

Electrodeposited Nickel Oxide Thin Film for Electrochemical Water Splitting

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Abstract: Cheaper and capable electrocatalysts play an important role in electrochemical water splitting. Here, we have prepared nickel oxide (NiO) thin film as an electrocatalyst on the stainless steel substrate by electrodeposition method. XRD and FESEM techniques were used to study structural and morphological properties of prepared electrocatalyst. Further, obtained (NiO) thin film electrocatalysts are used for Oxygen evolution reaction (OER) by LSV in 1 M KOH. The electrodeposited (NiO) thin films exhibited overpotential of 212 mV at a current density of 5 mA cm⁻², and a Tafel slope of 75.7 mV dec⁻¹. This electrocatalyst is stable for at least 15 hrs. in the catalytic activity.

Keywords: Thin film, Electrocatalyst, OER, Oxide, Alkaline

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