

ABSTRACT

PREPARATION AND CHARACTERIZATION OF HYDOXYAPATITE -10 Wt% SILICA COMPOSITE

By

AHMAD SULAIMAN

This study was conducted to prepare and characterize of hydroxyapatite -10 Wt% silica composite with sintering temperature 1200°C. Materials characterized by FTIR test, SEM, and XRD. Some functional groups generated was OH⁻, CO₃²⁻, PO₄³⁻, Si-O-Si dan Si-H which is a group that forming hydroxyapatite and silica. Granules and the resulting grain boundary also increasingly apparent with increasing grain size and evenly. Due to the distribution of silica in the structure of hydroxyapatite and given thermal treatment, there is decomposition of compounds with the emergence of two distinct phases in the sample. The formed phase are calcium phosphate silicate (Ca₅(PO₄)₂SiO₄) PDF file number 40-0393 and tricalcium phosphate (Ca₃(PO₄)₂) with a PDF file number 9-0169.

Keywords: composites, hydroxyapatite, silica, FTIR, XRD, and SEM.