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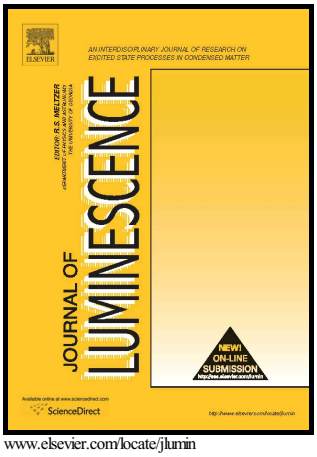

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A novel aggregation induced emission active cyclometalated Ir(III) complex as a luminescent probe for detection of copper(II) ion in aqueous solution

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Abstract

We report the synthesis and characterization of a novel aggregation induced emission (AIE) active cyclometalated Ir(III) complex, namely $[Ir(dfppy)_2(phen\text{-}DPA)]PF_6$, where dfppy and phen-DPA represent 2-(2,4-difluorophenyl)pyridine and 2-(bis(pyridin-2-ylmethyl)amino)-N-(1,10-phenanthrolin-5-yl)acetamide, respectively. The complex showed remarkable selectivity for copper(II) in aqueous solution over other competitive ions. Furthermore, this sensor showed a rapid and reversible response to copper(II) in aqueous solution with a detection limit of 65 nM.

Keywords: Ir(III) complex, copper(II) ion, aggregation induced emission, chemosensor, luminescence sensing.