

Efficient Hydrophobic Surface Innovation for Reduced Drag and Improved Performance

Technology Description:

This innovative technology uses controlled gas injection and porous material to enhance the performance of submerged super-hydrophobic surfaces (SHS). By introducing gas into the system, it improves liquid repellency and reduces drag, resulting in enhanced efficiency. The process involves the formation, merging, and detachment of bubbles, leaving a gas layer on the surface. Increasing the gas injection pressure enhances restoration speed and bubble size, leading to faster and more effective surface enhancement. This advanced approach outperforms traditional methods and holds significant potential for various applications requiring improved liquid repellency and reduced drag in dynamic environments.

Inventors:

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Applications:

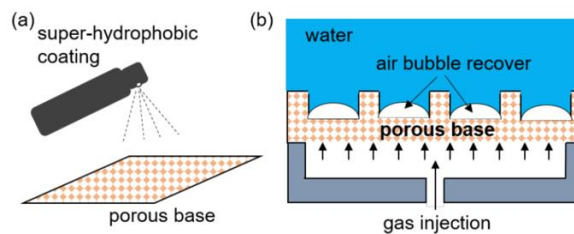
- Ship Hull Coatings
- Offshore Platform Protection
- Underwater Pipelines and Cables

Benefits:

- Improved Liquid Repellency: The technology enhances the liquid repellency of super-hydrophobic surfaces, preventing the adhesion and spreading of liquids. This benefit is crucial in various applications where keeping surfaces dry and clean is essential, such as in marine environments, biomedical devices, and electronics.
- Extended Surface Protection: The technology offers enhanced protection to surfaces by maintaining a stable gas layer. This helps prevent fouling, corrosion, and biofilm formation, resulting in increased durability and reduced maintenance requirements for structures and equipment in marine, oil and gas, and water treatment industries.
- Reduced Drag and Enhanced Efficiency: By restoring and stabilizing the plastron, the technology reduces drag on submerged super-hydrophobic surfaces. This leads to improved flow dynamics, reduced energy consumption, and increased efficiency in industries like marine, aerospace, and automotive.

Patent Status:

Patent Pending.



Technology Principle

For more information:

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