

Global OLED Lighting Technology/Company Trend and Market Forecast (2010~2020)

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Abstracts

The most widely used lighting sources are incandescent light and fluorescent light. However, these cause world power consumption of lighting fixtures to amount to 2.1 trillion KW each year, corresponding to about 12~15% of the entire electricity. As a result, about 1.7 billion tons of CO₂ are being discharged each year, causing mercury contamination or various types of environmental pollution. Thus, there is a need for new eco-friendly lighting allowing for human sensitivity as well as high efficiency.

The best known type of this new concept lighting might be LED. However, OLED is also at the height of technical development, making the best use of its success in the display industry as a springboard in the field of lighting.

Since OLED lighting has the advantages -no emission of contaminants such as mercury and high efficiency - like LED, it is considered as eco-friendly lighting that can reduce power consumption compared to existing lighting types. Moreover, in that it is a surface light source, it allows a variety of choices in design, a wide range of applications (transparent) and flexible lighting, which indicates its high market potential.

In addition, it is expected that new technologies to be adopted in the field of display in the future will be also applied to the field of OLED lighting, due to a relatively low technical level of OLED lighting compared to OLED display.

For this reason, the OLED lighting technologies are expected to achieve performance improvement at an impressive pace, creating a synergy effect with the OLED display technologies.

Major lighting companies including Phillips, Osram, and GE in the United States,

Europe and Japan, which realized the potential of OLED as a lighting source for lighting fixtures early on, are carrying out R&D and investments for lighting OLED as the next generation lighting; there is aggressive R&D in progress to the degree of release prototype products.

The aforementioned countries are supporting the companies, carrying on projects for R&D on lighting OLED. The United States is supporting development of lighting WOLED through a R&D project of DOE (Department of Energy) and Europe is carrying out various projects such as OLED100 to support R&D on lighting OLED. In Japan, the NEDO project is underway. In Korea, the Ministry of Knowledge and Economy is supporting R&D on OLED lighting, in which companies such as SMD, and LG Chemical.

What is the difference between LED lighting and OLED?

At this point, the nearest thing to the next generation lighting is LED. Since it offers superior service life in comparison with incandescent light and fluorescent light and has good energy efficient and eco-friendly properties, its application is increasingly extended. Besides, with its increasing performance and decreasing price, it is emerging as a powerful candidate to change the existing lighting market.

However, since LED is a point source, converting it into a surface light source requires additional units of equipment such as light guide plate or diffusion plate. On the other hand, in addition to the benefits of LED, OLED has an extra merit ??it itself is a surface source. Although it still needs further improvements in terms of efficiency and price, its characteristic ?i½a surface light source - can be another competitive edge for its application to general lighting.

The service life, which has been a weak point of OLED lighting, is steadily being improved and the price can be reduced by mass production. Moreover, considering that OLED lighting can evolve as the next generation lighting wherein transparent display and flexible display technologies are combined, there is a good reason to pay attention to OLED lighting.

This report covers key technologies regarding the OLED lighting process, efficiency enhancement, light extraction, life time and encapsulation and major materials as well as general information about OLED. Furthermore, it also deals with the current status of OLED lighting technology development and future market forecast of domestic/foreign companies including Philips, Osram, GE Lighting, NOVALED, and LG Chemical along with the current status of projects for applications of OLE into lighting in each country

including the United State and Europe.

This report

Examines the OLED technologies;

Describes characteristics that OLED should have for its application into lighting, and provides comparative analysis with other types of lighting;

Examines the latest trends of OLED lighting process technologies and key technologies;

Looks into trends of OLED lighting development by country and major companies; and

Forecasts demand for OLED lighting from 2010 to 2020

This report features

Total 220 pages, 218 figures and 34 tables

Technology development road map and development trends of major OLED lighting companies

OLED lighting prices forecast and 2010~2020 market forecast

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