TAILORING THE LIGHT EMISSION PATTERN OF ORGANIC LEDS

Micro Optics for Organic LED

Organic LEDs (OLEDs) usually exhibit a more or less Lambertian far-field emission pattern. Depending on the desired application, approaches to tailor this characteristics efficiently are required.

Approach

The combination of a primary optics for enhanced light outcoupling from the substrate glass (see Figs. 1 and 2) and a secondary beam-shaping optics allows to generate user-defined far-field emission patterns. The high reflectivity of the OLED’s active thin film stack enables the so-called photon recycling, yielding a significant brightness enhancement in e.g. perpendicular direction (Fig. 3).

For this purpose, micro-optical array systems are simulated and designed, optionally adapted to the specific OLED stack, and laboratory samples as well as replication master structures are offered.

Reference