Alq3 synthesis and the effect of its concentration on performance of organic light emitting diodes with two single-layer mixture and multilayer structures

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Abstract
In this article, organic light emitting diode with the two structures of ITO / PEDOT: PSS / PVK / Alq3 / PBD / Al and ITO / PEDOT: PSS / PVK: Alq3: PBD/Al with different concentrations were fabricated. The effect of changing the concentration of fabricated Alq3 complex organic light-emitting layer on the characteristics of diodes, were studied. Layers with the same weight percentages PVK, PBD and different wt. % of Alq3 were deposited on PEDOT: PSS layer by spin coating. Current - voltage characteristic curve - and luminescence (El) were studied. Experimental results showed that by increasing the concentration of Alq3 complex in both structures, luminescence and frequency are increased and the operating voltage is reduced.

Keywords: organic light emitting diode, Alq3 complex synthesis, spin coating

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