

## **Prometeon and the “Federico II” University of Naples launch EPIMETEO, a research project for developing more sustainable and efficient tyres**

**Developed in collaboration with the Italian Fund for Applied Sciences (FISA), the programme aims to develop a high-efficiency tyre prototype that utilises up to 65% of materials from sustainable sources**

**Professor Flavio Farroni (“Federico II” University of Naples/MegaRide) is the project’s Principal Investigator**

**Milan, 21 October 2026 - Prometeon Tyre Group**, a global tyre manufacturer serving the commercial, agricultural and OTR sectors, announces the launch of **EPIMETEO - Enhanced Paradigm in Innovative Materials and Engineering for Tires Energy Optimization**, a research and innovation project that focuses on developing a new generation of sustainable tyres for heavy-duty commercial vehicles.

The project, which involves the **Vehicle Dynamics** research group of the **Department of Industrial Engineering (DII) of the “Federico II” University of Naples**, aims to combine innovative materials, digital technologies and new design approaches to improve tyre energy efficiency, performance and sustainability. **Scientific responsibility for the project and its coordination** have been entrusted to the **Principal Investigator Flavio Farroni**, a lecturer in the university’s Department of Industrial Engineering and co-founder of MegaRide, a leading company in the modelling and simulation of tyre-vehicle-road interaction.

The initiative falls within the scope of the **Italian Fund for Applied Sciences (FISA)** promoted by the **Italian Ministry of University and Research**, a funding instrument supporting research programmes capable of turning scientific and technological results into practical applications for industry.

**Michela Caprio, Head of Materials & Compounding and Deputy Chief R&D Officer** at Prometeon, commented: *“EPIMETEO stems from our belief that sustainable innovation requires close collaboration between industry and scientific research. Together with the ‘Federico II’ University of Naples, we are working to develop new technological solutions that can improve the efficiency of heavy-duty vehicle tyres, addressing one of the industry’s most complex challenges: reducing energy consumption and emissions while maintaining high levels of safety, performance and durability. This project marks another step on our journey towards more efficient and sustainable mobility”.*

**Professor Flavio Farroni** added: *“Prometeon is a long-standing partner with whom we have been collaborating for over ten years and with whom, once again, we are perfectly in tune. EPIMETEO will focus on three scientific aspects: improving tyre contact with deformable surfaces, reducing energy consumption through lower rolling resistance, and limiting acoustic impact. Being selected under the highly competitive FISA calls, which require scientific and technical excellence and strong links with industry, is a source of great pride for us, as well as a responsibility in the use of the resources provided by the Ministry. Through this project, our research group aims to strengthen its role by combining technology transfer with basic and applied research”.*

## The sustainability challenge in road transport

The transport sector represents one of the major challenges of the global environmental transition. According to the Italian Ministry of Sustainable Infrastructure and Mobility, transport accounts for around **a quarter of Italy's total greenhouse gas emissions and more than a third of its CO<sub>2</sub> emissions**.

For commercial vehicle tyres, it is therefore essential to reduce energy consumption and CO<sub>2</sub> emissions in both electric and combustion-engine vehicles by improving rolling efficiency. This is one of the main technological challenges in tyre development: finding the right balance between low rolling resistance and high wear resistance.

**Tyre wear**, which contributes to microplastic pollution<sup>1</sup>, is another increasingly important and related issue. This area, too, is undergoing profound change, driven by the need to reduce consumption and emissions, increase energy efficiency and incorporate more sustainable materials throughout the product life cycle.

It is therefore essential to design and develop tyres that combine lower rolling resistance with greater durability, ensuring optimal performance, safety and efficiency throughout the product life cycle.

EPIMETEO, the research project promoted by Prometeon in collaboration with the "Federico II" University of Naples, addresses this challenge.

## A new paradigm for more sustainable tyres

EPIMETEO aims to develop a **tyre prototype** intended for research and technological validation rather than immediate commercialisation, designed to reduce the product's overall environmental impact throughout its entire life cycle.

One of the project's main objectives is to achieve a **rolling resistance of 3.6 kg/tonne**, corresponding to **Class A**, with expected benefits in terms of reduced energy consumption and CO<sub>2</sub> emissions associated with road transport.

The prototype will also incorporate **advanced sensor systems** to monitor parameters such as tyre pressure and temperature in real time, thereby optimising performance during use and helping to reduce fuel consumption and, consequently, CO<sub>2</sub> emissions, while promoting more even wear.

## Sustainable materials and digital design

Sustainability is one of the project's central pillars. The new tyre will be developed using **up to 65% renewable, recycled or tyre-derived waste materials**, through the study of new formulations and manufacturing processes capable of maintaining high standards of safety and performance.

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<sup>1</sup> JRC (Joint Research Centre), Contribution of Road Vehicle Tyre Wear to Microplastics and Ambient Air Pollution, 23 October 2023; Recital 20 of Regulation (EU) 2024/1257 (Euro 7)

EPIMETEO will adopt an advanced **virtual prototyping** approach that relies on mathematical and simulation models to replace experimental tests that tyres would otherwise undergo, in order to reduce the number of physical prototypes required during development and thereby cutting the time, costs and environmental impact associated with testing.

The university's research team will contribute to the development of predictive models aimed at optimising energy consumption, studying **energy loss through deformation (Strain Energy Loss)**, and analysing the viscoelastic properties of materials and tread design, with special emphasis also on noise reduction.

### **Research, innovation and technological expertise**

The models will be validated through a hybrid process combining **laboratory tests and road testing** on physical prototypes, with the aim of ensuring high levels of safety, reliability and long-term durability.

Indoor testing will take place at the **RACEARCH LAB** laboratories of the "Federico II" University's Department of Industrial Engineering and at Prometeon's **Innovation Center in Cinisello Balsamo (Milan)**, which will also conduct outdoor testing. The project will involve a multidisciplinary team of **engineers, chemists, testing technicians and test drivers**, with the aim of accelerating the development of technological solutions with a lower environmental impact.

Prometeon has an international network of **four Research and Development facilities** in Italy, Brazil, Turkey and Egypt, dedicated to developing products for the various global markets. The Cinisello Balsamo facility houses an important materials research area as well as a tyre performance testing area, and benefits from a **€7 million investment** allocated in 2024 to state-of-the-art equipment for its advanced chemical and physical laboratory.

### **Prometeon and the "Federico II" University of Naples team up for sustainable innovation**

The collaboration between Prometeon and the "Federico II" University of Naples is a concrete example of synergy between industry and scientific research, aimed at transforming technological expertise and academic knowledge into solutions applicable to industry.

Through EPIMETEO, Prometeon reaffirms its commitment to more sustainable mobility by combining industrial innovation, scientific research and a focus on reducing environmental impact.

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#### **PROMETEO TYRE GROUP**

Prometeon Tyre Group is the only tyre manufacturer entirely focused on the industrial (transport of goods and people), agricultural and OTR sectors. Prometeon offers a multi-brand portfolio that includes PROMETEO, PIRELLI, FORMULA, PHAROS and ANTEO among its leading brands. The Group operates four manufacturing facilities (two in Brazil, one in Egypt and one in Turkey) and four Research & Development centres (in Italy, Brazil, Turkey and Egypt). More than 7,500 people of around 40 nationalities work for the Group, which operates in all five continents.

**THE "FEDERICO II" UNIVERSITY OF NAPLES**

Modern, inclusive and international, the "Federico II" University of Naples has just celebrated its 802nd anniversary. The University operates across more than 30 locations, hosting 26 departments (12 of which have been recognised as Departments of Excellence), 4 Schools, 178 degree programmes, 80,000 students, 3,000 professors and 16 Academies. As a comprehensive university, it encompasses a wide range of disciplines, educating professionals in medicine, law, science, architecture, literature, philosophy, economics, physics, mathematics and engineering. The EPIMETEO project is led by the Department of Industrial Engineering, which is active in the fields of mobility, materials and technological innovation, contributing to interdisciplinary and applied research projects.

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**ELEONORA FRIGO**

Corporate Communications Manager  
Prometeon Tyre Group  
[eleonora.frigo@prometeon.com](mailto:eleonora.frigo@prometeon.com)

**MARIA ESPOSITO**

Press Office  
"Federico II" University of Naples  
[stampa@unina.it](mailto:stampa@unina.it)