

LIFE BIOBCOMPO



lifebiobcompo.eu



PARTNERS



ENVIRONMENTAL PROBLEM TARGETED

Road vehicles are responsible of about 12% of total worldwide CO₂ emissions. On January 2007 the EC has proposed a reduction of transport sector related GHG by redefining the emission target of new automotive vehicles to 95 g of CO₂ per km from 2021.

PROJECT OBJECTIVES

The LIFE BIOBCOMPO project aims at reducing the environmental footprint of new vehicles through innovative low density thermoplastic composites derived from renewable (bio-based) sources.

The specific objectives of BIOBCOMPO are:

- 1 To develop at industrial level very low density thermoplastic materials which allows to save up to 8% in weight respect to traditional compounds by using natural fillers combined with traditional polymers and physical/chemical expanders.
- 2 To replace conventional mineral fibers (e.g. glass fibre) with bio-based fibers thus promoting the use of more sustainable resources.
- 3 The project aims to demonstrate these new technologies at industrial scale, aiming to overcome the problems related to industrialization of the newly proposed solutions.
- 4 The project team coordinated by SAPA, a leading company in production of injection moulded parts for the automotive industry, will improve the workability, aesthetics and mechanical properties of the new materials by fitting the final products to the requirements of the end-user. Here, FCA will play a major role by ensuring proper industrial vision and exploitation perspectives. In this respect, the objective of BIOBCOMPO is not only to reduce the vehicle emissions but also to make the production costs of such lightweight composites compatible with the client requirements and make sure that the new materials will be fully recyclable at the end of their life-cycle. This will be realized thanks to the cooperation of SOPHIA.

ACTIONS

- ✓ Optimization of those bio-composites formulations.
- ✓ Optimization of injection molding process.
- ✓ Development of a recycling process for the composite materials.
- ✓ Monitoring impacts, including environmental impact assessment through LCA methodology.
- ✓ Dissemination and networking.

CONTACTS

ALFONSO MOLARO
SAPA R&D Application Engineer
LIFE PROJECT Technical Manager
alfonso.molaro@sapagroup.it

LIGHTWEIGHT BIO-BASED POLYMER COMPOSITES FOR LOWER EMISSION VEHICLE

WITH THE CONTRIBUTION OF THE LIFE PROGRAMME OF THE EUROPEAN UNION LIFE17 CCM/PL/000049



EXPECTED RESULTS

BIOBCOMPO aims to produce and industrialize automotive components made of bio-based low density and low environmental impact polymer composite.

At least one of the bio-based composite formulation developed by SAPA in a previous research and development program (BIOPOLIS), will be optimized and industrialized for the production of automotive component.

The most promising bio-composite developed is a polypropylene (PP) matrix reinforced with 20% of vegetable fibers.

In BIOBCOMPO the bio-based formulations will be optimized, characterized and fully qualified to ensure their industrial exploitation. The moulding process will be optimized to ensure the best technical and economic performance.

The replacement of PP matrix reinforced with 20% of mineral GF (density of 1.04 g/cm³) with 20% of cellulose fibers CF (density of 0.96 g/cm³) will mean a weight saving of 8% that in turn will reflect into a proportional reduction of CO₂ emissions from the vehicle.

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