



AIRCOAT

FLYING ON WATER

THE AIRCOAT CONCEPT

The AIRCOAT project promotes a ground-breaking passive air lubrication technology with a high potential to revolutionise the ship-coating sector by reducing energy consumption and ship emissions

AIRCOAT PROJECT

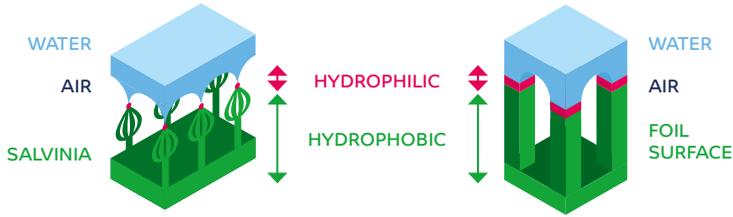
The Air Induced friction Reducing ship COATING (AIRCOAT) project aims to develop a passive air lubrication technology inspired by the Salvinia effect. Applying the AIRCOAT solution to ship-hull surfaces will produce a thin permanent air layer when submerged in water. This will reduce the overall frictional resistance while acting as a physical barrier between water and the hull surface. In addition to reducing energy consumption, the air barrier will inhibit the attachment of marine organisms (biofouling).

THE SALVINIA EFFECT AND BIOMIMETICS

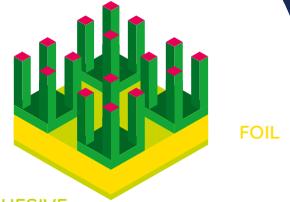
The naturally occurring Salvinia effect allows the Salvinia floating fern to breathe under water by keeping a permanent layer of air. Inspired by this phenomenon, the AIRCOAT project intends to implement this effect on a self-adhesive foil system. It is therefore a prime example of a biomimetic application where understanding a natural phenomenon inspires and directly leads to technical innovation.



SALVINIA
FLOATING FERN



1. Development of the surface/foil implementing the Salvinia effect, that is able to trap a layer of air when submerged in water.



ADHESIVE

4. Application of the AIRCOAT foil on the hull of ships



3. Large-scale production of the AIRCOAT foil



2. Apply the AIRCOAT material onto a self-adhesive foil

LESS
FRICTION

LESS
FUEL USE

LESS
EMISSIONS

ABOUT AIRCOAT

This three-year project started on 1 May 2018 and received a total grant of 5.3 million Euros from the European Commission within the Horizon 2020 framework addressing the topic Innovations for energy efficiency and emission control in waterborne transport.

CONSORTIUM PARTNERS

Coordinated by the Fraunhofer Center for Maritime Logistics and Services CML and scientifically managed by the Karlsruhe Institute of Technology (which pioneered the air coating technology and demonstrated initial prototypes), AIRCOAT brings together a total of ten partners from six European countries.



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