

Leaching of Flotation Concentrate of Oxide Copper Ore from Sepon Mine, Lao PDR

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Abstract : Acid leaching of flotation concentrate of oxide copper ore containing mainly of malachite was performed in a standard agitation tank with various parameters. The effects of solid to liquid ratio, sulfuric acid concentration, agitation speed, leaching temperature and time were examined to get proper conditions. The best conditions are 1:8 solid to liquid ratio, 10% concentration by weight, 250 rev/min, 30 °C and 5-min leaching time in respect. About 20% Cu grade assayed by atomic absorption technique with 98% copper recovery was obtained from these combined optimum conditions. Dissolution kinetics of the concentrate was approximated as a logarithmic function. As a result, the first-order reaction rate is suggested from this leaching study.

Keywords : agitation leaching, dissolution kinetics, flotation concentrate, oxide copper ore, sulfuric acid

Conference Title : ICSRD 2020 : International Conference on Scientific Research and Development

Conference Location : Chicago, United States

Conference Dates : December 12-13, 2020