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Eco-Friendly Cement Made From Mammal Urine And Trash Could Change The Game

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Highlights

Researchers are of the belief that the biocement can be helpful in improving the soil in numerous ways, including hardening the ground for construction/excavation, limiting erosion of sand on the beach. The novel biocement can also be used as a biogrout to seal cracks in a rock to control seepage as well as repair and touch up rock carvings, structures etc.

Researchers from the Nanyang Technological University in Singapore have **developed a novel way** to make biocement from trash, offering a more eco-friendly alternative to the cement that's commonly used today.



NTU

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Biocement is essentially a kind of renewable cement that can bind soil to form a solid block with the help of bacteria to help it harden. The novel biocement made by NTU scientists is using two kinds of waste -- industrial sludge as well as urea extracted from mammalian urine. This was then mixed with calcium ions to create the hard solid.

Researchers are of the belief that the biocement can be helpful in improving the soil in numerous ways, including hardening the ground for construction/excavation, limiting erosion of sand on the beach, reducing dust or wind erosion in desert-like areas as well as setting up freshwater reservoirs in the desert or beaches.

The novel biocement can also be used as a biogROUT to seal cracks in a rock to control seepage as well as repair and touch up rock carvings, structures etc.

According to Professor Chu Jian, Chair of the School of Civil and Environmental Engineering, who is also the Director of NTU's Centre for Urban Solutions, the biocement could be a good sustainable and renewable alternative to traditional cement that could be used in a variety of construction projects.

Eventually, they wish to not just reduce the cost of producing the biocement but also the cost of disposing waste.



NTU

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To the unaware, in order to make conventional cement, it requires burning of raw materials at extremely high temperatures to result in the formation of clinkers, the binding agent for cement and this process exudes a ton of carbon dioxide. On the other hand, biocement is manufactured at room temperature and doesn't require any form of energy for its creation -- a truly carbon-neutral process.

They claim that if scalability is achieved for biocement, similar to conventional cement manufacturing, the overall cost of production would be considerably less.

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