

Identification of Cu(I) in bimetallic compound of $\text{Cu(II)[Ni(CN)}_4\text{]}^{2-}$ during electrolytic reduction in alkaline medium using divided cathodic electrolytic cell

A.G.Ramu, G. Muthuraman, 문일식[†]

순천대학교

(ismoon@sunchon.ac.kr[†])

In mediated electrocatalytic reduction (MER) process, quantification of mediator ion is key role for further processes. In bimetallic complex, the identification is very difficult due to two metal ions reduced simultaneously. The present investigation focuses on Cu(I) identification in bimetallic $\text{Cu(II)[Ni(II)(CN)}_4\text{]}^{2-}$ during electrolytic reduction process. At first, reduction efficiency of individual compounds identified at given current density in 10 M KOH medium. Then, ORP values with electrolysis time found to differentiate the metal ions reduction. UV-visible, and CV analyses were shown to identify the exact metal ion reduction, especially Cu(I) formation. The present analysis will help to use Cu(I) as electrocatalyst in a bimetallic complex.