
Abstract

The omega-3-like compounds have acquired a special interest in the last years due to their important benefits that bring to humans an omega-3 containing diet. They represent a human energy source which needs to be supplied, since our organism is not able to synthesize them. Nature offers different omega-3 sources, such as fish and linseed oil.

The dehydrogenation of omega-6-like compounds, such as ethyl linoleate, may give place to these interesting compounds. The obtaining of such compounds by chemical catalytic reaction is an innovative alternative. It is worth pointing out the large number of research studies which refer to this reaction. However, they do not use catalysts, but determined enzymes with desaturation activity.

Then, the synthesis of these compounds by a chemical way appears as a challenge, mainly because of the bibliographic scarcity concerning different aspects of this study to face up the different aspects of such study. Thus, an important part of this work centred on developing a suitable methodology to study the catalytic activity of different catalysts, and on establishing a robust analytic part.

Another part of this research work was the proper evaluation of the catalytic behaviour of the different carbons and graphite, and their characterization, in order to conclude, if possible, a relation between the activity and the chemical and structural catalyst properties. Analogously, the influence into catalytic activity of active carbon modifications has been also studied.

Finally, it is important to mention that the obtaining of tri-unsaturated FAEE has been achieved by another path, alternative to the separation methods proposed and described in the bibliography.