

# IIT-I creates green concrete with industrial waste products

TIMES NEWS NETWORK

**Indore:** Indian Institute of Technology, Indore (IIT-I), has created an environmentally sustainable concrete without cement using geopolymer technology, incorporating industrial waste products like fly ash and ground granulated blast furnace slag (GGBS).

The institute said this innovative concrete can decrease carbon dioxide emissions by 80%, while reducing construction expenses by 20%. Additionally, it eliminates the requirement for water curing, which is particularly beneficial given current water scarcity concerns. The rapid strength development characteristic makes it ideal for time-sensitive construction applications, including military bunkers, bridges, emergency relief structures, precast railway sleepers, and high-



**The innovative concrete can decrease carbon dioxide emissions by 80%, while reducing construction expenses by 20%**

way pavement repairs.

The research team, led by Dr Abhishek Rajput, associate professor from the civil engineering department at IIT-I, utilised geopolymer technology to produce high-strength concrete with superior performance and durability compared to conven-

tional concrete.

"This development is a step toward transforming the way we build our future infrastructure as stronger, faster, and greener. The goal is to find a practical solution that benefits both the environment and the construction industry," said Rajput.

The institute noted that ordinary Portland Cement Concrete (PCC) is responsible for approximately 8% of global carbon dioxide emissions, generating nearly 2.5 billion tonnes of carbon dioxide annually through cement manufacturing processes, including limestone burning and fuel consumption.

IIT-I director Prof Suhas Joshi said, "This is an excellent example of how IIT Indore is contributing to national priorities through sustainable technology. Such developments align with India's vision for green infrastructure and carbon neutrality."