

Catalyst for Degradation of Traditional PET

Non-degradability of PET

Polyethylene terephthalate, or PET, is a versatile petroleum-based polymer that is widely used in a variety of consumer products including beverage bottles, food containers, clothing, and packaging materials as well as to create a water barrier in applications including coffee cups, take-out food containers and food shipping containers. PET is widely used mainly for its excellent water barrier properties; however, this makes it non-biodegradable in its current state in the market. Current methods of disposal of PET are via incineration or landfill, which has adverse environmental effects.

Catalyzed Degradation of PET

Innovators at Georgia Tech have developed a solution to the issue of the non-degradability of PET. This involves introducing a catalyst to the molding process that imparts a time-dependent degradation of the PET into molecular-sized non-hazardous parts with no microplastics upon degradation. The application of this catalyst-assisted PET to paper or paper-like materials would be highly beneficial to single-use plastic products that currently do not biodegrade or compost.

Summary Bullets

- Degradation of PET products lead to less landfill waste.
- The technology has applications in bio-based packaging to eliminate single-use plastics.
- Degradation does not give rise to microplastics, which are hazardous.

Solution Advantages

- **Environmentally friendly:** Degradation of PET products lead to less landfill waste.
- **Less wasteful:** Bio-based packaging to eliminate single-use plastics.
- **No microplastics:** Degradation does not give rise to microplastics, which are hazardous.

Potential Commercial Applications

- Food packaging
- Use in making disposable utensils like take-out containers, glasses etc.

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IP Status

<p>Patent application has been filed</p>: US63/399405

Publications

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Images

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