# A Co(II)-Ru(II) dyad relevant to light-driven water oxidation catalysis.

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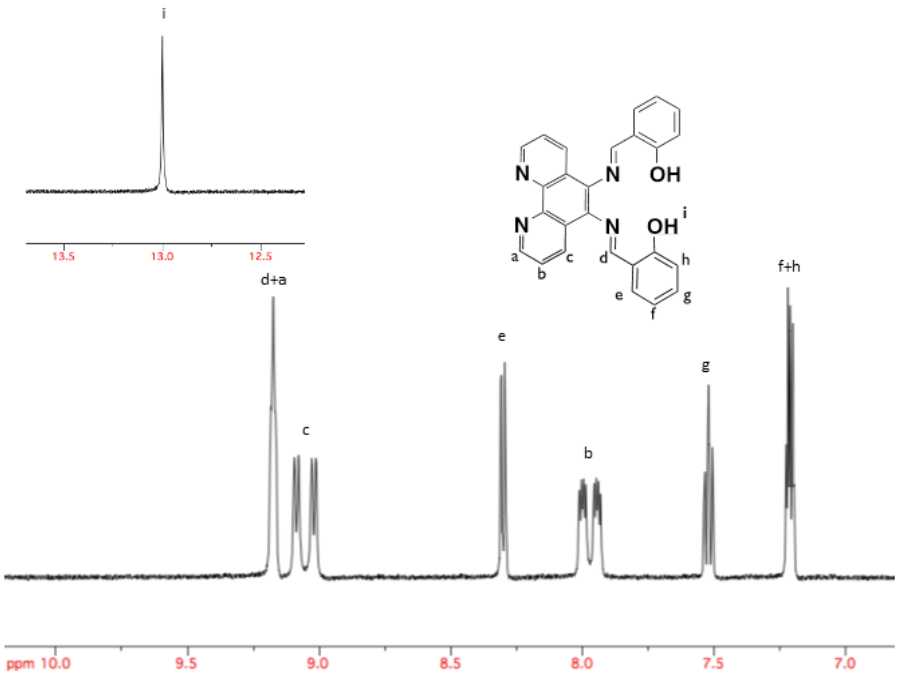


**Figure S1**. [1]H-NMR (500 MHz) spectra of (**2**) d[6]-DMSO.

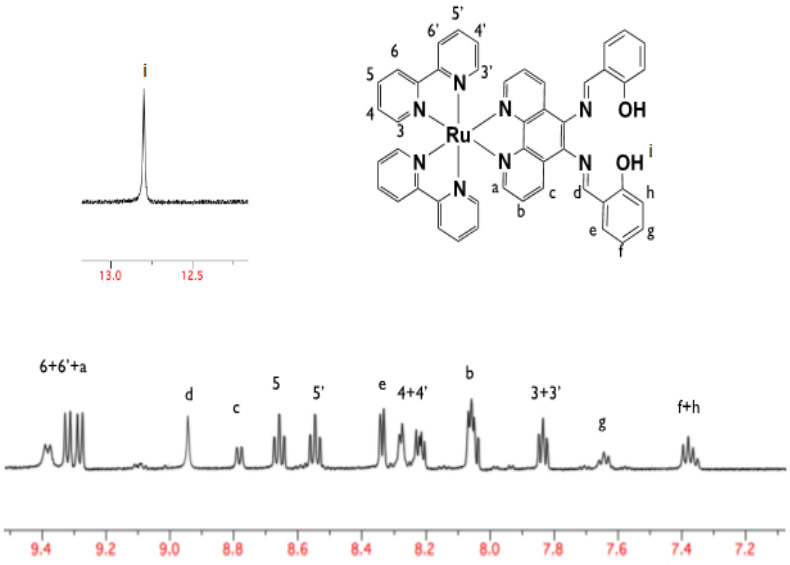


**Figure S2.** [1]H-NMR (500 MHz) spectra of (**3**) d[6]-DMSO.

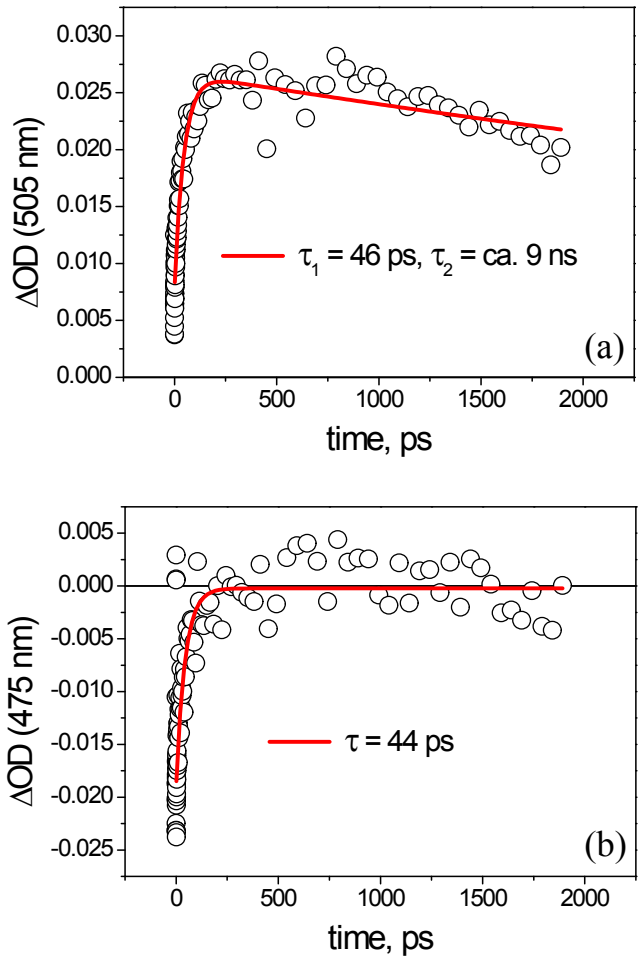


**Figure S3.** Kinetic analysis obtained by UFS (excitation at 400 nm) on **3** (a) at 505 nm and (b) at 475 nm.

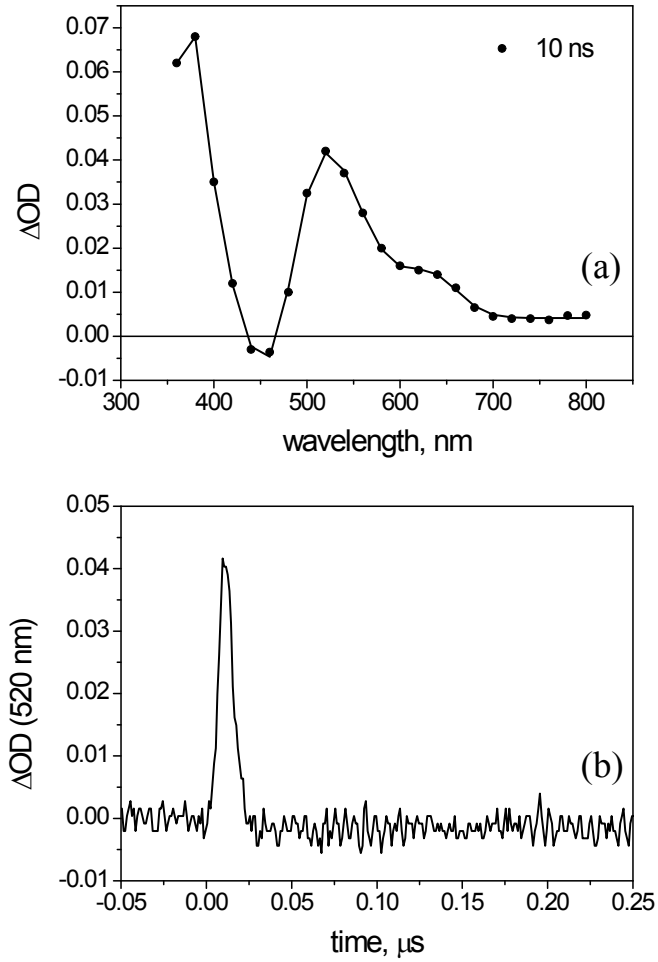


**Figure S4.** (a) Transient spectrum of **3** in acetonitrile at 10 ns time-delay obtained by laser flash photolysis (excitation at 355 nm); (b) kinetic profile of the transient recorded at 520 nm.

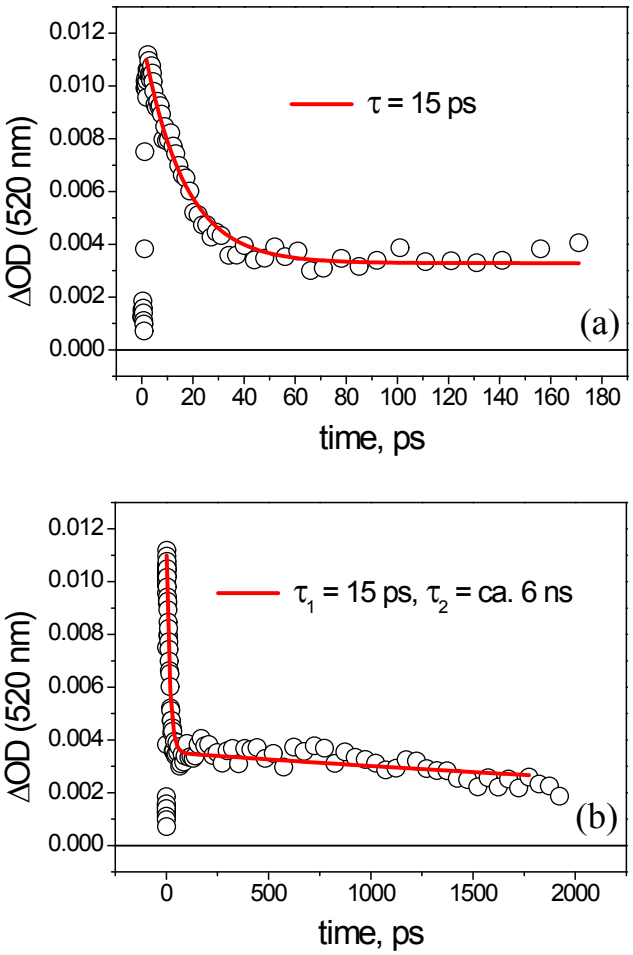


**Figure S5.** Kinetic analysis obtained by UFS (400-nm excitation) on **1** in acetonitrile at 520 nm: (a) 0-200 ps and (b) 0-2000 ps.

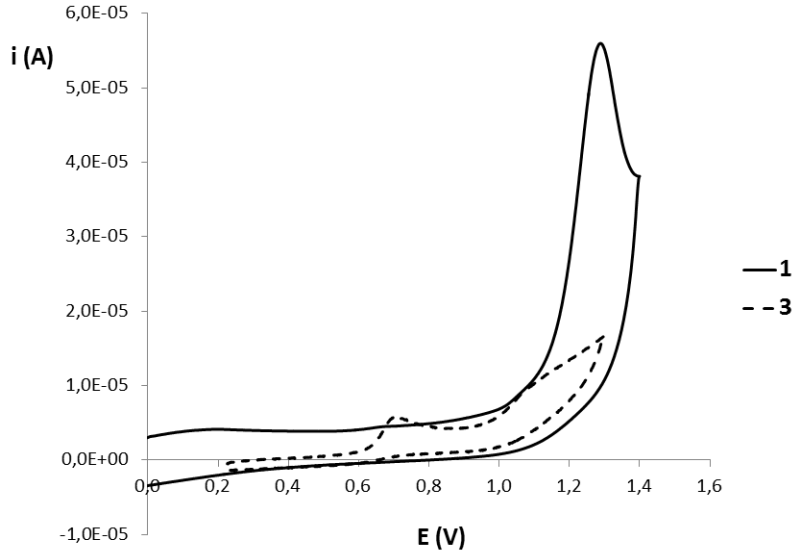


**Figure S6.** Cyclic voltammograms of 0.5 mM **1** and **3** under anodic scans in 0.2 M phosphate buffer, pH 7. Working electrode glassy carbon, counter electrode: platinum wire, reference electrode: Ag/AgCl (3 M NaCl); scan rate 20 $mVs^{-1}$.

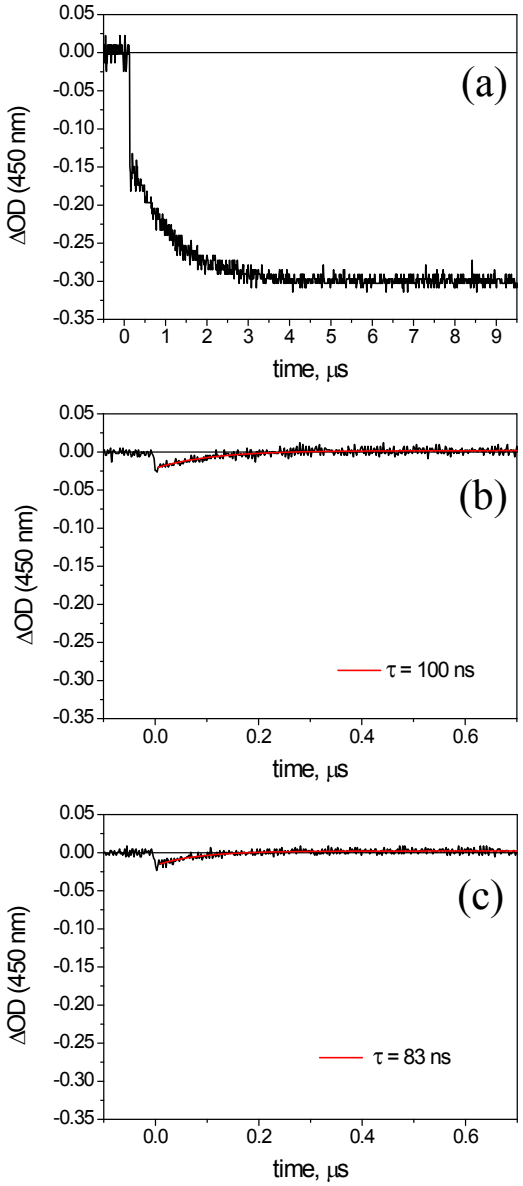


**Figure S7.** Kinetic analysis at 450 nm obtained by laser flash photolysis (355-nm excitation) in pH 7 phosphate buffer solutions (optically matched at the excitation wavelength) containing (a) $Ru(bpy)_3^{2+}$ and 5 mM $Na_2S_2O_8$, (b) **3** and 5 mM $Na_2S_2O_8$, and (c) **1** and 5 mM $Na_2S_2O_8$. The efficiency of the bimolecular excited-state quenching by persulfate, as determined by emission measurements, is comparable (≥ 90%) in the three cases.