

Enhanced efficiency of White PLEDs by blending with nanodots

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In this study, we have fabricated single-layer white PLEDs with an emission layer containing a blend of three phosphorescent iridium complexes within a poly(N-vinylcarbazole) (PVK) /1,3-bis[(4-tert-butylphenyl)-1,3,4-oxadiazolyl] phenylene(OXD-7) host matrix. Despite their simple architectures and fabrication procedures, these devices show good color purity and considerable power efficiencies and luminous efficiencies. By blending poly (ethylene glycol) PEG into active layer of the devices the current density became lower than those of conventional devices. In addition, the luminous efficiency and the external quantum efficiency of the PLEDs were both improved.

Moreover, special polysilicic acid (PSA) nanodots synthesized and then introduced to PLEDs to improve device efficiency by trapping holes and keeping balance of charge carriers.