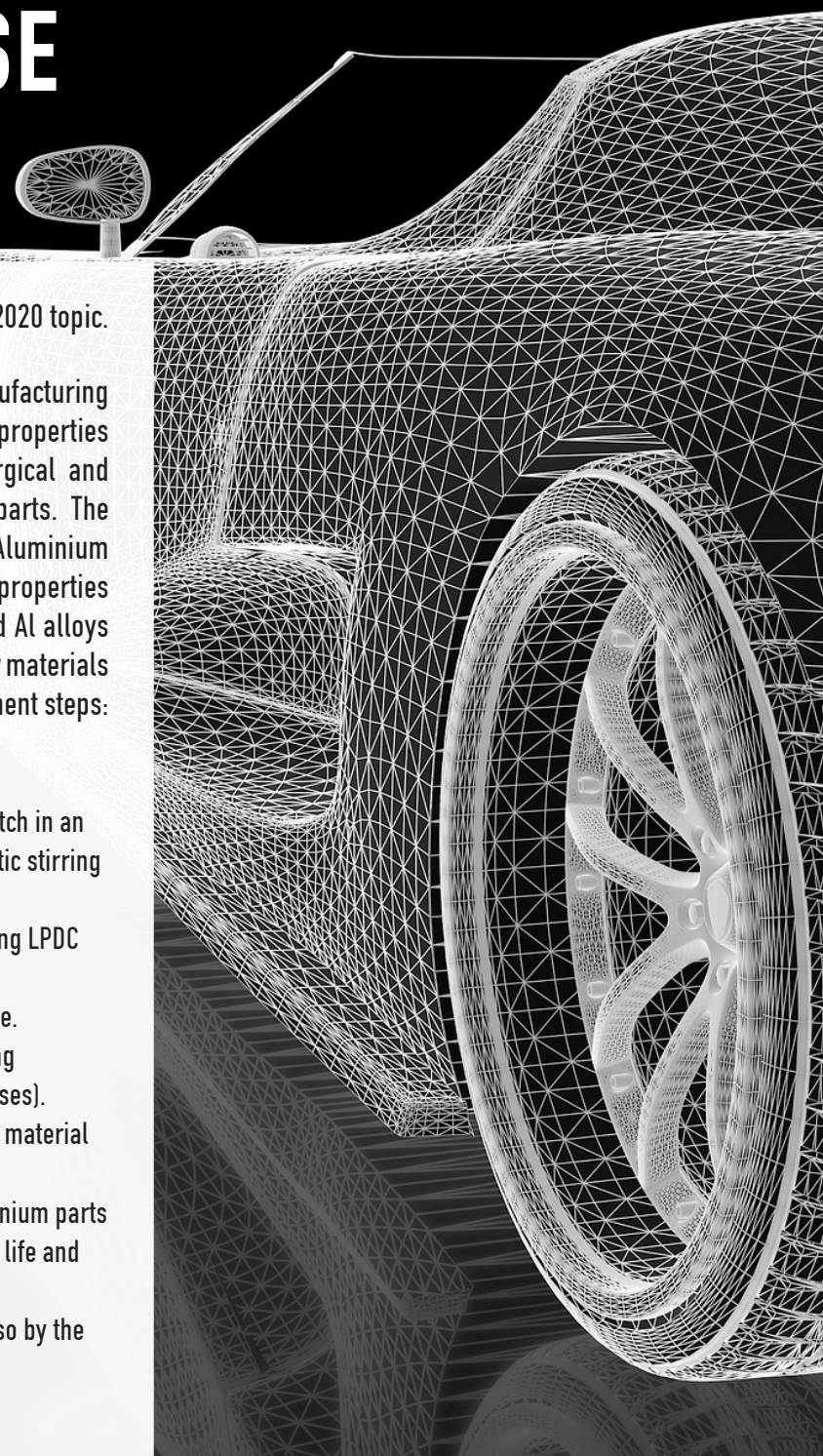
FLAMINGo

Fabrication of Lightweight Aluminium Metal matrix composites and validation In Green vehicles

1ST PRESS RELEASE
Kick-off meeting



FLAMINGo is a H2020 project funded under the LC-GV-06-2020 topic.

The FLAMINGo consortium will develop a novel industrial manufacturing process for the efficient production of high mechanical properties lightweight Aluminum composite material with metallurgical and forming combined approaches 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. To be effective in introducing the new materials in the market the project will target the following development steps:

- Production of Al-MMnC via solid state mechanical alloying.
- Casting of Al-MMnC components by inoculating the masterbatch in an Al melt, and homogenized by ultrasonication and electromagnetic stirring systems.
- Production of smaller components by Low Pressure Die Casting LPDC and bigger components by Green Sand Casting.
- Extrusion of cast billets for making profiles for the body frame.
- Weldability assessment of Al-MMnCs using a range of welding technologies (MIG, resistance spot and arc stud welding processes).
- Topology optimisation/process simulation enabling reduce of material per part without losing performances.
- Use of these components for substitution of steels and aluminium parts in electric vehicles, validation of components estimated service life and installation on vehicles.
- Validation of recycling of Al-MMnC components supported also by the use of secondary aluminium in the formulation.

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On the 18th of February 2021, the Kick-off meeting of the FLAMINGo H2020 Project was held remotely due to the COVID-19 Pandemic. The meeting was hosted by the Coordinator, MBN Nanomaterialia. Partners presented their role in the project, and analyzed their contribution to the Work Packages and Tasks of the project. In addition, the Project officer from the EC provided valuable advice to the Consortium related to the guidelines and procedures in a project management perspective. The next steps, within a six months plan, was also presented by the FLAMINGo consortium.

Project coordinator thoroughly presented WP1, related to the Coordination and Management followed by WP2 regarding the Specification and Design and Topology Optimization, presented by ALKE. WP3 of the FLAMINGo project is connected to the Production of Al-MMCs Masterbatches, led by MBN, and WP4 refers to the Topology Optimization and Process Simulation, undertaken by OGI. WP5 & WP6 cover the Casting Production and Extrusion Methods. WP7 refers to the Validation and Demonstration of materials and components presented by OGI and Brunel University, respectively. Circularity and Environmental Sustainability is connected to WP8, led by Factor CO_2, and Exploitation and Dissemination activities as well as Innovation and IPR management is connected to WP9, led by AXIA Innovation.

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