Category: **Chemical and Material Sciences**

**Sugar-Based Composite Materials As Alternatives To Plastics**

**Problem Statement**

Traditional plastics, though highly functional, pose significant environmental challenges, particularly when used for single-use products. There's a need for alternative materials that match the performance of plastics but offer better environmental benefits, such as being biodegradable and recyclable.

**Technology Overview**

This invention introduces sugar-based composite materials designed to replace conventional plastics. The composites are made from small molecule sugars and various natural additives. These composites can be melt-processed and molded into different shapes, offering similar mechanical properties to plastics. Additionally, they are biodegradable and can be easily recycled through re-melting and reshaping processes.

**Applications:**

Rigid single-use applications such as:

* Event decorations
* Cosmetic, pharmaceutical and healthcare packaging.

**Benefits:**

* Sustainability: Made from renewable resources and biodegradable.
* Recyclable: Can be re-melted and reshaped multiple times without significant loss of properties.
* Versatile: Suitable for a wide range of applications, from packaging to disposable products.
* Non-Toxic: Safe for use in various consumer products.



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Working Prototype

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