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(54) Title: OXYCARBONITRIDE PHOSPHORS AND LIGHT EMITTING DEVICES USING THE SAME

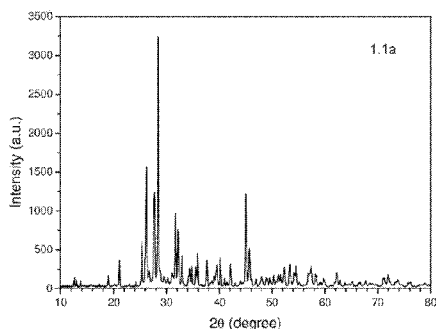


Figure 1A

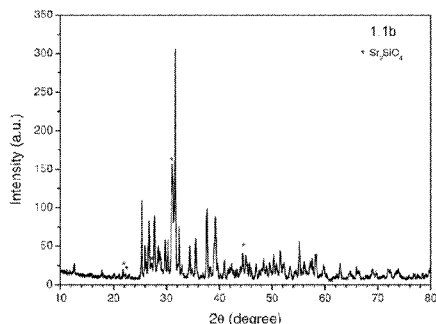


Figure 1B

(57) Abstract: Disclosed herein is a novel family of oxycarbonitride phosphor compositions and light emitting devices incorporating the same. Within the sextant system of M-Al-Si-O-N-C-Ln and quintuplet system of M-Si-O-N-C-Ln (M = alkaline earth element, Ln = rare earth element), the phosphors are composed of either one single crystalline phase or two crystalline phases with high chemical and thermal stability. In certain embodiments, the disclosed phosphor of silicon oxycarbonitrides emits green light at wavelength between 530-550 nm. In further embodiments, the disclosed phosphor compositions emit blue-green to yellow light in a wavelength range of 450-650 nm under near-UV and blue light excitation.



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