A New Blue-emitting Diimine Copper(I) Complex: Synthesis, Crystal Structure and Photophysical Properties

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A new diimine Cu(I) complex, \([\text{Cu(DPEphos)(DPOP)}]\text{BF}_4 \cdot \text{CH}_2\text{Cl}_2\) (1) (DPEphos = bis[2-(diphenylphosphino)phenyl]-ether, DPOP = 2-(11-dipyrido[3,2-a:2',3'-c]phenazine)-5-p-tolyl-1,3,4-oxadiazole), has been synthesized and characterized by X-ray single-crystal diffraction analysis. In crystals of complex 1, the \([\text{Cu(DPEphos)(DPOP)}]\text{BF}_4\) cations are arranged in supramolecular chains, just like a “zipper”. Cation layers and anion layers are alternating in this structure. The photophysical behavior of DPOP and 1 was studied.

\textit{Key words}: Cu(I) Complex, Oxadiazole-functionalized Ligand, Photoluminescence