

AURORA PROJECT

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“Upcycling polypropylene from urban recycling into a new generation of high-performance compounds through the development of an advanced production system”

Sirmax has secured **funding from the PNRR** for the innovative “Aurora” project.

This project aims to **upcycle and transform polypropylene from urban recycling into a new generation of high-performance compounds**, through the development of an advanced production system. “Aurora” has been developed with the consultancy of the **University of Padua, La Sapienza University of Rome, the Belgian Ghent University and Smart Mold**, the University of Padua’s spin-off company specializing in injection molding technology and research, in which Sirmax holds a 50% stake.

The project involves the production of a highly innovative **circular polypropylene compound** that is not currently available on the market, and which will be used to mold **car interior panels**. The material created will be more durable, chemically stable and characterized by reduced emissions, comparable to a panel made from virgin polypropylene. The algorithms and sensors implemented in the injection molding process will increase the production line’s efficiency by 30%, whilst also minimizing production waste.

The “Aurora” project will **last 36 months**; the laboratories and research centers of Sirmax and Sirmax New Life will be utilized, focusing on specific areas: the separation of municipal plastic waste, washing (deodorization, de-inking) and granulation, compounding with additives and fillers, and the injection molding of the final components.

With this project, Sirmax will bridge a gap in the current state of the art. Indeed, at present, the polypropylene recycling process does not allow for upcycling to the extent that it can be used in high value-added applications such as automotive interiors. With the proposed innovations, thanks to a fully mechanical recycling process, Sirmax aims to produce new compounds containing at least 30% recycled polypropylene from flexible films sourced from the separate collection of municipal waste, with high performance levels that can therefore be used in the injection molding of automotive interior components.

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