

Sub-committee on Photochemistry of IUPAC

The Sub-committee on Photochemistry of IUPAC, dependent on Division III of IUPAC (Organic and Biomolecular Division), met for a working lunch on July 21st, 2009, within the frame of the XXIV Conference on Photochemistry (ICP2009) which took place in Toledo (Spain) in the period July 19th-24th. The following colleagues were present: Cornelia Bohne (Canada), Silvia E. Braslavsky (Germany, Chairwoman), Fred Brouwer (The Netherlands), Axel Griesbeck (Germany, Titular member in Division III), Johan Hofkens (Belgium, new member), Hiroshi Miyasaka (Japan), Massimo Olivucci (Italy), Guillermo Orellana (Spain), Robert Pansu (France), Enrique San Román (Argentina), Masaki Terazima (Japan), David Worrall (United Kingdom).

The meeting started with a discussion about the need for the existence at large of the Sub-Committee, in view of the fact that any chemist (or any non-chemist as well) can propose a new project within the present IUPAC structure. The general view was that the Sub-Committee was a very good structure in order to discuss personally once a year (on the occasion of the International Conference on Photochemistry the odd years and of the IUPAC-Sponsored Symposium on Photochemistry the even years), as well as through e-mail, the progress of the initiated projects and the need for new projects, whereas the presence of the “Photosciences” within the IUPAC structure is maintained through the Sub-Committee.

The Sub-Committee understands itself as a control and source of new ideas for all projects concerned with the interaction of light and matter. It should also connect with the three Societies on Photochemistry, the Inter-American (Inter-American Society on Photochemistry, IAPS), the European (European Photochemical Association, EPA), and the Asian (Asian Society on Photochemistry, ASP). This was a fruitful discussion during which several ideas for new projects came to the surface (see below).

The undersigning, Silvia Braslavsky, was convinced by the Sub-Committee to keep the chair based on her experience with the writing of various documents and her knowledge of the photosciences community. I accepted and thank very much my colleagues for the confidence deposited in my work and “pushing” abilities.

Information was provided on the progress of various projects as follows:

1. **“Glossary of Terms on Photocatalysis and Radiocatalysis”** (Silvia Braslavsky). The almost finalized draft has been sent for a last round of comments to the working party

and to the members of the Sub-Committee on Photochemistry. **Comments on the draft should be sent to Silvia Braslavsky before the end of August 2009.** Some comments have already been received and we hope to submit officially the document to IUPAC by September 2009.

2. **“Reference Methods, Standards and Applications of Photoluminescence”**

(Enrique San Román and Fred Brouwer). Three documents (from the 6 planned documents within the frame of the project) are at different levels of completion:

- The 1st document in the series, **“Fluorescence Standards: Classification, Terminology and Recommendations on their selection, use and production (Technical Note)”** whose status is defined as provisional in the sense that it passed all the filters within the Task Group and is ready to be submitted to IUPAC for internal and external review.
- The 2nd document, **“Characterization of photoluminescence measuring systems (Technical Note)”** which is a draft version intended for internal use, as a last review - revision step is still pending.
- The 3rd document is also a draft version: **“Reference Methods, Standards and applications of photoluminescence”** It contains a notice to be sent accompanying the first document and should also be posted at the IUPAC web page. Opinions about this notice will be welcome.

Anyone wishing to see and comment on the documents should request them to Enrique San Román <esr@qi.fcen.uba.ar> or Fred Brouwer <a.m.brouwer@uva.nl>

3. A project has been submitted to IUPAC by **Axel Griesbeck** <aco01@uni-koeln.de> <griesbeck@uni-koeln.de> on “Photochemical Synthetic Methods”. The project is in the process of evaluation within IUPAC.

4. A new project has been proposed to the Sub-Committee by **Guillermo Orellana** (orellana@quim.ucm.es) on **“Long-lived Emission Standards”**. Guillermo will submit the project to IUPAC by October 2009. Robert Pansu and Stephan Landgraff are members of the Sub-Committee working in the field. Guillermo will suggest a series of names as members of the working party.

5. A suggestion was made to ask **Tito Scaiano** (Ottawa) to provide the series of transient spectra of triplet states and radical species he has measured and collected over many years for inclusion in a sort of extended collection of transient species. **Trevor Smith** had

agreed in 2008 to initiate this project, that should be written and submitted to IUPAC. Johan Hofkens <johan.hofkens@chem.kuleuven.be> and Hiroshi Miyasaka <miyasaka@chem.es.osaka-u.ac.jp> are ready to participate in this project and provide spectra of excited singlet state species.

6. There is a need for actinometer standards in the UV. Jim Bolton has measured the quantum yield of the ferrioxalate actinometer following a strict protocol and has arrived to the conclusion that the value 1.25 for the quantum yield upon excitation at 254 nm is definitively wrong. It should be about 1.40 at 254 nm. The protocols are available from Jim Bolton <jbolton@boltonuv.com>. This is a question to be taken by the photochemistry community at large. **David Worrall** has agreed to initiate some consultations. In the mean time Marta Liras at Tito Scaiano's research group in Ottawa is applying some actinometers for wavelengths in the UV region (190 nm). It would be advisable to propose a project to IUPAC on this subject, since these wavelengths are and will be more and more used in important applications such as water remediation.

Axel Griesbeck informed that the **Glossary of Terms used in Photochemistry** (<http://media.iupac.org/publications/pac/2007/pdf/7903x0293.pdf>) will be included in the CRC-Handbook of Photochemistry and Photobiology, edition 3, which is very advanced in its preparation.

The Sub-Committee suggested enhancing the information about the work of the Sub-Committee by distributing a leaflet about its activities and the possibilities of members of the photochemical communitie(s) to participate in these activities, during the photochemistry meetings around the world. Silvia Braslavsky and Enrique San Román will write such a leaflet.

The Sub-Committee will meet again during the IUPAC-sponsored Symposium on Photochemistry to be held in Ferrara, Italy, at the end of July 2010. If you have any questions and/or would like to participate in any of the projects outlined or have ideas for new projects, please contact us !!

Membership of IUPAC (Div. III) Sub-Committee on Photochemistry (2009-2011)

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