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Process Engineering Department



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CERTIFICATE OF PARTICIPATION

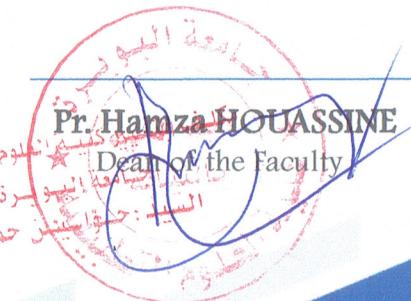
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ABSTRACT TEMPLATE

EFFECT OF ACTIVATOR CHEMISTRY ON THE STRENGTH DEVELOPMENT OF GEOPOLYMER SYSTEMS: REVIEW

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Abstract

The Portland cement manufacturing industry generates harmful substances such as carbon dioxide, nitrogen oxides and sulphur dioxide, which have a negative impact on the environment. We therefore need an alternative material, namely geopolymers. These have similar or superior properties to Portland cement. Geopolymers are obtained by alkaline activation of aluminosilicate materials. However, one of the disadvantages of geopolymers is that they require more expensive alkaline activators, such as NaOH and Na₂Si₃, than traditional binders, to activate the precursor, and they present risks of corrosion. This review offers a perspective on the role of geopolymers and the development of innovative solutions to overcome their disadvantages and in advancing a sustainable future, notably by reducing their impact such as replacing the activator solution with water to reduce the use of alkaline activators. Use of magnesium hydroxide in the manufacture of geopolymers. Or they offer a gentler, more environmentally-friendly approach to activating aluminosilicate materials.

Keywords: Geopolymer, alkaline Activation, Aluminosilicate materials, Activator, Carbon dioxide