DIRECT SYNTHESIS OF ANALCIME FROM KAOLIN: INFLUENCE OF CRYSTALLIZATION TEMPERATURE AND TIME

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Abstract
Analcime has been directly synthesized from kaolin with variations of temperature 150, 175 and 200°C and crystallization time 6, 12, 18 and 24 hours. In this research analcime was synthesized with molar composition 2,6Na₂O : Al₂O₃ : 7SiO₂ : 132H₂O by Hydrothermal method. The results of characterization using XRD and FTIR showed that analcime begin to at a temperature of 150°C for 12 hours, but the peak is not very high than peak of zeolite P, as well as at 175 and 200°C for 6 hours was also similar persistence peak zeolite P. Analcime formed at a temperature of 150°C with a time of 24 hours, the temperature of 175 and 200°C at 12, 18 and 24 hours. Analcime formed along increasing of crystallization temperature and time. Based on the results of SEM morphology analcime with high crystallinity shaped like a round ball with uneven surfaces having a particle size of approximately 13.2 µm, except analcime mixed with zeolite P having a round shape like a square and a little round ball that is not manageable units.

Key Words: Synthesis of analcime, kaolin, temperature and crystallization time.