



LIGHT

the official

NEWSLETTER

of the **indian society of lighting engineers**

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FROM THE PRESIDENT'S DESK

The term of the present Governing Body is drawing to a close and the process for the election of a new team to lead the Society is underway. It is gratifying to see the high level of interest being taken in our Society with 19 candidates offering to help contribute to the running of ISLE over the next four years. As President I find that these last few months of my term are really full of activity.

In March we had the Lii2011 Exhibition and Conference in Chennai (see report on page 4). This was the first time that Lii has gone to the south and it was a successful and high visibility event.

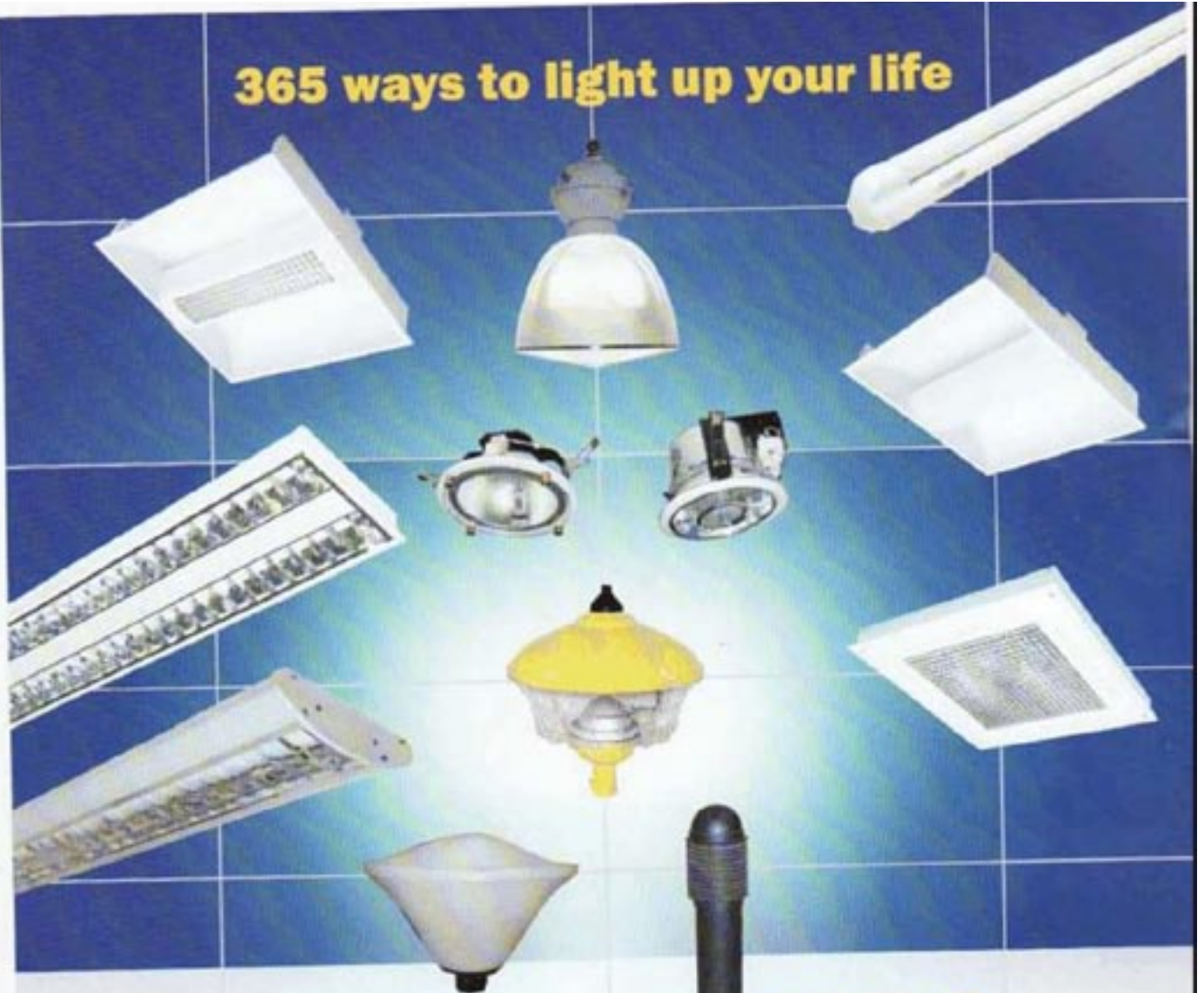
There are also some fruitful collaborations in the offing. The greatest achievement of ISLE has been its members' contributions to the National Lighting Code under the able guidance and coordination of Past President Mr. P.K. Bandyopadhyay. In recognition of ISLE's work the Bureau of Indian Standards is joining ISLE in a series of seminars on the NLC across the country. After the release in Delhi and seminars in Kolkata and Hyderabad, the State Centres in Bangalore and Chennai are organising seminars in June. And then Mumbai State Centre is acting as a knowledge partner in an international energy audit programme taking place presently in Mumbai.

The next CIE Session, the last of the first hundred years of its existence, takes place in South Africa in July. It is a great opportunity to interact with the world's leading technical experts in all areas of lighting. I do hope that some of our members will attend.

To help ISLE in a more professional approach to pursuing its objectives, we have appointed a General Manager in Delhi. Mr. Tapan Chattopadhyay brings with him a variety of management skills from his national and international experience. This will help greatly in ISLE liaison work with the Government as well as with the industry. He can be contacted at tapanisle@yahoo.in

After the big contributions that CFL have made to energy saving in our country the latest introduction that

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has caught the collective imagination of professionals in lighting is Solid State Lighting. Since all the research and developments are presently being done abroad, it is important for ISLE to prepare itself to participate in all technical aspects of this product. The Government of India appointed a Committee to advise on the Indian approach and we are happy that Mr. Mamak has been invited to join. And I have just returned from China where as President of ISLE I was invited to attend the newly formed International Solid State Lighting Alliance as a special invitee in their Executive Member meetings. This Alliance has members from China, Korea, Taiwan, Australia and New Zealand. I have given a brief report on my China visit on page 30. It is indeed gratifying that this new body has approved the induction of the ISLE representative a Director of ISA.

Avinash D. Kulkarni
President

EDITORIAL

This issue carries a report on the recently concluded Lii2011 Exhibition and the concurrent Seminars conducted in Chennai.

We are also very pleased to present a paper on Daylight Integration with Lighting and Architecture by Dr. P.C. Jain and Ms Manpreet Kaur of Spectral Lighting and another on Retail Lighting by Dr. Amardeep Dugar. Both papers were to have been presented at the Conference on "Sustainable Lighting - Smarter, Elegant and Energy Effective", scheduled to run with Lii2011 but which had to be cancelled due to unavoidable reasons.

An interesting new development is the advent of the International Solid State Alliance (ISA) of which ISLE is now a part. A report on Dr. Avinash Kulkarni's participation in their recent meetings in China is carried on page 30.

The State Centres continue to be active and we have reports from Delhi, Mumbai, Karnataka and the newly upgraded MP State Centre.

ISLE has been a member of CIE from shortly after its inception. There are still a few members like Sudeshna Mukhopadhyay, S. Chakraborty, Anil Valia and P.K. Bandyopadhyay who take part in the technical work of the CIE, but the participation of ISLE members has greatly diminished over the years. A look at the new CIE publications in this newsletter will give an idea of the range and importance of the international technical work done by CIE. The CIE Session is taking place in South Africa in July and as there is still time to register, I would strongly urge members to attend. I certainly will be there to keep up with the latest in the world of lighting and do hope that I will meet some of you there.

H.S. Mamak
Editor

OBITUARY

Satindra Mohan Lahiri 1934 - 2011



It is with deep regret that we inform you of the passing away of ISLE Fellow Mr. S.M. Lahiri on March 23, 2011 at Kolkata.

Mr. Pranab K. Bandyopadhyay, Past President ISLE, reminisces -

I was shocked to hear that S M Lahiri was no more. It is never easy to receive the news of death of a friend or a close associate. But it's much harder when the association or friendship lasted for close to five decades. Yes, I came to know him almost 20 years before ISLE was born and the Illuminating Engineering Society was still very healthy and strong. S. M. Lahiri had a company, The Fabricators, at Central Calcutta, which manufactured a variety of products needed for installation and testing jobs in several projects all over eastern India.

When one of the project authorities approached him for Lighting, he came to Philips. I was then a Lighting Engineer at the Philips Eastern Regional office in Calcutta. A fruitful association thus started. He was a brilliant electro-mechanical engineer. I can't say with certainty when this mutual appreciation became admiration and developed into a life long friendship.

In 1970 I was transferred to Bombay, but we remained in touch through letters and my periodical visits to Calcutta. He had such a wonderful handwriting - both Bengali and English - and such command of language. He has written many poems in Bengali. By then he gave up The Fabricators, joined a company as its MD for a couple of years and finally started his own consultancy and became an adviser to companies working in big projects mainly in eastern India including Bhutan. Later on he became an adviser to the Government of Bangladesh.

When ISLE was formed in 1983 and started the membership drive, he was one of the first few Fellow Members from Calcutta. In 1985 I was transferred to Calcutta and Late Mr. M.L. Dongre, the then President of ISLE told me that as I was situated in Calcutta, the first State Centre of ISLE should come up there, as ISLE was conceived in my office in Bombay.

The first task was to enroll the requisite minimum number of members from the region. Mr. S.M. Lahiri assured me and recruited a good number of members within a short time. The first State Centre was inaugurated in October 1987 with similar stellar roles played by Late D. R. Ghosh and Prof. Dr. S R Bandyopadhyay. Many of the leading Governing Body members came from Bombay for the well attended inauguration function.



March 4-7, 2011 Chennai

The month of March began with the latest in the series of International Lighting Exhibitions and Conferences organised by ISLE.

From March 4 to 7, Light India International 2011 organised by ISLE Chennai State Centre took place at the Chennai Trade Centre in Chennai. The Lii2011 exhibition which was held for the first time in Chennai had the largest number of exhibitors that ISLE have been able to attract so far. There were 144 stalls and according to Mr. Dilip Kumbhat, Chairman Lii2011, 230 companies were represented at the exhibition including 80 international companies from 17 countries. Some of these were represented directly while others presented their products and technologies through the stalls of their collaborators. A list of exhibitors is given below.

In September 1988 Calcutta S C organised the first National Seminar of ISLE - Lighting and Environment. Prof Dr Triguna Sen, Education Minister, Govt. of India and Dr. K. L. Puri, Adviser, Ministry of Power, Govt. of India, were the Chief Guest and Keynote Speaker respectively in the very well attended 2-day seminar at Park Hotel. The organisation was mainly in the hands of S. M. Lahiri and some of the members he had recruited. One such member later became the Chairman of Calcutta S C and Hon. Gen. Secretary of the Governing Body - Mr. H. Mukherjee.

Although, in the initial years he was in the Committee of Calcutta State Centre S.M. Lahiri shunned office. He had indifferent health since 1997 and could not attend Prakash and Lii programmes after that. However, on every such occasion he used to send me fitting poems. Some have been published in our Newsletter.

His wife Arati died in 2001. He has left behind his only daughter, Gopa, who is the Principal of a school in Kolkata, son-in-law Somjit Barman and grandson Drick, and, of course, many friends, in and outside ISLE.

May his soul rest in peace.

PKB

Lii2011 List of Exhibitors

Abba Lighting Solution/Hilite	Elektromag Devices	K-Lite Industries
Agnay India	Elora Greentech Systems	Krishna Energy
Alanod (Standard Conduits)	Emittron Green tech	Krystal Lites
Alux-Luxar (Standard Conduits)	Energy & Power Industry	Kushi Collections
APN Technologies	Entrust Exim	Ledlink Optics
Architecture + Design	Essemtec India	Leeway Lighting Parts (Xiamen)
Arklite Speciality Lamps	Everfine Photo-E-Info	Light Form Marketing (Fluo Lite)
Arya Filaments	Evonik Degussa India	Light Inside
Atco Controls (India)	Excelpoint Systems	Looklite Systems
Aver LED & Solar Energy	Excel Copier Systems	Lumino Gloz Solutions
Bag Electronics (India)	Four Square Media	Luxon LED Lighting
Baliga Lighting Equipment	Fujian Ydj Light	M.N.Trading (Hybec)
Binay Opto Electronics	G.E.T.Power	Maximalight
Blue Star Exports	GEIndia Industrial	Media Exposition & Events
Bor Hurng (Zhaoqing)	Glacial Tech Inc	Melux Control Gear
Bracecorp Publications	Havells India	META
Builders Line	Helios Led Lightronics	MIC Electronics Limited
Buljin Elmec	History of Lighting by Poorn Lamp	Miro Ref
Bureau of Indian Standards	Manufacturing	Moon Electrical Corporation
Calicom Telelink	Hotelier India (ITP Publishing India)	Na Ba Green Energy
Cape Electric Corporation	Hovel Led Lighting Inc	National Information Center of Lighting
Carriell Car	HPL India	Industries
China National Light Industry	I LED Lighting Systems	National Productivity Council
Information Centre	Ideal Homes	Nature Efficient Electronic
Cona Lighting Solutions	Index Media	Nextech Control
Cree Asia Pacific	Indiamart.com	NSIC
Cross-Linking Corporation	Indo-Italian Chamber of Commerce and	Opal Energy Souldution
Danson Electronics (India)	Industry	Pasolite Electricals private Limited
Data Bank and Information Centre	Instyle Lights	Philips Gardco Lighting
Decore Nano Semiconductors	Interior India	Philips Lumiled Lighting Company
Edison Opto Corporation	Inventaa	Poly Plast Corporation
Electrical Fittings & Equipment (Madras)	ISLE	Poseidon Lighting
Electrical For You	J.P Electronics Devices (India)	Precious Electronics
Electrical Installation Engineer	Jai Balaji Control Gears	Precious Lighting Solutions
Electrical Market	Karthe Power Controls	Premier Combines

Premium Coating & Chemicals	Seoul Semiconductor	Standard Conduits
ProLite Autoglo Limited	Shamanjawali Metals	Step Lightings
PSI Enterprises	Shanghai Luminasia & Overdrive Electronics	Surya Roshni Limited
Pyrotech Odyssey Optronics	Shanghai QuanYong Electeic Equipment Company	Swan Electric Engineering Company
R.G.E Lighting Industries Sdn. Bhd	Shenzhen Sampoo Hi-tech	Trade4india.com
R.S Traders (M-Lite)	Shri Kanakka Durga Eleectrical Industries	Tradeindia.com
Regnant Energy Solutions\Regnant Lighting	Sigma Search Lights Limited	Vanjax Sales
Renata Lighting	SilverLine Lighting & Exim (India)	Ventura Sunleaf India
Rooster Lighting	Skyshade Technologies	Venture Lighting India Limited
S.R.Industries	Spectrum International	Welly Power Optronics Corporation
Sahasra Electronics	Spica Appliances	Yangzhou Kaipu Electronics
Samp Green Lighting Company	SRM Electronics	Zhejiang Shendu Optoelectronic Technology
Samson Lighting		Zhejiang Tonking Technology
Satco Traders India		Zigong Cemented Carbide

At the Inaugural Ceremony Mr. Dilip Kumbhat, Chairman Lii2011 welcomed the exhibitors and delegates. The gathering was then addressed by Dr. Avinash Kulkarni, President ISLE, Guest of Honour, Mr. Dinesh Agarwal, CEO Indiamart.com, Mr. Himanshu Prasad, President and CEO GE Lighting India. The exhibition was inaugurated by Mr. M. Subramanian, the Worshipful Mayor of Chennai. Mr. R. Balasubramanian, Secretary Chennai State Centre gave the vote of thanks.

This was followed by a laser show by the US based laser artist Mr. Manick Sorcar. The laser show accompanied by a cultural show was a great attraction every evening for the visitors to the fair.

On the evening of March 5 ISLE Chennai State Centre had their Silver Jubilee celebration.

The event was widely reported in both the electronic and print media.

As always the Lii Exhibition was accompanied by a series of conferences. Below is a report from Dr. P.C. Barjatia, Director Seminar Committee for Lii2011.

Innovative Seminars/ Conferences/Technical Sessions During Lii2011

The Indian Society of Lighting Engineers (ISLE) has always conducted Conferences, workshops and seminars during their International Exhibitions held since 1991. But these Conferences were limited to presentation of technical papers by experts, master classes by expert speakers and sometimes paper presentation by students. At Lii2011 in Chennai from March 4 to 7 for the first time innovative events such as Product Presentations by Exhibitors, Seminars exclusively for Electricians, Architects, Electrical Contractors etc. were organised. These were planned by the Seminar Committee under the guidance of Mr. Dilip Kumbhat, Chairman, Lii2011 and Chairman of the Seminar Committee, Lii2011, Dr. Prakash Barjatia. All these events were well attended and appreciated by all speakers, participants and exhibitors.

Product Presentation & Technical Detailing Meet

This half day unique meet, the first of its kind began after lunch on March 4. After the welcome address by Mr. Dilip Kumbhat, Dr. Barjatia elaborated the purpose and need of such meets. During the event interesting presentations were made by the experts from the following companies: BAG Electronics, Pune; Evonik Degussa, Taiwan; Philips Lumileds, Hongkong; Binay Opto, Kolkata; Regnant Lighting, Delhi; Cree, Malaysia; Seoul Semiconductors, South Korea; and Poseidon Lighting, Singapore. The presentations were focused more on the technology and not so much on their products. As such these were well taken by the audience. During his vote of thanks, Mr. R. Balasubramanian, Secretary, Lii2011 thanked all the participants and exhibitors for their impressive display of products and enthusiastic support for the event.

Technical Seminar on "Green Lighting for a Greener World"

"Lighting is for Human Beings and hence it requires better understanding". With these words the Technical Seminar on "Green Lighting for a Greener World" was inaugurated by Dr. Warren Julian, Chairman, Lux Pacifica and Emeritus Professor & Dean, Faculty of Architecture, Design & Planning, University of Sydney, Australia on March 5, 2011. Terming current living "cave life" as offices and malls were dark without lighting, he further said that the real problem lay in the type of interiors being designed. While better new products had been found, their use was found to be more difficult. Pointing out that research was quite successful in road lighting, he said that cost proved to be the most important criterion in lighting buildings. With reference to the use of daylight, Dr. Julian asserted that architecture needed to improve. Underlining the need for integrating lighting and architecture, he said it would be achieved only when lighting and architecture were to be considered as a "whole," and when lighting was understood to be more than just electric lighting.

At the beginning, Mr. Dilip Kumbhat, Chairman of ISLE-CSC and also Chairman of Lii 2011 welcomed the guests and gave a brief background of the event.

Mr. Praveen Thampi, Executive Director of Ministry of Light, Mumbai dismissed the impression that Green Lighting is "synonymous" with LED Lamps. During his Key Note Address he said that even the educated tend to be taken in by this type of marketing, and there is a mad rush for LEDs. To say that LED is Green Light is not right just because they do not contain mercury. The LED is more than just a contribution to green lighting.

Dr. Prakash Barjatia, Chairman, Seminar Committee, Lii2011 and also Chairman, Mumbai State Centre of ISLE gave a brief introduction on the theme of the Seminar. He emphasised that in view of the recent and rapid developments taking place in the field of Lighting, there was a need of setting up a National Lighting Centre for consolidating efforts in the country in the fields of Lighting Education, Research, Testing & Calibration.

During his Presidential Address, Dr. Avinash Kulkarni, President of ISLE lamented that there was so much of misinformation regarding Green Lighting that everyone plumped for CFL Lamps and now the same persons were switching over to LEDs under the same misconceptions. As an organisation, he said that ISLE should establish "model installations" of good and comfortable lighting, which could function as bench marks and hence be replicated.

During this day long Seminar, experts from all over the world deliberated among other subjects on different aspects of LED lighting. To start with during the first Technical Session, Dr. Gillian Isoardi of Queensland University of Technology, Australia spoke on "Day Light, Integrating Technology and Human Factors". This was followed by a Case Study on "Efficient Vision & Energy Economic Solutions for Indian Streets" by Prof. Saswati Majumdar and S. Chakraborty, both from Jadavpur University, Kolkata, which provoked a number of queries. This Session was chaired by Dr. Prakash Barjatia and the Reporter was Mr. S. Alvares, Hon. Secretary of ISLE, Mumbai State Centre.

The second Technical Session was chaired by Dr. Amardeep Dugar, Architect and the Reporter for the session was Mr. M. G. Satyendra, Hon. Secretary of ISLE, Karnataka State Centre. The first presentation was by Mr. Vincent Chu of Cree Hongkong Ltd., Malaysia on "LED Lighting - Towards a Greener World". This was followed by "AC LED Device - Acriche" by Mr. Ricky Im of Seoul Semi conductors, South Korea. The last presentation in the session was on "Breakthrough LED Innovations for a Greener World" by Mr. Waiming Poo-Cheong of Philips Lumileds, Hongkong.

The post lunch session was chaired by Mr. S.K. Agrawal, CEO & MD of the Aryan Group of Industries, Indore and the reporter was Mr. S. Alvares. Mr. Nitin

Kewte of BAG Electronics, Pune made an interesting presentation on "Green Lighting vis-à-vis Global Warming & Light Pollution". The second presentation was on "Designing LED Luminaires with respect to Human Scotopic Vision" by Mr. K.K. Rohatgi of Binay Opto, Kolkata. The third presentation was by Mr. Junglin Tsai of Evonik Degussa, Taiwan on "Savosil for LEDs and Opto-Electronics".

The last Technical Session began with a presentation by Mr. Leonardo Dei of AEC Illuminazione, Italy on "Facing the LED Technology and Good Ways to use LED Technology in the Lighting Technology Activity". The last presentation of the day was on "Energy Efficient Lighting - Induction Lamps" by Mr. P.K. Sood, Chairman, Regnant Group, New Delhi. This Session was chaired by the Lighting Educator and Designer, Mr. Anil Valia from Mumbai and the Reporter was Mr. Mahesh Agrawal, Hon. Treasurer of ISLE Madhya Pradesh State Centre.

The Seminar concluded with the vote of thanks by Dr. Barjatia who thanked the speakers for their presentations, the Chairmen for conducting the Sessions, Reporters for making it possible to complete the Seminar in time, and of course participants for remaining present till the end of the Seminar. He specially thanked Mr. Anil Valia and others who interacted from the floor during the Seminar.

Electrician's Meet: Technical Presentations on LED Lighting

This was a unique experience of having almost 700 Electricians pouring in from all parts of Tamil Nadu to attend the event with enthusiasm and interest to know what is an LED, where it should be used and how it was better than the existing conventional light sources. The meet which was organised in association with the Federation of All Tamil Nadu Thaniyar Min Paniyalargal Association was held on the morning of March 6 with presentations in the local language and interesting interactions on LEDs and related issues. This meet confirmed that there was a need for bringing awareness amongst electricians and technicians who were the link between actual users and the suppliers.

Architect's Meet/Seminar on Integration of Lighting & Architecture

This post lunch event on March 6 was organised in association with the Indian Institute of Architects (IIA), Tamil Nadu Chapter. The Welcome Address was made by Mr. Dilip Kumbhat. During his presidential address, Prof. F.B. Rajaratnam, Chairman, IIA, Tamil Nadu Chapter appreciated the efforts of Mr. Kumbhat in arranging a lighting fair of such a magnitude in Chennai and also for taking the initiative of arranging this Seminar for the

benefit of the Architecture Community. Subsequently Chief Guest, Mr. C.N. Raghavendran, a well known Architect was felicitated on his recognition and being awarded the "Padma Shri" by the Government of India. Replying to the felicitation he stressed the need for more interaction between Lighting Professionals and Architects, specifically in view of the rapid developments in the field of Lighting and their importance for energy conservation and protection of the environment. This was followed by a talk by Ar. Pramod Chougule on "Sustainability with respect to Architecture". Dr. Amardeep M .Dugar, a well known lighting designer made an interesting presentation on "Integration of Lighting & Architecture". The final presentation of the Seminar was by Mr. Nitin Kewte of BAG Electronics, Pune on "Green Concepts".

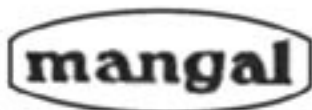
Electrical Installation Engineer's Meet

On March 7, welcoming participants, speakers and members and office bearers of TNEIEA, Mr. Dilip Kumbhat thanked the Tamilnadu Electrical Installation Engineers' Association 'A' Grade (TNEIEA) for their association for arranging this Meet. This last event in the series during Lii2011 was well attended by Engineers and Contractors and others who were keen to know about Green Lighting Concepts. After a brief introduction about TNEIEA by Er.

A.K. Venkatasamy, President, the Inaugural address was given by Er .S. Appavoo, Chief Electrical Inspector to Government of Tamil Nadu. He stressed the need for using the right type of light from the safety point of view and also to save energy and the environment. He felt a need of introducing some sort of Certificate or Diploma Course in Lighting for Electrical Installation Engineers. Subsequently there was an interesting presentation on "National Lighting Code - An Overview" by Mr. D. Goswami, Scientist, Bureau of Indian Standards, New Delhi. He highlighted the important aspects of Code which had taken more than 10 years for its preparation and making it available to practitioners.

Post tea there were interesting presentations on "Green Lighting Concepts" by Mr. Gajanan Inamdar of BAG Electronics, Pune and Mr. Hari Narayanan, Director, Technology & Marketing, GE Lighting, Vadodara. Lastly through his presentation on "Lighting Education in India", Dr. Prakash Barjatia, Director, MIT School of Energy & Lighting, Pune emphasised the need for bringing awareness amongst users, specifiers, lighting professionals and architects about the right type of light for different applications. It was therefore essential that organisations like ISLE encourage lighting education in the country

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through formal education, distance learning etc. The Meet was concluded with the vote of thanks by Mr. T.M. Bhikkaji, Secretary, TNEIEA.

Dr. Prakash Barjatia
Chairman, Seminar Committee
Lii2011

National Workshop on National Lighting Code April 28, 2011, Hyderabad

After the first workshop in Kolkata, the recent workshop on the National Lighting Code was organised in International Convention Centre Hyderabad by BIS in collaboration with ISLE, Elcoma and BEE in Hyderabad, Andhra Pradesh on April 28th 2011.

The workshop packed with an audience of more than 150 participants was inaugurated with the welcome address of Mr. R.K.Trehan, Head of FTD & HRD BIS Delhi followed by the opening remarks and the program objectives by Mr. P.K. Bandhopadhyay, the eminent Lighting expert, Chairman ET24 and the Convener of the Panel for National Lighting Code. Mr. Bandhopadhyay effectively explained the overview of the National Lighting Code and its scope of utilisation coupled with his vision and experience of Lighting practice.

The key note address was delivered by Mr. R.S. Sharma Head of the Hyderabad Branch of BIS.

The entire workshop was divided into three sessions:

National Lighting Code - Concepts and Application

Use of NLC in Interior Illumination: Mr. S. Chakraborty, Vice President (Technical) of Surya Roshni touched upon the various parameters in enhancing the interior illumination domain in lighting and the benefits and guidelines that could be derived out of the NLC.

Light - Beyond Codes and Practice and our well being: Ms Sudeshna Mukhopadhyay, Director Marketing, Philips Electronics highlighted the effect of light in our day to day well being and how it plays an unperceived but obvious role in our vision thus affecting our modern life style. In this presentation various issues came up which were not only interesting but specific to health care practice.

Relevance of NLC in S&L Program: Dr. Sandeep Garg, Economist of BEE touched upon the urgent requirement of the NLC in the context of our present state of Lighting and the conservation of energy with data and the explanation. The NLC will go hand in hand with energy efficiency in lighting.

Future Trends in Lighting Designs with Respect to NLC

Photometry and Measurement: Mr. Gautam Brahmhat, Senior Manager Verification Services, UL India gave a

presentation on the various measurements and testing backed up by the measuring instruments to ensure safe, durable and energy efficient light. He also gave information on the setting up of a fully equipped testing lab in Gurgaon. This type of lab will definitely ensure better management of lighting requirement as per the NLC and its practice.

Use of NLC for Road and Street Lighting: Mr. S. Chakraborty of Surya Roshni once again made a wonderful presentation on the application of the code guidelines in the most important area of exterior lighting requirements with photographs and technical parameters.

NLC for Solid State Lighting Application for Public Lighting

Future Trends of National Standards on LEDs: Mr. D. Goswami of BIS Delhi highlighted the importance of standards for LED light sources and luminaries and indicated the need for standards to regulate this future and very important domain of lighting.

BIS is taking the initiative through this series of workshops on the NLC to create awareness of the great advantages of good lighting practice as outlined in the code in terms of energy conservation as well as issues of visual comfort, productivity and well being.

The next workshops are being held in Bangalore on June 30 and Chennai on July 1, 2011.

Tapan K. Chattopadhyay
General Manager, ISLE

DELHI STATE CENTRE

Technical Lecture March 2, 2011, Delhi

Delhi State Centre organised a lecture at the India Habitat Centre on the Trends and Challenges of LED Technology by Mr. Marc Gillet, Chief R&D Officer at Schreder Group in Belgium.

Mr. Sudesh Gupta, Secretary Delhi State Centre welcomed the participants. Mr. A.K. Jain, Chairman, Delhi State Centre chaired the meeting and introduced the speaker.

Mr. Gillet said that LEDs were a tool to enable us to do a better job in lighting. In this context it is expected that by 2015 it should be possible to get 150-160 lm/W.

He pointed out that visual performance had a cost but that this was "not at any cost". He emphasised the need to look at the total cost of ownership. While there is an existing draft standard for visual performance, standardisation for LED modules was in progress. He

explained the importance of the Zhaga consortium in the standardisation process and its role in helping to make developments future proof (parts should be replaceable enabling flexibility in operation).

The efficiency of the system must take into account the energy efficiency as well as the visual performance efficiency. For sustainability it was important that visual performance, carbon footprint and financial viability should have a balanced relationship.

He ended his presentation with some indications of what the future would bring in this field. The 1W LED he felt was going to be a museum piece soon. There would be higher currents and higher lumen outputs. Thermal management and glare issues would be greatly improved. Multichip sources, variable lumen output and adaptable solutions would be the direction for new developments.

In conclusion, he said it was important at this stage to do a case by case assessment for deciding on the most appropriate solution.

Mr. Sudesh Gupta gave the vote of thanks. The lecture was followed by cocktails and dinner sponsored by Keselec Schreder. The function was attended by 125 people.

MUMBAI STATE CENTRE

International Hands-on Training on Energy Audit for Developing Countries May 4-14, 2011

ISLE Mumbai State Centre is a 'Knowledge Partner' for the 10-day 'International Hands-on Training on Energy Audit for Energy Professionals in Developing Countries' being co-organised by CESP/SEEM along with the NAM Science and Technology Centre, New Delhi and hosted by Jawaharlal Nehru Port Trust (JNPT), Navi Mumbai, from 4th- 14th May 2011.

This training program will be attended by twenty energy professionals from 15 countries, namely, Botswana, Cambodia, Indonesia, Iran, Iraq, Malawi, Malaysia, Mauritius, Myanmar, Nepal, Nigeria, South Africa, Sri Lanka, Togo and Uganda. In addition 15 energy professionals from India including 5 from JNPT are also availing this training opportunity.

As a part of this training program, ISLE Mumbai State Centre will be conducting sessions on interior and exterior lighting measurement and audit in the office, residential and port area of JNPT for future recommendations and implementation.

We also look forward to introducing the latest energy saving products and technologies offered by Indian companies to the delegates and decision makers through

presentations and demonstrations on select days during the program.

The programme was inaugurated on May 4. A report will be published in the next issue.

Dr. Prakash Barjatia, Chairman, Mr.A. Auddy, Hon. Treasurer, Mr. K. Naveen of Bajaj Electricals and Mr. Stan Alvares, Hon. Secretary all of Mumbai State Centre are participating as Resource Persons/Mentors. During the first Technical Session, Dr. Barjatia also made a presentation on "Lighting Energy Efficiency".

Urban Infra World Expo 2011 October 19-22, 2011, Mumbai

ISLE Mumbai State Centre is a 'Supporting Association' to Chemtech Foundation's forthcoming event 'Urban Infra World Expo 2011' scheduled from the 19th-22nd October 2011 at the Bombay Exhibition Centre in Mumbai. It will be a landmark event for infrastructure activities which are on the rise and has support from various Indian and International Associations. Shri Saugata Roy, Minister of State for Urban Development, Govt. of India has agreed to be the Patron for this event.

A Two-day World Conference on 20th-21st October 2011 is being organised covering the entire gamut of the infrastructure sector.

ISLE Mumbai State Centre is organising a Lighting Pavilion to showcase the latest lighting products and technologies which will get an excellent exposure to the visitors, builders, architects, designers and consultants, who will be visiting the Expo.

For further details contact:

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KARNATAKA STATE CENTRE

Lighting Workshop April 9, 2011, Bangalore

Karnataka State Centre conducted a Lighting Workshop at the RNS Institute of Technology in Bangalore.

The workshop was attended by about 100 Engineering Students from various disciplines including Architecture, Electrical & Electronics as well as faculty members.



Messrs. Swamy, Sathyendra, Bhavani Prasad and Ravi Rao

Prof. & HOD (Ele) H.N. Rama Krishna welcomed the ISLE Members, Faculty Members and students to the workshop which was held for the first time in this institution,

M.S.N. Swamy Chairman, ISLE KSC welcomed the Students and the Faculty Members on behalf of ISLE KSC.

Mr. Sathyendra Hon. Secretary gave a brief introduction about ISLE and the projects undertaken.

Prof. Rama Krishna introduced the Speakers.

The following papers were presented:

Selection of Source	M.S.N.Swamy
Design Trends	Bhavani Prasad
Controls	Ravi Rao
Safety Standards	Sathyendra
Pollution	M.S.N. Swamy

With the question and answer session the Workshop was concluded. This Interactive session was an excellent experience, both interesting and educative. The students showed an awareness about CFLs and a great interest in LEDs. They showed concern about environmental issues in lighting and an appreciation for the use of modern techniques to save energy. It was suggested that an energy audit be carried out at the college and the guidelines in the presentation applied. Faculty members wanted additional workshops to be held in the college as well as other nearby institutions.

MP STATE CENTRE

Lecture on Suitable and Unsuitable Lighting February 27, 2011, Indore

The monthly, last Sunday morning meeting for February, one of the unique features of ISLE-MPSC, included the presence of Dr. Barjatia, Chairman, Bombay State Centre. Dr. Barjatia presented mementos to Mr. Vijay Panse past chairman MSC and Mr. Akhilesh Jain past Chairman ILC, for the Silver Jubilee Celebrations held at MSC, Mumbai.

Er. Jitendra Vyas, gave a very informative and interesting lecture on different forms of Suitable and

Unsuitable Lighting. He commenced with "Pratyaksh" or direct light from the Sun God and proceeded to discuss the Indian, Greek and Hellenistic scientific theories.

His lecture included the benefits and harmful effects of visible and invisible light to the human body. He also gave useful inputs on the safe disposal of CFLs. He highlighted the harm caused to both the environment and human health by inappropriate lighting using examples of traffic headlights, welding arc lights and video lights.



Messrs. Akhilesh Jain, P.C. Barjatia, Jitendra Vyas and Dinesh Wadhwa

Members were also given important and interesting information about LII 2011 to be held at Chennai.

Lecture on Home Lighting March 27, 2011, Indore

The 17th monthly meet, organised by ISLE MP State Centre at Indore was attended by over 60 participants.

In a simple presentation that he chose to call "Fresh and Easy Lighting", Er. Vipin Soni discussed some easy ways to save money and light in homes (not houses) with some energy conscious people. The entire topic was handled very diligently by the eminent speaker, and he termed the lighting aspects for domestic applications as "fresh" because it gives freshness to us when we think of saving energy and consequently money and "easy" because the actions to be taken are very easy and practical to follow. He proved this with a very effective animated film on electrical applications and tips on saving electrical energy, which followed his presentation.

The presentation inspired even veterans of MPSC like Mr. Surendra Agrawal, MD Arya Lighting and Capt. Sharma, Principal of a leading Engineering college, founder Secretary, Mr. Raje of Lotus Electronics and Mr. Bharat Rawlani of RRCAT, DAE Indore to share their experiences and the Q & A session extended beyond the prescribed time allocated.

The office holders of the State Centre will try to maintain the overwhelming public response in future meetings. The Chairman, Mr. Akhilesh Jain, also contributed with his expertise. The vote of thanks was

Continued on page 23

PERLA  LED LIGHTING

DIFFERENT AND INTELLIGENT
LIGHTING FOR THE CITY



Design: Michel Tortel

FOUR LIGHT DISTRIBUTIONS

The Perla is available with two electronic configurations: static or dynamic LED lighting. In both cases, the optical compartment consists of 64 high-power white LEDs distributed over 16 modules that are independently oriented and tilted depending on the type of light distribution required. The use of LEDs permits low height installations (4 metres) under foliage.



VARIABLE INTENSITY

The dynamic version is equipped with blue LEDs that accentuate the luminaire's nocturnal presence. Each luminaire can be individually programmed with 4 timed intervals. Unlike with classic sources, the intensity of the LEDs varies instantaneously, without loss of luminous efficacy.

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Schröder, the urban light

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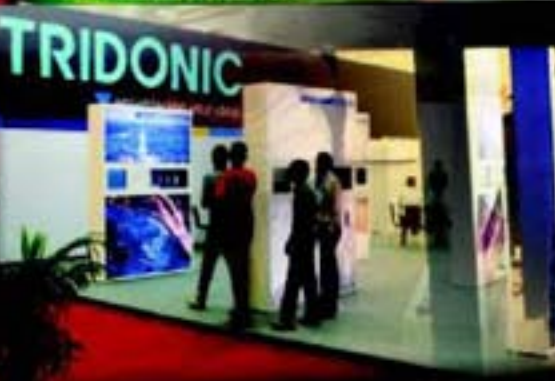

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LI 2011

LIGHT INDIA INTERNATIONAL

4-7 March 2011 Chennai Trade Centre, Chennai







Technical Seminar On "Green Lighting for a Greener World"



Product Presentation and Technical Detailing Meet



Seminar on "Integration of Lighting & Architecture – Green Lighting for a Greener World"



Seminar on "Green Lighting Concepts" and National Lighting Code - BIS



Seminar on Green Lighting – Federation of all Tamil Nadu Thaniyar Min Paniyalargal Association

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Retail Lighting; Discussing Trends for Emerging Economies

Amardeep M. Dugar

Introduction

The growth of the retail sector in a country is one of the indicators of its economic prosperity. Studies on the booming retail sector in India report that its organised retail market is expected to reach the US\$ 50 billion mark by 2011. Its rural market alone is projected to dominate the retail industry landscape by 2012 with total market share of above 50%. Its top cities as well as tier II and III



Photo courtesy - Mahesh Notandias - Jewellers, Mumbai

cities are witnessing a dominant retail activity. The prominent growth segments listed in these studies are shopping malls, discount stores and single-brand stores. Visual merchandising being the primary point of contact between product and customer is increasingly gaining currency within these segments. Consequently, lighting is also being valued as a versatile tool in this 'art-for-commerce.' This paper essentially reviews retail lighting trends laid out by three different authors/designers (Hot, 2005; Kontorigas, 2005; Nusser, 2005) to summarise their relevance in today's retail growth segments namely: shopping malls, discount stores and single-brand stores.

Retail growth segments - An overview

Shopping malls are usually themed retail segments for entertainment, excitement and fascination so as to appeal to a wider customer base. Discount stores such as warehouse clubs and supermarket chains are basic retail segments, which usually target the masses as they rely on high traffic volume for sales. Single brand stores such as fashion and jewellery stores are high-end retail segments, which usually target a niche group of customers and do not rely on high traffic volume for sales. Apart from attracting customers, lighting within these retail segments should facilitate evaluation of merchandise, completion of sale and way finding. Lighting and branding

can have a very strong link resulting in distinctive retail environments: lighting that reflects the desired corporate brand image is critical at entrances of all these retail segments, as this is the first impression customers have when approaching; luminous colours are often applied in branding, making a mall or a store recognisable and unique.

Shopping malls - generally tend to 'visually announce' their presence within an urban setting, and therefore require a themed external and internal lighting concept to provide a mall identity. The success of this common

themed lighting concept is determined by its ability to link all the areas, without being too overpowering to distract from the internal stores and specific features. Lighting should assist in way finding by making a sense of destination, and aid orientations by enabling customers find their desired merchandise. Daylight can be used to create 'an internal street' in shopping malls that enables easier way finding. With customers spending a lot of time inside malls especially during weekends, daylight can also provide a sense of orientation by keeping in contact with the outside. However planned and context specific contrasts should be applied for those areas without access to daylight or located adjacent to day-lit areas for visual clarity.

Creating the right ambience for dining is key, as food courts have become an essential part of malls to attract customers and extend their shopping experience by keeping them inside for longer periods of time.

Discount stores - generally tend to promote bulk sales of different products rather than focus on one single product. Therefore the objective is to provide high illumination levels using simple ambient lighting systems for way finding, examining the required products, and completing the sale. However, care has to taken while choosing the right kind of lighting technology for fresh and frozen food display areas such as cold storages that require appropriate IP-rating.



Photo courtesy - Mahesh Notandias - Jewellers, Mumbai

Single-brand stores - generally tend to initiate people to linger by providing low perimeter light with highlights on the merchandise. Therefore the objective is to provide lighting that is product specific with more localised and less generalised or ambient lighting. Bright light is also provided on the product for contrast, with softer or darker surroundings for visual relief. With prescribed contrast ratios ranging between 1:3 and 1:5, the appropriate light level ranges for bright and soft lighting should be 500-1500 lux and 150-300 lux respectively. During the day, window displays should have higher illumination than reflected outside images to prevent glare.



Photo courtesy - Mahesh Notandias Jewellers, Mumbai

Retail lighting tips

Use of multiple gimbal fixtures - As a tried and tested luminaire, it can provide a number of specific highlights without the clutter of individual spotlights. Whether it is fitted with single, double, triple quad or a long row of lamps, it is just one clean-lined luminaire that is contemporary and chic. The suspended and pantograph versions of these fixtures add to the inherent flexibility of the product.

Use of lockable fixtures - As the average maintenance staff is ill equipped at aiming specialty fixtures, the ability to replace lamps without changing the angle or rotation of the fixture has become exceedingly important. Lockable fixtures that do not shift beam angle even during extreme maintenance work will definitely be invaluable to the overall appearance of the store in the long run.

Use of CDM-T lamps - As ceramic metal halide lamps have arrested the colour-shift associated with quartz metal halide ones, they have a wider scope of applications due to their better colour rendering properties. The 20W miniature versions have allowed this technology to be applied with subtlety.

Use of LED fixtures - As a long life, low maintenance, miniaturised and energy-efficient light source, it can provide the flexibility of illuminating even difficult areas within retail environments such as small display cabinets and coves.

Use of strict maintenance plans - As it is a common maintenance error to replace lamps with wrong beam angles, wrong colour temperature and even with wrong power rating, it is crucial to plan how a lighting installation will look over its life. A skilfully designed lighting scheme will last only a few months if maintenance isn't seriously considered at the design stage. Therefore it is always preferable to have the staff properly educated in terms of dimming, aiming and lamp selection.

Additional tips

Use of lighting controls - As the complexity of handling switching and dimming schedules for different settings

increases with the size of the retail outlets, it is preferable to use programmed controls instead of manual controls. Additionally, different times of year and the changing daylight conditions require differentiated switching and dimming so as to bring about substantial energy savings. Lighting controls that provide control over parameters such as light level, light colour, beam direction and beam width will play a dominant role in these segments due to the following reasons:

- Provide flexibility within the space without changing the electrical installation. The lighting parameters for specific locations can be adjusted to suit changes in furniture layout for chosen periods of time.
- Provide multiple working modes with matching lighting parameters in the various areas to meet retail needs such as sales, circulation, window, façade, etc. Working modes can also be timed to coincide with various activities within retail segments such as before opening hours, during opening hours, before closing hours, etc.
- Create dynamic special effects such as colour and movement using DMX controllers or Go-Bo projectors. Customers' attention can be drawn using colour changes, flashing light or moving light patches.
- Provide energy management by optimising power consumption for lighting. Controlled electric lighting linked with daylight and occupancy sensing can optimise energy saving.

Summary

Retail environments are a reflection of a country's economy as the demands of this fast moving world determine their evolutionary process of how they shed one skin for another. For example, the myriad displays, logos, signs, windows and their consequent lighting are not only representative of their merchandise, but are a snapshot of their market situation which are subject to constant change. Lighting can influence this market situation by attracting customer attention to key displays and making it easier to judge the quality of products. The subtlety with which the lighting design concept can guide

customers within retail environment without their realising it determines its success.

Images

Photos courtesy - Mahesh Notandas Jewellers, Mumbai
Architects - Zarur Nykkab and Seema Puri, Mumbai
Lighting Design - Dr. Amardeep M. Dugar, Chennai

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Daylight Integration with Architecture and Lighting

Manpreet Kaur and Prem C Jain

Day-Lighting

Daylighting is the controlled admission of natural light into a space through windows to reduce or eliminate use of electric lighting during daytime. By providing a direct link to the dynamic and perpetually evolving patterns of outdoor illumination, day-lighting helps create a visually stimulating and productive environment for building occupants, while reducing as much as one-third of total building energy costs.

It is important to appreciate that the day-lighting design process involves the integration of many disciplines, including architectural, mechanical, electrical, and lighting. All these design team members need to be brought into the process early, to ensure that day-lighting concepts and ideas are carried throughout the project. Successful day-lighting designs in India must take into consideration shading devices, window size and spacing, glass selection specifically for high visible light transmissivity (VLT), the reflectance of interior finishes and the location of any interior partitions.

Benefits of Day-Lighting

Day-lighting has the potential to significantly improve life-cycle cost, increase user productivity, reduce emissions, and reduces operating costs:

- Improved Life-Cycle Cost: With ever increasing capital cost of lighting fixtures and controls, day-lighting can result in huge energy savings annually, making life-cycle cost highly competitive.
- Increased User Productivity: Daylight enlivens spaces and has been shown to increase user satisfaction and visual comfort, leading to improved performance.
- Reduced Emissions: By reducing the need for electric consumption for day-time lighting and cooling.
- Reduced Operating Costs: Electric lighting accounts for 35 to 50 percent of the total electrical energy consumption in commercial buildings. The energy savings from reduced electric lighting through the use of day-lighting strategies results in dramatic reduction in operating costs.

Integration with Architecture

In large measure, the art and science of proper day-lighting design is not so much how to provide enough daylight to an occupied space, but how to do so without any undesirable side effects. It involves more than just adding windows or skylights to a space. It is the careful balancing of heat gain and loss, glare control, and variations in daylight availability. For example, successful day-lighting designs will invariably pay close attention to the use of shading devices to reduce glare and excess visual contrast in the workspace. Additionally, window size and spacing, glass selection, the reflectance of interior finishes and the location of interior partitions must all be carefully evaluated.

1. Strategies:

An awareness of basic visual acuity and performance issues is essential to an effective day-lighting design.

- Veiling Reflections: Veiling reflections of high brightness light sources off specular (shiny) surfaces obscure details by reducing contrast. These should be avoided, particularly where critical visual tasks occur.
- Distribution: Introduce as much controlled daylight as deep as possible into a building interior. In general, light which reaches a task indirectly (such as having bounced from a white wall) will provide better lighting quality than light which arrives directly from a natural or artificial source.
- Glare: The aim of an efficient day-lighting design is not only to provide illuminance levels sufficient for good visual performance, but also to maintain a comfortable and pleasing atmosphere.
- Variety: Some contrast in brightness levels may be desirable in a space for visual effectiveness. Dull uniformity in lighting can lead to tiredness and lack of attention-neither of which is compatible with a productive environment. Often well integrated designed daylight areas can meet the intent.

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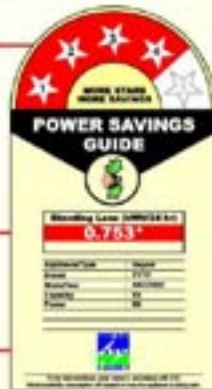
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2. Design Recommendations

The following design strategies should be explored during the design process.

- Increase perimeter daylight zones - extend the perimeter footprint to maximize the usable day-lighting area. Traditional Indian homes had a central courtyard (Aangan) that increased perimeter of the building to increase daylight zones
- Allow daylight penetration deep into the space. Windows located high in a wall or in roof monitors and clerestories will result in deeper light penetration and reduce the likelihood of excessive brightness.
- Reflect daylight within the space to increase room brightness. A light shelf, if properly designed, has the potential to increase room brightness and decrease window brightness.
- Slope ceilings to direct more light into space. Sloping the ceiling away from the fenestration area will help increase the surface brightness of the ceiling will allow day light deeper into a space.
- Avoid direct beam daylight on critical visual tasks. Poor visibility and discomfort will result if excessive brightness differences occur in the vicinity of critical visual tasks.
- Filter daylight. The harshness of direct light can be filtered with vegetation, curtains, louvers, or the like, and will help distribute light more uniformly.
- Understand that different building orientations will benefit from different day-lighting strategies; for example light shelves which are effective on south façades are often ineffective on the east or west elevations of buildings.

3. Materials and Methods of Construction

- Exterior Shading and Control Devices: In hot climates, exterior shading devices often work well to both reduce heat gain and diffuse natural light before entering the work space. Examples of such devices include light shelves, overhangs, horizontal louvers, vertical louvers, and dynamic tracking or reflecting systems.
- Glazing Materials: The simplest method to maximize daylight within a space is to increase the glazing area. However, three glass characteristics need to be understood in order to optimise a fenestration system: U-value, Shading Coefficient, and Visible Transmittance.
- Aperture Location: Simple side lighting strategies allow daylight to enter a space and can also serve to facilitate views and ventilation.
- Reflectance of Room Surfaces: Reflectance values for room surfaces will significantly impact daylight performance and should be kept as high as possible.

Integration with Lighting

Designers must avoid glare and overheating when placing windows. More windows do not automatically result in more day-lighting. That is, natural light has to be controlled and distributed properly throughout the workspace. Also, for cost savings to be realised, lighting controls have to be incorporated and maintained in proper functioning order. Poor installation, commissioning, or operation and maintenance (O&M) practices can all lead to sub-optimal performance.

1. Strategies

Use a Lighting Strategy that Integrates daylight from the beginning of the design: Lighting strategy, fixture selection, and method of control are all affected by the goal of daylight integration.

- Balance the light in a deep room: In a deep room provide vertical illumination on back wall with a cool color temperature to balance luminance differences between the front and back and prevent a gloomy feeling. Use walls or partitions with high-reflectance through light-colored surfaces.
- Organise electrical fixture layout to match day-lighting distribution: To ensure adequate illumination, group fixtures by areas of similar daylight availability (e.g., in rows parallel to window wall). Arrange lighting circuits in zones parallel to window wall for day-lighting even if controls are not specified, to allow the possibility for controls to be added later.
- Task lighting integration with day-lighting: Day-lighting can provide required ambient lighting for most operating hours. Provide user-controllable task lights to assure that task illumination requirements are met at all locations where supplemental lighting is necessary. Users near windows will often use daylight as their primary task source.
- Daylight distribution. Direct/indirect lighting keeps the brightest light sources out of view, and is a good pair with daylight spatial distribution. These systems require a clean, high reflectance ceiling and adequate ceiling height. A direct/indirect system will generally be more efficient at providing task luminance than an indirect system

2. Hardware

- Choose the Right Hardware: Good day-lighting requires attention to both qualitative and quantitative aspects of design. Make sure the combination of natural and artificial sources provides adequate light levels for the required task.
- Maximize Visual Comfort

3. Controls & Dimming of Fixtures

A successful day-lighting design not only optimises architectural features, but is also integrated with the electric lighting system. With advanced lighting controls, it is now possible to adjust the level of electric light when sufficient daylight is available. Three types of controls are commercially available:

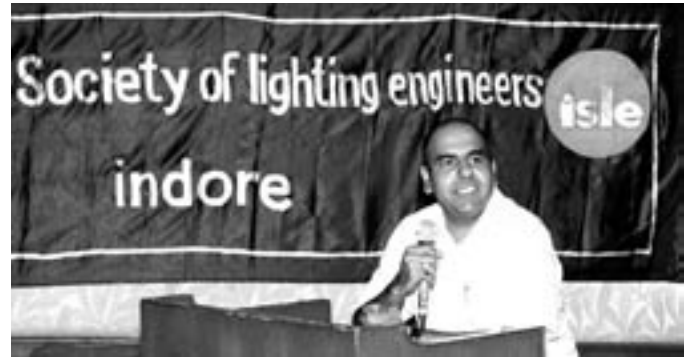
- Switching controls - on/off controls simply turn the electric lights off when there is ample daylight.
- Stepped controls - provide intermediate levels of electric lighting by controlling individual lamps within a luminaire.
- Dimming controls - continuously adjust electric lighting by modulating the power input to lamps to complement the illumination level provided by daylight.
- Any of these control strategies can, and should, be integrated with a building management system to take advantage of the system's built-in control capacity. To take full advantage of available daylight and avoid dark zones, it is critical that the lighting designer plan lighting circuits and switching schemes in relation to fenestration.
- Occupancy controls - using infrared, ultrasonic or micro-wave technology, occupancy sensors respond to movement or object surface temperature and automatically turn off or dim down luminaires when rooms are left unoccupied. Typical savings have been reported to be in the 10 to 50 percent range depending on the application.
- Timers - these devices are simply time clocks that are scheduled to turn lamps or lighting circuits off on a set schedule. If spaces are known to be unoccupied during certain periods of time, timers are extremely cost effective devices.

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Continued from page 10



Mr. Vipin Soni

given by the Er. Dinesh Wadhwa, Hon. Secretary with announcement of the next speaker.

The State Centre Committee meeting followed the presentation.

Dinesh Wadhwa
Hon. Sec. MPSC

CIE ACTIVITY

CIE 2011 - Quadrennial Session July 10-15, 2011 Sun City, South Africa

Below, an excerpt from the message of the CIE President, Franz Hengstberger.

"The Session was previously divided into a Conference part followed by a part for the meetings of the CIE Divisions and the Division's Technical Committees (TCs). For the Session from Sunday, 10 to Friday, 15 July 2011, the Conference part has been allocated to the mornings and the Division and TC meetings to the afternoon. This new arrangement is aimed at encouraging the attendance of both parts by the majority of participants. I would like to stress very strongly that ANYBODY with an interest in the work of any CIE TC is more than welcome not only to attend the Conference part in the mornings but also the applicable Division meetings, TC meetings and workshops in the afternoons. If the interest is strong enough, interested persons may also apply to the TC chair to become a member of the particular TC of interest. For a full list of all CIE Divisions and their TCs, please visit the CIE website at <http://www.cie.co.at>. I should also emphasise that the CIE is the pre-eminent international standards body for light and lighting and is recognised as such by both ISO and IEC (see CIE website). Consequently, a lot of the work in CIE TCs deals with the drafting of international standards in this field. The international character of our organisation is also illustrated by the venues of the various Sessions and midterm Sessions."

For registration and further information contact:

<http://www.cie2011.co.za/>

Emergency Lighting in Road Tunnels

CIE 193:2010

This report makes recommendations for emergency lighting in road tunnels longer than 500 m, to facilitate the safe evacuation of vehicle occupants in emergency situations such as fire. The recommendations may also be valid for tunnels less than 500 m in length, where conditions such as high traffic volume, or severe curvature or gradient apply. The report addresses the fundamental issues of emergency lighting for evacuation routes, emergency exits, escape routes and lay-bys, as well as giving some practical advice regarding aspects of installation and maintenance in road tunnels. It recommends lighting levels and general provisions for emergency lighting installations that, based on experience, are considered to be necessary for the safety of people driving through road tunnels in case of an incident and particularly of fire. However, as there are different types of road tunnels, both in construction and traffic conditions and various types of incidents may occur, this report should be considered as a list of minimum recommendations for emergency lighting in tunnels, to be completed by means of specific risk analysis for the particular tunnel.

This report is intended to be used in conjunction with CIE 88 (2nd revision - 2004 or any further revision) or with relevant Regional or National standards, directives and regulations for road tunnel lighting. The latter may include requirements that differ from the recommendations of this report, and take priority over them. Before following the recommendations of the report in a particular location, the existence of any relevant legal requirements should be investigated.

The publication is written in English, with a short summary in French and German. It consists of 14 pages with 7 figures 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 66, (Members of the National Committees of the CIE get 66,7% discount).

On Site Measurement of the Photometric Properties of Road and Tunnel Lighting

CIE 194:2011

This Technical Report gives the information which designers and users of automatic systems intended to measure the photometric properties of road and tunnel lighting systems need in order to understand the performance of such systems. The main aim of this guide is to clearly define and describe the technical limitations

and characteristics of these measurement systems. In this way the advantages and disadvantages of the technical solutions adopted in different systems can be assessed. Their measurement uncertainty can be evaluated and discrepancies understood when the measurement results are compared with those obtained by manual systems or by theoretical evaluations from mathematical algorithms and/or computer simulations. The guide concentrates on systems that measure horizontal illuminance and luminance on road surfaces but much of the guidance is relevant to other quantities and measurement conditions. The guide is divided into two parts:

Review of essential photometric quantities where differences between their physical or normative definition, their mathematical evaluation and their measurable approximation are highlighted (Clause 2 and Clause 3);

Review of the types and characteristics of instruments, the conditions and methodologies of measurements, the evaluation of uncertainty in measurement results and data elaboration (Clause 5, Clause 6 and Clause 7).

The publication is written in English, with a short summary in French and German. It consists of 90 pages with 45 figures and 6 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 192, (Members of the National Committees of the CIE get 66,7% discount).

Specification of Colour Appearance for Reflective Media and Self-Luminous Display Comparisons - Background Information Relating to the Development of the CIECAM02 Colour Appearance Model

CIE 195:2011

This Technical Report summarises the body of work conducted by CIE Technical Committee 1-27 "Specification of Colour Appearance for Reflective Media and Self-Luminous Display Comparisons" from 1990 until 2001. After compiling data from researchers around the world and studying various forms of colour appearance models to predict results from hardcopy/softcopy matching experiments under a variety of viewing conditions, it was discovered that the same colour appearance model would not consistently or adequately predict the visual results. In 2001, all CIE TC1-27 results were passed along to CIE TC 8-01, Colour Appearance Modeling for Colour Management Systems. This Technical Committee within Division 8 formulated an effective colour appearance model by combining the best features of the colour appearance models that were studied by CIE TC1-27. The result was the development of the CIECAM02 colour appearance model.

The publication is written in English, with a short summary in French and German. It consists of 46 pages with 28 figures and 14 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 66, (Members of the National Committees of the CIE get 66,7% discount).

CIE Guide to Increasing Accessibility in Light and Lighting CIE 196:2011

This guide was written for lighting designers and engineers, as well as scientists of light, colour and vision to assist them in taking account of the needs of older persons and persons with disabilities. The guide was developed in accordance with ISO/IEC Guide 71:2001 "Guidelines for standard developers to address the needs of older persons and persons with disabilities" and its technical guidelines ISO/TR 22411:2008 "Ergonomics data and guidelines for the application of ISO/IEC Guide 71 to products and services to address the needs of older persons and persons with disabilities" in order to implement accessible design in the field of light and lighting. Some content has been shared with those two documents. The guide was prepared by a Working Group (Ad-hoc) in the CIE Board of Administration in cooperation with TC 1-54 "Age-related change of visual response" and TC 3-44 "Lighting for the elderly".

The publication is written in English, with a short summary in French and German. It consists of 63 pages with 20 figures and 11 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 219, (Members of the National Committees of the CIE get 66,7% discount).

Vehicle Headlighting Systems Photometric Performance - Method of Assessment New Standard CIE S 021/E:2011

This Standard specifies a method to consistently assess the photometric performance of vehicle headlighting systems to enable the performance of different systems to be compared. The requirements are given in relation to road scene illumination and the limitation of glare, and the performance is assessed using parameters relevant to lane guidance and the detection of pedestrians and objects.

The Standard includes a measurement and calculation procedure. It does not specify the format of an assessment report.

The Standard is written in English and has been approved by CIE National Committees. It is readily

available via the website of the Central Bureau of the CIE (www.cie.co.at). The price of this Standard is EUR 135, (Members of the National Committees of the CIE get 66,7% discount).

OTHER NEWS

Second LED Lighting Conclave April 26-28, 2011, Hyderabad

Electric Lamp & Component Manufacturers Association of India (ELCOMA) organised the second LED Lighting Conclave at Hyderabad International Convention Centre from 26th to 28th April 2011 with a two day workshop and three day exhibition running concurrently. The event was co-sponsored by BEE, Ministry of Power and NEDCAP. The first conclave was held at New Delhi in May 2010. The LED Conclaves are being held in different Indian cities in order to provide information, promote concepts and encourage demonstration of various lighting applications to all stakeholders.

The Ministry of Power together with the Bureau of Energy Efficiency presented a concept paper in 2009 in which LEDs were identified as the product within lighting that required an overall focus by government, industry, specifiers and customers in view of its substantial potential to save energy and also because it was environment friendly. ELCOMA was entrusted with the task to popularise LEDs and create awareness of its technical features and areas of effective lighting potential in India.

Together with the Bureau of Indian Standards, ELCOMA has circulated draft technical standards best suited to Indian conditions. The three applications selected for LED lighting in India were i) secondary roads, ii) downlights for show-rooms, and iii) retrofit self ballasted LED lamps for domestic use.

The workshop was inaugurated by Mr. Chandan Mitra, Vice-Chairman and Managing Director, New and Renewable Energy Development Corporation of Andhra Pradesh (NEDCAP) and Mr. Shekhar Bajaj, Ex President, Elcoma. Mr. Mitra promised that he would encourage all future Lighting projects in Andhra Pradesh to consider LED Lighting. Mr. Shekhar Bajaj suggested that LED Self Ballasted Lamps should also be considered for CDM Schemes.

On this occasion there were several innovative LED introductions. Mr. Nirupam Sahay, CEO, Philips Electronics launched their Self Ballasted Lamp of 5W LED lights at Rs. 649. He indicated that the price of this lamp would reduce once the demand increased. Mr. Swaroop Bolar of Crompton Greaves also launched a Self Ballasted LED Lamp in a warm white version also priced at Rs. 649. Mr. Venkateswara Rao of Global Telelinks launched a portable, rechargeable LED Lantern for rural areas.

Mr. Nirupam Sahay outlined the National Program for stimulating LED Lighting in India and the Elcoma execution plan. He also sought support from the government in providing Test Labs, financial subsidies and tax rebates.

The three Technical Sessions were chaired by Mr. P.K. Bandhyopadhyay, Mr. S. Chakraborty and Mr. Anil Valia. Various expert speakers from India and abroad presented papers on specialised topics. Mr. Christoph Platzer of Atco, Austria addressed the issue of how to create optimum light quality in LED applications. Mr. Nilesh Naik of Philips Electronics explained how architectural designs can be prepared with LED Lighting. On recent developments in LED Lamps and its applications, Mr. Stan Thijssen of Lemnis Lighting, Netherlands (in collaboration with Crompton Greaves) had several innovative ideas to share. Mr. Poo-Cheong of Philips Lumileds, Hong Kong shared information of different categories of LED lamps for SSL applications. And for general LED Lighting, Mr. Indraneel Goswami of Philips Electronics presented an interesting paper on different applications. Mr. R. Sunderrajan of Bajaj Electricals presented case studies and solutions on LEDs for professional lighting. Megha Soni of Osram gave an overview of the future including organic LEDs. There were also presentations on rural lighting. Mr. Debdas Goswami of BIS spoke on the development of LED Standards and Mr. Gautam Brahmabhatt of UL India on how to design SSL Products and how photometric tests can be undertaken.

There were about 200 delegates registered during the conference comprising of government officials from organisations like PWD, Municipalities, Utilities, local bodies besides consultants, contractors, architects, designers and manufacturers. The delegates participated in active and lively discussions.

Advertisements, supplements and reports were carried in the press.

The third ELCOMA LED Lighting conclave will be held at Mumbai from November 24-26, 2011 at the Nehru Centre in Worli.

Shyam Sujan
Secretary General, ELCOMA

WEBWATCH

New Guide Provides Daylighting Designs to Maximize Students' Health and Performance

The body's internal clock is responsible for regulating the timing of our sleep and other daily biological cycles, called circadian rhythms. During school months, however, teenagers miss out on essential morning light needed to

stimulate the 24-hour biological clock. For this reason, professors at the LRC developed a daylighting design guide that balances the photobiological benefits of daylighting with well-known daylight design techniques that can be applied in schools.

"When done properly, these dynamic interiors support human health and activities while also reducing energy demand," said Russ Leslie, LRC associate director, professor, and lead author of the newly published book, *Patterns to Daylight Schools for People and Sustainability*.

The book is the culmination of a research project that began in 2008, sponsored by the U.S. Green Building Council (USGBC) and, in part, by a grant from a Trans-National Institutes of Health Genes, Environment and Health Initiative (NIH-GEI), to scientifically quantify the impact of daylight design on students' well-being and performance in K-12 schools and investigate the underlying biological mechanisms associated with this possible link.

Results of the studies were detailed in the following papers:

"Lack of short-wavelength light during the school day delays dim light melatonin onset (DLMO) in middle school students," published by the journal, *Neuroendocrinology Letters*. The paper can be accessed at http://node.nel.edu/?node_id=9849.

"Measuring circadian light and its impact on adolescents," published by the journal, *Lighting Research and Technology*. The paper can be accessed at <http://lrt.sagepub.com/content/early/2010/10/26/1477153510382853.abstract?patientinform-links=yes&legid=spirt:1477153510382853v1>.

"Evening daylight may cause adolescents to sleep less in spring than in winter," published by the journal, *Chronobiology International*. The paper can be accessed at <http://informahealthcare.com/eprint/eWR6wecNupmX9ZnhNRRT/full?tokenKey>.

NLPIP Releases Report on Street Lighting Technologies Used in Residential Areas

Specifier Reports: Streetlights for Local Roads available online

The National Lighting Product Information Program (NLPIP) at the Rensselaer Polytechnic Institute Lighting Research Center (LRC) released its latest publication, *Specifier Reports: Streetlights for Local Roads*, designed to provide objective performance information on streetlights for local roads in residential areas.

Municipalities across the United States have applied for funding through the American Recovery and

Reinvestment Act of 2009 to replace their current streetlights with light-emitting diode (LED) and induction streetlights. LED and induction streetlights are often claimed to provide energy savings, better lighting uniformity and distribution, and lower maintenance costs compared with high pressure sodium (HPS) streetlights and, as a result, are marketed as effective replacements for both new construction and retrofit applications. NLPPI's report provides objective data to help lighting specifiers analyze these claims and make informed decisions.

The full report is available at www.lrc.rpi.edu/nlpip/publicationDetails.asp?id=931&type=1.

In 2010, NLPPI published results from a similar study for roads servicing traffic between local and major roadways. That publication, Specifier Reports: Streetlights for Collector Roads, details the results of HPS, induction, LED and pulse-start metal halide streetlights tested by NLPPI for use along collector roads. The full report is available at

www.lrc.rpi.edu/nlpip/publicationDetails.asp?id=927&type=1.

BESCOM Efficient Lighting Program (BELP)

BESCOM presents the innovative Bescom Efficient Lighting Program (BELP) Sponsored by United States Agency for International Development (USAID) under the Energy Conservation and Commercialisation (ECO II) initiative. This program is implemented by International Institute for Energy Conservation (IIEC), Bureau of Energy Efficiency (BEE) and BESCOM. BELP gives you attractive discounts on energy-efficient CFLs from official suppliers Asian, Osram and Philips.

The Bescom Efficient Lighting Programme (BELP) launched recently is for residential lighting. The programme covers 16 lakh domestic consumers, who can replace their conventional lamps with energy-efficient Compact Fluorescent Lamps (CFL) in high-usage areas such as corridors, kitchens and porticos.

Every light replaced with CFL, according to Bescom, will save consumers around Rs. 17 per month. BELP will reach out to consumers through innovative direct sale and monthly installation schemes.

Link:

<http://www.bescom.org/en/news/belp.asp>

MEMBERSHIP APPLICATIONS APPROVED BY GOVERNING BODY

New Members Admitted in 21st February 2011

M. No	Name & Addresses	Grade	Centre
I.0150	Elmeco Projects Pvt Ltd 101, Rani Jhansi Road Model Basti New Delhi 110 005	Institutional	Delhi

IM.0150	Somenath Sarkar Elmeco Projects Pvt Ltd 101, Rani Jhansi Road Model Basti New Delhi 110 005	Institutional Representative	Delhi
I.0151	Poseidon Lighting Pvt Ltd No. 5, 23 rd East Street Kamarajar Nagar Thiruvanmiyur Chennai 600 041	Institutional	Chennai
IM.0151	Ramakrishnan Venugopal Poseidon Lighting Pvt Ltd No. 5, 23 rd East Street Kamarajar Nagar Thiruvanmiyur Chennai 600 041	Institutional Representative	Chennai
I.0152	Vignani Solutions Pvt Ltd #380, 5 th Main HSR Layout, 6th Sector Bangalore-560 095	Institutional	Karnataka
IM.0152	Dr. R. Srinivasan Vignani Solutions Pvt Ltd #380, 5 th Main HSR Layout, 6th Sector Bangalore-560 095	Institutional Representative	Karnataka
I.0153	Ocean Thin Flms C/o Halma Trading & Services India Pvt Ltd 201, Hyde Park Saki-Vihar Road, Andheri (E) Mumbai 400 072	Institutional	Mumbai
IM.0153	Bhushan S. Dhakras Ocean Thin Flms C/o Halma Trading & Services India Pvt Ltd 201, Hyde Park Saki-Vihar Road, Andheri (East) Mumbai 400 072	Institutional Representative	Mumbai
F(L).0713	Yasin Mohd. Siddique Mapara Fatema Manzil Plat No. 37A Sector 5 New Panvel (East) 410 206 Dist. Raigad	Fellow (Life)	Mumbai
F(L).0714	Ramesh M.S. Madras Electrical Consultants 6, Park Avenue 1 st Cross Street, Velachery Chennai 600 042	Fellow (Life)	Chennai
F(L).0715	Sanjeev Sethi B-672, Sector -49 Sainik Colony Faridabad 121 001	Fellow (Life)	Delhi
F(L).0716	Biswakesan Sahoo Executive Engineer (Electrical) Electrical Maintenance Division IIT, Powai Mumbai 400 076	Fellow (Life)	Mumbai
F(L).0717	Nilotpal Paul AH-250, Sector-II Salt Lake City Kolkata 700 091	Fellow (Life)	Kolkata
M.1595	K.N.V. Raju CR. Narayana Rao Architects & Engineers No. 10, Karpagamal Nagar Mylapore Chennai 600 004	Member	Chennai

M(L).1596	Sanjay Agarwal Srishti Interiors 22, Goenka Lane Daccapalli, Ground Floor Kolkata 700 007	Member (Life)	Kolkata	S.0603	Mohit Jain 102, Chandani App. 252, Usha Nagar Main Annapurna Road Indore	Student	MP
M(L).1597	Shyamal Mondal C/o Debendra Nath Mondal Village Mathurapur, P.O.+ P.S. Sonarpur Kolkata 700 150	Member (Life)	Kolkata	S.0604	Kunal Soni 2/3 Usha Nagar Main 409 Raj Palace, Mhow Naka Indore	Student	MP
M(L).1598	C. Prakash Chand Jain Dhanlaxmi Lights 164, Govindappa Naicken Street 1 st Floor, Kalyan Complex Chennai 600 001	Member (Life)	Chennai	S.0605	Kapil Sharma Sector – C Near Marthoma Hr Sec School Sukhliya Indore 452 001	Student	MP
A(L).1059	Shiladitya Sendh B-1, 12, Bhimashankar CHS Sector-19A, Nerul Navi Mumbai 400 706	Associate (Life)	Mumbai	S.0606	Kamlesh Satpute Sector – C, 1107 Near Marthoma H.S. School Sukhliya Indore 452 001	Student	MP
A(L).1060	Jajati Keshari Sendh B-1, 12, Bhimashankar CHS Sector-19A, Nerul Navi Mumbai 400 706	Associate (Life)	Mumbai	S.0607	Akshay Khandelwal 925, Bijalpur Naka A.B. Road Indore	Student	MP
A(L).1061	Mahaveer Kumar Jain Vinay Agencies 5/1, H.T. Street, 1 st Cross Basettypet Bangalore 560 053	Associate (Life)	Karnataka	S.0608	Sourabh Arora 26 Joy Builder Colony Ranisati Gate Indore	Student	MP
A(L).1062	Mahendra Dudhoria Premier Electricals 680/1, Chickpet, S.B. Market Bangalore 560 053	Associate (Life)	Karnataka	S.0609	Dhaneshver Kewat 36 Mangal Nagar Nx Sukhliya Indore	Student	MP
New Members Admitted in 15th March 2011				S.0610	Dushyant Rishi Lauwanshi 36 Mangal Nagar Nx Prime City, Sukhliya Indore	Student	MP
F(L).0718	Shreesh Trimbak Kutumbale 1 Sardar Patel Marg South Tukoganj Indore	Fellow (Life)	MP	S.0611	Hari Shankar Manikpuri J.N. City Boys Hostel RNT Marg 117 Chhawani Square Indore	Student	MP
F(L).0719	Goverdhan Das Gidwani 54, Greater Tirupati Near St. Paul School Indore	Fellow (Life)	MP	S.0612	Sandeep Singh EK – 357, Scheme 54 Vijay Nagar Indore	Student	MP
F(L).0720	Ramesh Kumar Bhargava 102 Mangalam Residency 100/101 Anoop Nagar Indore 452 008	Fellow (Life)	MP	S.0613	Tasneem Yusufi 46-A, New Saify Nagar Manik Baug Road Indore	Student	MP
M(L).1599	Gautam Zalani United Engineers & Co. 1, Gas House Road Near Nagar Head Post Office Indore	Member (Life)	MP	S.0614	Amrata Agrawal 102, New Agrawal Nagar Nlima App. F.No. 02, S.No. 47 Indore	Student	MP
M(L).1600	Chandra Prakash Sablok 119 VIP Praspar Nagar 97/4, Slice-4 Indore 452 012	Member (Life)	MP	S.0615	Kavita Pandey 527, Dwarkapuri Indore	Student	MP
M(L).1601	Bharat Lal Patel 75,76 Suman Nagar B/H BCM Heights, Near Bombay Hosital Indore	Member (Life)	MP	S.0616	Shipra Sharma C/o Ar. Deepak Sharma Plot No. 70, Panchvati Colony Kodariya, Mhow Dist: Indore 453 441	Student	MP
S.0600	Jatin Matkar 415/A, Usha Nagar Extn Indore	Student	MP	New Members Admitted in 28th March 2011			
S.0601	Sahil Khan 33, Ganesh Nagar Indore	Student	MP	F(L).0721	Jitendra Sharma Chief Engineer M/s M.P. Urja Vikas Nigam Ltd Urja Bhawan, Shivaji Nagar Bhopal 462 016	Fellow (Life)	M P
S.0602	Manish Jariya 79, Jabran Colony Jouny Indore	Student	MP				

M(L).1602	Sitanshu Behuria Surya Apartment, 1st Floor Khasara No 643, B-3 Export Enclave, Nai Basti, Devli New Delhi 110 062	Member (Life)	New Delhi
M(L).1603	Anil Samaria Samaria Electronics Opposite Kalidas Girls' College Near Mohan Talkies Ujjain (MP)	Member (Life)	M P
M(L).1604	Hiranand Hemnani Jyoti Electronics 103, Prince's Centre 6/3, New Palasia Indore 452 001	Member (Life)	M P
M(L).1605	Nitin Kumar Jain N.K. Electricals 413, M.G. Road Kadabeen Indore	Member (Life)	M P
M(L).1606	Rajendra Siroliya Pankaj Electricals 57, Varuchi Marg Near Gurudwara Freeganj Ujjain (MP)	Member (Life)	M P
M(L).1607	Rajesh Basaria Manokamna Electrification Co. 132 Jehangirabad Near Post Office Bhopal 462 008	Member (Life)	M P
M(L).1608	Deepak Jajodia Armoney Electricals 9, Ganji Compound Behind Nagar Nigam Indore 452 007	Member (Life)	M P
M(L).1609	Mohd. Abdul Rehman Manpower Controls 119, Chaitanya Complex Sikh Mohalla Chouraha Indore 452 007	Member (Life)	M P
M(L).1610	Deepak M. Singhi Riddhi Siddhi Electricals 164, Kalayan Complex, 1st Floor Govindappa Naiken Street Chennai 600 001	Member (Life)	Chennai
M(L).1611	Joseph Austin Balarajan Trinity Associates 5/C-10,11, Jenne Plaza Bharathiyar Salai, Cantonment Tiruchirapalli Tamilnadu 620 001	Member (Life)	Chennai
M(L).1612	Jagmohan Rathi Shri Krishna (Bajaj House) Sushila Complex Chimanbag Chouraha 130, Devi Ahilya Marg, Jail Road Indore	Member (Life)	M P
A(L).1063	Ankit Zalani Zalani Sons 1, Gas House Road Near Nagar Head Post Office Indore	Associate (Life)	M P

Transfer of Grade

F(L).0722	S.G. Mehta 50/B, Vandana Nagar Anx. Tilak Nagar Colony Indore 452 001	from M.0502	M P
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President's Visit to China

In October 2010 a new organisation by name of International Solid State Lighting Alliance (ISA) was formed in Beijing, China. As President of ISLE I participated as a special invitee in their Executive Member meetings in Shanghai on 13th May and another meeting in Beijing on 15th May. There were several banquets; a welcome banquet in Shanghai and two Director's banquets, one in Shanghai and other one in Beijing.

As of now there are six Executive Members of ISA and they are: 1. Optoelectronic Industry Development Association, 2. Korea Association for Photonics Industry Development, 3. Taiwan Optoelectronic Semiconductor Industry Association, 4. China SSL Alliance, 5. Illuminating Engineering Society of Australia and New Zealand and 6. Indian Society of Lighting Engineers. The approval of ISLE as an Executive Member was passed in the Executive Member meeting in Shanghai on 13th May and representatives of all the six Executive Members are Directors of ISA.

From 11th to 13th May there was an event "Green Light Shanghai Forum 2011", comprising a technical conference and a trade show. The registration for the conference was over 1100 and there were two to three parallel sessions of paper presentations. Between attending Executive Member meetings, banquets and visiting the trade show, I tried my best to attend as many technical sessions as possible. I have a copy of their written proceedings but most papers are in Chinese. As simultaneous translation was available on head phones; understanding Chinese papers was no problem at all. Although all sessions I attended were very interesting I will present high lights of two sessions which are of more interest to ISLE members.

There was a panel discussion on "LED Lighting Policy and Application: Experience of International Cities". The moderator was Mr. Phillip Jessup, Director, The Climate Group, and the panel members included very senior executives responsible for city lighting and transportation of six major cities: Toronto, New York, San Jose, London, Nanjing (third largest city in China) and a city in Sichuan province that was devastated by an earthquake two years ago a place in China where they had a major earth quake three years ago). Only the executive from Toronto expressed serious concern about life of the lamps as he found that in an underground parking lot installation the lumen drop was 10% in one year. The other five panelists were 100% happy with the performance though all them thought that the price was too high.

Later in the evening I had a ten minute discussion with one of the panelist Ms. Margaret Newman, Chief of Staff, Department of Transportation, New York City. She

replacement of the sodium lamps with white light of LEDs and these LED luminaires are being installed on the most busy roads of the city; but again, the cost is three to four times that of the HPSV lamp + luminaire. This feedback from six major cities across the world is indeed very significant data.

There was only one session dedicated to light sources other than LED. One paper talked in some detail about the Philips CosmoPolis 140W CDM lamp of super compact design with efficacy of 125 LPW. But the most interesting paper in this session was from Taiwan about the electrodeless lamp of low wattage for domestic use (frequency 150 to 200 kHz) and high wattage of up to 250W, operating at 2.6 MHz for industrial use. There are National standards drawn for all of them with seven approved manufacturers making these induction lamps in Taiwan.

We all flew to Beijing from Shanghai on the 14th and on the morning of Sunday the 15th we had an Executive meeting in perhaps the most premium location in China: The Great Hall of The People in Beijing. The sheer scale and elegance of it is beyond imagination. In the beginning of the meeting the facility in charge of GHP briefed us about the current lighting status and welcomed ISA's proposal to redo the entire lighting using LEDs. That

should give a big boost and a head start to promotion of SSL. International quotes will be invited for the project. We all were given a tour of the place.

In the afternoon we had another working meeting and most of the time was spent on the Strategic Research Agenda (SGA). I have taken an initiative to write a proposal on 'Off Grid Lighting' as for India, with more than 30% homes without electricity, the biggest utility of LED would be for domestic lighting in areas where power from the grid is not available. Mr. C.M. Chen, President, Silicon Based Development Inc., a Taiwan based company employing 500 persons and with operations in Taiwan and the Mainland offered to work with me on the proposal. There were five other projects identified for SGA.

After a formal dinner we all went to the National Centre for the Performing Arts to see a Chinese play/ opera.

On 16th May I took the flight back to Mumbai via Hong Kong.

As part of the courtesy extended to me, the expenses for the entire China trip were borne by ISA.

Avinash D. Kulkarni
President ISLE

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