

ABSTRACT

SYNTHESIS OF ZEOLITE FROM OMBILIN COAL FLY ASH AT LOW TEMPERATURE BY USING SEA WATER

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Zeolite synthesis using Ombilin coal fly ash at low temperature with alkaline hydrothermal process by using seawater has been carried out . The used Fly ash was melted by NaOH at a temperature of 550⁰C . Alkaline hydrothermal processes in zeolite synthesis performed with variations of temperature at 35 ⁰C , 45 ⁰C and 60 ⁰C . The zeolite that obtained was characterized by using *Fourier Transform Infra Red* (FT - IR) , *X - Ray Diffraction* (XRD) , *Scanning Electron Microscopy* (SEM) in combination with EDX . The characterization results showed the formation of zeolite were better when an increasing in temperature procesess and the use of sea water as a solvent. On the use of seawater, were obtained sodalit zeolite with the chemical formula $\text{Na}_8 (\text{Al}_6\text{Si}_6\text{O}_{24}) \text{Cl}_2$.

Keywords: zeolite , fly ash , alkali hydrothermal , sea water , crystallization