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LIGHT the official NEWSLETTER

of the **indian society of lighting engineers**

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FROM THE PRESIDENT'S DESK

As this issue goes to press I have just returned from a very successful seminar organised through an ISLE Mumbai State Centre initiative at MIT Pune, yet another institution that has added a lighting syllabus to its curriculum.

This is part of the growing trend in recent years where you find your Society in the forefront of many important lighting initiatives. I enumerate below some recent ones.

- ISLE invited to join Government Tourism Committee on monument lighting
- ISLE invited by BEE to draw up plans for promoting CFL Lamps to save energy
- ISLE invited along with ELCOMA to Karnataka Government Committee for establishing Lighting Competence Centre in Bangalore
- TVB School of Habitat Studies, to establish Library Section on Lighting Books and periodicals sponsored by ISLE. Once a month ISLE lighting lectures by panel of ISLE Members. 53 student members enrolled.
- ISLE invited to participate in finalization of Building Code with relevance on lighting by Government of India
- EU project on street lighting partner - ISLE Karnataka State Centre under supervision of Mr. J.N. Bhawani Prasad and Mr. M.S.N. Swamy
- ISLE was called upon to organize a training programme on lighting for all India CPWD engineers and architects.

This recognition has not come about by chance. It is the result of many years of hard work put in by ISLE members at all levels - at the GB, at the State and Local Centres and even at the international level. And those of us who have inherited the results of that hard work and imaginative pioneering effort also have the responsibility to ensure that this is taken forward.

So once again I request members to come forward and help enhance the activity level at the centres and to those of you are qualified, to take part in the technical work of the CIE through the CIE India Committee. Interesting things are happening in the world of light - let us be an active part of it.

S. Venkataramani
President

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EDITORIAL

This issue of the newsletter reflects the renewed enthusiasm and activity at the State Centre level. You will find reports of activities at Delhi, Mumbai and Bangalore.

In addition to the State Centre activities, you will find a brief report on the training programme in lighting that ISLE helped the CPWD Training Centre to organize for electrical engineers and architects from all over the country. You will also find the first announcement for the Lighting Competence Centre being set up in Bangalore.

Colour is an important and critical element of our daily lives. On page 6 you will find details of the Expert Symposium on the CIE Standard Colorimetric Observer by Sharon McFadden, Director of CIE Division 1.

The programme for the second CIE Expert Symposium on Light and Health is published on page 7 This symposium is an outstanding example of true interdisciplinary collaboration among the worlds of medicine, biology, physiology, psychology and the world of lighting practice. I would request members to pass this information on to their contacts in the world of medicine, architecture and anyone else that may have an interest in these issues.

Mr. Peter van Strijp, Head of Solid State Lighting in Philips who was in Delhi in February spoke at a meeting organized by Delhi State Centre. His article from the Directory on Solid State Lighting is reproduced on page 19

From the International Lighting Review we have an article on Dynamic Lighting which is an important trend for creating a more stimulating, enjoyable and productive indoor environment.

We welcome our new student members, particularly the 53 from the TVB School of Habitat Studies, Delhi. We look forward to contributions from our student members

H.S. Mamak
Editor

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ISLE ACTIVITIES

CPWD Training Programme
March 16-17, 2006

In March, ISLE helped the CPWD Training Institute in Ghaziabad to organise a training programme on lighting for 32 architects and electrical engineers from all over the country.

The faculty included Mr. S. Venkataramani, President ISLE and Head of Philips Lighting in South Asia, Mr. Gagan Mehra, MD of Osram India, Ms Sudeshna Mukhopadhyay, GM LiDAC Philips, Dr. B. Bandyopadhyay, Advisor MNES, Mr. Rajesh Naik, Senior Manager (Design) Crompton Greaves, Mr. Deepak Gahlowt, Architect, Mr. V.S. Kukreja, Electrical Consultant and Mr. S. Ramaswamy, Advisor BEE.

The two day lighting course covered a broad range of lighting subjects. On the first day the subjects included Lighting Sources, LEDs, Indoor Lighting, Sports lighting, Urban Lighting and the contribution of Photo Voltaic to Energy Saving in Lighting. The second day covered the topics of Lighting and Architecture, Planning and Execution of Project Lighting, Energy Saving in Lighting and Auditing.

Lighting Competence Centre

ISLE is joining hands with USAID, KPTCL, IREDA and ELCOMA in the setting up of a Lighting Competence Centre in Bangalore.

The purpose of this centre is to give the public information on energy efficient lighting products and systems. There will be a display of world class products which will be interactive and effectively demonstrate cause and effect on manual and digital systems.

Mr. S. Padmanabhan of USAID and Mr. B.L. Meena of KPTCL at a press conference announcing the project

Mr. S. Padmanabhan, Senior Energy and Environment Advisor at USAID expects the centre to advance demand-side management and end use energy efficiency. It will also promote the cooperation and transfer of illumination technology, facilitate lighting technology information sourcing, develop human resources and catalyse policy change for promoting cooperation in energy efficient technology.

While the centre will be essentially a "brandless" museum and exhibition, there is the possibility of having a separate space where lighting companies can display and demonstrate their products.

This is the first time that such a center is being set up in the country. The Government of Karnataka has already identified the land for the centre.

DELHI STATE CENTRE

Seminar on LEDs
February 28, 2006

Taking advantage of the presence in Delhi of the international head for solid state lighting in Philips,

Mr. Peter van Strijp, Delhi State Centre organised a seminar on LEDs in Lighting – today and the future at the India Habitat Centre on February 28.

Owing to the short notice it was not possible to inform all members of this event.

Mr. van Strijp gave an overview of the progress being made in this important field where there are new developments and technology improvements on a regular basis. He also showed interesting new applications that are being developed.

Mr. Van Strijp's article, Solid State Lighting ... is more than just a new light generating technology, which was published in the Directory, is reproduced on page 19.

MUMBAI STATE CENTRE

14th Annual General Meeting
February 10, 2006

The Mumbai State Centre conducted its 14th Annual General Meeting on February 10, 2006.

The results of the election for the State Centre Committee were announced by the Election Convenor, Mr. Dilip Bania. The following 6 members were elected unopposed for the 7 vacant seats:

Mr. P.C. Barjatia
Ar. Rohini Mani
Mr. A. Auddy
Mr. K. Naveen
Mr. P. Mavinkurve
Mr. V.S. Doshi

Mr. P.C. Barjatia was nominated to the post of Chairman, Ar. Rohini Mani as Hon. Secretary and Mr. A. Auddy as Hon. Treasurer. Mr. Stan Alvares was then co-opted as a Member of the Committee.

L to R Messrs. Firdaus Masani, Ashok Butala, Raj Chawla, Anil Valia, Rashmi Bhuta and Rohini Mani

Preceding the AGM there was a panel discussion on Futuristic Trends in Architectural Lighting. The panel consisted of the following people eminent in their respective fields: Mr. Ashok Butala (Architect), Mr. Anil Valia (Lighting Designer), Mr. Mohan Kelkar (Electrical Consultant), Mr. Firdaus Masani (Electrical Contractor), Mr. Rashmi Bhuta (Lighting Manufacturer) and Mr. Raj Chawla (User). The session was chaired by Ar. Rohini Mani.

A wide range of issues on future trends were raised – Are they affordable and beneficial to the user? How does the technology reach from the manufacturer to the ultimate user? What are the benefits of these new trends? The discussion highlighted the need for lighting designers and the important role they play in coordination with the architect, electrical consultant, electrical contractor and the user. A lively discussion ensued followed by a questions and suggestions from the audience. It was generally agreed that to optimize the best technology, energy efficiency and cost efficiency, every project needed a lighting designer.

Mr. Barjatia and Ar. Rohini Mani felicitating Dr. Dash

After the panel discussion, a presentation was made on New Technological Developments by Dr. Bijoy Kumar Dash, Chairman, Invention and Research Centre, MIT, Pune. The presentation was appreciated by the audience of 50 members and invitees.

The meeting ended with dinner. The Committee thanked Mr. Prakash Mavinkurve for the excellent arrangements.

ISLE Pavilion at IIID Showcase 2006

February 16-19, 2006, Mumbai

ISLE Mumbai State Centre set up a pavilion at Showcase 2006, an exhibition for interior designers and architects providing them with an opportunity to interact with manufacturers and distributors of world class lighting products and controls and experience the performance of the latest products.

Held at the Nehru Centre, the exhibition was inaugurated by the eminent architect Mr. Raja Aederi.

Ar. Raja Aederi, Mr. Rashmi Bhuta and Ar. Ashok Butala being welcomed by Mr. Stan Alvares at the ISLE stall

The following exhibitors took part: Anusha Technovision, Bajaj Electricals, Bhavnani Lights, Crompton Greaves, Havells, Lumiere, Skylite, and Tulip.

At the seminar, "Design Talk" held on February 17 at the Nehru Centre Auditorium, a presentation was made by Mr. Andre Tammes, Managing Director of Lighting Design Partnership, Australia which was of interest to all the participants.

The award for the best stall went to Tulip Corporation (Mr. Rashmi Bhuta of Tulip is a well known former GB Member of ISLE and an active supporter of the Mumbai State Centre).

Many of the architects, interior designers, consultants and students visited the ISLE stall and showed an interest in membership. The ISLE stall took shape as a result of the efforts of Ar. Rohini Mani, Secretary of Mumbai State Centre assisted by Mr. Stan Alvares and Mr. Prakash Mavinkurve. The exhibition has encouraged the State Centre to bring more professional users of lighting equipment into the ISLE fold.

KARNATAKA STATE CENTRE

Book Release

February 10, 2006, Bangalore

ISLE Karnataka State Centre organized a function at the Leela Palace in Bangalore on the occasion of the release of a book by one of their members.

Mr. M.S.N. Swamy, a Fellow of ISLE (presently Secretary, Karnataka State Centre) and a member of the lighting community for four decades has published a book "Lighting – What Everyone Should Know".

This book is intended as a reference guide for electricians, dealers, salespersons, contractors as well as beginners in interior designing, architecture and civil and electrical engineering. Mr. Swamy even hopes to "empower the general public" through this publication.

The book was released by Mr. Prahlad B. Mahishi IAS, Additional Chief Secretary and Principal Secretary Public Works, Government of Karnataka. Mr. Sanjay Jadhav, Chairman, Karnataka State Centre presided over the function The evening began with an invocation by Mrs. Shanthamani Dattatri.


Let There Be Light

rnataka State Centre

Coverage of the book release in the Indian Express

The book is available from SRPA Helpline at #194, First Floor, Natakaratna Gubbiveeranna Road, Seshadripuram, Bangalore 560 020.

The price of the publication is Rs. 300.

EULightINDIA

ISLE Karnataka State Centre is one of the partners in EULightINDIA, an 18 month project being organized by the European Union. This project is intended to improve capability and knowledge in India on street lighting systems and infrastructure techniques used in Europe through a structured informative capacity building programme.

Along with ISLE, the consortium consists of **Assital** (composed of companies involved in design, supply, installation and maintenance of technical systems including lighting systems), **ACAI** (representing Italian companies building and providing lighting poles and towers), **IRSEP** (experts of the Polish Association of Lighting Engineers with a wide source of experience concerning the technologies and infrastructure of street lighting) and the **EU-India Chambers** (an independent, impartial body promoting two way flow of trade, investment and technology transfer between India and members of the EU).

The programme proposes to hold 3 three day training courses and 3 one day workshops. Project details will be published subsequently.

CIE ACTIVITY

ISCC/CIE Expert Symposium - 75 Years of the CIE Standard Colorimetric Observer

May 16-17, 2006, Ottawa, Canada

Colour permeates all aspects of our life and accurate colour judgment is a critical component of many decisions. Thus, industry has an ongoing requirement to be able to specify the colour appearance of objects under a wide range of conditions and to measure the perceived colour difference between objects. The CIE is the internationally-recognized authority leading the development of basic standards for colour specification. In 1931, the CIE made the first major recommendation regarding colorimetric standards by approving the Standard Colorimetric Observer, an ideal observer whose colour matching properties correspond to the three CIE colour-matching functions. $\bar{x}(\lambda)$, $\bar{y}(\lambda)$, $\bar{z}(\lambda)$. The 1931 recommendations have formed the basis of modern colorimetry and underpin a continuing effort to provide guidance in the areas of colour specification, colour differences, and colour appearance that reflect developments in practice and science. For example, the original 1931 colorimetric observer was based on experimental data collected with stimuli subtending two degrees to avoid any participation of rod vision. Later, the CIE determined that the 1931 Standard Colorimetric Observer could be applied to stimuli subtending between 1 and 4 degrees of visual angle. To support colour specification in fields greater than 4 degrees, a supplementary standard observer, the 10 degree Standard Observer was approved in 1964.

In addition to the specification of colour in a three dimensional colour space, there is an ongoing requirement to calculate the perceived colour difference between two colour stimuli. To provide uniformity of practice, the CIE in 1976 specified two approximately uniform colour spaces, CIELUV and CIELAB. Pairs of stimuli that are equidistant in either of these colour spaces will be approximately equally discriminable, but only under a limited set of conditions.

Since that time, work has continued on the development of better models to more accurately compute perceived colour difference under a wider range of viewing conditions. The most recent summary of recommendations on colorimetry can be found in the 3rd edition of CIE Publication 15, Colorimetry, published in 2004. Currently, Division 1, through TC 1-57, is preparing standards on key aspects of the CIE recommendations on colorimetry.

In recent years, there has been considerable effort to develop models to specify the appearance of colours as a function of factors such as ambient illumination, spatial extent and surround. In addition, the advent of a wide range of imaging technology and light sources has given rise to many new issues some of which are currently being addressed by Division 1 and Division 8.

The year 2006 marks the 75th Anniversary of the CIE 1931 Standard Colorimetric Observer. It seems an opportune time to reflect on all that has been accomplished, the current status of our understanding, and to provide guidance to the CIE on what future work should be undertaken in the area of colorimetry. Thus, the Inter-Society Color Council (ISCC) and the Canadian National Committee of the Commission Internationale de l'Eclairage (CNC/CIE) are hosting a CIE Expert Symposium in celebration of this very important 75th Anniversary on the 16th and 17th of May at the National Research Council, in Ottawa, Ontario, Canada.

The Symposium features an outstanding technical programme with 28 oral presentations and 8 interactive posters covering major topics in colorimetry. These include:

- The origins and history of the CIE Standard Observers

- Physiologically-based colour matching functions
- CIE recommendations and standards oncolorimetry: what next?
- CIE colour appearance models: their past and future
- Colour appearance in image displays
- Colour difference formulae: past, present and future
- The use of the CIE 1931 Standard Observer in digital colour management

In keeping with the theme of the 75th Anniversary of the Standard Colorimetric Observer, the papers provide historical, current and future perspectives on key aspects of colorimetry. The details of the technical programme and schedule of events can be found at the Symposium web-site: www.iscc.org/jubilee2006/.

In addition to the presentations and poster session, the Symposium will include ample time for discussions on the issues raised by the presenters. It is hoped that members of all Divisions as well as industry and academia will attend the Symposium to provide input on those aspects of colorimetry that the CIE should be focusing on. In particular, we encourage the active participation of Division 1 members so that the outcome of these discussions can be fed into the Annual Meeting of Division 1 which will be held on the 18-19 May in the same location.

The Symposium will be preceded by the Annual Meeting of the ISCC, 14-15 May. The ISCC is the principal professional society in the field of colour in the United States, encompassing the arts, sciences and industry. Its membership includes both individuals and other national organizations with an interest in colour. The ISCC was founded in 1931, and will also be celebrating it 75th Anniversary in 2006. The Annual Meeting will include papers and posters on basic and applied research in colour, industrial application of colour and colour in the arts, science and psychology.

Further information on the ISCC meeting can be found at their website http://www.iscc.org/.

Further information on the Symposium, including registration forms and hotel information, can be found at the Symposium website http://www.iscc.org/jubilee2006.

Plan to attend these important events in colorimetry!

Sharon McFadden
CIE Division 1 Director

(Reproduced from CIE News)

2nd CIE Symposium on Lighting and Health
September 7-8, 2006, Ottawa, Canada

This symposium is aimed at bringing together experts from the health research and the lighting communities in order to examine proposals regarding optimal lighting parameters to enhance health. A specific aim is to define the ranges of daily doses of light and ultraviolet radiant energy that are physiologically optimum. The Symposium will examine the impact of spectrum and spectra; variations, optimal profiles of light exposure variations, constraints regarding flickering, and recommendations for potential changes as a function of time of the day, season, climate, work conditions.

The sessions are organized to present new health information where the basic scientists will be asked to speculate on the impact of their research to the indoor lighted environment. At least one-third of the time will be devoted to discussion of the possible consequences for different lighting scenarios, lamp and luminaire specifications. The panel discussion will be triggered by a featured speaker in each session.

Preliminary Programme
Thursday, September 7, 2006:

Session 1 – Introduction and Fundamentals
Session 1a – Fundamentals – Biological Basis

- Non-Visual Photoreception of Light - *George Brainard*
- Circadian Rhythms and Other Brain Functions - *Steven Lockley*

Session 1b – Fundamental - Applications

- Implications for Lighting - What do we know? - *Peter Boyce*
- Measurement Implications - *Robert Levin*
- Implications for Different Lighting Sources – *Mark Rea*
- Summary and Relevant Posters – Discussion – *Guy Newsham and Miriam Aries*

Session 2 – Effects upon Healthy People
Session 2a – Healthy People - Fundamentals

[Healthy people experience fatigue and stress, and reduced alertness after long periods spent indoors under artificial lighting. Shift workers experience extra stress and sleep disorders. Travelers experience jetlag with an adverse impact upon sleep and alertness. Can indoor lighting conditions contribute to reducing negative effects?]

- Ultraviolet Benefits and Risks - The Evolving Debate - *Ann Webb*
- Effects of Dim and Bright Work Environments on Retinal/Circadian Functions - *Marie Dumont*
- Light at Night – Cancer Risks of Shift Work - *David Blask*

Session 2b – Healthy People - Applications

- Shift Work and Jet-Lag Adaptation
- Studies of Dynamic Changes in Light and Spectral Mixtures on the Human Circadian Timing System - *Howard Cooper and Claude Gronfier*
- Implications of Lighting for Health vs. Well-Being - *Jennifer Veitch*
- Dynamic Lighting - Both in Level and Colour - *Wout van Bommel*

Poster Session

Friday, September 8, 2006:

Session 3 – Medical and Clinical Light Therapy

[Lighting conditions may reduce suffering, and even reduce the illness itself. This session will explore the various pathologies that may respond to light and examine ways to treat patients through a well adapted luminous environment, or by supplying carefully prescribed light exposures.]

Session 3a - Fundamentals – Medical/Clinical Light Therapy

- The Potential for Treating Sleep Disorders - *Debra Skene*
- Alzheimer Patient Care – *Mariana Figueiro*
- Seasonal Mood Disorders
- Light and Developmental Disorders

Session 3b – Applications Medical/Clinical

- Studying Comotose Patients with Light
- Applied Lighting for the Elderly – *Eunice Noel*
- Lighting in Nursing Homes – *Naomi Miller*
- Flicker Sensitivity, a New Understanding
- New Implications of Luminaires - *Peter Dehoff*
- Discussion and Relevant Posters

Session 4 – Applications in Lighting – General Discussion

- Implications for International Collaboration: Road Maps for Divisions 3 and 6
- Implications for Lighting at Night – *Terry McGowan*
- Implications for Lighting in the Day
- Panel Discussion on Implications for Division 3 *Chair: Marc Fontoynont with Division 3 participants*
- Panel Discussion on Implications for Division 6 – What Research is Needed to Answer Practical Questions of Photobiology? – *Chair: Ann Webb*

We especially invite the international community of lighting practitioners and designers to attend and to lend their knowledge to the discussions. Prior registration is required. The registration fee will be CAN$ 360,-.

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Posters may be submitted on the following topics:

- Effects of light exposure on physiological or psychological processes, including light exposure at night, shift work and jet lag adjustments, daytime light exposures
- Use of light exposure for treatment of medical disease or disorders, including sleep disorders, dementias, seasonal mood disorders
- Implications of light and health research for lighting recommendations and lighting practice, including ethical and educational implications

Authors are invited to submit two-page extended abstracts of their proposed contributions in English no later than *15 May 2006* (please note the extended deadline) to CIE Central Bureau (Kegelgasse 27, A-1030 Vienna, Austria, e-mail: ciecb@ping.at), per mail or e-mail.

Meetings of CIE Divisions 3 and 6 will take place on 9 September 2006, in conjunction with this symposium.

Registration forms will soon be available on the symposium website http://www.irc.nrc-cnrc.gc.ca/ie/lighting/health/cie_e.html.

For information on registration, please contact:

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New TCs

TC 4-45 Performance assessment method for vehicle headlamps

The new *Terms of Reference* of this TC are: To produce a technical report with the objective of subsequently developing a standard that defines an objective procedure for the evaluation of forwardlighting system performance in terms of active safety. The work carried out by the former GTB EuroNCAP taskforce constitutes the basis for this development.

TC 8-09 Archival colour imaging
Chair: Robert Buckley, USA

Terms of Reference: To recommend a set of techniques for the accurate capture, encoding and long-term preservation of colour descriptions of digital images that are either born digital or the result of digitizing 2D static physical objects including documents, maps, photographic materials and paintings.

Activity Report Division 8 Image Technology

Terms of Reference : To study procedures and prepare guides and standards for the optical, visual and metrological aspects of the communication, processing, and reproduction of images, using all types of analogue and digital imaging devices, storage media and imaging media.

Division Director	Todd Newman
Secretary	David McDowell
Editor	Dr. Mike Pointer

TC 8-02 Colour difference evaluation in images
Chair: M. Ronnier Luo (UK)

Terms of Reference: To study, develop and standardise methods to derive colour differences for images.

The TC technical report V8 was distributed to TC members. It includes the following sections:

1. Introduction
2. Factors affecting the evaluation of colour differences for digital images
3. Reference colour digital images
4. Statistical processing of colour differences in images
5. Instrumental colour difference method
6. Existing experimental data
7. TC8-02 studies and recommendations

Section 7 is a new one which summarises the TC work. More recently, David McDowell rewrote the Section 3 to update the recent developments.

There are some decisions to be made regarding to the TC recommendation:

1. which colour difference formula should be recommended? Although CIEDE 2000 performed slightly better than CIELAB, the difference is small. This decision could be left to for CIE Div 1.
2. Is there a need to include an example of an option filter?

TC8-03 Gamut Mapping
Chair: Jan Morovic (Spain)

Terms of Reference: To study, develop and recommend an optimal solution for cross-device and cross-media image reproduction. This solution will provide a standard procedure to calculate the colour gamut of an image, an imaging system, or its components, and either one algorithm, or a set of algorithms and rules for use in specific applications.

The TC has completed its technical report on the Guidelines for the Evaluation of Gamut Mapping Algorithms early last year and has since been encouraging

Continued on Page 14

Dynamic lighting

Jolanda Tielens-Aarts

People's lives are characterised by continual change, as are the indoor and outdoor spaces in which they unfold. With the dynamic of change having such a stimulating, beneficial effect on our sense of well-being, why is lighting so often static and constant? Lighting has vast potential to make our lives more comfortable, enjoyable and productive, by reintroducing the natural rhythm of light into our living and working spaces.

Daylight - the form of light with which we are most comfortable - is never constant. It changes throughout the day and over the seasons, influencing our emotions, moods, perception and performance. Obviously, we can't control daylight. However, and this is important in our contemporary society, where so much of what we do takes place indoors, we can control artificial light, and we are learning to do so more and more effectively. As the examples on the following pages show, adding a dynamic component to our artificial lighting can help to enhance our sense of well-being, create ambience and offer better, more immersive experiences.

Emotional trigger

In the competitive world of retailing, effective lighting is crucial, helping retailers to present their merchandise in the most inviting way imaginable. A bright, dynamic in-store ambience draws consumers in, inspires them, and induces them to buy.
The combination of bright light and dynamic lighting effects opens up a wealth of opportunities for inspiring product presentations.

Our eyes are drawn towards the areas in our field of vision with the highest brightness. And this 'attraction' can be intensified by changing the light of these bright areas. The larger and more abrupt the changes, the more our attention is drawn; the smaller the change, the more subtle its effect on our subconscious. Using advanced lighting controls, retailers can exploit this fact to the benefit of their bottom line. For example, in one and the same retail space a sparkling, fresh white light with warm, sunny accents can be used to sell bathing costumes in spring, while a lower level of ambient light with extra-warm accents can create an intimate ambience for the sale of lingerie during autumn.

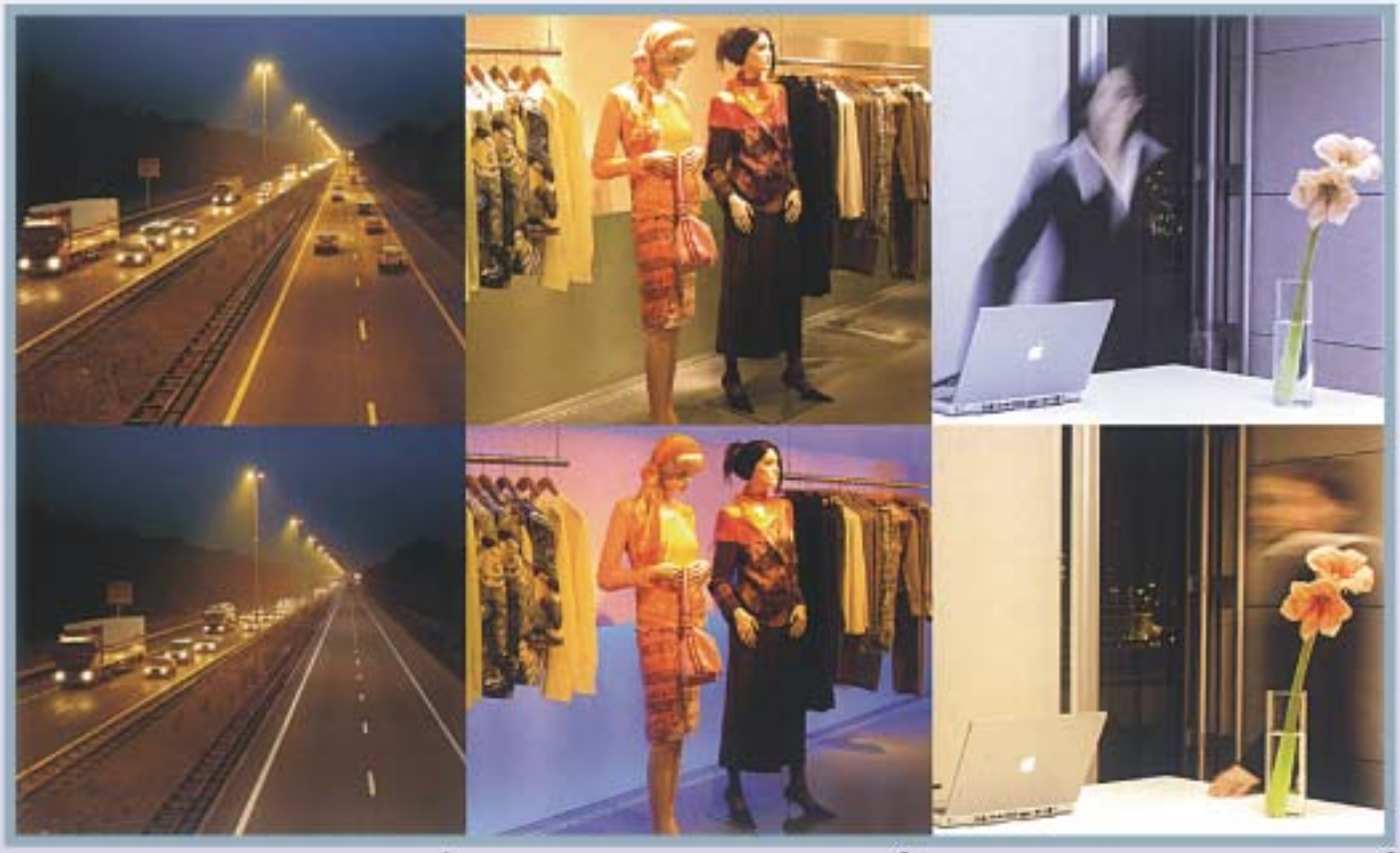
Image-builder

Dynamic lighting of landmarks can add a dramatic extra dimension to the city nightscape. The Eiffel Tower in Paris is a good example. Since the year 2000 it has been illuminated by an attractive sparkling effect that comes on every ten minutes. Dynamic lighting also means that it can be lit for a specific theme, e.g. as was the case

1. A Telemanagement system switches these luminaires to a different mode three times every evening and night: when it is busy the lamps burn at 80%, when it is less busy at 60%, and during the night at 40%.

2. How to present the new summer fashions in the most effective way possible

3. Inspired by the constant variation of daylight, dynamic lighting with its changes in brightness and colour temperature creates a pleasing, natural lighting rhythm that stimulates and inspires office users.



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in January 2004 when the entire tower was illuminated in red to mark the establishment of formal ties between France and China.

Increasing safety and reducing costs
Most public lighting cannot be controlled beyond a simple on/off. However, the installation of a dynamic control system can offer significant benefits in terms of increased road safety and reduced energy consumption.

Many roads are only busy during the rush hour, which is a relatively short part of the day.

With a dynamic control system, a high level of light can be applied when the roads are busy or in bad weather, whereas a lower level of light will suffice when visibility is normal and during the bulk of the day when traffic volumes are low. The resulting energy savings would quickly recoup the initial cost of investment.

Enhancing our sense of well-being
Lighting has a significant influence on our performance and well-being at work. On a functional level, it has an effect on our visual task performance. And on a personal level, it affects our general sense of well-being. Both affect productivity.

Most people work indoors, in workspaces with static lighting, which tends to be perceived as passive and dull.
By bringing the familiar, natural dynamics of daylight - with its changes in brightness and colour temperature over time - into indoor workspaces we can create dynamic lighting that stimulates and inspires those working there. Utilising the potential of dynamic lighting enables the creation of personal light and 'dynamic ambience' in the workplace.

Personal light lets individuals control the lighting according to their personal preference. Dynamic ambience controls the ambient lighting in an entire room, animating the workspace by changing

Here we see - in the same room - four different activities, each with its own dedicated lighting ambience.

1. Technical and professional: a high level of cool light, with minimal shadow effect
2. Active and dynamic: a high level of light, with a neutral colour temperature
3. Cosy and intimate: high-contrast warm light, with a lot of shadow effect
4. Romantic and sensual: extra-warm light, with bright, eye-catching accents

the lighting level and colour temperature of the light according to a chosen rhythm. The lighting ambience can also be altered to create a different 'feel' in the room, or to revive flagging spirits as energy levels drop.

In this way, dynamic lighting gives those working indoors greater freedom and control in how they light up their day, creating an inspiring environment that enables everyone to function to the best of their ability.

Creating the right ambience

With urban populations growing and real estate at a premium, we are - by necessity - seeing a trend towards multifunctional spaces. A company restaurant, for example, can be used as a staff canteen at one point in the day, as a display space at another time, and as a venue for plenary meetings at yet another time. Each situation calls for its own specific ambience, which means that the lighting has to be flexible. That, in turn, calls for effective lighting controls.

Increasingly, such controls allow us to change the very character of the light in order to create the ideal atmosphere for what we are doing, e.g. by varying the colour temperature or mixing light colours to mimic the dynamic aspects of daylight.

In the years to come our growing ability to change and control light creatively will enable us to offer people better and more inspiring lighting experiences. Whatever the application, though, the lighting solution cannot be seen in isolation: to achieve the optimum result it must always be considered in context, as an integral part of the interplay of architecture, objects, materials and colours. ■

(Reprinted with permission from the International Lighting Review)

Continued from Page 10

participation in the coordinated research on its basis. While there has been important work done in this way (most importantly the effort coordinated by the JBMIA in Japan) the TC is still encouraging further participation to arrive at a solid data set on gamut mapping algorithm performance. In parallel with this effort, there has been an internal discussion within the TC about its terms of reference and two alternatives are being considered. The first one is to facilitate the coordinated research and to combine the data from individual experiment and the second is to do that and also to make a recommendation of a number of baseline algorithms (i.e. algorithms that would be a reasonable default but that would likely be inferior to proprietary solutions) and instructions about when to use them.

TC8-05: Communication of Colour Information
Chair: Robert Buckley (US)

Terms of Reference: To standardise a minimal set of techniques that enable unambiguous and efficient communication of the colour information in images. Two fundamental approaches will be addressed:

1. The association with the image data of additional data that describes the colour space of the image data.
2. The representation of the image data in a standard colour space.

The standard will also define a minimal set of standard colour spaces that addresses a wide range of imaging applications. Whenever possible, existing standard colour spaces will be used in preference to creating new ones.

Status: The TC 8-05 Technical Report has been published as CIE 168:2005 “Criteria for the evaluation of extended-gamut colour encodings.” The TC has now disbanded.

CIE 168:2005 - Outline

Criteria for the evaluation of extended-gamut colour encodings

1. Introduction
2. Colour Gamut Metrics
3. Quantization Metrics
4. Hue constancy when applying non-linear tone scale modifications to RGB colour values
5. Complexity of transform to/from important colour spaces
6. Additional Proposed Criteria
7. References

Appendices

A. Calculation of Optimal Surface Colour Gamut
B. Plots of Colour Encoding vs. Real World Surface Colour Gamut
C. Plots of Colour Encoding vs. Optimal Surface Colour Gamut
D. Plots of Colour Encoding vs. Legal Colour Gamut (Spectrum-Locus)
E. Plots of Colour Encoding vs. CRT Colour Gamut
F. Plots of Colour Encoding vs. Photographic Print Colour Gamut

TC8-08: Spatial Appearance Models for High Dynamic Range Images
Chair: Garrett Johnson, USA)

Terms of Reference: To study high-dynamic range imaging and to provide methods and examples for evaluating spatial appearance models for such images.

The priorities are to provide the community with techniques for testing and improving existing algorithms, as well as providing a repository for hosting HDR images and tone-mapped versions (as well as experimental results) of said images.

The following priorities have been undertaken:

- Defining a vocabulary
- What do we mean by HDR?
- 16-bit linear light?
- Using Weber function to define "perceptible" contrast ratio?
- Which tone curves/csf to use for this definition

- Methods for testing HDR scenes
  - Preference scaling: Techniques for scaling preference without an original
  - Accuracy scaling: Comparing tone-mapping algorithms against an "original" scene
  - Accuracy scaling: Using and HDR display as the original...is it the same or equivalent to real scene
  - Visibility/Perceptibility scaling: Techniques for measuring scientific usefulness of HDR rendering

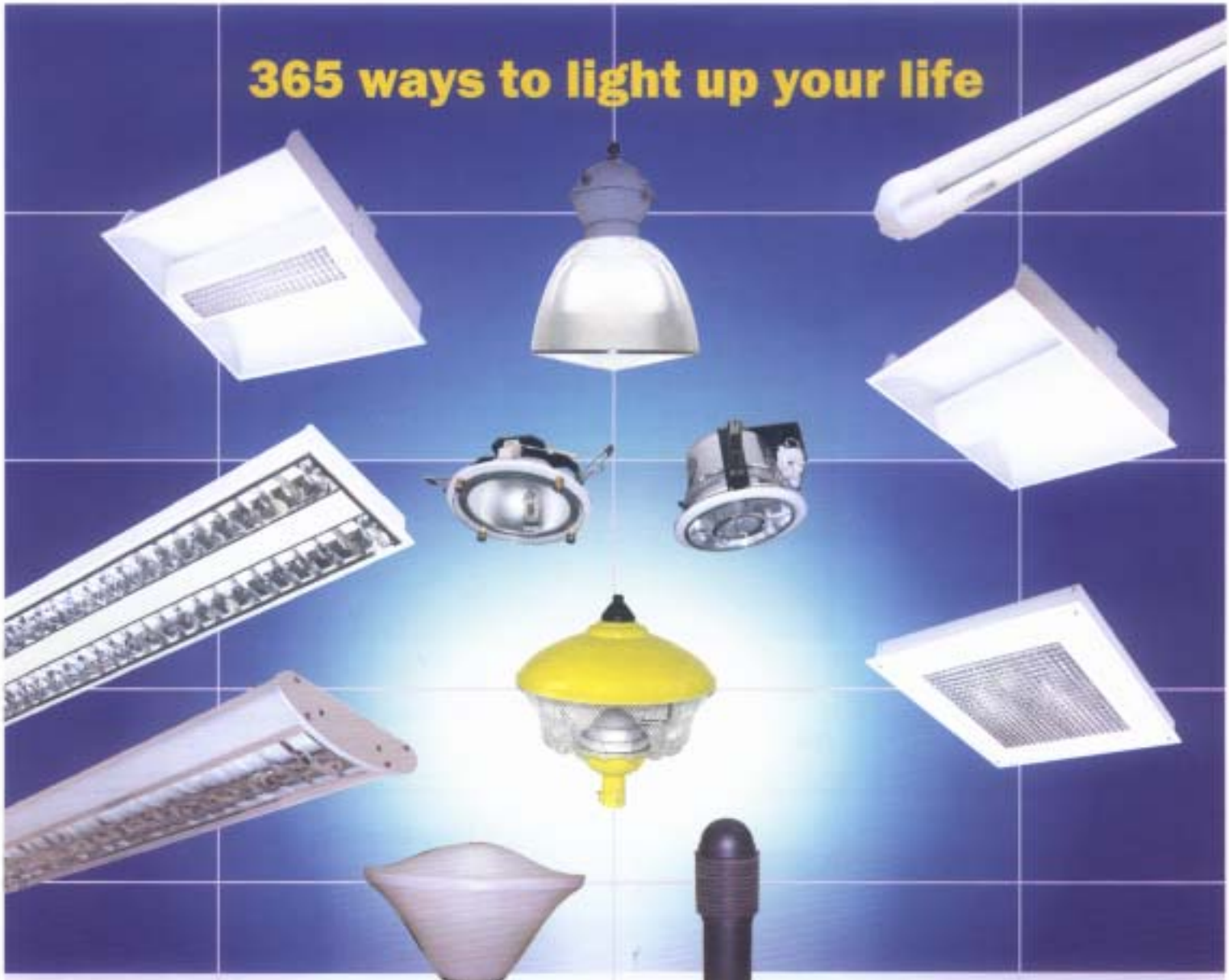
- Defining a "standard" scene for testing algorithm performance
  - Built out of common items
  - Blueprint for construction of identical scene in a variety of locations
  - Providing measurement (3D geometry, BRDF, spectral, luminance, colorimetric, and appearance scaling data)
  - Providing HDR images of stand
  - Providing a repository for unprocessed HDR scenes

- Providing experimental tone mapped images and results for future comparisons
- Providing guidelines for testing new algorithms against existing results

R-8-05: CIE Image Appearance
Reporter:Mark Fairchild

Terms of Reference: To investigate and report on research extending colour appearance models to include

365 ways to light up your life



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The success of TRILUX is based upon solid foundations: quality has always been a major priority, as has fairness to our business partners, commercial reliability as well as technical accuracy and farsightedness as a result of a manufacturing competence matured over decades of experience. This is what determines the strategic orientation of the TRILUX group.

Optimising illumination for the people is undisputedly the centre of our entrepreneurial thinking as we consider the refinement of lighting provided by modern light sources in order to improve both living and working conditions as well as to influence people's health, well-being and mood in a positive way - this, as one of the most important missions innovative lighting systems have to accomplish, is our task. Our research and development activities are committed to the deployment and realisation of progressive lighting concepts supported by a variety of new approaches and attitudes.

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properties of spatial vision for static images and scenes, with a particular focus on:

1. Spatial fitering for image difference metrics
2. spatial adaptation for image rendering
3. Potential interactions between or connections of (1) and (2).

Since 2003 when this reportership was established there continues to be incremental research in this area both in the open scientific literature and through activities of various CIE technical committees. It remains safe to say that there is no fully-defined image appearance model that has been published to date and that seems to be a logical prerequisite to forming a TC to explore possible CIE recommendations in the area. The iCAM framework that was one motivating factor for the formation of this reportership remains a topic of active research by its original authors and others. It shows promise, but still remains very immature relative to a formal CIE recommendation like CIECAM02. This process of gradual evolution and refinement will likely carry on for many years. Regarding items 1 and 2 in the terms of reference, CIE activities in TCs 1-60, Contrast Sensitivity Function for Detection and Discrimination, and 8-02, Colour Difference Evaluation in Images, 8-08, Testing of Spatial Colour Appearance Models, are providing some advancements in this area. These committees seem to be adequate at this time. Formation of a new TC specifically on image appearance should wait for further research and the availability of comparable visual data and model structures from multiple research groups.

R8-06: Results of CIECAM02
Reporter: Nathan Moroney

The main items of interest relating to CIECAM02 since the last meeting of CIE Division 8 are as follows:

1. The technical committee 8-01 should be formally closed. This will be proposed and voted on during this division meeting.
2. Michael Brill has provided a pre-publication manuscript of his analysis of the two RGB spaces, CAT02 and HPE, that are used in CIECAM02. He notes that for a highly chromatic, say saturated blue, illuminant the model breaks due to mis-matches in the domain and range of the two RGB spaces. He proposes a revision to CAT02 to resolve this problem and provides visualizations schemes for assessing models with more than one RGB space.
3. Li et al, Tastl et al and Shaw et al have published results on the computational limits of the CIECAM02 model. Li et al published their analysis in a recent issue of Color Research and Application and through mathematical analysis of the model identify problematic regions in the chromaticity space. Tastl et al and Shaw et al consider the input range of the ICC CIELAB PCS and use a grid of input values to identify problematic regions of the CIELAB space. Both papers were presented at the 13th IS&T/SID Color Imaging Conferences and can be further reviewed in the conference proceedings. Both papers consider solutions to computational limits in CIECAM02 by exploring various forms of pre-clipping of the date. A subset of spaces and pre-clipping techniques has been considered but this has not been exhaustively explored and compared to other approaches, such as minor modifications to the model to allow extrapolation of negative perceptual attribute correlates.
4. The CIECAM02 model has been announced as one component in the newly announced Windows Vista Windows Color System. Michael Bourgoin of Microsoft presented an overview of the WCS at the 13th IS&T/SID Color Imaging Conference and discussed, among other things, how CIECAM02 will be used in this system. http://www.microsoft.com/whdc/device/display/color/WCS.mspx
5. The open source C CIECAM02 implementation of Billy Biggs has been revised by Moroney. Version 0.4 has been released on Bigg's web site for immediate download and testing by Moroney has brought the code into agreement with CIE publication 159. http://scanline.ca/ciecam02/

Given the above items of interest the following are specific recommendations of this reporter.

1. That TC8-01 be formally dissolved. With publication of CIE technical report 159 the committee has accomplished it's goal of providing a single revision to the CIECAM97s model.
2. That a reportership be established to study item 2 above. While many applications of CIECAM02 will not require prediction of perceptual attribute correlates for highly saturated viewing illuminants, this issue may be a relatively low effort area in which a preliminary exploration of Brill's analysis and proposal will yield specific, short-term recommendations for these cases. At a minimum the range for which this problem occurs should be better explored and documented. This should be a separate reportership than R8-06.
3. That reportership R8-06 continue to provide timely status reports on CIECAM02 to CIE division 8.

The following TCs have completed their work and are closed

TC8-01, Colour Appearance Modeling for Colour Management Applications, Nathan Moroney

TC8-04, Adaptation Under Mixed Illumination Conditions, Naoya Katoh

TC8-05, Communication of Colour Information, Robert Buckley

TC8-06, Vocabulary, Janos Shanda

The following CIE reports have been published since the last Division 8 meeting

- **CIE 159:2004**, A Colour Appearance Model for Colour Management Systems: CIECAM02. (TC8-01)
- **CIE 162:2004**, Chromatic Adaptation Under Mixed Illumination Condition When Comparing Softcopy and Hardcopy Images (TC8-04)
- **CIE 168:2005**, Criteria for the evaluation of extended-gamut colour encodings (TC8-05)
- The work of TC8-06, Vocabulary, has become part of the revision of CIE Publication 17, International Lighting Vocabulary.

CIE PUBLICATIONS

UV PROTECTION AND CLOTHING
CIE 172:2006

Clothing can provide substantial protection against solar ultraviolet radiation (UVR) and quantifying the amount of protection can have useful applications to recreational, occupational and medical situations.

Various test methods for measurement of UVR transmittance through fabrics are discussed. The measured transmittances can be used to calculate the erythemally weighted UVR transmitted by the fabric and thus the amount of protection provided. Factors affecting the UVR transmission of fabrics are also detailed.

Currently existing standard documents are discussed, and then the document outlines a recommended test method for the determination of the UVR transmitted by fabrics and details a rating scheme using Ultraviolet Protection Factors (UPFs) to quantify the protection. Areas where research and standardisation efforts are still needed are discussed.

The report is written in English, with a short summary in French and German. It consists of 52 pages with 8 figures and 10 tables, and is readily available via the website of the Central Bureau of the CIE (www.cie.co.at).

The price of this publication is EUR 56,-- (Members of the CIE National Committees get 50% discount).

FORTHCOMING EVENTS

National Lighting Congress and Interlight Istanbul Fair
August, 24-27, 2006 Istanbul

The 6th National Lighting Congress which is organised biennially will be held on 24-25 August 2006 at CNR Fair Centre and Interlight 2006 Istanbul International Fair will be organised in conjunction with the Congress.

Topics

The congress will include papers on following general topics and is open to the papers in Turkish or English:

- Vision and Colour,
- Physical Measurement of Light and Radiation,
- Interior Environment and Lighting Design,
- Lighting and Signalling for Transport,
- Exterior and other Lighting Applications,
- Photobiology and Photochemistry,
- Image Technology,
- General Aspects of Lighting (Terminology, Education, Economics of Lighting, Development of Light Sources, Luminaires etc.).

The Interlight 2006 Istanbul International Lighting Installation and Building Automation Fair supported by Turkish National Committee on Illumination (ATMK) and Lighting Fixture Manufacturers Association (AGID) will take place at CNR Fair Centre along with the congress and the following weekend. Companies wishing to participate should fill in the registration form and send it to the Congress Secretariat.

Registration

The registration fee for all participants covers the proceedings, refreshments and the opening cocktail.

Until 14th July 2006 50. -Euro
After 14th July 2006 75. - Euro

for further information contact

Congress Secretariat
Assist. Prof. Dr. Önder Güler
Istanbul Technical University, Energy Institute
34469 Maslak, Istanbul, TURKEY
Tel: + 90 212 285 38 70
Fax: + 90 212 285 60 51
E-mail: onder.guler@itu.edu.tr
http://www.atmk.org.tr

Urban Nightscape 2006

September 21-23, 2006, Athens, Greece

This conference is organised by the Hellenic Illumination Committee (National Committee of CIE), and will be held in conjunction with the annual meetings of CIE Divisions 4 and 5.

The conference will focus on the environmental, technical and cultural aspects of artificial light in the urban context, providing a significant contribution to the enhancement of nightlife quality and of night-time city identity.

The following topics will be covered:

- Master planning for city lighting
- Obtrusive light
- Cultural applications of city lighting
- Light and colour perception in public spaces at night.

The conference will be held in English and Greek. Simultaneous translation will be provided. Deadline for Attendees can register electronically at:

http://www.urbannightscape.com/applicationform.htm

Registration fee: EUR 250 (before 15 June), EUR 400 (after 15 June)

For further information, check the website of the conference: www.urbannightscape.com

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Interlight 2006

December 6-9, 2006, Moscow

The 12th International Trade Fair for Lighting, Light Technology and Intelligent Building Technology is being held in Moscow between December 6th to 9th, 2006.

Import business has really taken off with the demand for energy saving lighting and innovative lighting solutions for internal and external applications. With its 150 million consumers the Russian market offers a virtually inexhaustible potential for both foreign lighting producers as well and for providers of lighting systems and intelligent building technology.

For information please contact:

OWP Ost-West-Partner GmbH
P.O.Box 2127 92611 Weiden
phone: (+49) 0961 38977-0
fax: (+49) 0961 32035
e-mail: info@owp-tradefairs.com
internet: www.interlight-moscow.com

TECHNICAL PAPER

Solid State Lighting……..is more than just a new light generating technology

PW van Strijp

The lighting industry worldwide is experiencing a wave of excitement caused by the emergence of solid state lighting or LEDs, as the latest light generating technology.

Although there are still some sceptical industry insiders, most of us share the notion, that solid state lighting (SSL) will have a revolutionary impact on the lighting industry. SSL offers many attractive performance features in combination, exactly what the lighting industry has been looking for. They are: Energy efficiency, lifetime, size, robustness, saturated colours, easy controllable low voltage operation and design freedom.

These benefits are relevant to all parts of the globe...each for it's own reason, like to countries where power supply is restricted this technology could provide lighting in rural areas.

SSL, with its technology basis in the semiconductor industry, offers through these features "never before possibilities". The semiconductor industry has already revolutionised many areas of modern society and thus the life of all of us through consumer electronics like video, computers, communication, as well as many professional applications. This time it's lighting.

The lighting industry is, although solidly placed in its current technology, driven by the application of light and the physical and mental benefit it brings to the consumers as well as further economical benefits it brings to professional customers. Technology plays an enabling role.

SSL enabling new lighting solutions

Ever since the incandescent lamp was invented the lighting industry has laboured to develop new lamps that were superior in performance on specific aspects and each of these new lamps established it's own place …only partly replacing the existing lamps and for the major part enabling new opportunities and thus enlarging the lighting market.

SSL is no different, it allows us to create dynamic lighting situations covering the full colour gamut in the same installation without colour filters, to install lighting without taking light source replacement into account and to just use light in decorative and safety applications like path markers in outdoor applications, just to name a few.

The Automotive industry , like the traffic signalling application are frontrunners in the adoption of LEDs, utilising the new qualities of the technology.

Although there is an economic reality affecting the adoption rate of SSL in the market place, the major part in the coming decade will be based upon these new never before opportunities.

.....shifting industry paradigms

These new opportunities are creating paradigm shifts. Where lighting was till now for a large part an economically driven lamp replacement business, based upon an installed lamp socket base that was in turn installed or updated upon static lighting situations, we expect that lighting will get a consciously strong emphasis on effects and emotional aspects of the lighting, while the economical and rational performance aspect will be increasingly regarded as a given and no longer as the differentiator.

The industry challenge is to capture these new possibilities .....to create the enablers for real differentiating lighting effects, in other words truly the designers delight .....to arrange for new lighting installations truly embedded in their physical environment and .....to enable the user to change it to his needs in a continuous, intuitive way.

.....thus changing the industry

A new technology invites new competition, so also in SSL where new players are entering the market. On the application side however market needs are not replaced but only expanding, so we have to continue to fulfill such requirements, which requires in depth application knowledge. New players are generally not very familiar with such requirements. This is where the existing experts have to play their role. A double role: fulfilling today's market needs and to develop the lighting solutions of tomorrow fully exploiting the SSL technology capabilities....re-inventing lighting

Thank you ISLE for taking the lead!

It's very encouraging to hear that the Indian Society of Lighting Engineers has placed SSL as one of the key topics on the agenda of the 2005 conference and is preparing itself to take the lead!

As a representative of one of the industry leaders I know the importance and impact of such initiatives. Thank you on behalf of the industry....and all it's customers and end users

PW van Strijp
Executive Vice President
CEO BU Solid State Lighting
Philips Lighting

OTHER NEWS

Seminar and Demonstration at Jadavpur University

February 6, 2006, Kolkata

The School of Illumination Engineering and Design at Jadavpur University (SISED-JU) organized a seminar and demonstration programme on New Generation Light Sources and Applications under the Academic Excellence activities of the Technical Education Quality Improvement Programme (TEQUIP) of Jadavpur University.

About 200 people with an interest in lighting gathered at the Aban Auditorium on the afternoon of February 6 for this programme.

L to R Messrs. Ajoy Ghosh, Sikha Sorcar, Manick Sorcar, R.S. Mandal, S.K. Sanyal, K. Goswami and Saswati Mazumdar

Prof. K. Goswami delivered the welcome address and requested the Pro-Vice-Chancellor, Prof. S.K. Sanyal to Preside over the programme. The Dean of the Engineering Faculty, Prof. M.K. Mitra discussed in some detail the utility of Illumination Engineering studies at the undergraduate and postgraduate levels and the need for extensive research in this field.

Prof. Sanyal emphasized the necessity of holding such programmes and requested Dr. S. Mazumdar to introduce the speakers. Following the introduction of the speakers, UGC Visiting Professor P.K. Bandyopadhyay was requested to hand over mementoes to the distinguished speakers. To conclude the inaugural ceremony, Dr. B. Roy proposed a vote of thanks.

The first speaker, Mr. R.S. Mandal, Senior General Manager at Osram India described incoherent modern sources of light in his lecture on Innovation and Contemporary Applications in General Lighting. He described new light sources like the new T5 fluorescent lamps, the new CFLs, metal halides, sodium vapour and white LEDs. He displayed a large variey of these sources

and demonstrated the new remote control techniques with his lighting kit.

The second speaker, Prof. Ajoy Ghosh from the Department of applied Optics and Photonics at Kolkata University illustrated the only coherent source, Laser in his lecture Laser: Light Fantastic. Elaborating his discussion with figures, he explained the applications which included a highly appreciated laser show.

The last speaker was the internationally known lighting engineer, Mr. Manick Sorcar, CEO and President of Sorcar Engineering in the USA. He explained the cutting edge technology of Laser and laser generating machines that are being used for laser shows. He described the versatile use of Lasers ranging from sensitive eye surgery to drilling through the thickest sheet of steel. He explained that somewhere between in between the two extremes lies a fantasy land where its use can take us beyond all imagination. After that he took the audience to a magnificent world created by green laser giving a brief depiction of Indian history. Finally he concluded by dedicating this programme to the Golden Jubilee of Jadavpur University.

WEBWATCH

First Solid-State Lighting Competition Launched

Solid-state lighting (SSL) will be featured in a U.S.-based competition for the first time.

Lighting for Tomorrow, an organization dedicated to stimulating the market for high-efficiency residential lighting fixtures, is sponsoring the competition.

Niche lighting applications are the focus of the SSL competition. Prototype entries are being sought in three categories:

1) Kitchen under-cabinet lighting
2) Portable desk/task lighting, and
3) Outdoor porch, pathway and step lighting.

Full guidelines and rules for the 2006 SSL competition are available at the Lighting for Tomorrow website.

A separate 2006 Lighting for Tomorrow competition for compact fluorescent (CFL-based) fixtures is being held concurrently.

Lighting for Tomorrow was launched in 2002, with a focus on CFL-based residential lighting fixtures that use two-thirds less electricity than standard incandescent fixtures.

"The 2006 competition is an opportunity to evaluate innovative new fixture designs employing LEDs, while providing valuable feedback to SSL manufacturers and facilitating new connections within the lighting industry," says Terry McGowan, director of Technology and Engineering for the ALA.

Link

http://www.lightingfortomorrow.com/

Under Construction: Model Lighting Ordinance Guidelines for Cities

Cities and municipalities that want to provide a regulatory strategy for outdoor lighting will get some help soon from two leading organizations: The International Dark Sky Association (IDA) and the Illuminating Engineering Society of North America (IESNA).

The two groups have agreed to develop a model lighting ordinance (MLO) and companion design guidelines this year.

The model ordinance would require lighting appropriate to communities, the environment and the natural habitat.

IDA will take the lead in developing the model ordinance. Design guidelines will be developed under the lead of the IESNA, to provide technical background on the provisions of the model lighting ordinance for design professionals. The guidelines will help professionals determine how to give appropriate design guidance about the model lighting ordinance.

The MLO is still under development by a joint task force for both organizations. While the final ordinance will not be available for another few months, the following information indicates the initial intent of the ordinance.

Most cities are already familiar with classifying different areas into zoning districts for other regulatory purposes, and the model lighting ordinance will recommend Lighting Zones (LZs) that correspond to those districts. The districts are usually based on population and/or use type. Each LZ will provide a recommended "upper limit" on amount of light.

A community could choose to assign a different LZ to an area—preferably lower—to align with its different districts.

Examples of LZs are:

LZ0 - Astronomical observatories and open spaces with wildlife

LZ3 - Commercial districts not in proximity to residential areas.

Two methods of demonstrating compliance with the MLO are offered:

- A prescriptive method provides the allowed lumens per square foot and minimum requirements for each LZ.
- A performance method limits the lumens emitted by an optical system, and is based on a new IESNA luminaire classification system. The system will allow manufacturers to describe their products in terms of the quantity of light emitted at various angles, using a rating system easily understood by those specifying and evaluating the suitability of a particular optical system.

While the prescriptive method is envisioned to be applicable for most LZs, the performance method will be required for certain special applications, for LZ4 use types (the highest LZ designation), and when the allowance for a site exceeds the limits of the designated LZ.

The MLO will address how, when and where to impose curfews. It will not include limits on any aspect of public lighting, which is defined as lighting installed for public benefit, such as within the public right-of-way, street and roadway lighting. Communities are, however, encouraged to evaluate and improve their public lighting systems based on the MLO.

IDA and IESNA expect to have the draft MLO completed by mid-2006. The Design Guidelines will be developed as a companion to the MLO, and will be issued shortly after the completion of the ordinance.

Links :

http://www.darksky.org/
http://www.darksky.org/ordsregs/mlc/
http://www.iesna.org/

NLPIP Diagnoses Lighting Problems : Lighting Diagnostics

Lighting systems are becoming more complicated and harder to specify, install, and commission properly. To help facility managers, lighting specifiers, and building owners, the National Lighting Product Information Program (NLPIP) is now publishing Lighting Diagnostics reports. Lighting Diagnostics documents actual cases in which NLPIP researchers have helped to diagnose and solve lighting problems in commercial buildings.

http://www.lrc.rpi.edu/resources/news/enews/Apr06/general327.html

Scientists Develop Simple Alternative for Harvesting Daylight and Saving Energy - The DaySwitch™

Scientists at the Lighting Research Center have developed a simple, cost-effective, energy-saving device designed to harvest daylight automatically. The DaySwitch™ was designed as an alternative to traditional dimming ballast systems that adjust light levels by reducing the lamp current.

http://www.lrc.rpi.edu/resources/news/enews/Apr06/general331.html

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Considering LEDs, But Have Questions? DOE to the Rescue

If you're thinking of using LEDs, but don't know where to begin, the U.S. Department of Energy (DOE) has created a "frequently asked questions" guide to assist you.

For more information, visit the DOE's website.

http://www.netl.doe.gov/ssl/faqs.htm

Multi-Year Solid-State Lighting Plan Released

Want to know how the U.S. sees the development of solid-state lighting evolving in the years to come?

Check out the recently released "Solid-State Lighting Research and Development Portfolio: Multi-Year Program Plan," which has been posted on the U.S. Department of Energy's Solid-State Lighting (DOE SSL) website.

Among the topics covered:

- SSL Technology Status
- Current Portfolio and Funding Opportunities
- Technology Research and Development Plan
- Solid-State Lighting Portfolio Management Plan
- Solid-state Lighting Portfolio Evaluation Plan

The report is available as a downloadable PDF file on DOE's SSL home page.

http://www.netl.doe.gov/ssl/PDFs/SSLMultiYearPlan.pdf

Note:

A lot of documentation is available on the DOE SSL Website. Check Archives, Updates and Publications on the website.

Anool Mahidharia

MEMBERSHIP APPLICATIONS APPROVED BY GOVERNING BODY

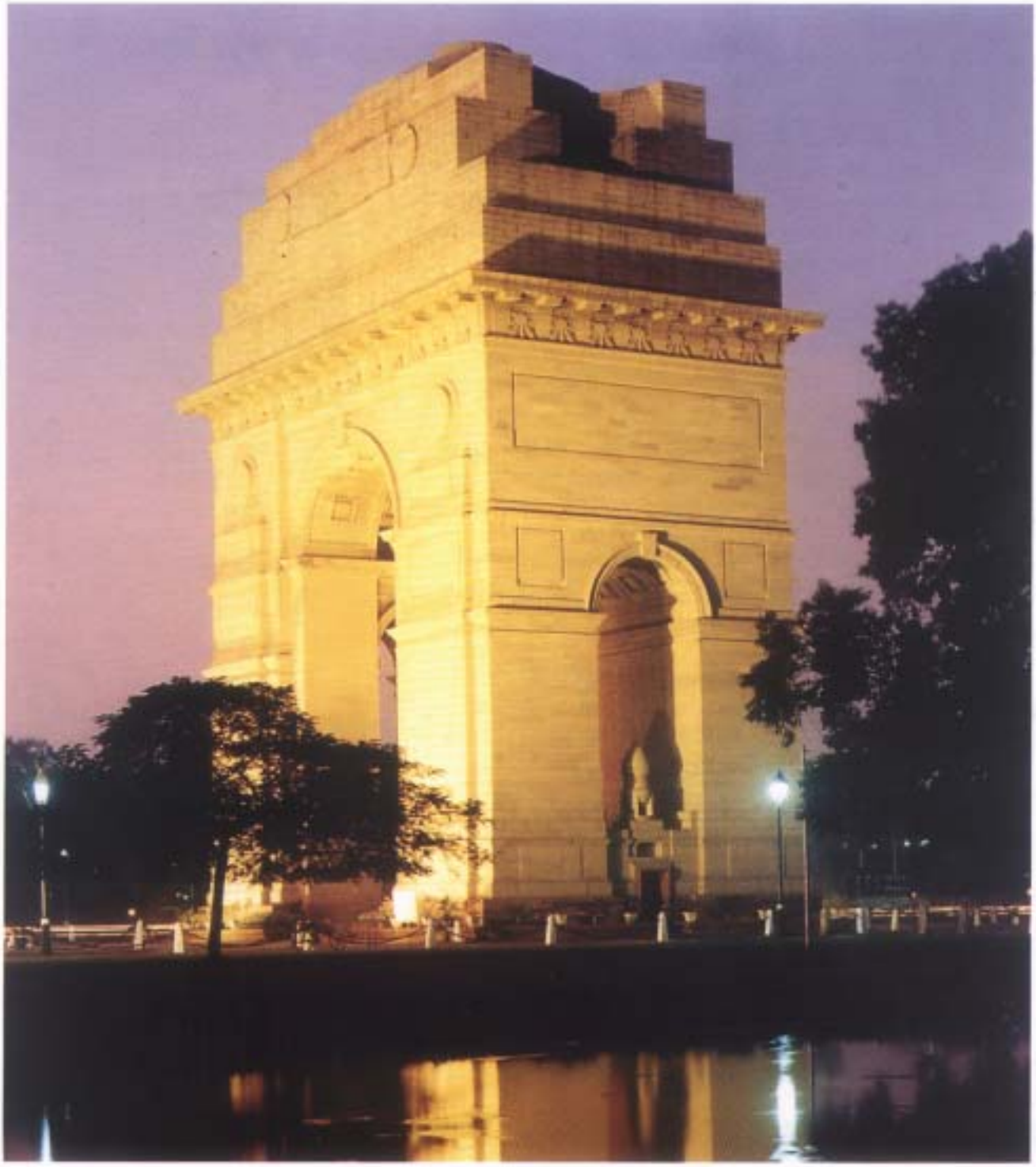
Members admitted on 15th March 2006

M. No	Name & Addresses	Grade	Centre
F(L)-0543	Mr. Om Prakash Piplani Premises Dept, Central Office Reserve Bank of India Sahid Bhagat Singh Marg Fort Mumbai 400 001	Fellow (Life)	Mumbai
F(L)-0544	Mr. B. K. Chandrasekhar JFWTC, EPIP Phase II Whitefield Road Bangalore 560 066	Fellow (Life)	Karnataka
M(L)-1259	Mr. Ulhas Kumar Nandapurkar O/O Suptd Engineer (E) BSNL 6/7 Rajbhavan Road Bangalore 560 001	Member (Life)	Karnataka
M(L)-1261	Mr. Giridharan Johnsi V. Shanmugavel & Associates 63 Ranganathan Street T. Nagar, Chennai, 600 017	Member (Life)	Chennai
M-1262	Mr. Chander Mohan Wason F-26/118, Sector 7, Rohini Delhi 110 085	Member *	Delhi
M- 1263	Mr. Sudesh Gupta 17A, Block E4, LIG Flats Sector 82 Noida 201 305	Member *	Delhi
A(L)-0892	Mr. Saravana Kumar Shanmugan 576 D, Railway West Colony Erode 638002	Associate (Life)	Chennai
A(L)-0893	Ms. Sashikala Kumari Ranasinghe 410/79 Bauddhaloka Mawatha Colombo 07 Sri Lanka	Associate (Life)	Chennai
A(L)-0894	Mr. Sk. Narul Huda M/s Crown Electrical Works 14 Syed Amir Ali Avenue Kolkata 700 017	Associate (Life)	Calcutta
A(L)-0895	Mr. Tekchand Azahar Machwe E 180 Greater Kailash II New Delhi 110 048	Associate (Life)	Delhi
S-0196	Mr. Arush Baluja 15/7-B Subhash Nagar New Delhi 110 027	Student	Delhi

Transfer of grade

M(L)-1260	Mr. H. Raj Choudhury Megatrend Systems 12 Townshend Road Kolkata 700 025	Member (Life) from A(L) 0583	Calcutta
M-1264	Mr. Atul Kumar Rai Pocket B-9, Plot 142-143 Sector 5, Rohini New Delhi 110 085	Member * from A-0847	Delhi

** w.e.f. 01.04.2006*



India Gate with Philips Lighting

Tonight, as dusk gives way to darkness, Philips Lighting brings this national monument to light... Watch the beauty of the Dholepur stones come alive as light rekindles the memories of our true martyrs ...and great deeds.

Lighting solutions that really last

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