

Highly Stable Platinum(II) Triplet Emitters Displaying High Photoluminescent Quantum Efficiencies

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New efficient light-emitting materials have attracted a broad range of potential applications in the fields of sensors, storage, photoelectronic devices, and optical devices.^[1-4] Extensive investigations on transition metal complexes as triplet emitters for application in phosphorescent organic light emitting devices (PhOLEDs) have been carried out.^[5-10] Transition metal complexes with suitable ligands allow tailoring the properties for a specific application as luminescent compounds. Achieving high stability, powerful quantum efficiency and specific chromaticity of such organoplatinum(II) complexes present a major challenge in this field. Recently, our group has demonstrated a series of highly emissive platinum(II) complexes bearing N-heterocyclic carbene ligands with promising photophysical properties.^[11] The thermal stability of such complexes was improved by the use of more rigid chelating ligands which are less prone to undergo reductive elimination. The complexes were fully characterized and the photophysical properties were investigated.

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