INNOVATIVE PROCEDURE TO OBTAIN CUTIN USING MICROWAVES

PATENTED TECHNOLOGY

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ABSTRACT

The research group on **Polymers and Nanomaterials Analysis** has developed a new procedure for obtaining cutin from plant waste by microwave heating.

The new procedure has multiple advantages, such as higher efficiency, lower number of steps and a lower cost than existing procedures. In addition, it allows to obtain cutin with outstanding thermal stability.

The procedure is ideal for the recovery of a large number of vegetable wastes and can be applied by different industries.

ADVANTAGES AND INNOVATIVE ASPECTS

ADVANTAGES OF TECHNOLOGY

The advantages of the technology are as follows:

- Obtaining cutin at a lower cost by presenting lower energy requirements.
- Elimination of the previous degreasing stage, common in this type of extraction procedures, which generated a significant temporary and energy cost.
- Lower solvent consumption than in other procedures.
- Greater efficiency and protection of thermolabile components.
- High potential for scaling up the process at an industrial level.
- Development of a more sustainable process by allowing the use of organic acids such as citric acid.
- Obtaining cutin of a higher quality by presenting higher thermal stability.
- It facilitates the recovery of a large amount of vegetable waste.

INNOVATIVE ASPECTS OF TECHNOLOGY

The main novelty of the technology is the use of microwave heating to obtain cutin. The procedure allows to obtain a higher quality cutin with a more efficient, faster and more sustainable process.

This facilitates the exploitation of a wide variety of agri-food waste since it allows to obtain various substances of high value that can again be implemented by the industry.

MARKET APPLICATIONS

This technology is very useful for the recovery of waste from the agri-food industry. It is therefore of interest to a wide range of companies.

It is interesting for agricultural companies and food producers that generate a high volume of vegetable waste. It is also interesting for waste

management companies. Finally, it is also interesting for chemical companies specialized in the extraction of chemical compounds such as cutin, antioxidants and water-soluble proteins.

COLLABORATION SOUGHT

We are looking for companies interested in acquiring this technology for **commercial exploitation** through:

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