

Optical properties for N,N-bis (Inaphthyl)- N,N-diphenyl-1,1-biphenyl-4,4-diamine and tris (8-hydroxyquinolinato) aluminum in organic light emitting devices.

ABSTRACT

The optical properties of N,N'-bis (Inaphthyl)-N,N'-diphenyl 1,1'-biphenyl-4,4'-diamine (NPB) and tris (8-hydroxyquinolinato) aluminum (Alq3) organic materials used as hole transport and electron transport layers in organic light-emitting devices (OLED) have been investigated. The NPB and Alq3 layers were prepared using thermal evaporation method. The results show that the energy band gap of Alq3 is thickness independence while the energy band gap of NPB decreases with the increasing of sample thickness. For the case of photoluminescence the Alq3 with thickness of 84 nm shows the highest relative intensity peak at 510 nm.

Keyword: Energy Band Gap; N,N-Bis (Inaphthyl) -N,N-Diphenyl-1,1-Biphenyl-4,4-Diamine Tris (8 Hydroxyquinolinato) Aluminum; Organic Light Emitting Diode; Photoluminescence.