

Companies in the plastics sector are working to improve recycling of multilayer food packaging to obtain high-quality recycled polyamides

The RECIPAM project, funded by the Valencian Innovation Agency (AVI), is developing new recycling methods for multilayer food packaging that improve the quality of the resulting materials so they can be incorporated into high value-added applications.

The development of a cost-effective process and high-quality materials will lead to the creation of a recycling chain for this kind of packaging through the involvement and collaboration of the entire value chain.

Valencia (12 November 2019). Multilayer plastic structures provide the packaging sector with many advantages, including weight reduction (with the subsequent economic and environmental saving in manufacture and transport); improving their properties by providing a combination of functions such as sealability, structural and thermal stability, and different printing options; and, of course, barrier properties, which help preserve foodstuffs to ensure safety and avoid waste. Despite these benefits, multilayer plastic packaging waste represents a serious environmental concern because it is not always managed in the best possible way, and incineration and landfill rates are still very high.

Separating the different layers calls for new technologies and recycling processes that raise the price of the entire process and make it much less technically and economically feasible. Another difficulty is the current low demand for recycled plastics, which account for only 6% of total plastics demand in Europe and are often limited to low added-value applications.

To address this challenge, AIMPLAS, the Plastics Technology Centre, is leading the RECIPAM project, which is funded by the Valencian Innovation Agency (AVI). The participants include the companies ACTECO, UBE, FAPERIN and REPOL, with the collaboration of the Valencian Association of Plastics Entrepreneurs (AVEP). The project aims to develop new recycling processes to obtain polyamides (PA) from multilayer packaging waste for foodstuffs. A delamination process will be included to separate the polyamides, as well as a compatibilization process to reprocess them with other plastic materials in order to obtain compounds of sufficient quality.

The goal is to create a multilayer packaging recycling chain by involving and collaborating with the entire value chain through the industrial implementation of the recycling

processes developed and following the validation of the technical performance and quality of the recycled polyamides by using them instead of virgin plastics in high value-added applications, including those involving food contact.

The project will help address the challenges defined by the strategic innovation committees specializing in the circular economy in the Valencian Community. It will help recover waste more efficiently, either by improving the separation of multilayer plastics or their recovery through mechanical recycling and pyrolysis. It will also make it possible to supply more sustainable consumer goods by using recycled material in the manufacture of new high-quality products.

About AIMPLAS

AIMPLAS is involved in this project and carries out research on this topic to fulfil its commitment to environmental sustainability. As a result, companies in the sector will be able to integrate circular economy criteria into their business models and turn the legislative changes affecting them into opportunities to improve efficiency and profitability and reduce their environmental impact. AIMPLAS also does research in areas such as recycling, biodegradable materials and products, and the use of biomass and CO₂.



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