

# INFUSE 2025: International Conference on Frontiers of Unified Science and Exploration



Contribution ID: 168

Type: Poster

## Biodegradable Water Bottles for a Plastic-Free Tomorrow

Biodegradable and compostable water bottles can be made from agricultural by-products like sugarcane bagasse and rice husk. These bottles offer a sustainable alternative to petroleum-based plastics. They change agricultural waste from open burning, which will help to reduce air pollution and greenhouse gas emissions. By converting waste products into value-added goods, they support the concept of a circular economy. It will be lightweight, durable, and naturally textured. These bottles retain their strength but require less energy to produce than conventional plastics. Their non-toxic, microplastic-free breakdown will ensure that no harmful materials can enter soil or aquatic systems, which helps protect freshwater ecosystems from plastic pollution. Natural coatings can be used, allowing for safe water storage without synthetic materials. These innovations reduce reliance on fossil fuels and promote the use of renewable, low-carbon materials. As a result, they present a sustainable path to water packaging, helping to conserve the environment and protect the global water crisis.

Keywords - sustainability, reusable bottles, durable, bagasse, rice husk.

**Author:** Ms ELSA SANTHOSH, Aimee (School of Sciences)

**Co-authors:** Mr HARISOMAYAJULA, Abhinav (School of Sciences); Mr KRISHNA, Badri Nithin (School of Sciences); Ms FAYAZ, Mehreen (School of Sciences); Mr R NAIR, Prem Krishna (School of Sciences); Dr M M, Rekha (School of Sciences); Mr C, Sandeep (School of Sciences)

**Presenter:** Ms ELSA SANTHOSH, Aimee (School of Sciences)

**Track Classification:** Chemical Sciences