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H2020 REVOLUTION Project

Supporting the Electric Vehicle REVOLUTION through maximising EV Range and End-of-Life Vehicle Recovery through optimisation of recycled plastics and advanced light materials

The REVOLUTION project officially started in January 2021. A project kick-off meeting was hosted virtually on January 13th and 14th from Farplas's Fark Labs R&D Center facility due to the pandemic. Despite the restrictions the project goal and objectives were enthusiastically endorsed and plans for successful project delivery agreed. The coordinator of the project, Emre Elmas, has transmitted his enthusiasm to all the partners of the consortium and highlighted the positive impacts that the results of the REVOLUTION project will have in the automotive industry. In his own words:

"It is a pleasure to be a part of such a consortium with 14 valuable partners to develop the industry and novel technologies. The REVOLUTION project will have significant impacts on transformation of automotive industry in the aspect of efficient use of recycled materials, producing more sustainable, lighweighted and high-quality components, and maximising EV range."

(Emre Elmas (Farplas), Coordinator of REVOLUTION Project)

The kick-off meeting establishes the beginning of a joint effort between 14 organisations from 10 countries, which will join their expertise to bring a solution to the market that addresses the entire value chain in the production of automotive components. The international consortium includes: Farplas (Turkey), Türk Otomobil Fabrikası A.Ş (Turkey), Maier (Spain), LyondellBasell (Germany), Clariant (Germany), Altuglas® (France), Heathland (Netherlands), VTT (Finland), Norner (Norway), Fraunhofer- Gesellschaft (Germany), Iconiq Innovation (Ireland), Imec (Belgium), Idener R&D (Spain) and Centro Ricerche FIAT SCPA (Italy).

The EU aims to be climate-neutral by 2050, an economy with net-zero greenhouse gas emissions, and this objective is at the heart of the European Green Deal. That means that a fleet of entirely zero emission vehicles (ZEVs) will be necessary, and, therefore, increasing the efficiency of Electric Vehicles is a key step. At the same time, the new Circular Economy Action Plan, also part of the EU Green Deal, targets the entire life cycle of products, including their design, and promoting circular economy processes. . Within that context, the REVOLUTION project will significantly contribute to achieve those goals, but keeping quality and competitiveness of the EU automotive industry.

The REVOLUTION project will run for 3 years, until December 2023. The project will focus on the development of lightweight car components for enhancing the development of Electric Vehicles (EVs) and on increasing the circularity in the automotive industry by facilitating the recycling of polymeric materials of the car components and the use of recycled polymers in the conformation of those car components.

The aim of the REVOLUTION project is to innovate new solutions for lightweighting of vehicle components with circular economy principles and Artificial Intelligence

The REVOLUTION project focuses on overcoming the challenges hindering the use of recycled materials, proposing a disruptive innovation that will bring open-loop recycling to the forefront of automotive injection moulding. The project will use Artificial Intelligence to optimise the input of recycled materials and injection moulding process to deliver high-quality parts. Besides contributing to the adoption of circular economy principles in the automotive industry, the REVOLUTION project will work with specific materials that can be seen as lightweight alternatives to glass and mineral mineral-filled polymers. In some cases, even to metal. The REVOLUTION project will focus on achieving lightweight design by maximising recycled material and introducing materials that can offer ease of recyclability.

The REVOLUTION outcomes and developments will be specifically tested in 4 car components, including functional parts and aesthetic components. REVOLUTION will demonstrate its approach on 4 components. The REVOLUTION project's innovations within these use cases will include both effective solutions for reuse and recycling of all materials and components and to get affordable and sustainable weight reductions on those car components. In particular, the REVOLUTION project aims to reduce weight of

the components between 10% and 40% compared to current alternatives and to demonstrate that at least 80% of the components of the use cases can be recovered for recycling and/or reuse. Both are really ambitious goals which will push the EU towards its goals in terms of carbon emissions and circularity.

The REVOLUTION project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement 101006631.

Please, do not hesitate to contact us if you want to know more about the REVOLUTION Project.

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