THE HINDU

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Better technology to blow away the fly-ash menace

Special Correspondent

Fly ash, a powdery residue generated during combustion of coal, is considered a major environmental pollutant. Technological limitations have so far hampered efforts to utilise effectively the silica-rich residue from thermal power plants for production of building materials.

Fly ash is generally captured from the chimneys of thermal power plants and stored on the plant site or used as landfills along with other residual materials. Available technology permits utilisation of only 20-35 per cent of fly ash as a component in building materials.

The CSIR-National Institute for Interdisciplinary Science and Technology (NIIST) in Thiruvananthapuram has developed a flux-bonded technology that uses fly ash to the extent of 80 per cent in the manufacture of building materials.

The institute says the new technology reduces the use of clay to less than 15 per cent, thereby minimising the need for mining of top soil.

Huge volume

The technology utilises a large volume of fly ash for production of bricks and tiles. Their properties are better than that of clay-based building components and the colour of the products remains similar to that of conventional “fired bricks and tiles,” a spokesman for the institute said. “All the present-day technologies utilise fly ash by making admixtures with high volume clay followed by firing or by using it with cement, lime or gypsum, followed by curing. In the flux-bonded technology, fly ash with certain additives are shaped and fired for making clay-based building components. The additives form a low melting-point liquid like glass, which further reacts with fly ash during firing and finally forms a hard sintered product. In this process the fly ash also develops a permanent ‘red brick' color, which is exactly the same as that of fired clays.”

The technology has been transferred to a company in Andhra Pradesh. CSIR-NIIST is offering the technology on a non-exclusive basis.

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