ABSTRACT

PREPARATION AND CHARACTERIZATION OF SILICA CERAMIC BAMBOO LEAVES AND CITRIC ACID LEACHING RESULT COMBUSTION TEMPRATURE 800-1000°C

By

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Leaching method using citric acid aims to eliminate impurities and substances that are not needed in bamboo leaves. Bamboo leaves before the citric acid leaching were characterized using DTA/TGA. The results of the analysis of the DTA/TGA show that the mass of a very large shrinkage in bamboo leaves, indicating the evaporation of organic substances in the previous high temperature heating process, as well as the contribution of the residual carbon in the samples indicated the presence of considerable mass shrinkage at a temperature of 949°C for 77,02%. Prior to burning, bamboo leaves leached using citric acid 5%. Combustion temperature used is 800°C-1000°C in order to obtain silica powder. Samples of silica ceramic combustion products were analyzed using FTIR, XRD, and SEM. FTIR characterization results indicate the peak wave number of functional groups OH, Si-O-Si and Si-O. XRD characterization results indicate that the pattern of the x-ray crystal structure of silica samples with cristobalite phase and quartz phase. SEM characterization results showed that the surface of the grain size of the sample tested had more equitable, more refined and more granular look even.

Keywords. *silica, bamboo leaves, leaching citric acid, DTA/TGA, FTIR, XRD, and SEM*.