

# **Optimization of solids-to-liquid and alkali activator ratios of calcined kaolin geopolymeric powder**

## **Abstract**

This paper investigates the effect of S/L and alkali activator ratios on the synthesis of geopolymeric powder. Geopolymeric powder was synthesized by applying geopolymerization process. By adopting the concept of "just adding water", resulted geopolymer paste was produced from geopolymeric powder. Compressive testing, bulk density measurement SEM, EDX, XRD and IR analyses were performed. The results concluded that solids-to-liquid and waterglass-to-NaOH solution ratios affected the strength significantly and these ratios were optimized at 0.80 and 0.20, respectively. The densification of microstructure, presence of amorphous gels and crystalline zeolite phases as well as the increase in the geopolymer bonding could be revealed in this study.