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Intrinsic Catalytic Effects of Graphene and Its Derivatives in Vanadium Redox Flow Batteries

Countless applications have already been found for graphene in energy storage, though most investigations have neglected to control for differing surface area and porosity, which hold significant influence on the performance of any catalytic material. The research covered in this presentation seeks to control for these effects through novel monolayer deposition techniques to determine the intrinsic kinetics of a Vanadium Redox Flow Battery system containing various graphene-based materials, and ultimately the optimal material and loading to improve battery performance.