VIBES Green Chemistry Recycling Solution

CONTACT US: info@vibesproject.eu

VISIT: www.vibesproject.eu

PRESS RELEASE

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VIBES: A Green Chemistry Recycling Solution

The use of composite materials has gained interest in recent years due to their properties such as high mechanical strength, good chemical resistance and long durability, light weight and corrosion resistance. Their properties make them very attractive for advanced engineering applications in many sectors, such as aeronautics, automotive, marine and naval, construction, energy, sports, electronics.

However, the end-of-life of composite materials poses a technical difficulty due to their inherent complexity, generating plastic waste. Industrial needs for high performance materials have increased the use of composite materials, so there is a need to develop and ensure a systematic circular ecosystem for these materials as a priority in Europe, in order to be able to contribute to the EU's 2050 long-term strategy for a climate-neutral Europe.

The VIBES project presents an innovative solution to improve the recyclability of thermoset composite materials through an innovative, greener, cost-efficient, and non-toxic recycling technology. It is a research & innovation project, started in June 2021, with a duration of 48 months and a budget of almost 5.3 million Euros. VIBES is funded by Bio-Based Industries Joint Undertaking (BBI – JU) under the European Union's Framework Programme for Research and Innovation, Horizon 2020.

The VIBES approach focuses on the controlled separation and recovery of composite material components, by means of developing customised biobased bonding materials (BBM). The thermoset composite materials with intrinsic recycling properties will be validated for optimum performance / cost ratio, in three high-demand industrial sectors: aeronautical, construction and naval industries. The green recycling technology will be designed and implemented at pilot semi-industrial environment to separate and valorise the recovered composite components as new feedstocks for the development of new products.

The improved properties of the developed thermoset composite materials and the recycling technology will lead to reduced environmental impact by reducing the use of primary materials and landfilling, combined with higher cost-effectiveness and increased profitability. Value-added products will be produced for the circular economy, by returning products obtained from the recycling process to the market. Benefits will be significant in terms of growth, increasing jobs, turnover and investments with forward-looking policies for climate change.

Furthermore, the demonstration and training activities of VIBES will provide new knowledge and skills to researchers, industrial professionals and students in materials science, engineering and chemical fields, for new arising demand in technical jobs.

BBI JU

Bio-based Industries Consortium

Horizon 2020 European Union Funding for Research & Innovation

VIBES has received funding from the Bio-Based Industries Joint Undertaking under European Union's Horizon 2020 research and innovation programme under grant agreement No 101023190.

The VIBES consortium aims at achieving better results through collaborative innovation, contributing to competitiveness and helping meet social challenges. Led by AITIIP (Spain), it is comprised of 13 partners across 7 EU member states (Spain, France, Ireland, Germany, Belgium, Italy, Greece): 3 Research & Technology Organisations and 1 University (AITIIP, LEITAT, DITF, University of Limerick), 7 Small and Medium-sized Enterprises (Specific Polymers, BCIRCULAR, FLIPS & DOBBELS, IDEC, Juno Composites, ARCHA, Q-PLAN International), 1 Large Company (ACCIONA Construccion), and 1 Public Body (Teruel International Airport PLATA).

You can keep up to date with VIBES progress and developments, by visiting the project's website (www.vibesproject.eu), subscribing to the VIBES newsletter and following VIBES on social media.

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