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High Efficiency Organic Light-Emitting Devices Having Charge Generation Layers

JUNJI KIDO, Yamagata University

A new type of organic LEDs having charge generation layers (CGLs) were developed. By applying voltage, holes and electrons are generated at CGL and injected to adjacent organic layers to recombine with the carriers with opposite polarity. Thus, current efficiency can be greatly improved. An extremely high current efficiency of 130 cd/A, which is equivalent to more than 30 device. One of the devices exhibited the lifetime of over 1,000,000 hours at the initial luminance of 100 cd/m².