

Preparation of nano structured $\text{Co}_x\text{O}_x/\text{PbO}_2$ at low temperature and its Characterization

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The nano structured binary metal oxide has made new diversion to heterogeneous catalytic application, among them lead based binary oxides are predominantly used in the industrial and environmental application such as water treatment, electrochemical degradation of organic pollutant and VOC oxidation and so on. Addition of cobalt dioxide with lead oxides, results of excellent promising anodic material which shows higher oxygen evolution over potentials and has shown higher catalytic activity in alkaline environment. But preparation of binary materials required high temperature such as 450 °C to 600 °C and consumes more energy. Here we synthesized binary $\text{Co}_x\text{O}_x/\text{PbO}_2$ nano material at room temperature through oxidation by the chemical method. The materials was characterized by SEM, TEM, and XRD results that cobalt oxides existed as nano sheet width of 0.45 nm which was overlapped by the spherical shaped lead dioxide which around 25 nm in size.