

Supporting Information

In-situ Real-time and Quantitative Investigation on Stability of Non-aqueous Lithium Oxygen Battery Electrolytes

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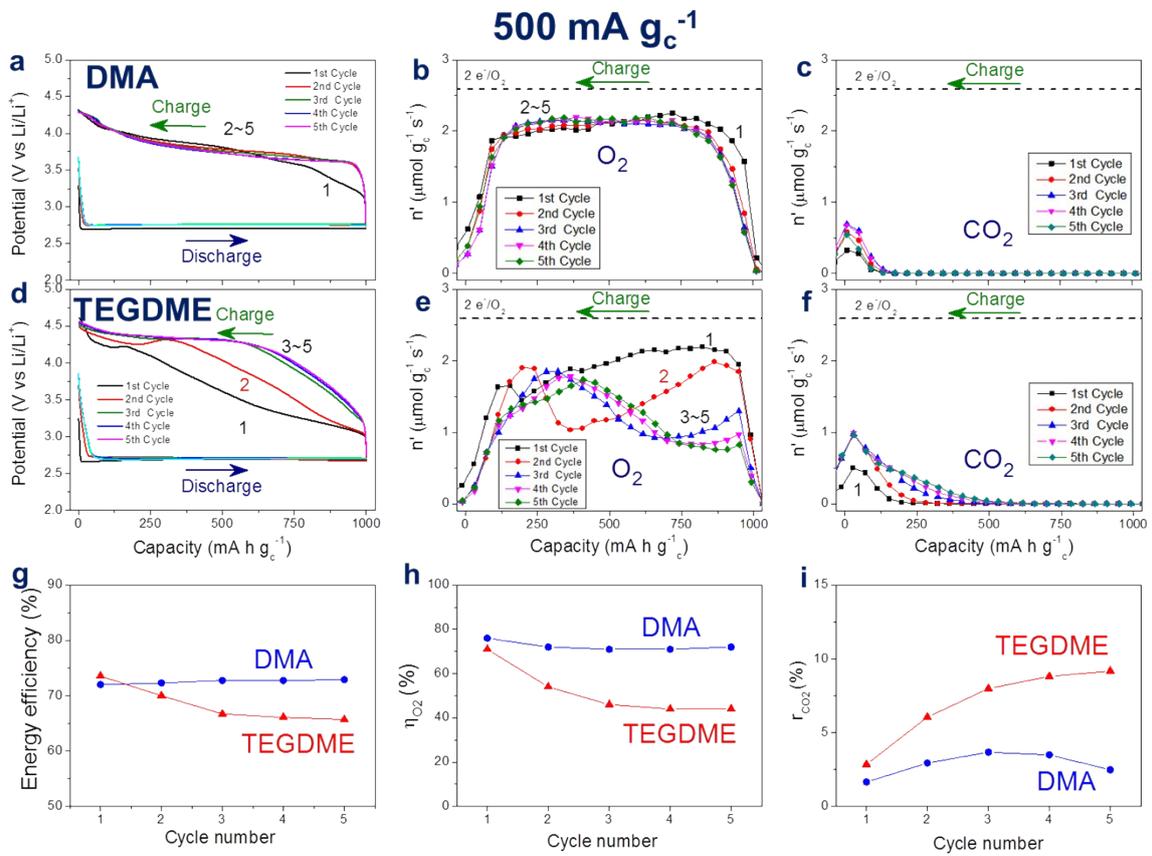


Figure S1. Potential profiles (a, d), the rates of O₂ evolution at charge (b, e), and the rates of CO₂ evolution at charge (c, f) in Li-O₂ cells with DMA-LiNO₃ electrolyte (a, b, c) or TEGDME-LiTFSI electrolyte (d, e, f) during the five cycles at current density of 500 mA g⁻¹. Energy efficiency (g), oxygen efficiency at charge (h), and r_{CO₂} (i) as a function of cycle number in Li-O₂ cells with DMA electrolyte or TEGDME electrolyte over the five cycles at current density of 500 mA g⁻¹.

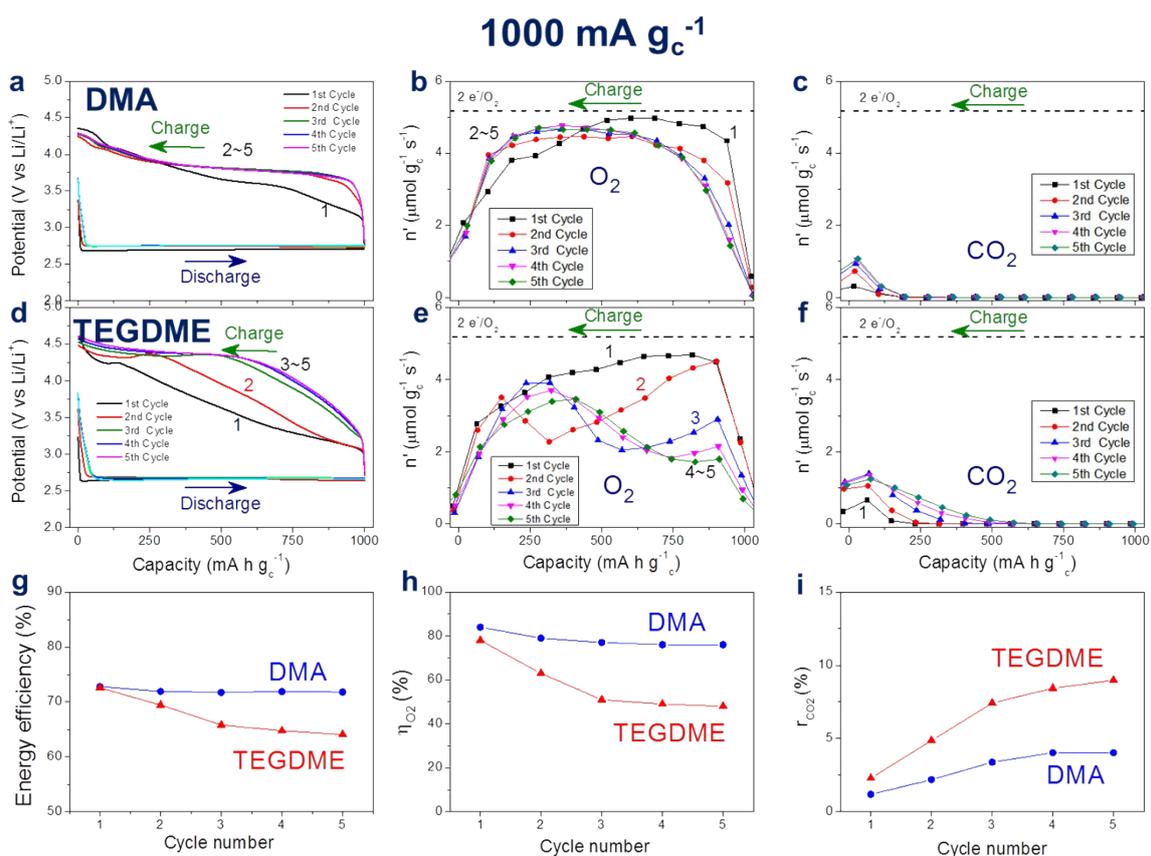


Figure S2. Potential profiles (a, d), the rates of O₂ evolution at charge (b, e), and the rates of CO₂ evolution at charge (c, f) in Li-O₂ cells with DMA-LiNO₃ electrolyte (a, b, c) or TEGDME-LiTFSI electrolyte (d, e, f) over the five cycles at current density of 1000 mA g_c⁻¹. Energy efficiency (g), oxygen efficiency at charge (h), and r_{CO₂} (i) as a function of cycle number in Li-O₂ cells with DMA electrolyte or TEGDME electrolyte over five cycles at current density of 1000 mA g_c⁻¹.

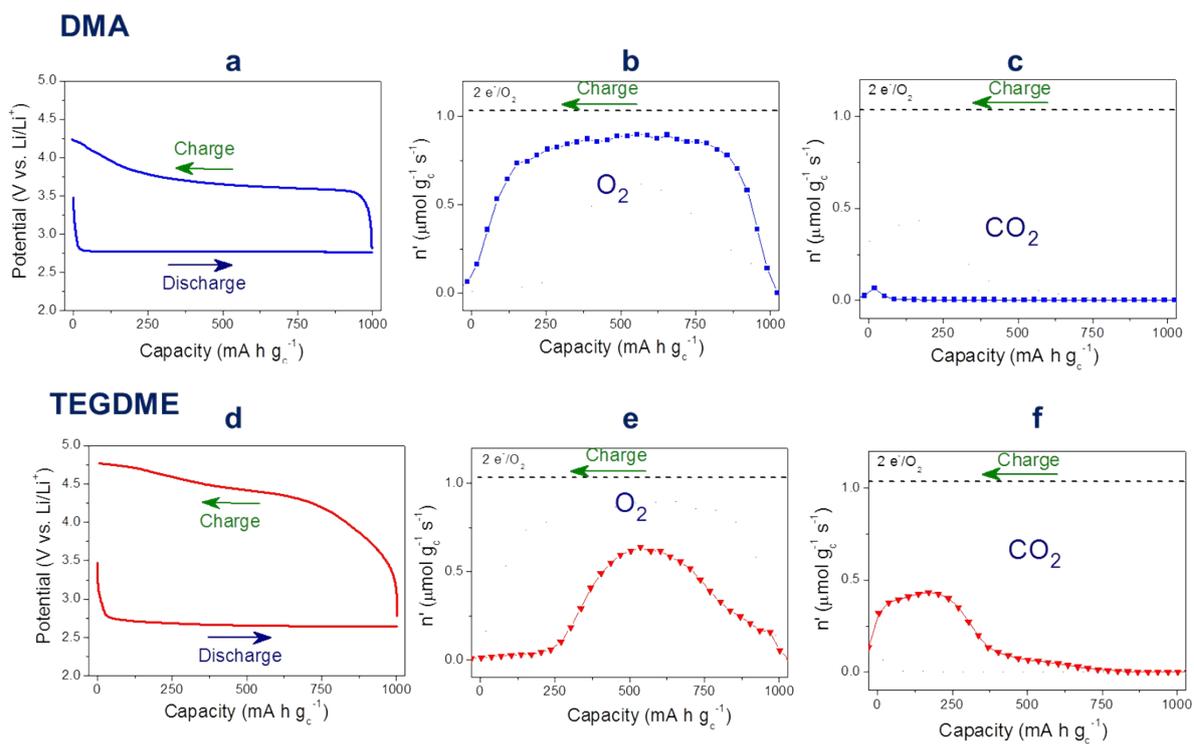


Figure S3. Potential profiles (a, d), the rates of O₂ evolution at charge (b, e), and the rates of CO₂ evolution at charge (c, f) in Li-O₂ cells with DMA-LiNO₃ electrolyte (a, b, c) or TEGDME-LiTFSI electrolyte (d, e, f) at the 10th cycle with current density of 200 mA g_c⁻¹.

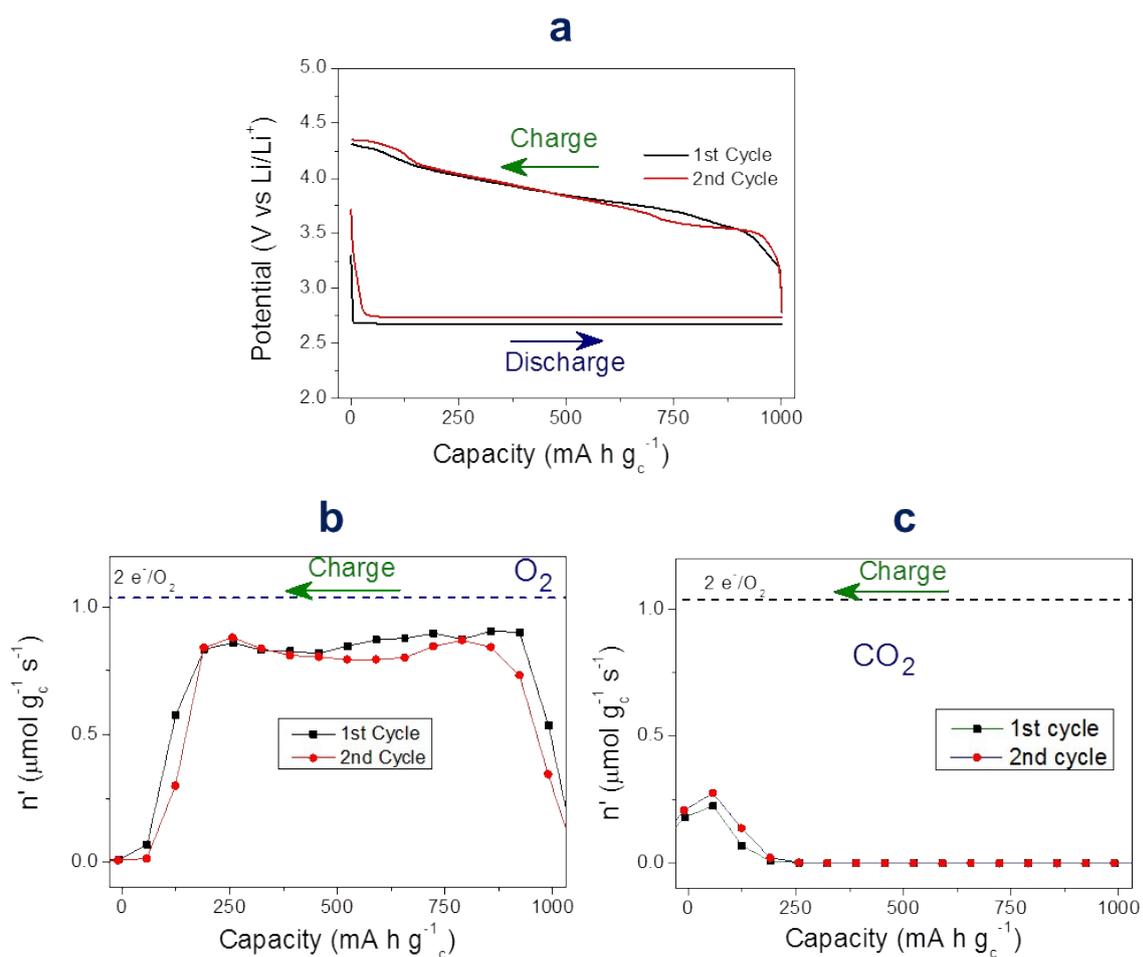


Figure S4. Potential profiles (a), the rates of O₂ evolution at charge (b), and the rates of CO₂ evolution at charge (c) in Li-O₂ cells with TEGDME with 0.5 M LiNO₃ during the first two cycles. The current density is 200 mA g_c⁻¹.