

Boulogne-Billancourt – 18 Nov. 2020

**MICHELIN AND PYROWAVE JOIN FORCES TO  
INDUSTRIALIZE AN INNOVATIVE PLASTIC WASTE  
RECYCLING TECHNOLOGY**

- Michelin Group and the Canadian firm Pyrowave join forces to accelerate time-to-market for an innovative plastic waste recycling technology.
- They agree to fast-track the process industrialization.
- The purpose of the technology is to increase the rate of sustainable materials not only in Michelin tires, but also in other industries.

**Pyrowave, a pioneer in the electrification of chemical processes and plastics recycling, and Michelin agree to industrialize an innovative plastic waste recycling technology**

The Canadian firm Pyrowave proudly announces a joint development agreement with the Michelin Group. Through the Pyrowave-developed technology, it is possible to generate recycled styrene from plastics found in packaging, insulation panels and/or household appliances. This recycled styrene is an important monomer\*: it is used in the production of polystyrene and synthetic rubber for tires and a large number of consumer products.

The scientific breakthrough behind Pyrowave technology helps recycle plastics using microwaves. Unlike current thermal processes, this unique technology enables the recycling of plastic waste into high-quality raw materials using electricity – the energy form currently providing the highest decarbonation potential. It also provides higher yields, while being more accurate than conventional technologies, to replace virgin raw materials from oil and gas.

The joint development agreement between Pyrowave and Michelin will result in the implementation of new value chains in the circular plastics economy. Redesigning new packaging or manufacturing new products from recycled plastics in the automotive, electronics or tire sectors will become possible.

\* **Monomer:** A Monomer is a molecule with natural or synthetic origins. By successive sequences with identical or different molecules, it generates a polymer structure.

## **An Industrial Demonstrator by 2023**

The two companies will work together in the coming months to fast-track the industrialization of Pyrowave technology with a view to a certification and commercial roll-out in international markets. The joint development agreement, which will ultimately account for an investment of more than €20 million, will combine Pyrowave's expertise with Michelin's industrial know-how.

In order to fast-track the validation of the technology and the certification of its products, Michelin's technical teams will work with their Pyrowave's counterparts to develop an industrial demonstrator, funded and operated by Michelin, by 2023. The technology will meet the highest standards in place within the Group in terms of safety, operation and performance.

## **Towards an Increase in the Rate of Sustainable Materials in Michelin Tires, but Also in Other Industries**

After a year of evaluation, Michelin was able to see the process in operation and test samples of recycled styrene in the composition of its tires. This polymer regeneration process is fully in line with Michelin Group's strategic vision and its product sustainability objectives.

"This partnership is an ultimate illustration of the Group's sustainable strategy. The purpose is to manufacture tires made of increasingly sustainable materials and to make these technologies available to innovative recycling channels. We believe in the potential of Pyrowave technology and share their vision for a more sustainable future through innovation", said Sonia Artinian-Fredou, Executive Vice President, Services & Solutions, High Tech Materials at the Michelin Group.

"Our partnership marks the beginning of the industrialization phase, drawing on the expertise and technical soundness of the Michelin Group. This strategic partnership reflects the attractiveness and potential of chemical process electrification, both environmentally and commercially, for world-scale players in the chain value. Through this partnership with Michelin, we will be in a position to develop a breakthrough technology with a view to transforming future materials in a sustainable way", said Pyrowave Co-Founder and Chief Executive Officer Jocelyn Doucet.

## **About Pyrowave**

Pyrowave is a pioneer in the electrification of chemical processes using microwaves with low-carbon footprint. Pyrowave is also a leader in the circular economy of plastics and microwave chemical recycling, to enable post-consumer and post-industrial plastics to be restored to new plastics, reinstating these resources to their full value. Its patented high-power microwave catalytic depolymerization technology platform is the most advanced worldwide and is now at the forefront of the new generation of plastics. In restoring plastics to their molecular state identical to virgin materials, Pyrowave technology enables infinite recycling of plastics and provides a circular economy solution to meet the global challenge of plastic recycling.

[www.pyrowave.com](http://www.pyrowave.com)



## About Michelin

Michelin is committed to the sustainable improvement of their customers' mobility. A leader in the mobility industry, Michelin designs, manufactures and distributes tires best suited for their needs and usage conditions, in addition to services and other solutions to improve transportation efficiency. Michelin also provides offerings to enable customers to experience unique moments during their trips and travels. In addition, Michelin has developed high-tech materials for a wide range of applications. Headquartered in Clermont-Ferrand, Michelin operates in 170 countries, with more than 127,000 people and 69 tire plants and an output of approximately 200 million tires in 2019.

[www.michelin.com](http://www.michelin.com)

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## To know more about the Pyrowave technology:

- [Images](#) of the Pyrowave technology – no logo
- [Images](#) of the Pyrowave technology – with logo
- [The 4 steps](#) of the treatment of polystyrene with the Pyrowave technology
- Pyrowave logo [animation](#)



## Pyrowave-Michelin partnership signature, Novembre 18, 2020



**Caption from left to right:**

Sonia Artinian-Fredou, Executive Vice President, Services & Solutions, High Tech Materials Member of the Group Executive Committee

Jocelyn Doucet, Co-Founder and Chief Executive Officer of Pyrowave

Eric Philippe Vinesse, Executive Vice President, Research & Development - Member of the Group Executive Committee

## Pyrowave equipment



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