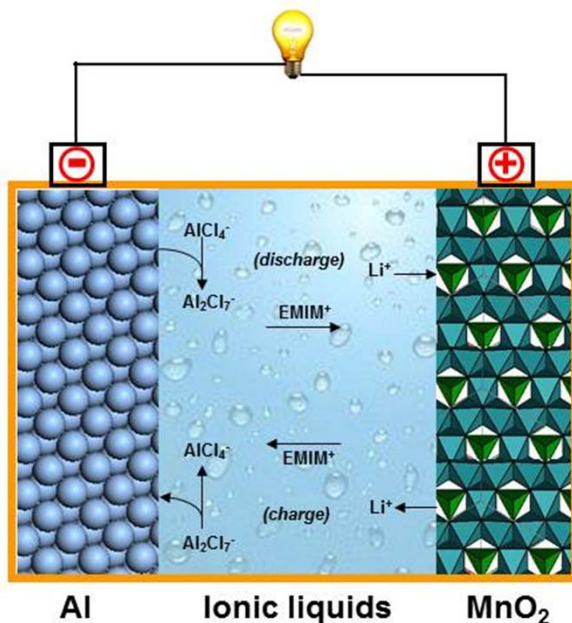


A Rechargeable Al-MnO₂ Battery in Ionic Liquid Electrolyte

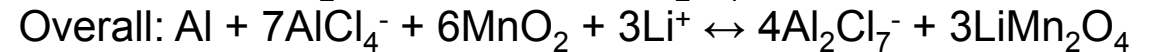
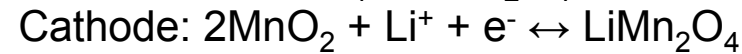
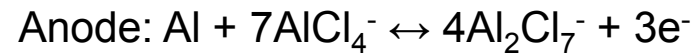
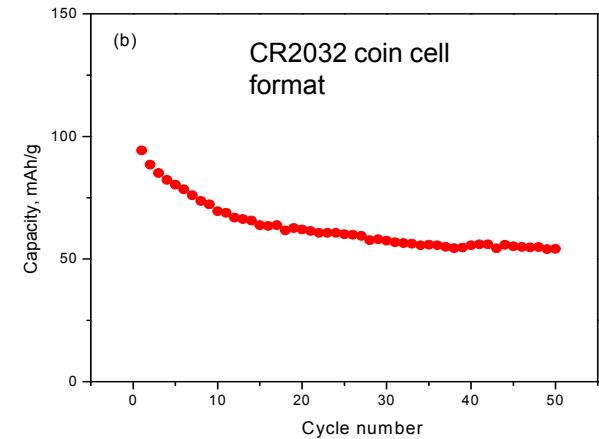
Al anode: trivalent electrochemical redox reaction

λ-MnO₂ cathode: Li⁺ insertion-extraction

Electrolyte: room temperature ionic liquid electrolyte , LiAlCl₄ in 1-ethyl-3-methyl imidazolium (EMIm) AlCl₄⁻ *avoids problem of passivation layer on Al.*



Battery Performance



Average discharge voltage of 2.0V, rechargeable capacity with multiple cycles, and good stability without self-discharge.