

Hydrogen evolution reaction on MoS₂ electrocatalyst grown by chemical bath deposition

신석희, Zhenyu Jin¹, 한승주¹, Ranjith Bose¹,
고동현¹, 민요셉^{1,†}
건국대학교; ¹건국대학교 화학공학과
(ysmin@konkuk.ac.kr[†])

Recently MoS₂ has attracted great attention as an electrochemical catalyst for hydrogen evolution reaction (HER). Here we report chemical bath deposition of the MoS₂ catalyst for HER. MoS₂ was deposited at 90 °C on carbon fiber papers (CFP) in an aqueous solution which contains ammonium molybdate and thioacetamide as Mo and Sulfur precursors, respectively. The catalyst of MoS₂/CFP, which was grown for 30 min in the chemical bath, exhibited a small overpotential of 156 mV vs. RHE to reach a cathodic current density of 10 mA/cm² in 0.5 M H₂SO₄ solution. In addition, the Tafel slope and exchange current density of the catalyst were 44 mV/dec and 3.03 μA/cm², respectively.