



**COMMISSION INTERNATIONALE DE L'ÉCLAIRAGE
INTERNATIONAL COMMISSION ON ILLUMINATION
INTERNATIONALE BELEUCHTUNGSKOMMISSION**

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**DIVISION 6
PHOTOBIOLOGY AND PHOTOCHEMISTRY**

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Minutes of the Division 6 Meeting July 9, 2006 Beijing, China

In Attendance:

Roman Beliyev, Russia

Rolf Bergman, USA

George Brainard, USA

B. Corneliussen, Denmark

Werner Horak, Germany

Sylvia Hubalek, Germany

Hans Jacobson, Denmark

David Jenkins, USA

Toshimasa Kawanishi, Japan

Kohtaro Kohmoto (ADD)

Yang Ming, China

Tongshen Mu, China

Kenneth Munck, Denmark

Hajimu Nakamura, Japan

Natasha Nel-Sakharova, South Africa

Hiroki Noguchi, Japan

John O'Hagan (Editor)
Lucia Ronchi, Italy
Masako Sasaki, Japan
Luc Schlangen, Netherlands
Qinke Shu, China
David Sliney, USA
Shu Takeshita, Japan
Jennifer Veitch, Canada
Richard Vincent, USA
Ann Webb (DD6)
Tian Yan, China

Apologies were received from Stephen Wengraitis, Division Secretary, and Dr. Kjell Daae, Norway.

1. Welcome. Attendees were welcomed to the meeting by DD6 Ann Webb, who reminded them that only the morning was available for the Division meeting.

2. Approval of Agenda. The agenda proposed in recent correspondence was accepted.

3. Approval of Minutes of the Previous Division 6 Meeting. Minutes of the meeting in Ottawa, Canada in July 2006 were approved.

4. Division Director's (DD's) Report. Webb gave a brief summary of Division 6 activity over the past Quadrennium, noting that the Division had met 3 times and held 2 symposia on Light and Health, the second in conjunction with Division 3. Five TC reports, 2 standards and 2 Proceedings have been published, while 7 new TCs have been established and one reportership.

Certificates in recognition of service to CIE were presented in absentia to:

Jean-Pierre Cesarini, ADD Photodermatology, 1991 – 2007

Myron Wolbarsht, Division Editor, 1995 – 2006

Stephen Wengraitis, Division Secretary, 1999 – 2007

It was noted that vacancies now exist for ADD Photodermatology and Division Secretary. It is

most urgent to fill the latter post although Wengraits has agreed to continue for a short time while a replacement is found. The Division was asked to consider any likely candidates and inform Webb.

The Division was also told of the new procedure within CIE for incoming Division Directors. The new Directors are now to be approved by the Board one year before the Quadrennial session (rather than at the Quadrennial session), giving them one year to become accustomed to the working of the CIE. Directors will still serve for a full Quadrennium, incoming Directors taking office at the end of each Session, as they do now. This means a new DD6 must be identified and approved by the Division by autumn 2010 (since Webb is now going into her second term), and will take office at the next Session in 2011.

5. Secretary's Report. There was no Secretary's report, as Wengraits was unable to attend.

6. Editor's Report. John O'Hagan reported that he had not received any documents to edit since becoming the D6 Editor in September 2006.

7. TC Progress Reports

6-08 Guidelines for Obtaining Action Spectra. TCC is David Sliney, who stated that the TC was committed to finishing by the end of the year.

6-15 A Computerized Approach to Reflection, Transmission and Absorption Characteristics of the Human Eye. TCC is Jack Lund. A spreadsheet was recently reviewed, with data to be used as a basis for the report. Sliney agreed to follow up with Lund regarding this report.

6-20 Phototoxicity in Domestic and Industrial Environments. No recent updates have been received from TCC Neil Gibbs, who took over as chair 2-3 years ago. A status update would be requested from Gibbs.

6-21 Cataractogenesis by Low-Level Exposure

to Ambient Ultraviolet Radiation. TCC Sliney reported that this TC met in Fort Lauderdale, FL in 2006 and that the draft had been revised. He also stated that the draft would be ready by the end of the year.

6-23 Develop Generalized Action Spectra for Plant Responses to Wavebands from 280 to 1100 nm. This TC is tasked with extending information published in CIE-Journal by TC 6-05, and obtaining agreement on generalized (or normalized) action spectra for photosynthesis, photochromism, blue light photomorphogenic responses and other receptor responses in plants. TCC Stephan Flint has stated that he cannot continue as chair. However, he suggested a replacement (Patrick Neale) who is receptive to taking on this effort.

6-24 Sunscreen and UVA. In view of the importance of ultraviolet-A radiation (in matter of skin premature ageing, skin carcinogenesis, immune local or systematic depression), and because of lack of existing regulations to test for UVA protection, it is proposed to extend the work of TC 6-12 (concerning UVB protection) on high protection factor (SPF) sunscreens. The goal is to arrive at an international consensus on sunscreen testing for UVA protection. Uli Osterwalder has taken on the task of finalising this effort from Jean-Pierre Cesarini, and hopes to have a report ready by the end of year

6-28 Standardization of Sunscreen Testing: Method of UV-A Sunscreen Testing Activity on this TC is awaiting the conclusion of 6-24, Sunscreen and UVA.

6-29 UV Protection and Clothing Completed, published as CIE Document 172:2006.

6-31 Immediate Pigment Darkening This TC is tasked with developing a standardized action spectrum for immediate pigment darkening (IPD), after a review of contrasting published results of testing for IPD. Chair: J. P. Cesarini

(France). A final draft is thought to exist, and should be acquired.

6-33 Photoimmunological Effects Mediated Through the Skin. A final draft was sent to the Bureau some years ago and deemed “too technical.” Some definitions were added with help of Sliney and Wengraitis, along with some supporting material. Sliney agreed to finalize the document with TCC De Fabo.

6-36 UVR Protective Materials Used in Shading. This TC is tasked with investigating the properties of materials, such as tent or awning fabrics used in solar UVR shading devices, and develop standardized methods for the testing fabrics other than clothing that are used for UVR protection. Plenty of information is available on materials, but less on structures. Nel-Sakharova reported that the TC was meeting that afternoon, and hoped for a report by the end of the year

6-37 Light and Retinal Disease TCC Sliney stated that this TC met in Fort Lauderdale, and that a draft was available, but some controversy still remained for this TC, including issues with regard to afterimages from light emitting diodes.

6-39 UV Radiation in Lighted Environments TCC Kohmoto stated that a TC meeting had been held in Ottawa, and a draft was in progress.

6-42 Lighting Aspects for Plant Growth in Controlled Environments Navvab volunteered in Ottawa that he may be able to move this effort forward, and would like interested members for the TC. It was suggested that Tibbetts, who started the TC, could provide a list of such members and should be contacted.

6-43 UV Water Disinfection. No recent updates have been received from the TCC (Cabaj). It was suggested that a template be sent with the Terms of Reference, and possibly put the TCC in touch with the CIE CB. Vincent stated that he knows people who could help out. A Light and Health symposium presentation (Vienna, 2004) could act as a draft.

6-44 Illuminators for Treatment of Infant Hyperbilirubinemia. Riccardo Pratesi is currently being investigated as the possible new TCC for this effort.

6-45 Optical Radiation Hazard Measurements in the Work Space. A draft document is in development. Some issues need to be resolved regarding this document.

6-46 Standard Action Spectrum for UV Disinfection. Petra Rettberg can no longer continue as TCC. Vincent stated that he would look at any existing draft. Thomas Coohill wrote a review on the subject that could be useful and should be contacted.

6-47 Photobiological Safety of Lamps and Lamp Systems. This TC met in Ottawa, and ongoing revisions continue.

6-48 Typical Minimal Erythema Doses. New material is thought to be available for this TC. TCC Beer will be contacted. A study of Chinese MED's was recently published, and will be provided to AW.

6-49 Infrared Cataract. TCC Okuno received drafts of previous TC reports and a report template. Efforts are on-going.

6-50 Photodegradation of Pharmaceuticals. TCC Steven Baertschi has recently provided a rough draft for this TC. It was suggested that an additional draft template be provided to stimulate further activity.

6-51 Standardized Solar Simulator Spectral Irradiance for Sunscreen. No recent updates had been received from TCC Sayre, who will be contacted for an update.

6-52 Proper Measurement of Passive UV Air Disinfection Sources. The TC planned to meet within the next few days. An outline draft was

available, linked to a research project. A report would be ready for mid-term.

6-53 Personal Dosimetry for UV Radiation. New TCC Attila Berces was sent drafts of recent TC reports and a report template, to help move his effort forward.

6-55 Photobiological Safety of Light Emitting Diodes. This TC is tasked with reporting on the differing methods of assessing the photobiological safety of Light Emitting Diodes (LEDs). The assessment measures in the CIE Lamp Safety Standard, CIE S009/E:2002 will be compared to the measures in IEC 60825-1-2001. This entails a review and report on the known effects from a physiological standpoint and a determination of the dose relationships that pose a potential risk for eye injury from excessive irradiation. TCC Horak reported that the TC would meet this week, and that theoretical material was available. The TC was waiting for measurement material from TC 2-58.

6-56 Infrared Warming Cabins. TCC Jan Stolwijk is concerned that there is little interest in this TC from the Health Authorities, and Industry-only interests would bias the TC. Piazena was identified as a possible TC chair, if Stolwijk cannot continue.

6-57 Standardization of Terms and Action Spectra for Blue Light and Retinal Thermal Hazard Functions. TCC Kohmoto stated that he hoped that a draft would be provided by the end of the year.

6-58 A Recommendation on Lower Limits for UV Exposure TCC Wim Passchier held a meeting of this TC in the Netherlands recently, would also meet at the upcoming European Society for Photobiology meeting in Bath, and is continuing to synthesize information from various sources into a draft.

6-59 UVC Photocarcinogenesis Risks from

Germicidal Lamps. TCC Vincent held a meeting of this TC in Ottawa. A draft would be available for review at the TC meeting on Wednesday, and a finished draft should be ready by the end of year.

6-60 Spectral Weighting of UVR from Solar Surrogate Sources. No recent updates had been received from the TCC. Wengraitis was tasked with contacting TCC Forbes.

Brainard noted that the information from the Central Bureau, when provided to a new TCC, can be rather overwhelming to those unfamiliar with CIE. Webb agreed write to the new TCC's to welcome them to the work of D6 and explain in brief terms what is expected from them.

8. Progress Reports from Reporters. Sasaki reported briefly on her reportership on the definition of UV wavebands, and said a final draft will be ready by the end of the year.

The reportership on UV protection by disposable gloves by Marina Khazova was suggested in Ottawa, approved by the Board in November and is now with the central Bureau for publication. The efficiency was applauded by Webb and the attendees.

9. Maintenance of Joint Standards. A query was raised about the maintenance of joint standards eg CIE/IEC or CIE/ISO. If the different bodies work on different time scales then there is a danger of divergence in opinion as standards are reviewed. This issue will be raised at the Board meeting.

12. Proposals for Dissolution of TC's and Reporterships. No TCs or reporterships were proposed for dissolution this time, but it was agreed that those with no activity to report at this meeting will be considered for dissolution next year if there is no clear evidence that the TC is active.

13. Proposals for New TCs and Reporterships. A reportership by Alois Schmalwieser (Vienna) was proposed by Webb, to be titled, "A survey of

action spectra in the scientific literature: 19XX – 200X” (specific years to be determined). Schmalweisser has a collection of over 200 action spectra with original references. The Division agreed to this proposal.

A joint D6/D8 TC was proposed by Webb to look at vertical illuminance and spectral output of domestic imaging appliances, e.g. TV screens. The idea needs to be formalised and also agreed by D8. The DD8 was reported to be enthusiastic about this proposal. The Division agreed with the principle and interested members were asked to contact Webb.

It was noted that there are no procedures within CIE for inter-divisional TCs. This should be raised at the Board meeting.

There is also, in principle, a joint TC with Division 1 (TC1-67), but representative Sliney has not received any communication regarding the TC.

14. Future Meetings. It was suggested that the next meeting be held in conjunction with the ASP meeting in San Francisco in 2008. Sliney, the new President of ASP, would provide more details.

15. Questions for D6, and Potential Collaboration with the Deutsches Institute für Normung. Professor Ronchi presented a brief paper with questions for the Division. Copies were circulated to those present for digestion and personal responses.

The DIN has written to D6 stating that they have established FNL27 to address questions relating to light and biological responses. They stated an interest in information exchange, and a willingness to contribute to CIE activities in this field. It was agreed that Webb would respond thanking them for their interest. A list of current TC's would be supplied with an invitation to contribute to the TC's. This should be achieved by working through the German national committee to put appropriate people into TC's.

16. President's Visit. During the meeting the Division received a visit from the President, Wout van Bommel, President-Elect, Franz Hengtsberger and VP Technical Elect, Janos Schanda.

Schanda stated that one of his goals for the next few years was to speed up the work of TC's. The Central Bureau is to get more staff to enable them to support the work of TC's, e.g. by formatting reports. Schanda invited anyone with ideas or comments about how the CB might operate most efficiently in this way to contact him by email.

He announced that the new International Lighting Vocabulary will be available on the web site (as a draft) by the end of the year. It will be presented in dictionary style, i.e. terms with a common root will be presented together (e.g. radiance; radiance, spectral...etc.). The dictionary will be in English only. Any NC can take the responsibility for translating the dictionary into its own language and putting it on the web.

van Bommel announced that there will be a press release on lighting / energy / global climate change at the end of the Symposium. He encouraged the Divisions to check that all reports and guidelines are up to date with respect to energy efficiency (although it was recognised this was not particularly relevant to D6 reports).

In response to a question from Veitch, van Bommel explained more about the recent agreement between the Bureau International des Poids et Mesures (BIPM) and CIE.

This concerned responsibilities for units of photometry. Both physicals unit are needed (nominally BIPM) and an action spectrum (nominally CIE).

The Memorandum of Understanding provides for a consulting mechanism so that neither organisation makes changes to elements for which they are responsible without discussing the changes with the other group. For example, the

definition of the candela is linked to the definition of the kg, which is changing. However, the change is so small it will make no practical difference to the candela.

The SI edition 8 has an appendix containing photobiological units, written by Jean Bastie on behalf of the CIE. It is intended to add more photobiological units for the next edition. It would be advantageous if the action spectra used in defining the units were CIE action spectra.

There is good argument for this particularly if the action spectra are also accepted as ISO standards. Hengstberger requested a list of action spectra considered mature and accepted in general use, and a further list of action spectra that are “on the way” or in current use but not yet in use long enough to be considered mature.

Division 4 have suggested that similar links be established with WMO with respect to daylight and solar simulators. It is the aim of CIE to increase such formal relationships with other international organisations over the next 4 years and raise its profile.

Bergman requested that a list of TC members be made available on the CIE website so that NCs can identify the service of their national members (at present only TCC's and Terms of Reference are provided). Hengstberger agreed that this information could be made public but it requires the TCC to provide this (up to date) information to the Bureau.

Veitch asked if space could be made available on the Bureau server for Division websites, which are currently hosted at disparate sites.

Hengstberger replied that this would become a priority within the Bureau, as part of the overhaul and outsourcing of IT support at the Bureau.

17. CIE Meetings. The Board accepted the invitation to hold the mid-term meeting in Budapest, Hungary in 2009 (possibly May). A

general scientific meeting will be organised in conjunction with the mid-term meeting, with the overarching theme of solid state sources. The Division is encouraged to hold its Division meeting here, and an ad hoc poll of members at one of the dinners supported this idea.

The General Assembly accepted the invitation to hold the next Quadrennial meeting in Sun City, South Africa in 2011 (July).

18. Adjournment.