

# TECHNICAL TALK ON WHY LED LIGHT FLICKER AFFECTS HEALTH & WELL BEING : HEALTH AT RISK

(Organised by Electrical Engineering, Technical Division, IEM)

BEM Approved CPD/PDP Hours: 2

Ref. No.: IEM18/HQ/399/T

Date : 13<sup>th</sup> October 2018 (Saturday)  
Time : 9.00am – 11.00am (Refreshments will be served at 8.30am)  
Venue : Malakoff Auditorium, Ground Floor, Wisma IEM, Petaling Jaya  
Speaker : Mr. Siew Choon Thye (C. T. Siew)

## SYNOPSIS

### Method and Standard Guide for measuring Lighting Flicker.

Regular exposure to flickering lights has a negative impact on the human body. Recent studies show that flickering lights impact productivity, focus, comfort, and even our emotional well-being. Lighting Flicker is invisible when it consists of pulses or waves of light that repeat one after the other so rapidly that they appear to fuse together into steady light. The human eye and brain process the light from LEDs within a infinite time, so most of us will not notice or "see" the flicker. Even though light flicker may not be visible to the naked eye, there is evidence that the human brain can detect light flicker frequencies as high as 200Hz. Potential problems include headaches, eye strain, impaired visual performance or, in extreme cases, epileptic seizure. Consumer, designers, authorities, engineers and etc.. are changing their light to LED, purely on the basis of energy efficiency, cost maintenance without deeply understanding the quality of LED light which will ended up risking their health. Research has shown the fluctuation of short wavelength emission are perceived to a higher extent and light flicker has a huge influence on well-being "Human Health Related Issues". Its may causes headache, migraine, dizziness, photosensitive epilepsy, nausea and to the extent of loss of sight. With the ever-increasing of LED lamps in various application, we have to consider and understand the mode of operation are different from the conventional lamp technologies. LED lighting products may exhibit anomaly high flicker rates, especially under dimming control system. Light Flicker is garnering increased attention from lighting designers and specifiers, the standards and specification community and consequently lighting manufacturers. An IEEE group has developed a recommended practice for evaluating light flicker risks. An understanding of why light flicker matters and how much it varies across commercially available products is increasingly becoming essential for proper lighting design. Specifying the right product for a given application and risk sensitivity further requires the ability to quantitatively characterize light flicker. There are many manufacturers and traders (Players) in the field of lighting business. With the rapid development of LED lighting, players are now focusing on introducing of LED as a new light source. Most of them are from electronic based manufacturing company extension LED as another light source and income. They have little experience on lighting application. Hence not all manufacturers are competent and reliable and they do not understand the method of lighting application and measurement.

## SPEAKER'S BIODATA



Mr. Siew Choon Thye (C. T. Siew) has more than 20 years history of leadership and governance positions in lighting manufacturing, application and businesses for the professional lighting sectors. His activities primarily include Lighting Design Application, Lighting Product Development, Engineering and installation of various types of lightings application such as; Sport –Stadium, Port, Architectural Facade and Public Street Lighting. He is a member of the SIRIM TC Lighting committee and several working group on MS standard. He was the founding Chairman of CIE and Lighting Council Malaysia (MyCIE & NCCIE) and is currently the Div 5 – Head.

In addition to the Lighting Industry, Mr. C.T. Siew is a Managing Director of Gruppe Lighting Solution Sdn. Bhd. Specializing in lighting manufacturing and application on Public lighting, Sport lighting, & industrial lighting Mr. C.T. Siew is actively and deeply involved in the Malaysia government standards development and activities related to lighting and is a Deputy President of The Electrical and Electronics Association of Malaysia (TEEAM) Council of MyCIE & NCCIE – Malaysia – International Commission on Illumination. Mr. C.T. Siew has a Bachelor's degree in Manufacturing graduated in 1990.

Ir. Chong Chew Fan

Chairman

Electrical Engineering Technical Division, IEM

## FEE ANNOUNCEMENT (Effective: 1<sup>st</sup> October 2017)

### Members:

- (i) Registration Fee: No Charge
- (ii) Administrative Fee:
  - (a) Online RM15
  - (b) Walk-In RM20

### Non-Members:

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- (ii) Administrative Fee: RM20

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