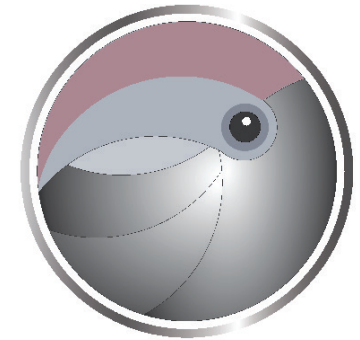




This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Grant Agreement number: 101007011



FLAMINGO

## PROJECT PARTNERS



## PROJECT COORDINATOR

MBN Nanomaterialia SPA  
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## CONTACT



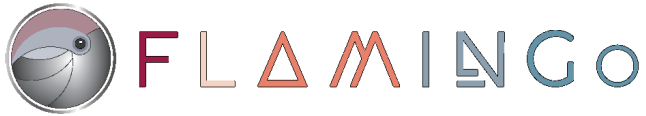
[www.flamingo-project.eu](http://www.flamingo-project.eu)  
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Fabrication of Lightweight Aluminium Metal Matrix nano-Composites and Validation in Green Vehicles

## PROJECT DETAILS

Start date:  
1 February 2021  
Duration: 4 years  
EU contribution:  
EUR 4.445.411





## WHAT IS THE FLAMINGO PROJECT?

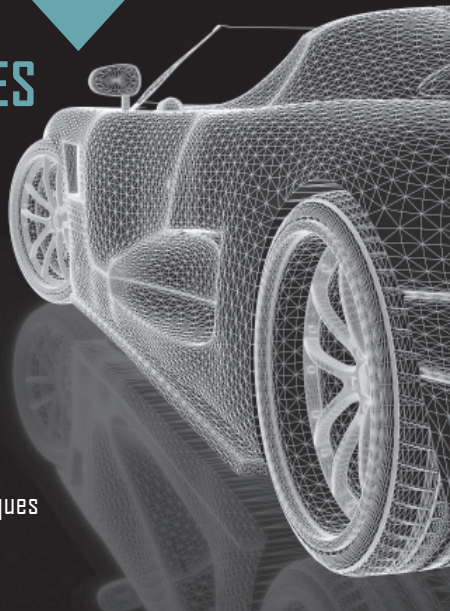
FLAMINGO is a H2020 project funded under the LC-GV-06-2020 topic, aiming to the development of high-performance lightweight Aluminium composite materials thanks to a novel metallurgical and forming combined approach for making automotive parts

The FLAMINGO Project aims to manufacture strengthened Aluminium Metal Matrix nano-Composites, Al-MMnC, with enhanced properties in terms of strength and stiffness, compared to the existed Al alloys used in Green Vehicles.

## WE ARE A STRONG TECHNOLOGY-BASED PROJECT!

### OUR TECHNOLOGIES ARE:

- Metal Alloying
- Topology optimisation
- Casting
- Extrusion
- Welding
- Non-Destructive Techniques
- Recycling



## OUR WORKPLAN

### 48 MONTHS

- WP1: Coordination and Management
- WP2: Specification, design and topology optimisation
- WP3: Production of Al-MMnCs
- WP4: Topology optimisation and process simulation
- WP5: Casting production methods
- WP6: Extrusion production methods
- WP7: Validation and demonstration of materials & components
- WP8: Circularity and environmental sustainability
- WP9: Dissemination, Exploitation and Communication activities

## IN COMPLIANCE WITH THE MARKET TREND...

The electric vehicles industry is following the continuously increasing market rates due to the environmental concerns, that lead to regulatory actions and initiatives by governments. Moreover, aluminium is used extensively in the automotive industry because of its lightweight properties. The FLAMINGO project aims to develop lightweight aluminium nano-composites for the Green Vehicles industry, establishing it as a market trend-oriented project.

## THE OBJECTIVES

- To produce Al-MMnC materials via solid-state mechanical alloying.
- To re-design automotive components and parts with structural integrity and reduced weight via topology optimisation.
- To optimise the casting methods for the production of Al-MMnC components.
- To optimise the extrusion process of Al-MMnC components.
- To optimise welding techniques and join Al-MMnC automotive parts.
- To prove the recyclability of the Al-MMnC components.
- To manufacture BIW, automotive components, using the Al-MMnCs in casting and extrusion pilot lines.
- To demonstrate in a real scale electric vehicle and to conduct quality control tests.

## THE IMPACT

- Vehicle weight reduction and improvement of existing aluminium properties.
- Short lead time, by deep integration of combined material modeling into the value chain of product development and manufacturing.
- Monitoring and control to ensure structural integrity and safety of the FLAMINGO components and their adoption in Utility Vehicles, Electric Vehicles, Aerospace.
- Compliance with circularity and zero-emission legislation.