

Meeting of IUPAC Commission III.3 on Photochemistry, Minutes
Sunday, 01 July and Monday, July 03 2001
at the IUPAC General Assembly in Brisbane, Australia

Present: A. J. R. Bolton (TM) (acting as Secretary), S. Braslavsky (TM), H. Masuhara (AM), T. Wallington (observer), R. G. Weiss (Chairman, TM)

1. Prof. Weiss (Chair of Commission III.3) opened the first meeting on July 01, 09:30.
2. Jim Bolton agreed to act as Secretary in the absence of J. Wirz.
3. The *Agenda* as circulated was approved.
4. The *Minutes* of the previous meeting of the Commission, held in Dresden, July 26 and 27, 2000, were approved.
5. Chairman's Report
 - Financial Status – no expenditures except for TM expenses in Dresden
 - Photochemistry Journals – It is suggested that the impact and appropriateness of the new journals, “Photochemical and Photobiological Sciences” (sponsored by the European Photochemical Association) and Journal of Photochemistry and Photobiology, Part C (sponsored by the Japanese Photochemical Association), should be items for discussion by the new Inter-Society Committee on the Practices of Photosciences.
6. Future of Photosciences in IUPAC after 2001
 - a. The end of the Photochemistry Commission
 - We have taken measures to assure a smooth transition to the new system through the formation of the Inter-Society Committee on the Practices of Photosciences that has representatives from the 3 major photochemical societies of the world and a member of the Organic Division.
 - Friday meeting of Organic Division – appeals to have an Interdivisional Committee on Photochemistry were rebuffed. Silvia Braslavsky will remain a member of the Organic Division.
 - How is the distribution of new projects to be done? Is there a mechanism that assures that all potential interested parties within IUPAC divisions will see proposals? The Organic Division has informed Commission III.3 that there is web access to all new proposals.
 - b. The end of National Representatives?
 - There will be only 6 National Representatives per Division in the new system.
 - the Divisional Membership will be circulated to all National Adhering Organizations
 - and they will be asked to send National Representatives. Individual projects may have representatives (who are not members of a project Task Force) named by a National Adhering Organization.
 - National Representatives may be named to the New Sub-Committee on the

Photosciences (see below).

c. The photochemistry representative on the Organic Division Committee (Silvia Braslavsky)

- A proposal to establish a new Sub-Committee on Photochemical Sciences, consisting of 9 members and attached to the Organic Chemistry Division was presented to an approved by the Division.

d. Inter-Society Committee on the Practices of Photosciences

- A new "Asian Photochemical Association" (ASA) will replace the Japanese Photochemical Association (JPA). It will encompass photoscientists from southeast Asia, including Australia, China, and India.

- This Commission asks that the Presidents of the three major photochemical societies consider establishing contacts with the International Ultraviolet Association and Rad-Tech International (UV curing) and any other Societies that have interests in Photochemistry. S. Braslavsky will advise the Inter-Society Committee to initiate contacts with the International Ultraviolet Association (Prof. J. Bolton, Executive Director, P.O. Box 1110, Ayr, ON, Canada, N0B 1E0; Email: jbolton@iuva.org) and Rad-Tech International (Mr. Gerald Cohen, Executive Director)

- It was suggested that the three Societies become "adhering Members" of IUPAC. R. Weiss will contact the Presidents of the three Societies about this matter.

- Current members of the Inter-Society Committee are: (appointed by IAPS) Cornelia Bohne (Univ. of Victoria), Richard Weiss (Georgetown Univ.) and Fred Lewis (Northwestern Univ. and President of IAPS); (appointed by EPA) Fred Brouwer (Univ.

of Amsterdam), Helge Lemmetyinen (Tampere Univ. of Technology, Finland), and Jacek Waluk (Poland and President of EPA); (appointed by JPA) Haruo Inoue (Toyko Metropolitan Univ.), Hiroshi Fukumura (Tohoku Univ., Sendai) and Hiroshi Masuhara (Osaki Univ. and President of JPA); Silvia Braslavsky (representing

IUPAC).

- Objectives: to coordinate interests and activities among members of the three societies as well as to provide a pathway from the Societies and their Members to IUPAC. The "Inter-Society" committee will not assume the role of the current Photochemistry Commission but will try to identify projects that are appropriate for IUPAC development in the photosciences and task force leaders who are capable and willing to develop them.

Strategic plan for an IUPAC Committee on Photosciences (Braslavsky)

- this Plan was submitted to the Organic Division and many others.

- Division reaction was very "positive."

- The progress so far has been very satisfactory, but attempts to make the photosciences representatives to IUPAC interdivisional have been rebuffed.

- The proposed "Interdivisional Committee" will be replaced by a Divisional "Sub-Committee"(see above). It is envisioned that the approval of completed Projects will be handled by the new "Sub-Committee".

7. Report on *Organic Photochromism* Project by Bouas-Laurent and Dürr (Weiss)

- IDCNS has approved the Project Report and it will be published in due course in *Pure and Applied Photochemistry*.

8. Project on Time and Space Resolved Fluorescence Spectroscopy and Photochemistry (Masuhara)
 - a Draft was presented to the Commission
 - the contributions from the new authors (De Schryver and Barbara) need to be integrated into the current document.
 - S. Braslavsky indicated that the Physical Chemistry Division has a strong interest in this Project
 - This Project will be submitted to IUPAC (under the new structure) and will go to S. Braslavsky for future management.

9. Project on Ultraviolet Disinfection (Bolton)
 - the Report was approved by the Commission, contingent on resolution of terminology inconsistencies between it and the "Glossary" and Actinometry Reports.
 - Further refereeing was considered unnecessary in view of the iterative nature of the process in writing the Report among the many authors. J. Bolton and S. Braslavsky will try to resolve the differences and produce a new draft before the end of September, 2001.

10. Project on Advanced Oxidation Technologies (Bolton)

This Report has been published in *Pure and Applied Chemistry* as: Bolton, J. R., Bircher, K. G., Tumas, W. and Tolman. C. A., "Figures-of-Merit for the Technical Development and Application of Advanced Oxidation Technologies for both Electric- and Solar-Driven Systems", *Pure Appl. Chem.* **73** (4), 627-637, 2001.

11. Revision of report on Actinometry (Braslavsky)
 - a provisional document was presented, which is under review by other members of the Task Force.
 - the Project (headed by S. Braslavsky) must be submitted as a formal IUPAC Project.

12. Revision of report on Fluorescence Standards (Braslavsky)
 - Cornelia Bohne has agreed tentatively to contact potential experts on fluorescence standards, who will constitute a Task Force for revision of the current document.
 - a formal IUPAC Proposal must be submitted.

13. Revision of Glossary of Terms by Acuña and interactions with IDCNS (Weiss)
 - This Commission offered several months ago to consult with IDCNS and Commission I.1 concerning terms used frequently by the Photosciences Community whose definitions in the "Green Book" are not totally consistent with the Community's use of terminology. The response was that a copy of the Draft version of the revised "Green Book" would be forthcoming in due course. When a copy was finally received on June 23, 2001 (about 1 week prior to the IUPAC General Assembly), it was clearly in almost final form and that any inputs into its content would have to be received almost immediately. The document is >160 pages in length. On this basis, our Commission has concluded that we will not be able to have a meaningful input into the resolution of the differences between the "Green Book" and even documents (including the "Glossary") produced by the Commission for IUPAC unless Commission I.1 is willing to delay submission of the current draft to IDCNS for at least 2 months. Negotiations about this matter are ongoing with the Division of Physical

Chemistry.

- The Chairman was asked to write a letter to the IUPAC Secretary General explaining the lack of cooperation and the potential consequences to having more than one language for chemistry terms in IUPAC approved documents.

- J. Bolton made a "quick" list of inconsistencies between the "Glossary" and the "Green Book" that have been forwarded to interested parties in the Physical Chemistry Division.

- It was suggested that the "Glossary" should be revised taking into account the document "Terms and Units in Ultraviolet Disinfection" and inclusion of terms in polarization. S. Braslavsky will seek a person to Chair this Project. J. Bolton will provide a list of suggested changes in the "Glossary".

14. Report on Single Molecule Spectroscopy by de Schryver (Masuhara/Weiss)
 - Prof. de Schryver is working on this Project with other groups and has indicated that a first draft will be available by December 2001.
15. Report on Photodynamic Therapy by Phillips, Jori, and Tedesco (Braslavsky)
 - an IUPAC Project will be submitted shortly on this subject, and already a nucleus for a Task Force has been identified.
16. Report on Supramolecular Photochemistry by Ramamurthy, Irie, Balzani, Scheffer, Weiss (Weiss)
 - the Chair of the Task Force is Prof. V. Ramamurthy and Members are: Irie, Balzani, Scheffer, Weiss. A Project will be submitted to IUPAC for approval shortly.
17. Report on Polymer Photochemistry by Neckers et al. (Weiss)
 - a Proposal will possibly be submitted in the future.
18. Report on joint project with Commission I.4 on "Glossary of Terms in Photocatalysis and Radiation Catalysis" by Valentin Parmon (Bolton/Weiss)
 - The Draft as submitted cannot be approved by Commission III.3 and new authors need to be added to expand the breadth. This Commission has submitted names of possible experts who would be able to assist in preparing a new Draft. (See joint meeting with I.4).
19. Plans for "joint" Meetings with other Commissions:
 - Commission III.2, Physical Organic Chemistry
 - we should explore ways in which the new Sub-Committees can collaborate
 - Commission I.4, Chemical Kinetics, and I.6, Colloid and Surface Chemistry
 - we will discuss the Photocatalysis document.
 - invite participation from these Commissions on the new Sub-Committee on Photosciences
20. Discussion of Associate Members and National Representatives
 - there was a discussion of potential AMs to the Organic Divisional Committee and it was suggested that one of the AMs be from the Photochemistry Community.

21. Other topics
- we encourage that Web sites dealing with IUPAC projects that are out-of-date be updated as soon as possible
22. Adjournment

Joint Meeting between Commissions III.3 and I.4, 2 July 2001

Prof. M. Rossi, Chair of Commission I.4 (Chemical Kinetics) and Prof. R. Weiss, Chair of Commission III.3 (Photochemistry) chaired the meeting

1. Main Projects underway in Commission I.4:
 - a. Prof. Tibor Bérces – “Selected Free Radicals and Critical Intermediates: Thermodynamic Properties from Theory and Experiment” – a Database of important properties of key radicals
 - b. Dr. Robert Huie – “Reduction Potentials of Radicals in Solution” – Dr. David M. Stanbury is the Task Group Chair
 - c. Prof. Michel Rossi – “Gas Phase Kinetic Data Evaluation for Atmospheric Chemistry” – Data has now been posted on the Web at www.iupac-kinetic.ch.cam.ac.uk
2. Prof. Weiss outlined the principal Projects underway in Commission III.3 (see minutes above). He also outlined the manner in which Photochemistry Projects will be handled in the future through initiation from the Inter-Society Committee on Photosciences and management from the Sub-Committee on Photochemistry of the Organic Chemistry Commission.

Joint Meeting between Commissions III.3 and I.6, 2 July 2001

Prof. Luuk Koopal, Chair of Commission I.4 (Catalysis) and Prof. R. Weiss, Chair of Commission III.3 (Photochemistry) chaired the meeting.

1. Prof. Koopal outlined some of the Project that Commission I.4 is undertaking. These include:
 - a. A Project on Electrokinetic phenomena
 - b. A Project on Environmental Clean-up Systems
 - c. Standardization of methods for inorganic membranes
 - d. Atomic Force Microscopy for Colloidal Particles
 - e. Symbols and Terminology in Colloids
2. Prof. Weiss then outlined the Projects that Commission III.3 has underway.

3. The Photocatalysis Project (Task Force leader, Prof. V. Parmon), which is joint between Commissions III.3 and I.4 was discussed in considerable detail. The following points were discussed:
 - a. Commission III.3 feels that the current Draft still needs considerable work and that a “Glossary” such as this one has to undergo extensive analysis and revisions because it lasts much longer than a “Technical Report”. Prof. Weiss suggested broadening the Task Force to include a “Co-Chair”, who would undertake a full “rewrite”. Prof. N. Serpone was suggested as a possible “Co-Chair”. R. Weiss and J. Bolton will contact him to see if he would agree.
 - b. Prof. Koopal suggested that the “Glossary” could be organized into two parts, a main Section that would concentrate on fundamental terms, symbols and definitions and a second Section that would include all the “Apparent” and “Relative” terms.
 - c. It was agreed to prepare an official IUPAC Project Submission with a budget of \$8,000 with the following timetable:
 - i. Find a Co-Chair of the Task Force 31 Aug. 2001
 - ii. Produce a New Draft for consideration by Prof. Parmon 28 Feb. 2002
 - iii. Prof. Parmon and new Co-Chair agree on a new Draft 30 Apr. 2002
 - iv. Comments received from Members of the Task Force and a Workshop Organized for key Members 31 July 2002
4. Dr. S. Braslavski outlined the new Sub-Committee on Photochemistry within the Organic Division and the Inter-Society Committee on the Practices of Photosciences and how these new committees would function.

Joint Meeting between Commissions III.3 and III.2, 3 July 2001

Prof. E. Baciocchi, Secretary of Commission III.2 (Physical Organic Chemistry), and Prof. R. Weiss, Chair of Commission III.3 (Photochemistry) chaired the meeting.

5. Prof. Weiss outlined the Projects underway in Commission III.3
6. Prof. Baciocchi indicated that they have several projects underway:
 - a. A Project on a Glossary of Terms in Supramolecular Chemistry. He provided a copy of a Draft Report, which Prof. Weiss will pass on to Prof. Ramamurthy, Chair of the Task Force on Supramolecular Photochemistry.
 - b. Project on “Reaction Pathways and Processes in Green Chemistry” – completed
 - c. “Workshop on Green Chemistry Education” – collaboration with OECD – will take place in Venice in September, 2001.
 - d. Project on “Internationalization of Organic Chemistry Curricula”—to be submitted.

- e. Project on “Environmental Degradation of Organic Compounds” –to be submitted.
 - f. “Critical Compilation of Hydrogen Bonding Acidity and Basicity Scales” – to be submitted.
 - g. “Activity of Strong Acids” – to be submitted.
7. There was some discussion of how projects will be evaluated in the new system. It was felt that there should be a process for helping a Task Force to modify project proposals to make them acceptable, rather than having them rejected.
8. Dr. S. Braslavsky indicated that there will be several Sub-Committees within the Organic Division: Photochemistry, Organic Synthesis, Biotechnology, Physical Organic Chemistry. It has not yet been decided how these Sub-Committees will be structured.

Submitted by:

James Bolton

Acting Secretary

Commission III.3