

O₂ reduction and evolution at metal oxides in alkaline electrolyte: A study of the role of cations and isotope exchange experiments

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Within the context of elucidating the possibilities of aqueous Li-air batteries, several metal oxides of the perovskite and spinell type such as Co₃O₄ have been tested as bifunctional catalysts in alkaline electrolyte. The effect of the cation and concentration on O₂ evolution and reduction has been studied.

Previous isotope exchange experiments using DEMS had shown that in acid electrolyte the surface oxygen participates in the O₂ evolution at RuO₂ [1], IrO₂ [2, 3] and Ru_{0.9}Ni_{0.1}O₂ [4], but not at Pt. Such experiments have now been performed in alkaline electrolyte with the above mentioned catalysts in order to better understand the mechanism and activity.

References:

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