TECH OFFER

Durable Dirt Mitigation Surface Coating Solution for Building Exteriors

KEY INFORMATION

TECHNOLOGY CATEGORY:
Sustainability - Low Carbon Economy
Chemicals - Coatings & Paints
Green Building - Façade & Envelope

TECHNOLOGY READINESS LEVEL (TRL): TRL9
COUNTRY: HONG KONG
ID NUMBER: TO175242

OVERVIEW

Managing building exteriors such as aluminium cladding, facades, curtain walls, glass, stone, and solar surfaces can be challenging due to the constant accumulation of dirt, tear marks, and general wear and tear. These issues increase the need for frequent maintenance, driving up costs and resource consumption for property managers and facilities teams. Environmental factors such as rain, UV rays, and pollutants further accelerate the degradation of these surfaces, compromising both aesthetics and durability.

This coating technology offers an innovative solution to these pain points by forming a highly durable, protective layer over surfaces, significantly reducing the need for frequent maintenance. Once applied, the coating enhances surface durability and keeps exteriors pristine and visually appealing, as rain naturally washes away dirt and stains. This not only minimizes the accumulation of grime but also prevents environmental damage, extending the lifespan of treated surfaces, it also reduces long-

term maintenance costs, save valuable time, and conserve resources.

This technology aligns with modern architectural demands, providing a revolutionary approach to exterior building maintenance. Embrace the future of property management with this state-of-the-art solution that brings both immediate benefits and long-term value.

The technology owner is looking for collaborations with landlords, property and facilities managers, as well as solar manufacturers and installers for R&D collaborating, test bedding or licensing.

TECHNOLOGY FEATURES & SPECIFICATIONS

- **Nano-Hydro Synthesis Platform:** Enables direct synthesis of quantum dot-level nanomaterials in aqueous environments.
- **Surfactant-Free Stability:** Stabilizes active materials via a double charge layer on surfaces, avoiding the use of surfactants or steric hindrance agents (ensuring high purity).
- **High Purity Nano-Dispersions:** Composed solely of water and active materials, ensuring high purity.
- **Self-Assembly Process:** Nanomaterials remain stably dispersed in water with sol-like kinetic stability.
- **High Stability:** Nanomaterials maintain stability even under high-speed centrifugation.

POTENTIAL APPLICATIONS

- **Infrastructure:** Ideal for bridges, highways, and public buildings, reducing maintenance costs and extending the lifespan of surfaces exposed to harsh environmental conditions, including acid rain and pollutants.
- **Property Management:** Applicable to building exteriors like aluminium cladding, glass facades, and curtain walls, ensuring long-term aesthetic appeal while minimizing cleaning and upkeep.
- **Construction:** Useful in both residential and commercial projects for durable surface protection on various materials such as stone, aluminium, and glass, providing a cost-effective solution to preserve the appearance and integrity of building materials.
- **Solar Energy:** Suitable for solar panels, preventing dirt and debris buildup that could lower energy efficiency, ensuring long-term performance with minimal maintenance.

UNIQUE VALUE PROPOSITION

- **Long-Lasting Durability:** Provides a protective layer that significantly extends the lifespan of surfaces, reducing wear and tear from environmental factors such as dirt, pollutants, and acid rain.
- **Self-Cleaning Properties:** The coating minimizes dirt accumulation, allowing surfaces to remain clean with just rainwater, reducing the need for frequent manual cleaning.
- **Multi-Surface Application:** Compatible with a variety of materials, including aluminium, glass, stone, and solar panels, making it versatile across different industries like construction, property management, and solar energy.
- **Eco-Friendly and Sustainable:** By reducing the need for harsh cleaning agents and frequent maintenance, the product aligns with sustainability goals, offering an environmentally conscious solution.
- **High Purity Nanotechnology:** Nano-Hydro synthesis creates a surfactant-free, highly pure coating, ensuring long-term stability and performance without the use of harmful chemicals.