

## Electron Cascade via a Phenanthroline-5,6-dithiolate Bridge

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Charge and energy transfer are key elements in photocatalysis. A variety of polynuclear complexes with Ru(II) or Ir(III) chromophores have shown remarkable potential of charge separation or energy transfer.[1] To achieve light-driven charge separation ligands with different coordination sites are particular interesting, different coordination sites are particular interesting, because they are directional. Phenanthroline-5,6-dithiolate combines the rigid structure of the phenanthroline with a dithiolate function in 5,6-position as classical donor groups. We synthesised the first dinuclear complex **1**-(PF<sub>6</sub>)<sub>2</sub> with the specific bridging ligand and the electrochemical properties disclose an oxidation potential at 0.47 V for the oxidation of the metal dithiolate moiety (Fig. 4).[2]



Fig. 1: Comparison of absorption and emission spectra of mononuclear Ru complex and dinuclear complex  $1-(PF_6)_2$ . Photoluminescence quenching caused by energy transfer ( $\phi_{\mathsf{PL}}$  going from 13% to 0.05%).

