

Effects of Zn Substituted on the Structure of Hydroxyapatite Synthesized from Waste Chicken Eggshells

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In this research, Zn substituted Ca hydroxyapatite synthesized from waste chicken eggshells were prepared precipitation method. The structure properties and morphology were investigated by X-ray diffraction (XRD) Fourier transform infrared spectroscopy (FTIR) and scanning electron microscopy (SEM). The results showed that the intensity of XRD pattern and crystallite size of hydroxyapatite decreased with increasing Zn concentration and function groups of hydroxyapatite and Zn were confirmed by FTIR. The hydroxyapatite was transformed to parascholzite ($\text{CaZn}_2(\text{PO}_4)_2 \cdot 2\text{H}_2\text{O}$) phase after added Zn more than 20 percent weight. The SEM images show that the particle size of hydroxyapatite reduced with increasing Zn concentration. The experimental results indicated that the Zn can be substituted Ca hydroxyapatite by precipitation method.

Author: Ms PAIKAEW, Chutharat (Department of Physics, Faculty of Science, King Mongkut's University of Technology Thonburi, Bangkok, THAILAND 10140)

Co-authors: Mr HOONNIVATHANA, Ekachai (Department of Physics, Faculty of Science, Kasetsart University, Bangkok, THAILAND 10900); Dr NAEMCHANTHARA, Kittisakchai (Department of Physics, Faculty of Science, King Mongkut's University of Technology Thonburi, Bangkok, THAILAND 10140); Prof. LIMSUWAN, Pichet (Department of Physics, Faculty of Science, King Mongkut's University of Technology Thonburi, Bangkok, THAILAND 10140)

Presenter: Ms PAIKAEW, Chutharat (Department of Physics, Faculty of Science, King Mongkut's University of Technology Thonburi, Bangkok, THAILAND 10140)

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