

Investigation of Parameters Affecting Copper Recovery from Brass Melting Dross

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Abstract : Metal amounts of copper based compounds in the various wastes have been recovered successfully by hydrometallurgical treatment methods in the literature. X-ray diffraction pattern of the brass melting slag demonstrates that it contains sufficient amount of recoverable copper. Recovery of copper from brass melting dross by sulfuric acid leaching and the effect of temperature and acid and oxidant concentration on recovery rate of copper have been investigated in this study. Experiments were performed in a temperature-controlled reactor in sulfuric acid solution in different molarities using solid liquid ratio of 100 g/L, with leaching time of 300 min. Temperature was changed between 25 °C and 80 °C and molarity was between 0.5 and 3M. The results obtained showed that temperature has important positive effect on recovery whereas it decreases with time. Also copper was recovered in larger amounts from brass dross in the presence of H₂O₂ as an oxidant according to the case that oxidant was not used.

Keywords : brass dross, copper recovery, hydrogen peroxide, leaching

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