

# AIRCOAT

## FLYING ON WATER

### 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.



The AIRCOAT project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 764553.

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# THE AIRCOAT CONCEPT

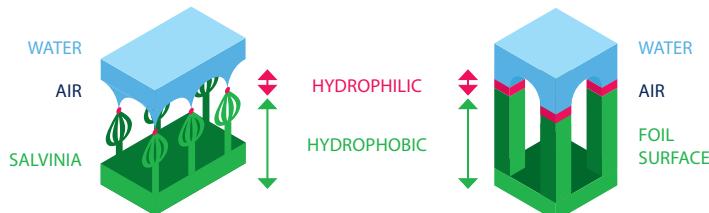
The AIRCOAT project promotes a ground-breaking passive air lubrication technology with a high potential to revolutionise the ship-coating sector by reducing energy consumption and ship emissions

## AIRCOAT PROJECT

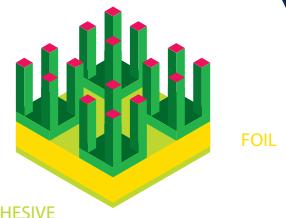
The Air Induced friction Reducing ship COATING (AIRCOAT) project aims to develop a passive air lubrication technology inspired by the Salvinia effect. Applying the AIRCOAT solution to ship-hull surfaces will produce a thin permanent air layer when submerged in water. This will reduce the overall frictional 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.



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

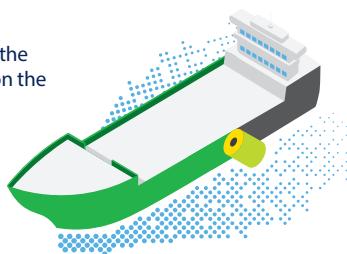


2. Apply the AIRCOAT material onto a self-adhesive foil

3. Large-scale production of the AIRCOAT foil



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



LESS  
FRICTION

LESS  
FUEL USE

LESS  
EMISSIONS



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