

New Zn complex derivatives as host materials of red OLEDs

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We synthesized new two zinc complex, di-(Phenyl dipyrrolyl methene)zinc (Zn(PDPM)_2) and di-(Pentafluorophenyl dipyrrolyl methene)zinc (Zn(PFPDPM)_2) as a host material instead of Alq_3 .

To estimate electroluminescent properties, multi-layered organic light-emitting devices were fabricated using 4-(dicyano methylene)-2-tert-butyl-6-(1,1,7,7-tetramethyljulolidyl-9-enyl)-4H-pyran (DCJTB) as a dopant and Alq_3 as an electron transporting layer.

EL spectrum of device using Zn(PDPM)_2 point out a red emission at around 617nm and showed current efficiency of 1.54cd/A at current density 10mA/cm^2 . And EL spectrum of device using Zn(PFPDPM)_2 exhibited a yellow light emission at 563nm, 700nm and showed current efficiency of 0.04cd/A at current density 10mA/cm^2 .