



# Elastika

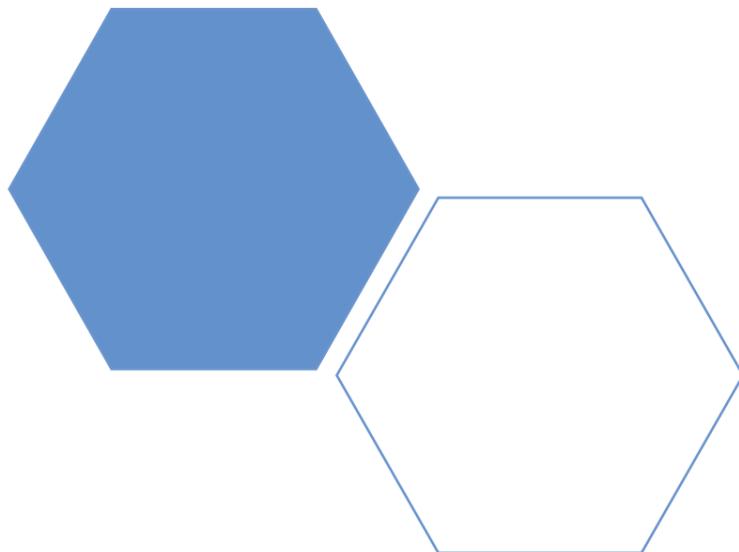
*By Avanzare*

The R&D unit specialized  
in rubber



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“We continue moving toward a future that demands high-performance materials, while improving the rubber industry in a sustainable and environmentally responsible way.” – Julio Gómez Córdón, PhD and CEO of AVANZARE GROUP.



# Innovating the future of rubber

At Grupo Avanzare, we have taken a firm and strategic step toward technological specialization with the creation of **Elastika by Avanzare**, a research, development, and innovation (R&D&I) unit exclusively focused on the rubber sector.

This project was born in response to the growing demands of a highly competitive, demanding, and constantly evolving global market.

At **Elastika by Avanzare**, we drive the evolution of rubber with customized, sustainable, and high-performance solutions. Furthermore, we believe that the rubber of the future is being built today, through science, innovation, and commitment.

Our purpose is clear: to develop and bring to market **new materials and technologies** that effectively meet the real needs of our clients and the challenges of an ever-changing industry. Our mission is to drive the development of applied solutions that turn today's challenges into opportunities for growth.



### Tailor-made product

We design specific solutions for each client, sector and application.



### Continuous improvement

We research, test and optimise to achieve the best result.



### Future vision

We research, test and optimise to achieve the best result.

# A multidisciplinary team

With a combined experience of **over 80 years** in the rubber industry, this team brings together scientific knowledge and applied innovation.

However, the most important part of **Elastika by Avanzare** is its entire technical team: highly qualified, multidisciplinary, and composed of the best specialists from Avanzare and Nasika, as well as researchers from the University of La Rioja.



"We're not satisfied with simply improving rubber—we aim to redefine its limits in an increasingly competitive industry."



**Elvira Villaro Ábalos, PhD**  
Chief Technology Officer (CTO)



## Most important projects

From additives for [high-performance applications](#) to alternatives with enhanced properties (thermal conductivity, flame retardancy, etc.), we work to deliver differentiated value and high-impact solutions in sectors such as automotive, construction, and energy.

### AlChemiSSts project



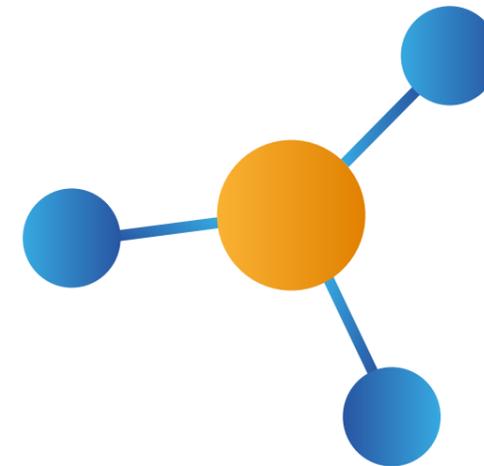
NASIKA, in its ongoing commitment to researching new solutions for rubber, has embarked on the European project AlChemiSSts, focused on the development of new safe and sustainable flame-retardant additives to replace materials classified as Substances of Very High Concern (SVHC) due to their harmful effects on human health and the environment.

The goal of the project is to develop safer alternatives to traditional flame retardants, especially those based on halogenated compounds. Although these have been widely used for their effectiveness and low cost, they pose serious drawbacks due to their high toxicity to human health and aquatic life, as well as their persistence in the environment, which can lead to water and soil contamination. The search for safer alternatives represents a major challenge for the flame retardant industry.

With this goal in mind, new additives will be developed for specific industrial sectors. Based on the tested flame retardants, the project will formulate and industrialize predispersed compounds derived from optimized blends of these additives, with the aim of using them in applications such as rubber for safety boots or insulating foams used in the construction sector.

The implementation of these new alternatives will not alter the production process of the corresponding materials, as these mixtures can be easily integrated into the conventional production machines used in industries such as footwear, construction, and automotive.

This allows for a broader implementation of the new technology, reaching end users more effectively.



Development of safe and sustainable flame retardants as an alternative to SVHC substances



## AD-GRHID project



AD-GRHID is a project formed by a consortium of companies under the Missions, Science, and Innovation program.

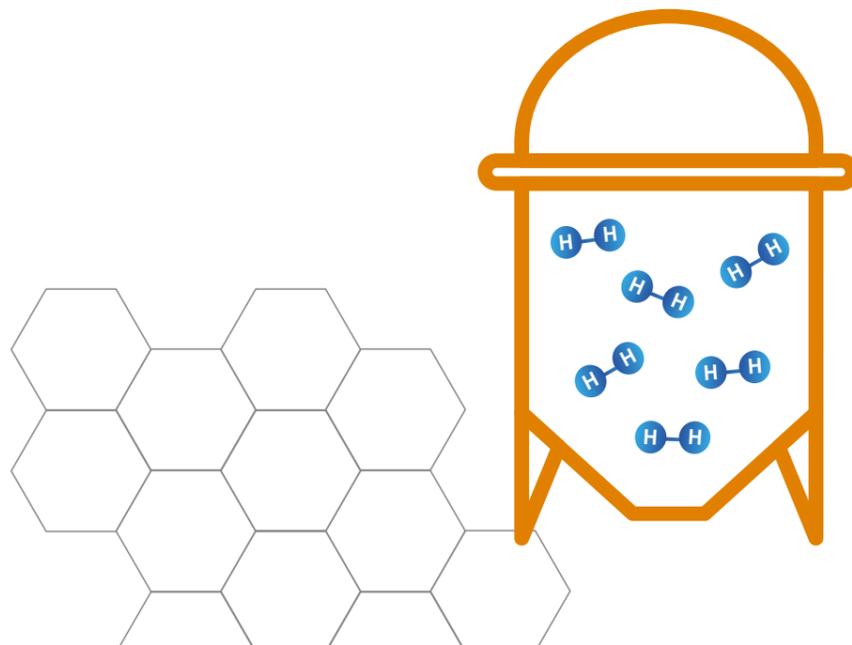
The objective is to develop an integrated management platform for AC/DC hybrid microgrids based on hydrogen, there by improving the integration of renewable energy into distribution networks. The project integrates two key technologies:

- **Hydrogen as an energy vector:** A hybrid system that enhances storage efficiency and autonomy.

- **Microgrids:** These group generation, storage, and load systems, improving the resilience and flexibility of the networks.

In this project, NASIKA is working on two lines of development:

1. Development of an elastomer-based material that acts as a hydrogen absorber and increases the storage capacity of H<sub>2</sub> gas in a tank of the same volume. A formulation of MOFs and carbon-based materials has been achieved, increasing gas storage by up to 20%.
2. Reduction of H<sub>2</sub> permeability in the tank wall (made of polymeric material through rotational molding), minimizing losses.



## Heating of rubber by the Joule effect

The Joule effect is the increase in temperature in conductive materials when electric current flows through them, caused by the movement of electrons.

Although typically associated with metals, it can also be applied to materials like rubber by adding graphene. In this way, conductive properties can be imparted to rubber components.

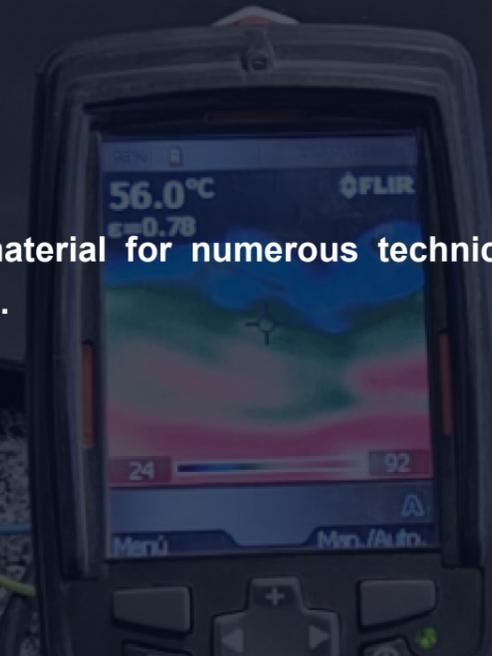
This property enables the development of applications such as heatable parts, radiant flooring, and anti-freezing systems.

## Rubber with high thermal dissipation

Rubber, although ideal for its properties, is an extremely thermally insulating material, which can reduce efficiency in systems that require heat transfer.

By adding materials such as graphene or graphite nanoplatelets, its thermal conductivity is improved, facilitating heat dissipation and enabling faster, more efficient, and more uniform vulcanization.

Rubber is an ideal material for numerous technical applications due to its exceptional properties.

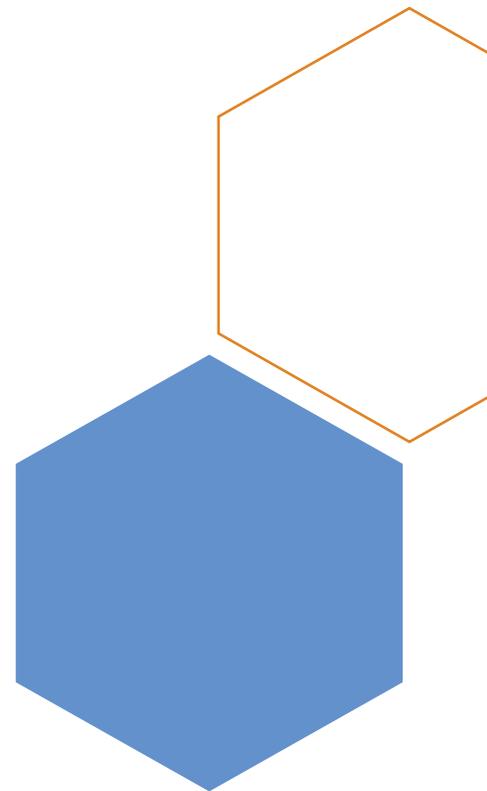


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