The tris (8-hydroxyquinoline) aluminum (III) complex is a stable metal chelate that stands out as one of the most successful materials in organic light emitting devices. In this paper we study the electronic structure of Alq3 in solution of methyl benzene, using the techniques of optical absorption and Steady state photoluminescence. The samples were exposed to irradiation of light in the visible wavelength max of 405 nm. The optical absorption and fluorescence spectrum were obtained during the period of the irradiation (95 hours). The optical absorption spectrum shows a band with maximum intensity at 390nm and in the photoluminescence spectrum shows a maximum intensity at 520nm when no irradiated. Irradiation causes a decrease in fluorescence intensity, this decrease from the beginning of irradiation to the previous measurement was 35%. Besides this decrease in intensity, there was a slight deformation of the spectrum, where slope of the peak became less pronounced. Already the optical absorption of the complex, so decrease much less pronounced, showing a difference of 4.5% with no change in any way spectrum. The photophysical processes of such material will be applied to organic optical sensor system.

Keywords: Alq3, metallic complexes, Steady state photoluminescence, OLEDs, uv-vis absorbance.


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