LiBr for lithium oxygen batteries

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For many years with various results, degree of Li-O2 research seems to have reached an equilibrium state. It is now clear that the instability of the cell components toward the extreme conditions existing during cell operation, leads to cell failure in short period. One serious challenge is the high oxidation potential applied during the charge process. Redox-mediators may reduce the over-potential and improve the efficiency and cyclability of Li-O2 cells. We have previously shown that LiI can indeed behave in such a manner; however, it also promotes the formation of side products during cell operation. We have concluded that low concentration of LiBr in diglyme solution can improve the cell performance with fewer side effects than those of LiI.