

# CHEMISTRY

## A **European** Journal

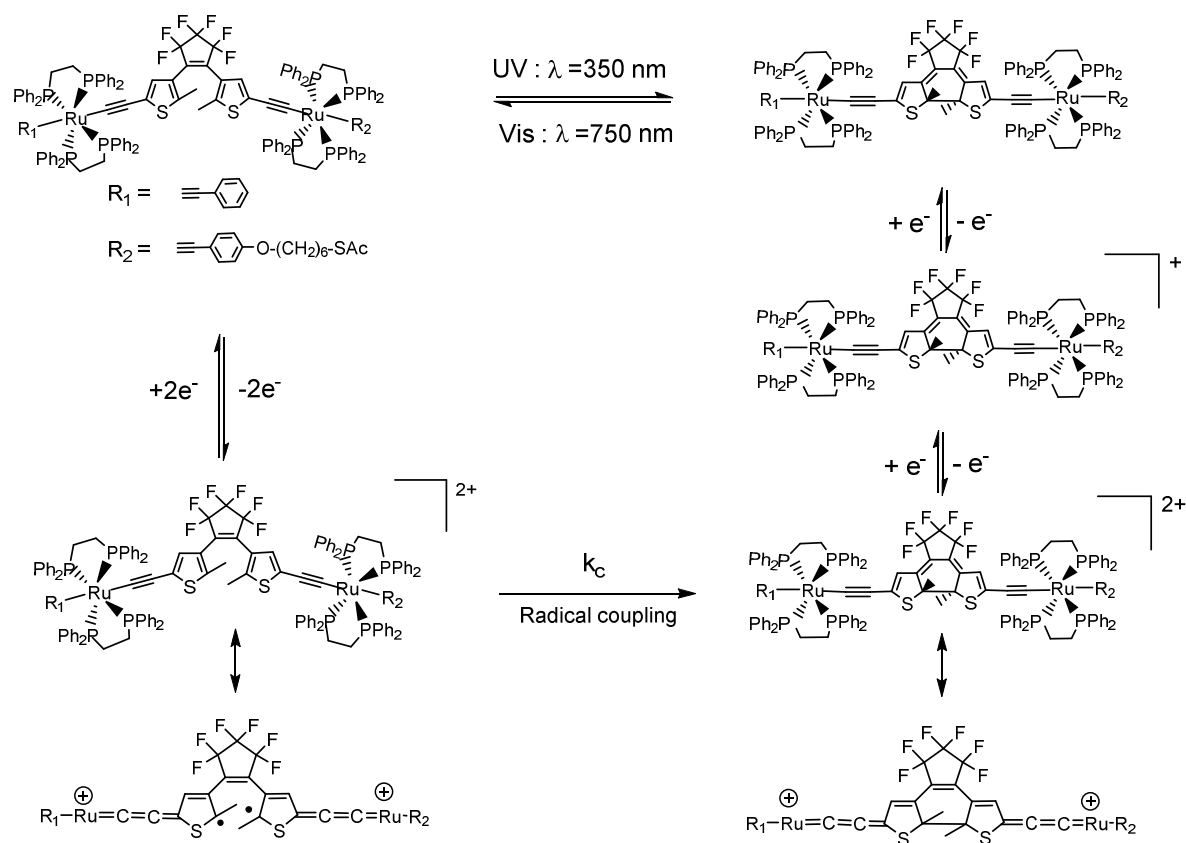
### Supporting Information

#### **Dual-Responsive Molecular Switches Based on Dithienylethene–Ru<sup>II</sup> Organometallics in Self-Assembled Monolayers Operating at Low Voltage**

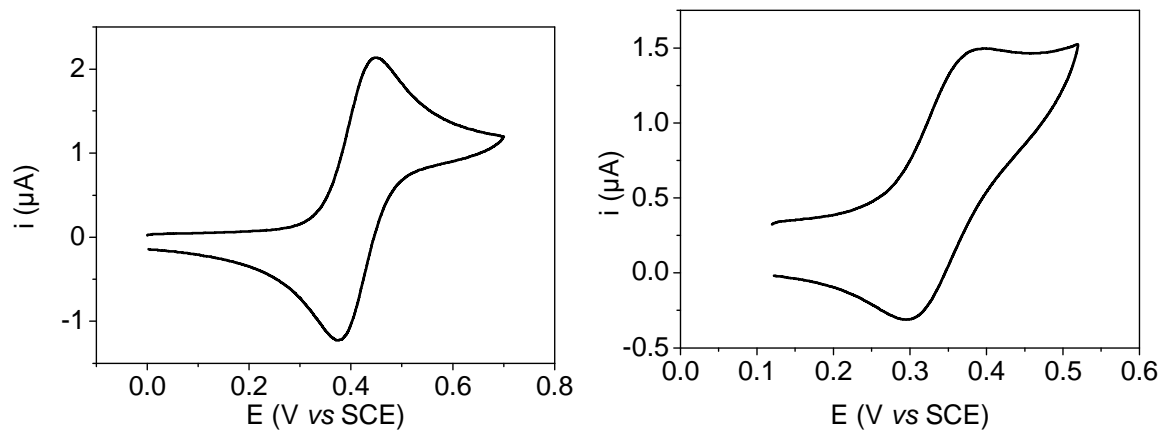
Andrea Mulas, Xiaoyan He, Yves-Marie Hervault, Lucie Norel, Stéphane Rigaut,\* and Corinne Lagrost\*<sup>[a]</sup>

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Supporting Information



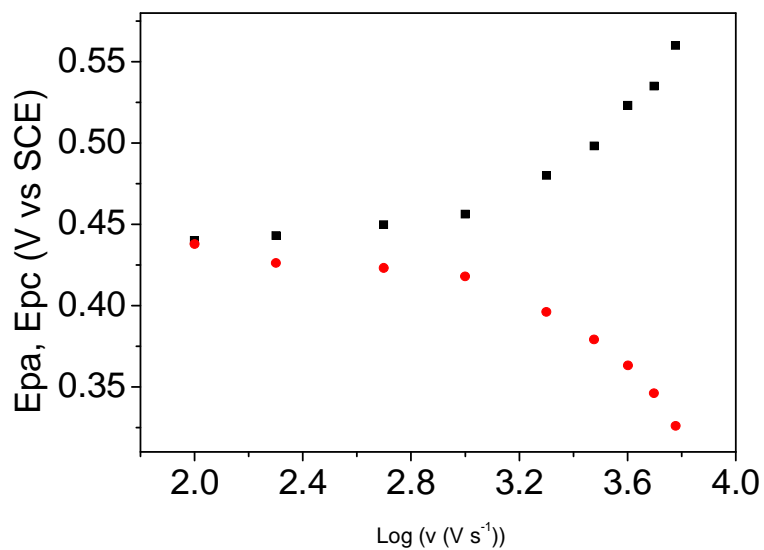
**Scheme S1.** Mechanism of switching processes in the bimetallic compound. In particular electrochemical switching shown to be driven by the presence of two metallic centers.



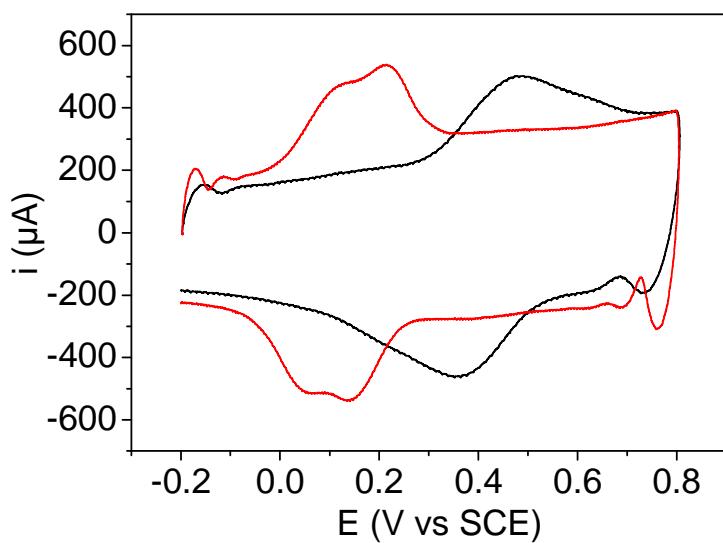
**Figure S1.** Cyclic voltammetry in  $\text{CH}_2\text{Cl}_2 + 0.2 \text{ M NBu}_4\text{PF}_6$  at a platinum electrode of **6o** (left),  $E_{1/2} = 0.41 \text{ V/SCE}$  and of **6c** (right),  $E_{1/2} = 0.35 \text{ V/SCE}$ . **6c** is obtained after irradiation of **6o** at 350 nm.



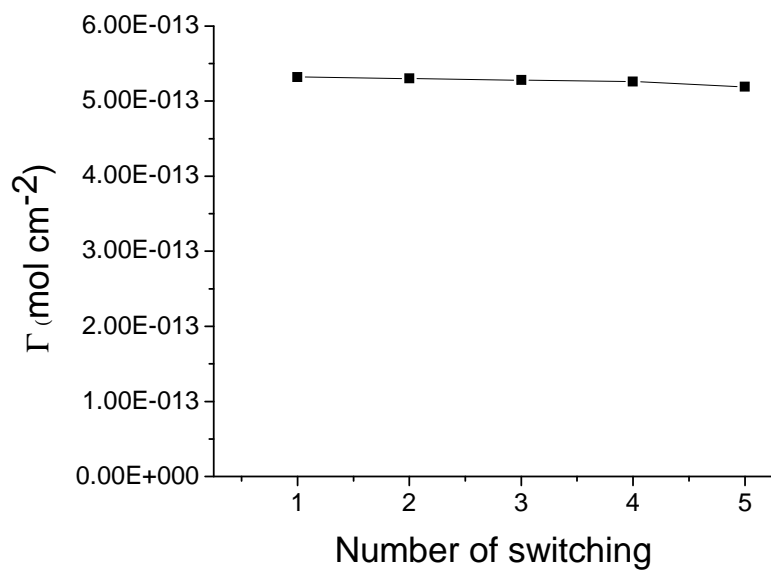
**Figure S2.** Profile of a  $\text{H}_2\text{O}$  droplet in contact with a SAM of complex **6o** (left) and **8o** (right) on gold



**Figure S3.** Laviron's plot for single component SAM of compounds **6o**



**Figure S4.** Cyclic voltammograms in CH<sub>2</sub>Cl<sub>2</sub> containing NBu<sub>4</sub>PF<sub>6</sub> of single-component SAMs on a gold disk electrode ( $\phi$  1.6 mm). SAMs of **8o** (black line) and **8c** (red line), scan rate is 1000 V s<sup>-1</sup>. SAM of **8c** is obtained after cycling of SAM of **8o** with 5 repetitive cycles between -0.2 and 0.8 V at 10 mV s<sup>-1</sup>.



**Figure S5.** Evolution of surface concentration of SAM from **80** as a function of 5 consecutive switching processes combining oxidation/UV irradiation (350 nm) then visible irradiation (750 nm).