**EQUILIBRATION BETWEEN ELECTRONIC STATES AND REVERSIBLE ELECTRONIC ENERGY TRANSFER IN BICHROMOPHORIC COMPOUNDS**

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The efficient use of energy following light absorption is of extreme importance in natural photosynthetic assemblies as well as in artificial systems. Small supramolecular systems have been used successfully to absorb light energy and transfer it to a specific site, while reversible energy transfer processes in polypyridine complexes with transition metals have been reported to temporarily stock energy and prolong excited-state lifetimes.

Strategies to increase the luminescence lifetimes and quantum yields have reposed on disfavoring thermally-activated loss by increasing the energy gap between states on lowering emissive 3MLCT levels, as a result of incorporating highly electron poor terpyridine-like ligands and/or increasing steric rigidity of complexes in excited states. Additionally, coupling with an organic auxiliary with matched lowest triplet state energy led to a spectacular increasing of the metal complex centered luminescence lifetime and quantum yield.

Here we report the unique excited-state equilibration between three different excited states in a structurally simple bichromophoric Copper(I)-phenanthroline complex coupled through a short spacer with an auxiliary anthracene chromophore acting as an energy reservoir [1] as well as unprecedented increasing of luminescence lifetimes in Ruthenium(II) complexes based on tridentate polypyridine ligands linked to anthracene chromophore [2] and emissive cyclometallated Iridium(III) centre connected to pyrene [3].

1. Leydet Y. et al. Journal of the American Chemical Society, **129**, 8688 (2007).

2. Ragazzon G. et al. Chemical Communications, **49**, 9110 (2013)

2. Denisov S. A. et al. Inorganic Chemistry, **53**, 2677 (2014).