SUPPLEMENTARY INFORMATION

Electrochemical Properties of Protic Ionic Liquids: Correlation between Open Circuit Potential of H₂/O₂ Cells under Non-humidified Conditions and ΔpKₐ

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Figure S1. Chemical structures of all acids and bases used in this study. Data in parenthesis indicate pKₐ values in aqueous system taken from ref. 6.
Figure S2. Time-dependent isothermal TG curves for [DBU]- and [dema]-based PILs at 130 °C for 2 h under nitrogen atmosphere using aluminum pan.

Figure S3. Cyclic voltammograms using a Pt wire as working electrode for (a) [DBU]CH₃SO₃ under O₂, N₂ and H₂ gas bubbling atmospheres at 110 °C and (b) [dema]CH₃SO₃ under O₂ gas bubbling atmosphere at different temperatures. Scan rate is 10 mVs⁻¹.
**Figure S4.** Change in OCP at 30 °C as a function of time with the addition of pure amine (dema) to [dema]CF$_3$SO$_3$. 