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Production of silicon carbide via grinding and heat treatment process

Abstract

This study is to determine the properties and characterization of silicon carbide via grinding and heat treatment process. In this study, the raw materials used were waste glass and graphite powder. Silicon carbide was produced by milling and mixing waste glass and graphite powder in different grinding mills; planetary mill and ring mill. The samples were then heat treated at 700 °C for 1 hour soaking time. Two types of characterization procedures were completed to determine the properties and microstructure of silicon carbide. Formation of silicon carbide was only formed through grinding by planetary mill but not ring mill. This may due to the grinding mechanism of both mills. Due to the simple and low cost of raw material to form silicon carbide, silicon carbide has high potential to be one of the commercialized products. It has the potential in reducing waste and improves the environment quality.

Keywords; Grinding, Heat Treament, Silicon Carbide (SiC)