SPARTA

Composite materials applied to aeronautical structural parts manufacturing have multiple advantages such as optimum mechanical properties, weight reduction and therefore fuel consumption in comparison with metal materials. However, conventional composite materials such as thermosets are not environmentally efficient due to the recycling complexity which generates a large amount of waste at aircrafts end of life (EoL).

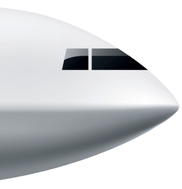
To meet this challenge, the aerospace industry is looking at recycling materials such as thermoplastic composites, which offer potential benefits, i.e: recyclable scrap and end of life products, welding and reforming capability and short processing cycles time in comparison with thermoset matrix.

In response to this necessity, the SPARTA project will focus on the development of a new recycling method for these thermoplastic composites (TPC) and obtaining high-quality parts for new applications within the aeronautic sector.

Compared to other mechanical recycling methods, SPARTA methodology will reduce the recycling processing time by 50%, and the energy consumption by at least 15%. Additionally, the reuse of the scrapped TPC will reduce the demand of virgin material, and consequently, the energy embodied reduction in virgin composite materials will imply a significant CO2 reduction (by 30%).

These key drivers are aligned with the Eco-Design objectives of the Clean Sky 2 programme.

As result of the SPARTA project, new high-quality products will be obtained made of recycled thermoplastic composites (rTPC) with a production cost by 15-20% lower than current mechanical recycling technology and material reprocessing.



For further information, please contact us:
https://project-sparta.eu/contact.php

PARTNERS

AIMPLAS PLASTICS TECHNOLOGY CENTRE

Tekniker MEMBER OF BASQUE RESEARCH & TECHNOLOGY ALLIANCE

The AIMPLAS (project coordinator) and TEKNIKER research centres are carrying out this project in collaboration with Topic Manager Royal Netherlands Aerospace Centre (NLR). The SPARTA Project is framed within the Airframe ITD of the CS2 Programme. Its results will contribute to Europe's strategic environmental and societal priorities while promoting the competitiveness and sustainable economic growth of the aeronautics industry.

This project was funded by the European Union

Clean Sky 2 JOINT UNDERTAKING

The SPARTA project has received funding from the Clean Sky Joint Undertaking under the European Union's Horizon 2020 research and innovation programme under grant agreement No 887073.