

Trending and Future Applications in Opto-Semiconductors

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Summary: In the past, mainly LED's were known as Opto-Semiconductors, and their applications were very limited to coloured indications such as “on-off”, switch buttons and so on. This technology had an amazing evolution over the past years, moving towards the “white” colour, growing significantly on efficiency and also on the same path, developing very fast towards the “non-visible” applications such as Infrareds and Ultra violets. The idea of this presentation is to guide you through where this evolution on the new technologies are leading us to, and even, how all these new technologies together could take us to a “New World”

Keywords: Led, Infrared, future applications

The Presentation intend to give actual insights over the latest and newest ideas on Opto Semiconductors applications.

It will be shown which applications are already possible to be done in terms of using “Light”, visible and non-visible, sometimes in combination, to achieve fantastic features on fields of **visualization, illumination and sensing**, such as:

- **Automotive** (Interior and Exterior)
- **General Lighting** (Indoor, Outdoor, Architectural, Industrial)
- **Horticulture Lighting** (Special Lighting for growing plants)
- **Smart Devices** (Mobile phones, tablets, smart watches, etc)
- **Biometrics** (Safety, surveillance, Health monitoring)

And, which applications are about to come, and how these new applications would allow us to do things differently and/or will affect how we do things in the future.

OSRAM Opto Semiconductors

Osram Opto Semiconductors is one of the guiding lights both in technological development and in the manufacture of high-quality products. For nearly four decades, the high-tech company has been investing in research and developing new products on the technological cutting edge - enabling Osram Opto Semiconductors to set international standards in the fields of illumination, visualization and sensor technology.

OSRAM Opto Semiconductors is a pioneer in technology for high-performance LEDs in the visible and infrared spectrum. Our chip technologies such as thin-film or UX:3 technology stand for excellent light extraction and light efficacy. Our broad portfolio of package types is outstanding and has made us a leader in compact, high-performance light sources for visible and non-visible light. We have made pioneering achievements also as a leader in manufacturing

technology, receiving awards for 1st surface mounted TOPLED – a global SMT standard today (1990), 1st white converted LED – together with Fraunhofer institute (1996), 1st Thinfilm red LED (2001), 1st polymer OLED volume manufacturing (2002), 1st proprietary ThinGaN blue and white LED (2003), as well as numerous Product of the Year and Product Innovation awards, Automotive PACE awards, Electronic Design awards and so on (full list of Awards available at:

(https://www.osram.com/os/company/awards_in_the_course_of_our_success_story.jsp).

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We work together with our customers at a very early stage in the development of new products and projects, bringing our innovations to their future products

Some Reference material available can be found at:

- <https://www.osram.com/os/>
- <https://ledlight.osram-os.com/applications/horticultural-led-lighting/>
- <https://www.osram.com/os/applications/automotive-applications/index.jsp>
- http://www.osram-os.com/osram_os/en/applications/areas-of-competence/iris-scan/
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