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Author Tung Chen Lee
Author's Email Address No Public.
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Abstract
Organic light-emitting diode (OLED) is the present extremely popular topic. It is biggest with the liquid-crystal display (LCD) differently lies in which self emitting. Therefore, it does not need the back lighting. Moreover it emit light of the scope to be quite broad. Simultaneously, the organic electroluminescent part most important goal is its application in "the full color" on the plane display. Therefore has the high efficiency and the good light color red, green, the blue (R、G、B) three of fundamental colors devices are the nowadays whole world all studies OLED to produce the goal which the official educational world joint effort.
At present one of three full colors main technologies：color conversion；It is using the blue light as host luminescent material by the way of the light color transformation layer transfer for three colored of different lights as red, blue, and green. In addition, the purpose of this experiment is try to find the optimum parameter of manufactures of blue organic light-emitting diode. At the same time, the improvement mechanism from predecessor - hole blocking layer (HBL) which proposed on PLED. And the application to OLED device of this experiment, which attempted to improve the characteristic of the OLED device.
And the major materials of our experiment are NPB、DPVBi、Alq3、LiF、PBD、BCP、TPBI；The materials of NPB, DPVBi, Alq3 was used as hole transporting layer, emission layer and electron transporting layer, respectively. The materials of PBD、BCP、TPBI was used as three kind of different hole blocking layer in our experiment. In addition, the major key point of this experiment is finding the optimum parameter of blue OLED device. And try using the different materials of HBL to improve the performance of the device. Simultaneously, observe and analyze the influence which apply the hole blocking layer to OLED.
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