

CATCO2NVERS, A PROJECT THAT SEEKS TO REDUCE GREENHOUSE GASES IN THE BIO-BASED INDUSTRIES

- **FUNDITEC, ARTIFICIAL NATURE, CARTIF, CSIC, PERSEO BIOTECHNOLOGY AND SUSTAINABLE INNOVATIONS ARE THE SIX SPANISH PARTNERS OF CATCO2NVERS**
- **THE PROJECT HAS BEEN FINANCED WITH €6.6 MILLION FROM THE HORIZON 2020 RESEARCH AND INNOVATION PROGRAMME**

Madrid, May 27, 2021 - CATCO2NVERS kicks off, a new project funded within the framework of the European Union's Horizon 2020 research and innovation programme that seeks to create value-added chemical products from bio industrial CO₂ emissions that integrate catalytic technologies.

The main purpose of CATCO2NVERS is to reduce greenhouse gas (GHG) emissions from bio-based industries by developing five innovative and integrated technologies based on three catalytic processes (electrochemical, enzymatic and thermochemical). The objective of the project is to transform the residual CO₂ from industries into value-added chemical products: glyoxylic acid, lactic acid, methyl furan dicarboxylic ester, methyl esters of cyclic carbonated fatty acids and bio methanol, with application in the chemical and cosmetic industry and industries plastic.

FUNDITEC, Artificial Nature, CARTIF, CSIC, PERSEO Biotechnology and Sustainable Innovations are the six Spanish partners that are part of a consortium in which a total of fifteen partners from eight different European countries participate. All of them will work together for 48 months, helping to convert the captured CO₂ into value-added chemical products where they are produced and use them in a cycle close to production, instead of releasing CO₂ into the atmosphere.

CATCO2NVERS will process certain bio-based products replacing fossil material with zero or negative greenhouse gas emissions, which will help establish solid business models that involve all actors in the value chain and thus reduce environmental impacts and costs of production.

FUNDITEC is the technological centre in charge of coordinating the project, in addition to supervising the validation of technologies based on thermocatalytic processes and working on the development of an innovative technology to convert CO₂ into cyclic carbonates using fatty acid methyl esters as starting material. PERSEO Biotechnology will characterize and provide the partners with CO₂ for its recovery, coming from the alcoholic fermentation stage of its industrial process for the production of bioethanol from the organic fraction of urban solid waste.

CARTIF and CSIC will be in charge of the thermocatalytic conversion of CO₂ into methanol and furan dicarboxylic acid dimethyl ester, respectively, as well as the validation of value-added chemicals and technologies. For its part, Artificial Nature will assume the assessment of the life cycle and the tasks related to the cost of this cycle. Finally, Sustainable Innovations leads the exploitation and market research strategies, the development of e-learning materials and training programs, as well as the development and implementation of a communication and dissemination plan.

“At SUSTAINABLE INNOVATIONS we work on various research projects with the aim of improving the environment and guaranteeing the sustainability of resources. Belonging to a consortium like CATCO2NVERS allows us to advance in this strategy”- declared Jesús Serrano, Deputy General Manager of SUSTAINABLE INNOVATIONS.

In the words of Caterina Coll, CEO of PERSEO Biotechnology - "At PERSEO Biotechnology we have been working for several years on European projects that have allowed us to improve our processes for the recovery of solid urban waste into bioproducts, and therefore our competitiveness in the development of biorefineries. The development of CO₂ capture systems and generation of bio-based products from CATCO2NVERS will contribute to closing the cycle of our process to reach a biorefinery with zero emissions".

In summary, CATCO2NVERS will focus on reducing industrial CO₂ emissions, while exploring new ways to produce value-added products. To this end, a holistic approach will be used for the design and development of innovative catalytic technologies for the valorisation of CO₂ in the manufacture of different bio-based products, including monomers for the production of bioplastics, using CO₂ streams from biorefineries.

About CATCO2NVERS

Led by FUNDITEC, CATCO2NVERS is made up of Alchemia-nova, Artificial Nature, Ava Biochem, Avantium Chemicals BV, CARTIF, CSIC, Evyap, Hysytech, Johnson Matthey, Nova-Institute, PERSEO Biotechnology, Stichting Wageningen Research, Sustainable Innovations and the University of Twente.

The project has received funding of €6.6 million from the European Union's Horizon 2020 research and innovation program under grant agreement number 101000580. For their part, the Spanish partners will be financed with a total of €2.3 million.

About FUNDITEC

FUNDITEC is a private non-profit organization created in 2003, as an R+D+i Centre for two key sectors: Advanced Materials and Cybersecurity. Its mission is to offer applied research and technology services in the field of advanced materials and cybersecurity that can improve the profits and sustainability of its clients. It has a team, with more than 15 years of experience in technical execution and project management, made up of highly qualified engineers, chemists, doctors and scientists with extensive experience in the development of products, processes and prototypes.

FUNDITEC's capabilities within the Advanced Materials area cover lines of research such as: nanotechnology, coatings and resins, biomaterials, agri-food solutions, food technology, catalysis and photocatalysis processes, water treatment and waste recovery.

About Artificial Nature

DAN * NA (Artificial Nature S.L) is a bioengineering company dedicated to the development and production of biomaterials and bioplastics with high added value, for the microelectronics, regenerative biomedicine and sustainable agriculture sectors. Using bio-based materials as raw materials such as plant derivatives or organic waste. Through the combination of molecular technology, green chemistry and Artificial Intelligence, we bring to the market a highly efficient biobased material in energy consumption and CO₂eq emissions. DAN * NA, certified as an innovative SME by the Ministry of Science and Innovation, and with the environmental and social impact company seal by the SHIP2B foundation, manages its impact through its digital platform based on the control and management of the LCA and LCC. Offering the market, apart from its biomaterials, a personalized digitization service for the management of the LCA and LCC. DAN * NA's mission is to accelerate the world's transition to sustainable technology materials.

About CARTIF

CARTIF is a technology centre dedicated to research and development of R+D+i projects. Its main function is to generate technological knowledge and offer innovative solutions to companies, so that they can improve their processes and systems and, consequently, their final products and services. It is an innovative and horizontal centre, which covers a wide spectrum of scientific disciplines, which differentiates it from other technological centres of a more vertical and specialized nature. This allows it to meet the needs of companies from very diverse

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sectors, helping them improve their competitiveness and create new business opportunities, evolve and adapt to a constantly changing market. CARTIF maintains the same values and objectives with which it was born in 1994, the main one being to contribute to the development of its economic and social environment, through the use and promotion of technological innovation through research. Its research team, made up of more than 180 people, has the ability to anticipate the needs of society, the business world and academia.

About CSIC

The Higher Council for Scientific Research (CSIC, www.csic.es) is the largest public research institution in Spain, with around 11,000 employees, of which almost 6,000 are scientists. The CSIC is made up of 120 institutes distributed throughout the country distributed in three global areas: Life, Society and Matter and is the first institution in Spain in the generation of patents, to which more than 20% of the national scientific production is attributed. The research group in charge of the proposal, MatSusAppl, is focused on the preparation of materials with high technological impact for environmental applications, specifically focusing its research on the development of new materials with applications in heterogeneous catalysis, sensors, adsorption, and separation of gases.

About PERSEO Biotechnology

PERSEO Biotechnology was born as an engineering and biotechnology company specialized in the development of processes for the conversion of the organic fraction of waste into new value-added products: biofuels, bioenergy and bioproducts, using the company's own patented technology and know-how. In addition, PERSEO offers technological collaboration services and expansion of its own or co-developed processes, as well as complementary services to evaluate the viability and scalability of biotechnological processes. PERSEO has a demonstration plant with a processing capacity of 25 T / day of organic waste, as well as the necessary infrastructures to control the process. PERSEO Biotechnology's mission is to contribute to the circular economy through the technological transfer of the PERSEO Bioethanol® process, promoting and enhancing the implementation of industrial waste management processes that reduce its environmental impact.

About Sustainable Innovations

SUSTAINABLE INNOVATIONS is a Spanish consultancy company that provides innovative services to a wide range of sectors throughout Europe: biobased industry, renewable energy, or advanced materials, among others. The capabilities that SUSTAINABLE INNOVATIONS offers are structured around three main pillars that serve as a bridge between the conception of innovative ideas and the market: Innovation management, Market Uptake and Capacity Building. Our main asset is the highly qualified team of engineers, environmentalists, communication experts and business strategists who work with us.