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## Synthesis of hydroxyapatite from limestone by using precipitation method

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Hydroxyapatite from limestone was synthesized by precipitation method. During the synthesization the temperature of a 200 mesh sample was increased to 600°C for 3 hours. The heating means to transform  $\text{CaCO}_3$  into  $\text{CaO}$ . Then the  $\text{CaO}$  was dissolved in aquades to get  $\text{Ca(OH)}_2$ , then dissolved in  $\text{H}_3\text{PO}_4$  0,3M as source of phosphate. The solution was mixed using magnetic stirrer with speed of 300 rpm for 1 hours. Then  $\text{NH}_4\text{OH}$  1M are periodically drops so that the solution becomes an alkaline with pH 10. Then the solution was left for 24 hours and precipitated was dried in 120°C for 5 hours. Hydroxyapatite powder obtained was characterized by FTIR to see the major functional groups that is formed in hydroxyapatite limestone. The results were 3

functional major groups that is phosphate ( $\text{PO}_4^{3-}$ ), carbonate ( $\text{CO}_3^{2-}$ ) and hydroxyl ( $\text{OH}^-$ ) on hydroxyapatite limestone. This shows that a good hydroxyapatite has been formed.

### Speaker Biography

Makmur Sirait has completed his PhD at the age of 51 years from North Sumatra University, Medan Indonesia. He is the head of physics program study FMIPA Universitas Negeri Medan, Indonesia. He has over 70 publications that have been cited over 40 times, and his publication H-index is 3 and has been serving to Ministry of Research and Higher Education of Indonesia for research funding support via DRPM funding scheme.

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