



STUDY OF MORPHOLOGY FOR GEOPOLYMER MATERIALS OBTAINED FROM FLY ASH

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Abstract

Geopolymerization is a continuous developing field of research for utilizing solid waste and by-products. It provides a solution to many problems where hazardous residue has to be treated and stored under critical environmental conditions. Consumption of fly ash in the manufacture of geopolymer is an important strategy in making materials more environmentally friendly. Fly ash has been chosen as a base material in order to utilize this industrial waste.

Previous researches have shown that geopolymerization grade depends on different factors such as: temperature, stirring speed, ratio solid-liquid, the time of contact between phases, etc.

This paper reports the results of the study of the influence of temperature and time curing, stirred and ratio s/l on phase composition and microstructure in geopolymer materials prepared using Class F fly ash and sodium hydroxide solutions. Scanning electronic microscopy (SEM) were utilized in this study for characterize the geopolymer formation.

The main product of reaction in the geopolymer materials was amorphous alkali aluminosilicate gel. The type of presented material was dependent on the curing history.

Key words: activation, characterization, fly ash, geopolymer

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