TRANSPORT PHENOMENA IN METAL-OXYGEN BATTERIES: FROM NANO TO MACRO

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Metal-oxygen batteries continue to attract interest due to their high theoretical specific energies [1]. However, several challenges must be overcome before these batteries can be viable. For example, in the case of Li-O₂ systems sluggish charge transport within the Li₂O₃ discharge product has been proposed to limit capacity and round-trip efficiency [2,3]. This presentation will describe multi-scale computational studies, spanning from the nano- to the macro-scale, aimed at revealing the mechanisms responsible for these limitations. Based on these findings, opportunities for improving cell performance will be discussed [4,5].

Keywords: Energy Storage, Charge Transport, Multi-scale Modeling

References:


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