

The beneficial effects of trifluoromethyl-substituents on the photoconversion efficiency of copper(I) dyes in dye-sensitized solar cells

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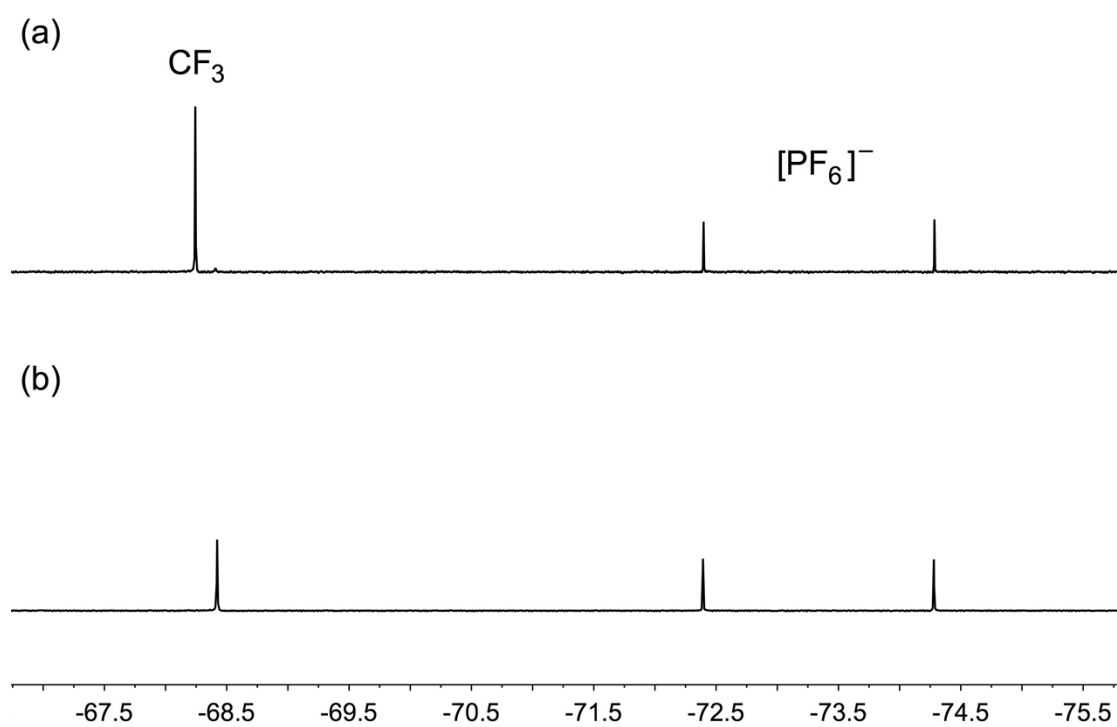


Fig. S1. 376 MHz ¹⁹F NMR spectra of CD₂Cl₂ solutions of (a) [Cu(2)₂][PF₆] and (b) [Cu(3)₂][PF₆]. Chemical shifts in δ/ ppm.

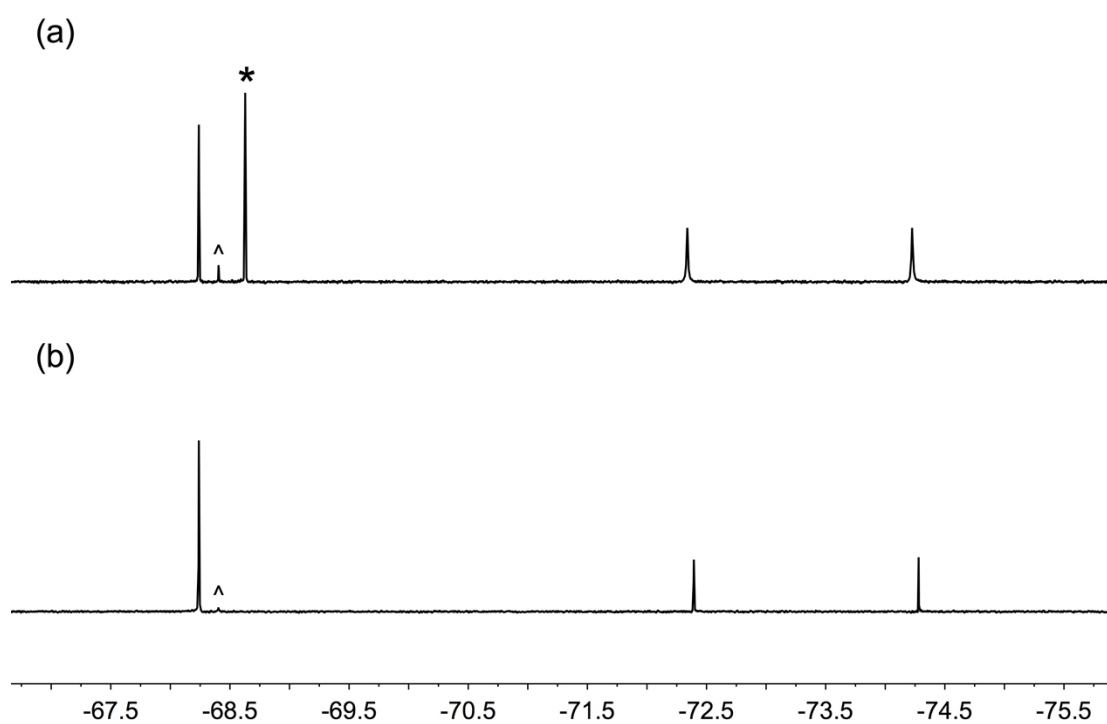


Fig. S2. 376 MHz ^{19}F NMR spectra of CD_2Cl_2 solutions of (a) a mixture of $[\text{Cu}(\mathbf{1})_2][\text{PF}_6]$ and $[\text{Cu}(\mathbf{2})_2][\text{PF}_6]$ and (b) $[\text{Cu}(\mathbf{2})_2][\text{PF}_6]$. The latter contains a small impurity of free ligand **2**, marked \wedge . In (a) the signal marked $*$ arises from the heteroleptic complex $[\text{Cu}(\mathbf{1})(\mathbf{2})]^+$. The doublet centred at $\delta = -73.3$ ppm is due to the $[\text{PF}_6]^-$ ion. The initial solution for (a) contained 3 mg of each complex = 5.2 mmol $[\text{Cu}(\mathbf{1})_2][\text{PF}_6]$ and 3.8 mmol $[\text{Cu}(\mathbf{2})_2][\text{PF}_6]$. Chemical shifts in δ /ppm.