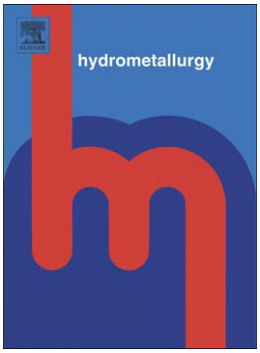

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Recovery of zinc from a low-grade zinc oxide ore with high silicon by sulfuric acid curing and water leaching

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Abstract: A low-grade zinc oxide ore with high silicon was cured by sulfuric acid in a water-starved system and then leached in water. Thermodynamics of the curing process was analyzed according to the phase stability diagram for the systems of Zn-S-O-H and Si-O-H. It was indicated that the extraction of zinc and the dissolution of silica were influenced by the water content in samples during cured. Under optimal conditions, the extraction percentage of zinc was 99.22% and dissolution of silica was as low as 0.56%. XRD examination of the samples demonstrated that all the zinc-bearing minerals were transformed into $ZnSO_4 \cdot H_2O$ while combined silica and

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