Supplementary Information

Spectroelectrochemical Properties of a Ru(II) Complex with a Thiazolo[5,4-*d*]Thiazole Triarylamine Ligand

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Figures

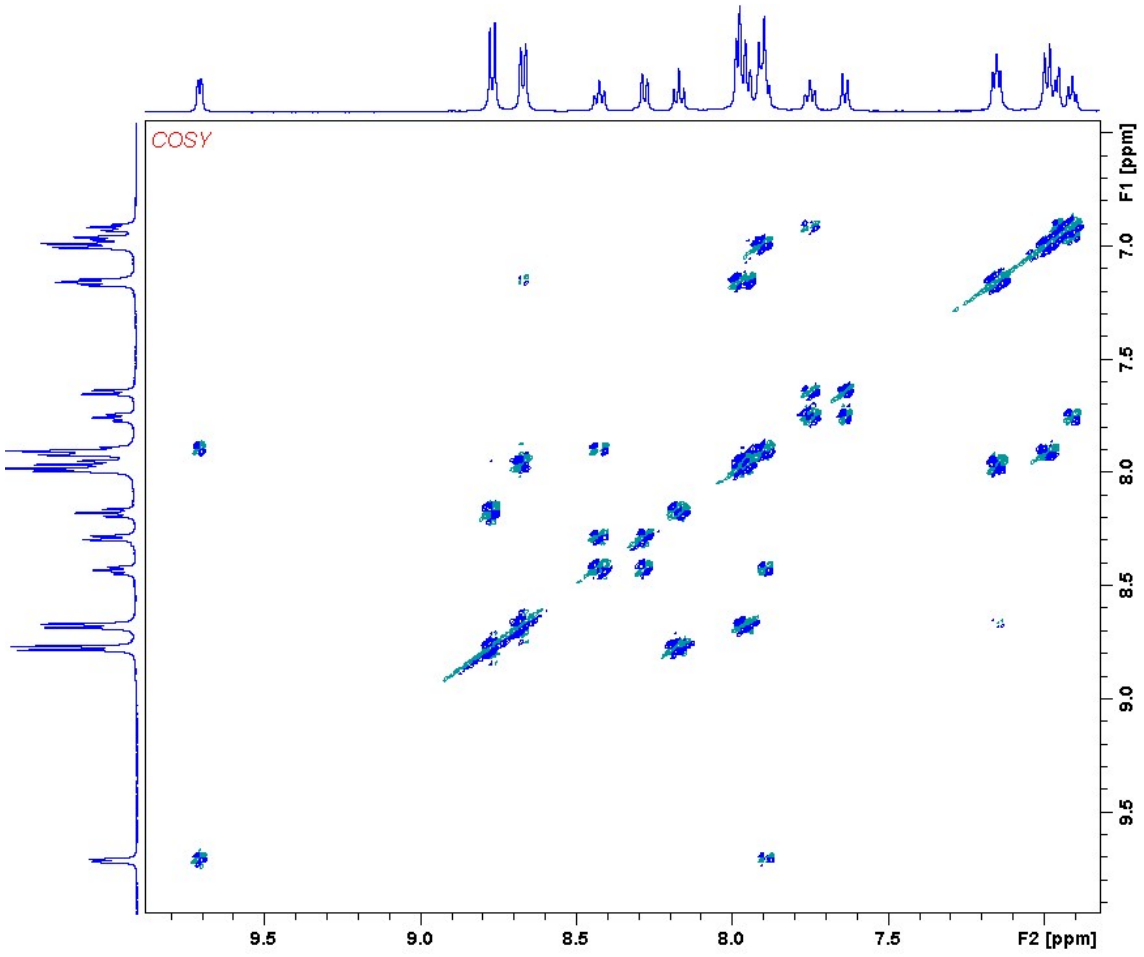

Figure S1. ^{1}H-^{1}H COSY spectrum for **2** obtained at 500 MHz.

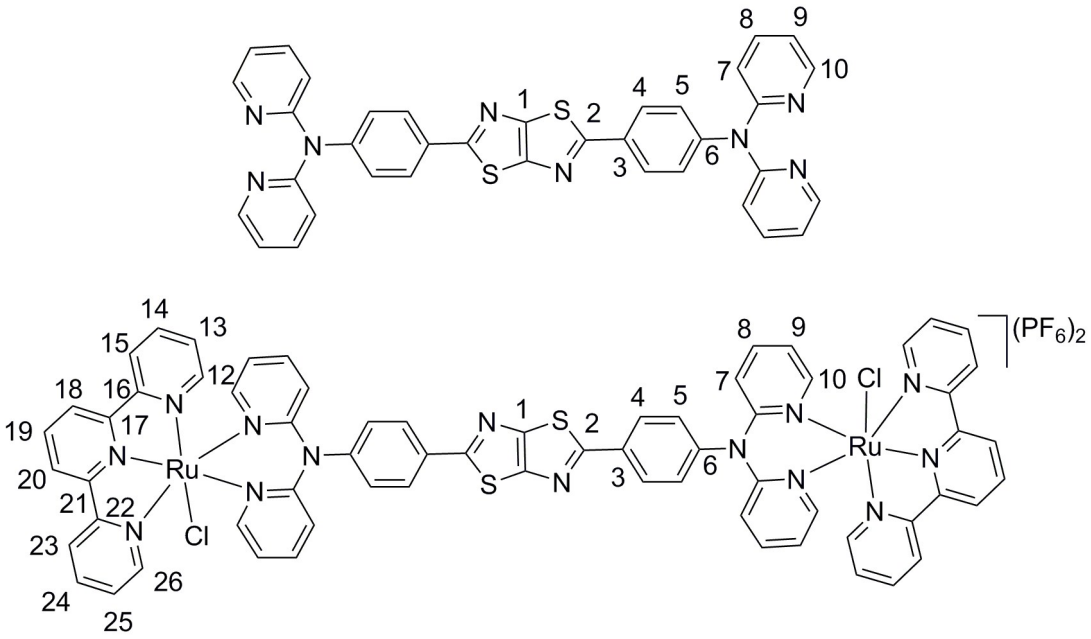

Figure S2. Numbering for compounds **1** and **2**.

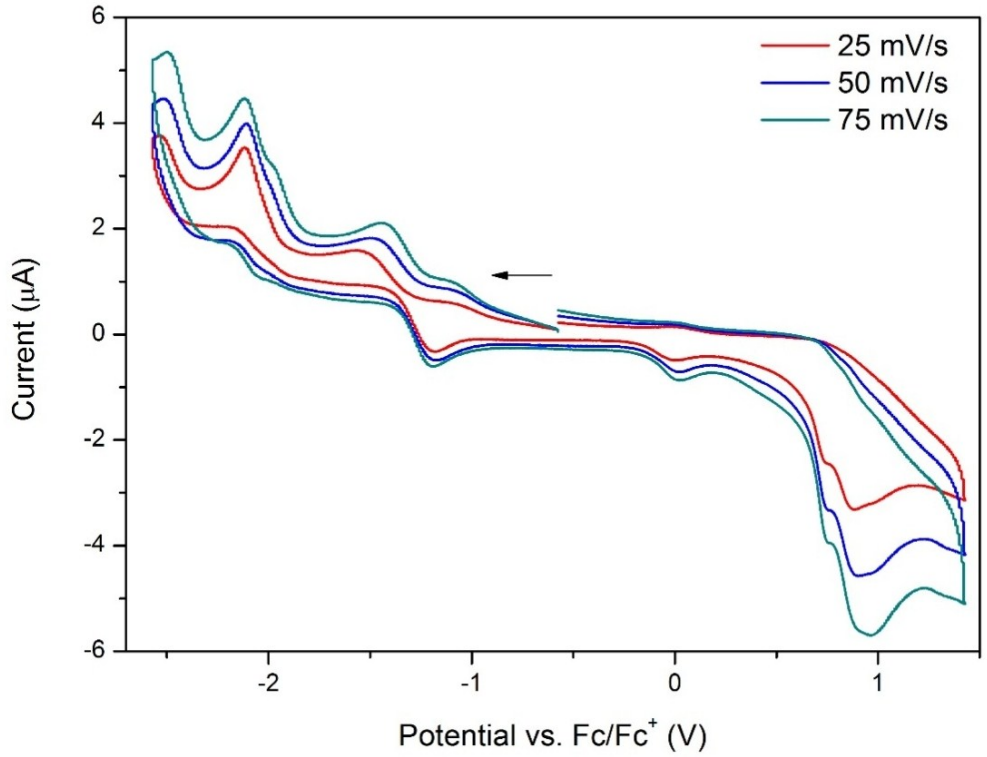

Figure S3. Cyclic voltammograms of **1** in 0.1 M $[(n\text{-}C_4H_9)_4N]PF_6/CH_3CN$ electrolyte over scan rates of 25-75 mV/s where the arrow indicates the direction of the forward scan.

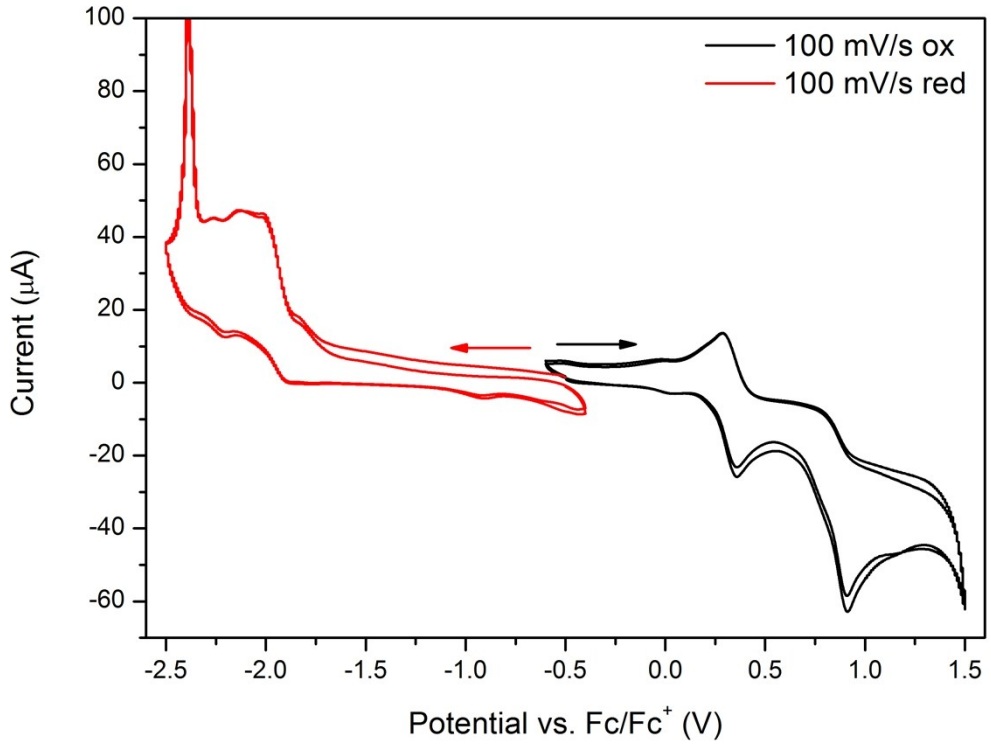

Figure S4. Cyclic voltammograms of **2** cycled twice in the anodic and cathodic directions in 0.1 M [(*n*-$C_4H_9)_4N]PF_6/CH_3CN$ electrolyte at a scan rate of 100 mV/s where the arrow indicates the direction of the forward scan in each case.

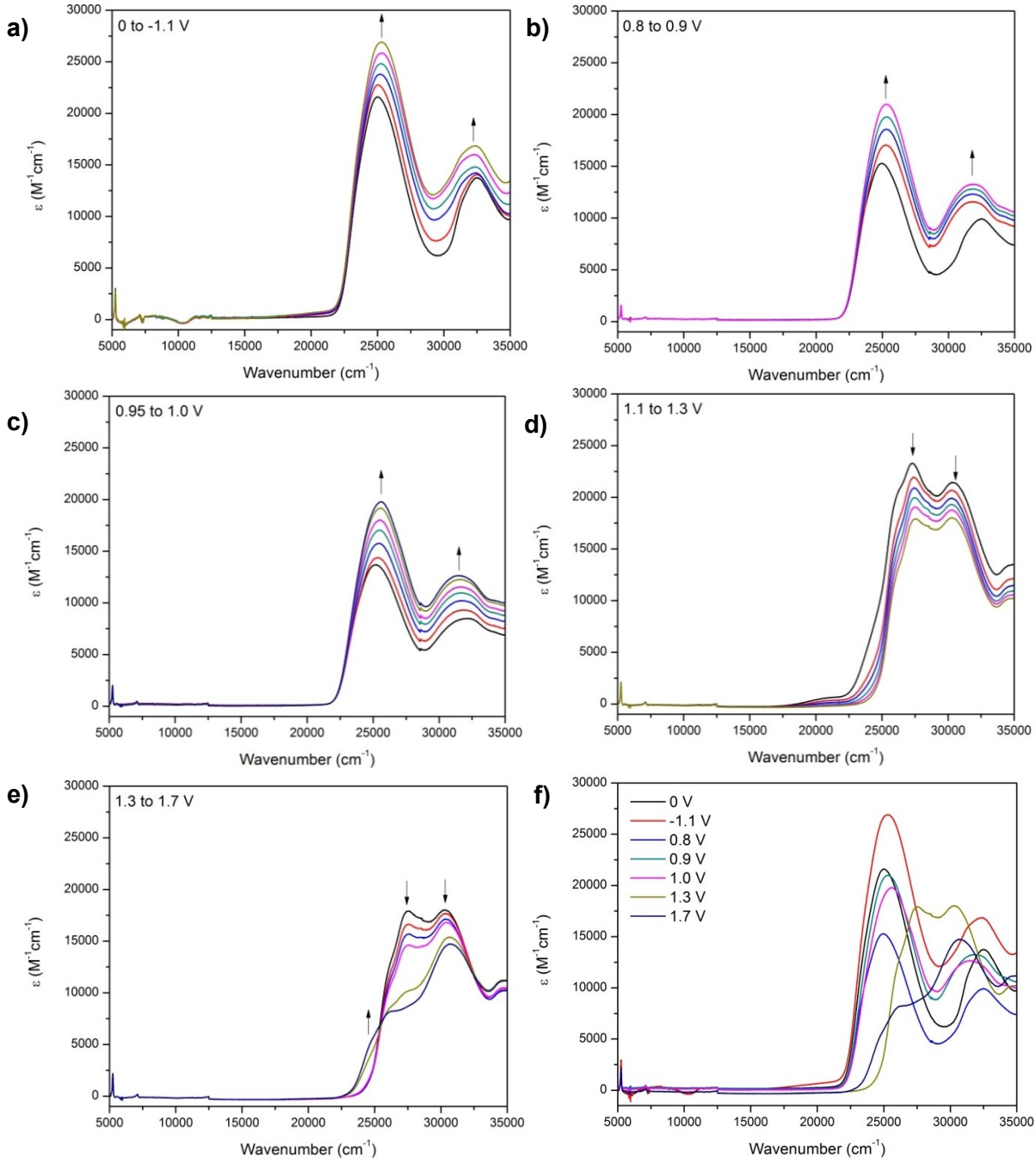

Figure S5. Solution state spectroelectrochemistry on **1** in $[(n\text{-}C_4H_9)_4N]PF_6/CH_3CN$ electrolyte over the potential range a) 0 to -1.1 V, b) 0.8 to 0.9 V, c) 0.95 to 1.0 V, d) 1.1 to 1.3 V, e) 1.3 to 1.7 V and f) overlay of all maximised processes.

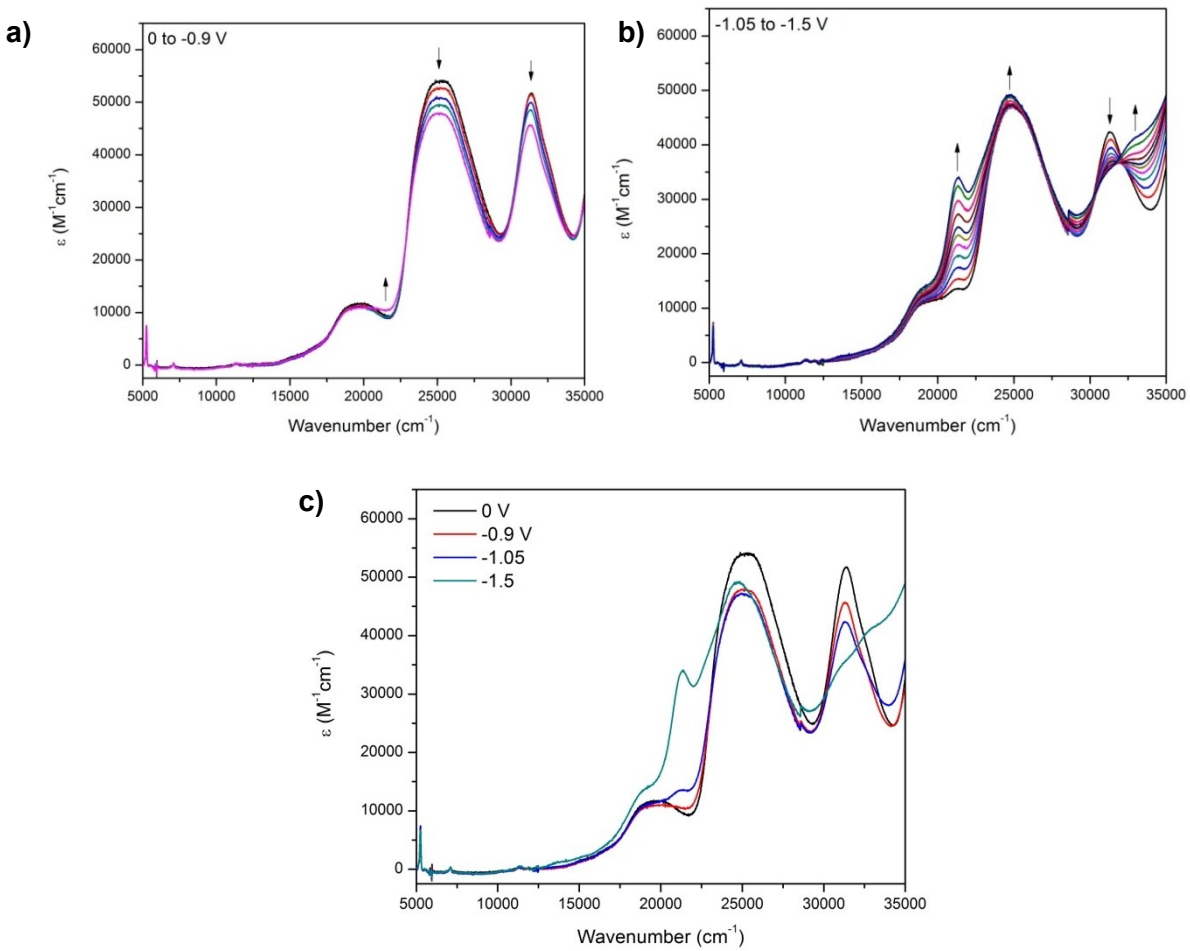

Figure S6. Solution state spectroelectrochemistry on **2** in $[(n\text{-}C_4H_9)_4N]PF_6/CH_3CN$ electrolyte over the potential range of a) 0 to -0.9 V, b) -1.05 to -1.5 V and summary of the changes in the absorption spectrum as a function of potential applied.

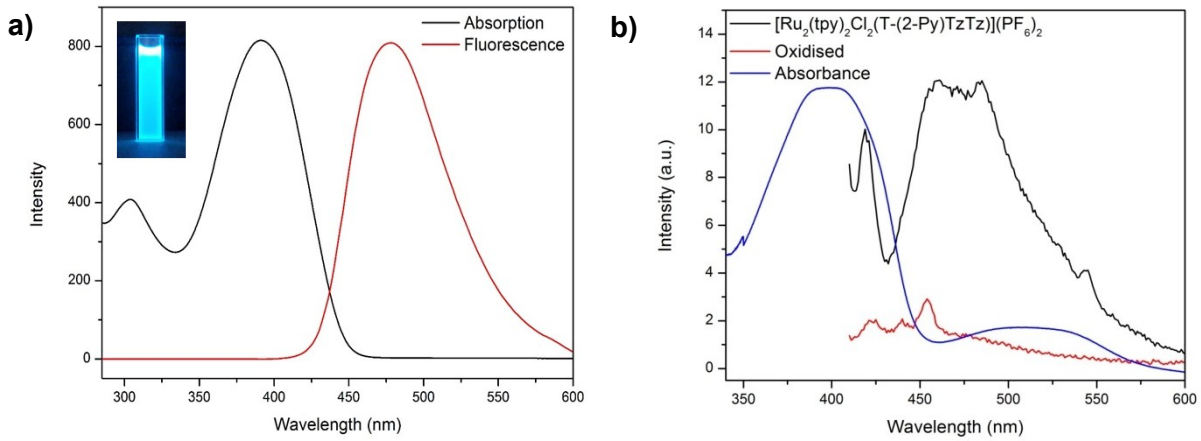

Figure S7. Fluorescence (λ_{ex} = 390 nm) and absorption spectra of a) the **1** and b) **2** (λ_{ex} = 400 nm) as a solution in acetonitrile.

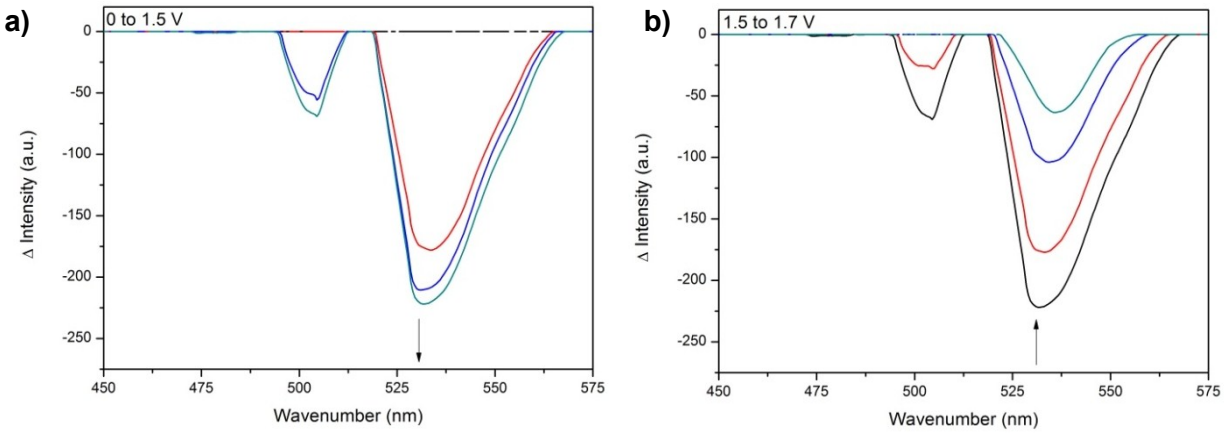

Figure S8. Fluorescence difference spectra of **1** (λ_{ex} = 380 nm) during the *in situ* spectroelectrochemical experiment in $[(n\text{-}C_4H_9)_4N]PF_6/CH_3CN$ electrolyte where the potential was increased from a) 0 to 1.5 V, and b) 1.5 to 1.7 V.

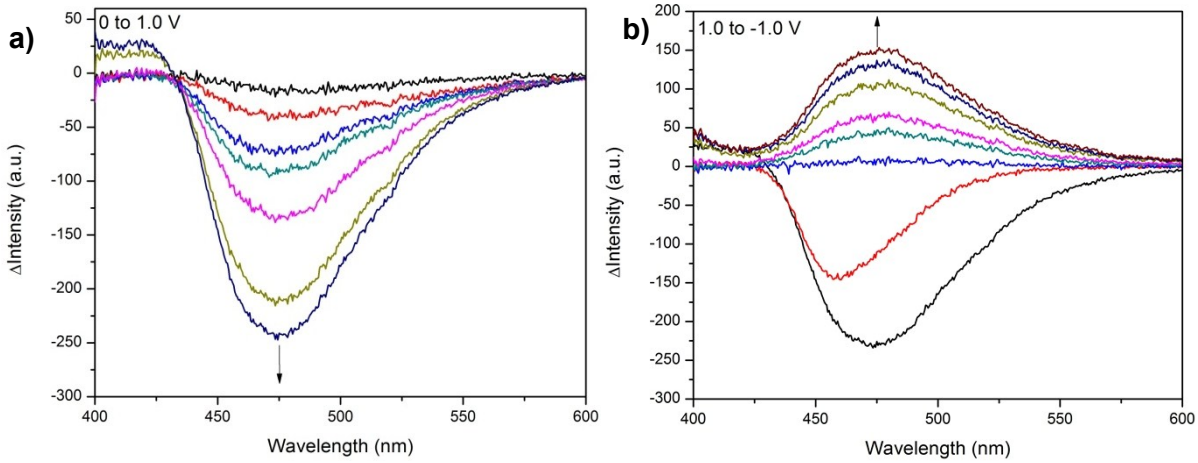

Figure S9. Fluorescence difference spectra of **2** (λ_{ex} = 380 nm) during the *in situ* spectroelectrochemical experiment in $[(n\text{-}C_4H_9)_4N]PF_6/CH_3CN$ electrolyte where the potential was a) increased from 0 to 1.0 V then b) decreased from 1.0 to -1.0 V.