

Title: Anti-icing coating for wind turbine blades

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Here, we share some of the options for addressing wind turbine icing risks, including ice detection sensors, blade heating technology, and icephobic (anti-ice) coatings.

This project investigates advanced polymeric coatings for horizontal-axis wind turbine (HAWT) blades to mitigate freezing rain, ice accretion, and erosion in cold climates. In severe icing conditions, wind ...

To address the above issues, research has been carried out in recent years on coating with superhydrophobic anti-icing properties. In this review, the theory of solid surface wettability was ...

Wind turbine blades endure year-round impacts from strong winds, rain, and sand, demanding extreme coating durability.

Because of its excellent superhydrophobic ability and micro-nano structure, the coating has good anti-icing ability.

In this research, a durable superhydrophobic perfluoroalkoxy alkane (PFA) coating was developed and specifically designed for spray application onto the surface of wind turbine blades.

This paper comprehensively reviews the current research status of icing detection methods and anti-icing coating technologies for wind turbine blades. In terms of icing detection, the methods are ...

This review provides a comprehensive analysis of the suitability of current icephobic coatings for wind turbine applications, emphasizing their alignment with present industrial standards ...

Abstract To address aerodynamic efficiency reduction and safety risks caused by wind turbine blade icing in cold regions, this study proposes a low-energy composite anti-icing/de-icing ...

The prepared coating has a higher static water contact angle (CA is 153°) and a lower rolling angle (SA



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is 3.3°), showing excellent super-hydrophobicity. Because of its excellent ...

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