

PROJECT

AIRCOAT

Air-Induced friction Reducing ship COATing

Funding: European (Horizon 2020)

Duration: May 2018 - Apr 2021

Status: Complete

Total project cost: €5,901,541

EU contribution: €5,299,097



[CORDIS RCN : 217590](#)

Objectives:

The overall goal of AIRCOAT is to make European waterborne transport more energy efficient and less polluting by developing a disruptive hull coating that reduces the frictional resistance of ships.

Methodology:

The AIRCOAT project will enhance a passive air lubrication technology that utilises the biomimetic Salvinia effect. This effect enables trapping air through combination of a hydrophobic micro-structured surface with hydrophilic pins. The project will technologically implement this effect on a self-adhesive foil system. Applying a ship with such an AIRCOAT foil will produce a thin permanent air layer, which reduces the overall frictional resistance while acting as a physical barrier between water and hull surface.

Besides substantially reducing main engine fuel oil consumption and hence exhaust gas emission, the air barrier further inhibits the attachment of fouling, the release of biocide substances (of underlying coatings) to the water and mitigates the radiation of ship noise. As a refit technology, it is immediately applicable to the whole fleet, is independent of the fuel type and can be combined with other efficiency improving technologies. Consequently, the technology creates both an economical and an environmental benefit.

The interdisciplinary AIRCOAT consortium will develop small-scale prototypes to optimise the surface characteristics of this new technology supported by experimental and numerical methods. AIRCOAT will further produce large-scale pilots to demonstrate the efficiency and industrial feasibility in operational environments (laboratory, research ships and container ship). Finally, the project will perform a full-scale validation process to boost the technology towards market readiness.

The AIRCOAT project will demonstrate the high potential of this game-changing technology to revolutionise the maritime coating sector and to become a ground-breaking future energy efficiency and emission reduction technology.

Parent Programmes:

[H2020-EU.3.4. - Horizon 2020: Smart, Green and Integrated Transport](#)

Institute type: Public institution

Institute name: European Commission

Funding type: Public (EU)

Other programmes: MG-2.1-2017 Innovations for energy efficiency and emission control in waterborne transport

Lead Organisation:

Fraunhofer Gesellschaft Zur Foerderung Der Angewandten Forschung E.v.

Address:
HANSASTRASSE 27C

80686 MUNCHEN
Germany

Organisation Website:
<http://www.fraunhofer.de>

EU Contribution: €1,138,625

Partner Organisations:

Hamburgische Schiffbau - Versuchsanstalt Gmbh

Address:
Bramfelder Str. 164
22305 HAMBURG
Germany

Organisation Website:
<http://www.hsva.de>

EU Contribution: €655,225

Ppg Coatings Europe Bv

Address:
OCEANENWEG 2
1047 BB AMSTERDAM
Netherlands

Organisation Website:
<http://www.ppg.com>

EU Contribution: €307,303

Danaos Shipping Company Limited

Address:
Christaki Kompou 3
3300 Limassol
Cyprus

EU Contribution: €334,075

Karlsruher Institut Fuer Technologie

Address:
Kaiserstrasse
76131 Karlsruhe
Germany

Organisation Website:
<http://www.kit.edu>

EU Contribution: €1,004,166

Aquabiotech Limited

Address:
Naggar Street Central Complex
MOSTA MST 1761
Malta

EU Contribution: €211,339

Avery Dennison Materials Belgium**Address:**

BOULEVARD KENNEDY ZONE INDUSTRIELLE ZONE B
7060 SOIGNIES
Belgium

EU Contribution: €552,986

Ilmatieteen Laitos**Address:**

Erik Palmenin aukio 1
00560 HELSINKI
Finland

Organisation Website:

<http://www.fmi.fi>

EU Contribution: €165,279

Hochschule Bremen**Address:**

Neustadtswall
28199 Bremen
Germany

Organisation Website:

<http://www.hs-bremen.de>

EU Contribution: €648,569

Revolve Water**Address:**

RUE D'ARLON 63-67
1040 BRUXELLES
Belgium

EU Contribution: €281,531

Technologies:

Ship design and manufacturing
Advanced material solutions for efficient ships

Development phase: Demonstration/prototyping/Pilot Production

STRIA Roadmaps: Vehicle design and manufacturing
Water transport (sea &

Transport mode: inland)

Transport sectors: Passenger transport, Freight transport

Transport policies: Other specified

Geo-spatial type: Other