

## Nitride Phosphors for the Better Performance of WLEDs

*Chulsoo Yoon*

**R&D Institute, Samsung LED Co., Suwon, Kyunggi-do, Korea**

Phone: +82-31-210-6825, E-mail: chulsoo.yoon@samsung.com

### **Abstract**

Phosphors with oxide host material, YAG:Ce<sup>3+</sup> and (Ca,Sr,Ba)<sub>2</sub>SiO<sub>4</sub>:Eu<sup>2+</sup> yellow phosphor, has been used for LED applications. The WLEDs using these phosphors are widely used for LCD backlighting, automobile, and general lighting applications since they have high conversion efficiency and good thermal and chemical stability which can meet necessary life time of LED products up to now. With advances of LED chip technology, the external quantum efficiency and driving current in chip get higher so that the phosphors for high power chip are required to maintain high conversion efficiency and stability at high temperature due to the heat dissipated from LED chips. In addition, higher color rendering index of LED lighting and color reproducibility of LCD than those of LEDs with single yellow phosphors are required. In order to overcome these technical issues rising from evolution of LED technology, new phosphors are in demand and nitride phosphors, one of the promising new candidate materials, will be discussed here.