

KINETICS OF ADSORPTION OF Cu(II) AND Cd(II) FROM AQUEOUS SOLUTION ON RICE HUSK AND MODIFIED RICE HUSK

Abstract

The present study is aimed to investigate the adsorption behavior of Cu(II) and Cd(II) ions onto rice husk and modified rice husk. The adsorption of the heavy metal ions over both the adsorbents was found to follow Langmuir and Freundlich adsorption isotherm models. It was observed that the adsorption capacity of rice husk increased after treated with nitric acid. The pseudo first-order, pseudo second-order, second order and intra-particle diffusion models were used to analyze the kinetic data and the rate constants were evaluated. The kinetic adsorption data fitted the pseudo second-order kinetic model well and also followed the intra-particle diffusion model up to 90 min, but diffusion is not the only rate controlling step.

Author Keywords

Adsorption; Heavy metals; Kinetics; Modified rice husk; Rice husk