Short Communication

Recovery of Dissolved Metals from Beneficiation Wastewater by Electrochemical Oxidation

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Beneficiation wastewater, grew out of the mine industry, has made a very wide range of pollution owing to the large amount of metals such as Fe, Ni, and Mn contained in it. The materials for selectively recover the including metals in beneficiation wastewater was highly demanded. In our work, an electrochemical method was explored to produce the highly required materials (neutralizing agents). In the direct oxidation reaction, the graphite electrode demonstrated the best performance with highest rate compared with BDD electrode and titanium electrode. Salt bridge was used as a connecting medium owing to its lowest Fe ions loss resulted from the slower migration rate of Fe into the catholyte. The catholyte produced by electrochemical methods has been applied as a neutralizing agent due to the high pH value. The potential of the usage of catholyte in selective recovery of dissolved metals in beneficiation wastewater has verified the successful use of electrochemical methods.

Keywords: Beneficiation wastewater; Electro-oxidation; Recovery; Fe; Precipitation

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