress, and to the International Advisory Board and its Chairman, Prof. Y. T. Lee, for shaping the outstanding scientific program. The 39th IUPAC Congress will be held in Ottawa, Canada in 2003.

Nomenclature

Nomenclature is an activity that for many chemists defines IUPAC. It has been important for the past 80 years and will continue to be important in the future. As part of the reorganization of IUPAC work, it was felt that this area required special care and attention.

In recognition of both IUPAC's long-standing interest in this subject and the need for planning the continued development of this complex and somewhat esoteric subject, the Officers, at Berlin, accepted the Secretary General's proposal to develop a long-range strategy by initially convening a meeting of nomenclature experts and broad categories of users of chemical nomenclature. Secretary General Dr. Edwin D. Becker and Dr. Alan D. McNaught (Royal Society of Chemistry), who has been active on the Commission on Nomenclature of Organic Chemistry (CNOC), the Interdivisional Committee on Nomenclature and Symbols (IDCNS), and the Committee on Printed and Electronic Publications (CPEP), organized a Strategy Roundtable on Representations of Molecular Structure: Nomenclature and Its Alternatives.

The group assembled for this meeting represented experts in organic, inorganic, biochemical, and macromolecular nomenclature; users of nomenclature in academia and industry; the patent, international trade, and health and safety communities; journal editors and publishers; database providers; and software vendors—a total of 41 participants from ten

countries. Following wide-ranging discussions during the first day, on the second day, a number of recommendations to IUPAC were considered. As a result of this meeting, the Bureau recommended to Council that a new Division of Systematic Nomenclature and Structure Representation be formed. Council has approved this recommendation.

This effort is an example of the new IUPAC way of doing things. First, the customers are asked what they need and how can IUPAC best contribute to meeting that need. Next, the question is asked, should IUPAC be doing this? Finally, a program or project is developed that addresses the expressed needs of the chemistry community and that involves both people who have been active in IUPAC previously and others who have not.

Education

The central issue of science education in general, and education in chemistry in particular, pertains to the preservation and advancement of global human capital. Meaningful contributions to this endeavor constitute a major challenge for the Union. IUPAC, as an international worldwide organization, must consider in this context the diversity of cultural approaches and the different conditions and needs in distant parts of the world. It should be emphasized that chemistry, owing to its interdisciplinary nature, provides the basis for scientific training in the natural sciences.

The problems facing the global chemistry education system involve the erosion of scope and quality of science education, resulting in science illiteracy in the developed countries and the need for qualified scientific manpower in less-developed countries. At the General Assembly in 1999, Prof. Joshua Jortner assumed responsibility for organizing an *ad hoc* IUPAC Education Strategy Development Committee (ESDC). Prof. Peter W. Atkins, who is internationally known in the field of chemical education, was recruited to be the Chairman of the ESDC. Following two meetings, the ESDC concluded its task by preparing a report that puts forth recommendations for possible future directions of IUPAC's activities in chemistry education and the public appreciation of chemistry. I would like to express my appreciation of the work done by Prof. Atkins and the members of the Committee. They have provided a report that will lead to major changes in the ways IUPAC responds to the needs of the global chemistry community in this important area. (The report of the ESDC is available on the IUPAC Web site.)

The proposals by the ESDC now provide a framework for developing an overall strategy by which IUPAC can contribute to chemistry education in a way that complements the programs of national

chemistry organizations. A special Working Party of the Executive Committee has evaluated the recommendations of the ESDC for feasibility and implementation. The recommendations of the Working Party have been adopted by the Bureau and will be implemented by the end of the year (see IUPAC Web site).

IUPAC–Industry Relations

In 1999, the Bureau appointed an *ad hoc* Committee on IUPAC–Industry Relations. The members of this Committee were industrial scientists, from both IUPAC and outside, with myself as Chairman. As a result of the recommendations of this group, the Committee on Chemistry and Industry (COCI) will be reorganized to serve as a better communications forum for industry with IUPAC. COCI, with its revised Terms of Reference and membership, will work to increase the participation of industrial scientists in IUPAC's work and to improve communications with the global chemical industry

As part of my personal contribution to this effort, I have met with the heads of a number of regional and global chemical trade associations. These meetings have led, I believe, to a greater appreciation of IUPAC's work by these groups.

As Vice President, I proposed in my Critical Assessment that we should attempt to combine existing meetings of chemical society presidents and the heads of regional chemistry federations and also invite the participation of leaders of industry and chemical trade associations in a World Chemistry Leadership Meeting (WCLM). I am pleased to report that the first WCLM took place on Monday, 9 July, immediately after the IUPAC General Assembly, and addressed a number of issues of concern to the assembled chemical societies and leaders of chemical industry.

World Chemistry Leadership Meeting

On Monday, 9 July, a World Chemistry Leadership Meeting (WCLM) was held. There were 37 participants from 25 countries, including presidents of chemical societies, regional chemical federations, industry trade associations, representatives of developing countries, and the IUPAC officers. The two half-day meetings addressed two sets of issues. The morning session was devoted to the single topic of "Sharing Responsibility for Our Science—Chemistry Across National Boundaries". IUPAC was requested to address this subject by a resolution of the meeting of chemical

society presidents held in Berlin during the IUPAC General Assembly and Congress in 1999. This session addressed how the chemical societies of the developed countries plan, using the resources available to them, to work with chemists and chemical societies in developing and economically disadvantaged countries, to strengthen chemistry in those countries, and to assist in their development. The afternoon session considered subjects of common interest to the assembled chemical societies and other representatives of the worldwide chemistry community. Most of the session was devoted to a discussion of what various chemical societies and trade federations are doing to improve the public perception of chemistry and how to improve communication among the societies and thereby share information and successful ideas.

At the Berlin meeting of chemical society presidents, organized by the Gesellschaft Deutscher Chemiker, IUPAC was requested to organize a meeting on the topic "Sharing Responsibility for Our Science—Chemistry Across National Boundaries" in order to provide a forum for examining ways that chemistry can be strengthened in developing and economically disadvantaged countries. The entire morning session of the WCLM was devoted to this subject.

IUPAC's Publications

Based on an analysis of the future of the scientific publishing market, the Committee on Printed and Electronic Publications recommended, and the Executive Committee approved, the change of *PAC* from having an official publisher to being published by IUPAC. The driving force for this change was the desire to achieve greater independence in how the Union approaches electronic publishing. The financial analysis indicated that there was little financial risk in this change. This change was made with the January 2000 issue of *PAC*, and the results have met our expectations, both in terms of the improved quality of the journal and improved financial results.

As a consequence of the severing of our relationship with Blackwell Science, we purchased the stock of IUPAC books published by Blackwell. The Secretariat has been selling these books directly since the middle of 2000.

In April 2000, the Executive Committee appointed an *ad hoc* Committee to study the overall strategy

of the Union with regard to its news magazine, *Chemistry International (CI)*. This committee, called the *Chemistry International* Strategy Development Committee, Chairman Dr. D. H. M. Bowen, former chair of CPEP, presented its final report to the Executive Committee in April 2001. The report can be summarized by saying that *CI* needs a better look and feel. It should be seen as a news magazine that reports on IUPAC activities, as well as issues in chemistry of international interest, rather than a collection of reports from IUPAC bodies. The CISDC report emphasizes the importance of integrating the three main news channels of the Union—*CI*, the Web site, and *e-News*. The Executive Director was asked to prepare an implementation plan with associated costs. This plan was reviewed at the recent Bureau meeting and adopted.

Dissemination of Information

The IUPAC web site (<http://www.iupac.org>) has been greatly expanded over the biennium. The number of visitors to the site has increased from fewer than 3 000 in March 1998 to almost 200 000 in January 2001. Six mirror sites are currently active: the RSC in the United Kingdom, SUNSite Germany, SUNSite South Africa, the Korean Chemical Society, SUNSite Japan, and the Institut Teknologi Bandung in Indonesia.

A significant addition to the Union's communication with not only the active and former participants in IUPAC activities, but with interested people worldwide, is *e-News*. Since it was first e-mailed on 28 June 2000, five *e-News* editions have been dispatched to the pool of current members, including NAOs, Associate NAOs, Associated Organizations, and Company Associates. Positive feedback has been received regarding the value of this electronic newsletter as a means of communicating with our members.

Service of Chemistry

The CHEMRAWN series continues to address issues at the interface of science and society. A highly successful CHEMRAWN Conference on Green Chemistry was held on 9–13 June 2001 in Boulder, Colorado, USA.

At the Berlin Council meeting, a new initiative to encourage career development of young scientists was approved. The IUPAC Prize for Young Chemists, based on their doctoral research, will be awarded annually, with the winners being brought to the IUPAC Congress to receive their prizes and to participate in the scientific activities. The nine prize winners for 2000–2001 received their prizes at the opening ceremonies in Brisbane on Sunday, 1 July. Each prize winner also presented his/her work in a

poster at the Congress.

The first Goal in our Strategic Plan addresses IUPAC's responsibility "to serve as a scientific, international, nongovernmental body in objectively addressing global issues involving the chemical sciences". Within recent months, IUPAC has been asked to take on just this type of task for the Organization for the Prohibition of Chemical Weapons (OPCW), the international body set up to administer the Chemical Weapons Convention (CWC), now ratified by 143 countries, which is designed to "determine for the sake of all mankind to exclude completely the possibility of the use of chemical weapons". I believe that this activity is important for the image of chemistry and for international public policy, and I expect that the Union will be able to provide the necessary leadership and objective advice.

IUPAC Activities in Less-Developed Countries

A new initiative to promote sponsorship of IUPAC conferences in developing and economically disadvantaged countries was approved by Council at Berlin. This initiative provides funds to help IUPAC member countries that often cannot hold major international conferences to do so. Holding an international conference is an excellent way to help scientists in developing countries maintain the contacts that are a necessary part of participating at a high level in modern chemistry. It also enables young scientists to participate in a major international conference, an opportunity many of them rarely receive.

Globalization

IUPAC currently has 44 National Adhering Organizations, which include the vast majority of the world's most developed chemistry economies. Yet, there are a significant number of countries that are major contributors to the chemical sciences and to chemical industry but which do not currently adhere to IUPAC. In all our contacts with international chemistry federations and societies, we are continually exploring ways by which such countries can be brought into the IUPAC family. Indeed, as we broaden the scope of the Union's programs, we must make it clear why these countries will benefit from membership in IUPAC.

Overall, our message to the world's chemists is one of openness. We are restructuring our scientific programs to permit any scientist anywhere in the world to propose projects that will benefit international science. We have made it easier for top-notch scientists in countries that currently do not adhere to IUPAC to participate in the Union's projects and to serve on its scientific bodies. We have made it

clear through our Strategic Plan and through our followup actions that IUPAC believes in the service of chemistry to society, worldwide. We are making strenuous efforts to work cooperatively with the chemical and pharmaceutical industries to provide an independent scientific base that will assist them in bringing the benefits of chemistry to mankind. I believe that IUPAC's new and candid approach to the world chemistry community will pay dividends in years ahead, both to the Union and to the science that we serve.

Epilogue

In his report to the Berlin Council meeting, President Jortner stated six points that he described as the future message of IUPAC:

- openness to the fast expansion of the borders of the chemical sciences
- response to conceptual and structural changes in chemical research and technology
- perpetuation of interdisciplinary unification, high quality, relevance, and the global dimension in activities
- contribution to the globalization of the scientific endeavor
- adherence to the principles, norms, values, and ethics of science
- recruiting "human capital" for IUPAC

IUPAC has embarked on a new course for the future. The changes that have been made and that will take full effect starting in 2002 are intended to address these six points. IUPAC can only remain important to chemists by continuing to meet their needs for an organization that helps them do their work. We must continue to ask the two fundamental questions:

- Why should IUPAC be involved with this activity?
- What does the customer need/want?

Secretary General's Report

This issue of *Chemistry International* includes a number of news items from the General Assembly, along with reports on the State of the Union and its financial status. I would like to comment on some aspects of the reports presented to the Council and to look at some trends in our future activities.

Restructuring of the Divisions

This year marks the conclusion of the transition period for converting to a project-driven system. The reports by the Division Presidents and Standing Committee Chairmen indicated that a large number of existing projects are expected to be completed by the end of this year; they were largely optimistic regarding the flexibility of the new system and the opportunities to improve interdisciplinary activities. However, there remain some concerns about the effect of termination of Commissions at the end of the year.

Divisions are handling the new system in quite different ways. For example, the Analytical Chemistry Division will replace its eight Commissions with only one subcommittee (to manage the *Solubility Data Series*) and will retain its one working party on quality assurance in analytical laboratories. The Physical and Biophysical Chemistry Division will have no subcommittees and will host the reconstituted Commission on Physicochemical Symbols, Terminology, and Units. Both of these Divisions expect to rely on IUPAC Fellows and on contacts with outside groups, including national chemical societies, as sources of ideas for new projects.

On the other hand, the Organic and Biomolecular Chemistry Division and the Chemistry and the Environment Division will retain a much more extensive structure, with a large number of subcommittees in place of their Commissions. In all cases, funds will be available primarily through approved projects. The Macromolecular Division expects to continue about 30 projects as at present, but the Physical and Biophysical Chemistry Division anticipates about 10 projects, with some being supported at much higher levels than was possible in the past.

It will take several years to determine which models will ultimately prove to be most successful.

Some Trends in IUPAC Activities

The final words of the President's State of the Union message were echoed in several presentations—What does the “customer” need, and why should

IUPAC undertake the activity? This emphasis will surely focus our efforts on activities that are widely perceived to be important and that require the unique perspective of IUPAC.

The Union is poised to expand its efforts in chemistry education in ways that clearly complement activities by others, including national chemical societies. The new Vice President, Prof. Leiv Sydnnes, has been active in chemistry education in Europe and in helping to develop plans for IUPAC's work in this area. We should soon see a reconstituted Committee on Chemistry Education, with particular emphases on developing countries and the public appreciation of chemistry.

The new Division of Systematic Nomenclature and Structure Representation will provide the means for IUPAC to maintain leadership in development of chemical nomenclature in the era of computer-based structures and nomenclature. In a broader context, IUPAC will probably take the lead in setting standards for CML (Chemical Markup Language), which seems likely to become the preferred medium for web-based communication in chemistry and for input into printed publications.

IUPAC is increasingly being recognized as an independent international organization that can provide objective scientific advice on global issues. We have begun an effort to advise the Organization for the Prohibition of Chemical Weapons (OPCW) on scientific and technological advances that may have an impact on the enforcement of the Chemical Weapons Convention. More information will be forthcoming in the next two months.

The Union will be making more concerted efforts to expand its membership base of National Adhering Organizations and Associate NAOs, with the lead role being played by the newly established *ad hoc* Membership Development Committee, chaired by Prof. Hitoshi Ohtaki.



Dr. Edwin D. Becker

Report of Treasurer and Report of Finance Committee

Dr. Christoph Buxtorf, IUPAC Treasurer and recently retired Head of Production and Technology of Novartis Crop Protection (Switzerland), and Dr. Edwin Przybylowicz, Chairman of the IUPAC Finance Committee and retired Director of Research at Eastman Kodak Co. (USA), have submitted these reports on the financial condition of IUPAC.

Treasurer's Review

General Remarks

I would like to present IUPAC financial status by providing an audited statement of income and spending to our members. We last presented a detailed financial statement in the July 2000 issue of *Chemistry International (CI)*. The Bureau and Council voted to support budgets for the next biennium at our General Assembly in Brisbane in July 2001. This annual report is a good place to give answers to some of the questions about IUPAC finances.

From Where Does IUPAC Get its Money?

IUPAC has the following main sources of income:

Membership Dues from National Adhering Organizations (NAOs): The NAOs support IUPAC's role as a leading international body in the field of chemistry through active programs and project work in the fields of nomenclature, research, teaching, and systems providing unimpeded access to information. The national subscriptions are based on the national chemical turnover through an established formula. The calculations of the chemical turnover and the payments are made in U.S. dollars (USD). Voting representation of each member country is broadly related to the national subscription, thus ensuring the voice of each NAO in the international world of chemistry. Solidarity and commitment are the warranty for the sustainable work of IUPAC. Unfortunately, we see some serious signs of discontinuity in the future.

Publications: Our publication *Pure and Applied Chemistry (PAC)* has become—at least for the time being—a very important source of income. This situation was, in particular, made possible by a switch from external publishing to IUPAC becoming its own publisher. We have kept the subscription fees constant over the last two years. Owing to higher printing and shipping costs, we should increase the price moderately.

Interest from our Investments: In the past few

years, the excellent performance of the financial markets has allowed IUPAC to grow the long-term account to finance various endeavors (see details in comments of the Chairman of the Finance Committee below). However, during the past two years, the investment markets were difficult and, therefore, the available income was smaller than in earlier years.

Grants: Periodically, ICSU and IUPAC collaborate on projects. Such project-related funds are not part of our regular income.

Donations: Unfortunately, this part is actually very small. However, there are some opportunities for project funding in the areas of research and education. We definitely need more effort in these areas to receive funds from industry and other agencies.

How Does IUPAC Spend its Money?

IUPAC is a nonprofit organization, and any revenue is used to support chemistry activities around the world. The IUPAC Strategic Plan has facilitated focused activities.

The main expenses of IUPAC are as follows:

International Meetings: IUPAC supports a number of international meetings—including the World Congresses—with loans, grants, and travel subsidies, in line with programs and project work.

Scientific Advisory Activities: The Divisions and Committees of IUPAC have the responsibility to produce scientific evidence to support nomenclature (e.g., together with Chemical Abstracts, the Beilstein Society, and patent agencies), standardization, research, teaching, and information systems (e.g., Web sites) to sustain chemical science in the service of mankind.

Publications: IUPAC publishes *CI* as an information tool to stay in contact with its Members and Affiliate Members and *PAC*, a journal for the international scientific community, with reports and recommendations emanating from IUPAC's project



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work and manuscripts from IUPAC-sponsored conferences and symposia. The maintenance and expansion of the IUPAC Web site is a new and important activity in this context. Through careful management, the overall expenses for these publications have been substantially reduced.

Reduction of Administrative Costs

Administrative costs have been well managed in the last biennium. The move from Oxford to Research Triangle Park has been quite successful in terms of cost and benefit. The addition of staff is carefully evaluated and only accepted if a clear benefit for IUPAC can be demonstrated. Many services are performed under contract, which helps keep costs down.

Future Initiatives

IUPAC is on the way to focusing more on project-driven activities. It may present a big challenge to make this move rapidly without losing competence. Furthermore, a revision of the Strategic Plan will support better focus and a more efficient allocation of resources.

Income and Expenses

A major and successful financial turnaround is the best description of what happened during the period 1991–1999 under Prof. John Ward as Treasurer. The financial health of IUPAC is, therefore, good. The future, however, has some downside risks, which may be anticipated as a review of the financial summary of the last three years clearly shows.

This summary indicates that our total financial support in 2000 was down some 8% over the previous year, owing in part to a decrease in grants and contributions from outside sources and a decline in National Subscriptions (owing to some countries with financial problems and membership cancellations). Additionally, the investment environment was difficult in 2000, and the impact is quite apparent in our investment income. In the area of publications, the impact of the move from outside to inside publishing in 2000 is very positive. Even with the higher administrative costs associated with this change, the

IUPAC Accounts, 1998–2000

	1998	1999	2000
Support			
Grants and contributions, USD	65 000	31 000	7 000
National Subscriptions	658 455	689 650	677 591
Affiliate Membership Program	58 969	74 436	71 957
Total support	782 424	795 086	756 548
Other revenues			
Publications	394 608	431 505	727 982*
Investment income	257 827	413 225	23 779
Other	17 126	27 793	34 188
Total other revenues	669 561	872 523	785 949
Total support and other revenues	1 451 985	1 667 609	1 542 497
Expenses			
Program	495 653	777 505	699 956
Management and general	452 927	533 795	669 667*
Total expenses	948 580	1 311 300	1 369 623
Increase in net assets	503 405	356 309	172 874
Net assets, beginning of year	3 561 578	4 064 983	4 421 292
Net assets, end of year	4 064 983	4 421 292	4 594 166

*Reflects large increases in both income and expenses from self-publishing.

net income from publications is greater under the new system than it was with an outside publisher. The bottom line shows a steady, but declining, increase in net assets.

A special report on IUPAC's long-term investments and reserve funds is given below by Dr. Ed Przybylowicz (Finance Committee Report).

Summary and Conclusions

An analysis of the above table indicates that the financial health of IUPAC is good, the reserves are still growing, but our income side has some areas of concern. On the expense side, the move from commission-driven costs to a more project-driven system remains to be experienced. As a starting point, we are planning that the balance between operations and projects will be 25%/75%. It remains to be seen whether experience will bear this out. It is possible that we may not fully use the project funds allocated to the Divisions and the Division Reserve in the next period. For this reason, we propose that there be only a 1% increase per annum in the National Subscriptions for the next biennium. To help offset increases in publication costs, we are recommending that the

Committee on Printed and Electronic Publications consider a 5% per annum increase in the subscription prices of *PAC*. Beyond this biennium, we may have to be prepared to increase the National Subscriptions in the period 2003–2005 at a higher rate, depending on our experience with the new project system.

It is most important that we spend IUPAC funds on strategically important projects, making visible to our outside world of customers those accomplishments that IUPAC is in a unique position to provide. This effort will require focusing on fewer, high-priority tasks. For the next biennium, the allocation to the Divisions will follow mainly the pattern of past expenditures, as proposed to the Bureau at its meeting in September 2000. As we take on new tasks, such as the Systematic Nomenclature and Structure Representation Division, more activity in COCI, and educational efforts, the allocations will be different.

The next biennium is, in many respects, a provisional one, with some uncertainties that will be resolved through the experience of the next two years. For future biennia, it will be up to the Executive Committee and the Bureau to develop focused strategies that give clear guidelines to the Finance Committee and to the Treasurer to allocate the funds in the most sensible way.

Acknowledgments

The present work of the Treasurer was only possible thanks to the great cooperation and help of the Executive Director, the Finance Committee, and last—but not least—the outstanding heritage of my predecessor, Prof. John Ward.

Finance Committee Report

According to the standing orders of the Finance Committee (FC), the FC is charged broadly with providing financial advice to IUPAC, as well as the responsibility for IUPAC securities in the long-term accounts. Over the past biennium, our long-term investments have been handled through the Merrill Lynch International Bank Limited with offices in New York City. The holdings in the IUPAC long-term investment account are a mixture of international equity funds and international bonds, with approximately 1–2% of the funds being available in a money market fund for liquidity.

The investment market over the past two years was very mixed. The year 1999 showed poor performance early in the year; however, the fourth quarter ended strong. In 2000, the markets took a decided turn downward from the preceding several

years when growth was high. It was the end of a prolonged period of outstanding investment opportunities. The downward turn in the markets, especially during the past year, had its way with the IUPAC portfolio.

For the biennium, 1999–2000, the value of our long-term portfolio increased from USD 3 465 219 to USD 4 359

888, or 25.8%. However, a significant portion of this increase is due to underrunning the operating budgets during this biennium and transfer of those funds to the long-term account. During 1999, the investments yielded an 11.9% increase, largely due to a market rally in the fourth quarter of the year. During the year 2000, however, our investments decreased in value by 1% in an equity investment market that decreased by over 9%. Financially, we have done well in a rather poor investment market.

In view of the recent volatility of the equity markets and the goal of the FC to “preserve capital”, a decision was taken at the FC meeting in March 2001 to move to a 50/50 ratio of equity-to-fixed income in the long-term portfolio.

The Finance Committee and Executive Committee also approved an IUPAC Investment Policy and a Fund Policy Statement that provide an annual operating description of how the long-term investment account is allocated to various funds of the organization. These policy statements are available upon request to the Secretariat.

In summary, the long-term investment account of IUPAC is in good shape and can provide financial stability for the annual operations of the Union, as well as income to support certain special projects. As the Treasurer points out in his report, the health of this account depends on a continued strong investment market.

As FC chairman, my thanks go to our Treasurer and to the FC committee members for their advice and counsel, as well as to the officers of IUPAC for their continued support. Special thanks go to Dr. Alfred Hartmann, a retired member of the FC, and to Prof. John Ward, past-Treasurer, who have attended the FC meetings during the past two years and participated in our deliberations.



Dr. Ed Przybyłowicz

News from IUPAC

COCI Visit to China, April 2001

IUPAC's Committee on Chemistry and Industry (COCI) has submitted the following article, prepared by COCI Chairman Dr. A. Nelson Wright (12539 Ranger, Montréal, Quebec H4J 2L7, Canada; E-mail: anwright@citenet.net) after his visit to China in April 2001.

Representing COCI, I had a most productive and enjoyable visit to China in April 2001. The primary goal of the visit was to spend some time in Beijing with SINOPEC, which last year gained representation on COCI in the person of Dr. Jinliang Qiao, Deputy Director of the Beijing Research Institute of Chemical Industry. SINOPEC, an acronym for China Petrochemical Corporation, is a giant petroleum and petrochemical enterprise group, established in July 1998 by the State on the basis of the former China Petrochemical Corporation, with 95 wholly owned enterprises, sales over USD 28 billion in 1999, and well over 500 000 employees. It is represented on both the New York and London stock markets. In addition to having an opportunity to explain COCI/IUPAC, and especially those activities pertinent to industry, to company officers, and to developing a *modus operandi* with the company after Dr. Qiao's first COCI meeting in Montréal last year, we hoped also to meet representatives of the overall Chinese chemical industry to promote IUPAC and to ascertain their future needs that the Union might be able to address. (Such industrial initiatives are part of the strategies recently developed by President Hayes's IUPAC/Industry Relations Task Group.) Prof. Cun-hao Zhang, of the IUPAC Bureau, also kindly offered to arrange visits for me in Beijing with the pharmaceutical sector. All these meetings were successfully coordinated before my arrival and proved fruitful.

The trip began at the IUPAC/ICSU Biodiversity Workshop in Kunming with COCI's participation in the final drafting of Recommendations in order to represent "industrial interests". Co-chaired by Profs. Cun-hao Zhang and Upendra Pandit, the work-

shop featured several IUPAC-associated speakers from around the world, as well as other scientists from China. It was particularly interesting for me to discover the extent and quality of research in China focused on the growing understanding of traditional Chinese medicine (TCM). Much of the research stems from the biodiversity native to China, which we all wish to preserve! It was also a pleasure to spend some time at the banquet with Prof. Chunli Bai, Vice President of the Chinese Academy of Sciences (CAS), President of the Chinese Chemical Society, and a (newly elected; see p. 129) candidate for the IUPAC Bureau at the election in Brisbane. It was a particular delight following the workshop to participate with many Chinese and overseas colleagues in a field trip arranged by our hosts, the Chinese Association for Science and Technology (CAST), to the historic Yunnan city of Lijiang and its beautiful environs. We were all impressed, especially by the culture, architecture, and costumes of the local, minority Naxi peoples.

In Beijing, a scheduled 15-minute audience with Mr. Jiming Wang, President and Director of the Board of SINOPEC, was extended to 45 minutes following my brief presentation about the new directions of IUPAC and its efforts pertinent to industrial concerns! The new brochure "IUPAC and Industry" was also distributed. Others present included Ms. Yuan Qingtang, Chief Engineer; Mr. Li Jiaxun, Di-



From left to right: Mr. Jiaxun Li, Director, Foreign Affairs Department; Mr. Haihong Xu, Interpreter; Mr. Jiming Wang, President; Ms. Qingtang Yuan, Chief Engineer; Mr. Yong Zhang, Deputy Director, Science and Technology Department.



From left: Dr. Jinlian Qiao, Dr. A. Nelson Wright, and Mr. Jiming Wang

rector, Foreign Affairs Department; Mr. Zhang Yong, Deputy Director, Science and Technology Department (who made the first contact with COCI as an Observer at our Berlin Meeting); Dr. Qiao; and Mr. Hailong Xu, the interpreter. Mr. Wang's response to proposed interactions with IUPAC was most enthusiastic! (In the photo, he is shown on the right with Dr. Qiao on the left.) Mr. Wang personally committed SINOPEC to support existing COCI programs; to identify before our Brisbane meeting a SINOPEC candidate for the COCI/UNESCO/UNIDO Training Program; to sponsor (i.e., financially support) a Safety/Environment Workshop in Beijing in 2002 or 2003; and to purchase copies of *DIDAC* (see *DIDACTic Tools for Teaching Chemistry, CI*, Vol. 22, No. 4, pp. 103–105, 2000), to have them translated into Chinese, and then to provide them to the Ministry of Education. He also encouraged COCI to continue initiating IUPAC projects that address issues of industrial/societal concerns, such as the recent Special Topic Issues of *PAC* on "Chlorine" (Vol. 68, No. 9, 1996) and "Environmental Oestrogens" (Vol. 70, No. 9, 1998). I extended President Hayes's invitation to attend the World Chemistry Leadership Meeting in Brisbane, and Mr. Wang agreed to try to send a company officer. In the afternoon, Dr. Qiao and I visited the Polyolefins National Research Center and the Beijing Research Institute of Chemical Industry, hosted by Mr. Xi Wang, Senior Engineer. Much of the research/development in both places is focused on polyolefin catalyst systems, and I was impressed by the sophistication of the analytical instruments and the pilot facilities.

A meeting with the Society of Chemical and Petrochemical Industry of China (until recently the

Chemical Industry and Engineering Society of China) was hosted by the Secretary General, Mr. Qi Yi Gong. Although obviously strongly influenced by SINOPEC (several officers in attendance were from that company), the Society has more than 60 000 industry members and many Constituent Institutes. Thus, we were able to get the "IUPAC story" across to a broad spectrum of the chemical industry. Mr. Gong described his organization and presented me with extensive documentation. He expressed great interest in the many COCI/

IUPAC activities pertinent to industry and in the new industry brochure that has been widely distributed. We spent considerable time discussing the "Environmental Oestrogen" Special Topic Issue of *PAC*, and our Chinese colleagues promised to keep COCI informed of the appearance of such industry/societal issues in China. Mr. Gong committed to be a coorganizer with SINOPEC in a planned Safety/Environment Workshop in Beijing; they will help identify areas that need special attention in China, and make sure that many of their companies attend. They were intrigued by the Training Program and will try to identify a candidate before Brisbane—at my suggestion—from one of their smaller companies with "needs". They will try to recruit new Company Associates from among their member companies. Mr. Gong also promised to attempt to respond to Dr. Hayes's invitation to send an officer to the World Chemistry Leadership Meeting in Brisbane.

Thanks to arrangements by Prof. Cun-hao Zhang, I also visited the Pharmaceutical College of Beijing and the Pharmaceutical Institute of the Chinese Academy of Sciences, hosted by Prof. Li-He Zhang, Dr. Han Lin Wen, and Mr. Bao Sheng Huang, among many others. Again, I was impressed by how much really good chemistry is underway to identify the active components in TCM, as well as by their anti-tumor and antibacterial effects. I also appreciated the Chinese emphasis on joint efforts with overseas researchers, including those at the Université de Montréal! I have many brochures on hand describing this college and institute, and I am sure that many "drugs/medicines" will eventually result from this collaborative work. Although direct interaction with COCI is not currently obvious, the Chinese may well

participate in the 2002 (or 2003) Safety/Environment Workshop that we are planning with SINOPEC; we shall keep them informed of progress.

Finally, I would like to express my thanks to my many hosts in China, including Ms. Fang Chen of CAST, who arranged things so well for many of us in Kunming and Lijiang; Mr. Wang of SINOPEC (and, of course, Dr. Qiao of COCI and his Foreign Affairs Senior Engineer, Mr. Chaosheng Wang); Mr. Qi Yi Gong of the Society; Prof. Zhang of the IUPAC Bureau; and Prof. Li-He Zhang, Dean of the School of Pharmaceutical Science and Member of the Chinese Academy of Sciences; and to Prof. Albert Fischli for keeping COCI involved in the "Molecular Basis of Biodiversity". The food was great everywhere, the science inspiring, the scenery magnificent, the cultural attractions wonderful (and always also explained in English notices!), and the cities, hotels, and airports more modern than I could ever have anticipated. Of course, there is no better way to "see" a country than in the company of colleagues who live there!

IUPAC "Red Book II"

This new volume of nomenclature rules for polyanions, isotopic modification, tetrapyrroles, nitrogen hydrides, and inorganic ring, chain, polymer, and graphite intercalation compounds is now available from the Royal Society of Chemistry. (See announcement on pp. 149–150.)

IUPAC–NIST Solubility Data Series

Two more volumes in the IUPAC–NIST Solubility Data Series have recently been published as issues of the *Journal of Physical and Chemical Reference Data (JPCRD)*, as per the cooperative agreement described in *Chemistry International*, Vol. 21, No. 2, pp. 36–37, 1999. These volumes have been published by the American Chemical Society (ACS) and the American Institute of Physics (AIP) for the National Institute of Standards and Technology (NIST).

IUPAC–NIST Solubility Data Series 71. Nitromethane with Water or Organic Solvents: Binary Systems, by Valerii P. Sazonov, Kenneth N. Marsh, and Glenn T. Hefter, appeared as *JPCRD*, Vol. 29, No. 5, pp. 1165–1354, 2000.

IUPAC–NIST Solubility Data Series 72. Nitromethane with Water or Organic Solvents: Ternary and Quaternary Systems, by Valerii P. Sazonov, Kenneth N. Marsh, David G. Shaw, Mariya F. Chernysheva, Nikolai V. Sazonov, and Hideo Akaiwa, appeared as *JPCRD*, Vol. 29, No. 6, pp. 1447–1641, 2000.

For more information about these IUPAC–NIST volumes, see the article on New Publications from the American Chemical Society and the American Institute of Physics on page 151.

IUPAC Recommendations for Macromolecular (Polymer) Nomenclature: Guide for the Authors of Papers and Reports in Polymer Science and Technology

Dr. Edward S. Wilks (E. I. DuPont de Nemours & Co., CR&D BMP 14-1288, P.O. Box 80014, Wilmington, Delaware 19880-0014, USA; E-mail: edward.s.wilks@usa.dupont.com), Titular Member of the IUPAC Commission on Macromolecular Nomenclature (IV.1), has prepared an easy and less formal guide to IUPAC recommendations on macromolecular nomenclature. All IUPAC recommendations referred to in this guide have been published previously in *Pure and Applied Chemistry*.

It has been the goal of Commission IV.1 to improve communication among polymer scientists by recommending unambiguous, standardized, and universally understood names and structure representations of polymers. The guide may be found on the IUPAC Web site at <<http://www.iupac.org/reports/IV/guide.html>>.

Tribute to Prof. Valentin A. Koptuyug and his IUPAC Career

Prof. Boris F. Myasoedov (V. I. Vernadsky Institute of Geochemistry and Analytical Chemistry, Russian Academy of Sciences, Radiochemistry Laboratory, Kosygin Street 19, Moscow, RU-117975; E-mail: nrc@mail.ru), Russian National Representative for the IUPAC Commission on Radiochemistry and Nuclear Techniques (V.7) and Vice Chairman of the National Committee of Russian Chemists, has contributed the following tribute to Prof. Valentin A. Koptuyug (IUPAC President, 1987–1989) on the occasion of the 70th anniversary of the birth of the late Prof. Koptuyug (1931–1997). This article previously appeared in *Chemistry in Russia* and in the *Mendeleev Chemical Society Journal* and is published here gladly at the request of Prof. Myasoedov on behalf of the National Committee of Russian Chemists.

Prof. Valentin A. Koptuyug was an outstanding scientist, a great thinker, an excellent organizer of science (for 17 years, he was Chairman of the Siberian Branch of the Russian Academy of Sciences), and a strong and determined person. Although his commitments at the Academy took most of his time, he

managed to take an active part in the work of leading international organizations. Many years of his life were dedicated to IUPAC, the most authoritative organization consolidating chemists from 56 countries of the world.



Prof. Valentin A. Koptuyug

The first activities of Prof. Koptuyug in IUPAC (1973–1983) were connected with the activities of the Commission on Molecular Structure and Spectroscopy (I.5) within the Physical Chemistry Division. Realizing the increasing importance of computer technology to the chemical sciences, he initiated and successfully accomplished a project on the development of electronic databases for properties of chemical compounds.

At the 30th IUPAC General Assembly (Davos, Switzerland, 1979), Prof. Koptuyug was elected to the Bureau (1979–1989). At the 33rd IUPAC General Assembly (Lyon, France, 1984), he became IUPAC Vice President (1986–1987). This election signified the international recognition of his scientific achievements. In January 1988, he became IUPAC President. The election of Prof. Koptuyug as a member of the Bureau led to the most productive period of his activity in IUPAC. During his years as a Bureau Member and Officer, environmental problems acquired a global significance, and Prof. Koptuyug's scientific and organizational work focused on finding solutions to these challenges. He concentrated his efforts on the reorganization of the Union's activities in order to respond adequately to the global changes occurring in the world and to solve various environmental problems.

Prof. Koptuyug actively supported the idea of "horizontal" interdisciplinary specialized programs in which the IUPAC Divisions and Commissions were supposed to be engaged. In February 1989, he proposed the first program on "Chemistry and the Environment", which was adopted by the Scientific Committee on Problems of the Environment (SCOPE) and the International Council for Science (ICSU) to deal with environmental problems. In August 1989 at the 35th General Assembly (Lund, Sweden), the IUPAC Bureau approved the "Chemistry and the Environment" program, and Prof. Koptuyug became its coordinator.

Prof. Koptuyug realized that the only way to solve global environmental problems is to consolidate the efforts of the entire chemical community. He prepared

and published the digest of articles entitled "Compilative Information on International Organizations and Programs Relating to Chemical and Biochemical Aspects of Environmental Problems" (IUPAC, SB RAS, Novosibirsk, 1991), where information on international organizations dealing with environmental problems was summarized and analyzed.

At the end of his presidency, Prof. Koptuyug was appointed an IUPAC representative to ICSU–SCOPE (1989–1997). In 1992, he became Vice President of ICSU–SCOPE. Prof. Koptuyug responsibly and actively supported the concept of sustainable development, which was accepted as the main principle of development of the human community at the famous UN Conference in Rio de Janeiro (1992), where Prof. Koptuyug represented Russia. For his remaining years after this conference until his death on 10 January 1997, Prof. Koptuyug was actively engaged in developing and popularizing this concept. As the IUPAC representative to ICSU–SCOPE, he participated in organizing the International Conference ASCEND-21, where the role of science in the 21st century, as well as various approaches to the solution of environmental problems, were discussed.

Prof. Koptuyug undertook many efforts to organize a series of international conferences on Chemical Research Applied to World Needs (CHEMRAWN), including CHEMRAWN VIII: "Chemistry and Sustainable Development Toward a Clean Environment, Zero Waste, and Highest Energy Efficiency", which he organized with academician Prof. Oleg M. Nefedov, Vice President of the Russian Academy of Sciences, in September 1992 in Moscow. This conference was held soon after the UN Conference in Rio de Janeiro.

In 1993, owing to Prof. Koptuyug's efforts, a new international journal, *Chemistry for Sustainable Development*, was created. The primary goal of the journal was to promote better understanding of chemical sciences, as well as the role of industry in the development of human society.

The fruitful work of Prof. Koptuyug in IUPAC and ICSU–SCOPE lasted for 24 years, from 1973 until 1997 and the last days of his life. Prof. Koptuyug easily established contacts with foreign scientists due to his excellent knowledge of English. His activity in IUPAC was highly appreciated by scientists all over the world.

Prof. Koptuyug had a strong feeling of responsibility toward people and society. The range of his scientific interests was extremely wide. He worked on both fundamental and applied problems. His main concern was with the social role of science and education and their contribution to the solution of environmental problems and to the sustainable development of mankind on the threshold of the 21st century.

Reports from IUPAC-Sponsored Symposia

4th Annual UNESCO School and IUPAC Conference on Macromolecules and Materials Science, 7–11 April 2001, Stellenbosch, South Africa

This fourth in a series of annual events attracted 141 delegates, of whom 46 were from countries other than South Africa, including four African countries. Fifty-three students actively participated.

The UNESCO School was opened by Dr. Benjamin Ntim, Science and Technology Advisor of UNESCO, Pretoria. He discussed the role of UNESCO, both at present and in the future, as a proactive body in promoting science and technology awareness and in helping to provide education for the underprivileged—especially in Africa—in all fields of chemistry. Twenty-two experts presented plenary lectures on a wide range of subjects, recording the state-of-the-art in various fields, often encompassing the last few years of research. Bringing together several experts into similar fields led to some lively discussions and a sharing of knowledge, particularly about the availability of analytical subroutines for certain analytical equipment that the manufacturer often neglects to explain to the customer. One such example is the measurement of polymer crystallinity by differential scanning calorimetry (DSC).

The IUPAC Conference was opened by Prof. Robert Gilbert, President of IUPAC's Macromolecular Division, Key Centre for Colloids, School of Chemistry F11, University of Sydney, Australia. He explained the proactive role of IUPAC in the chemical community, industry, and government institutions. Prof. Gilbert's remarks were followed by presentations of 9 plenary speakers, 19 invited speakers, and 20 others. Thirty high-quality posters were presented in a very well attended (especially by students) 2-hour poster session.

Some conference topics especially worthy of mention include starch hydrocolloids; self cross-linking of films from functionalized latexes; recent advances in macromolecular engineering using ROMP and self-assembling procedures; mechanisms of formation of iso- and syndiotactic poly(1,3-diene)s; atom-transfer radical polymerization of styrene and butyl acrylate; chain transfer to polymer in emulsion copolymerization; free volume and transport properties of heterogeneous poly(ethylene-co-octene)s; early recognition of oxidative degradation in polymers by chemiluminescence; analytical techniques for polymers with complex architecture; characterization of macromolecules,

microgels, and nanoparticles by analytical ultracentrifugation; characterization of complex polyolefins; chemical composition and molecular weight dependence; challenges in the application and design of gel permeation chromatography (GPC)/size exclusion chromatography (SEC) separation media; polyelectrolytes and their characterization; role of micromechanisms to improve the mechanical properties of polymers; full characterization of complex polymers and oligomers by different chromatographic techniques; characterization of acid-base properties of polymers and other materials; and a solution to the plastic shopping bag visual pollution problem.

The conference banquet at Boschendal Restaurant, Groot Drakenstein, was greatly enjoyed by everybody who attended it. It embodied South African cuisine, wines of the area, and good music in a wine-farm atmosphere, in an area where up to 40 farms are available for touring and tasting.

A virtual teaching encyclopedia CD-ROM 2001 (PolymerED), consisting of all abstracts and UNESCO School lectures and IUPAC Conference talks, is being created. Such an encyclopedia is an excellent tool for teaching and expanding course notes and will be made available to all speakers at the UNESCO School and IUPAC Conference 2001. It is also available for ordering for USD 50 a copy through the UNESCO Associated Centre's Web site: <<http://www.sun.ac.za/unesco.unesco.htm/>>. It will be placed in an abridged form on the web site after approval by each of the contributors.

The 5th Annual UNESCO School (2–3 February 2002) and IUPAC Conference (4–6 February 2002) will also take place in Stellenbosch, South Africa.

**Prof. R. D. Sanderson (Conference Chairman)
and Aneli Fourie (Conference Secretary)**
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University of Stellenbosch
Private Bag X1
Matieland 7602, South Africa

Prof. Harald Pasch (Conference Cochairman)
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4th International Congress on Chemistry and 13th Caribbean Conference on Chemistry and Chemical Engineering, 16–20 April 2001, Havana, Cuba

The 4th International Congress on Chemistry in Havana doubled as the 13th Caribbean Conference on Chemistry and Chemical Engineering. It was organized by the Cuban Chemical Society and cosponsored by IUPAC, the International Union of Biochemistry and Molecular Biology (IUBMB), and the Third World Academy of Sciences. More than 800 people attended this meeting; over 300 were from outside Cuba—mostly from various countries in the Americas.

I attended the first four days of the congress and gave a short opening lecture as appointed representative of IUPAC. The sessions were generally well organized, with plenary lectures (free-standing) mostly at the beginning of the morning session (with two at the very end of the congress) and section and contributed lectures in the late morning and all afternoon. Many posters were also presented. The only problem was that several plenary lectures did not start on time and thereby intruded upon the schedule of the contributed papers (which was also not always followed exactly as programmed).

Section and contributed lecturers were grouped in the following areas: analytical chemistry, agricultural chemistry, biochemistry, carbohydrate chemistry, chemical education, chromatography, environmental chemistry, history of chemistry, industrial chemistry, natural products, organic chemistry, pharmaceutical chemistry, physical chemistry, and supramolecular chemistry. As usual, the quality of the papers varies from outstanding (especially in the Supramolecular Chemistry Symposium organized by Prof. Luis Echegoyen of the University of Miami) to trivial. The number of papers with biological relevance was strikingly large.

The spirit of the congress was excellent, with many young people in attendance. The registration fee included a very good group lunch each day, which encouraged mingling of the participants.

The congress took place in a very good, relatively new conference center with a large auditorium for the plenary lectures and a number of medium and smaller lecture rooms for the concurrent contributed papers. Unfortunately, the large auditorium was somewhat “super-modern” in that it provided for projection of PowerPoint material (as did the smaller lecture rooms), but not for projection of slides and overheads! I had to give my lecture without slides, which problem I solved by giving it alternately in English and Spanish. For subsequent plenaries, slide and overhead projectors were made available but



they were inadequate for the size of the room. The hotel in which I stayed was more than satisfactory and was connected with the conference center by a covered passage.

General conditions in Cuba have vastly improved since I traveled there in 1996. There is much reconstruction of old buildings and construction of new ones, and there are many good restaurants and hotels. One also sees an increasing number of late-vintage automobiles (not including U.S. makes!). I was informed that the chemistry department of the University of Havana is undertaking a much needed renovation of their laboratories. When I inquired about the source of the still quite limited government funds, I was told that, in addition to income from tourism, the government benefited from successful nickel mining by a Canadian company and was also deriving some funds from licensing and royalty fees from prospecting for oil (which had now actually been found!).

The American Chemical Society (ACS) was well represented by three former presidents, the administrator of the International Activities Office, and an additional dozen or so members. There was discussion at the congress about establishing closer relations in the future between the ACS and the Cuban Chemical Society.

Ernest L. Eliel
Professor Emeritus
Department of Chemistry
University of North Carolina
Chapel Hill, North Carolina, USA

Prof. Eliel, a former American Chemical Society president, who studied at the University of Havana during World War II, was declared an honorary member of the Cuban Chemical Society at a special session of the meeting in Havana in April. Leslie Yanyez Gonzalez of the University of Havana presented Prof. Eliel with a copy of his undergraduate research thesis and a bound copy of his matriculation papers and records from his student days at the university.

New Projects

Visit <http://www.iupac.org/projects/> for complete information and further links.

Atomic Force Microscopy (AFM) in Direct Measurements of Colloidal Forces

IUPAC has approved a new project to recommend (1) procedures for measurement of interparticle distance dependence of colloidal force data using the atomic force microscope (AFM) colloid probe technique, and (2) methods by which force-distance data can be compared with existing models of interparticle forces.

The colloid probe AFM technique is a promising new method to determine the interactions between colloidal bodies. The technique is based on the general AFM, and this equipment is, in principle, available for many research groups (i.e., it is not excessively expensive). In order to avoid confusion in the literature about the use of AFM equipment for colloid stability measurements (and, consequently, about the interpretation of results), recommendations for the use of this equipment for this type of measurement are needed.

The project includes the following components:

- principles of atomic force microscopy
- attachment of colloidal probe to cantilever
- force measurement
- distance separation
- determination of spring constant
- determination of colloid probe radius
- interaction geometry
- interparticle forces
- nondeformable and deformable surfaces
- symmetric and asymmetric interactions

Comments from the chemistry community are welcome and should be addressed to the project coordinator, Prof. John Ralston, Ian Wark Research Institute, University of South Australia, The Levels, South Australia 5095, Australia; Tel.: +61 8 8302 3066; Fax: +61 8 8302 3683; E-mail: john.ralston@unisa.edu.au.

See <http://www.iupac.org/projects/1999/1999-016-3-100.html> for project description and update.

Selected Free Radicals and Critical Intermediates: Thermodynamic Properties from Theory and Experiment

Accurate thermodynamic data are required in modeling of atmospheric processes, combustion, and other complex chemical systems. However, for most of the free radicals participating in such processes, no reliable thermodynamic properties are available; literature data are contradictory, often depend on a single determination made decades ago using indirect methods, or are based on estimations. Owing to the progress made in developing new direct experimental techniques, reliable thermodynamic properties have become available for more and more free radicals. In spite of this success, a breakthrough and an essential improvement in this field may not be expected in the near future. Fortunately, recent studies using *ab initio* theoretical methods have shown that an accuracy better than 4 kJ/mol is a realistic aim in the computation of enthalpies of formation. This analysis of the state of affairs was the motivation that initiated a joint effort of experimentalists and theoreticians to create a set of reliable thermodynamic properties for selected organic free radicals.

IUPAC has approved a 2.5-year project for the compilation and critical evaluation of available thermodynamic properties as well as for the computation of accurate data for selected free radicals that are of importance in atmospheric chemistry and/or combustion. Altogether, six experimentalists and seven theoreticians are participating in the project. The interdisciplinary character of this group may prove to be useful in finding the right answer in cases where contradictory thermodynamic properties were published for the same free radical from different laboratories or were obtained by different techniques.

A series of seminal papers, to be published in leading journals of physical chemistry and chemical physics, is expected from this project. The final results of the project will appear in peer-reviewed journals such as the *Journal of Physical and Chemical Reference Data* or *Pure and Applied Chemistry*. A web version of the results may be presented in the NIST Chemistry Web Book.

It is expected that the recommended thermodynamic data, the results of compilation and critical data evaluation of organic free radicals, would be widely used by the kineticist community. The major

users are probably the modelers dealing with atmospheric chemistry and/or combustion. The anticipated impact is an improvement in the reliability of the predictions of modeling studies.

Comments from the chemistry community are welcome and should be addressed to the task group chairman, Prof. Tibor Bérces, Institute for Chemis-

try, Chemical Research Center, Hungarian Academy of Sciences, Pusztaszeri u. 59/67, H-1025 Budapest, Hungary; Tel: 36 1 325 7752; Fax 36 1 325 7554; E-mail: berces@chemres.hu. See <http://www.iupac.org/projects/2000/2000-013-1-100.html> for project description and update.

Provisional Recommendations

IUPAC Seeks Your Comments

In this section, we publish synopses of IUPAC's latest provisional recommendations on nomenclature and symbols. All comments on these recommendations are welcome and will be taken into consideration. The final revised versions are published in *Pure and Applied Chemistry (PAC)*.

If you would like to comment on the provisional recommendations, please visit the IUPAC Web site at <http://www.iupac.org/reports/provisional/index.html>, where the full texts are available for downloading as draft pdf files. Alternatively, you can write to your nearest national/regional center to request a copy; the most recent list of national/regional centers is available on the web site at the address above and last appeared in *CI*, Vol. 17, p. 141 (1997).

Organic and Biomolecular Chemistry Division. Commission on Nomenclature of Organic Chemistry—Phane Nomenclature. Part II: Substitution Derivatives of Phane Parent Hydrides

<http://www.iupac.org/reports/provisional/abstract01/powell_310102.html>

Cyclophane and linear phane systems are considered as parent hydrides. Their derivatives are named in conformity with the principles, rules, and conventions prescribed for naming organic compounds. The following nomenclatural features are described: indicated and added hydrogen, order of seniority for numbering, substituents expressed as suffixes, substituents cited as prefixes, phane parent hydrides modified by addition or subtraction of hydrogen atoms, and polyfunctional derivatives.

Comments by 31 January 2002 to Dr. Warren H. Powell, 1436 Havencrest Court, Columbus, Ohio 43220-3841, USA. Tel.: +1-614-451-1830, E-mail: wpowell2@juno.com.

Physical and Biophysical Chemistry Division and Analytical Chemistry Division. Working Party on the Definition of pH—Measurement of pH—Definition, Standards, and Procedures

<http://www.iupac.org/reports/provisional/abstract01/rondinini_310102.html>

pH, defined by $\text{pH} = -\lg a_{\text{H}^+}$, is a single ion quantity; hence, it is immeasurable unless evaluated by an associated convention. Nevertheless, pH can be incorporated within the SI system of measurements, because primary and secondary standards can be defined and determined by the primary method or by secondary methods. Furthermore, incorporation of the uncertainties for the primary method, and for all subsequent measurements, permits the uncertainties for all procedures to be linked to the primary standards by an unbroken chain of comparisons. Thus, a rational choice can be made by the analyst of the appropriate procedure to adopt to achieve the target uncertainty of sample pH.

Accordingly, this new document gives the IUPAC-recommended definitions, procedures, and terminology relating to pH measurements in dilute aqueous solutions ($\leq 0.1 \text{ mol kg}^{-1}$) in the temperature range 0–50 °C.

- The primary method is the cell without transference, called the Harned Cell.
- The procedure for assigning pH(PS) values to primary buffer solutions is based on the Bates–Guggenheim convention.
- The seven primary buffer solutions, to which pH(PS) values can be assigned by the primary method, fulfill the required condition of “highest metrological” quality, and are as follows:
 - potassium hydrogen tartrate (saturated at 25 °C), $0.0341 \text{ mol kg}^{-1}$
 - potassium dihydrogen citrate, 0.05 mol kg^{-1}
 - potassium hydrogen phthalate, 0.05 mol kg^{-1}
 - disodium hydrogen orthophosphate, $0.025 \text{ mol kg}^{-1}$ + potassium dihydrogen orthophosphate, $0.025 \text{ mol kg}^{-1}$

- disodium hydrogen orthophosphate, 0.03043 mol kg⁻¹ + potassium dihydrogen orthophosphate, 0.00869 mol kg⁻¹
- disodium tetraborate, 0.01 mol kg⁻¹
- sodium hydrogen carbonate, 0.025 mol kg⁻¹ + sodium carbonate, 0.025 mol kg⁻¹
- As there can be significant variations in the purity of samples of a buffer substance of the same nominal chemical composition, the primary buffer material used must be certified with values that have been measured with the Harned cell.
- The certified pH(PS) values have target expanded uncertainties $U = 0.004$, with a repeatability of 0.0015, reproducibility of 0.003, and variations between batches of 0.003.
- To these uncertainties, a further contribution of 0.01, the assigned uncertainty of the Bates–Guggenheim convention, must be added in order to make a pH value traceable to the internationally accepted SI system of measurement.
- The pH(SS) values of secondary standard buffer solutions can be assigned by the following procedures:
 - Those substances that do not fulfill all the criteria for primary standards but to which pH values can be assigned using the primary method are considered to be secondary standards (target uncertainty $U = 0.01$).
 - Secondary standards are also derived by secondary methods, which allow the assignment of pH(SS) values by comparison with primary standards, either of the same nominal composition or of different composition (target uncertainties range from 0.004 to 0.015).
 - When secondary standards are not compatible with the use of the platinum hydrogen electrode, the glass electrode can be used in secondary methods (target uncertainty $U = 0.02$).
- Secondary methods use cells with transference, which involves a liquid junction potential contribution to the measured potential difference; hence, the measurement equations contain terms that, although small, are not quantifiable so that these methods are secondary, not primary, methods.
- The target uncertainties for measuring the pH of unknown solutions depend on the uncertainties of the standard buffer solutions and on the chosen calibration procedure: multipoint (5-point), bracketing (2-point), and 1-point + assumed practical slope calibration.

Details are given of the primary and secondary methods for measuring pH and of the rationale for

the assignment of pH values with appropriate uncertainties to selected primary and secondary methods and to unknowns.

The present approach supersedes the previous compromise IUPAC Recommendations [A. K. Covington, R. G. Bates, R. A. Durst, *Pure Appl. Chem.* **57**, 531 (1985)], in that the focus is shifted from standard *solutions* to standard *methods* and their associated *uncertainties*. The unifying principle follows the simple path:

Method + quality of materials → standard with known uncertainty

Standard + calibration procedure → measurement of unknown pH with stated uncertainty

This approach requires the evaluation of the uncertainty associated with each step in the process, starting from the assignment of pH(PS) to a primary standard solution down to pH measurements of unknowns, and to tracing the resulting combined uncertainty back to the primary standards. Examples of uncertainty budget calculations, given in the Annex, allow identification of the principal experimental parameters affecting the accuracy of the selected procedure (to the target uncertainty level), thus directing attention to the major error sources, and enabling the minor ones to be disregarded.

Comments by 31 January 2002 to Prof. Sandra Rondinini, Dipartimento di Chimica Fisica ed Elettrochimica, Università di Milano, Via Golgi 19, I-20133 Milano, Italy; Tel.: +39 02 26603 217; Fax: +39 02 26603 203; E-mail: sandra.rondinini@unimi.it or vertova@icil64.cilea.it.

Analytical Chemistry Division. Commission on General Aspects of Analytical Chemistry—Recommendations for the Use of the Term “Recovery” in Analytical Procedures

<http://www.iupac.org/reports/provisional/abstract01/urns_310102.html>

The terms *recovery* and *apparent recovery* are recommended to avoid confusion caused by the use of the term *recovery* to cover two distinct situations. Namely, the two situations deal with the *yield* of a preconcentration or extraction stage of an analytical process and the *ratio, observed value/reference value*, obtained using an analytical process with calibration graph.

Comments by 31 January 2002 to Prof. D. T. Burns, Department of Analytical Chemistry, The Queen’s University of Belfast, David Keir Building, Stranmillis Road, Belfast, BT9 5AG Northern Ire-

land, UK; Tel.: +44 2890 668567; Fax: +44 2890 382117; E-mail: profburns@chemistry.fsbusiness.co.uk.

Analytical Chemistry Division. Commission on Separation Methods in Analytical Chemistry—Terminology for Analytical Capillary Electromigration Techniques

<http://www.iupac.org/reports/provisional/abstract01/riekkola_310102.html>

This paper presents terms and definitions for capil-

lary electromigration techniques for separation and quantitative chemical analysis. Names and descriptions for such techniques (e.g., capillary electrophoresis and capillary electrochromatography), as well as terms for the phenomenon of electroosmotic flow, are included.

Comments by 31 January 2002 to Prof. Marja-Liisa Riekkola, Laboratory of Analytical Chemistry, Department of Chemistry, University of Helsinki, P. O. Box 55, FIN-00014, Finland. Tel.: +358 9 1914 0268, Fax: +358 9 1914 0253, E-mail: riekkola@penger.helsinki.fi.

New Books and Publications

New Books from IUPAC and Wiley-VCH

Macromolecular Symposia, Vol. 161: Controlled Synthesis of Functional Polymers. Symposium Editor, Jaroslav Kahovec; Editor, I. Meisel; Associate Editor, S. Spiegel; Assistant Editors, H. Beattie and C. S. Kniep. Published by Wiley-VCH, October 2000, pp. 1–190. ISBN 3-527-30140-2 (ISSN 1022-1360).

The microsposium “Advances in Polymerization Methods. Controlled Synthesis of Functionalized Polymers” was the 39th in the series of Prague Meetings on Macromolecules organized since 1967. This microsposium, devoted to the tailoring of polymers, tried to bring together experts dealing with controlled polymerizations of all kinds regardless of the character of the growing chain-end. Thus, there was discussion of anionic, cationic, and radical processes leading to polymers with tailored structure and properties and bearing reactive groups.

Main topics covered were (i) tailoring of polymers by ionic living systems, (ii) controlled free-radical polymerization, (iii) synthesis of functionalized polymers by initiation and termination methods and by chemical modification of polymers, and (iv) characterization and application of functionalized polymers. It was shown that both the ionic (R. P. Quirk) and radical (K. Matyjaszewski) methods can offer the desired products; none of them, however, is generally applicable, and each method has its advantages and drawbacks (P. Lutz). Several lecturers presented the utilization of appropriate combinations of polymerization methods giving polymers and copolymers of new structures, thus demonstrating the potential of controlled polymerization and stimulating new research initiatives.

An effort was made to include specialists from various parts of the world (127 participants from 29

countries); also, young scientists were encouraged to participate in the meeting. The scientific program consisted of 9 invited (main) lectures presented by top experts in various fields, 23 short (special) presentations, and 61 posters. Most of the oral contributions are included in this volume, reflecting both the quality and diversity of the meeting and giving a brief overview for those interested in the field.

The organizers of the microsposium wish to express their gratitude to the sponsoring companies: Unipetrol, Inc., Czech Republic; Sigma-Aldrich Ltd., Czech Republic; Eastman Chemical Europe, B. V., United Kingdom; Bayer A. G., Germany; and Exxon Chemical Europe, Belgium.

Dr. Petr Vlček
Institute of Macromolecular Chemistry
Academy of Sciences of the Czech Republic,
Prague

Macromolecular Symposia, Vol. 165: Developments in Polymer Synthesis and Characterization. Symposium Editors, Ronald D. Sanderson and Harald Pasch; Editor, I. Meisel; Associate Editors, C. S. Kniep and S. Spiegel; Assistant Editor, K. Grieve. Published by Wiley-VCH, March 2001, pp. 1–154. ISBN 3-527-30327-8 (ISSN 1022-1360).

UNESCO Chemistry for Life Division in Paris has awarded 13 Associated Centres for research in chemical science and education. One of these is the UNESCO Associated Centre for Macromolecules and Materials, in the Chemistry Department at the University of Stellenbosch, Stellenbosch, South Africa. UNESCO has a humanitarian approach to the support of science and education. (See <http://www.sun.ac.za/unesco/_private/unescoinfo.htm/>.) One of the ways it sees its goals is to encourage and partially sponsor UNESCO Schools in collaboration

with scientific associations such as IUPAC.

The UNESCO School and Conference is held annually in Stellenbosch (50 km from Cape Town), South Africa (Web site: <http://www.sun.ac.za/unesco/unesco.htm>). World authorities in various areas of macromolecular science are invited to deliver informative plenary lectures in their fields of expertise. Not only does this conference have the benefits of an IUPAC Conference, at which people can meet and form liaisons, it also introduces advanced concepts and techniques into Africa. Generous concessions are made for students and staff from disadvantaged communities or from countries with emerging technologies.

Abridged versions of papers presented at the 3rd UNESCO School and IUPAC Conference, held 8–12 April 2000, were compiled, in printed form, to create this contribution to Macromolecular Symposia. The content of the papers is also made available as a PowerPoint Presentation in the Virtual Teaching Encyclopedia, available online at <http://www.sun.ac.za/unesco/unesco.htm/>.

Prof. R. D. Sanderson
UNESCO Associated Centre for
Macromolecules and Materials
Chemistry Department, University of
Stellenbosch
Matieland, South Africa

Macromolecular Symposia, Vol. 168: Natural and Synthetic Polymers: Challenges and Perspectives. Symposium Editor, Waldo Argüelles-Monal; Editor, I. Meisel; Associate Editors, C. S. Kniep and S. Spiegel; Assistant Editor, K. Grieve. Published by Wiley-VCH, March 2001, pp. 1–116. ISBN 3-527-30330-8 (ISSN 1022-1360).

The 7th Latin American Symposium on Polymers (SLAP 2000), a joint meeting with the 5th Ibero-American Congress on Polymers and the 1st Ibero-American Symposium on Chitin and Chitosan, was held in Havana, Cuba, from 20–24 November 2000. This congress was organized by the Cuban Chemical Society, Polymers Section, and sponsored by the University of Havana, IUPAC, the Center for Research on Food and Development (Hermosillo, Mexico), and the Third World Academy of Sciences.

The SLAPs have been organized since 1988 as an effort of Latin American polymer scientists and businessmen to exchange, discuss, and share results of macromolecular science. It could be stated that SLAP 2000 closed a cycle in the life of these Latin American and Ibero-American meetings, after having been celebrated previously in Venezuela, Mexico, Spain, Brazil, Argentina, and Chile.

It was a pleasure to welcome 291 delegates com-

ing from Argentina, Brazil, Canada, Chile, Colombia, Cuba, France, Germany, Italy, Japan, Mexico, Norway, Peru, Portugal, Spain, Sweden, the United States, and Venezuela. The program of the meeting included the following topics:

- synthesis and characterization of polymers
- chemical modifications and specialty polymers
- polymer processing
- rheology
- composites
- biomass utilization
- biopolymers and natural polymers
- polymer degradation
- environmental impact and recycling
- biomedical, pharmaceutical, and biotechnological applications
- polymer physics

In addition to the above-mentioned topics, the program of the 1st Ibero-American Symposium on Chitin and Chitosan also was presented. This volume of Macromolecular Symposia collects some of the invited lectures presented by well-known specialists, giving an overview of the principal challenges and perspectives in current macromolecular science.

On behalf of the Organizing Committee of SLAP 2000, I would like to thank all our Latin and Ibero-American colleagues, as well as those from other regions, for their participation and support that culminated in a successful meeting.

Dr. Waldo Argüelles-Monal
Instituto de Materiales y Reactivos
Universidad de La Habana
La Habana 10400, Cuba

New Book from IUPAC

Nomenclature of Inorganic Chemistry II: Recommendations 2000 (IUPAC "Red Book II"). Edited by J. A. McCleverty (University of Bristol, England, UK) and N. G. Connelly (University of Bristol, England, UK). Published by Royal Society of Chemistry, 2001. Hardcover, x + pp. 1–130. ISBN 0-85404-487-6, GBP 39.50.

Chemical nomenclature has attracted attention since the beginning of chemistry, when the need to exchange knowledge was first recognized. The responsibility for providing nomenclature to the chemical community was assigned to IUPAC, whose Rules for Inorganic Nomenclature were published and revised in 1958 and 1970.

Since then, many new compounds have appeared, particularly with regard to coordination chemistry

and boron chemistry, which were difficult to name using the 1970 Rules. Consequently, the IUPAC Commission on Nomenclature of Inorganic Chemistry (II.2) decided to revise the last edition of the "Red Book" thoroughly. As many of the new fields of chemistry are very highly specialized and require complex nomenclature, the revised edition is in two parts. While Part I is mainly concerned with general inorganic chemistry, this volume, Part II, addresses such diverse chemistry as polyanions, isotopic modification, tetrapyrroles, nitrogen hydrides, and inorganic ring, chain, polymer, and graphite intercalation compounds. The recommendations bring order to the nomenclature of these specialized systems, based on the fundamental nomenclature described in Part I and the organic nomenclature publications. Each chapter has been subjected to extensive review by members of IUPAC and other practicing chemists in various areas.

Brief Contents

Polyanions; Isotopically Modified Inorganic Compounds; Metal Complexes of Tetrapyrroles; Hydrides of Nitrogen and Derived Cations, Anions, and Ligands; Inorganic Chain and Ring Compounds; Graphite Intercalation Compounds; Regular Single-Strand and Quasi-Single-Strand Inorganic Coordination Polymers; Subject Index

The Royal Society of Chemistry is a learned and professional society with a worldwide membership of 46 000. It has as its main objective the advancement of the science of chemistry and its applications, and the maintenance of high standards of competence and integrity among practicing chemists. The society has been involved with the publication of scientific literature since 1841. Surplus cash generated from sales funds the promotion of chemistry.

To order, contact Sales and Customer Care, The Royal Society of Chemistry, Thomas Graham House, Science Park, Milton Road, Cambridge, England CB4 0WF, UK; E-mail: sales@rsc.org; Tel.: +44 1223 420066; Fax: +44 1223 423429; Web site: <http://www.iupac.org/publications/books/author/mccleverty.html> or <http://www.chemsoc.org/>.

New Publications from the National Institute of Standards and Technology

***Guide to Rheological Nomenclature: Measurements in Ceramic Particulate Systems*, by Vincent A. Hackley and Chiara F. Ferraris. NIST Special Publication 946, U.S. Department of Commerce, Technology Administration, National Institute of Standards and Technology, 31 pp., January 2001. Available from the**

Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402-9325.

Nomenclature is fundamentally important to the progress of science and technology. Because of the rapidly growing volume of available technical information, and the speed with which this information must now be processed, it is critical to have a uniform terminology in place for describing experimental methods and instrumentation, to facilitate the exchange of material property data, and for sharing technical ideas and concepts. This need is especially true for the ceramics industry because of its breadth and interdisciplinary nature. The present document addresses the issue of nomenclature for one important area of ceramic science: rheology and rheometric measurements.

Ceramic suspensions, gels, and pastes are the starting materials for a wide variety of applications, playing critical roles in the processing of products ranging from whitewares to concrete to paint and pigments to high-tech multilayer ceramic packages for the advanced electronics industry. Unfortunately, researchers and engineers working in these diverse fields often speak different languages, thus resulting in miscommunication and ambiguity. Even within the same field, variations in terminology are common. The need for widely accepted, uniform, and precise nomenclature was emphasized recently by the Ceramic Processing Characterization Council (CPCC, formerly the Ceramic Processing Characterization Consortium), a voluntary organization of participants representing industry, instrument companies, academia, and government. CPCC members identified nomenclature as a high-priority issue in the areas of dispersion and rheology. In response to this need, we have initiated a series of guides to help in the interpretation of nomenclature and data relating to particle-liquid ceramic systems.

In compiling the present guide, we drew upon a number of sources, including books, review articles, and published terminologies. To the extent possible, an effort was made to maintain a degree of uniformity with existing standards and conventions. To this end, definitions are generally consistent with nomenclatures published by the American Concrete Institute (ACI), the British Standards Institute (BSI), IUPAC, and the Society of Rheology. A complete bibliography of sources is provided.

An international ad hoc committee was formed to review the technical content and language of the nomenclature and to offer input where needed. The committee members represent a broad spectrum of experts from industry, academia, and government, and include (in alphabetical order) Lennart Bergström (YKI), John Dealy (McGill University), Ed Garboczi (NIST), Bob Hunter (University of



Sydney), Kamal Khayat (University of Sherbrooke), François de Larrard (Laboratoire Central des Ponts et Chaussées), Makio Naito (JFCC), Celik Ozyildirim (Virginia Transportation Research Council), Ponserril Somasundaran (Columbia University), and Abbas Zaman (University of Florida). Their efforts are gratefully acknowledged.

It is our primary hope that this document will serve as a resource to those working in particle systems applications, particularly in the ceramic sciences. It is our further hope that this document will serve to promote the establishment of a commonly recognized system of terminology throughout the ceramics community.

Vincent A. Hackley and Chiara F. Ferraris
National Institute of Standards and Technology
Gaithersburg, Maryland, USA

New Publications from IUPAC, the
 American Chemical Society, and the
 American Institute of Physics

IUPAC–NIST Solubility Data Series 71.
Nitromethane with Water or Organic Solvents:
Binary Systems, by Valerii P. Sazonov, Kenneth N. Marsh, and Glenn T. Hefter. Published in the *Journal of Physical and Chemical Reference Data*, Vol. 29, No. 5, pp. 1165–1354, 2000, by the American Chemical Society (1155 Sixteenth Street, N.W., Washington, DC 20036-9976) and the American Institute of Physics (Suite 1N01, 2 Huntington Quadrangle, Melville, NY 11747-4502) for the National Institute of Standards and Technology [S0047-2689(00)00505-5].

The mutual solubilities and liquid–liquid equilibrium of nitromethane binary systems with liquid solvents are reviewed. The solvents include water, inorganic compounds, and a variety of organic compounds as hydrocarbons, halogenated hydrocarbons, alcohols, acids, esters, and nitrogen compounds. A total 474 systems published through 1993 are compiled. For 39 systems, sufficient data were available to allow critical evaluation. All data are expressed as mass and mole fractions, as well as in the originally reported units. Similar reviews of gas, liquid, and solid solubilities for other systems were published in the frame of the Solubility Data Series.

IUPAC–NIST Solubility Data Series 72.
Nitromethane with Water or Organic Solvents:
Ternary and Quaternary Systems, by Valerii P. Sazonov, Kenneth N. Marsh, David G. Shaw, Mariya F. Chernysheva, Nikolai V. Sazonov, and Hideo Akaiwa. Published in the *Journal of Physical and Chemical Reference Data*, Vol. 29, No. 6, pp. 1447–1641, 2000, by the American Chemical Society (1155 Sixteenth Street, N.W., Washington, DC 20036-9976) and the American Institute of Physics (Suite 1N01, 2 Huntington Quadrangle, Melville, NY 11747-4502) for the National Institute of Standards and Technology [S0047-2689(00)00106-9].

The mutual solubilities and liquid–liquid equilibria of nitromethane ternary and quaternary systems with liquid solvents are reviewed. The solvents include water, inorganic compounds, and a variety of organic compounds as hydrocarbons, halogenated hydrocarbons, alcohols, acids, esters, and nitrogen compounds. A total of 107 ternary and 8 quaternary systems whose properties were described in the chemical literature through 1998 are compiled. For 22 systems, sufficient data were available to allow critical evaluation. All data are expressed as mass and mole fractions, as well as in the originally reported units. Similar reviews of gas, liquid, and solid solubilities for other systems were published in the frame of the Solubility Data Series.

Conference Announcements

 designates IUPAC sponsorship

24th International Organization for Standardization (ISO) General Assembly and Associated Meetings, 13–20 September 2001, Sydney, Australia

This first ISO General Assembly to be held in the Southern Hemisphere will include meetings of the ISO Regional Officers, DEVCO (ISO Committee for Developing Country Matters), TMB (Technical Management Board), and Council. There will also be an Open Seminar on Climate Change and an Open Session on Risk Management.

For additional information, contact ISO Central Secretariat; E-mail: allen@iso.ch; Tel.: +41 22 749 01 11; Fax: +41 22 733 34 30; Web site: <http://www.iso.ch/>.

International Conference on Legal Metrology, 18–20 September 2001, Bucharest, Romania

This conference, which celebrates the 50th anniversary of the Romanian National Institute of Metrology, is intended to be a forum for discussing the new role of metrology in a changing society, as well as a venue for the latest developments in theoretical and applied metrology. Principal topics to be discussed at the meeting will include the following:

- theory of measurement
- measurement standards and realization of the measurement units
- measurement principles and methods
- new developments in measuring instruments
- metrology in chemistry
- automation of the measurement processes
- virtual instrumentation
- new approaches in legal metrology
- MRA and the future of metrology
- metrology as a service to industry, calibration, accreditation

For further information, contact International Conference on Legal Metrology Secretariat, Sos. Vitan Barzesti 11, 75669 Bucharest 4, Romania; E-mail: conference@inm.ro; Tel: +40 1 334 55 20; Fax: +40 1 334 53 45.

9th International Topical Meeting on Optics of Liquid Crystals (OLC2001), 1–6 October 2001, Sorrento, Italy



This meeting is the 9th edition of a series of meetings initiated in Naples in 1986 by Prof. Enrico Santamato with the support of Prof. Yuen Ron Shen. The OLC conference is held biannually and covers all aspects of optics of liquid crystals from fundamentals to new applications. Its aim is to provide an international forum for exchange of scientific ideas and technological advances in optics and related aspects of liquid crystals and liquid crystals-based materials. The increasing success of the previous editions held, after Naples 1986, in Turin (Italy) 1988, Cetraro (Italy) 1990, Cocoa Beach (Florida, USA) 1991, Siófok (Hungary) 1993, Le Touquet (France) 1995, Heppenheim (Germany) 1997, and Humacao (Puerto Rico) 1999, led to the organization of this 9th edition.

The conference program will emphasize the following topics: general optics; nonlinear optics; surfaces and interfaces; composites and confined systems; liquid crystals photonics; liquid crystals and waveguides; dyes, photochemistry, and materials with ultrahigh optical nonlinearities; instabilities, pattern formation, and chaos; novel phenomena in liquid crystals; new display applications; and lyotropic and polymer systems.

A 1-1/2 day tutorial course on Basics and Perspective Applications of Liquid Crystals in Communication Technologies (BALC2001) will be held 30 September–1 October at the same location just before the start of OLC 2001. Although BALC2001 will be devoted mainly to young scientists and Ph.D. students, attendance by expert scientists is



equally welcome.

For additional information, contact Prof. Giancarlo Abbate, Dipartimento di Scienze Fisiche e INFN Unità di Napoli, Università degli Studi di Napoli "Federico II", Via Cintia Monte S. Angelo, I-80126, Napoli, Italy; E-mail: olc2001@na.infn.it or giancarlo.abbate@na.infn.it; Tel.: +39 081 676118; Fax: +39 081 676346; Web site: www.na.infn.it/olc2001/.

American Association of Cereal Chemists (AACC) Annual Meeting 2001, 14–18 October 2001, Charlotte, North Carolina, USA

This year the AACC Annual Meeting will take place in Charlotte, North Carolina, USA. The International Association for Cereal Science and Technology (ICC) will be represented at this event with a joint ICC/AACC Symposium entitled "Testing and Release of Varieties in Major Exporting Countries" chaired by B. Cracknell and K. Preston.

For more information, contact Kathy Aro at AACC Headquarters; E-mail: karo@scisoc.org; Tel.: +1 651 994 3850; Web site: www.scisoc.org/aacc/meeting/2001/.

Food and Nutrition Conference AIFST, 1–2 November 2001, Melbourne, Australia

This conference is organized by the Crop and Food Research Institute, New Zealand, and will include the following topics:

- changing trends
- current issues and dilemmas: global human health
- enhancing human health: food of the future
- delivering a healthy outcome

For further information, contact Lynette Parker, Crop and Food Research Institute, Private Bag 4704, Christchurch, New Zealand; E-mail: parker@crop.cri.nz; Tel.: +64 3 325 6401, Ext. 3534#; Fax: +64 3 325 2074; Web site: <http://www.crop.cri.nz/>.

International Conference on Agricultural Science and Technology (ICAST 2001), 7–9 November 2001, Beijing, China

This conference, under the theme "Promoting Global Innovation of Agricultural Science and Technology and Sustainable Agriculture Development", is initiated and sponsored by the Chinese government

(Ministry of Science and Technology, Ministry of Agriculture, Ministry of Education, and State Administration of Foreign Experts Affairs) and cosponsored by several international organizations. The International Association for Cereal Science and Technology (ICC) is also invited to take part.

For additional information, contact ICAST, Chinese Science and Technology Exchange Center, P.O. Box 2143, Beijing 1000435, China; E-mail: icast@agscience2001.org; Tel.: +86 10 6851 1837; Fax: +86 10 6857 1255; Web site: www.agscience2001.org/.

3rd International Symposium on Chemistry and Biological Chemistry of Vanadium, 26–29 November 2001, Osaka, Japan

This 3rd Symposium addresses the biological aspects of vanadium chemistry (chemistry, biochemistry, and therapeutic applications of vanadium compounds), but it also expands the field of vanadium chemistry to include inorganic chemistry, chemistry of catalysis, materials chemistry, and organic synthesis. This symposium follows those held in Cancun, Mexico (November 1997; Chairpersons, D. C. Crans and A. S. Tracey) and Berlin, Germany (August 1999, in conjunction with the 37th IUPAC Congress and 27th GDCh General Meeting; Chairpersons, D. Rehder and V. Conte).

Topical sessions will include the following:

- biological aspects of vanadium chemistry (insulin-like functionality, haloperoxidases, tunicates, nitrogenase, and others)
- inorganic chemistry of vanadium
- vanadium chemistry toward catalysis and organic synthesis

For more information, contact Prof. Toshikazu Hirao, Chairman, V-Sympo, Department of Applied Chemistry, Faculty of Engineering, Osaka University, Yamada-oka, Suita, Osaka 565-0871, Japan; E-mail: hiraov@chem.eng.osaka-u.ac.jp; Tel.: +81 6 6879 7413; Fax: +81 6 6879 7415.

5th International Symposium on Functional π -Electron Systems ($F\pi 5$), 30 May–4 June 2002, Ulm/Neu-Ulm, Germany



$F\pi 5$ aims (1) to combine biology, chemistry, physics, and applications of functional π -electron systems, and (2) to strengthen interactions between academia and industrial research laboratories. Although many materials-oriented symposia (organic,

polymeric, etc.) are dominated by physics, F π 5 will be centered around and stress chemical aspects of the field. This interdisciplinary symposium is designed to stimulate and encourage young researchers who will be carrying science and technology forward into the 21st century.

F π 5 represents the fifth consecutive meeting in a series formerly entitled "International Symposium on Functional Dyes". Previous symposia were held in Osaka, Japan (June 1989); Kobe, Japan (August 1992); Santa Cruz, California, USA (August 1995); and again in Osaka, Japan (June 1999). The total number of participants for each symposium was 500 to 600 from 12 to 15 nations. The symposium name has been changed to broaden the scope of the conference and to adjust to actual developments in academic and industrial research.

Plenary and invited lectures, contributed papers in oral and poster presentations, and roundtable discussions will focus on the following topics:

- synthesis of functional π -electron systems (including combinatorial approaches)
- structure/property relationships in functional π -electron systems
- nanostructures comprising functional π -electron systems
- organic electronic devices and molecular electronics
- biological π -electron systems (including biolabeling)
- supramolecular aspects
- probing and imaging
- industrial aspects

Approximately 250–350 scientific participants from around the world are expected to attend F π 5.

For additional information, contact Prof. Dr. Peter B auerle, Abteilung Organische Chemie II, Universit at Ulm, Albert-Einstein-Allee 11, 89081 Ulm, Germany; E-mail: peter.bauerle@chemie.uni-ulm.de; Tel.: +49 731 502 2850; Fax: +49 731 502 2840.

4th International Symposium on Molecular Order and Mobility in Polymer Systems, 3–7 June 2002, St. Petersburg, Russia



This symposium, presented by the Russian Academy of Sciences and the Russian Foundation of Basic Research, will focus on the modern problems of molecular order and dynamics in polymer systems. As distinct from the previous symposium in this series, held in 1999, primary attention will be paid to equilibrium problems. Both experimental data and the results of theories and simulation approaches

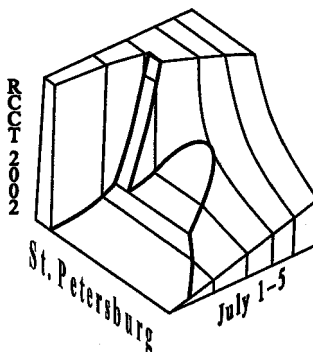
will be presented. Topics announced for this meeting are as follows:

- macromolecules in solutions, melts, and networks
- liquid crystalline polymers
- block-copolymers
- polymer layers and micelles
- polymer complexes and membranes
- branched and star polymers, dendrimers

About 160 scientific participants from around the world are expected to attend the symposium.

For further information, contact Organizing Committee: Prof. T. M. Birshstein, Institute of Macromolecular Compounds, Russian Academy of Sciences, Bolshoi pr. 31, St. Petersburg 199004, Russia; E-mail: birshtei@imc.macro.ru; Tel.: +7 812 328 85 42; Fax: +7 812 328 68 69.

15th Russian Conference on Chemical Thermodynamics, 1–5 July 2002, St. Petersburg, Russia



This conference, presented by the Russian Academy of Sciences, St. Petersburg State University, and the Russian Chemical Society, represents the revival of regular Russian Conferences on Chemical Thermodynamics, with international participation.

Topics announced for this meeting are as follows:

- thermochemistry of organic and inorganic substances, and of advanced materials
- thermodynamics of liquid solutions, melts, and solid solutions
- phase equilibria
- thermodynamics of surface and interface phenomena
- thermodynamics of polymer, liquid crystalline, self-assembling, and biological systems
- experimental methods and equipment
- standardization and systematization of thermodynamic data
- teaching of chemical thermodynamics

For further information, contact Organizing Committee: RCCT2002, Division of Physical Chemistry, Department of Chemistry, St. Petersburg State University, Universitetsky pr. 2, 198504 Petrodvorets, St. Petersburg, Russia; E-mail: rcct2002@nonel.pu.ru; Tel.: +7 812 428 4066; Fax: +7 812 428 6939; Web site: <<http://rcct2002.nonel.pu.ru/>>.

10th International Ceramics Congress
and 3rd Forum on New Materials
(CIMTEC 2002, International
Conferences on Modern Materials and
Technologies), 14–19 July 2002,
Florence, Italy



This meeting will cover recent achievements in the areas of classical and high-technology ceramics, as well as advances in the research and development of other innovative materials. Objectives will include identifying and exploring new directions for fundamental research, process science, and application engineering.

Organized with the involvement of major scientific and cultural institutions, professional organizations, and industrial groups worldwide, CIMTEC 2002 will provide materials researchers and users with an excellent opportunity for cross-pollination of knowledge and experience coming from very different areas of materials technologies. About 2 000 experts from academia and industry will introduce a wide international audience to the latest advances in fundamentals of materials and processes, innovation in products and technology, and application engineering and performance.

The 10th International Ceramics Congress will consist of 11 sections to cover recent progress in advanced technical ceramics and two international symposia devoted to ongoing activities in classical ceramics. The 3rd Forum on New Materials will consist of six parallel international conferences to cover general fields of research such as computational materials science and mass and charge transport phenomena in materials, as well as some of the most demanding, application-driven research and development areas where the availability of new materials functionalities is crucial.

CIMTEC 2002 will gather ceramics researchers, materials scientists and engineers, as well as experts from user areas. Keynote speeches will address current emerging research and technology trends. Contributed papers (oral and poster presentations) will report on recent original research in basic science, process science, technology and manufacturing, and application engineering, standards, and markets.

For more information, contact CIMTEC 2002, P.O. Box 174, Corso Mazzini, 52, 48018 Faenza, Italy; Tel.: +39 0546 22461/664143; Fax: +39 0546 664138/663362; Web site: <<http://www.dinamica.it/cimtecc/>>.

23rd International Symposium on
the Chemistry of Natural Products
(ISCNP-23), 28 July–2 August 2002,
Florence, Italy



ISCNP-23 will offer opportunities to share multi-disciplinary information about natural products chemistry and medicinal chemistry among chemists, biochemists, and medicinal chemists. Subsections will focus on structure elucidation, biotransformations, synthesis, proteins and proteomics, and drug design and combinatorial chemistry.


Approximately 1 000 scientific participants from around the world are expected to attend ISCNP-23.

For further information, contact Prof. Bruno Botta, Dip. Studi Chimica e Tecnologia Sostanze, Biologicamente Attive, University "La Sapienza", P.le A. Moro 5, 00185 Roma, Italy; E-mail: bruno.botta@uniroma1.it; Tel.: +39 06 49912781 or +39 06 49912783; Fax: +39 06 49912780; Web site: <<http://www.iscnp.com>>.

International Conference on
Luminescence and Optical
Spectroscopy of Condensed Matter
(ICL'02), 25–30 August 2002,
Jerusalem, Israel

This meeting plans to cover all basic, theoretical, and experimental aspects of luminescence phenomena in both inorganic and organic materials. Emphasis will be on interrelations between the properties of these two classes of materials and between optical spectroscopy, including luminescence, and other branches of solid-state physics and molecular physics. Important applications of luminescence phenomena in technology will be included as well. The conference will also feature a technical exhibition of lasers, monochromators, luminescent materials, vacuum systems, and books.

For additional information, contact ICL'02 Secretariat, c/o Unitours Israel Ltd., P.O. Box 3190, Tel Aviv 61031, Israel; Tel.: +972 3 5209999; Fax: +972 3 5239299/5239099; Web site: <<http://www.technion.ac.il/technion/chemistry/ICL>>.

European Molecular Liquids Group 
(EMLG) Annual Meeting on the Physical
Chemistry of Liquids. Novel Approaches
to the Structure and Dynamics of
Liquids: Experiments, Theories, and
Simulations, 6–15 September 2002,
Rhodes, Greece

This meeting, held jointly with the Japanese Molecular Liquids Group (JMLG), is planned as an advanced school with discussions and a workshop aimed at graduate students, postdoctoral fellows, and researchers entering the field or wanting to bring up to date their knowledge of recent developments in fields related to molecular liquids.

Lecture topics will include classical spectroscopies, analytical theories of liquids (microscopic description), thermodynamics and phenomenological description, structure determination (microstructure), simulations, and NMR/dielectric. Exercises and discussion will take place on classical spectroscopies, analytical theories and applications, and simulations. There will be a seminar on time-resolved spectroscopies. In addition, special topics will be considered, including classical/quantum simulations, diffusion methods, exotic methods for structure determination (e.g., EXAFS), supercritical state, sound techniques, proton and electron transfer, energy relaxation, inhomogeneous and interfacial systems, and confined liquids. Approximately 90 scientific participants are expected to attend EMLG 2000.

For more information, contact Prof. Dr. Jannis Samios; E-mail: isamios@cc.uoa.gr; Tel.: +30 1 7274534 or +30 1 7274751; Fax: +30 1 7274752.

International SCOPE/IUPAC Symposium
on Endocrine-Active Substances, 17–21
November 2002, Yokohama, Japan

This symposium is jointly organized by the Scientific Committee on Problems of the Environment (SCOPE) and IUPAC and supported by ICSU, UNESCO, UNEP, USEPA, USFDA, USNIEHS, EU, the British and Japanese governments, IUTOX, and ICCA.

At the symposium, approximately 60 designated experts and additional invited speakers from the United States, United Kingdom, Japan, the Netherlands, Denmark, Switzerland, Israel, New Zealand, and France will present papers associated with the jointly organized SCOPE–IUPAC Project on Endocrine Active Substances: Present state-of-the-art and future research needs (IUPAC Project No. 2000-016-1-600), which began in April 2000 and is scheduled

to be completed in March 2003.

Objectives of the project include the following:

- to expand and deepen the IUPAC/IUPHAR/IUTOX evaluation (*PAC*, Vol. 70, No. 9, pp. 1617–1865, 1998) by including other similar evaluations concurrently underway, avoiding unnecessary overlapping
- to deal with endocrine disrupter issues as scientific problems that have major significance on the world environmental scene
- to prioritize future research needs and to make the best use of available resources
- to facilitate effective risk assessment and risk communication on the problem by offering some manageable action
- to deal with the problem highlighted by international academia on an international basis, which makes the project unique and quite different from other evaluations that are regional and/or regulatory in intent

Specific topics of the project will focus on the following areas:

- molecular mode of action of nuclear receptors; fundamentals for understanding the action of endocrine-active substances
- environmental fate and metabolism of endocrine-active substances
- effects of endocrine-active chemicals in rodents and humans and risk assessments for humans

The final report of the Project, expected to comprise approximately 600 pages in English, will be published (as well as a shortened summary for nonexperts) and distributed worldwide.

For further information, contact Secretariat, Kiyohiro Kubota, Chemicals Evaluation and Research Institute (CERI), 1-4-25, Kouraku, Bunkyo-ku, Tokyo, 112-0004, Japan; E-mail: eds-sympo@cerij.or.jp; Tel.: +81 3 5804 6135; Fax: +81 3 5804 6139; Web sites: CERI: <<http://www.cerij.or.jp/>>; IUPAC: <<http://www.iupac.org/>>; SCOPE: <<http://www.icsu-scope.org/index.html/>>.

15th FECHEM Conference on
Organometallic Chemistry,
10–16 August 2003, Zürich, Switzerland

The University of Zurich is hosting this event on behalf of the Federation of European Chemical Societies (FECS).

For additional information, contact Dr. Ferdinand Wild, Gruppe Berke, Anorganisch-chemisches Institut, Universität Zürich, Winterthurerstrasse 190, CH-8057 Zürich, Switzerland; E-mail: fwild@aci.unizh.ch; Tel.: +41 1 635 46 46; Fax: +41 1 635 68 02.

Conference Calendar

Visit <http://www.iupac.org> for complete information and further links.

NEW designates a new conference since the last issue.

2001

Medicinal Chemistry

2–6 September 2001
Hungarian–German–Italian–
Polish Joint Meeting on Medicinal
Chemistry, Budapest,
Hungary.
*Dr. Péter Mátyus, Institute of
Organic Chemistry Semmelweis
University H-1092 Budapest,
Hungary*
Fax: +36-1-217-0851
E-mail: matypet@szerves.sote.hu

Ionic Polymerization

22–26 October 2001
4th International Symposium on
Ionic Polymerization, Crete,
Greece.
*Dr. Nikos Hadjichristidis,
University of Athens, Department
of Chemistry,
Panepistimiopolis, Zografou,
GR-157 71 Athens, Greece*
Tel.: +30 1 724 9103
Fax: +30 1 722 1800
E-mail: hadjichristidis@chem.uoa.gr

Biodiversity

3–8 November 2001
3rd IUPAC International Conference
on Biodiversity (ICOB-3),
Antalya, Turkey.
*Prof. B. Sener, Department of
Pharmacognosy, Faculty of
Pharmacy, Gazi University, P.O.
Box 143 06572, Maltepe-
Ankara, Turkey*
Tel.: +90 312 212 2267
Fax: +90 312 213 3921
E-mail: blgsener@tr-net.net.tr

Polymers

11–15 November 2001
6th Brazilian Polymer Conference / IX International Macromolecular Colloquium, Gramado, RS, Brazil.
Prof. Raquel Santos Mauler, Instituto de Química, Universidade Federal do Rio Grande do Sul, Av. Bento Gonçalves, 9500, 91501-970 Porto Alegre, RS - Brazil
Tel.: +55 51 3166296
Fax: +55 51 319 1499
E-mail: mauler@if.ufrgs.br

Sweeteners

13–17 November 2001
2nd International Symposium on Sweeteners, Hiroshima-Shi, Japan.
Prof. Kasuo Yamasaki, Institute of Pharmaceutical Sciences, Faculty of Medicine, Hiroshima University Kasumi, Minami-ku, Hiroshima 734-8551, Japan
Tel.: +81 82 257 5285
Fax: +81 82 257 5289
E-mail: yamasaki@pharm.hiroshima-u.ac.jp

2002

Carotenoids

6–11 January 2002
13th International Symposium on Carotenoids, Honolulu, Hawaii, USA.
Dr. John S. Bertram, Cancer Research Center, University of Hawaii, 1236 Lauhala Street, Honolulu, Hawaii 96813, USA
Tel.: +1 808 586 2757
Fax: +1 808 586 2970
E-mail: John@crch.hawaii.edu

Polymer Characterization

7–11 January 2002
10th International Conference on Polymer Characterization (POLYCHAR), Denton, Texas, USA.
Dr. Witold Brostow, Department of Materials Science, University of North Texas, Denton, Texas, 76203-5310 USA
Tel.: +1 940 565 4358, -3262, or 4337
Fax: +1 940 565 4824
E-mail: brostow@unt.edu or polychar@marta.phys.unt.edu

Macromolecules

2–6 February 2002
5th Annual UNESCO School and South African IUPAC Conference on Macromolecules and Materials Science, Stellenbosch, South Africa.
Prof. R. D. Sanderson, UNESCO Associated Centre for Macromolecules and Materials, Institute for Polymer Science, University of Stellenbosch, Private Bag XI, Matieland 7602, South Africa
Tel.: +27 21 808 3172
Fax: +27 21 808 4967
E-mail: rds@maties.sun.ac.za

Bioinformatics

6–8 February 2002
The International Conference on Bioinformatics 2002: North–South Networking, Bangkok, Thailand.
Dr. Prasit Palittapongarnpim, BIOTEC, 15th Fl, Gypsum Metropolitan Tower, 539/2 Sri-Ayudhya Road, Ratchadevi, Bangkok, Thailand
Tel.: +66 2 642532231, ext 228
Fax: +66 2 488304
E-mail: incob@biotec.or.th

Heterocycles

6–8 March 2002

3rd Florida Heterocyclic Conference, Gainesville, Florida, USA.

Prof. Alan R. Katritzky, Department of Chemistry, University of Florida, P.O. Box 11720, Gainesville, Florida 32611, USA

Tel.: +1 352 392 0554

Fax: +1 352 392 9199

E-mail: katritzky@chem.ufl.edu

π -Electron Systems

NEW

30 May–4 June 2002

5th International Symposium on Functional π -Electron Systems (F π 5), Ulm/Neu-Ulm, Germany

Prof. Dr. Peter Bäuerle, Abteilung Organische Chemie II, Universität Ulm, Albert-Einstein-Allee 11, 89081 Ulm, Germany

Tel.: +49 731 502 2850

Fax: +49 731 502 2840

E-mail: peter.baeuerle@chemie.uni-ulm.de

Polymer Systems

NEW

3–7 June 2002

4th International Symposium on Molecular Order and Mobility in Polymer Systems, St. Petersburg, Russia

Prof. T. M. Birshtein, Institute of Macromolecular Compounds, Russian Academy of Sciences, Bolshoi pr. 31, St. Petersburg 199004, Russia

Tel.: +7 812 328 85 42

Fax: +7 812 328 68 69

E-mail: birshtein@imc.macro.ru

Drug Residue Analysis

4–7 June 2002

4th International Symposium on Hormone and Veterinary Drug Residue Analysis, Antwerp, Belgium.

Prof. C. Van Peteghem, Ghent University, Faculty of Pharmaceutical Sciences, Harelbekestraat 72, B-9000 Gent, Belgium

Tel.: +32 9 264 81 15

Fax: +32 9 264 81 99

E-mail: carlos.vanpeteghem@rug.ac.be

Macromolecules

7–12 July 2002

39th International Symposium on Macromolecules - IUPAC World Polymer Congress 2002 (MACRO 2002), Beijing, China.

Prof. Fosong Wang, The Chinese Academy of Sciences, Beijing 100864, China

Tel.: +86 10 62563060

Fax: +86 10 62573911

E-mail: fswang@mimi.cnc.ac.cn

Solid-State Chemistry

7–12 July 2002

5th Conference on Solid-State Chemistry (SSC 2002), Bratislava, Slovakia.

Prof. P. Sajgalik, Slovak Academy of Sciences, Dubravska c. Brastislava, SK-842 36 Slovakia

Tel.: +421 7 59410400

Fax: +421 7 59410444

E-mail: ssc2002@savba.sk

Organometallic Chemistry

7–12 July 2002

20th International Conference on Organometallic Chemistry (20th ICOMC), Corfu, Greece.

Dr. Constantinos G. Screttas, National Hellenic Research Foundation, Institute of Organic and Pharmaceutical Chemistry, 48 Vas. Constantinou Avenue, 116 35 Athens, Greece

Tel.: +30 1 7273876

Fax: +30 1 7273877

E-mail: kskretas@eie.gr

Organic Synthesis

14–19 July 2002

14th International Conference on Organic Synthesis (ICOS-14), Christchurch, New Zealand.

Prof. Margaret A. Brimble, Department of Chemistry, University of Auckland, 23 Symonds St., Auckland, New Zealand

Tel.: +64 9 373 7599, Ext. 8259

Fax: +64 9 373 7422

E-mail: m.brimble@auckland.ac.nz

How to Apply for IUPAC Sponsorship

To apply for IUPAC sponsorship, conference organizers should complete an Advance Information Questionnaire (AIQ). The AIQ form is available at <http://www.iupac.org> or by request at the IUPAC Secretariat, and should be returned between 2 years and 12 months before the conference. Further information on granting sponsorship is included in the AIQ and available online.

Photochemistry

14–19 July 2002

XIX IUPAC Symposium on Photochemistry, Budapest, Hungary.

Prof. H. D. Roth, Rutgers University, Department of Chemistry and Chemical Biology, 610 Taylor Road, New Brunswick, NJ 08854-8087 USA

Tel.: +1 732 445 5664

Fax: +1 732 445 5312

E-mail: roth@rutchem.rutgers.edu

Electrical Polymers

15–18 July 2002

21st Discussion Conference and 9th International ERPOS Conference on Electrical and Related Properties of Polymers and Other Organic Solids, Prague, Czech Republic.

Prof. Dr. Drahomir Vyprachticky, Institute of Macromolecular Chemistry, Academy of Sciences of the Czech Republic, Heyrovského nám. 2, 162 06 Praha 6, Czech Republic

Tel.: +420 2 20403251 or +420 2 20403332

Fax: +420 2 35357981

E-mail: vyprach@imc.cas.cz or sympo@imc.cas.cz

Solubility Phenomena

22–26 July 2002

International Symposium on Solubility Phenomena (10th ISSP), Varna, Bulgaria.

Prof. Christo Balarew, Institute of General and Inorganic Chemistry, Bulgarian Academy of Sciences, BG-Sofia 1040, Bulgaria

Tel.: +359 (2) 9793925

Fax: +359 (2) 705 024

E-mail:

balarew@svr.igic.bas.bg

Chemical Thermodynamics

28 July–2 August 2002

17th IUPAC Conference on Chemical Thermodynamics, Rostock, Germany.

Prof. A. Heintz, FB Chemie, Universitat Rostock,

Hermannstr. 14, D-18051

Rostock, Germany

Tel.: +49 381 498 1852

Fax: +49 381 498 1854

E-mail: andreas.heintz@

chemie.uni-rostock.de

Natural Products

NEW

28 July–2 August 2002

23rd International Symposium on the Chemistry of Natural Products (ISCNP-23), Florence, Italy.

Prof. B. Botta, Dip. Studi Chimica e Tecnologia Sostanze,

Biologicamenta Attive, University "La Sapienza", P.le A. Moro

5, 00185 Roma, Italy

Tel.: +39 06 49912781 or +39

06 49912783

Fax: +39 06 49912780

E-mail: bruno.botta@

uniroma1.it

Crop Protection

4–9 August 2002

10th IUPAC International Congress on the Chemistry of Crop Protection (formerly International Congress of Pesticide Chemistry), Basel, Switzerland.

Dr. Bernard Donzel, c/o

Novartis CP AG, WRO-1060.3.06, CH-4002 Basel, Switzerland

Tel.: +41 61 697 22 67

Fax: +41 61 697 74 72

E-mail: bernard.donzel@

cp.novartis.com

Chemical Education

6–10 August 2002

17th International Conference on Chemical Education (17th ICCE)—New Strategies for Chemical Education in the New Century, Beijing, China.

Prof. Xibai QIU, 17th ICCE c/o Chinese Chemical Society, P.O.

Box 2709 Beijing 100080, China

Tel.: +86 10 62568157, 86 10 62564020

Fax: +86 10 62568157

E-mail: qiuxb@infoc3.

icas.ac.cn

Bioorganic Chemistry

11–14 August 2002

6th International Symposium on Bioorganic Chemistry (ISBOC-6), Toronto, Canada.

Dr. Ronald Kluger, Department of Chemistry, University of Toronto, Toronto, Canada M5S

3H6

Tel.: +1 416 978 3582

Fax.: +1 416 978 3482

E-mail: rkluger@

chem.utoronto.ca

Physical Chemistry of Liquids

NEW

6–15 September 2002

European Molecular Liquids Group (EMLG) Annual Meeting on the Physical Chemistry of Liquids. Novel Approaches to the Structure and Dynamics of Liquids: Experiments, Theories, and Simulations, Rhodes, Greece

Prof. Dr. Jannis Samios

Tel.: +30 1 7274534 or +30 1

7274751

Fax: +30 1 7274752

E-mail: isamios@cc.uoa.gr

Visas

It is a condition of sponsorship that organizers of meetings under the auspices of IUPAC, in considering the locations of such meetings, should take all possible steps to ensure the freedom of all bona fide chemists from throughout the world to attend irrespective of race, religion, or political philosophy. IUPAC sponsorship implies that entry visas will be granted to all bona fide chemists provided application is made not less than three months in advance. If a visa is not granted one month before the meeting, the IUPAC Secretariat should be notified without delay by the applicant.

Polymer Science and Technology

2–5 December 2002

IUPAC Polymer Conference on the Mission and Challenges of Polymer Science and Technology, Kyoto, Japan.

Prof. Seiichi Nakahama, Faculty of Engineering, Tokyo Institute of Technology, 2-12-1

Ohokayama, Meguro-ku, Tokyo 152-8552, Japan

Tel.: +81 3 5734 2138

Fax.: +81 3 5734 2887

E-mail: snakaham@

polymer.titech.ac.jp

International Union of Pure and Applied Chemistry



IUPAC

announces the 2002

IUPAC Prize for Young Chemists

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Each awardee will be invited to present a poster on his/her research and to participate in a plenary award session.

Call for Nominations
(deadline February 1, 2002)

For more information, including application form, please visit the IUPAC web site at www.iupac.org/news/prize.html or contact the IUPAC Secretariat by e-mail at <secretariat@iupac.org> or by fax: +1 919 485 8706.