

Phosphors for LED lighting - Technology trend and market forecast (2010~2015)

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Abstracts

LED lighting sources as next lighting sources are in the limelight for eco-friendly lighting solutions, reducing energy consumption and CO2 emission. LED can express various colors, by regulating a composition ratio of composite semi-conductors, and synthesizing the three primary colors ; red, green, and blue. As key elements, phosphors emit light by absorbing light emitted from LED. There is effort to develop various technologies for color reproduction close to natural light.

With the development of LED lighting, it is expected that the use of red/green phosphors with high color reproducibility and nitride phosphors with high color rendition and heat resistance will increase, though YAG phosphors and silicate phosphors are frequently used now.

According to analysis of the phosphor market for white LED by type (as of 2010), yellow phosphors, which are combined with high-efficiency blue LED chips, account for more than 85%; among which, YAG phosphors account for about 60%.

The global white LED phosphor market is expected to hit 1,350 billion won in 2015 from 387.2 billion won in 2010, with the annual growth rate of about 29%.

This report covers the light emitting principle of phosphors used for LED lighting, manufacturing technologies thereof, and technologies for phosphor coating and phosphor layer formation. It also contains patent issues related to phosphors and the market forecast of phosphors used for LED lighting.

In addition, it contains data and current status of technology development of major LED phosphor manufactures and such as Nichia, Mitsubishi Chemical, Toyoda Gosei, POSCO, and OSRAM.

The major contents of this report are

Major principles and implementation methods

LED phosphor manufacturing methods and technologies

Technology development trend for LED lighting phosphors

Phosphor patent issues

Market forecast of LED lighting phosphors (2010~2015)

LED lighting phosphors company trends

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