

***Information Display* article examines energy efficiency**

An article in the November issue of *Information Display* examines increasing LCD energy efficiency using Vikuiti™ Optical Films. LCD displays are highly inefficient as less than 10 percent of the available light typically passes through the display, and less than 1 percent of the total electrical power to the display is emitted as usable optical power. And as global electrical usage increases, governments and regulatory organizations are aiming to reduce energy consumption in LCD displays and other devices.

The article, co-authored by Mark O'Neill, 3M senior research specialist and Tao Liu, 3M research engineer, highlights the energy efficiency improvements that are possible using low-loss components in LCD displays. In addition, tests show that LCD efficiency in TVs, monitors and handheld devices can be improved by up to 50 percent using a reflective polarizer and high efficiency reflectors. To read the article, go to www.informationdisplay.org.

LCD Optics 101 explains performance characteristics

Learn more about the optical physics behind LCD technology, including uniformity, through [LCD Optics 101](#). Uniformity describes the consistency of color and brightness across display images. The uniformity in a display is highly dependent on the efficiency of the backlight unit in evenly distributing light across the entire screen.

Typically, display enhancement films that recycle light back into the backlight have the beneficial feature of increasing the uniformity of a display. Display enhancement films take the uniformly distributed light from the light guide and optimize its angular direction and polarization to make the LCD display appear brighter.

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