Synthesis of quinoline-based zinc metal complexes and characterization as an electron transfer layer.

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Metal chelate complexes are often studied as a carrier transport material in OLEDs, because they have a good electron transport property. We have synthesized metal chelate complexes,Bis(8-hydroxyquinolinato)zinc (Znq2) and Bis(10-hydroxybenzo[h]quinolinato)zinc (Zn(bq)2) as well as Bis(10-hydroxybenzo[h]quinolinato)beryllium Be(bq)2 and compared EL performance with commercialized Alq3. We will report the basic EL performance of synthesized complex materials such as EL spectrum, current efficiency and CIE value. When we applied Znq2 and Zn(bq)2 to conventional blue OLED device, the device exhibited better power efficiency of 0.4 lm=w and 0.28 lm=w compared to 0.2 lm=w of Alq3 device. We also introduce overall EL performance of metal chelate device including Be(bq)2.