Illumination light source with Simulated Solar Spectrum by using light-Emitting diode

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ABSTRACT

Daylight is the natural white light in the nature, and also the element of human existence.Therefore, daylight is the absolutely perfect light source for illumination.Because the impact of daylight for body's health is very significant,if the artificial light source can simulate the daylight, it will be the most perfect light source. The emitting light of light-emitting diodes is monochromatic, and then the solar spectrum can be composed of different monochromatic light-emitting diodes. This experiment used current commercially available light-emitting diodes to simulate the solar spectrum;the layouts of light-emitting diodes are modified for obtaining the similar spectrum to the solar spectrum and arranging the circuit with series connection and parallel connection. However, the existing light-emitting diodes are not enough to constitute the solar spectrum completely. The reason is that several spectral bands of light-emitting diodes are not yet in official mass production. If those light-emitting diodes are available, the simulated spectrum of this experiment will be more similar to the solar spectrum.

Keywords : light-emitting diode, Illumination light source,simulated solar spectrum.

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