全彩發光二極體模組之分光曲線量測系統研製

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摘要

The purpose of this research is to set up a far field measurement system for light emitting devices. The system used thirteen (13) photo-detector array modules to form a 90 degree arch with a diameter of 63.2cm. Each module comprised eight photo-detectors, and each detector covered 0.9 degree. A stepping motor, placed at the center of the arch, rotated a device under test, namely a light emitting device, through 360°with a step size of 1.8 degree. With programming in C language, a powerful and high speed micro-controller, C8051-F020, was employed in the data acquisition sub-system that bridges the photo-detector array modules and a personal computer. The communication between the personal computer and the data acquisition sub-system was through a RS232 interface that allowed a Labview based program to control the 3-dimensional far field measurement flow. A fast, reliable, user-friendly measurement system had been achieved by using the above mentioned scheme.

關鍵字：Goniometer, Photo Detector, Far Field Measurement System, Photo-Density Detector