

Room temperature Synthesis of $\text{CoO}_x/\text{PbO}_2$ and its Application to electrochemical reduction of Nitrobenzene

Kannan Karunakaran, 문일식[†]

순천대학교

(ismoon@sunchon.ac.kr[†])

The nano structured binary metal oxide has made new diversion to heterogeneous catalytic applications such as water splitting and electrochemical degradation of organic pollutant. Addition of cobalt oxide with lead oxides result increased catalytic activity with widened potential window in alkaline environment. High temperature preparation of PbO_2 leads higher oxidation state of Pb. In order to solve high temperature preparation and energy consumption, here we started synthesize a $\text{CoO}_x/\text{PbO}_2$ binary nano material at room temperature. At first, precursors of cobalt and Pb reduced to nano metals followed by chemical oxidation using NaOCl at RT. The Surface and Morphology of MMO were characterized by XRD, TEM and SEM. The prepared mixed oxides were used to apply electrochemical reduction of nitrobenzene in alkaline medium.