

Producing amorphous white silica from rice husk

ABSTRACT

The aim of this paper is to investigate the effects of various acid treatments of the rice husk (RH) on removal of its metallic ingredients and determine the percentage of silica and metallic ingredients contained in the RH. Leaching of RH in diluted HCl proved to be effective in substantially removing most of the metallic ingredients. Pre-heat treatment of RH at 500 °C for 1 hour and continue at 800 °C for 2 hours are required for complete combustion of RH to white ash. Ash residues obtained from acid-treated samples were completely white in colours. The acid treatment of RH does not affect the amorphicity of the silica. 5% HF and 5% HNO₃ are used to digest the rice husk ash (RHA). Inductively coupled plasma was used to characterize the percentage of the silica and metallic ingredients contained in the RH.

Keyword: Digestion; Rice husk; Silica; Leaching