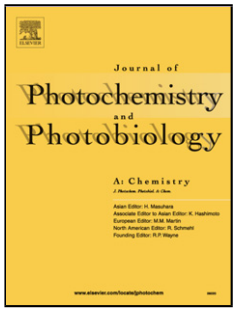


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# Red-emitting cyclometalated platinum(II) complexes with imidazolyl phenanthrolines: Synthesis and photophysical properties

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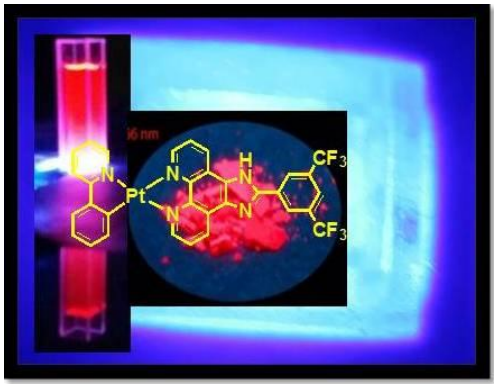
Graphical abstract




## Highlight

- Synthesis, electronic spectral and electrochemical characterization of three new cyclometalated platinum-polypyridyl complexes.
- Significant Pt….Pt and π - π interaction in the solid state involving $^{3}$MMLCT state.
- Solid state emission is significant for one of the complexes and the emission spectra with the commercial LED (6V) shows red emission.
- Excited-state properties are corroborated by static and time-dependent density-functional theory.

**Abstract:** Three cyclometalated platinum(II) complexes with substituted imidazolyl phenanthrolines **L1 - L3** have been synthesized and characterized using spectral and electrochemical techniques. The effect of substituent (in the appended aromatic ring to the imidazolyl moiety) on the electronic feature and redox potential of the cyclometalated