

## Transesterification of Jojoba Oil Wax Using Microwave Technique

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**Abstract :** Jojoba oil-wax is extracted from the seeds of the jojoba (*Simmondsia chinensis* Link Schneider), a perennial shrub that grows in semi-desert areas in Egypt and in some parts of the world. The main uses of jojoba oil wax are in the cosmetics and pharmaceutical industry, but new uses could arise related to the search of new energetic crops. This paper summarizes a process to convert the jojoba oil wax to biodiesel by transesterification with ethanol and a series of aliphatic alcohols using a more economic and energy saving method in a domestic microwave. The effect of time and power of the microwave on the extent of the transesterification using ethanol and other aliphatic alcohols has been studied. The separation of the alkyl esters from the fatty alcohols rich fraction has been done in a single crystallization step at low temperature ( $-18^{\circ}\text{C}$ ) from low boiling point petroleum ether. Gas chromatography has been used to follow up the transesterification process. All products have been characterized by spectral analysis.

**Keywords :** jojoba oil, transesterification, microwave, gas chromatography jojoba esters, jojoba alcohol

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