
Objectives

The importance of fatty acids and their derivatives has attracted the scientific interest for the last years. Our interest is mainly focused in the obtaining of poly-unsaturated fatty acids in a catalytic dehydrogenating system, if possible to reach ω -3 compounds.

Due to the scarcity of such studies, the achieving of this goal was only possible after accomplishing several intermediary steps. Now then, a thermal stability study was initially performed due to the sensitive behaviour of fatty acids under thermal conditions. The setting-up either of the continuous reactor or the analytical system were strongly conditioned by the headlines marked by the results of the thermal study, and both became another goal of this work.

The search of active catalysts in the dehydrogenation of fatty acids ethyl esters (FAEE) turned out to be an interesting new challenge. The commonly accepted catalytic methodology includes the structural characterization of heterogeneous catalysts as a key objective of any scientific study involving activity and selectivity tests. This powerful tool allows the scientific correlation between the catalytic behaviour and the structure of the catalytic materials and their subsequent improvements.

The next objective was the identification and study of the reaction products and the proposal of an obtaining mechanism. The reactivity of FAEE towards different compounds, and specifically those coming from the dehydrogenation reaction (including the ω -3 tri-unsaturated FAEE), became an important objective of this work.