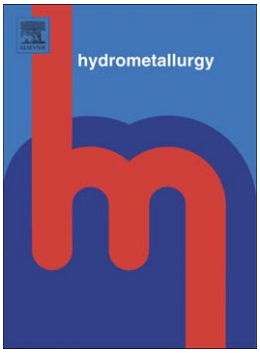

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Extraction and separation of tungsten from acidic high-phosphorus solution

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Abstract: The utilization of high-phosphorus tungsten ores has attracted extensive attention with the mining and utilization of rich tungsten ores. To extract and separate tungsten from acidic high-phosphorus solution effectively, a novel process was developed. Firstly, tungsten was extracted directly in acid medium by solvent extraction. 99.8% tungsten in acidic high-phosphorus solution was extracted with Aliquat 336 in kerosene by one extraction stage under the conditions of O:A=1, pH=2, 25℃, t=10 min, 5% v/v 2-Octanol and 10% v/v Aliquat 336. And then, tungsten and phosphorus were preliminary separated through stripping process. Over 95% tungsten were recovered after five stripping stages under the optimum stripping conditions of 2.5 M ammonium bicarbonate, 8 min stripping time, O:A=1:1, pH=9, and 60℃, but only about 1.2% phosphorus was recovered from feed liquor. Finally, a small amount of phosphorus left in strip liquor was deeply removed by magnesium salt precipitation method on the optimum conditions of pH=10.0, 25℃, reaction time 1 h and Mg/P molar ratio of 1:2 and the ammonium

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