Cu^{1+} generation in bimetallic compound of $Cu^{II}[Ni^{II}(CN)_4]$: Effect of cathode

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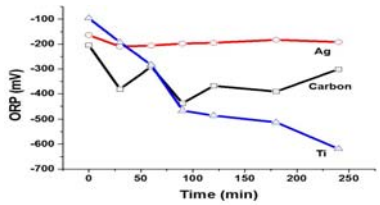
Bimetallic complexes are robust in an enhancement of catalytic process. Laking in selective metal ion reduction and its quantification minimizes the application of bimetallic compounds in mediated electrochemical reduction (MER) process. The present investigation focuses on Cu^{1+} selectievely in bimetallic $Cu^{II}[Ni^{II}(CN)_4]$ by suitable electrode. The following figure shows Oxidation/reduction potential (ORP) variation during electrolysis of $Cu^{II}[Ni^{II}(CN)_4]$, where anodized Ti (TiO_2) found ORP of −600 mV indicates the formation of Cu^{1+} only on TiO_2 electrode. Additional optimization through ESR, UV-visible, and CV analyses were investigated to identify the exact metal ion reduction, especially Cu^{1+} formation.



Key words: Selective reduction, Homogeneous mediator, Cu(I), bimetallic complex, MER.