

PREPARATION OF SYNTHETIC ZEOLITES FROM COAL FLY ASH

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ABSTRACT

Coal Fly ash from Sultan Abdul Aziz Power Station in Kapar, Malaysia was characterized and used for the synthesis of zeolites. Coal Fly ash was pretreated with Wet High Intensity Separation (WHIMS) to remove undesirable iron components prior to the formation of synthetic zeolites. The synthesis method used was a hydrothermal treatment with NaOH activation at low temperature. The hydrothermal reaction produced stable zeolite P which increased in crystallinity as temperature and reaction time increased. Mineral transformation during hydrothermal treatment involved the dissolution of aluminosilicate glass and formation of synthetic zeolite P with a high Cation Exchange Capacity (CEC).

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