

A new collaboration between academic research and business to create the rubber of the future

- Michelin, the CNRS, INSA Lyon, Lyon 1 University, and Jean Monnet University are inaugurating an associated research laboratory to conduct research on and develop next generation rubber.
- The goal is to develop new eco-designed, recyclable, and high-performance polymers that are less energy intensive to produce.
- This 10th collaboration between Michelin and the CNRS represents a new lever for accelerating innovation and developing next generation rubber for both tyres and other applications.

Michelin, the CNRS, INSA Lyon, Lyon 1 University, and Jean Monnet University will inaugurate PolMixLab on 22 April 2026, an associated research laboratory (LabCom) to invent the rubbers of the future. This new partnership seeks to accelerate research and innovation in creating polymer materials for multiple industrial applications. It relies on the recognized scientific and industrial expertise of the partners to balance performance, durability, and energy sobriety.

In a context marked by the ecological transition and heightened requirements for industrial performance, polymer materials such as elastomers represent a major avenue for research and development. Used in sectors as varied as automobiles, aeronautics, health, and construction, these materials must increasingly respond to imperatives of durability, recyclability, energy sobriety, and advanced functionalities. In light of these challenges, the CNRS, INSA Lyon, Lyon 1 University, and Jean Monnet University –via research teams from the Polymer Materials Engineering Laboratory– have joined forces with Michelin as part of a research project to develop new generation polymer materials.

Over the course of four years, academic and industrial scientists will work to push back the technological limits of polymer materials central to numerous critical industrial systems, doing so through three research focuses:

- 1) Reducing the quantity of energy needed to manufacture elastomer materials via digital simulation as well as a focus on the quality and homogeneity of resulting blends.
- 2) Obtaining new elastomer materials that surpass current performance limits thanks to innovative structures.
- 3) Increasing the environmental performance of elastomers by integrating short-loop recycling right from the polymer formulation phase.

This associated research laboratory combines the industrial expertise of Michelin with the scientific excellence of the Polymer Materials Engineering Laboratory, recognized on both the national and international level. It represents a structural initiative to develop solutions responding to contemporary industrial and environmental issues, such as reducing the carbon footprint for processes, lengthening material lifespan, and optimising their performance.

It is wholly in keeping with Michelin's historical expertise in materials science developed over more than 130 years, in addition to its unparalleled ability to combine chemistry, material transformation, composite design, and a firm grasp of uses, spanning from basic research to industrialisation.

The new rubbers developed will have varied and strategic applications in both mobility and other sectors such as medical, aeronautics, and high-performance industrial equipment.

PolMixLab is the 10th active associated research laboratory between the CNRS and Michelin.

"The CNRS is pleased with the creation of PolMixLab, a new associated research laboratory with Michelin, a leading partner with which it has a longstanding relation of trust since the 1990s, one that is structured by a framework-agreement renewed multiple times and nearly forty collaborations each year. This associated research laboratory, which also includes INSA Lyon, Lyon 1 University, and Jean Monnet University, marks a new stage in this cooperation by developing polymer materials that offer higher performance, and are more recyclable and sober in energy." declares Mehdi Gmar, the CNRS Chief Innovation Officer.

"With PolMixLab, Michelin is strengthening its ability to anticipate and accompany major industrial and environmental issues connected to materials. By combining our unparalleled expertise in materials science and polymer composites with the academic excellence of our partners, we strive to invent rubbers that offer higher performance, and are more durable and sober in energy. This research indeed includes the development of materials from biosourced resources, as well as control over material life cycle assessment, with a view to creating innovative solutions offering reduced environmental impact in the service of mobility, along with numerous industrial applications beyond tyres." adds Christophe Moriceau, VP Advanced Research for the Michelin Group.

"PolMixLab illustrates the capacity of Lyon 1 University to develop structural research partnerships where scientific excellence meets industrial and environmental issues. By mobilising our expertise in materials science alongside our academic partners and Michelin, we help develop innovative solutions for materials that offer higher performance and are more suitable for the uses of the future." enthuses Bruno Lina, the President of Lyon 1 University.

About the CNRS

A major player in basic research worldwide, the National Centre for Scientific Research (CNRS) is the only French organisation active in all scientific fields. Its unique position as a multi-specialist enables it to bring together all of the scientific disciplines in order to shed light on and understand the challenges of today's world, in connection with public and socio-

economic stakeholders. Together, the different sciences contribute to sustainable progress that benefits society as a whole.
www.cnrs.fr

About Michelin

Michelin is building a world-leading manufacturer of life-changing composites and experiences. Pioneering engineered materials for more than 130 years, Michelin is uniquely positioned to make decisive contributions to human progress and to a more sustainable world. Drawing on its deep know-how in polymer composites, Michelin is constantly innovating to manufacture high-quality tires and components for critical applications in demanding fields as varied as mobility, construction, aeronautics, low-carbon energies, and healthcare. The care placed in its products and deep customer knowledge inspire Michelin to offer the finest experiences. This spans from providing data- and AI-based connected solutions for professional fleets to recommending outstanding restaurants and hotels curated by the MICHELIN Guide. Based in Clermont-Ferrand, France, Michelin operates in 175 countries and employs 129,800 people.

About Lyon 1 University

The Lyon 1 University of Science, Technology, Health and Sport has more than 49,000 students and has been offering excellent training and cutting-edge research in an attractive environment for more than 50 years. The 5,000 staff members who make up the University work every day to provide a demanding educational program that is as close as possible to the reality of research, and is supported by 2,800 teacher-researchers. Its staff are also involved on a daily basis in developing high-quality research, carried out within 88 research units equipped with unique facilities. Lyon 1 University is also an innovative university that has seen the creation of nearly 30 start-ups since 2020. Research at Lyon 1 University is interdisciplinary and focused on the major societal challenges of our time, helping to advance science in France and internationally.

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