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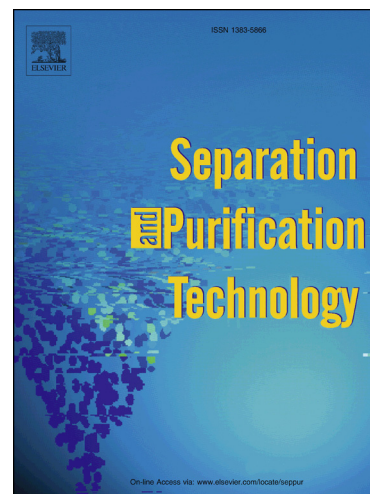
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Removal of coke powder from coking wastewater by extraction technology

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ABSTRACT

Coking wastewater is generated during high-temperature coal carbonization, coal gas purification and chemical products refining. There is a large amount of coke powder in coking wastewater. Various problems have been brought by coke powder. In this study, a novel method was proposed to remove coke powder from coking wastewater. The removal of coke powder was linked with extraction technology. A series of physical and chemical properties of coke powder were characterized by investigating XRF, XPS, elemental analysis and contact angle. Based on “Like Dissolve Like” principle, different extractants were selected to test contact angle of coke powder. Coke powder extraction experiments with the analysis results were carried out. This study provides a new insight to remove coke powder from coking wastewater.

1. Introduction

Coking wastewater is generated during high-temperature coal carbonization, coal gas purification and chemical products refining. There is a large amount of coke powder in coking wastewater. And various problems have been brought by coke powder. Firstly, coke powder has posed adverse effects on stripper. Because coke powder covers on float valve tray, which will decrease the gap between floating valve and tray. And this will weaken the exchange between gas phase and liquid phase. These factors will make it difficult to remove ammonia from acidic gas. It will affect the normal operation for wastewater treatment system seriously.

Secondly, ammonia purification will be affected by coke powder. Part of coke

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