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(57) Abstract :
The present invention relates to a biodegradable nanocoating for solar panels that enhances their efficiency by providing self-cleaning properties. The nanocoating, composed of biodegradable polymers and photocatalytic nanoparticles, such as titanium dioxide (TiO_2), creates a superhydrophobic surface that repels dust, dirt, and water, while also breaking down organic contaminants under sunlight. This results in improved light transmittance, reduced maintenance needs, and increased energy conversion efficiency. The environmentally friendly coating is transparent, durable, and capable of degrading into non-toxic byproducts over time, offering a sustainable solution for maintaining solar panel performance and longevity.

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