

Thermal analysis and pozzolanic index of rice husk ash at different grinding time

Abstract

Thermo-gravimetric and differential thermo-gravimetric analyses were performance to study the effect of temperature on the mineralogical compositions of rice husk ash subjected to different grinding time. Eight rice husk ashes with different grinding time, i.e. coarse original rice husk ash (RHA0), RHA1, RHA2, RHA3, RHA4, RHA5, RHA6, and RHA7 were used for the study. The TGA/ DTA analysis and X-ray fluorescence (XRF) was used through this investigation. On the other hand, the pozzolanic activity index of the RHA was assessed in accordance with ASTM C 311-11a. From the experiment, it was found that the greater the weight loss, the less the crystallinity of the RHA. In addition, there are no significant differences in chemical compositions of the rice husk ashes with different grinding time. Furthermore, when the grinding time increased from 1 hour and 30 minutes to 5 hours, there was a significant drop in the pozzolanic index.

Keywords;

Grinding; Pozzolanic index; Rice husk ash; Thermal analysis; X-ray fluorescence