

论文

石煤烧渣中硅、钒的高效分步提取

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摘要:

针对我国石煤沸腾炉渣钒、硅含量很高的特点, 提出一种新的工艺进行硅与钒的分步高效提取。取一定量碳酸钠混匀于石煤烧渣中, 经1 400 °C高温熔融后进行水淬; 得到的水淬渣在 100 °C 用NaOH溶液进行浸出, 可制得水玻璃溶液, 原料中硅的浸出率达80.5%; 产生的碱浸渣用10%硫酸在60 °C下进行酸浸, 加入一定量氧化剂后, 钒的浸出率可达93.1%。该工艺在高效提取钒的同时, 实现了石煤烧渣中硅的综合利用, 可减少约70%的尾渣排放量。

关键词: 石煤烧渣; 熔融; 水淬渣; 浸硅; 浸钒

Efficient step-by-step extracion of vanadium and silicium from stone coal cinder

Abstract:

A new efficient step-by-step process of extracting vanadium and silicium from stone coal cinder was proposed, which overcomes the tendency of stone coal slag to contain vanadium and high silicium during the power generation process in China. The results show that when the stone coal cinder blending with the right amount of sodium carbonate is melted at 1 400 °C for two hours and then is poured into water, then the resulting cinder is leached in sodium hydroxide solution at 100 °C, water glass solution can be produced, and the leaching rate of silicium in raw material is 80.5%. At the same time, the obtained alkaline leaching residue is leached in 10% sulfuric acid solution at 60 °C, adding small amount of oxidant, the leaching rate of vanadium is 93.1%. As well as effectively extracting vanadium, this process could realize the comprehensive utilization of silicium in stone coal, and reduce tailing by 70%.

Keywords: stone coal cinder; melting; water quenching slag; leaching silicium; leaching vanadium

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