

TECH OFFER

Sustainable Paper Coating for Plastic-Free Packaging



KEY INFORMATION

TECHNOLOGY CATEGORY:

Sustainability - Circular Economy

Foods - Packaging & Storage

Chemicals - Coatings & Paints

Chemicals - Inorganic

TECHNOLOGY READINESS LEVEL (TRL): **TRL7**

COUNTRY: **HONG KONG**

ID NUMBER: **TO175260**

OVERVIEW

The rise in plastic pollution globally is driving a critical need for sustainable alternatives to single-use plastic in packaging. Traditional plastic-based packaging materials contribute significantly to environmental degradation, as they are non-biodegradable and create long-lasting waste. This technology offers a sustainable and eco-friendly solution through a fully biodegradable coating for paper packaging.

The coating enhances the barrier properties of paper, enabling it to resist water, grease, and oxygen, making it an ideal replacement for single-use plastic in applications such as packaging and food containers. Not only does the coating maintain recyclability and biodegradability, but it is also compatible with existing manufacturing equipment and can be applied either before or after printing, minimising disruption to current production processes.

The technology owner is interested to work on joint R&D opportunities with packaging companies and businesses focused on sustainable solutions for consumer goods.

TECHNOLOGY FEATURES & SPECIFICATIONS

This technology is a proprietary coating formulation that can be applied to paper and fully biodegradable.

Some features of the coating include:

- Enhances paper barrier properties against moisture, grease, and oxygen
- Food-grade (FDA approved)
- Fully recyclable and biodegrades in 180 days
- Scalable and compatible with existing manufacturing processes such as silk screen, rotogravure and flexography
- Can be applied before or after printing
- Thermally cured at 120 °C for 30 seconds
- Improves mechanical properties of pure paper

POTENTIAL APPLICATIONS

This technology is suitable for a wide range of industries, including food and beverage packaging (such as cups, containers, and wrappers), cosmetics (biodegradable packaging for beauty products), and general consumer goods packaging. It serves as a sustainable alternative to traditional plastic-based barriers, providing an eco-friendly solution that meets the increasing consumer demand for environmentally conscious products.

UNIQUE VALUE PROPOSITION

- Environmentally sustainable as it provides the same protective qualities as synthetic plastic, with the added benefits of full biodegradability and recyclability
- Cost-effective coating solution
- Scalable solutions as it is compatible with existing production processes for application