IUPAC DIVISION-III

MINUTES OF THE DIVISIONAL ANNUAL GENERAL MEETING, ORGANIC & BIOMOLECULAR CHEMISTRY, BEIJING GA, AUGUST 14TH 2005

HALL 15, INTERNATIONAL CONFERENCE CENTRE, BEIJING, CHINA

1. **THE MEETING** convened at 09.05
PRESENT: Prof M. Isobe (Div-III President), Prof. T. Tidwell (Past President), Prof. G.M. Blackburn (Secretary), Profs K. Ganesh, M. Garson, V. Ivanov, G-J. Koomen, T. Krygowski, Lin Guo-Qiang, L. Mc-Elwee-White, F. Nicotra, M.F. da Silva, M. Pilar Rauter, B. Sener, K. Suzuki, E. Uggerud, P. Tundo, and D.St.C. Black (General Secretary). Young Observer: I. Kozlov. Prof. Peter Atkins was present for Agendum 8.
APOLOGIES: received from Prof. S. Braslavsky, Dr. G. Cragg, Profs. R. Kazlauskas, S.V. Ley, F. McDonald, T. Norin, A. ur Rahman, M.F. Ruasse, C.G. Screttas, and H. Waldmann.

2. **MINUTES of past AGMs:** Ottawa 2003, accepted. Sheffield-Nagoya 2004 accepted. There were no matters arising other than those in the Agenda papers (circulated).

3. **PRESIDENT'S REPORT** from Prof. Minoru Isobe.
This had been circulated June 2005 (copy attached – Appendix I).
Professor Isobe gave a broad oral summary of the Report dealing with all major items

4. **DIVISION ELECTIONS**
The President announced that a list of seven names had been received from the Nominations Panel (Chairman, Prof. Upendra Pandit) for an election for TMs with the suggestion that further names might be added. In the Meeting, the names of Jannine Cossy, Mary Garson, and Pietro Tundo were proposed and seconded for addition to the list of TM candidates. However, in the event it transpired later that the original list of seven names had been distributed without further addition to many but not all members of the eligible electorate from the IUPAC Secretariat. Several voting returns had been received. After deliberation, the Officers decided that these returns did not constitute a valid election and AGREED to present the complete list of all ten nominees for TM with their c.v.s to the Secretariat to be circulated to all eligible voters (i.e. all members of Division-III and its sub-committees) with the intention that the ballot be completed as soon as possible to elect the required seven TMs.†

5. **OFFICERS 2006-2007**
As a result of the election of Prof. D. St. C. Black to the position of IUPAC General Secretary, the Division faced an unexpected vacancy for President. For this item, Prof. Isobe vacated the Chair which was taken by Prof. Tidwell. After discussion, the following names were proposed for Officers 2006-7. (Appointment to be agreed later).

(i)	Prof. Minoru Isobe	President
(ii)	Prof. Vadim Ivanov	Vice-President
(iii)	Prof. G-J. Koomen	Secretary

† Dr. Paul LeClair in the Secretariat kindly undertook this ACTION with the outcome that Prof. Janine Cossy, Dr. Gordon M. Cragg, Profs. M. F. das Gracas Fernandes da Silva, Mary J. Garson, Steven V. Ley, Pietro Tundo, and Li-He Zhang were elected. The unsuccessful candidates on this occasion were Profs. Marek C. Chmielewski, Ari M. P. Koskinen, and Bilge Sener. These results were announced November 3rd 2005.

A list of 6 nominees for Associate Member and 8 nominees for National Representative was agreed. [§]

6. Membership of Division-III for 2006-7.

Prof Isobe resumed the Chair. He said that the forgoing proceedings now meant that the Division-III membership was essentially complete – subject to the result of the pending election for TMs. The Secretary added that there appeared to be plenty of scope for turnover in the Membership of Sub-Committees and accepted the opinion of the Meeting that he should bring this to the attention of Sub-Committee Chairmen. ACTION GMB

7. Reports of Sub-Committees

(a) Prof. G-J Koomen presented the Report for Organic Synthesis (in the absence of the Chair, Prof.; F. MacDonald). (Appendix - 2). Particular prominence was given to the upcoming meetings; ICOS-16 (Mexico, 2006), ICOS-17 (Korea, 2008), ICOS-18 (Bergen 2010), and ICOS-19 (Shanghai 2012). OMCOS-13 has taken place in Geneva (July 2005) and OMCOS-14 would be held in Nara in 2007. There will also be a Heterocyclic Meeting in 2007.

(b) Prof. Vadim Ivanov presented the detailed Report for the Biomolecular Chemistry S/C. (Appendix - 3). Particular emphasis was given to ISCNP-25 (Kyoto2006) and ISCNP-26 (Mary Garson – Australia 2008?). Prof. Ivanov advertised the Round Table discussion to be held Friday 19th August on the proposed Project from Prof. M. Mosihuzzaman (Dhaka) (see Appendix). Prof Koomen raised a question on publications arising from ISBOC-7 to which Prof. Blackburn responded: there would be no publication arising.

(**c) Green Chemistry**. This item was deferred for the afternoon session (*v.i.*).

(d) Photochemistry. The Report from Prof. Braslavsky had been circulated previously (Appendix – 4). In her absence, there was discussion of the exclusive position of the Photochemistry S/C in Division-III. Prof. Blackburn reported that he had explored this situation with the President of Division-I (Prof. Chris Brett). Division-I has no Sub-Committee structure and so this Photochemistry S/C can only exist within Division-III.
The Report was accepted.

(e) Structural and Mechanistic Chemistry. Prof. Marek Krygowski presented his Report (which had been circulated previously – Appendix – 5). He expanded on several details and also provided an up-todate account of Project developments.

(f) Biotechnology. In the absence of Prof. Romas Kaslauskas, Prof. Blackburn presented the Report of this S/C (previously circulated – Appendix – 6). This provided details of the S/C Membership. The invitation to Prof. Dan Tawfik to act as Secretary had been declined. There were clear proposals from Dr. Sebastian Wendeborn for an inaugural Biotechnology Conference. The Meeting encouraged the Officers of the Division to pursue this matter with urgency.

[§] Division-III Membership as of December 2005 stands at:
TM (10 max) Profs. Minoru Isobe, Vadim T. Ivanov, Gerrit J. Koomen, Janine Cossy, Gordon M. Cragg, Maria Fatima d G. F. da Silva, Mary J. Garson, Steven V. Ley, Pietro Tundo, and Li-He Zhang.
AM (6 max) Profs. Attar ur-Rahman, Krishna N. Ganesh, Ari M. P. Koskinen, Bilge Sener, Einar Uggerud, and Jaime Valderrama
NR (flexible numbers) Profs. N. Argiropoulos, G. Michael Blackburn, José Elguero, Axel Griesbeck, Nikolay Nifantiev, Ivan Pojarlieff, Martin Putala, Keisuki Suzuki, Francesco Nicotra, Osman M. E. El-Dusouqui, Ezz-Eldin M. Salem, Istvan T. Horvath, and Chun-Chen Liao.

8. **REPORT on TEACHING in CHEMISTRY (COCE)**
   Professor Peter Atkins joined the Meeting for this item. PWA identified Prof. Peter Mahaffy as his successor in this position. The Committee would henceforth have two sub-committees: Public Understanding of Chemistry (Peter Mahaffey) and CED (Chemical Education for Development).
   COCE is very much a shop-window for presenting IUPAC ideas to the outside world. PWA highlighted Prof. Tundo's activities in Portugese translation of the work on Environ. Chem. Prof Ivanov commented on an upcoming winter school on Biomolecular chemistry (with UNESCO support) and asked whether IUPAC support might be added. PWA suggested this might be the basis for a Project.
   Profs Rauter and da Silva commented on Portugese translation of IUPAC work on org. chem. There were further comments on developments of kits for Middle Schools chemistry experiments and questions about the decline of chemistry in English Universities.
   The President thanked Professor Atkins for his contribution.

9. **Interdivisional Activity in the Biological Application of Chemistry**. In the absence of Prof. Norin, Prof. Blackburn spoke to this item. There was a need to draw together the activities of separate Division in this area. The Meeting ex-pressed the opinion that it should be led form the Biomolecular S/C of Division-III. Prof. Black suggested that there was a clear need for a succession to the former Interdivisional Working Party on Biomolecular Chemistry (formerly led by Prof. Upendra Pandit). Prof. Blackburn said that he would take this matter forward as quickly as possible. ACTION Blackburn

10. **IUPAC Secretariat Visit. Prof. Black** outlined the activities which as General Secretary he wished to see develop strongly within Division-III. Projects are priority number 1 and need much work in this Division. A document has been circulated (Appendix – 7) setting out the present position of Projects in Division-III. Details of each of these are available on the web (not listed in Appendix – 7). Prof. Tidwell commented on the progress of PAC and all agreed that Prof. James Bull is doing a good job as its editor.
    Prof Black shared good practice from other Divisions. E.g. Analytical Chemistry uses a slot in each of its conferences to discuss Projects and their initiation.
    Prof Ivanov expressed support for the continuation of a Division-III brochure (in abeyance!). It shows what activities are afoot – especially in Projects. The Meeting thought that such a brochure was a task for the Division Vice-President. However, Prof Ivanov demurred and the Meeting proposed that Dr. Gordon Cragg be responsible for project monitoring, initiation, and formulation in a brochure. ACTION C.G.Cragg
    The President said this was an activity where positive input was required from each of the Titular Members. ACTION All TMs

11. **Poster Prizes and Awards**. (a) Poster Prizes are valuable features of Meetings but restricted to Conferences where IUPAC is the primary driver/organizer. (b) A discussion of Awards was linked to ambitions expressed in Nagoya last year. However, Prof. Blackburn reported that he has had no success in his endeavours with Verlag Chemie and he believed that Prof. Ley had not made any progress either. Prof. Black comments on the possibility of Reichard (?) supporting a general prize and also wondered whether Dr. Peter Gölitz might have a contribution to make (Angew. Chemie) as might Prof. Volkan Kisakurek (Helvetica Chimica). Samsung might also be encouraged to donate a prize (for what?).
    ACTION Secretary G-JK

Te Meeting here adjourned for lunch and reconvened at 14.30

12. Projects. As under Agendum 10, a listing of all current and recently completed Projects in Division-III had been circulated in advance of the Meeting. Specific discussion focused on: (a) Single molecule spectroscopy; Chairman: F.C. de Schryver; Number: 2000-012-1-300. There appeared to have been no report on this Project since 2001. However, this matter is under review by Prof. Braslavsky (Chairperson Photochemistry S/C).

ACTION Prof. Braslavsky

(b) Post-genomic chemistry; Chairman Sergey D. Varfolomeyev; Number: 2001-005-1-300. Prof. Ivanov reported that this project was now complete, the money had been spent, and a poster had been prepared for this GA.

7(c) Green Chemistry. Prof. P. Tundo presented his Report (Appendix – 8). Regarding projects, those on Green Chemistry in Russia and Green Chemistry in Latin America had been completed. The project on "Global Climate Change - Translation and Dissemination of a monograph for Secondary Schools" is in progress and a copy of the English version was tabled.

Green Chemistry in Evolution included reports on progress in the 1st Conference on Green Chemistry; G8 Meeting of Ministers of the Environment in Canada with further activity in Dresden approved.

General Discussion Several topics were discussed including: Formation of S/C s under this Division-III umbrella; rotation of the membership of S/C s; initiation of new projects; monitoring progress of existing projects. A minor conflict emerged between the 1st Conference on Green Chemistry (Dresden 2006) and a Meeting in Delhi (February 2006). This was regarded as unfortunate and ought to have been avoided – perhaps by better dissemination of information. However, it appeared that the Delhi Meeting would be largely Regional while the Dresden meeting would be truly international.

A discussion on the publication on Climate Change was initiated by Prof. Ivanov and ended with a strong comment from Prof. Nicotra to the effect that people generally do not know what is happening to the climate and there is a real need for chemistry to engage in improving public understanding.

13. Budget Allocations. The President reported that there is serious underspending of allocations. That can only be redressed by accelerating the submission of new projects and the expenditure of money already allocated. He encouraged new projects to seek a realistic maximum funding.

14. Symposia. These have been covered in the discussions on Sub-Committee activities. Prof. Bilge Sener spoke of the desirability of maintaining a separate identity for Biodiversity from natural Product Chemistry for the future.

15. Election of Officers. The list of proposals was declared closed (proposed Uggerud, seconded Ganesh) and the list was approved unanimously.

16. Election of Associate Members. The list proposed earlier was adopted (proposed Koomen seconded Ivanov) and approved unanimously.

17. Election of National Representatives. The list of names nominated was accepted (subject to national eligibility, which remained to be clarified for Chile).

18. **Appointments to Other IUPAC Organisations.** Prof. K. Ganesh was nominated for COCE. Prof. A.P. Rauter was nominated to Division-VIII (nomenclature). Prof. Ivanov informed the Meeting that he was standing down as Chairman of the Biomolecular Sub-Committee and proposed Prof. Blackburn as his successor and Prof. K. Ganesh as Secretary. All these proposals were approved unanimously.

19. **New Possible Projects**. A vigorous discussion led to the following proposals**.**
(a) ASEAN Network on Organic Chemistry - to be led by Minoru Isobe;
(b) New development in drug resistance - to be led by G-J Koomen;
(c) New advances of Biodiversity in Asia - might be linked to Mosihuzzaman?
(d) Action against Bioterrorism, glycoproteins as neutralizing agents/inhibitors of microorganisms (e.g. anthrax, rice blight) - A.P.Rauter to lead.
(e) "Beyond the LeBel, van t'Hoff Hypothesis: hydrocarbons with unusual structures, strongly-strained systems, etc." - M. Krygowski to lead.
(f) Prof. E. Uggerud offered "Critical comments on glossaries" – especially on terminology of POC (to be discussed at Structure & Mechanism S/C tomorrow).
ACTION – named individuals

20. **GA Posters**
Prof. Blackburn reported that in response to an initiative from the IUPAC Secretariat, the Division is presenting five posters related to current Projects in this General Assembly. The details are as follows:
1) "Post-Genomic Chemistry - Achievements and Prognosis". IUPAC Project #2001-005-1-300. Authors: Sergey Varfolomeyev1, Elena Efremenko, Irina Beletskaya, Ivano Bertini, G. Michael Blackburn, Alexey Bogdanov, Raimond Cunin, Jutta Eichler6, Igor Galaev, Vadim Gladyshev, David O'Hagan, Thomas Haertle, Jaak Jarv, Arkadiy Karyakin, Ilia Kurochkin, Marian Mikolajczyk, Vladimir Poroikov, Ivan Sakharov, Fritz Spener, Normand Voyer, James Wild. Prof. Sergey D. Varfolomeyev, M.V. Lomonosov Moscow State University, Faculty of Chemistry, Vorobiovy Gory 1, Bld. 11, 119992, Moscow, Russia.
2) "Chemical Actinometers," IUPAC Project #2002-008-1-300. Authors: Contact: Prof. Silvia E. Braslavsky, Max-Planck-Institut für Bioanorganische Chemie (formerly Strahlenchemie), Postfach 10 13 65, D 45413 Mülheim an der Ruhr, Germany.
3) "Fighting microbial resistance through development of new antimicrobial agents, directed against new specific targets". IUPAC Project #2002-030-1-300. Authors: Prof. Dr. G.J. Koomen, Prof. S. Mobashery, Dr. T. den Blaauwen, Prof. K. Hellingwerf, Prof. R. Ungaro, and Dr. H. Verheij. Contact: Prof. Dr. G.J. Koomen, Bioorganic Chemistry,Institute of Molecular Chemistry, University of Amsterdam, Nieuwe Achtergracht 129, 1018 WS Amsterdam, The Netherlands.
4) "Establishment of International Centre for Natural Product Research (ICNPR)," IUPAC Project #2003-046-1-300. Authors: Contact: Prof. Mohammed Mosihuzzaman, University of Dhaka, Department of Chemistry, Dhaka, 1000, Bangladesh. E-MAIL: bchemsoc@bangla.net
5) "Green Chemistry" IUPAC project #2003-043-1-300. Authors: Prof. Pietro Tundo, Mohamed Tawfic, David Black, Liliana Mammino, Ekaterina Lokteva, Valery Lunin, Rita Hoyos de Rossi, Rosaura M. Romero, Janet Scott, Antony Patti, Natalia Tarasova and Fulvio Zrcchini.
The President thanked all concerned in the preparation and presentation of these posters for their good work on behalf of Division-III.

21. Date and Time of Next Meeting Torino August 2007.

There being no further business, the meeting closed at 17.30.

Prof G.M. Blackburn
Secretary Division-III
December 2005.

APPENDIX – 1
PRESIDENT'S REPORT
Report of the IUPAC Organic and Biomolecular Chemistry Division (III)
August 2005
Minoru Isobe, President

I. Executive Summary and Highlights

The Mission of Division of Organic and Biomolecular Chemistry is to promote the goals of IUPAC in the field of organic and biomolecular chemistry in the broadest sense. To this end the Division consists of a Division Committee and 6 Subcommittees. Together these promote the formulation and execution of Projects on relevant chemical problems, the staging of chemical conferences on important areas of chemistry, the education and professional development of chemists worldwide, the advancement of chemical industry, and the application of chemistry to meet the world's needs. The Division is committed to utilizing the talents of chemists from around the world in these activities, and promoting diversity in our membership.
The Division covers such a broad area of multidisciplinary aspects, and stimulates the fundamental and applied organic synthesis as the top edge science. It includes asymmetric synthesis of Natural products, Process chemistry with Molecular catalysts, and still explosively expanding Organometallic chemistry. Chemical biology or Post genomic chemistry is the key sciences for the biomolecules in this century, and it is also close to Biotechnology. Physical chemistry has been the fundamental mechanistic science, and it is also important in the spectroscopy and/or organic analysis. Photochemistry is of worldwide significance in the standardization for analytical chemistry as well. Green and sustainable chemistry are increasingly recognized as important environmental and limited organic materials from the global scale. The Division coordinates these subjects to be interdivisional activities as well as among the following Subcommittees.
Subcommittee on Organic Synthesis (Chair: Frank McDonald, USA)
Subcommittee on Biomolecular Chemistry (Chair: Vadim Ivanov, Russia)
Subcommittee on Green Chemistry (Chair: Pietro Tundo, Italy)
Subcommittee on Photochemistry (Chair: Silvia Braslavsky)
Subcommittee on Structural and Mechanistic Chemistry (Chair: T. Marek Krygowski)
Subcommittee on Biotechnology (Chair: Romas Kazlauskas)

The Subcommittees have been dealing with the IUPAC sponsored conferences in the various location of the world with quite success. Some of them are recognized as the conference series and planned long time in advance with adjusting the period of time and place for the similar conferences to be held.
The following report style is slightly different from the instruction, since the subcommittees are differently active to fit making this report for the six Goals in the current IUPAC Strategic Plan.

II. An overall report of Division activities during 2004 and the first part of 2005

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

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

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

d) IUPAC will foster communication among individual chemists and scientific organizations, with special emphasis on the needs of chemists in developing countries. Biomolecular Subcommittee has been achieving the Biodiversity project, which has been completed in the form of IUPAC recommendation (*Pure Appl. Chem. 74,* 697-702, **2002**). It was discussed in Thailand, Brazil, China, and Turkey before the recommendation. Further workshop was held in New Delhi in 2004 during the 4th IUPAC Conference on Biodiversity proposed for a Natural Product Center in Bangladesh.

e) IUPAC will utilize its global perspective and network to contribute to the enhancement of chemistry education, the career development of young chemical scientists and the public appreciation of chemistry. IUPAC prizes have been

awarded to young chemists in the ICOS meeting as well as Poster Prize to 3 presentators. Many conferences have similar award system to give presentation awards to young chemists.
f) IUPAC will broaden its national membership base and will seek the maximum feasible diversity in membership of IUPAC bodies in terms of geography, gender, and age. The Division has been committed to these goals for some time, as witnessed by our current 31 members (11 TM, 6 AM, 12 NR, 2 PR), who are from 29 countries (Asia 8), (Europe 15), (North America 3), (South America 3), and (Africa 2). Only 4 are female but we expect to increase this representation. We are always conscious of the need to recruit younger chemists, but recognize their carriers; In addition our Subcommittee include 73 additional individuals, many of them younger chemists.

SUBCOMMITTEES:
Subcommittee on Organic Synthesis

Synthesis covers a central part of the organic chemistry spectrum and ethos. The mission of the Sub-committee on Organic Synthesis is to provide a focus for the dissemination of current knowledge and the development of future directions in all aspects of organic synthesis, including: 1) The development of new molecular transformations; 2) The development of new reagents; 3) The development of environmentally benign synthetic processes; 4) The synthesis of new types of organic structures; 5) The synthesis of target molecules for specific applications; 6) The total synthesis of natural products; 7) Combinatorial and high throughput techniques
IUPAC International Conference on Organic Synthesis (ICOS-15) was held in Nagoya, Japan from Aug. 2004, which was quite successful with nearly 1000 participants. IUPAC Prize was awarded to Prof. Hartwig, and next Prize nomination has just opened since June 20 by co-sponsor with Theme. It will be awarded in ICOS-16, which will be held in Merida, Yucatan, Mexico during June 11-15, 2006 by organizer Eusebio Juaristi. Further ICOS-17 was proposed to be held at Daejeon in Korea during Aug 17-23, 2008; ICOS-18 (2010) in Bergen, Norway; ICOS-19 (2012) in Taiwan.
Heterocyclic Chemistry (FHC-5) was held in Florida, USA in March 2004, and will be held in 2006.
Organometallic Chemistry (ICOMC-21) was held in Vancouver, Canada in July 2004.
There are 2 more conferences planned in 2005; thus, Heterocyclic Chemistry (ICHC) in Palermo, Italy in July-Aug, and Organometallic Chemistry (OMCOS-13) in Geneva in July.

Subcommittee on Biomolecular Chemistry

The Subcommittee will seek to deliver the long-range goals of IUPAC, particularly within the vital interfacial area of molecular science that lies between organic chemistry and biology. It will support the application of the powerful methods of chemistry to current and emerging problems in biology to achieve understanding and, where appropriate, modification of the systems of living organisms at the molecular level. To that end, the Sub-Committee will provide a focus for the dissemination of current knowledge and the development of future directions in the following fields: 1) Structure, function and applications of biomolecules and their analogues; 2) Molecular mechanisms of biological processes and their modulation; 3) Molecular engineering via chemo-enzymatic processes; 4) Analysis, manipulation and application of biomolecular information systems.
International Conference on the 4th Biodiversity and 24th Natural Products: Chemistry and Medical Applications was held in New Delhi, India in January 2004 by organizer V. S. Parmar with ca. 1000 participants. A Satellite symposium on Bioresources toward drug discovery and development was held in Mauritius in Feb. 2004 (Org. Am. G. Fakim). The next joint symposia (5th and 25th) will be held in Kyoto, Japan (D. Uemura) in July 2006; (6th and 26th) will be held in Australia (Mary Garson).
The 7th International Symposium on Biomolecular Chemistry (ISBOC-7) was held at the University of Sheffield, UK in July 2004, which was masterminded by Professor Michael Blackburn in collaboration with the Royal Society of Chemistry. In the Subcommittee meeting in Sheffield, the proposal (# 2004-013-1) submitted by Prof. Mosihuzzaman was recommended to modify the organization of a Symposium in Print. Progress reports of the projects on Post-genomic chemistry (#2001-005-1-300) and Fighting microbial resistance through development of new antimicrobial agent, directed against new specific targets (#2002-030-1-300) was reported by Koomen. Next ISBOC-8 will be held in Florida in March 2007.

Subcommittee on Photochemistry

Implementation of the overall goals and objectives of IUPAC in the multidisciplinary area of photochemistry and its links to the photosciences (e. g., materials sciences, photobiology, photolithography, photography) can be accomplished only with the inputs of a broad spectrum of experts in the field, including those with ancillary interests in areas covered by all Divisions within IUPAC. 1) Renewable energy sources; 2) Green chemistry; 3) Atmospheric photochemistry; 4) New analytical methods in the biosciences including trace analysis of proteins, nucleic acids, and small bioregulators, both in vivo and in vitro; 5) Industrial photochemistry; 6) Advanced spectroscopic methods in ultra-fast time and ultra-small space resolution; 7) Methods for identifying material fatigue and temporal changes.
The Subcommittee works in close contact with the three major Photochemical Societies of the world, i. e., the Inter-American Photochemical Society, IAPS, The European Photochemical Association, EPA, and the Japanese Photochemical Association.

Miguel Miranda organized a meeting of the Sub-Committee on Photochemistry, plus colleagues participating in or chairing projects, during the XX-IUPAC Sponsored symposium of Photochemistry in Granada, Spain in July 2004. The 21 Symposium is planned to be held in Kyoto, Japan in April 2006 (Masahiro Irie).
Project on Chemical Actinometry (#2002-008-1-300) has been published in *Pure Appl. Chem. 76*, 2105-2146 (**2004**) by H. J. Kuhn etc. Reference methods, standards and applications of photoluminescence Project (#2004-021-1-300) was carried out (by interdivision ally with III, I and V) by Task group (Chair E. S. roman and F. Brouwer). This is an updating of the previous 2 relevant documents *PAC, 60(7)*, 1107-1114 (1988), and *PAC, 62(8),* 1631-1648 (1990). The scope of this work is not only limited to the theoretical field in single molecule fluorescence, but also applicable to the material sciences and biology through fluorescence microscopy, etc.

Subcommittee on Structural and Mechanistic Chemistry

The Subcommittee should handle problems concerning the many aspects of structural and mechanistic organic chemistry. Specific examples include: 1) Environmentally friendly chemical processes and degradative pathways of organic contaminants; 2) Reactions in solution, gas phase, and solid state; 3) Solvents for organic reactions; 4) Acidity and basicity of organic compounds; 5) Supramolecular chemistry.
The 17th IUPAC Conference on Physical Organic Chemistry (ICPOC-17) was held in Shanghai, China in August 2004 (Guo Zhen Ji). The next ICPOC-18 is planned in Warsaw in Aug 2006; and ICPOC-19 will be in Santiago, Spain (Galicia) in 2008. Next group conference will be held in Essen, Germany in 2007 (Roland Boese). CAIC-10 was held in Bussan, Korea in August 2004 (Dae Dong Sung).
Subcommittee meeting in Shanghai approved the name of "Correlation Chemistry" to change to "Correlation and Modeling in Chemistry). This change aims at fostering research in all aspects of the modeling of the structure-property quantitative relationship (SPQR); thus, between structural variations and measurable properties as equilibrium constants, (enzyme catalyzed) reaction rates, etc.

Subcommittee on Green Chemistry

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

Activities are introduced in *Chemistry International, Vo. 26, No. 2, March-April, 2004* by Pietro Tundo and Mohamed Tawfic Ahmed as follows. "Green Chemistry is an emerging field concerned with the safe practice of chemistry—a goal that people all over the world are interested in attaining. Green chemistry addresses some of our most precious values; human well-being, environmental sustainability, integrity, and safety, and the worldwide need for green chemistry practices should allow human development and property, along with environmental ethics. The IUPAC working party on Synthetic Pathways and Processes in Green Chemistry defined Green Chemistry (2000) as *The invention, design, and application of chemical products and processes to reduce or to eliminate the use and generation of hazardous substances.*

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

Subcommittee on Biotechnology

The International Biotechnology Symposium and Exhibition (IBS-12) was held in Oct. 2004 in Santiago, Chile (J. A. Asenjo). The program included 10 sections with newer areas of Molecular tools, Cellular tools, Genomic tools, applied genome research, Cultivation technology, downstream processing, Biocatalysis, Health care, Plant and food biotechnology, and Environmental Biotechnology.

III. Any other substantive information

Budget of Division III for 2004-2005 is allocated to the 6 Subcommittees in part, and the rest are available for projects. Further funding is available for good proposals. The generation of new projects remains the most urgent business of the Division.
Many potential proposals have been discussed among the subcommittee meetings to generate most important and timely projects.

IV. Tabular material

List of publications

Current Projects

2000-012-1-300 - Single molecule spectroscopy*

2001-005-1-300 - Post-genomic chemistry*
2001-018-1-300 - Space- and time-resolved fluorescence spectroscopy and photochemistry
2001-020-1-300 - Glossary of terms and basic protocols used in photodynamic therapy
2001-036-1-300 - Glossary of terms in photocatalysis and radiation catalysis*
2002-024-1-300 - Glossary of terms used in photochemistry (3rd version)*
2002-028-1-300 - South East Asian, and neighbouring countries, Green Chemistry Network
2002-029-1-300 - A IUPAC coordinated web page on Green/Sustainable Chemistry
2002-030-1-300 - Fighting microbial resistance through development of new antimicrobial agents, directed against new specific targets
2003-043-1-300 - Green chemistry in the Arab region
2003-046-1-300 - Workshop for formulation of plans for the establishment of a "Center of Natural Products Research (CNPR)"
2004-021-1-300 - Reference methods, standards and applications of photoluminescence*
* Interdivisional project

OTHER INTERDIVISIONAL PROJECTS
2001-014-1-800- Fullerene nomenclature - part II
2001-031-1-800 - Alignment of nomenclature in areas of overlap between the preferred names for organic nomenclature and the revision of the nomenclature of inorganic chemistry
2001-043-1-800 - Preferred names in the nomenclature of organic compounds
2002-010-1-050 - Toward a core organic chemistry curriculum for Latin American universities
2003-006-1-100 - NMR chemical shifts: updated conventions

PROJECTS NEAR COMPLETION / IN PRESS
301/1/93 - Development of guidelines for the transmission of information on organic synthesis (Abbreviation guidelines and glossary of terms for protecting groups in synthesis)
Recently Completed
2003-026-1-300 - Green chemistry in Russia
2002-064-1-300 - Green Chemistry in Latin America
2002-008-1-300 - Chemical actinometry

Representation on other IUPAC Bodies

Committee on Chemical Education (CCE) M. Fatima d. G. F. da Silva.
Interdivisional Committee on Nomenclature, Terms, and Symbols (ITCNS) Gerrit Koomen.
Subcommittee on Materials Chemistry Shunichi Fukuzumi and Istvan Horvath.
Division VIII Nomenclature Warren Powell.

Recent Reports from ORGANIC AND BIOMOLECULAR CHEMISTRY DIVISION (III)
Chemical actinometry (IUPAC Technical Report)
Pure Appl. Chem. **76**(12), 2105-2146 (2004)
Phane nomenclature. Part II. Modification of the degree of hydrogenation and substitution derivatives of phane parent hydrides (IUPAC Recommendations 2002) (III)
Pure Appl. Chem. **74**(5), 809-834 (2002)
Molecular basis of biodiversity, conservation, and sustained innovative utilization
Pure Appl. Chem. **74**(4), 697-702 (2002)
Nomenclature for the C60-*I*h and C70-*D*5h(6) fullerenes (IUPAC Recommendations 2002) (III.1)
Pure Appl. Chem. **74**(4), 629-695 (2002)
Critical evaluation of proven chemical weapon destruction technologies
Pure Appl. Chem. **74**(2), 187-316 (2002)
Organic photochromism (IUPAC Technical Report) (III.3)
Pure Appl. Chem. **73**(4), 639-665 (2001)
Figures-of-merit for the technical development and application of advanced oxidation technologies for both electric- and solar-driven systems (IUPAC Technical Report) (III.3)
Pure Appl. Chem. **73**(4), 627-637 (2001)
Synthetic Pathways and Processes in Green Chemistry. Introductory Overview (III.2)
Pure Appl. Chem. **72**(7), 1207-1228 (2000)
That is the *Introductory Overview* to the *PAC* special topic issue on Green Chemistry.
Revised Section F: Natural products and related compounds (III.1)
Pure Appl. Chem. **71**(4), 587-643 (1999)
+ Errata, *Pure Appl. Chem.* **76**(6), 1283-1292 (2004)

Appendix - 2

IUPAC Division III: Organic Synthesis Subcommittee, Report on 2004 - 2005 activities

Prepared by Frank E. McDonald, July 18, 2005

The committee last met in Nagoya, Japan on August 4, 2004, during the International Conference on Organic Synthesis (ICOS-15).

Members present: Frank E. McDonald, (chair) Emory University (USA); David S. Black, University of New South Wales (Australia); Minoru Isobe, Nagoya University (Japan); Steven V. Ley, University of Cambridge (UK); Chun-Chen Liao, National Tsing Hua University (Taiwan); Leiv K. Sydnes, University of Bergen (Norway)

Guests / Observers Present: Michael Blackburn, Sheffield University (UK); Pauline Chiu, University of Hong Kong (China); Sung Ho Kang, Korea Advanced Institute of Science and Technology (South Korea); Sunggak Kim, Korea Advanced Institute of Science and Technology (South Korea); Eun Lee, Seoul National University (South Korea); Teck-Peng Loh, National University of Singapore (Singapore); Tien-Yau Luh, National Taiwan University (Taiwan); Pietro Tundo, University of Venice (Italy)

Conferences: ICOS-16 is scheduled for June 11 - 15, 2006, in Mérida, México (organizer: Prof. Eusebio Juaristi). Organization of ICOS-16 is proceeding well, and the conference has received sponsorship from IUPAC, the Academia Mexicana de Ciencias, and the American Chemical Society Division of Organic Chemistry. A list of plenary and invited lecturers has been finalized and confirmed, and promotional activities are underway to encourage registration and submission of presented papers in a poster session. The Thieme-IUPAC award will be awarded again at ICOS-16; Thieme has begun advertising the current call for nominations, due December 9, 2005, and Frank McDonald will lead a canvassing effort in fall 2005 to ensure that there are enough high quality nominations, including international breadth of nominees.

ICOS-17 will be held in August 2008 in Daejeon, South Korea (organizers: Profs. Sunggak Kim, Sung Ho Kang, Eun Lee). There was enthusiasm expressed from Profs. Chun-Chen Liao and Tien-Yau Luh for organizing a pre-ICOS symposium in Taiwan.

OMCOS-13 is being held this week (July 17 - 21, 2005) in Geneva, Switzerland (organizers: Profs. Peter Kündig, Alexandre Alexakis). Prof. Shengming Ma has been awarded the OMCOS-13 award, cosponsored by Springer Publishing House and by the Yen Chuang Foundation. OMCOS-14 will be held in 2007 in Nara, Japan, with organization headed by Prof. Koichiro Oshima of Kyoto University. It is proposed that the subcommittee will contact Prof. Oshima to offer assistance with generating nominations for the next OMCOS-14 award.

Projects: This area has not been a particular strength of this committee. However, there was considerable discussion of projects at the Nagoya meeting. A project is under development by Frank McDonald to develop a website with important organic chemistry constants, including pKa's, and basic information on protective groups, for instance.

Appendix – 3

IUPAC Division III: Biomolecular Chemistry Subcommittee, Report on 2004 - 2005 activities

Membership

Professor V.T. Ivanov (Russia, Chair); Dr. G. M. Cragg (USA, Secretary), Professor D. St. C. Black (Australia; ex officio), Professor G. M. Blackburn (UK), Professor. K. Chibale (South Africa), Professor M. Garson (Australia), Professor R. Kluger (Canada), Dr. A. Marquet (France), Professor T. Norin (Sweden), Professor U. K. Pandit (Netherlands), Professor V. S. Parmar (India), Dr. E. M. Salem (Egypt), Professor I. Scott (USA), Professor B. S. Sener (Turkey), Professor K. Taira (Japan), Professor S. D. Varfolomeyev (Russia), Professor H. Waldmann (Germany), Professor Y. Yutavong (Thailand), Professor L-H Zhang (China).

Mission Statement and Long-Range Goals

The Sub-Committee on Biomolecular Chemistry of the IUPAC Division III, Organic and Biomolecular Chemistry, will seek to deliver the long-range goals of IUPAC, particularly within the vital interfacial area of molecular science that lies between organic chemistry and biology. It will support the application of the powerful methods of chemistry to current and emerging problems in biology to achieve understanding and, where appropriate, modification of the systems of living organisms at the molecular level.

To that end, the Sub-Committee will provide a focus for the dissemination of current knowledge and the development of future directions in the following fields:

- Structure, function and applications of biomolecules and their analogues.
- Molecular mechanisms of biological processes and their modulation.
- Molecular engineering via chemo-enzymatic processes.
- Analysis, manipulation and application of biomolecular information systems.

Minutes of the Meeting of the Sub-Committee on Biomolecular Chemistry held in Sheffield on June 29, 2004.

A copy of the minutes is attached as Appendix 1

Status of Activities since January, 2004

1. **Past IUPAC Sponsored Meetings**
   - **International Conference on "Biodiversity and Natural Products: Chemistry and Medical Applications", New Delhi, January 26-31, 2004.** The proceedings of this conference have been published in PAC, **77 (1),** 1-344 (2005), and were summarized in Chemistry International, **27(2)**, Mar./Apr, 2005 (http://www.iupac.org/publications/ci/2005/2702/bw2_parmar.html).
   - **IUPAC Satellite Symposium: "Bioresources Towards Drug Discovery and Development", University of Mauritius, February 3-4, 2004.** Organizing Committee Chair, Professor Ameenah Gurib Fakim, University of Mauritius. The proceedings of this symposium are to be published in Pharmaceutical Biology.
   - **7th International Conference on Biomolecular Chemistry (ISBOC-7), Sheffield, UK, June 27-July 1, 2004.** Organizing Committee Chair, Professor G. M. Blackburn, University of Sheffield. A conference report prepared by Dr. David StC. Black appeared in Chemistry International, **26** (6), Nov./Dec., 2004 (http://www.iupac.org/publications/ci/2004/2606/cc5_270604.html), and Dr. Blackburn's report is attached as Appendix 2.

2. **Future IUPAC-Sponsored Meetings**
   - **International Conference on Biodiversity and Natural Products, International Congress Center, Kyoto. July 23 (Sunday) - July 28 (Friday), 2006.** IUPAC International Conference of ICOB-5 & ISCNP-25; the 5th International Conference of Biodiversity & the 25th International Symposium on Chemistry of Natural Product. Organizing Committee Chairman: Prof. Daisuke Uemura, Tel +81-52-789-3654, Fax +81-52-789-3654, E-mail < uemura@chem3.chem.nagoya-u.ac. Supported by IUPAC, Japan Science Council and Japan Chemical Society. Expecting Participants: 1900.
   - **8th International Conference on Biomolecular Chemistry (ISBOC-8), Florida, March, 2007.** Organizing Committee Chair, Professor Russell Kerr, Florida Atlantic University. Professor Kerr

has proposed that this meeting be held in Charlottetown, Prince Edward Island in August, 2007, rather than in Fort Lauderdale, Florida. Prof. Kerr comments:

"I believe that the meeting would be simpler to host in PEI than in Florida. I have looked into this possibility and it seems that the meeting could be readily hosted on the campus or at a nearby Delta Hotel. The former would be much less expensive. PEI is a beautiful island and should be an attractive location for scientists as well as their families. Also, given that the meeting could be held at the end of the summer there would be much less concern about weather (high heat and humidity and possibility of hurricanes) or school/university calendars. I thus suggest that ISBOC 8
be held in Charlottetown, PEI at the end of the summer (August)of 2007."

- **International Conference on Biodiversity and Natural Products, 2008:** Proposed venue: Australia. Professor Mary Garson, University of Queensland will be reporting on the status of arrangements for this conference at the S/C meeting in Beijing in August.

3. **Possible Future Meeting**
   - Dr. Nigel Richards (University of Florida; richards@qtp.ufl.edu) has contacted Dr. Ron Kluger concerning the possibility of organizing a meeting on topics in enzymology in Como, Italy, from June 5-8, 2006, in collaboration with Dr. Maria Vanoni (maria.vanoni@unimi.it). The idea is for this to become a European equivalent of the Enzymes Gordon Conference. It is possible that IUPAC sponsorship will be sought. The following information was provided to Dr. Kluger:

     "Maria Vanoni and I are planning a meeting on topics in enzymology that seeks to become a European equivalent of the Enzymes Gordon Research Conference. We are trying to gauge the level of interest in such a project, which is tentatively planned to be held in Como, Italy from June 5-8, 2006. In case you don't know, Como is a beautiful city on the shore of the Como Lake at the foot of the Alps on the Swiss/Italian border. This gathering will feature first-rate computational and experimental enzymologists from both the USA and Europe. At this time, we are heavily involved in planning the meeting and obtaining sponsorship and so we cannot yet provide you with details concerning the level of support that we can offer. You would be one of the speakers in a session titled *Chemical Perspectives in Enzymology*.
     In closing, I really hope that you will feel interested in supporting this conference idea. Maria (maria.vanoni@unimi.it) or I would be happy to answer any questions that you may have concerning our plans for the meeting."

4. **Projects**
   - **IUPAC project #: 2001-005-1-300. "Post-genomic chemistry." Chairman – Prof. Sergey D. Varfolomeyev.** The main objective of this project has been the analysis and discussion of the most promising areas of bioorganic chemistry exploiting the information provided by the recent advances of functional genomics. Panels of experts have elaborated on the main themes, including: Protein chemistry; post-genomic biocatalysis; post-genomic biosensor technology; combinatorial chemistry; and enzymatic polymer synthesis. A mini-workshop was held in Moscow from September 6-8, 2003 to promote worldwide collaboration and innovation in this area, and the preparation of materials outlining the Project accomplishments for publication in a special issue of "Pure and Applied Chemistry". A report on this meeting appeared in Chemistry International, Vol. 26(2), 2004 (http://www.iupac.org/publications/ci/2004/2602/pp1_2001-005-1-300.html). A poster will be presented at the GA in Beijing.
   - **IUPAC Project #: 2002-030-1-300. "Fighting microbial resistance through development of new antimicrobial agents, directed against new specific targets". Prof. G. J. Koomen.** A copy of the poster (minus figures) to be presented at the meeting in Beijing is attached as Appendix 3. A report is also being prepared for publication in PAC.

5. **Proposed IUPAC project**

- Dr. Zaman Mosihuzzaman for IUPAC is seeking support for the establishment of an International Centre for Natural Products Research in Dhaka, Bangladesh. A proposal is attached as Appendix 4.

Respectfully submitted

Professor Vadim Ivanov
Chair, Sub-Committee on Biomolecular Chemistry

Dr. Gordon Cragg
Secretary, Sub-Committee on Biomolecular Chemistry

Sub-APPENDIX 1

MINUTES OF THE MEETING OF THE BIOMOLECULAR SUB-COMMITTEE
DIVISION OF ORGANIC AND BIOMOLECULAR CHEMISTRY
IUPAC

Venue: "The Three Merry Lads", Sheffield, UK (Mike's favorite pub!), 29 June 2004
PRESENT: V. Ivanov (Moscow, Russia, Chair), M. Isobe (Nagoya, Japan), K. Ganesh (Pune, India), K. Chibale (Cape Town, South Africa), V. S. Parmar (Delhi, India), D. **St.C.** Black (Sydney, Australia), R. Kluger (Toronto, Canada), L. H. Zhang (Beijing, China), H. Waldmann (Dortmund, Germany), K. Taira (Tokyo, Japan), G. M. Blackburn (Sheffield, UK), T. Norin (Stockholm, Sweden), G-J. Koomen (Amsterdam, Netherlands)

APOLOGIES: M. Garson (Brisbane, Australia)

MINUTES of past meetings: Ottawa 2003, accepted

MATTERS ARISING FROM MINUTES: None

REPORT ON THE 4TH INTERNATIONAL CONFERENCE ON BIODIVERSITY AND NATURAL PRODUCTS: CHEMISTRY AND MEDICAL APPLICATIONS:

.V. S. Parmar presented the report
.Successful meeting having raised requisite amount of money. Over 1000 participants, of which 470 were from India, representing 30 countries. The biodiversity theme was under-represented compared to the natural products theme.
.G. M. Blackburn noted that the abbreviations BNP (Biodiversity and Natural Products) should be avoided as the same stand for an ultra/far right wing political party the British National Party.
.An issue, to be edited by A. **Eschenmoser** (*OK sp.*), in *Chemistry and Biodiversity* is planned. However, G. M. Blackburn to address issue of conflict of interest regarding publishing in *Chemistry and Biodiversity* vs *Pure & Applied Chemistry*.

REPORT ON PLANS FOR ISBOC-8, FLORIDA, 2006/7:
.G. M. Blackburn presented the report on behalf of R. Kerr
.ISBOC-8 was originally planned for March 2006 but R. Kerr has agreed to reschedule meeting to March 2007 (any date in during 2nd half of March). R. Kluger noted that March for North Americans is difficult (July is preferable). G. M. Blackburn suggested committee members give a date in 2007 to G. Cragg when each one of the members can attend. H. Waldmann and R. Kluger suggested R. Kerr should suggest dates that would capture North Americans. D. St. Black and R. Kluger suggested coordination of meeting with the Physical Organic meeting planned for July/August 2006. Someone (G. Cragg?) to write to R. Kerr to highlight what the committee is worried about i.e. March date is not suitable for North Americans and that R. Kerr needs to carefully consider the dates. Suggest to R. Kerr early December 2006 (anytime before Christmas).
.G. M. Blackburn reported that R. Kerr is confident to raise 30,000 GBP for the Florida meeting. Registration fee should/will be higher than for the Sheffield meeting, ISBOC-7.

.R. Kerr to be advised that it is important for IUPAC that R. Kerr looks for cheaper accommodation and registration deal. Suggest IUPAC members and students get a discount (10%??).
.R. Kluger suggested that R. Kerr consider the tougher US immigration laws. R. Kerr should investigate with the US State Department and/or complete an Advanced Information System (AIS?) questionnaire at least one year in advance. Participants must apply for visas 3 months before the meeting.

PROPOSED MEETINGS:
.Biodiversity & Natural Products: final plan for Kyoto, Japan, 23-28 July 2006. Professor D. Uemura (Nagoya University) is the local organizer. It was noted that the annual meeting of the American society of Pharmacognosy will be held in Washington in the same week.
.T. Norin stated that if there is someone from a developing country wishing to organize a biodiversity (without natural products) meeting, then this should be considered. Otherwise natural products should be combined with biodiversity as part of one conference
.Mary Garson's proposal for the International Conference on Biodiversity and Natural Products in Australia (2008) was accepted.

PROJECT REPORTS:
.G-J. Koomen (Fighting microbial resistance through development of new antimicrobial agents directed against specific targets) acknowledged support from IUPAC, which needs a report on the project. Intermediate report completed and sent to division. G-J. Koomen advised to write something about the project for *Pure & Applied Chemistry*. D. St. Black suggested a brief article on the project in *Chemistry International*.
. S. D. Varfolmeyev (post-genomic chemistry). Project completed successfully and a reported submitted (report since accepted). Project to appear in *Pure & Applied Chemistry*.

OTHER BUSINESS:
.Sub-committee report to be put on the web (Gordon Cragg to be requested)
.M. Isobe reported on the proposed Centre of Natural Products Research, in Dakar, Bangladesh. Proposal was approved in 2003 and a workshop subsequently held in Delhi, January 2004. M. Isobe advised a Symposia-in-Print on the handling of traditional herbal medicines. M. Isobe noted that a Symposia-in-Print should come first in order to explore what is going on internationally in this area before IUPAC gives backing to the proposed institute in Bangladesh. It was noted that IUPAC policy does not support setting up of institutes. However, IUPAC could support a Symposia-in-Print (peer-reviewed in *Pure & Applied Chemistry*) by well recognised experts.
. T. Norin called for proposals (?) for a Biotechnology meeting to be held in South Africa. Professor Jonathan Blackburn (University of the Western Cape) is keen to organize such a meeting.
.T. Norin advised that if other divisions are interested in participating in the Biomolecular subcommittee meeting, they are welcome.

The meeting closed at **21-45** pm
Kelly Chibale (Acting Secretary on behalf of Gordon Cragg)
August 2004

Sub-APPENDIX 2

REPORT ON ISBOC-7
Sheffield, 27th June to 1st July 2004

The 7th International Symposium on Biomolecular Chemistry - ISBOC-7 - was held at the University of Sheffield from 27th June to 1st July 2004. I should point out that the title of the series, namely "Bioorganic", was deliberately updated to "Biomolecular", firstly in order to broaden the scope of the programme, secondly to endorse the introduction of "Bioinorganic chemistry", and thirdly to align the title of this ISBOC Meeting series with the present name of this IUPAC Sub-Committee.
This series of conferences is planned by the Biomolecular Sub-committee of the IUPAC Division of Organic and Biomolecular Chemistry since its inception by Professor Ronald Breslow in New York in 1983. The Sheffield conference was organised by Professor Michael Blackburn and his local committee, in collaboration with the Royal Society of Chemistry who undertook to organise the logistics of the meeting.

Some 250 participants registered from 5 continents and over 20 countries. The meeting was particularly well supported by members of IUPAC Division-III and its sub-committees.The scientific programme was headed by 7 plenary lecturers (Benkovic, Lippard, Reetz, Robinson, Seebach, Taira, Whitesides), and fully supported by 5 keynote lectures which filled a single lecture chamber for the four morning sessions. 23 invited lectures, 38 contributed oral presentations, and 86 poster presentations. The posters were on display for the entire duration of the symposium, and extended lunch and tea breaks allowed generous time for discussion.

The meeting opened with the Alexander Todd Lecture, sponsored by Dr Yusuf Hamied of Cipla Ltd (Mumbai), and given by Professor George Whitesides (Harvard University), who dealt with both the fundamental and applied aspects of biomolecular chemistry. The University of Sheffield Krebs Lecture (Sir Hans Krebs was the first Professor of Biochemistry in Sheffield 1942-54) was given by Professor Stephen Lippard (MIT), whose bioinorganic research is aimed towards an understanding of the biological oxidation of hydrocarbons at non-heme di-iron centres, and to the development of practical synthetic models that will achieve the same thing *in vitro*. An excellent, more detailed report on the scientific content of this meeting has been written by Professor David Black and is available on the web at http://www.iupac.org/publications/ci/2004/2606/cc5_270604.html.

The overall framework of the conference grouped the invited and oral presentations into three parallel streams in six afternoon symposia. These were: "Proteins and peptides", "Bioinorganic chemistry", "Synthetic and bioorganic chemistry", "Structure and mechanism","Biothermodynamics", and "Biospectroscopy". These six symposia were closely integrated with the corresponding subject groups of the Royal Society of Chemistry. [**NB** Three themes were deliberately omitted: "Biological Phosphorus Chemistry" and "Carbohydrate Chemistry" were the subjects of IUPAC Conferences in the UK in July 2005 and "Nucleic Acids" had been the topic of an triennial RSC subject group Meeting in Sheffield in April 2005].

The goodly number of posters were available for most of the duration of the conference in the generous space available in the Octagon Centre. Relaxed coffee and lunch breaks provided ample opportunity for discussions of these posters and for the very large proportion of younger participants to share chemistry with the senior scientists present (the ovewhelming majority of whom supported the meeting from beginning to end!)

In addition to an excellent conference banquet in the historic Sheffield Cutlers Hall, a special feature of the social program was a piano recital by the internationally-renowned local pianist Benjamin Frith on the Bosendorfer Imperial Grand piano in the Firth Hall of the University. A full social programme was organised for accompanying participants, whose numbers were rather small.

Industrial sponsorship was generously provided by some 16 companies, both UK and internationally based, and was invaluable in keeping the cost of participation at a reasonable level, especially for the younger participants. the company logos were displayed most prominently, not least on the T-shirts of the organising helpers (see attached). The Royal Society of Chemistry through its Fish Fund generously supported a large number of bursaries for contributing younger participants.

Conclusions

This continues to be a great series of Meetings for IUPAC-Division-III. It is focused on its Biomolecular S/C but reaches out to other Sub-Committees. That outreach is capable of further development. The morning single sessions ensured a large audience for the plenary speakers while the afternoon sectionalisation of the programme was equally successful with audiences ranging from 50 - 100. The linkage of the sub-themes to national and international organisers proved fairly successful but the activity and commitment of a strong home team of workers is vital.

The level of international support is very strong, as shown e.g. by enthusiasm of the invited plenary speakers (only one invitee declined and that was through diary pressures), by strong overseas participation, and also by industrial funding.

I found that international support evidently exceeded the level of local enthusiasm (my UK experience was also somewhat evident in Canada (ISBOC-6) though not in India (ISBOC-5)) which is curious. That might have been the result of competitive Conferences in the UK (which emerged long after our initial planning and

placement of our meeting dates in International Diaries). It makes me ask whether IUPAC stands taller in some countries than in others, and the Biomolecular S/C should think about these matters in planning future venues for ISBOC.

My decision to link the IUPAC endorsement to RSC commitment proved to be sound in concept but rather more frail in delivery - integration with local chemical societies cannot be taken lightly.

Lastly, I sounded out key participants on the viability of generating publication material for PAC and found virtually no support. Indeed, the message I received most often was that such an imposed activity would inhibit the presentation of really up-to-date science.

Michael Blackburn

Sub-APPENDIX 3

IUPAC PROJECT 2002-030-1-300
Fighting Microbial Resistance through Development of new Antimicrobial Agents, directed against New Specific Targets.
Participants: G.J. Koomen, T. den Blaauwen, K.J. Hellingwerf, University of Amsterdam NL, R.Ungaro, University of Parma IT, S. Mobashery, University of Notre Dame IN, USA., Specs, Rijswijk NL.

The increasing resistance of bacteria, viruses and protozoa against the presently existing drugs is of great concern, like the multidrug resistance of M. Tuberculosis (strain W being resistant against 7 tuberculostatic drugs) and the Methicillin Resistant Staph. Aureus. (Hospital bacteria) or Vancomycin resistant Enterococcus. Since resistance is the result of a normal evolutionary process, research activities in this area will have to continue forever, also to combat new life-threatening types of influenza viruses or SARS. For the last virus at the moment no treatment is available.
The project combines synthetic, biochemical and biological expertise for the design and synthesis of new antimicrobial agents on targets that do not occur in the non-infected human cell.

Selected publications:
S. Mobashery c.s. Chem. Rev. 395-424 (2005), R.Ungaro c.s. Acc. Chem. Res. 246-254 (2003), G.J. Koomen, T. den Blaauwen c.s. Biochemistry 7879-7884 (2005), K.J. Hellingwerf c.s. Eukaryotic Cell 955-965 (2004)

Sub-APPENDIX 4

PROPOSAL

CENTRE FOR NATURAL PRODUCT RESEARCH AND DEVELOPMENT
(CENPROD International) PROF. M. MOSIHUZZAMAN (DHAKKA)

Objectives :

The objectives of the Proposal **are as follows:**

a. **Preservation of traditional knowledge and conservation of bio-resources relevant to health.**
b. **Study traditional medicines and other natural products for quality and safety.**
c. **Add value to bio-resources and develop sustainable practices for the benefit of Mankind.**
d. **Contribute to poverty reduction through economic and human resource development by utilizing natural resources.**
e. **Encourage sustainable partnership between researchers and entrepreneurs.**
f. **Provide scientific and technical support to relevant public and private institutions and industries**

Brief Description:

Over 80% of world population relies on herbal medicines for primary healthcare (WHO).Global sales of botanicals is over US$ 80 billion annually, projected to be US$ 3 trillion by the year 2010 (TRAFFIC). 60% of modern drugs incorporates natural products.

Herbal medicinal products are largely unregulated as drugs and contamination is an important safety issue with them. They have to be manufactured in good quality specifications.
It is important that the manufacture of herbal medicines of Bangladesh moving in international commerce needs to be governed by similar standards of quality, safety and efficacy as those required for pharmaceutical products. In order to facilitate the development of national regulation and registration of herbal medicine, there needs to be appropriate infrastructure to ensure quality and safety.
Herbal medicines are also popular in developed countries. Advances in chemical and biological techniques have resulted in scientific evidence to substantiate the use of many herbal products and have enabled manufacturers to produce standardized herbal preparations. Standardization is necessary to optimize effects and to guarantee of reproducible pharmacological and clinical studies as well as to advise on individual dosages.
Realizing the importance of herbal medicine a resolution was taken in ASOMSX to establish an institute to conduct organized research in this area.

Background:
Traditional Medicine was included for the first time in the scientific Topics of ASOMPS-X, held in Nov 2000 in Dhaka Bangladesh. A good number of traditional medical practitioners participated in the conference and the concept of establishing a Centre of Natural Product Research was developed in the following meetings and documents::

- ASOMPS-X 2000 Dhaka
- Dhaka Declaration
- SAARC Declaration 2002
- Delhi Workshop Jan.2004
- International Task Group meeting May 2004

Mission Statement:
The centre will work to preserve traditional knowledge of the use of natural products and conduct research and development to add value and quality. The centre will extend help to the industries and consumers by generating fundamental science and human resources necessary for development.

Goals

- Preservation of traditional knowledge and conservation of bioresources
- Evaluate scientifically the traditional medicines and other natural products for their efficacy, quality, safety and formulation
- Add value to bio-resources and develop sustainable practices for the benefit of Mankind
- Contribute to poverty reduction through economic and human resource development
- Encourage sustainable partnership between researchers and entrepreneurs/industry
- Provide scientific and technical support to relevant public and private institutions and industries

Plan of Activities

1. Preservation of traditional knowledge and conservation of bio-resources relevant to health:

- Collection of information from the traditional health practitioners (THP) and from other sources
- Collection of the existing documented information
- Compile information in accessible form
- Identification and mapping of the bioresources
- Create awareness on the threats to bioresources

2. Study traditional medicines and other natural products for quality and safety:

- Quality control and safety laboratories of the CENPROD for medicinal plant materials should be developed

- Registration of herbal medicines as well as nutraceuticals should be prepared to be useful by The Ministry of Health in Bangladesh.
- A monitoring and surveillance system for herbal medicines should be developed.
- Basic information should be made available to all countries and access improved to international databases.
- Pharmacovigilance activities should be strengthened between the WHO and the CENPROD.
- Collaboration with poison control centers should be established.
- Public information and educational tools for consumers should be developed.
- Standardization of herbal preparations
    - Encourage the local manufacture of raw material
    - To produce standardized herbal preparations from medicinal plants to guarantee the reproducibility of pharmacological and clinical studies
    - To adjuce individual dosage
    - To organize farming of medicinal plants for industrial scale
    - To integrate the appropriate data into the Pharmacopeia

3. ***Add value to bio-resources and develop sustainable practices for the benefit of Mankind:***

- Develop therapeutic and nutritional agents including intermediate products using standardized procedures
- Ensure sustainable cultivation and Good Sourcing Practices (GSP) of useful medicinal plants and herbs and other relevant bioresources.
- Use of biotechnology to improve the quality of natural products
- Vigilance on issues of Intellectual Property Rights (IPR) and Biopiracy using the IUPAC approved recommendations for the sustainable utilization of bioresources
- Surveillance system for adverse reactions related to herbal medicines

4. Contribute to poverty reduction through economic and human resource development by utilizing natural resources:

- Mainstreaming of vulnerable social groups (eg, tribal people and women) in propagating and producing valuable bioresources
- Human resource development through training and, formal and informal education
- Provide research/training facilities for postgraduate students

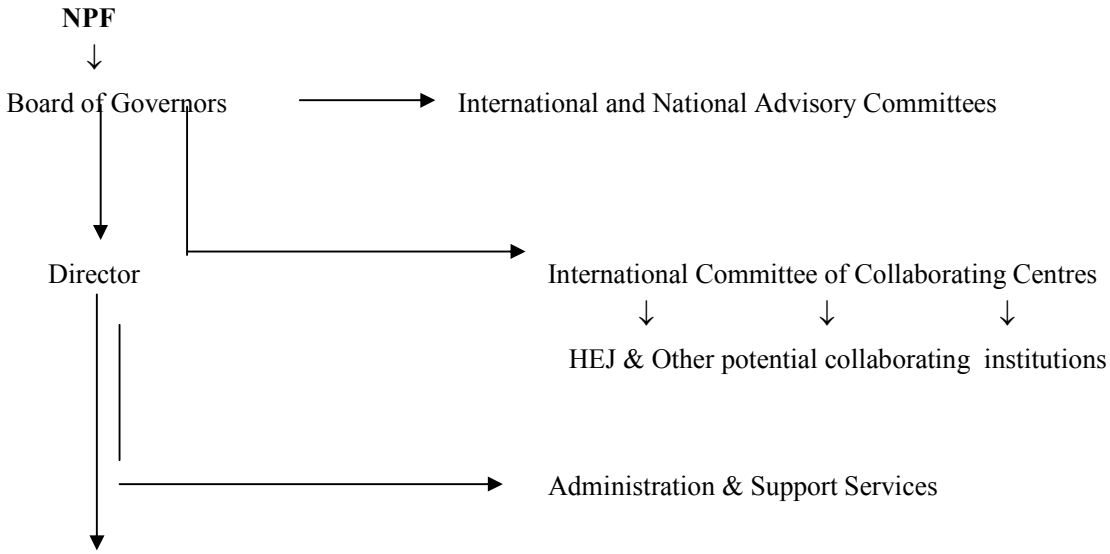
5. Encourage sustainable partnership between researchers and entrepreneurs

- Exchange of information and arrangement of constant dialogue between researchers and entrepreneurs
- Provide a counter-check for existing research/collaboration
- Dissemination of project concepts among entrepreneurs
- Involvement of entrepreneurs in the planning and execution of the projects leading to industrial production
- Sharing of facilities between the centre and industry
- Promotion of collaborative and contractual research

6. Provide scientific and technical support to relevant public and private institutions and industries

- Provide access to the private and public institutions to the facilities generated at the centre
- Provide specifications for the registration of phytomedicines, nutraceuticals and functional foods
- Provide protocols for the determination of quality control of herbal medicines
- Identify biomarker molecules for the assessment of the quality of herbal medicines
- Develop libraries of fingerprinting pattern to be used for standardization processes
- Conduct pre-clinical and clinical studies on herbal medicines, botanicals and other natural products

Management Structure



Divisions:

Ethnobotany

1. Cultivation/herbarium
2. Natural Product Chemistry & Pharmacognosy
3. Pharmacology, Toxicology & Clinical studies
4. Pilot Production & Marketing
5. Analysis facilities & Industrial Support Unit
6. Biochemistry Molecular biology & Biotechnology
7. Nutritional Product development

Support Services:

(Information / Maintenance / Library / Glass blowing / Glassware / Information management / LAN Management / Finance & Accounts / Support staff)

Initiation

Phase 1 – 3 Divisions (Chemistry & Pharmacognosy), (Pharmacology, Toxicology & Clinical studies) (Administration & Support Services)

Phase 2 – Ethnobotany/Cultivation/ Herbarium + all the rest

Appendix – 4
IUPAC Division III: Photochemistry Chemistry Subcommittee, Report on 2004 - 2005 activities

The Sub-Committee on Photochemistry met in Granada, Spain, on July 19th, 2004, on the occasion of the IUPAC Photochemistry Symposium.
Participants: Teresa Atvars, Silvia E. Braslavsky, Andre Braun, Alexander Chibisov, Ken Ghiggino, Andre Kutateladze, Helge Lemetyinnen, Enrique San Román, Massimo Olivucci, Masahide Terazima, Hiroshi Fukumura (Inter-Society Committee, ISC), Frans De Schryver, Hiroshi Masuhara (ISC), Reinhard Schmidt, Dick Weiss (ISC)
The minutes follow, with some additions updating the information.

I. Discussion of the various projects under way and those planned.

1. 2002-008-1-300: Chemical Actinometry (2nd version)
H. J. Kuhn, S. E. Braslavsky, and R. Schmidt
Published, *Pure Applied Chem. 76* (12), 2105-46, 2004.

2. 2001-018-1-300: Time and Space Resolved Fluorescence Spectroscopy and Photochemistry
Chairman: H. Masuhara, Osaka, Japan
The project will not be continued. It should be eliminated from the list.

3. 2000-012-1-300: Single Molecule Spectroscopy
Chairman: Frans De Schryver (Leuven, Belgium)
Status: A more elaborated draft in the form of recomended procedures will be ready.
We hope that **Frans** will now find the time to finalize a frst draft. Should this not happen before October 2005, the project should be discontinued.

4. 2002-024-1-300: Glossary of Terms used in Photochemistry (3rd Version)
Chairwoman: (S. E. Braslavsky)
The draft is essentialy ready, more than 50 colleagues participated in the elaboration of the new version. The new document is essentially ready.
Members of IDCNS required indicating which entries are new and/or different from those in the previous version, because the latter had been incorporated in the Green Book and in the Golden Book. Braslavsky is now updating this requirement. Before end of 2005 this procedure should be finalized.

5. 330/22/98: Ultraviolet Disinfection
Chairperson: Jim Bolton (Edmonton, Canada)
Status: Some corrections were suggested to the draft presented by Bolton. Nothing new was informed about this project. Unfortunately, we have not been able to obtain an answer from **Jim Bolton.**

6. 2004-021-1-300, Updating of Fluorescence Standards
Chairs: F. Brower (The Netherlands) and Enrique San Román (Argentina)
The project has been approved by IUPAC and a relatively large sum was assigned to finance the project. The project is going well. There will be a meeting of the task force (11 over a total of 21 in the task force) during the Conference called MAF (Methods and Applications in Fluorescence) in Lisbon (September 5-6, 2005). A first draft will be ready for the IUPAC Photochemistry Symposium in Kyoto (May 2006).

7. Glossary of Terms and Basic protocols in Photodynamic Therapy (PDT)
Chairman: David Phillips (London, UK). No first draft was be ready for Summer 2004. David Phillips will elaborate further on the ideas suggested by Roy Pottier (Canada)
Should not be any answer until September 2005, the project will be discontinued.
David and Ken Ghiggino should inform us about the progress on this project.

8. Glossary of Terms on Photocatalysis
The controversial problems with this Glossary are being discussed.
The revision will be taken up after the Glossary on Photochemistry is finalized.
Marta Litter has now submitted a draft on this project, taking into account the final version of the updated Glossary of Terms in Photochemistry.

9. Computational Methods for Excited States
Chairman: Massimo Olivucci, Siena, Italy

Massimo Olivucci informed that **it is still too early** to make a document about this very rapidly growing and expanding area.

II. Elections in 2005. The elections Committee will be selected in 2004. The nominations committee will start working in January 2005.
It is of upermost importance that a photochemist colleague will be nominated by the Inter-Society Committee on Photochemistry and elected as titular member of the Division. The name of Axel Griesbeck (Germany) was proposed by the German Chemical Society, but this name has not been included in the list of candidates for election, by the nominations Committee. Silvia Braslavsky would very much like to leave the flag (so to speak) in the hands of somebody else. There is no photochemist at the moment as a member of the Division of Organic and Biomolecular Chemistry of IUPAC.

III. Constitution of the Sub-Committee
The constitution of the Sub-Committee is (2003-2006):
Ulises Acuña, Spain
Teresa Atvars, Brasil
Cornelia Bohne, Canada
Roland Bonneau, France
André Braun, Germany
Alexander Chibisov, Russia
Ken Ghiggino, Australia
Andrei Kutateladze, USA
Helge Lemmetyinen, Finnland
Marta Litter, Argentina
Hiroshi Miyasaka, Japan
Massimo Olivucci, Italy
David Phillips, UK
Ron Rahn, USA
Enrique San Román, Argentina
Nick Serpone, Canada
Masashide Terazima, Japan

However, some members do not find the time to contribute to the work of the Sub-Committee. It is important that younger interested colleagues join the IUPAC work and bring new aspects of the field into the work focus. Therefore, we will adopt the recommendations of IUPAC in this connection and suggest changes of names after two-two years serving periods.
After contacting some colleagues and the photochemical societies, a new Sub-Committee will be suggested (serious personal problems have delayed my actions in this connection).

IV- A Special Web page of the Sub-Committee is in the process of installation.

August 3, 2005

Silvia E. Braslavsky <braslavskys@mpi-muelheim.mpg.de>
German National Representative
Chair of the Sub-Committee on Photochemistry
Division of Organic and Biomolecular Chemistry

Appendix – 5
IUPAC Division III: Structural and mechanistic Chemistry Subcommittee, Report on 2004 - 2005 activities

The report concerns the term after the meeting of Subcommittee at General Assembly in Ottawa, 2003
Last year there were two conference organised under auspices of IUPAC:

1. International Conference on Physical Organic Chemistry – ICPOC- 17 in Shanghai, (August, 15-20th 2004) organized by the Chinese colleagues with Prof. Guo Zhen Ji as the Chairman. Shanghai Institute of Organic Chemistry, Chinese Academy of Sciences 354 Fenglin RoadShanghai 200032, China.

   During the Conference, the meeting of the members of Subcommittee of Structural and Mechanistic Organic Chemistry took place. The presentation of the preparation to the next ICPOC conference was given by the Secretary of the Organizing Committee, prof. K. Woźniak. Suggestion for the organisation of ICPOC–19 was given, indicating Spain.

2. Conference on Correlation Analysis in Chemistry – CAIC-X in Busan (August, 22-27th 2004) organized by Koeran colleagues with Prof. Dae Dong Sung of DONG-A University of Busan as the Chairman.

   During the Conference, Members of the Correlation Analysis in Chemistry Group decided to change the profile and the name of the group for Correlation and Modelling in Chemistry. T. M. Krygowski was elected as leading person (the secretary general or executive chairman), and dr M. K. Cyranski as his assistant; the manifest of the group prepared mostly by Prof. Marvin Charton is:

The purpose of the International Group for Correlation and Modeling in Chemistry is to foster research in all aspects of the modeling of the structure – property quantitative relationships (SPQR). These are relationships between structural variations and measurable properties of chemical substances. The properties may be physical, such as spectra and molecular geometries; chemical such as those that depend on international forces; chemical reactivities such as rate and equilibrium constants; and biological activities ranging from rate and equilibrium constants for enzyme catalyzed reactions through minimum effective concentration studies on whole organisms. SPQR have proven useful in physical, inorganic, biological, medicinal, agricultural, environmental and polymer chemistry.

In addition to the SPQR themselves we are also interested in the parameterization used to obtain them, whether of physicochemical, topological, quantum chemical, comparative molecular field, or molecular mechanical in origin. We are also concerned with the methods used to generate them, whether statistical or neural networks.

Our work has provided one of the basic tool of modern chemistry, but we have just begun. Much more remains to be done.

The text was discussed and then accepted by all members participating in the meeting (about 30 persons). Appendix 1 – members of International Advisary Board.

Next conference of the group will be organized in Essen (Germany) in 2007 by prof. Roland Boese.

Preparations to the ICPOC–18 to be organized in Warsaw August 20–25th 2006 are very advanced and soon the First Circular will be sent as well as application to IUPAC authorities for a financial support. At the moment there are finished negotiation for the invitation of plenary lecturers (Appendix 2) and the International Advisary Board is formed (Appendix 3). For Local Organizing Committee see Appendix 4.

Very recently our colleagues from Galicia (Spain) prof. J.R. Leis Fidalgo (Santiago del Compostella) and prof. J.A. Santaballa Lopez declared organization of the conference ICPOC–19 in Santiago. Details I will present in Beijing.

Sub-Appendix 1

International Advisory Board CAIC X

1. John Shorter, Honorary Chairman (UK)
1. Marvin Charton (USA)
2. Otto Exner (Czech Republic)
3. Gerhard Gritzner (Austria)
4. Eduardo Humeres (Brazil)
5. Tadeusz M. Krygowski (Poland) <Executive Chairman>
6. Ickchoon Lee (Korea)
7. P. Ananthakrishna Nadar (India)
8. Marie-Francoise Rausse (France)
9. Christian Reichardt (Germany)
10. Thomas T.Tidwell (Canada)
11. Yuho Tsuno (Japan)

Sub-Appendix 2

Plenary Lecturers at ICPOC–18 in Warsaw, 2006

1. Prof. Robert Huber (Germany), **Nobel 1988**.
2. Prof. Alan J. Heeger (USA), **Nobel 2000**.
3. Prof. Jean-Marie Lehn (France), **Nobel 1987**.(final decision Sept. 2005)
4. Prof. Harald Kroto (UK), **Nobel 1996**.(final decision Sept. 2005)
5. Prof. Philip Coppens (USA)
6. Prof. Shunichi Fukuzumi (Japan)
7. Prof. Kwang S. Kim (S. Korea)
8. Prof. Latos-Grażyński(Poland)
9. Prof. Jay S. Siegel (Switzerland)
10. Prof. Ada Yonath (Israel)

Sub-**Appendix 3**

International Advisary Board at ICPOC–18 in Warsaw, 2006

1. V. Balzani (Italy)
2. G. M. Blackburn, (UK)
3. F. Diederich (Switzerland)
4. J. Elguero (Spain)
5. B. L. Feringa (Netherlands)
6. Guo-Zhen Ji (China)
7. M. Isobe (Japan)
8. W. Jones (UK)
9. R. Katritzky (USA)
10. J. P. Klinman (USA)
11. J. Michl (USA)
12. R. J. McMahon (USA)
13. V. I. Minkin (Rosja)
14. N. S. Nudelman (Argentina)
15. C. L. Perrin (USA)
16. L. Radom (Australia)
17. Z. Rappoport (Israel)
18. M-F. Ruasse (France)
19. J.A. Santaballa Lopez (Spain)

20. M. Schmittel (Germany)
21. L. Sobczyk (Poland)
22. T. T. Tidwell (Canada)

Sub-**Appendix 4**

Local Organizing Committee

1. Tadeusz Marek Krygowski, Chairman (Dept. of Chem., Warsaw University)
2. Krzysztof Woźniak, Secretary (Dept. of Chem., Warsaw University)
3. Michał K. Cyrański (Dept. of Chem., Warsaw University)
4. Jan S. Jaworski (Dept. of Chem., Warsaw University)
5. Andrzej Kutner (Institute of Farmacy, Warsaw)
6. Aleksander Koll (Dept. of Chem., Wroclaw University)
7. Ewa D. Raczyńska (SGGW, Warszawa)
8. Beata T. Stępień (Dept. of Chem., Warsaw University)

Tadeusz Marek Krygowski

August 2005

Appendix – 6
IUPAC Division III: Biotechnology Subcommittee, Report on 2004 - 2005 activities

1. Full Committee membership

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Dan Tawfik, Secretary (Nominated – to be confirmed)
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2. Chairperson and Secretary
Romas Kazlauskas, Chairperson
Dan Tawfik, Nominated secretary. (later declined the invitation).

3. Progress towards defining remit and goals
Our main goal is to organize a conference on Biotechnology in 2006-7.

4. Progress towards arranging an inaugural Conference in 2007.
The committee evaluated two proposals for the 2008 conference on biotechnology to be held in Asia. The committee strongly supported the application from Prof. Fengwu Bai in Dalian, China.

R. Kazlauskas visited Dalian and the conference organizers in May 2005 as part of another trip to help with planning, organization and fund raising.

2006-7 Conference planning.
Sebastian Wendeborn prepared a detailed conference proposal. Our current search is for a volunteer who could serve as the local organizer. Wendeborn cannot make the commitment.

Sebastian Wendeborn
"For a IUPAC organized Biotechnology conference I would suggest to highlight the role of chemistry within biotechnology, as we are representing first of all a chemical society. There are many conferences on biocatalysis, so possibly it is better to exclude that subject for sake of differentiation.
I would suggest something like this:
Conference Title:
IUPAC Biotechnology Symposium
'The Role of Chemistry in Biotechnology'
understanding and expanding natures structural diversity

A program could possibly look like this:
1) Structural modifications of Biopolymers/ Biomolecules
a) Proteins (beta amino acids (D. Seebach, Zürich), Collagen folding (R.T. Rainer, Wisconsin)...
b) Nucleic acid analogs (here I would stay away form antisense type talks, as there are plenty conferences covering just that. One could focus on electron transport in nucleic acids (J.K. Barton, California Institute of Technology or B. Giese, Basel, Switzerland), or a presentation on the expansion of the genetic code (Peter Schultz, Sripps)...
c) Photosynthesis or light induced redox systems: think this topic we must address sooner or later, Harry B. Gray, California Institute of Technology could give a very nice talk here, I suspect, but there must be others, that I do not know.
2) Artificial enzymes
a) Prof. Stefan Matile (Uni of Geneva, Switzerland) could give a very good presentation on tubes and barrels with catalytic functions
b) man made photosynthetic or photocurrent-generating systems (the importance of this area was highlighted in a recent TH publications T. Konishi, A. Ikeda, S. Shinkai Tetrahedron 2005, 61, 4881 (with respect to an increasing short-cut in energy supply, I think this could be a subject we

should promote - I am not sure if this is done already by other IUPAC divisions).
3) In silico methods
a) analysis of structures from structural genomics (relating protein sequence to structure and function). Recommended speaker: Janet Thornton University College, London (http://www.ebi.ac.uk/Thornton/). Once could ask for a talk on how all the genomic data available in the web can be used for determination of protein structures
4) Analysis of Biomolecules
a) electron microscopy, atomic force microscopy and molecular electron tomography are important tools to visualize biomolecules. Sidec is a company active in this field (http://www.sidec.com/), so are academics (Prof. Andreas Engel, Biozentrum Basel, Switzerland)
b) Mass spectroscopy in Biotechnology: MS is an important tool in analyzing large molecules as well as large numbers of molecules. Some cutting edge research is for example performed by G. Siuzdak at Scripps.

5) Some commercial applications /Stories from companies
Comments: For each subject one should be able to find more potential speakers, as back-ups or/and to diversify the origin of speakers more. Focus is more on subject than on speaker in my list. Somehow one has to make the program not too specific, as one will compete with more specialized conferences and not too general, as specialist/experts in their area of research may not feel attracted. My strong wish would be to make this a top scientific conference more than a 'political' IUPAC event."

5. Project development
Advice on this subject form established Division-III Members would be most welcome.

Appendix – 7

Organic and Biomolecular Chemistry Division (III)

Current Projects (from IUPAC web-site)

2000-012-1-300 - Single molecule spectroscopy*

2001-018-1-300 - Space- and time-resolved fluorescence spectroscopy and photochemistry

2001-020-1-300 - Glossary of terms and basic protocols used in photodynamic therapy

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

2002-024-1-300 - Glossary of terms used in photochemistry (3rd version)*

2002-028-1-300 - South East Asian, and neighbouring countries, Green Chemistry Network

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

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

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

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

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

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

* Interdivisional project

OTHER INTERDIVISIONAL PROJECTS

2001-014-1-800- Fullerene nomenclature - part II

2001-031-1-800 - Alignment of nomenclature in areas of overlap between the preferred names for organic nomenclature and the revision of the nomenclature of inorganic chemistry

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

2002-010-1-050 - Toward a core organic chemistry curriculum for Latin American universities

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

Appendix – 8

IUPAC Division III: Green Chemistry Subcommittee, Report on 2004 - 2005 activities

To the Members of the IUPAC Sub-Committee on Green Chemistry

Let me inform you on the Beijing IUPAC meeting and our related activities.
First, allow me to update you on the recent outcomes of our sub-committee.

1- The Projects

Completed:
- Green Chemistry in Russia, either in Russian (2004) and English (2005).
IUPAC project # 2003-026-1-300 - by Valery V. Lunin, Ekaterina Lokteva and Pietro Tundo

- Green Chemistry in Latin America, in Spanish and Portuguese.
IUPAC project # 2002-064-1-300 - by R. Hoyos de Rossi, R. M. Romero and P. Tundo

All the books are freely downloadable from: http://venus.unive.it/inca/publications/gcbooks.php

In progress:
- A IUPAC coordinated web page on Green/Sustainable Chemistry
IUPAC project # 2002-029-1-300 by Pietro Tundo and David StC. Black.

- Green Chemistry in the Arab Region
IUPAC project # 2003-043-1-300, by Mohamed Tawfic Ahmed and Pietro Tundo

Submitted:
- Translation and Dissemination of a monograph for Secondary Schools on "Global Climate Change"
IUPAC project # 2005-015-1 - by J. Scott, A. Patti, and N. Tarasova, P. Tundo and F. Zecchini

2- IUPAC ICGC-1

The first IUPAC International Conference on Green Chemistry is now advertised on:
http://www.gdch.de/vas/tagungen/tg/5559.htm

3. IUPAC Congress and General Assembly

In the occasion of the IUPAC Congress in Beijing: (see: http://www.ccs.ac.cn/IUPAC2005.htm) a Section related to Green Chemistry will take place:
"Environmental Chemistry and Green Chemistry". Tentative program on:
http://www.ccs.ac.cn/IUPAC2005/Session%201.htm

Our sub-committee was asked to present a poster on its related projects. It has the Title "Green Chemistry" and will deal with the following projects:
IUPAC project # 2003-043-1-300;
IUPAC project # 2002-029-1-300;
IUPAC project # 2002-018-1-300;
IUPAC project # 2003-026-1-300;
IUPAC project # 2005-015-1

The authors are all those involved in the job: Mohamed Tawfic, David Black, Liliana Mammino, Ekaterina Lokteva, Valery Lunin, Rita Hoyos de Rossi, Rosaura M. Romero, Janet Scott, Antony Patti, Natalia Tarasova, Fulvio Zecchini and Pietro Tundo.

4. Sub-committee meeting in Beijing

The sub-committee on Green Chemistry will meet in Beijing on August 15th, 14.00-17.30 h in meeting room 14.

Draft Agenda:
1. Report from the Chairman
2. New Membership
3. Projects (completed, current, to come)
4. IUPAC Conference on Green Chemistry, ICGC-1
5. Collaboration with the IUPAC Divisions and Standing Committees

6. International collaborations
7. New Activities (meetings, congresses, etc.)
8. Any other business

Contributions and comments are welcome.

Prof. Minoru Isobe, President of our Division III, allowed 2.000 US $ on the 2004; this sum was not utilized. If Prof. Isobe will kindly allow the same amount this year, the Sub-committee will be able to support some travel expenses for the persons coming from less favoured Countries. This sum is not really high, as IUPAC is mainly interested in supporting Projects. Maybe some registration fees may be granted from the organizing Committee, too. I will be happy to convey and support the request(s).

Pietro Tundo
Chairman of the Sub-Committee on Green Chemistry