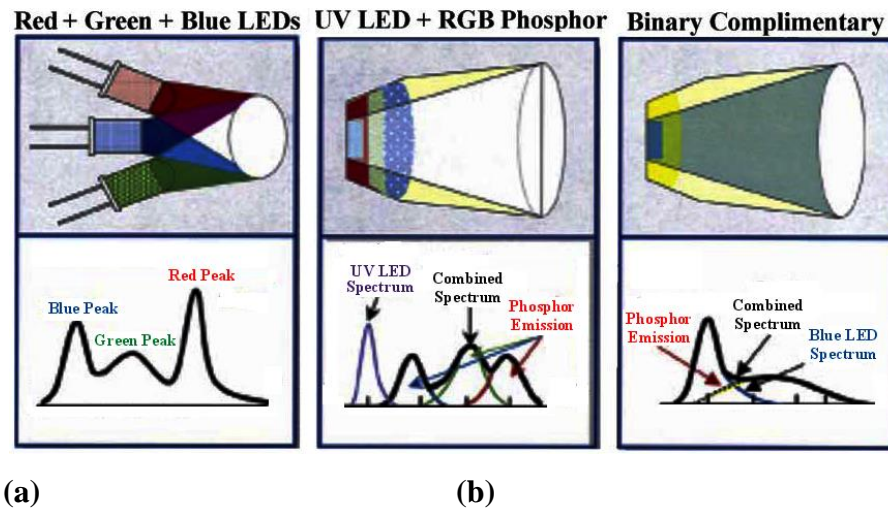




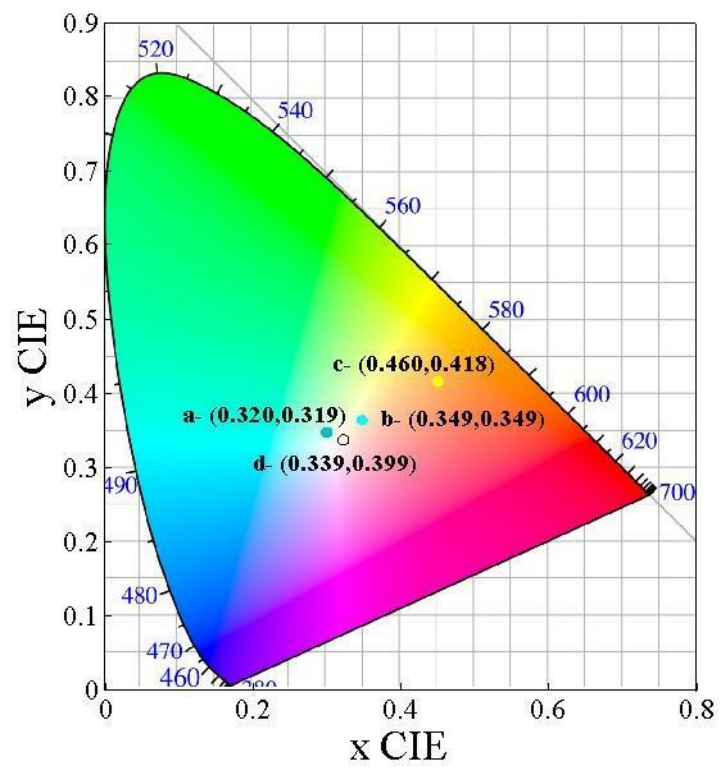
# Synthesis and Characterization of Tunable Multicolour and White Light Emitting Nano phosphors

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There are two types of light emitting diodes: organic, and inorganic. The light-emitting diodes (LEDs) are based on inorganic material including III-V group semiconductor materials or inorganic luminescent materials, which are called semiconductor devices that produce non-coherent, narrow-spectrum light when an electrical current flows through it. Nowadays, LEDs can emit in wavelengths from the UV band to IR. Recently, light-emitting diodes (LEDs), particularly white light-emitting diodes (WLEDs), have attracted much attention as new, and economically advantageous of all solid-state light sources. The development of LEDs has also stimulated research on phosphors used for WLEDs. Presently, three kinds of WLEDs have been proposed, and constructed as shown in Fig. 1.3. The ultimate objective of the work was to synthesis nano phosphors and make thin film to generate tunable multicolor and white light emitting as in Fig. 2 then to fabricate devices that can be used in different applications.



**Fig. 1: (a) RGB LEDs, (b) UV LEDs + RGB phosphors, and (c) Blue LEDs + yellow Phosphor conversion.**



**Fig. 2: CIE diagram coordinates of tunable and white light emission.**