

ACTIVE PACKAGING MADE FROM AGRI-FOOD WASTE



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ABSTRACT

The *Carbonaceous Materials and Environment* research group at the University of Alicante has developed an innovative active packaging that makes use of waste from the food industry. These containers are made from activated carbon obtained from waste and have an excellent capacity to adsorb ethylene. Therefore, it is an ideal solution to delay the ripening of fruit and vegetables, making use of agri-food waste.

This technology is very interesting for agri-food companies that want to reuse their waste and generate products with high added value.

Companies interested in acquiring this technology for commercial exploitation are sought.

ADVANTAGES AND INNOVATIVE ASPECTS

MAIN ADVANTAGES OF THE TECHNOLOGY

This technology has multiple advantages:

- Possibility of reusing waste that has no value and that generates an economic and environmental cost.
- The active packaging can adsorb the ethylene gas generated by food and which causes the acceleration of the degradation process.
- Increases the shelf life of food.
- Contributes to the overall reduction of food waste.
- The new process has a series of technical advantages over its predecessors, such as:
 - o More efficient method in which moisture content is not a drawback.
 - o Higher yields
 - o Shorter processing times
 - o Lower temperatures required for processing.
 - o More stable material
 - o Lower packaging saturation speed
 - o System integrated into the packaging itself
 - o Use of more sustainable chemical reagents.
 - o Possibility of being reused in successive processes.
 - o Lower replacement frequency due to high porosity
- Around 40% of the waste can be transformed into activated carbon and incorporated into the active packaging

INNOVATIVE ASPECTS

The most innovative aspect of this technology is the possibility of taking advantage of a waste that generates an economic and environmental cost, and turning it into an element of high added value that can be used by the food industry itself to produce food packaging. In addition, this packaging allows the shelf life of food to be increased, thus providing a new competitive element to the company and its products.

All this is achieved with a more efficient process that is easier to implement in the company's own facility.

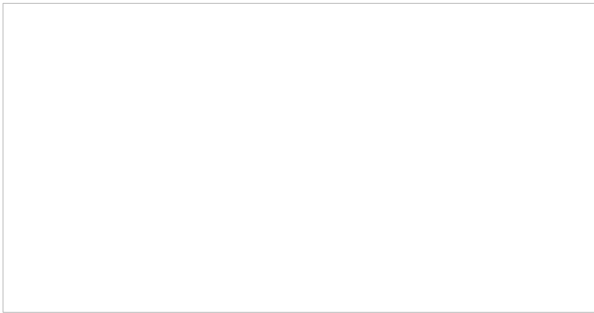


Fig 2. Packaging generated with new technology

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MARKET APPLICATIONS

This technology is particularly interesting for the **agri-food sector** and, in particular, for fruit and **vegetable companies**.

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COLLABORATION SOUGHT

Companies interested in acquiring this technology for **commercial exploitation** are sought through:

- Knowledge licensing agreements.
- R+D (technical cooperation) project agreement to undertake technology-related projects.

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