

## EOI : Technology Details

### **Title of Technology: Process for Making Fly Ash Based Geopolymeric Materials**

- Geopolymers, a class of inorganic binders formed through a polymerisation reaction involving alkaline liquids and aluminosilicate-rich compounds. Unlike ordinary Portland or pozzolanic cements, which derive strength from the formation of calcium-silicate-hydrate (C-S-H) gels, geopolymers achieve mechanical strength through the formation of an amorphous aluminosilicate gel. This gel results from the reaction between silicon and aluminium sources and an alkaline solution. The two principal constituents of geopolymers are source materials and alkaline activators. Suitable source materials are rich in amorphous silica (Si) and alumina (Al), and may include natural minerals such as kaolinite and clays, as well as industrial by-products such as fly ash, slag, silica fume, red mud, and rice-husk ash.
- CSIR-AMPRI Bhopal has developed Process for making Fly Ash based Geopolymeric materials.
- It is Eco-Friendly Process with around 80% less CO<sub>2</sub> emissions as compared to conventional Cement Matrix, thus Solves global warming problem and Obviates the need of water curing .
- It is Energy efficient process - can be made at ambient temperature (35-40°C approximately)
- An initiative under Atma Nirbhar Bharat & Swachha Bharat Programme of Government of India
- For Further details you may contact CSIR-AMPRI Bhopal

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