Environmental Engineering and Management Journal

October 2011, Vol.10, No. 10, 1433-1437
http://omicron.ch.tuiasi.ro/EEMJ/

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LEACHING OF NONFERROUS METALS FROM OXIDIZED LOW GRADE COMPLEX CONCENTRATE

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Abstract

The oxidation of low grade complex concentrates (Cu, Pb and Zn) in aqueous media (weak alkaline) oxidized nonferrous metals concentrates is carried out at high pressure. Leaching is the subsequent processing step in metal extraction. The paper studies the influence of some parameters (temperature, time, L:S ratio, excess) on the leaching efficiency of nonferrous metals from oxidized concentrate. The optimum parameters determined are: S/L ratio of 10/1, 25% reactive excess, leaching temperature of 50 ^{o}C - 60 ^{o}C and reaction time of 60 minutes. Maximum leaching yield obtained at optimum parameters was 97 – 98 % for Cu and 82 – 83 % for Zn. The complete characterization (XRD analysis and the chemical analysis) of the raw materials and products was carried out to determine the composition of the initial and final phases. The experimental results look very promising and the solution containing nonferrous metals will be used in the next hydrometallurgical steps precisely in the nonferrous metals recovery.

Key words: concentrates processing, extraction, mineralogy, nonferrous metals

Received: February, 2011; Revised final: April, 2011; Accepted: April, 2011

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