

Potential Application of Palm Ash as a Raw Materials in Production of Green Glass

Abstract

Oil Palm Ash is one of the abundance agricultural wastes found in Malaysia. This wastes need to be disposed properly. Oil palm ash contains compounds needed to produce glass. Most of raw materials (especially silica) used to produce existing commercial glass are imported; therefore it is the best time to highlight the potential of local natural waste as the raw material in glass production. In this study, raw material characterization, glass production and glass product evaluation has been done. A few parameters have been recognized to have effect on green glass production such as mixing compositions and firing temperature. Oil palm ash has been washed and dried then sieved to get uniformity of particle size. Then, oil palm ash is mixed with other glass materials such as alumina and flux and undergone melting process at 1400^oC. Through the experiments, the best glass compositions are as follows: 80% palm ash, 10% kaolin and 10% feldspar or 10% dolomite while the suitable temperature being used for sintering process to produced end product is range between 1150^oC to 1200^o.

Keywords: Agricultural Waste, Glass, Palm Ash