Red Emitting Phosphorescent Ir (III) Quinoline Complex

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Abstract

Phosphorescent Iridium metal complex Ir $(DPQ)_2$ acac which is based on cyclometalated with 2,4 diphenyl quinoline ligand has been synthesized and its photo physical properties(viz .absorption and photoluminescence) have been studied in detail. Absorption of the iridium complex [Ir $(DPQ)_2$ acac] (DPQ= 2,4 diphenyl quinoline, acac = acetyl acetone) was measured in different organic solvent such as tetrahydrofuran , dichloromethane and formic acid which show strong absorption peak at 275nm&346nm. Red photoluminescence was obtained with a peak wavelength of emission at 661nm.Iridium complex was also characterized using X ray diffraction(XRD) .Results show many distinct lines in the XRD spectra . FTIR spectra show many lines in iridium complex. It is proposed that the synthesized complex may be efficiently used in organic light emitting device.

Keyword: Photoluminescence; Iridium complex.