

Title : Transparent communication : a case study of the LCA of the Pyrowave-Michelin project.

How to compare CR technologies on a common basis?

Chemical recycling, an emerging sector, completes the portfolio of plastic recycling solutions by keeping our precious resources in the manufacturing loop. Our microwave technology decomposes polystyrene (PS) waste by returning it to its original, virgin component, ready to be reintroduced in new packaging or products such as rubber, or to serve several industries such as electronics, health and construction.

We have partnered with the major industrial leader Michelin to deploy our first plant in France, which will be operational in 2024. This collaboration, which is a world first, aims to rapidly industrialize our technology and increase the rate of sustainable materials in Michelin tires, but also in other industries. This partnership is already making a difference. Within the framework of the PS25 Consortium, Michelin with its Pyrowave technology and major French players in the food industry such as Syndifrais, Citeo and Valorplast are joining forces to create a chemical recycling industry for polystyrene packaging in France. About twenty Pyrowave modules will be installed on the Michelin site, making the site's overall activities carbon neutral. These installations will allow the recycling of plastic waste such as yogurt pots, meat trays or sushi trays – traditionally hard-to-recycle packaging - in order to create recycled styrene that will be reused to create new packaging.

Based on the life cycle analysis carried out by the CIRAIG and peer reviewed by Quantis, this project will make it possible to produce recycled styrene with 2 to 4 times less greenhouse gas emissions than the virgin styrene production in France. This conference will present data based on a concrete project and contribute to the reflection of setting common boundaries for the life cycle analysis of the emerging sector of chemical recycling of plastic waste.