

DEVELOPMENT OF COMPOSITIONS FOR HYDROPHOBIC COATING

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Hydrophobic coatings are becoming widely used in industry and in military technology. The coating is applied to various structural materials; the most popular choice in industry and military technology is the application of hydrophobic deposits on metal elements. One of the different types of hydrophobic coatings is anti-wrap (non-wrap) materials that prevent the growth of biological matter on the surfaces of lethal devices, various underwater and others ownership. Also, hydrophobic coatings are used for the difficult freezing of wires, parts of the fuselage of aircraft and unmanned aerial vehicles, installation of booths, etc.

The basis of hydrophobic coatings is made up of polymers, the structure of which ensures reduced adhesion of water molecules, low surface energy, as well as fractional particles that form the necessary structure and surface relief. To achieve optimal hydrophobicity of the surface, it is necessary to take into account both the characteristics of the coating and the strength of the surface itself. One of these powers is shortness. If the wool content is too high, the adhesion of water to the surface may increase; smooth surfaces may distort the molding of droplets.

Hydrophobic coatings are created according to technical requirements, arising from the necessary areas of their drying, the characteristics of possessing and other parameters, including the development of materials to replace imported coatings. Hydrophobic coatings are functional materials that ensure that the surfaces are resistant to moisture. The stench is also due to a number of related powers - anti-corrosion, anti-friction, waterproofness, self-cleaning properties (at the same time, with drops of water, contaminants are visible from the surface).

We develop functional hydrophobic coatings to preserve the performance characteristics of unmanned aircraft in harsh climates. The basis of the coatings was silicon organic rubbers, whose structure at elevated temperatures in the presence of polymerization initiators ensures high adhesion, durability at having reached a high level of protection from frost. Investigations were carried out to evaluate the resistance of drone propellers to freezing and their effectiveness in cold storage and ice formation. It was shown that during a year of testing at a temperature of -2°C , the propellers did not prevent the formation of ice; the loss of the effectiveness of the technical characteristics of the propellers and the damage to their aerodynamic characteristics were not identified.