



INNOVATIVE PAINT SYSTEMS

The Fraunhofer IFAM has many years of experience and competency in lacquer technology and has put them to use in a diverse range of projects. We would like to present two projects that were especially important in 2015. Further information can be found through the associated links.

Development of new ice protection systems for aircraft

The JediAce Project (Japanese-European De-Icing Aircraft Collaborative Exploration) is an international consortium with the goal of developing a multi-component de-icing system that meets the requirements of the next generation of aircraft. The project receives financial support from the European Commission and the Japanese Ministry of Economy, Trade and Industry (METI). Specialists from many different countries are working together on this project under the leadership of the Fraunhofer IFAM.

The aim of the project is to create an integrated ice protection system for airplane wings, covering three synergetic components: active de-icing technology, functional coatings to support de-icing, and sensors that observe both the ice formation process and de-icing in real time. The researchers from the Fraunhofer IFAM are focusing on developing anti-ice coatings and testing them whilst ice is forming on surfaces. A huge milestone was the construction of a wind tunnel that can reach freezing temperatures of $-30\text{ }^{\circ}\text{C}$ and wind speeds of up to 350 km/h. Tests at the Fraunhofer IFAM have already shown the efficiency of the parts developed during the project.

→ www.jediace.net

Repair systems and concepts for corrosion protection coatings for offshore wind turbines

Corrosion is a critical factor for offshore wind turbines. The most important protection mechanism for areas of the towers that are not always completely submerged is a corrosion protection coating. A sustainable repair system that can be implemented offshore requires consideration of the complex relationships between the operations, local conditions, and the observation and assessment processes of the available protection systems.

In the combined project "RepaKorr", sponsored by the German Ministry of Education and Research (BMBF), manufacturers of coating materials, contractors for coating systems, equipment manufacturers, system operators, steelworkers, and assessors were working together on the material, technical, conceptual, and organizational principles for an "on-site repair" concept. Important developments from this work concerned the repair of materials and on-site application methods as well as the development of a new method of inspection using drones.

→ www.matresource.de/projekte/repakorr/

1 *Investigations of wing profile icing in the icing wind tunnel.*

2 *Repairs of an offshore wind turbine.*

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