

### Light-Emitting Electrochemical Cells Based on Phosphorescent Iridium Complex Incorporated with Ionic Liquids

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A heteroleptic phosphorescent iridium complex  $[\text{Ir}(\text{ppz})_2(\text{dmphen})]\text{PF}_6$ , containing 1-phenylpyrazole (ppz) as cyclometalated ligand and 5,6-dimethyl-1,10-phenanthroline (dmphen) as ancillary ligand, has been synthesized and its photophysical and electrochemical properties have been investigated. Light-emitting electrochemical cells (LECs) based on this complex were fabricated using air stable electrodes resulting in a yellowish light emission. Furthermore, three different imidazolium based ionic liquids (ILs) such as 1-butyl-3-methylimidazolium hexafluorophosphate (BMIMPF<sub>6</sub>), 1-ethyl-3-methylimidazolium hexafluorophosphate (EMIMPF<sub>6</sub>) and 1-hexyl-3-methylimidazolium hexafluorophosphate (HMIMPF<sub>6</sub>) were incorporated into the active layer and hence the luminance and the current density of the devices were found to be enhanced with increasing ionic conductivities of ILs.