

Abstract

The invention relates to the field of inorganic luminescent materials and discloses a luminescent glass ceramic and the preparation method thereof and the use in LED lighting devices thereby. The luminescent ceramic is composed of silicate red luminescent glass powder and $\text{Sr}_4\text{Al}_{14}\text{O}_{25}:\text{Eu}^{2+}$ with a mass ratio of 100:0 to 99.1:0.9, wherein the silicate red emitting glass powder is composed of the following components by molar ratio: 50-60% SiO_2 ; 20-30% Na_2CO_3 ; 9% Al_2O_3 ; 6% CaO ; Eu_2O 35%. Since the emission wavelength of phosphor powder used ranges from 450nm to 550nm, and meantime the precursor glass powder can provide red light, the resulting luminescent glass ceramic can emit warm white light under the excitation of a 385nm UV chip. By regulating the ratio of phosphor and glass powder, different kinds of warm white light can be obtained, which expands the categories of luminescent materials and their application range.