

Synthesis and photophysical properties of Ir(III) complexes with oxazoline based ancillary ligands for the fabrication of light-emitting electrochemical cells

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Herein, we report two new cationic iridium(III) complexes using oxazoline based ancillary ligands, namely, [Ir(dfppy)₂(ibpo)]PF₆ (Complex 1) and [Ir(dfppy)₂(mbdpo)]PF₆ (Complex 2), where dfppy is 2-(2,4-difluorophenyl)pyridine, ibpo is (S,S)-2,2'-isopropylidene-bis(4-phenyl-2-oxazoline) and mbdpo is 2,2'-methylene bis[(4R,5S)-4,5-diphenyl-2-oxazoline]. These synthesized complexes were characterized by various spectroscopic methods and studied their photophysical and electrochemical properties. Light-emitting electrochemical cells (LECs) were fabricated employing these complexes and investigated their electroluminescent properties. LECs based on these complexes resulted in varicolored devices with high luminescent efficiencies. Moreover, we have investigated the effect of ionic liquids on the active layer and compared their properties with pristine devices.