Utami, Alvionita T., 2012, "Sintesis dan Karakterisasi Padatan Kalsium Fosfat dengan Metode Sol-Gel", SKRIPSI, di bawah bimbingan Dra. Usreg Sri Handajani, M.Si dan Ahmadi Jaya Permana, S.Si, M.Si., Departemen Kimia, Fakultas Sains dan Teknologi. Universitas Airlangga, Surabaya.

ABSTRAK

Penelitian ini bertujuan untuk mengetahui struktur padatan kalsium fosfat yang disintesis dengan variasi rasio mol Ca/P 1,0; 1,3; dan 1,5. Kalsium fosfat telah disintesis dengan mereaksikan $Ca(NO_3)_2.4H_2O$, C_2H_6O, dan H_3PO_4 85% pada suhu kamar dengan metode sol-gel dihasilkan berbagai bentuk padatan dengan diketahui hasil struktur padatan yang bermacam-macam dari hasil karakterisasi menggunakan *X-Ray Diffraction* (XRD) dihasilkan senyawa DCPA, DCPD, OCP, dan α-TCP. Hasil karakterisasi dengan *Fourier Transform Infrared* (FTIR) menunjukkan terbentuknya senyawa gugus fungsi kalsium fosfat, Ca-O-P pada pita 495.23 cm^{-1}. Hasil analisis dengan *Differential Scanning Calorimetry-Thermogravimetric Analysis* (DSC-TGA) dihasilkan penurunan berat sampel terhadap suhu yang menandakan penyusutan massa pada suhu 400°C dan 600°C.

Kata Kunci : Kalsium fosfat, Sol-gel, Rasio

Utami, Alvionita T., 2012, "Synthesis and Characterization of Calcium Phosphate Solids with Sol-Gel Method", Thesis, Supervised by Dra. Usreg Sri Handajani, M.Si and Ahmadi Jaya Permana, S.Si, M.Si., Departement Chemistry, Faculty of Science and Technology. Airlangga University, Surabaya.

ABSTRACT

This research aims to determine the structure of the calcium phosphate solids synthesized with variations mol ratio Ca/P 1.0; 1.3; and 1.5. Calcium phosphate is a chemical compound consisting of calcium (Ca) and phosphate (PO_4^3). Calcium phosphate has been synthesized by the reaction of $Ca(NO_3)_2.4H_2O$, C_2H_6O, and H_3PO_4 85% at room temperature by sol-gel method produced various forms of solids with known outcomes solid structures that vary from the results of characterization using X-Ray Diffraction (XRD) resulting compound DCPA, DCPD, OCP, and α-TCP. The result of characterization by Fourier Transform Infrared (FTIR) showing the formation of compound functional group of calcium phosphate, Ca-O-P in the bands 495.23 cm^{-1}. The result of characterization by Differential Scanning Calorimetry-Thermogravimetric Analysis (DSC-TGA) resulting decrease in sampel weight against the mass shrinkage indicates the temperature 400°C and 600°C.

Keywords : Calcium phosphate , Sol-gel, ratio