

Jordan University of Science and Technology

Removal of Sulfur Dioxide by a Slurry of Jordanian Oil Shale Ash

Authors: A. M. AL-HARAHSEH, R. A. SHAWABKEH, M. S. AL-HARAHSEH, and M. M. BATIHA

Abstract: This work presents a study on the capacity of oil shale ash to remove sulphur dioxide from air streams before escaping into the atmosphere. Slurries of different concentrations of this ash showed an uptake capacity of 4×10^{-4} mol SO₂/g ash obtained after 250 sec. This value increases with the increase of solution pH, temperature, and ash concentration, and decreases the ash particle size. The process of uptake seems to be coupled with both adsorption of SO₂ on the surface of metal oxides and reaction with alkali and alkali earth metal hydroxides.