

Chromaticity study of Curcumin Dye Extracted from *Curcuma longa* L. using for UV light down conversion for white light emitting diode

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Turmeric phosphor dye extracted from *Curcuma Longa* L. through simple technique using silica gel. The phosphor was used light down-conversion of UV light for white light emitting diode (WLED). Two types of UV (380nm and 395nm) wavelengths have been used. The characteristics of the white light chromaticity was controlled by changing the current and the concentration of the phosphor. The concentration has a critical effect on the conversion efficiency. The CIE coordinates and correlated color temperature were measured for various phosphor weight and current. An optimum color rendering index (CRI) value of 78.5 is obtained. The white phosphor has a (CIE) value of (0.336, 0.355) and the color temperature (CCT) 5350K.

Keywords: Turmeric phosphor, *Curcuma Longa* L., silica gel