

## NEW PROCEDURE FOR BIODIESEL PRODUCTION THROUGH HETEROGENEOUS CATALYSIS

### Description:

Biodiesel production plants use the conventional process through homogeneous catalysis where the catalyst is an alkaline hydroxide or methoxide dissolved in the methanol itself. This discontinuous process has some drawbacks, therefore, for some years now, research has been carried out on the development of solid catalysts that allow this process to be carried out through heterogeneous catalysis, simplifying the catalyst separation and washing phases, among other advantages. Thus, the present invention proposes a heterogeneous process for obtaining biofuels, particularly biodiesel, by catalytic transesterification of vegetable or animal oils or fats, with low molecular weight alcohols and under mild conditions of temperature and atmospheric pressure. For this, a metal zincate, particularly of an alkaline earth metal or a divalent transition metal, is used as a precursor of active basic solid catalysts. Thermal activation of the metal zincate used as precursor can be carried out in a wide range of temperatures, although a temperature of 400 ° C is sufficient to obtain active catalysts.

### Keywords:

[Biodiesel](#), [Biofuels](#), [Chemistry](#)

### Sectors:

[Engineering](#), [Chemistry](#)

### Areas:

[Synthesis and procedures](#), [Chemistry](#)



### Advantages:

The present invention has numerous advantages, among which are: • Higher reaction speed of the process compared to other solid catalysts • The decomposition or activation temperature of the catalyst is lower than that of other basic solid catalysts • Solid catalyst is reusable • The precursor is stable in air • Large volumes of aqueous effluents derived from intense washing are avoided, as these are not so necessary • Simplicity, reproducibility and easy scaling of the synthesis

### Uses and Applications:

This technology has its application in biofuel production processes, and more specifically, biodiesel.

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