

Review of Extraction of Silica from Agricultural Wastes Using Acid Leaching Treatment

Abstract

Large quantities of agricultural wastes such as palm ash and rice husk are found in Malaysia, have a large possibility to be employed as usefully renewable to produce energy and silica (SiO_2). Extensive researches have been carried out to extract silica from agricultural wastes such rice husk, because silica is useful raw material for industrial application. In the previous studies, the strong acid leaching treatment was carried out on rice husk to remove metallic impurities and organics contained in them. Leaching treatment is a proper route to extract the silica. Sulphuric acid (H_2SO_4), hydrochloric acid (HCl) and nitric acid (HNO_3) solutions are conventionally used in leaching treatment to prepare silica materials [1]. A strong acid leaching treatment, however, is significantly hazardous to the environment and humans. This paper reviews the common extraction method used and the latest research trends in extraction of silica.

Keywords ; Agricultural Waste, Organic Acid, Palm Ash, Rice Husk, Silica