

The Development of LED Standards and Measurement

LED標準和測量方法的進展

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Abstract

Firstly, the latest development of LED standards in IEC TC34 will be introduced. Combining with the new requirements of global energy saving and environmental protection, the new tendency of LED standardization in IEC will be presented, especially for the performance specification, lifetime and reliability testing of LED products, etc.

Currently, the requirements of photobiological safety of LED products are addressing to IEC 62471 series standards. The latest development of optical radiation safety standards of non-laser sources in IEC TC76 / WG9 will be reported, including new amendment of the threshold value and measurement conditions in IEC62471-1, and the new proposal of the measurement standard related to optical radiation safety.

Meanwhile, the development of activities in the CIE organization related to the LED standardization will be introduced, such as the research on the measurements of LED optical performances in the Division 2, the standardization on photobiological safety and healthy lighting for LED products in the Division 6.

Finally, the report will introduce the latest developments of LED measurements and relative equipments, including measuring systems for photometry, colorimetry and goniophotometry, and the measurements of photobiological safety, thermal properties measurements and the accelerating test of LED products.

摘要

首先報告介紹了IEC TC34有關LED照明產品國際標準的最新進展；同時結合全球節能、環保的新動向，分析了IEC標準的新趨勢，包括LED產品的光學性能、壽命和可靠性等等。

目前LED產品的光生物安全要求歸屬於IEC 62471系列標準。報告介紹了IEC TC76 / WG9針對非鐳射光源的光輻射安全標準的最新進展，包括IEC 62471-1對相關的閾值及測量條件的修訂以及光生物輻射安全測量方法標準的新提案。

同時，介紹了國際照明委員會CIE有關LED標準化的研究；如CIE第二分部有關LED光學測試方法研究；CIE第六分部有關LED產品的光生物安全以及健康照明的標準化研究。

最後，報告介紹了LED產品的測量技術及設備的最新進展，包括LED產品的光度色度、空間配光分佈、光生物輻射安全、熱性能測量以及壽命加速試驗方法等。

Biography

Prof Tongsheng Mou, recipient of IEC 1906 Award in 2010, has engaged in the research of light and color measurement in Zhejiang University since 1986, and the President of Zhejiang University SENSING Instruments Co., Ltd., and a NIST Guest Researcher from 2009 to 2010.

He is an international standardization expert delegated by China Standardization Administration in IEC TC76 on optical radiation safety, IEC TC110 on flat panel displays (LCD/PDP/OLED/3D). He was approved as the project leader of international standard IEC 62341-6-3 and a Chair of CIE R2-46 Photobiological Safety Measurement of Lighting Products, and also the liaison officer between CIE D2 and IEC TC110 / WG5 to promote the international collaboration on OLED standardization.