Clermont-Ferrand, 10 December 2025

Michelin ResiCare and its partners launch the DragonFly project to revolutionise industrial resins

Michelin ResiCare, together with its partners, has announced the launch of the DragonFly project, an ambitious initiative aimed at industrialising the production of an innovative bio-based molecule and accelerating the transition towards safer and more sustainable resins.

A project dedicated to innovation and sustainability

DragonFly builds on the BioImpulse project, which began in 2019 and enabled the development of a new range of non-toxic resins(1) using a bio-based molecule, designed to replace petro-based thermosetting adhesives. Building on progress already made (TRL 6 (2)), Michelin ResiCare is now taking the next step to assess the technical and economic viability of the process at industrial scale, while continuing to develop pathways using non-food substrates (2G).

Project objectives

- Create an industrial demonstrator with a capacity of 400 tonnes per year to validate large-scale biotechnological production.
- Develop a new strain with an enhanced metabolism and optimised enzymes.
- Implement innovative fermentation processes based on the use of non-food (2G) substrates.
- Optimise purification to maximise extraction yield and the purity of the target molecule.
- Valorise co-products, recycle water, and reduce energy consumption.
- Reduce greenhouse gas emissions by 60% (3) through eco-design of processes and eliminate SVHCs from resins, supported by a Life Cycle Assessment approach.

Leading scientific and industrial partners

The DragonFly project is led by Michelin ResiCare in collaboration with leading research organisations:

- **TBI, CRITT BIO and CRITT GPTE** (INSA and Toulouse INP),
- **TWB** (INRAE, INSA, CNRS),

who will be responsible for identifying and optimising innovative production pathways, designing microbial strains, and developing associated production and purification processes.

This alliance strengthens the French biotechnological ecosystem and contributes to the attractiveness of the region.

Key figures

- Project duration: 60 months
- Start date: January 2025

- Total project value: €44.7 million
- Grant and repayable advance funding: €19.7 million

A vision for the future
The DragonFly demonstrator will be installed on an industrial site in France, making use of existing equipment.

By 2029, the results from the demonstrator will enable the large-scale deployment of this technology, ensuring Michelin ResiCare has a secure and competitive supply of bio-based molecules. This breakthrough paves the way for the production and commercialisation of non-toxic, bio-based resins, meeting customer requirements while reducing costs.

DragonFly embodies the commitment of the Michelin Group and its partners to a more sustainable and safer industry.

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(1) Free from molecules meeting the criteria for SVHCs ("Substances of Very High Concern"), as currently defined by the ECHA (European Chemicals Agency).

(2) TRL ("Technical Readiness Level") 6: Technology demonstrated in a relevant environment.

(3) Compared to the equivalent petro-based molecule.

DragonFly is a government-funded project under the France 2030 plan, operated by ADEME (French Environment and Energy Management Agency).

The DragonFly team (2025) - Photo Michelin ResiCare.