

Hierarchical growth of free-standing electrocatalysts for electrochemical water splitting in alkaline solution

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Electrochemical water splitting is an efficient and clean technology to generate hydrogen with high purity. It is highly challenging to reduce the large overpotential for oxygen evolution reaction (OER) and hydrogen evolution reactions (HER). Transition metal oxides (TMOs) have been proposed as efficient electrocatalysts for electrochemical water splitting due to their various valence states. Herein, we have synthesized TMOs based layered hydroxides electrocatalysts for electrochemical water splitting application. In addition we have focused on synthesis of low-cost catalysts with high surface area, high conductivity, good catalytic activity, and minimization of gas bubble adhesion.