

# **IIT-Hyderabad creates bio-bricks from agricultural waste**

Hyderabad: Researchers from Indian Institute of Technology Hyderabad (IIT-H) and KIIT School of Architecture, Bhubaneswar, have developed bio-bricks from agricultural waste.

The product serves the dual purposes of waste management and development of eco-friendly, sustainable building material.

“The process of making bio-bricks starts with careful selection of dry agro-waste such as paddy straw, wheat straw, sugarcane bagasse and cotton plant. We decided to use dry sugarcane bagasse for the first sample,” said Priyabrata Rautray, PhD scholar, design department, IIT Hyderabad, who was part of the two-member team which conducted the research.

“Bagasse is first chopped to the desired size. A lime-based slurry is prepared and the chopped agro-waste is added to the slurry and mixed thoroughly by hand or mixer to create a homogenous mixture. The mixture is poured into moulds and rammed with a wooden block to create compact bricks,” she explained. The researchers said that it takes approximately a month for bio-bricks to attain working strength by air drying.

“Bio-bricks are not only more sustainable than clay bricks, but are also carbon sinks because they fix more carbon dioxide than they produce during their lifecycle,” said Avik Roy, assistant professor, KIIT School of Architecture, Bhubaneswar, adding that although these bio-bricks are not as strong as burnt clay bricks and cannot be used directly to build load-bearing structures, they can be used in low-cost housing with combination of wooden or metal structural framework.

They researches said the bricks provide good insulation to heat and sound and help in maintaining humidity of buildings, making the houses suitable for hot-humid climates like India’s and added that they would continue their research to improve the load-bearing capacity of the bricks.

The team emphasised that repurposing agricultural wastes is especially important in India as about 84 to 141 million-tonnes of it is burnt ever year, causing severe air pollution.

*Source: The Times of India*

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