

室內光能源採集產品安全標準與檢測技術建置計畫

執行單位

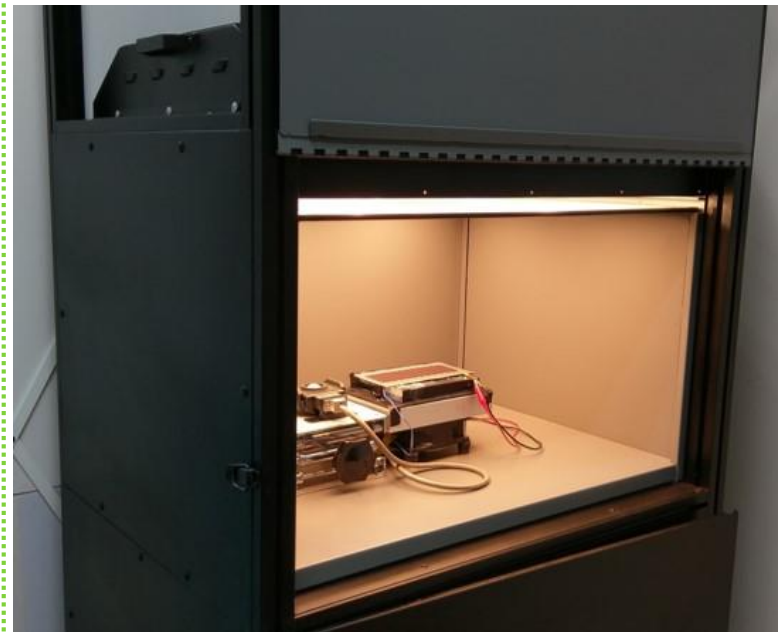
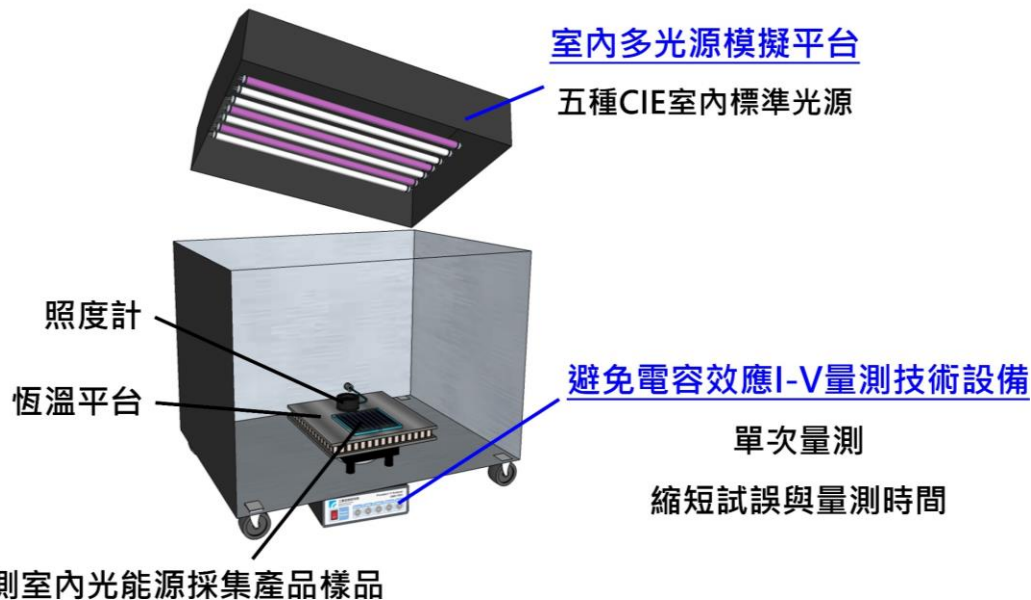
工業技術研究院

計畫主持人

顏鈺庭 博士

- 具五種CIE室內標準光源 (A/D65/CWF/TL84/U30) 照度可調控之室內多光源模擬平台，與避免電容效應I-V量測技術，可提供相關廠商與消費者檢測驗證服務，降低消費糾紛並提升國內產品的國際市場競爭力，協助國內相關產業發展，實現物聯網感測器所需供電元件基礎。

室內光能源採集產品性能量測系統



- 五種CIE室內光源 (A/D65/CWF/TL84/U30) 滿足 (白熾燈 家庭光源/窗邊日光/冷白光/商店或辦公室光源/暖白光) 室內常見應用情境。
- 結合演算法進行待測元件電壓電流特性量測，最佳化量測時間，並避免元件電容效應影響量測結果。
- 只需單次量測即可得到不具電容效應的I-V曲線之避免電容效應量測技術，可大幅縮短試誤與量測時間。
- 適用多種室內光能源採集產品 (染料敏化DSC/有機OPV/鈣鈦礦PSC)。
- 根據國際認可檢測程序，建置相關技術服務能量，滿足國內業者檢測驗證需求，協助產業發展，促成兆元商機。
- 發展關鍵量測技術與設備，帶動關鍵設備國產化，促成國內設備商技術升級。

Development Project of Inspection Technologies and Safety Standards for Indoor Light Source Energy Harvesting Products

Execution Unit

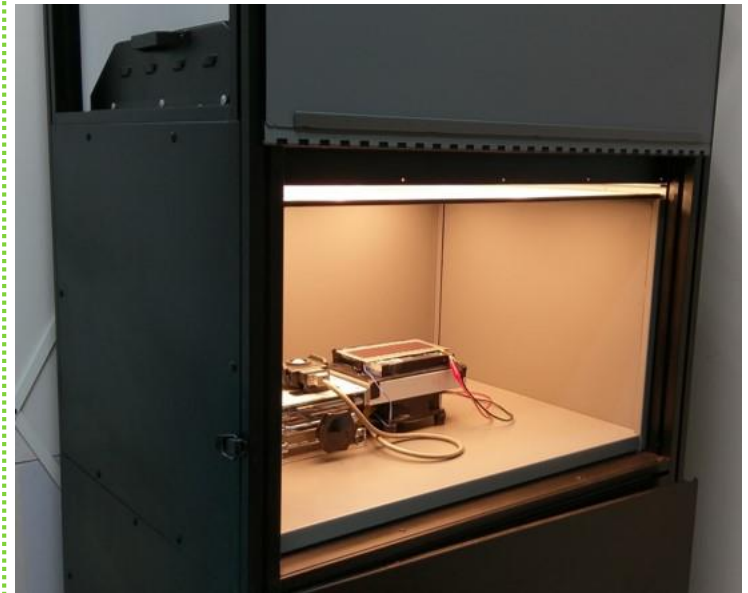
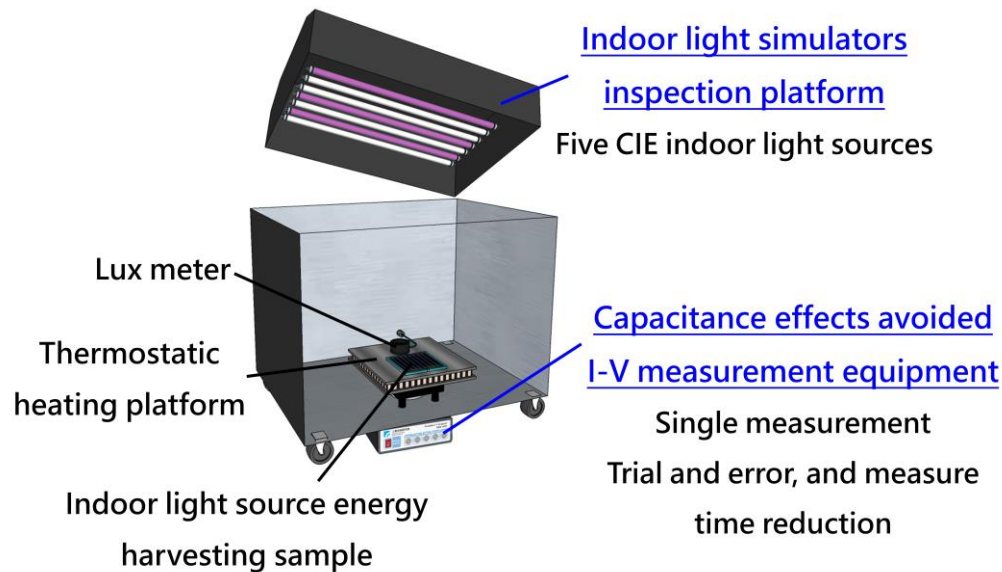
Industrial Technology Research Institute

Project Director

Dr. Yen, Yu-Ting

- Indoor light simulators inspection platform with five CIE indoor light sources (A/D65/CWF/TL84/U30), and capacitance effects avoided I-V measurement technology could provide product inspection services to related manufacturers and consumers, reduce consumer disputes, promote the international market competitiveness of domestic products, assist the development of domestic related industries, and realize the power supply components basis for IoT sensors.

Indoor light source energy harvesting products performance measurement system



- Five CIE indoor light sources (A/D65/CWF/TL84/U30) meet five common indoor application scenarios (incandescent lamp / sun / cool white light / store or office light / warm white light).
- Technology combined with algorithm is developed to measure the performance of samples, optimize the measure time, and avoid the capacitance effect.
- Capacitance effects avoided I-V measurement technology could provide I-V curves with no capacitance effects in just a single measurement, which dramatically reduces trial and error and measure time.
- Suitable for a variety of indoor light source energy harvesting products (DSC/OPV/PSC).
- According to international accredited inspection procedures, related technical service energy is established to meet the domestic industry inspection and verification needs, to assist the development of industries, and to promote trillion-dollar business opportunities.
- Key measurement technologies and equipment is developed to drive the localization of key equipment, and to promote the technological upgrading of domestic manufacturers.