Supporting Information

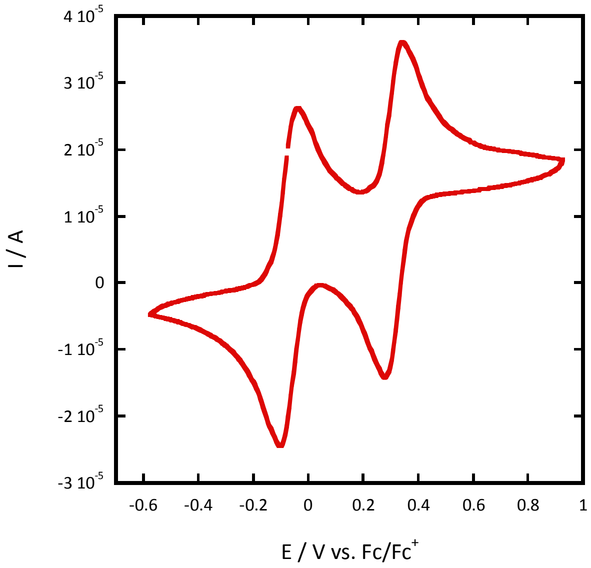

Figure S1. Cyclic voltammogram of 1 mM TTF with 0.1 M $nBu_4N[PF_6]$ in AN at a scan rate of 100 mV s^{-1}.

Potentiometry measurements were implemented with a working electrode and a reference electrode connected to an Autolab potentiostat with a GPES electrochemical interface. The working electrode used was a platinum wire placed inside the corresponding electrolyte solution. The electrolyte solution contained 0.2 M TTF with different concentrations of $NO[BF_4]$ in AN. Potentiometry was obtained by using chrono methods (interval time < 0.1s) versus an Ag/Ag^{+} reference electrode (10 mM $AgNO_3$ in acetonitrile) with 0.1 M tetrabutylammonium hexafluorophosphate solution in acetonitrile as supporting electrolyte.

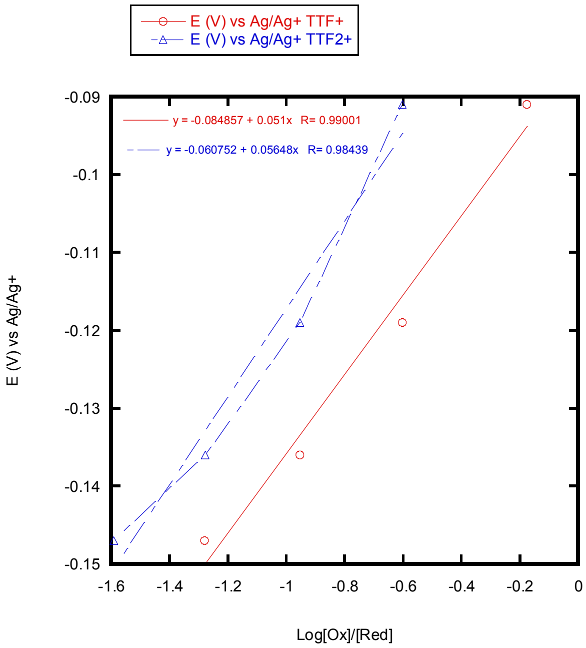

Figure S2. Potentials as a function of Log [Ox]/[Red] for electrolyte E_T. Assuming that TTF was only oxidized to TTF^+, the slope fit very well with n = 1 according to the Nernst equation. However, when the TTF was assumed to be oxidized to TTF^{2+}, the slope does not fit with n=2.

Table S1. Photovoltaic properties of DSCs using dye N719 (0.3 mM in ethanol) under 1 sun condition.

Dye	J_{sc} (mA·cm^{-2})	V_{oc} (V)	*FF*	η (%)
N719	0.15	0.34	0.30	0.01

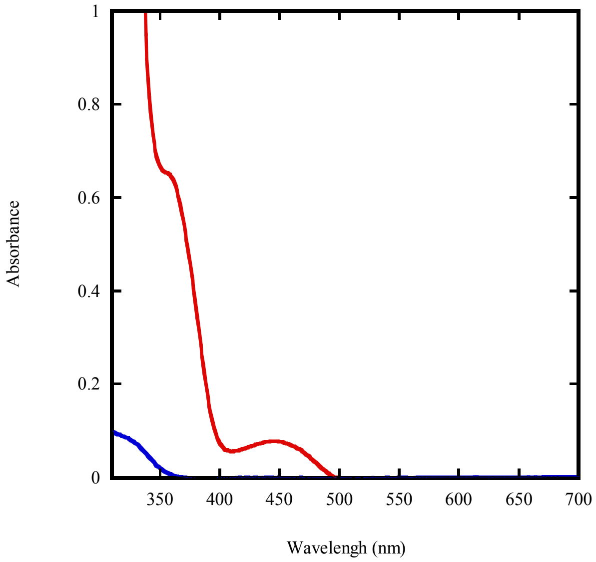

Figure S3. UV-vis spectra for electrolytes (100× diluted): E_T (red) and E_I (blue).

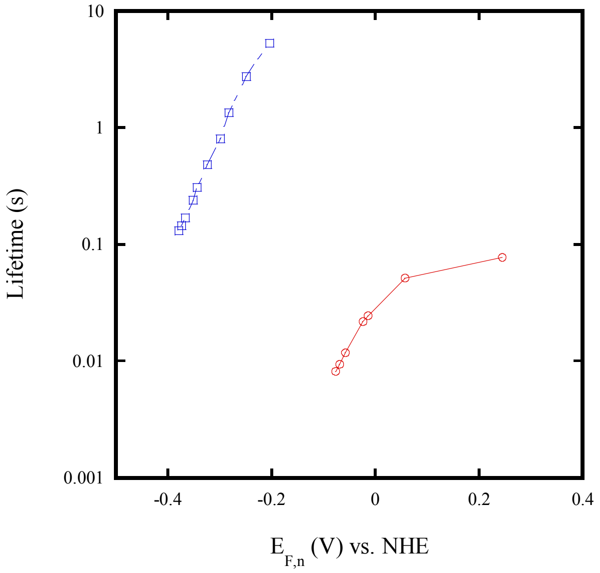

Figure S4. Electron lifetime as a function of electrochemical potential of TiO_2: Electrolytes E_T (red) and E_I (blue).

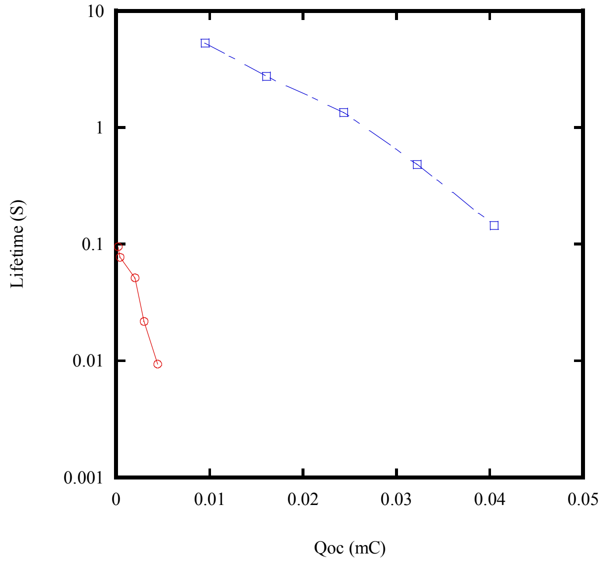

Figure S5. Electron lifetime as a function of extracted charge (Q_{oc}): Electrolytes E_T (red) and E_I (blue).