

# EFFECTS OF THERMAL AND ACID TREATMENTS ON SOME PHYSICO-CHEMICAL PROPERTIES OF LAMPANG DIATOMITE

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*Received: Apr 8, 2004; Revised: Aug 18, 2004; Accepted: Oct 6, 2004*

## Abstract

The physico-chemical properties of the natural diatomite, mined in the Lampang Province of Thailand, and the treated diatomite were studied. There included the composition analysis, phase analysis, morphology, thermal analysis, and particle size analysis. The results showed that the natural diatomite was composed of mainly amorphous silica (Opal A) and a small amount of quartz. The calcination did not change the Si/Al molar ratio but the particle size distribution decreased when the temperature was increased. The hot acid treatment affected both the chemical composition and the structure. The hot H<sub>2</sub>SO<sub>4</sub> treated diatomite followed by calcination in the range of 900 - 1,100°C did not result in crystallization of cristobalite. The diatomite treated with hot 6 M H<sub>2</sub>SO<sub>4</sub> then calcined at 1,100°C could be utilized as catalyst supports and adsorbent because it contained high amorphous silica and lower impurity.

**Keywords:** Diatomite, amorphous silica, calcination, acid treatment

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**Suranaree J. Sci. Technol. 11:289-299**