

Multifunctional hybrid solution for rotor blade protection

(Acronym: HyRoS)



 www.hyros-projekt.de

Project description

As part of the joint project "HyRoS" a multifunctional protection of rotor blades of wind turbines will be developed on the basis of a hybrid material solution. The functionality includes the protection of the rotor blade surface against erosion as well as an integrated de-icing system. This will be achieved through a new material combination of non crimp fabric and elastomer. Hence, an erosion of the rotor blades can be reduced.

The work package of the BIK encompasses researching and developing the application technology, i.e. the production processes and devices to reliably apply the multifunctional rotor blade guard into the forming tool. We are also responsible for the scientific and methodological implementation and support of the test series.



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Based on present and future scenarios the joint project will carry out a comprehensive requirements analysis for the technologies, materials, processes and devices to be developed. These scenarios include the production of rotor blades and hybrid rotor blade guards, as well as the operation of the rotor blades.

The BIK will use various product development methods for a systematic and methodical approach. The selection of potentially suitable methods will be based on the requirements analysis.

The methods of Design of Experiments will be applied throughout the scientific and methodical development and implementation of the test series. For example, the determination of suitable material parameters and significant factors that have an impact on production processes. These offer a systematic approach to identify

relationships of causes and effects and make them quantifiable.

The project goal, to relevantly reduce rotor blade erosion, offers a number of advantages. For example, increasing the efficiency of a wind turbine by reducing the air turbulence at the surface of a rotor blade, and the risk of blade damage reduced, even at higher tip speeds envisaged for the future. In addition the integrated heating system provides new installation areas.

A project successful in developing a multifunctional hybrid solution to protect the rotor blades, and proving its ability on a demonstrator, will be a great contribution to an environmentally friendly, reliable and affordable energy supply ■

Project partner

SAERTEX GmbH & Co. KG

WRD Wobben Research and
Development GmbH

Gummiwerk KRAIBURG
GmbH & Co. KG

K.L. Kaschier- und Laminier GmbH

HERMES Systeme GmbH

Institut für Verbundwerkstoffe GmbH

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