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Nickel Oxide Thin Films for Oxygen Evolution Reaction

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Abstract: *Active and cheaper catalysts is the essential element in electrochemical water splitting. In this work, we have synthesized nickel oxide (NiO) thin films on the conductive stainless steel substrate by both chemical bath deposition and electrode position methods. Structural study of the prepared thin films of nickel oxide done by using XRD technique. Further, obtained (NiO) thin films prepared using both synthesis techniques are used for Oxygen evolution reaction (OER) by LSV in 1 M KOH electrolyte. The chemically bath deposited and electro deposited (NiO) thin films exhibited over potential of 324.3 mV and 331.8 mV respectively at a current density of 10 mA cm^{-2} and corresponding tafel slopes of 75.33 and 87.17 mV dec^{-1}.Hence chemically bath deposited nickel oxide (NiO) thin film electro catalyst showed good catalytic behavior.*

Keywords: Thin film, catalyst, OER, Oxide, Alkaline.

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