

References and Notes

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- [20] Nitrobenzene and dinitrobenzenes, whatever the sweep rate, present one-electron reversible oxidation wave [1]
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[23] This oxidation wave appears only after a first reduction scan.

[24] a) The ESR spectrum reported by Marshall [24b] for stable radical anion of **1** exactly corresponds to the ESR spectrum of product **2** described here. These authors analyzed the spectrum and assigned the hfcs as corresponding to a doubled radical anion, with three equivalent nitrogen and three equivalent hydrogen atoms. Glarum and Marshall, assumed that the similitude of trinitrobenzene with other nitrocompounds erroneously presupposed the existence of one stable radical anion for product **1**, b) S.H. Glarum and J.H. Marshall; *J.Chem.Phys.* **1964**, *41*, 2182.

[25] a) The NMR data for ^1H are consistent with a paramagnetic species having a great value for the proton hyperfine coupling constant [25 b]. This spectrum corresponds to a biradical with an a_{H} smaller than the line width, b) P. Petillo, J. DeFelippis and S.F. Nelsen *J.Org.Chem.* **1991**, *56*, 6496.

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[27] a) Recent results [27 b] have shown that the oxidation potential of the π -complexes, are in the range 0.60-1.00V, b) I. Gallardo, G. Guirado and J. Marquet; *Chem.Eur.J.* In press

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[29] In DMF (Scheme 1), $k_3 = 1.2 \times 10^{-3} \text{s}^{-1}$

[30] a) Molecular Modeling (AMI, Hyperchem) show that the structure proposed for product **2** (Scheme 2, Figure 6) is a minimum in the potential energy surface [30 b]. b) P. Calle and C. Sieiro, unpublished results.

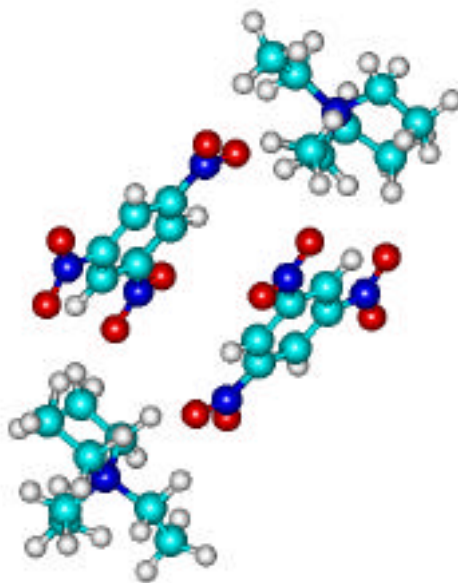


Figure 6. Molecular Modeling (AMI, Hyperchem©) for product **2**.

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SUPPORTING MATERIAL

Figure 1

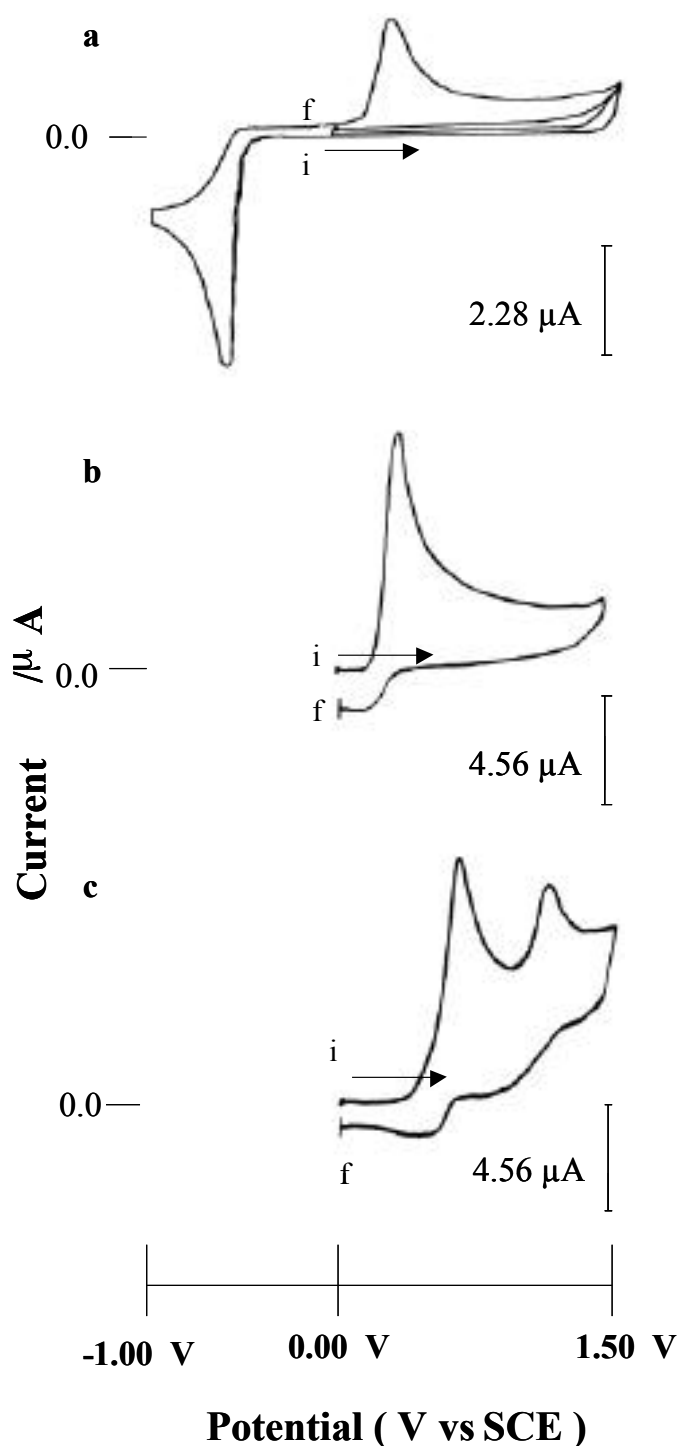


Figure 1. a) Cyclic voltammetry of **1** (6.0 mM) in DMF + 0.1M $n\text{Bu}_4\text{NBF}_4$ at 10°C. Scan rate 1.0 V/s, glassy carbon disk electrode (0.05 mm diameter). The scan is in the potential range: 0.00/1.50/-1.00/0.00 V (2cycles) **b)** Cyclic voltammetry of **2** (6.0 mM) in DMF + 0.1M $n\text{Bu}_4\text{NBF}_4$ at 10°C. Scan rate 1.0 V/s, glassy carbon disk electrode (0.05 mm diameter). The scan is in the potential range: 0.00/1.50/0.00 V **c)** Cyclic voltammetry of **3** (6.0 mM) in DMF + 0.1M $n\text{Bu}_4\text{NBF}_4$ at 10°C. Scan rate 1.0 V/s, glassy carbon disk electrode (0.05 mm diameter). The scan is in the potential range: 0.00/1.50/0.00 V

d

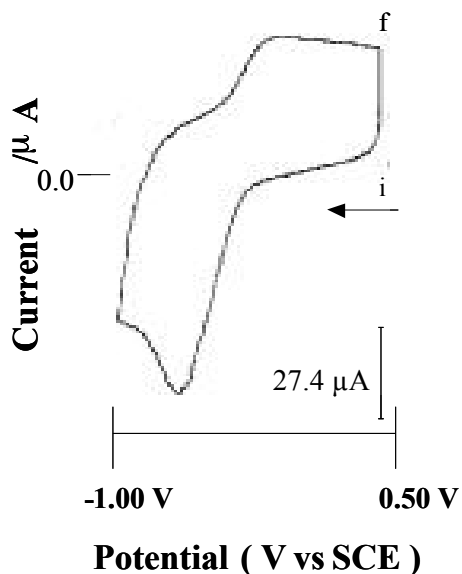


Figure 1d. Cyclic voltammetry of **1** (6.0 mM) in DMF + 0.1M nBu₄NBF₄ at 10°C. Scan rate 400 V/s, glassy carbon disk electrode (0.05 mm diameter). The scan is in the potential range: 0.50/-1.00/0.50 V

Figure 2

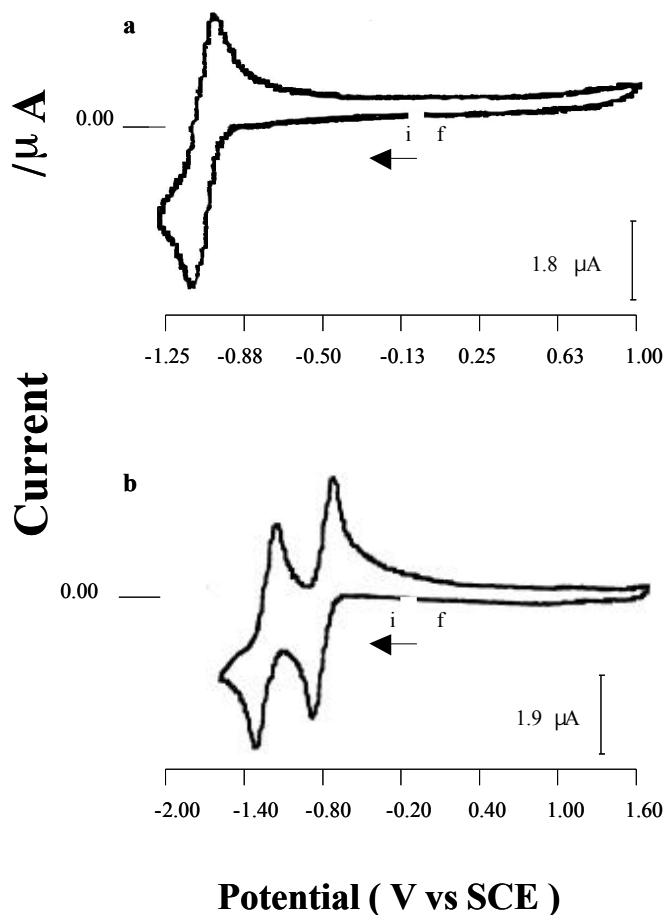


Figure 2. a) Cyclic voltammetry of nitrobenzene (6.0 mM) in DMF + 0.1M nBu₄NBF₄ at 10°C. Scan rate 1.0 V/s, glassy carbon disk electrode (0.05 mm diameter). The scan is in the potential range: 0.00/-1.25/1.00/0.00 V b) Cyclic voltammetry of 1,3-dinitrobenzene (6.0 mM) in DMF + 0.1M nBu₄NBF₄ at 10°C. Scan rate 1.0 V/s, glassy carbon disk electrode (0.05 mm diameter). The scan is in the potential range: 0.00/-2.00/1.50/0.00 V

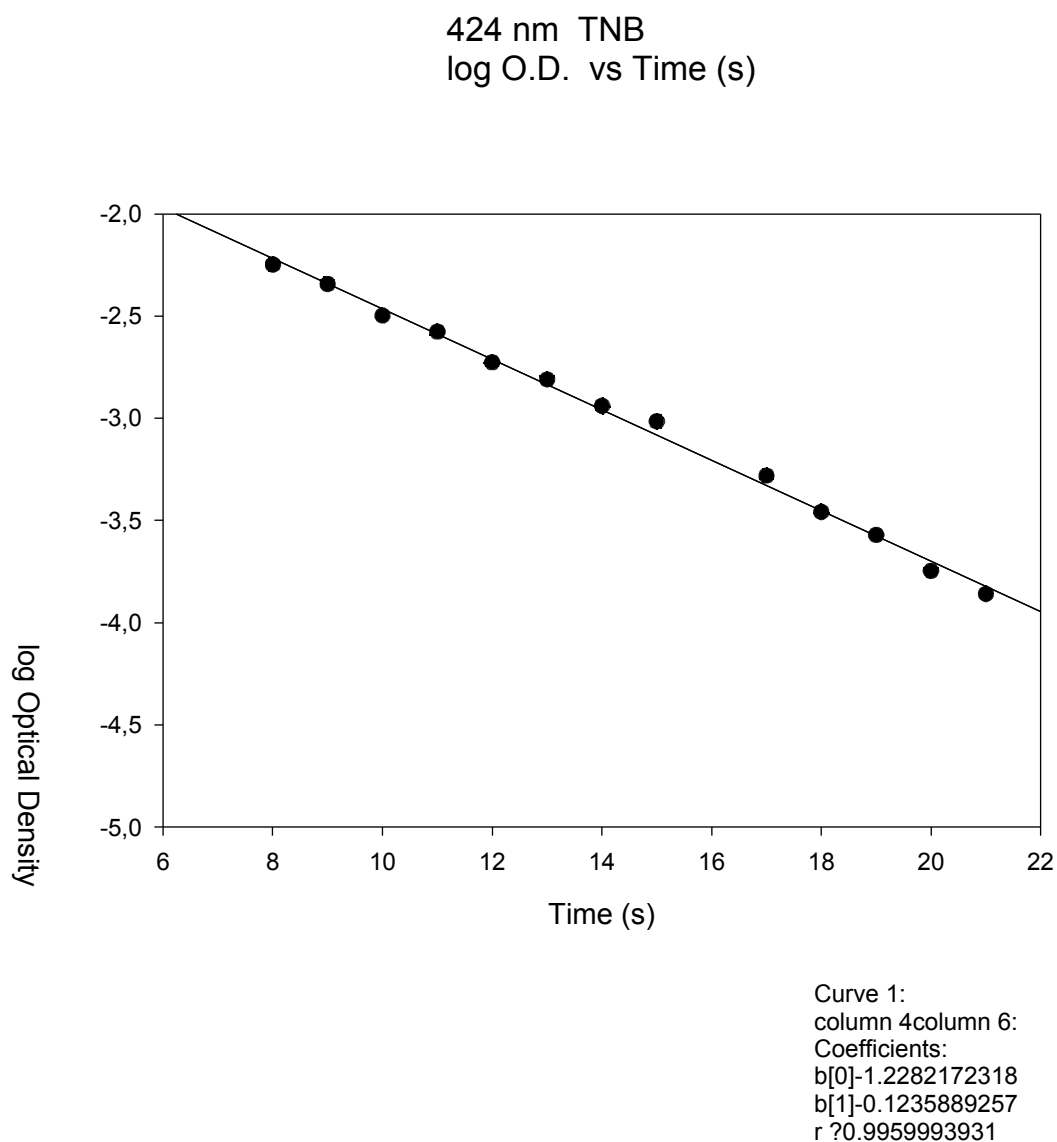


Figure 3. In situ UV/Vis spectra. Curve log Optical Density-time during a potential step experiment ($E_1=0.00$ V; $E_2=-1.00$ V; $E_3=0.00$ V) of $5 \cdot 10^{-4}$ M 1,3,5-trinitrobenzene (**1**) in 0.1 m TBABF₄ (acetonitrile) in the UV/Vis LIGA cell [30a,30b].