

## Collaborative project launched to develop the next generation of anti-ice & erosion resistant composite materials

In the wind power generation, aerospace and other industry sectors there is an emerging need to operate in the low temperature and highly erosive environments of extreme weather conditions. Such conditions mean current materials either have a very short operational lifetime or demand such significant maintenance as to render many applications either very expensive to operate or in some cases non-viable.

The European funded collaborative project EIROS coordinated by TWI will develop self-renewing, erosion resistant and anti-icing materials for composite aerofoils and composite structures that can be adapted by different industrial applications:

- Wind turbine blades,
- Aerospace wing leading edges,
- Cryogenic tanks and
- Automotive facia.



The addition of novel multi-functional additives to the bulk resin of fibre reinforced composites will allow the achievement of these advanced functionalities.

This advancement beyond the current state-of-the-art will give operating cost/efficiency and performance benefits to EU manufacturers in the high value wind turbine, aerospace and cryogenic storage industries; these industries combined provide around 650,000 jobs for EU citizens and are strategically important, high value, growth markets for the EU economy.

- ✓ Wind Energy Sector – 5% efficiency improvement in cold climates (20% of EU capacity).
- ✓ Aerospace – enhance active de-ice systems, saving time and cost (up to €10 Mn per annum).
- ✓ Space Launch Vehicles – saving up to €2.5Mn per launch for small launch vehicles.
- ✓ Automotive – saving 7% weight, equivalent to 3.4 million barrels of crude if fitted to all vehicles.

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