

TECH OFFER

Long-Lasting Disinfectant



KEY INFORMATION

TECHNOLOGY CATEGORY:

Chemicals - Additives

Chemicals - Coatings & Paints

Environment, Clean Air & Water - Sanitisation

Life Sciences - Agriculture & Aquaculture

Materials - Nano Materials

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

COUNTRY: **THAILAND**

ID NUMBER: **TO175039**

OVERVIEW

Disinfectants are chemicals that kill or inactivate harmful microorganisms, such as bacteria, viruses, and fungi. Commonly used to disinfect surfaces and objects that are frequently touched, disinfectants are an important tool for preventing the spread of infectious diseases and reducing the risk of transmission.

The technology on offer is a long-lasting active compound that serves as a disinfectant. Comprising of nanocomposites and polycondensates, the disinfecting active compound exhibits high efficacy against a broad spectrum of microorganisms including bacteria and viruses. Due to the controlled release effect of active species, the disinfectant's efficacy can last at least 3 months by accumulation of the active species on the surface of microorganisms and denaturing of the microorganisms' proteins. This technology is safe and non-toxic to humans and pets, making it applicable for a wide variety of products.

The technology owner is interested in joint R&D/co-development projects with partners keen to integrate this technology for new products/applications.

TECHNOLOGY FEATURES & SPECIFICATIONS

The disinfectant technology is based on a system composing of Ag-TiO₂ nanocomposites + polycondensate resin. Reactive oxygen species (ROS) are produced by a photocatalytic process to achieve the disinfecting properties.

Some features of the disinfectant technology include:

- High efficacy against broad spectrum of bacteria and viruses, effectively targeting 99.99% of bacteria (*Escherichia coli*, *Staphylococcus aureus*, *Enterococcus faecalis*, *Klebsiella pneumoniae*, *Pseudomonas aeruginosa*, *Proteus mirabilis*, and *Acinetobacter baumannii*) and SARS-CoV-2 virus
- Long-lasting – remains efficacious for at least 3 months
- Versatile – suitable for both porous and non-porous surfaces
- Safe and non-toxic
- Water-based – the active compound is available as a liquid

The technology has been validated in ready-to-use solution for disinfection and cleaning and in a disinfecting coating solution.

POTENTIAL APPLICATIONS

Possible applications include (but are not limited to):

- Coatings
- Cleaning products for home/industrial usage e.g., liquid disinfectants, aerosols etc
- Textiles
- Agriculture

UNIQUE VALUE PROPOSITION

- Targets broad spectrum of bacteria and viruses (including SARS-CoV-2)
- Long-lasting efficacy
- Eco-friendly (water-based and no VOC)