

Synthesis and characterization of zeolite A, using fly ash of the Iran Ferrosilice Company and investigating its ion-exchange properties

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Abstract: In this research fly ash (FA) from Iran Ferrosilice Company was converted to zeolite A by hydrothermal procedure. The type and quality of produced zeolite depends on the composition of used FA, concentration of sodium hydroxide solution, and parameters such as temperature, reaction time and liquid/solid ratio. The fly ash was fused with sodium hydroxide at 550°C for 1 hour followed by dissolution in water and hydrothermal treatment. It was found that the solutions of fused powders can be occurred at 90°C under hydrothermal condition to precipitate zeolite A. In order to evaluate its ion exchange properties, cation exchange capacity (CEC) of the synthesized zeolite A were also measured.

Keywords: *fly ash, zeolite A, synthesis, ion exchange*