

Effect of Pulp Density on Biodesulfurization of Mongolian Lignite Coal

Authors : Ashish Pathak, Dong-Jin Kim, Byoung-Gon Kim

Abstract : Biological processes based on oxidation of sulfur compounds by chemolithotrophic microorganisms are emerging as an efficient and eco-friendly technique for removal of sulfur from the coal. In the present article, study was carried out to investigate the potential of biodesulfurization process in removing the sulfur from lignite coal sample collected from a Mongolian coal mine. The batch biodesulfurization experiments were conducted in 2.5 L borosilicate baffle type reactors at 35 °C using *Acidithiobacillus ferrooxidans*. The effect of pulp density on efficiency of biodesulfurization was investigated at different solids concentration (1-10%) of coal. The results of the present study suggested that the rate of desulfurization was retarded at higher coal pulp density. The optimum pulp density found 5% at which about 48% of the total sulfur was removed from the coal.

Keywords : biodesulfurization, bioreactor, coal, pyrite

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