

## **Microstructure studies on different types of Geopolymer materials**

### **Abstract**

Geopolymer is a new binding material produced to substitute the ordinary Portland cement (OPC) function as a binder in concrete. As we know, different types of geopolymer will have different properties. In this research, the different types of geopolymer raw materials had been studied in term of microstructure. Different type of materials which is fly ash (class F) and kaolin had been mixed with alkaline solution consist of sodium silicate and sodium hydroxide with suitable geopolymer raw material to alkaline activator and sodium silicate to sodium hydroxide ratios. The geopolymer samples with different types of raw material were then cured at a temperature 70°C for 24 hr and maintained at room temperature until the testing was conducted. After the geopolymers were aged for seven days, the testing was conducted.

**Keywords** — Alkaline activator, Fly Ash (FA), geopolymer, geopolymerization, kaolin, SEM Analysis