论文

基于原生硬度的煤泥水沉降性能分析

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摘要：

为了寻求煤泥水沉降性能的评价指标，提出了循环煤泥水体系的原生硬度概念。通过对4个典型选煤厂原煤的矿物组成分析及选煤用水和循环水的水质分析表明，循环煤泥水体系的原生硬度由选煤用水的基础硬度和煤中矿物组成共同决定的，并建立了原生硬度的数学迭代模型，实验室模拟煤泥水循环试验验证了该模型的良好可靠性。通过煤泥水沉降试验可知，当水质硬度小于5 mmol/L时，水质硬度越高，煤泥沉降速度越快，且上清液越澄清。部分选煤厂实例表明，原生硬度低，则煤泥水难处理；原生硬度高，则煤泥水易处理，说明原生硬度是影响煤泥水沉降性能的关键因素。

关键词： 煤泥水；沉降性能；原生硬度；水质硬度

Settling characteristics analysis of coal slime water based on original hardness

Abstract:

A new conception of original hardness was proposed to evaluate the settling characteristics of coal slime water.The mineralogical and water quality analysis of four coal preparation plants shows the original hardness is determined by the basic hardness of washing water and the minerals composition of coal ores，and the mathematical iteration model of original hardness was developed，and the model has high reliability which is verified by laboratory simulation tests of coal slime water cycle.The settling tests indicate that the higher water hardness，the higher settling rate，and the clearer supernatant when the water hardness under 5 mmol/L.Some examples of coal preparation plants show that coal slime water is hard to settle at low original hardness，and it is easy to clarify at high original hardness.As a result，the original hardness is key influence factor of settling characteristics of coal slime water.

Keywords: coal slime water；settling characteristics；original hardness；water hardness

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