**ABSTRACT**

This paper presents the progress of the research on creating Geopolymer concrete by considering Thermal power plant fly ash. The project aims at creating and finding out the various properties of Geopolymer concrete by adding fly ash and therefore the alternative ingredients locally obtainable materials. Hydroxide and sodium Hydroxide resolution were used as alkali activators. The actual compressive strength of the concrete depends on numerous parameters like the magnitude relation of the matter solution to ash, morality of the alkali activators, ratio of the matter chemicals, set temperature etc. In recent years, Concrete usage round the world is second only to water. Normal cement (OPC) is conventionally used because the primary binder to provide concrete. The number of the CO2 discharged during the manufacture of OPC attributable to the calcinations of limestone and combustion of fuel is within the order of one ton for each ton of OPC created. Additionally, the extent of energy needed to provide OPC is merely next to steel and metallic element. Makes an attempt to cut back the employment of Portland cement in concrete area unit receiving abundant attention due to environment-related. Fly ash-based Geopolymer concrete could be a ‘new’ material that doesn't would like the presence of cement as a binder. The role of Portland cement is replaced by low Ca ash. Geopolymer is an inorganic alumino-Hydroxide chemical compound synthesized from preponderantly semiconducting material silica (Si) and aluminum (Al) materials of earth science origin or by product materials like ash.

This paper presents results of an experimental program to determine mechanical properties of glass fiber strengthened Geopolymer Concrete that contains fly ash, alkaline liquids, fine and coarse aggregates and glass fibers. The effects of inclusion of glass fibers on density, compressive strength and flexural strength of hardened geopolymer concrete composite (GPCC) was studied. Alkaline liquids to fly ash ratio were fixed as 0.35 with 100% replacement of OPC by fly ash. For an alkaline liquid combination ratio of hydroxide resolution to Sodium silicate resolution was fastened as 1.00 glass fibers were additional to the combination in 0.01%, 0.02%, and 0.03% by volume of concrete.