

SUMMARY DESCRIPTION

Grant Agreement Number: 307111

Project Acronym:

AMICOAT

Project Title:

DEVELOPMENT OF NEW ANTIMICROBIAL NANOSTRUCTURATED DURABLE COATINGS
FOR FUEL TANKS

Funding Scheme: CLEANSKY JTI-CS-2011-3-ECO-01-036

Name, title and organisation of the scientific representative of the project's coordinator¹:

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¹ Usually the contact person of the coordinator as specified in Art. 8.1. of the Grant Agreement.

² The home page of the website should contain the generic European flag and the FP7 logo which are available in electronic format at the Europa website (logo of the European flag: http://europa.eu/abc/symbols/emblem/index_en.htm logo of the 7th FP: http://ec.europa.eu/research/fp7/index_en.cfm?pg=logos). The area of activity of the project should also be mentioned.

AMICOAT APPROACH SUMMARY

Microbial growth in aircraft fuel tanks is one of the main sources of contamination of aircraft fuel, plugging of flow of fluids systems and, particularly microbially influenced corrosion of fuel tanks.

Microorganisms from aircraft fuel need water to growth and this water come form the intrinsically fuel moisture content and additionally water from atmospheric moisture condenses in the wall of fuel tanks. Among different microorganism *Hormoconis resiniae* (also known as the “kerosene fungus”) and *Pseudomonas aeruginosa* are the most prevalent.

The current main methods to control the microorganisms’ growth in aircraft fuel are based on maintenance, periodical removal of water from fuel tanks, and treatment, addition of additives as fuel preservatives.

These methods are not enough to solve the problem and there is an urgent need to develop better methods to control the microbial contamination.

In that sense the AMICOAT project proposes to develop new antimicrobial coatings to apply onto fuel tank walls. The antimicrobial coatings will confer antibioadhesion properties to the fuel tanks walls and they will allow the controlled release of biocides from the fuel tank walls to the water/fuel interphase.

The aim of AMICOAT project is to develop two different coating systems, a polymeric nanocomposite antimicrobial coating and a silica sol-gel antimicrobial coating. The main characteristics of the two new coating systems will be: i) good adhesion with epoxy primer due to the grafting strategy showed in Figure 1 ii) durable antimicrobial properties due to the encapsulation of biocides, that will be incorporated in the two both polymeric and inorganic-organic coating systems.

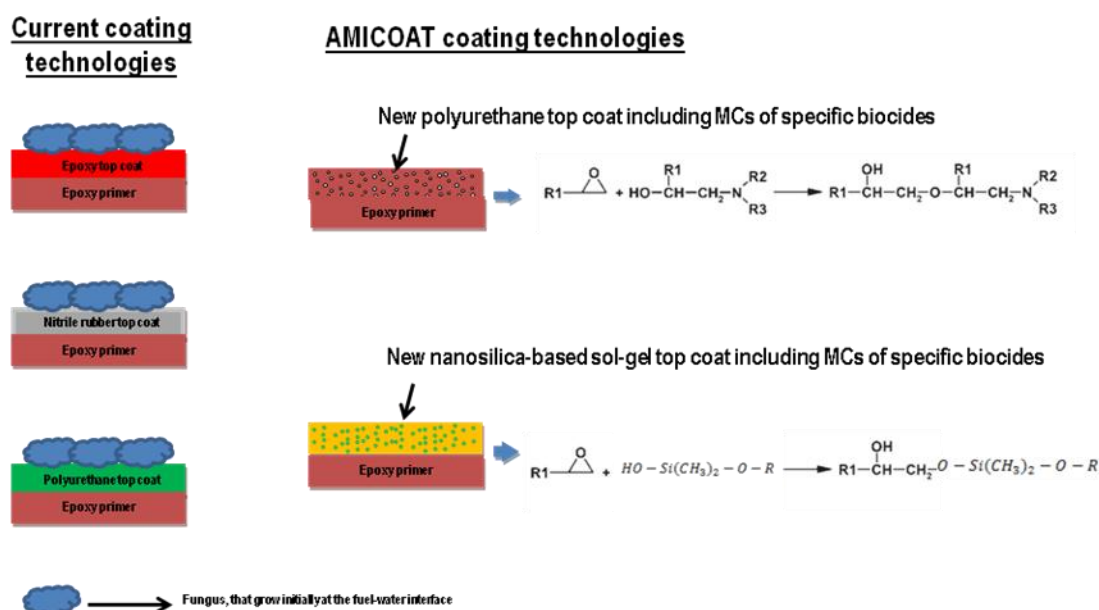


Figure 1. Project scheme