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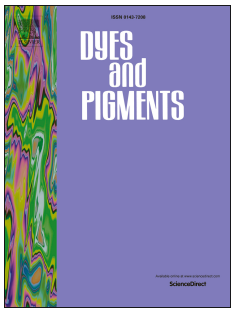

Fluorine-free blue-emitting cationic iridium complexes with oxadiazole-type cyclometalating ligands and their use in light-emitting electrochemical cells

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Fluorine-free Blue-emitting Cationic Iridium Complexes with Oxadiazole-type Cyclometalating Ligands and Their Use in Light-Emitting Electrochemical Cells

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Abstract

Fluorine-free, blue-emitting cationic iridium complexes, namely [Ir(Tipr-dphoxd)$_2$(bpy)]PF_6 (1) and [Ir(Tipr-dphoxd)$_2$(pzpy)]PF_6 (2), which use 2-phenyl-5-(2,4,6-triisopropylphenyl)-1,3,4-oxadiazole (Tipr-dphoxd) as the cyclometalating ligand (CΛN) and 2,2'-bipyridine (bpy) or 2-(1*H*-pyrazol-1-yl)pyridine (pzpy) as the ancillary ligands (NΛN), have been synthesized and fully characterized. In solution, complex 1 emits efficient blue-green light centered at 505 nm with notable charge-transfer (CT) (Ir/CΛN → NΛN) character; while in the lightly doped film, it emits efficient sky-blue light peaked at