

Highly efficient CuCo oxide nanoparticles for oxygen evolution electrocatalysts

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Hydrogen (H₂) has been recognized as a high energy density, efficient, and environmentally clean in a variety of renewable energy sources. However, production, storage, and transportation of H₂ it involves some problems with regard to cost, safety, low hydrogen gravimetric density, and difficulty in hydrogen extraction. The H₂ produced by water electrolysis in the on-site place can be an alternative compared to other way to solve these problems.

The target of this study is the development of non-precious catalysts with high activity via simple and efficient synthesis method that is a wet-chemical based method. The 0 dimensional transition metal oxide catalysts were synthesized through the co-precipitation. The electrocatalysts were characterized by various physicochemical analyses such as XRD, SEM, TEM, EDS, and XPS. To investigate electrocatalytic properties of prepared catalysts, we carried out electrooxidation activity measurements such as CV, LSV, long-term stability test, and EIS. The relationship between their physicochemical properties and electrocatalytic activities will be explored and discussed with respect to variation of dimension.