

Supporting Information for

The Electrochemistry of Iodide, Iodine and Iodine
Monochloride in Chloride Containing
Nonhaloaluminate Ionic Liquids

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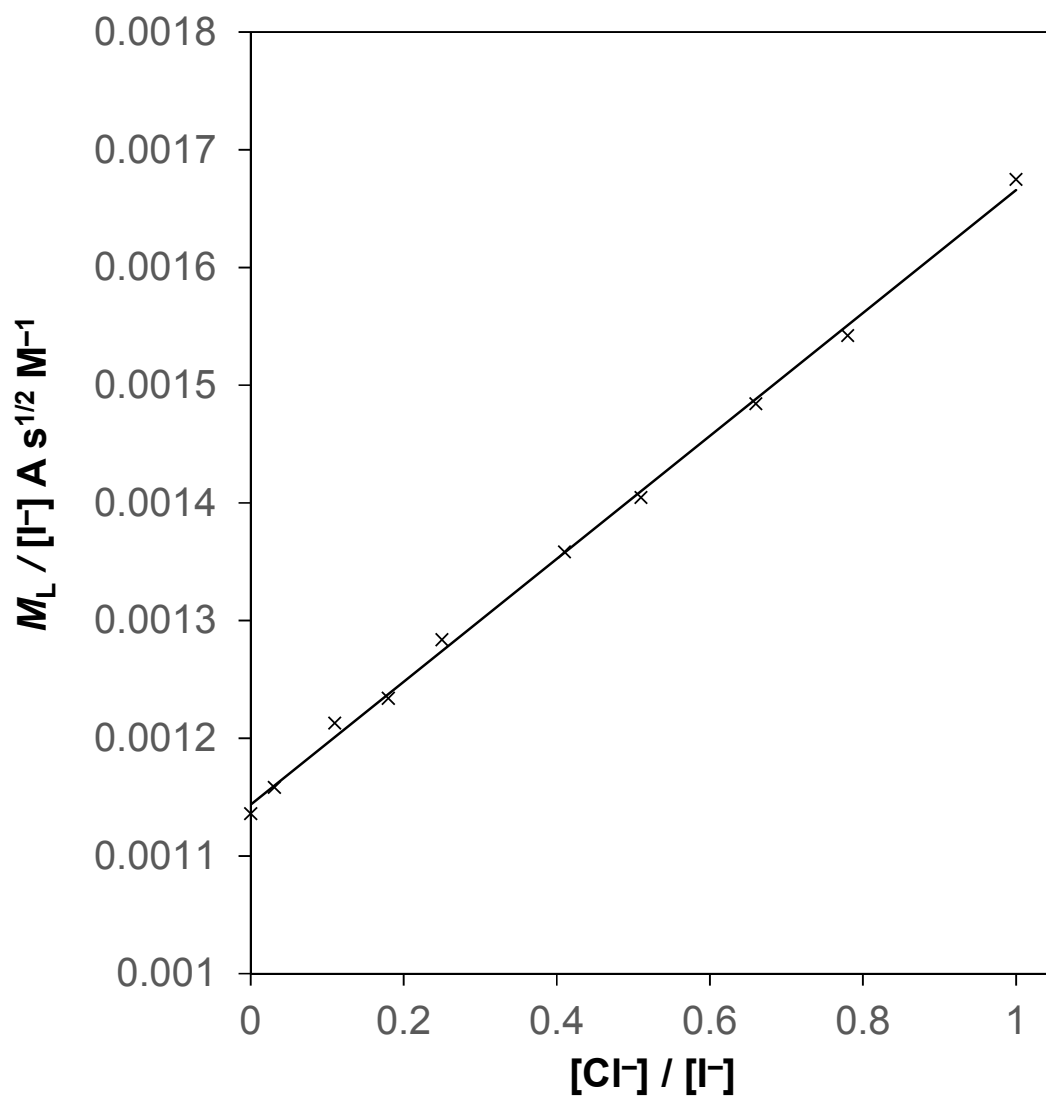


Figure S1. $M_L / [I^-]$ versus $[Cl^-] / [I^-]$ data obtained from a semiintegral voltammogram (Pt macrodisk electrode, scan rate = 50 mV s^{-1}) along with a plot (—) of the least-squares linear regression line ($r^2 = 0.998$).

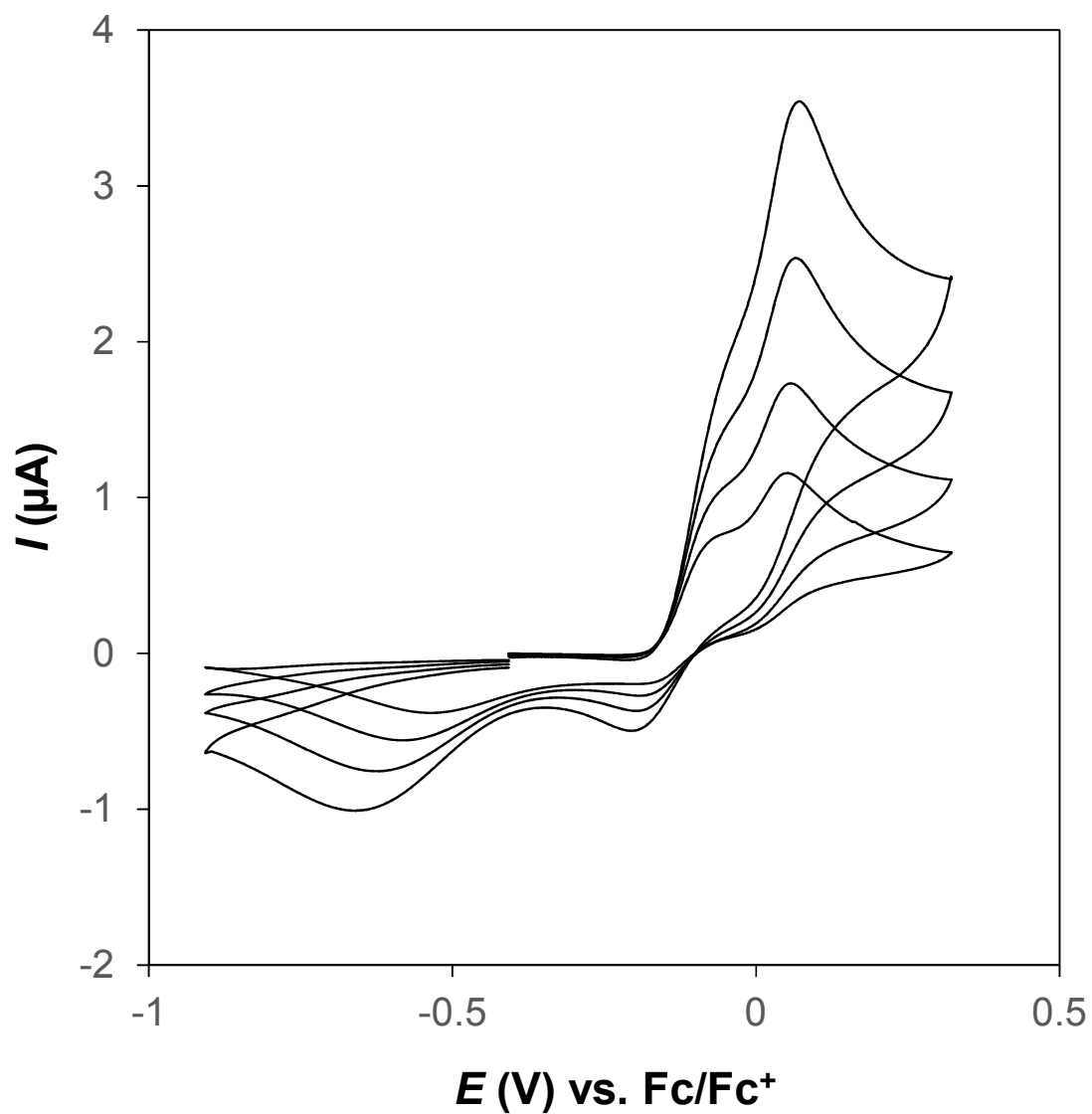


Figure S2. Background-subtracted cyclic voltammograms obtained at a 1.6 mm diameter Pt macrodisk electrode from the electro-oxidation of 10.8 mM Γ^- (from $[\text{C}_2\text{mim}]\text{I}$) in a mixture of $[\text{C}_4\text{mim}]\text{Cl}$ and $[\text{C}_2\text{mim}][\text{NTf}_2]$ (2.5:1 mol ratio). Scan rates are (from top to bottom) 100, 50, 25 and 10 mV s^{-1} .

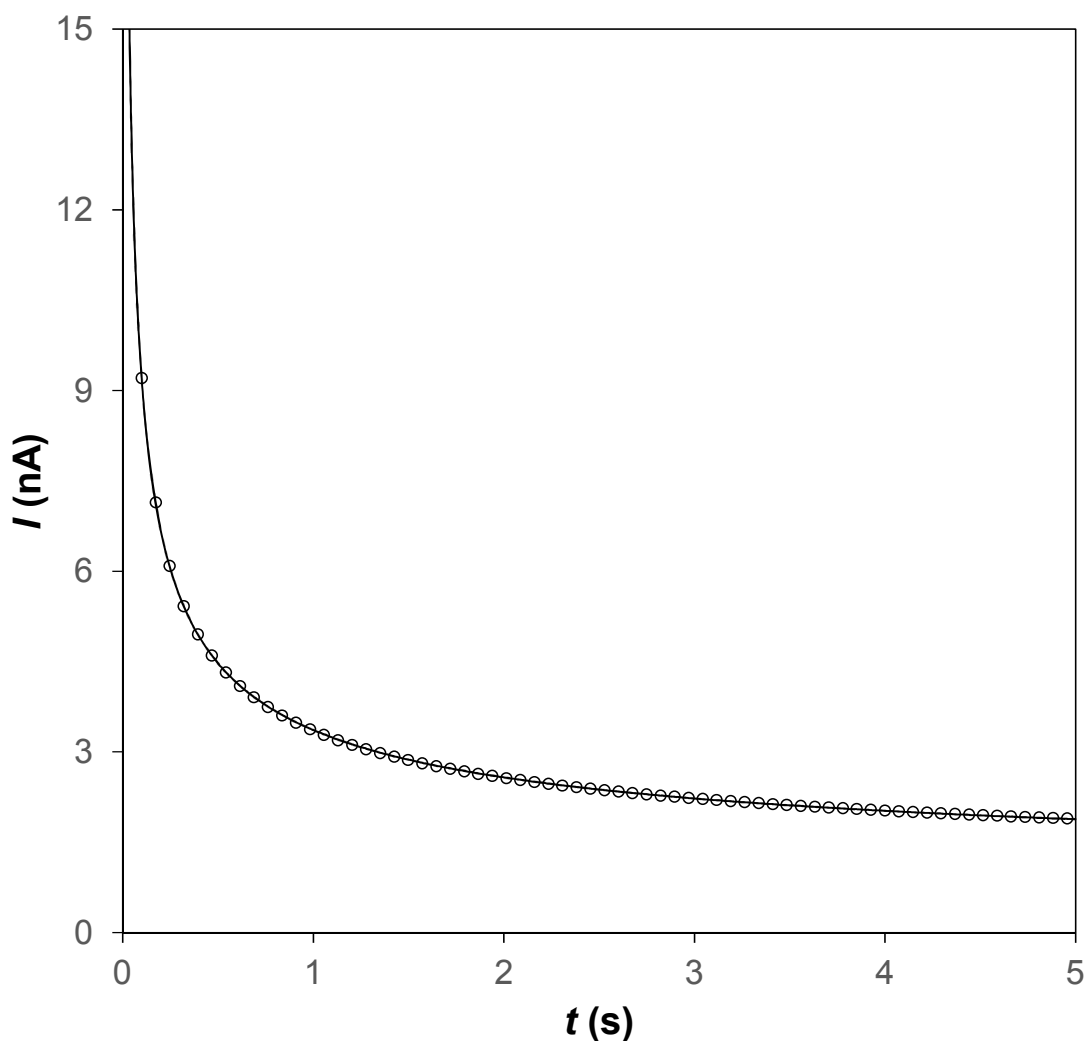


Figure S3. Shoup-Szabo theoretical (\circ) and experimental (—) chronoamperograms obtained at a 20 μm diameter Pt microdisk electrode from the diffusion controlled oxidation ($E_{\text{step}} = 0.16 \text{ V vs. Fc/Fc}^+$) of 43.9 mM Γ^- (from $[\text{C}_2\text{mim}]\text{I}$) in a mixture of $[\text{C}_4\text{mim}]\text{Cl}$ and $[\text{C}_2\text{mim}][\text{NTf}_2]$ (2:1 mol ratio). The fitting parameters ($r^2 = 0.99997$) used in the theoretical plot were: $[\Gamma^-] = 0.0439 \text{ M}$, $r_0 = 0.00112 \text{ cm}$, $n = 1.96$ and $D = 2.2 \times 10^{-8} \text{ cm}^2 \text{ s}^{-1}$.

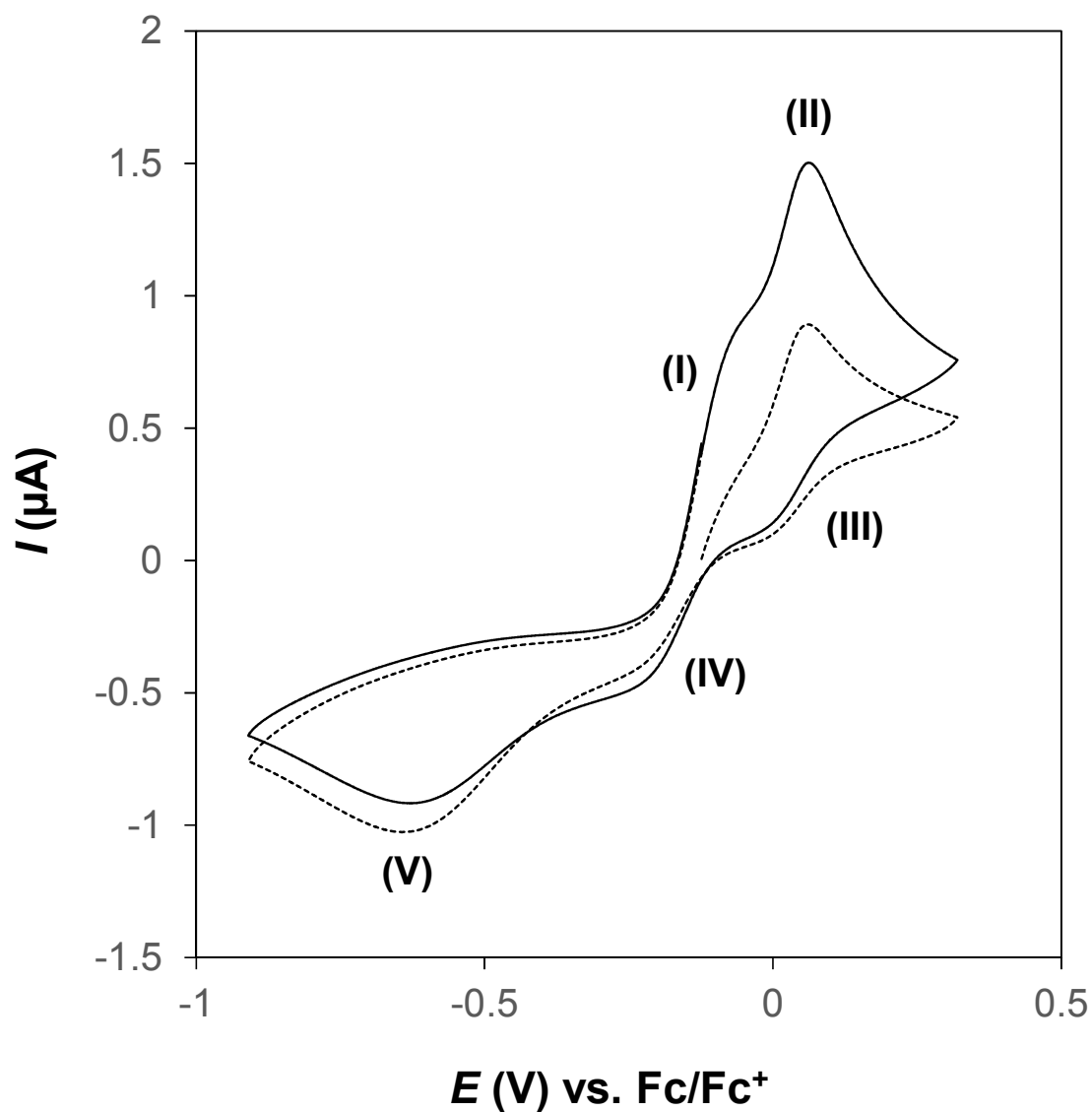


Figure S4. A background-subtracted cyclic voltammogram obtained at a 1.6 mm diameter Pt macrodisk electrode from 8.1 mM I_2 in a mixture of $[\text{C}_4\text{mim}]\text{Cl}$ and $[\text{C}_2\text{mim}][\text{NTf}_2]$ (2.5:1 mol ratio) with a scan rate of 10 mV s^{-1} . From open circuit ($-0.124 \text{ V vs. Fc/Fc}^+$), the potential was initially swept positively. Cycles 1 (---) and 2 (—) are shown.

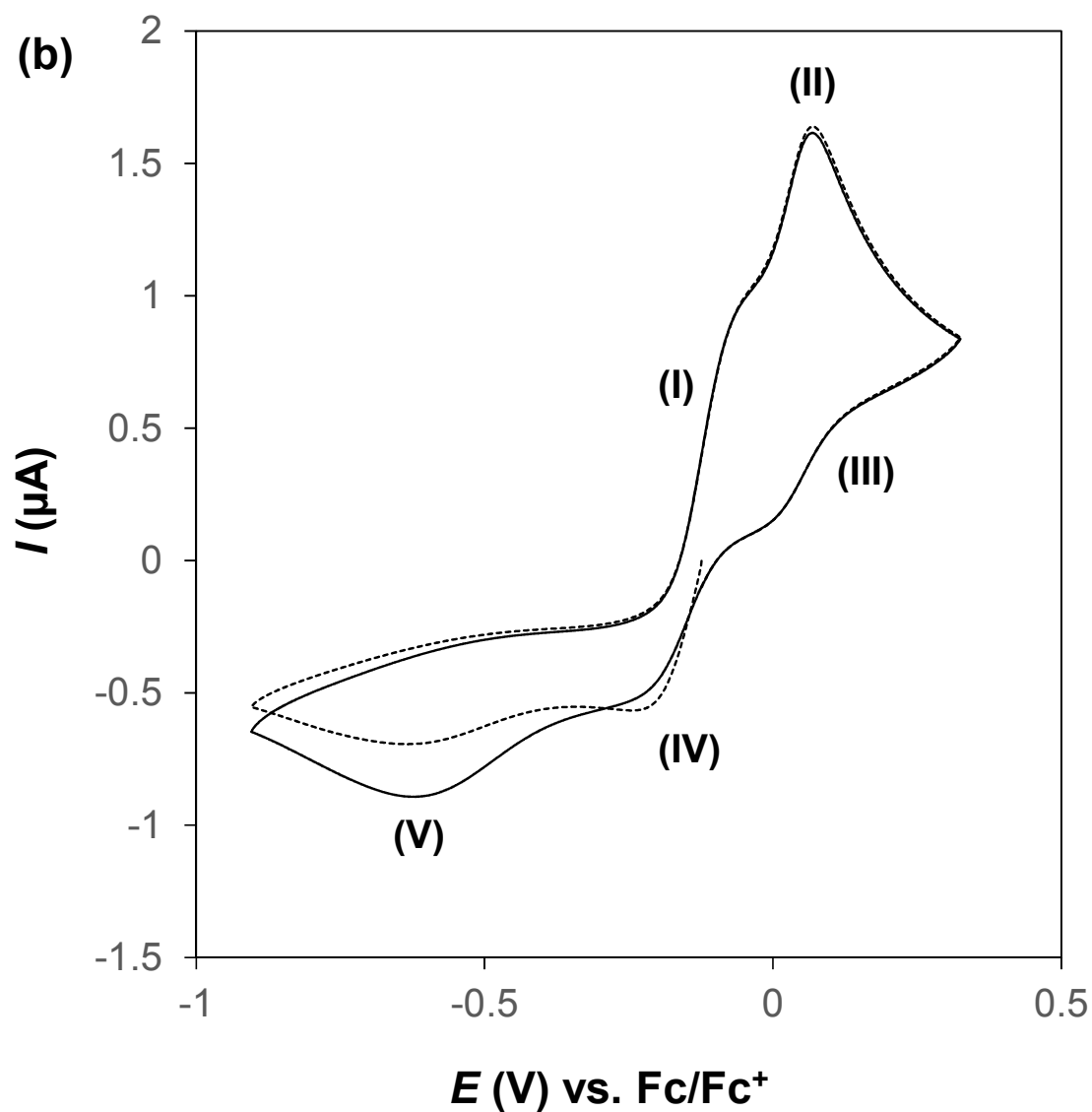


Figure S5. A background-subtracted cyclic voltammogram obtained at a 1.6 mm diameter Pt macrodisk electrode from 8.1 mM I_2 in a mixture of $[\text{C}_4\text{mim}]\text{Cl}$ and $[\text{C}_2\text{mim}][\text{NTf}_2]$ (2.5:1 mol ratio) with a scan rate of 10 mV s^{-1} . From open circuit ($-0.124 \text{ V vs. Fc}/\text{Fc}^+$), the potential was initially swept negatively. Cycles 1 (---) and 2 (—) are shown.