

HIDROPHOBIC COATING AND METHOD OF PRODUCING THE SAME

DESCRIPTION OF THE INVENTION

Ice or dirt that covers surfaces can often put out of service planes, or even the aerodynamic efficiency can be reduced and therefore accidents with serious consequences could occur. In the same way dirt deposition can increase the wind resistance and therefore fuel consumption is enhanced.

These problems can also be detected in energy industry, for example: ice deposition over the wind blade generator can stop the energy production of wind-blade generators or even breakages in wind-blades can occur.

In order to solve the ice deposition phenomena, several approaches have been carried out as for example: heaters coupled to electrothermal sensors (CA21472084) or pneumatics boots setting up over the leading edge.

However despite their utility, these approaches have limited uses in light UAVS due to overload problems or excessive electrical consume.

On the other hand in the technical state of the art, thermoset materials based on fluorinated polymer combined with carbon nanotubes are well known. These materials are hydrophobic, however, the materials have not been developed to protect surfaces against dirt or ice deposition.

According to the state of the art, AIMPLAS has developed an ultra-hydrophobic heatable coating that reduces ice formation and in case of ice formation, the coating can be heated enhancing the ice removal.

BUSINESS APPLICATION SECTORS

The developed coating shows applications in several sectors, especially in the following industries:

- Aeronautical industry
- Energetic industry
- Shipping industry.

TECHNICAL ADVANTAGES AND BUSINESS BENEFITS

The technology offers the following advances and benefits:

- The coating leads to improve the efficiency of anti-icing systems reducing the energy consumption in aircrafts.
- The coating can act itself as light anti-icing system in UAVs
- Reduction of dirt deposition over coated systems and therefore the keeping operations can be reduced.
- If the coating is applied over wind blades the wind friction could be reduced as well as the breakage risk under ice formation conditions

STATUS OF DEVELOPED TECHNOLOGY

The coating has been developed at lab scale employing commercial available products in coating sector. Nanoparticles have been synthesized at lab scale employing 2 liters reactors but the methodology could be scaled up to 15-20 liters. The process of obtaining has been proved to be feasible for the synthesis of nanoparticles as well as the application process for coating surfaces.

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INTELLECTUAL PROPERTY RIGHTS

This technology is protected under the patent: Hydrophobic coating and method of producing the same. ES 2 398 274 B1.

COLLABORATION SOUGHT

We are looking for companies interested in the following ways of cooperation:

- Agreement patent license for implementation and use of this technology.
- Agreement for the development of the R & D (technical cooperation) to complete the development of the technology or application to other sectors.

RELATED IMÁGES



CONTACT DETAILS

Amador García
AIMPLAS (Instituto Tecnológico del Plástico)
C/ Gustavo Eiffel, 4
46980 Paterna (Valencia)
T. +34 96 136 60 40
F. +34 96 136 60 40
E-Mail: amgarcia@aimplas.es
Web: www.aimplas.es

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