As it begins its second Quadrennium, Division 8 is starting to see the first fruits of its labors. We are making excellent progress with both our original TCs and our newer ones. Several of the original TCs have completed their final reports. Our newer TCs are engaged in active discussion.

TC 8-01 published CIE 159:2004: "A colour appearance model for colour management systems: CIECAM02". The new colour appearance model (CAM) fixes several problems that have been found with CIECAM97s; and so it will supersede the earlier CAM. With this publication, we will shut down TC 8-01, as it has completed its mission. Our thanks to the TC Chair, Nathan Moroney, and the many TC members who worked hard to bring this improved model.

TC 8-03 published CIE 156:2004: "Guidelines for the evaluation of gamut mapping algorithms". This report outlines a plan of coordinated research for studying gamut mapping algorithms. Two of the algorithms described in the report are used in the Ashland colour management project. This TC will coordinate further research according to the guidelines. So the TC will continue its work. Those wishing to participate in the research should contact the Chair, Jan Morovic.

TC 8-04, Adaptation under Mixed Illumination Conditions, and TC 8-05, Communication of Colour Information, have submitted final reports for review by the Division and the Board of Administration. We expect them to be accepted this year. With the publication of these reports, these TCs will have completed their work as well.

TC 8-02, Colour Difference Evaluation in Images, is examining formulas for including spatial aspects of colour difference evaluation. Having resolved differences between these formulas, they are now ready to begin the final draft of their report.

TC 8-06 is now developing its third draft of a vocabulary for colour imaging. We are coordinating closely with Division 1 and with other standards bodies.

TC 8-07 has been active in discussing alternative file formats for sharing multispectral colour information.

Along with its technical progress, the TCs have also settled into a convenient model for getting their work done. Almost all the TCs meet annually at the IS&T/SID Colour Imaging Conference in Scottsdale, AZ. This provides a chance for face-to-face discussions and an impetus to keep moving forward.
The rest of the year, the TCs communicate by electronic mail through mailing lists. This provides an inexpensive way to share results and hold discussions. On the one hand, participants can hold detailed discussion over a period of weeks, rather than the few days we can spare for a technical conference. On the other hand, it provides an opportunity for study and experimentation in the middle of the discussion process. Combining regular face-to-face meetings with electronic discussions provides a very productive infrastructure for the Division’s work.

Todd Newman
Director of CIE Division 8

News from the Divisions

Division 1 - Vision and Colour
http://www.bio.im.hiroshima-cu.ac.jp/~cie1

The draft report of TC 1-48 "Colorimetry" was circulated for Division and Board ballot. Deadline for vote is: 2004-06-20.


The Division 1 meeting was held on 9-10 June 2004 in Tokyo.

Division 2 - Physical Measurement of Light and Radiation
http://cie2.nist.gov

The Division 2 meeting was held on 9 and 11 June 2004 in Tokyo.

Division 3 - Interior Environment and Lighting Design

The draft report of TC 3-31 "Lighting design methods for obstructed interiors" was circulated for Division and Board ballot. Deadline for vote is: 2004-09-10.

The minutes of the Division 3 meeting held 30-31 March 2004 in Dublin are available on the Division 3 website.

Division 4 - Lighting and Signalling for Transport
http://www.tut.fi/cie4/

The draft report of TC 4-35 "Guide for the lighting of road tunnels and underpasses" was circulated for Division and Board ballot. Deadline for vote is: 2004-06-28.

Division 4 will have its next meeting on 8-11 September 2004 in Bern, Switzerland (together with Division 5).

Division 5 – Exterior and Other Lighting Applications
http://www.cie.co.at/div5/

The draft standard of TC 5-13 "Lighting of outdoor work places" (CIE DS 015.2/E:2004) was circulated for NC ballot. Deadline for vote is: 2004-07-30.

Division 5 will have its next meeting on 8-11 September 2004 in Bern, Switzerland (together with Division 4).

Division 6 – Photobiology and Photochemistry
http://physics.nist.gov/cie6/

Division 6 will have its next meeting on 27-29 September 2004 in Vienna, Austria, in conjunction with the CIE Expert Symposium on Light and Health.

Division 8 – Image Technology
http://www.colour.org

The draft report of TC 8-04 "Chromatic adaptation under mixed illumination condition when comparing softcopy and hardcopy images" was circulated for Division and Board ballot. Deadline for vote is: 2004-07-27.

The draft report of the Division 8 Reportership "The effects of fluorescence in the characterization of imaging media" was circulated for Division and Board ballot. Deadline for vote is: 2004-09-25.
New CIE Publications

Spatial Distribution of Daylight - CIE Standard General Sky

CIE has published the standard “CIE S003 Spatial distribution of daylight - CIE standard overcast sky and clear sky” in 1996. Since then further types of skies were examined and an international consensus was reached on their luminance distribution and standardization.

The luminance distribution of the sky depends on weather and climate, and it changes during the course of a day with the position of the sun. This standard lists a set of luminance distributions, which model the sky under a wide range of conditions, from the heavily overcast sky to cloudless weather. It is intended for two purposes:

i. to be a universal basis for the classification of measured sky luminance distributions
ii. to give a method for calculating sky luminance in daylighting design procedures.

This Standard defines relative luminance distributions: the luminance of the sky at any point is given as a function of the zenith luminance. For daylighting calculation purposes it may be used with values of zenith luminance or of horizontal illuminance to obtain absolute luminance distributions.

This Standard incorporates both the CIE Standard Clear Sky and the CIE Standard Overcast Sky, which are treated as particular cases of the General Sky. The Overcast Sky is retained as a separate formula because there are many calculation procedures that embody the mathematical formulation of this particular distribution.


New Publications in the Field of Light and Lighting

Electro-Optical Imaging System Performance, 3rd edition
Gerald C. Holst

The book by G.C. Holst is entitled "Electro-optical imaging systems", but has its emphasis on infrared imaging, a subject that was originally a military secret area, but became increasingly important in a number of medical and technical applications as well. Thus it can be very much recommended to CIE experts dealing with imaging and actinic radiation. Human medical diagnosis is using IR imaging techniques increasingly, and it would be high time for the CIE to get more involved in the characterization of the devices used in this field.

The book deals with its subject in 21 Chapters. In a short Introduction, one experiences already the different flavour of the field, when for the different parts of the IR spectrum the abbreviations WWIR (mid-wavelength infrared), or VLWIR (very long wave infrared) are introduced. Chapter 2 discusses infrared imaging systems, where we can learn about a number of different system configurations. As it often happens in such books, sometimes it is difficult for the newcomer to follow the discussions, as e.g. in describing the afocal telescope layout on p. 32.

The Chapter on radiometry should be more familiar to CIE readers, and it was nice to see the definition of radiance written in its partial derivative form, even if the author calls it radiant sterance - different disciplines have different terminology, just look at how the units are shown behind the equation of the quantity. As could be expected Planck's equation gets detailed treatment, showing the spectral emission curves for different temperatures in a number of scales.

The following chapters deal with the concept of modulation transfer function, sampling and digitalisation of the signal (and its artefacts, anti-aliasing, etc.).

The so-called common module system, where the scanner mirror performs both the scanning of the input beam and produces the visible image by the help of modulated LED is dealt with in detail: input optics, the scanner, detector and amplifier with its noise characteristics and the build-up of the visible image.

The following chapters deal with other system configurations with line and area scanning detectors. In these chapters the question of MTF is dealt with again, from a different perspective, together with questions of resolution. A further chapter deals with image quality, both objective determination and subjective appraisal.

Military reconnaissance is much interested in sampled data systems, to find out from how many pixels you can identify a ship or an airplane. Similarly atmospheric transmittance, distortions due to turbulences are perhaps less of interest to our readers, they are dealt with in two detailed chapters, just as questions of the temperature differences in different parts of military objects to be identified.

The chapters on noise and system performance might have again more relevance also for technical and medical applications.
In summary the book provides an insight into IR imaging techniques, and thus can be recommended for those who have special interest in the field.

J. S.

Field Guide to Atmospheric Optics
Larry C. Andrews
SPIE Press, 2004
ISBN 0-8194-5318-8

This volume is one of the first in a new SPIE series, the SPIE Field Guides. Field guide is a reference book that provides basic information on optical principles, techniques and phenomena in a concise form. The presented information is in the form of equations and figures, supplemented by a short explanation. Most of the sub-topics are placed on a single page. The appendix to the volume provides further information on related topics, mostly key mathematical equations. This concise presentation of the topic is usually not adequate for persons new to the field.

The material in this Field Guide is a condensed version of similar material found in two textbooks: Laser Beam Propagation through Random Media and Laser Beam Scintillation with Applications, co-authored by L. C. Andrews.

The first chapter deals with atmospheric structures, optical properties of the atmosphere and shortly describes scattering mechanisms that influence visibility. Topics chosen for the next chapter include a review of classical Kolmogorov turbulence theory, velocity, temperature, and refractive index turbulence and the power spectrum deduced from them. Chapter three is devoted to the propagation of plane, spherical and Gaussian-beam waves in free space, and atmospheric effects on a propagating optical wave. These atmospheric effects have great importance in a variety of applications like imaging, free space optical communications, laser radar, and remote sensing. The next two chapters are dedicated to the second and fourth order statistics of atmospheric propagation, respectively. Accent is given to detection, mostly to beam spreading, coherence, phase structure, image jitter and scintillation. Chapter six details imaging systems and adaptive optics, among others how point spread function and modulation transfer functions are effected by propagation. The last two chapters are not of great importance for CIE circles, they describe free space optical communication systems, laser radars and optical remote sensing.

This book presents tractable mathematical models from which the practitioner can determine beam spreading, beam wander, spatial coherence radius (Fried's parameter), angle-of-arrival fluctuations, scintillation, aperture averaging effects, fade probabilities, bit error rates, and enhanced backscatter effects, among others. It can serve for practicing engineers and scientists, who wish to have access to such material in a single concise presentation.

J.M.

Hands-on Morphological Image Processing
Edward E. Dougherty, Roberto A. Lotufo
SPIE Press, 2003

Mathematical morphology refers to a branch of nonlinear image processing and analysis developed initially by G. Matheron and J. Serra that concentrates on the geometric structure within an image. That structure may be of a macro nature, where the goal is analysis of shapes such as tools or printed characters, or may be of micro structure, where one can be interested in particle distributions or textures generated by small primitives. This universal nature of morphological image processing has become a standard part of the imaging scientist's toolbox and today is applied daily to a wide range of industrial applications, including inspection, biomedical imaging, document processing, pattern recognition, metallurgy, microscopy, robot vision, etc. As the morphological operations can serve as a language for image processing, their application is only limited by the ability to design effective algorithms and efficient computational implementation.

In the last decade, since the publication of "An Introduction to Morphological Image Processing", there have been many developments in morphological imaging, both in theory and practice. This book concentrates on applications. The aim of this book is to provide a handbook that instructs how to analyse a problem and then how to develop successful algorithms based on the analysis. It is shown how generic methods can be used in combination to solve practical problems. Demonstrations are included to show how various morphological techniques can be combined to produce complete and effective algorithms.

The first two chapters discuss the basic binary morphological operations, erosion and its dual dilatation in the first chapter, and opening and its dual closing in the second. All of morphological image processing rests on these operations, therefore it is treated in detail. The third and fourth chapters discuss the processing of binary images, the third focusing on applications of the primary operators, and the fourth on the hit-or-miss transform, which processes an image directly in terms of the foreground-background relation. Particular attention is paid to morphological reconstruction in the third chapter.
Gray-scale morphological operators are discussed in the fifth chapter, and their application is treated in the following one. Granulometric filters are discussed, which play a key role in describing and classifying texture and particle distributions. Once again great attention is paid to the role of reconstruction in applications.

The seventh chapter is devoted to watershed-based segmentation. There are many variants of watershed segmentation. The approach is to articulate the underlying principles while at the same time providing real-world applications. The key to successful segmentation is marker construction, and this issue is to some extent the focus of the chapter.

The final chapter of the book concerns the automatic design of morphological operators. Morphological image processing is based on probing an image with structuring elements, and these determine the relationships within image structure that an algorithm can ascertain. In many cases it is possible to obtain satisfactory structuring elements by human ingenuity; however, automation is needed when successful filtering requires hundreds or even thousands of structuring elements.

Even if the book concentrates on applications, careful definitions and explicit statement of operation properties have not been sacrificed. This is essential in image processing since skillful application requires that one understands the general filtering effects of an operation, and efficient implementation requires that one has knowledge of the operational simplifications available. Filter properties are integrated into the applications and their relevance is emphasized.

Most of the techniques used in the book are available in the Morphology Toolbox and a great majority of the images shown in the text have been processed by the toolbox. A demonstration version is downloadable from the web under http://sourceforge.net/projects/pymorph. To assist the user, each chapter concludes with a list of the toolbox operations used in the chapter and the detailed demonstration sections include corresponding toolbox implementations.

J.M.

The Science of Imaging, an Introduction
Graham Saxby
Inst. of Physics Publishing,
Bristol and Philadelphia 2002
ISBN 0 7503 0734 X

The book by G. Saxby is an interesting reading for everybody who would like to get a first scientific-technical introduction to imaging, but would like to avoid lengthy mathematical elaborations. The book is divided into 20 chapters, starting with the "nature of light", where - however - only the wave nature of optical radiation is dealt with in detail.

The 2nd chapter deals with photometry, and there some minor problems start. One has to realize that even for an excellent practitioner of imaging, the photometric concepts make some difficulties, e.g. on p. 15 one reads that "the candela is a unit of power". Problems can be found not only in how to include the solid angle, but also with differences between the efficacy of the emitted power and the total lamp efficacy. There are a number of places in this and the following chapter (Visual perception), where your reviewer could start a debate on the accuracy of the wording.

The more interesting part of the book starts with Chapter 4, Camera lenses, and continues with Ch. 5 Resolution in optical systems, a chapter that tries to communicate the fundamentals without any deeper insight of the problem. Chapter 6, Images in colour, is again a chapter somewhat nearer to your reviewer, thus he is perhaps more critical on its content. God knows, why one finds on the same page that the CIE established the colorimetric system in 1931 and then dates it to 1947. Similarly who knows why 1978 is the date for the 1976 UCS diagram if in the figure 1976 is shown. (Such discrepancies make the reviewer uncertain for details where he is not an expert, but one can hope that the author is an expert in those other fields.)

Those following fields are Still and motion cameras (Ch. 7 & 8), the photographic process (Ch. 9 to 12). Chapter 13 is a very short introduction on digital image recording. It provides the fundamentals, but with the present boom in electronic cameras one would have wished a more detailed treatment. Only five pages are spent on halftone and electrostatic printing. The next two chapters cover the fundamentals of television and video recording, while the last four chapters provide a short overview of three-dimensional imaging, holography, micro- and macro imaging and medical-scientific imaging. Every chapter contains a "Digging deeper" section that with annotated bibliography. 3 Appendices deal with basic logarithmic arithmetic, the chemical term pH and the fundamentals of the Fourier model for image formation.

The book contains many good illustrations, a number of highly interesting coloured images, and can be recommended to anybody interesting in imaging.

J. S.
Instrument Systems Germany focuses on LED metrology

Breathtaking developments in LEDs over recent years have generated a significant growth market with completely new applications. These new applications have placed more stringent demands on measuring the optical characteristics of LEDs, because their luminous properties serve as the benchmarks for product quality.

Instrument Systems GmbH based in Munich, Germany, was established in 1986. The company identified this development at an early stage and focused its activities on LED metrology. Today’s workforce numbering 30 specialists at the Munich head office, a branch in France and a sales and service office in North America provides support for a worldwide customer base from research and industry.

Spectroradiometers with innovative performance features

Spectroradiometers developed and manufactured in-house form the basis of LED measuring systems by Instrument Systems. These spectrometers are combined with special measuring adapters and calibrated appropriately. They are used to investigate the various optical parameters for LEDs. The product range includes scanning spectrometers, and spectrometers with a fixed diffraction grating and an array detector.

10 years ago, Instrument Systems gained a high industry profile when it developed and launched the SPECTRO 320 high-end spectrometer. The advantages of a scanning spectrometer include a large signal dynamic range and high precision. Combining these features with the short measuring times of array spectrometers was a world first. Spectra can be quickly obtained with high wavelength accuracy by using a DC motor to rotate the diffraction grating directly and uniformly. This eliminates the need for complex moving parts because a precision angle encoder synchronizes the data acquisition during rotation. This principle is applied for the single as well as for the double monochromator configuration. In the double monochromator, both diffraction gratings are located on the same shaft. This arrangement guarantees the best synchronization between the gratings. The versatility and broad spectral range spanning from 190 nm to 5000 nm make the SPECTRO 320 especially suitable for purposes of research and in development departments.

On the basis of powerful array detectors, Instrument Systems developed the successful array spectrometer family CAS140B as early as 1996. The CAS140B has a mechanical shutter for fully automated measurement of dark current and a motorized density filter wheel that expands the signal dynamic range by 4 orders of magnitude. At a very early stage, Instrument Systems in Munich focused on back-illuminated CCD detectors which permitted very high signal sensitivity with short measuring times of less than one second. This particular feature ensured that these instruments were incorporated in the production lines of numerous LED manufacturers where LEDs with high cycle rates are analyzed and selected individually. The successor model CAS140CT was launched in the early summer of 2004. This is based on a crossed Czerny-Turner design and has particularly good optical properties.

On the basis of array technology, Instrument Systems developed the MAS40 Spectrometer in order to provide users with low-cost entry into LED metrology. The LED station turnkey system was configured on this basis – with measuring adapters that are easy to change and an LED power source.

Flexible fiber input coupling

Instrument Systems had developed the first optical measuring instrument in 1987 and this system already involved the concept of light measurement using fiber-optic probes. This means that Instrument Systems can draw on a track record of 15 years in the application of fiber-optics for optical measurements. For example, the company holds the patent on a special mode mixer. This design eliminates the influence exerted by movements of large core diameter fibers on their transmission of light.
and ensures that uniform measuring conditions are always available, irrespective of the bending of the fibers. This eliminates a critical source of error in determining the absolute photometric and radiometric parameters of LEDs.

A specially developed fiber-plug concept also ensures that changing the measuring adapter at the spectrometer is neutral as far as calibration of the overall system is concerned. This is a key aspect because it is the only way of ensuring reliable calibration based on international standards. The universal fiber input port facilitates easy connection of a range of measuring adapters, such as cosine-corrected optical probes or integrating spheres, to the spectroradiometer. Flexible setup and deployment of the measuring station are the result.

**Measurement probes for Averaged LED Intensity**

Luminous intensity in candela is the main measuring parameter used for LEDs. The CIE introduced the concept of "averaged LED intensity". Today, this concept is a globally acknowledged recommendation. It is based on the fact that the luminous intensity of a LED is measured using a detector with an area of 1 cm², at a distance of 100 mm or 316 mm. Maintaining these geometrical conditions presents a significant challenge given the big variation in LED designs. In order to meet these requirements, Instrument Systems developed its own test sockets for the various LED types to guarantee reproducible positioning of LEDs in the measuring adapter.

**Integrating Spheres for measurement of luminous flux**

Since the use of LEDs in lighting applications is becoming more widespread, the need to measure luminous flux will increase in the future. In response to this development, Instrument Systems has developed a range of different integrating spheres, specially optimized to cater for the requirements of LEDs. The diameter of the spheres ranges from 75 mm for production tests to 500 mm for complex applications. The ISP500 also allows luminous flux to be determined for LED clusters and entire LED panels. Sphere diameters in this order of magnitude are also recommended for the HighPower LEDs that are currently in the ascendant.

**Goniophotometers**

Instrument Systems developed the LEDGON Goniometer for analyzing the spatial radiation pattern of LEDs and LED modules. The unit has been designed such that the integrated goniometer head rotates the LED by 360° about its mechanical axis and by 180° about the vertical axis. The LEDs are also mounted here in the relevant test sockets. Apart from determining the spatial radiation pattern of LEDs, this instrument can also be used to measure the luminous flux.

**Imaging Photometers and Colorimeters**

Homogeneity in luminance and in the colour coordinates over the entire sample is becoming increasingly important, particularly for LED modules and LED displays. Instrument Systems developed the LumiCam 1300 imaging photometer and colorimeter for this application. This system generates a true two-dimensional image of the test specimen being investigated, rather like a digital camera. By comparison with traditional spot photometers, measurement of the entire test specimen is carried out in one shot. Each pixel of the image recorded is assigned a value for luminance and colour on the basis of the calibration. Comprehensive software offers a range of analytical tools which already include functions of an image-processing program.

Instrument Systems GmbH
www.instrumentsystems.de
CIE Symposia

CIE Expert Symposium on
Light and Health:
The non-visual effects
and Tutorial on
Light Measurement for Photobiology
29 September - 2 October 2004, Vienna, Austria

The impact of light upon human health has been of greatly increased interest over the past three years with new discoveries relating to the impact of light upon the daily biological rhythms and mood. This symposium will span over 3 full days (30 Sep. - 2 Oct.) and create a unique opportunity for both the biomedical and lighting communities to exchange information.

The symposium will feature sessions on:
- Light and health, introductory session
- Circadian effects
- Medical applications and beneficial exposure
- Potential hazards of optical radiation
- Applications
- Future research and elective UV exposure

A keynote presentation by Prof. George Brainard, Philadelphia, will set the stage for presentations by a roster of internationally-known medical researchers and technical experts.

A one-day tutorial on light measurement for photobiology will be held on 29 September, dealing with the following subjects:
- Basic concepts of radiometry and spectroradiometry
- Action spectra and photobiological quantities and units
- The importance of measurement geometry
- Practical measurement issues and uncertainties for spectral and integral methods
- Challenge of the solar spectrum: measurement and spectral weighting
- Photobiological dosimetry and exposure geometry for phototoxicity and photocarcinogenicity studies
- Comparison of solar simulators used in drug and cosmetic testing to a standard sun.

Registration fee for Tutorial : € 100.
Registration fee for Symposium: € 350.

Deadline for registration (tutorial and symposium) is 15 August 2004. Early registration is strongly recommended, as space is limited and places are assigned in sequence of registration.

A detailed preliminary programme is attached to this NEWS issue as a separate folder. You can get further folders on request (ciecb@ping.at). The preliminary programme, hotel information and registration form can also be found on the CIE website (http://www.cie.co.at/symp/symposia.html).

CIE Midterm Meeting Léon
12-21 May 2005

Conference: Lighting in the XXI Century
18-20 May 2005, León, Spain

Subjects to be covered:
- Image technology
- Photobiology and photochemistry
- LEDs and applications
- Indoor lighting and daylighting
- Lighting and signalling for transport
- Economics of lighting
- New light applications
- General aspects of lighting

Abstracts of appr. 300 words should be sent to:
Gemma Rodríguez
Casa Consistorial
Pza San Marcelo s/n
24071 León (Spain)

Deadline for submission of abstracts: 30 November 2004.

Registration fee (before 12 March 2005): € 500
after 12 March 2005): € 600

The registration form can be found on the web (http://www.ceisp.com),

CIE administrative meetings, Division and TC Meetings

The CIE General Assembly meeting will take place on 14 May.

16 and 17 May will be available for Division and TC Meetings.

Future Meetings

China (Guzhen)
International Lighting Fair 2004
18-23 October, 2004, Zhongshan, Guangdong, China

The fair will set up nearly 2.000 booths covering 40.000 square meters, and over 700 exhibitors will participate in it. It is to build an excellent platform of
communication, cooperation, negotiation and trade for all people in the lighting industry.

For further information, please contact:
Preparatory Committee of China (Guzhen) International Lighting Fair
1/F, Guzhen Gymnasium, Zhongxing Rd., Guzhen, Zhongshan, Guangdong, China
P.C.: 528421
Tel: +86-760-2353188/2355699
Fax: +86-760-2359619
http://www.lightingcapital.cn
e-mail: gzlight@pub.zhongshan.gd.cn, gzlamp@pub.zhongshan.gd.cn

International Symposium on Obtrusive Light and Sky Glow
17-19 November 2004, Barcelona, Spain

This Symposium will be organized jointly by CIE Division 5 "Exterior Lighting" and the International Dark-Sky Association.

Light pollution has been given increasing importance and it has traditionally been applied in the following:
- new light developments to avoid or to reduce its incidence,
- legislation, regulations and ordinances to reduce its effects.

This situation points to the fact that it is necessary to establish channels of communication between all the sectors involved, with the purpose of harmonizing their demands towards solutions that are both possible and effective.

The Symposium will gather specialists, professionals, scientists and users from the lighting field as well as from astronomy, biology and ecology, who will show and discuss the latest advances, expositions and lighting applications.

Main topics will be:
- Light pollution phenomenon: origins and extension
- Environmental effects
- Lighting optimization and light pollution minimization
- Energetic and economic aspects
- Legislation, information and education.

Registration fee (before 15 July 2004): € 250
(after 15 July 2004): € 300

For more information, contact the Organizing Committee:
e-mail: cie.ida.bcn2004@upc.es

AIC Colour 05
10th Congress of the International Colour Association
8-13 May 2005, Granada, Spain

Main topics are:
- Applied colorimetry
- Colour vision
- Colour in computer vision and image processing
- Colour differences and appearance
- Colour physics
- Colour image capture, devices and media
- Colour education
- Colour in art
- Colour in architecture
- Multispectral colour science

Prospective authors are invited to submit original papers for presentation in any of the technical areas related to the field of colour before 30 October 2004 (electronic submission, check the website http://www.ugr.es/local/aic05). The conference language is English.


The AIC05 includes the 7th International Symposium on Multispectral Colour Science.

For further information on abstract submission and conference details: check the conference website http://www.ugr.es/local/aic05

6th International Conference on Energy-Efficient Lighting (Right Light 6)
9-11 May 2005, Shanghai, China

The conference is arranged by the UN-supported China Green Lights Programme together with IAEL, the International Association for Energy-Efficient Lighting.

Topics will cover:
- Implementing quality and efficiency
- Lighting market trends and environmental links
- Standards, guidelines and labelling
- Applied technologies, systems integration and advanced buildings
- Outdoor lighting
- New developments in lighting raw materials, production technology and products
- Lighting in non-electrified areas

For more information, please consult:
http://www.rightlight6.org
In Memoriam

Gyula Lukács

Dr. Gyula Lukács, member of the Hungarian National Committee of the CIE passed away in the age of 89 years. Dr. Lukács was the founder of modern colorimetry in Hungary, he participated in many CIE discussions on colour and contributed to a number of CIE publications.

His technical career started at the Hungarian Optical Institute, where - after World-War-Two - he got involved in colorimetry. Later he led the Optical Department of the National Office of Measures, where he introduced spectrophotometric and colorimetric calibrations. During these years he developed also a set of enamel colour standards, these served as basis for unification of the Hungarian colour measurement results.

Dr. Lukács continued his work in photometry at the Tungsram factory, developed the first Hungarian objective colorimeter at the Research Institute for Measurement Sciences and supervised the production of it at the Hungarian Optical Works, till his retirement.

But he stayed active also after retirement, was regular lecturer a Hungarian and foreign colorimetric symposia and other meetings. A generation of young engineers and scientists grew up on his many publications and his tutorial book on colorimetry. The Hungarian colour community will miss his guidance and advices but will keep his memory.

Vilmos Vincze

Vilmos Vincze, Member of the Hungarian National Committee of the CIE and of the Hungarian Illuminating Engineering Society died at Christmas 2003. Mr. Vincze was a practical lighting engineer, who played a key role in the post Second World War development of Hungarian Street Lighting, both as constructor of a number of modern luminaires and as designer of outdoor lighting installations. His career led him from apprenticeship up to the leading designer of an important multinational luminaire factory. Still in his retirement he functioned as an advisor for the Tungsram-Schréder Company, but he was also always at help to the Hungarian Illuminating Engineering Society at its meetings and discussion sessions. His good advices will be missed by his colleagues and the entire Hungarian Illuminating Society.

From the Lighting Journals

Journal of Light & Visual Environment
(http://www.ieij.or.jp/english/ and http://jlve.jstage.jst.go.jp/en/)
Vol. 28, Number 1, April 2004
On the estimation of the luminance distribution by the diffuse reflection component of an object's surface and shape measurement - analysis by the numerical experiment
N. Ikemoto, M. Isomura
Identification of coloring agents causing poor coloring reproducibility in computerized color matching
K. Sano, H. Ishii
The concept of visual acuity ratio to the maximum level of individual visual acuity - The evaluation method of background luminance and visual distance on visibility taking into account of individual visual acuity
Y. Akizuki, Y. Inoue
Brightness in natural environments evaluated using the brightness size of recognized visual space of illumination
H. Yamaguchi, H. Shinoda, M. Ikeda
Evaluation of light pollution using contingent valuation method
R. Muramatsu, Y. Nakamura, M. Takano
Modeling of electro-magnetic compatibility traction current and track circuit applied to signaling devices of railways electro-tractive systems
B.S. Gavrilovic
Psychological effect of daylighting on behaviour
Y. Oyama

Lighting Design + Application
(www.iesna.com)
March 2004: Street Life
April 2004: Hospitality Lighting
May 2004: Healthcare, Education & Government

Lighting Research & Technology
(www.lrtjournal.com)
Volume 36, Number 1, 2004
Driving performance with and preference for high-intensity discharge headlamps
M. Sivak, M.J. Flannagan, B. Schoettle, M.L. Mefford
Synthesis of specular reflectors for a finite size light source
A.A. Korobko, O.K. Kush
Variation of the luminous efficacy of direct, global and diffuse solar radiation with atmospheric parameters
A. Pons, A. Barrio, J. Campos
Reflectance distributions and vertical daylight illuminances in atria
S. Sharples, D. Lash

High-beam headlamp usage on unlighted rural roadways

The contribution of vehicle lights in urban and peripheral urban environments
A. Bacelar

Volume 36, Number 2, 2004

A proposed unified system of photometry
M.S. Rea, J.D. Bullough, J.P. Freyssinier-Nova, A. Bierman

Predicting daylight illuminance by computer simulation techniques
D.H.W. Li, C.C.S. Lau, J.C. Lam

A study of opinion in offices with and without user controlled lighting
T. Moore, D.J. Carter, A.I. Slater

A demonstration of energy-efficient lighting in residential new construction
P. Banwell, J. Brons, J.P. Freyssinier-Nova, P. Rizzo, M. Figueiro

Lys (in Danish)
(www.lysteknisk.dk)
Number 4, December 2003

Lighting Day was a success
D. Gram

Inadequate experimentation by the industry
K. Munck

Digital light
D. Gram, E. Hansen

Dynamical architecture
D. Gram

Coloured light with LEDs
K. Munck

Lighting for elderly
V. Clausen

The new Center of Frederiksberg
A. Ruberg

Young Light
U. Nordentoft

The Lighting Journal
(www.ile.co.uk)
Volume 69, Number 3, May-June 2004

Safety, regeneration and lighting
A. Howard

Lighting on the front line - an army engineer reports from Iraq
P. Metcalfe

In defence of dark skies
N. Thompson

The leasing of street lighting
J. Jeffrey

Highway electrical sector schemes
V. Siantonas

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<th>Date</th>
<th>Title of Meeting</th>
<th>Organizer</th>
<th>Place of Meeting</th>
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</thead>
<tbody>
<tr>
<td>July 18-22</td>
<td>10th Intern.Symp.on the Science &amp; Techn. of Light Sources</td>
<td>G.Zissis, fax:+335 61556332, <a href="mailto:ls10@cpat.ups-tlse.fr">ls10@cpat.ups-tlse.fr</a>, <a href="http://www.ls-symposium.org">www.ls-symposium.org</a></td>
<td>Toulouse, France</td>
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<tr>
<td>Aug. 7-8</td>
<td>1st Symposium on Applied Perception in Graphics+Visualization</td>
<td><a href="http://www.graphics.umn.edu/apgv04/">http://www.graphics.umn.edu/apgv04/</a></td>
<td>Los Angeles, USA</td>
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<tr>
<td>Sep. 8-11</td>
<td>CIE Division 4 meeting</td>
<td>CIE Division 4</td>
<td>Bern, Switzerland</td>
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<tr>
<td>Sep. 8-11</td>
<td>CIE Division 5 meeting</td>
<td>CIE Division 5</td>
<td>Bern, Switzerland</td>
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<tr>
<td>Sep. 19-22</td>
<td>Licht 2004</td>
<td>LTGR, <a href="mailto:marita.steinhoff@dew.de">marita.steinhoff@dew.de</a></td>
<td>Dortmund, Germany</td>
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<tr>
<td>Date</td>
<td>Event</td>
<td>Location</td>
<td>Contact Information</td>
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<tr>
<td>Sep. 23-24</td>
<td>European Symposium for Protection of the Night Sky</td>
<td>Paris, France</td>
<td><a href="mailto:Alan.Legue@wanadoo.fr">Alan.Legue@wanadoo.fr</a></td>
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<tr>
<td>Sep. 27-28</td>
<td>CIE Division 6 meeting</td>
<td>Vienna, Austria</td>
<td>CIE Division 6</td>
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<tr>
<td>Sep.29-Oct.2</td>
<td>CIE Symposium on Light and Health</td>
<td>Vienna, Austria</td>
<td>CIE, <a href="mailto:ciecb@ping.at">ciecb@ping.at</a></td>
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<tr>
<td>Sep.30-Oct.2</td>
<td>SINAIA 2004: Quality Solutions for an Efficient Lighting</td>
<td>Sinaia, Romania</td>
<td>CNRI, Romanian NC of CIE, fax:+4021 2524367, <a href="mailto:cnri@xnet.ro">cnri@xnet.ro</a></td>
</tr>
<tr>
<td>Oct. 7-8</td>
<td>5th National Lighting Congress</td>
<td>Istanbul, Turkey</td>
<td>Dr.Leyla Dokuzer Öztürk, fax:+90 212 261 05 49, <a href="mailto:dokuzer@yildiz.edu.tr">dokuzer@yildiz.edu.tr</a></td>
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<td>Oct. 14-16</td>
<td>Intern. Conf. on Cancer and Rhythm</td>
<td>Graz, Austria</td>
<td><a href="mailto:doris.scherling@auva.sozvers.at">doris.scherling@auva.sozvers.at</a></td>
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<tr>
<td>Oct. 18-23</td>
<td>International Lighting Fair</td>
<td>Guzhen, China</td>
<td>China, <a href="mailto:gzlight@pub.zhongshan.gd.cn">gzlight@pub.zhongshan.gd.cn</a>, <a href="http://www.lightingcapital.cn">http://www.lightingcapital.cn</a></td>
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<tr>
<td>Nov.11</td>
<td>Het nationale lichtcongres 2004</td>
<td>Ede, The Netherlands</td>
<td>NSVV, <a href="mailto:a.rommers@kema.nl">a.rommers@kema.nl</a></td>
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<tr>
<td>Nov. 17-19</td>
<td>Obtrusive Light and Sky Glow</td>
<td>Barcelona, Spain</td>
<td><a href="http://www.cie-ida-barcelona2004.org">http://www.cie-ida-barcelona2004.org</a>, <a href="mailto:cie.ida.bcn2004@ups.es">cie.ida.bcn2004@ups.es</a></td>
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<tr>
<td>Dec. 1-4</td>
<td>Interlight 2004</td>
<td>Moscow, Russia</td>
<td>Ost-West-Partner, fax:+49 961 320 35, <a href="mailto:info@owp-tradefairs.com">info@owp-tradefairs.com</a></td>
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**2005**

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<tbody>
<tr>
<td>May 6-7</td>
<td>5th European Symposium for Protection of the Night Skies</td>
<td>Belgium</td>
<td>Internat. Dark-Sky Association, <a href="http://www.darksky.org">www.darksky.org</a></td>
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<tr>
<td>May 9-11</td>
<td>Energy-Efficient Lighting (Right Light 6)</td>
<td>Shanghai, China</td>
<td><a href="http://www.rightlight6.org">http://www.rightlight6.org</a></td>
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<tr>
<td>May 12-21</td>
<td>CIE Midterm Meeting</td>
<td>León, Spain</td>
<td>CIE, <a href="mailto:ciecb@ping.at">ciecb@ping.at</a></td>
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<tr>
<td>June 2-3</td>
<td>ILUMINAT 2005 + BalkanLight 2005</td>
<td>Cluj-Napoca, Romania</td>
<td><a href="mailto:dorin_beu@cluj.astral.ro">dorin_beu@cluj.astral.ro</a>, <a href="mailto:marilena.maierean@energobit.com">marilena.maierean@energobit.com</a></td>
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<tr>
<td>Sep. 19-21</td>
<td>Lux Europa 2005</td>
<td>Berlin, Germany</td>
<td><a href="mailto:lichttechnik@ee.tu-berlin.de">lichttechnik@ee.tu-berlin.de</a></td>
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<tr>
<td>Sep. 22-23</td>
<td>CIE Division 3 Meeting</td>
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**2006:**

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<tr>
<td>March 27-30</td>
<td>XII International Winter Road Congress</td>
<td>Torino, Italy</td>
<td>PIARC. Org.Secr.:<a href="mailto:aipcr2006@mafservizi.it">aipcr2006@mafservizi.it</a></td>
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