

In Brief...

■ Important trends in lighting research include making light sources smaller, longer-lived, more efficient and more environmentally friendly. Future dividends could include the elimination of mercury from high intensity gas discharge lamps thanks to a better understanding of the physical-chemical processes in their interior and new electronic ballasts. (p. 35)

■ Different light sources can be integrated into intelligent networks and combined with natural light in the “adaptive lighting” concept, which offers both energy savings and increased comfort. The sensors and communications standards needed for this are already available. Osram is also developing a discharge lamp in which LEDs are used to provide variable color rendition. (p. 37, 49)

■ LEDs can achieve lifespans of up to 100,000 hours, and are being introduced into a growing number of applications, such as display panels, automobile headlights and flash units for cell-phone cameras. White LEDs could reach conversion efficiencies of 100 lumens per watt within ten to 15 years, opening the door to their use in general lighting applications. (p. 38)

■ Annual growth rates of 17 percent and more could lead to LEDs having a market volume of around seven billion euros in 2007 — which would correspond to 28 percent of the world lighting market. Opened in Regensburg by Osram in April 2003, the world’s most modern optical chip plant will enable the company to double its production capacity of optical semiconductor by 2005. (p. 42)

■ Prospects for organic LEDs (OLEDs) are also bright. These self-luminous, high-contrast, extremely flat and video-capable plastics could revolutionize the market for displays. Osram recently established a mass production facility for OLEDs in Penang, Malaysia. (p. 45)

■ A wide range of applications awaits displays capable of representing images in three dimensions. Examples include chemistry, factory design, and Internet shopping. Concepts are currently being developed. (p. 51)

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LINKS:

OSRAM: www.osram.com

Osram Opto Semiconductors:

www.osram-os.com

Encyclopedia of Light:

www.osram.com/lightatwork

Osram OLED: www.pictiva.com

Optoelectronics Industry

Development Association:

www.oida.org

Electric Power Research Institute:

www.epri.com

Energy User News:

www.energyusernews.com

3D-Displays: www.felix3d.com

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