

Free-standing MnCo_2S_4 Flakes as Efficient Electrocatalyst for Oxygen Evolution Reaction

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The development of highly efficient, stable and cost-effective electrocatalyst for oxygen evolution reaction (OER) is critical. Herein, we report growth of MnCo_2S_4 flakes on SS-mesh using two-step strategy, and used as an efficient, highly active and stable electrocatalyst for OER under alkaline condition. The free-standing electrocatalyst delivers exceptional stability of 100 hours and activity for OER with overpotential of 290 mV at a current density of 10 mA cm^{-2} in 1 M KOH. The enhanced electrocatalytic performance was supported experimentally by electrochemical impedance spectra and measurement of the electrochemically active surface area. The high electrochemical active surface area and electrical conductivity of MnCo_2S_4 flakes played an essential role in their high electrocatalytic performance. This work was supported by Basic Science Research Program through the National Research Foundation of Korea (NRF) funded by the Ministry of Education (NRF 2016R1D1A1B03930855).