

Organic Waste Valorization for Biodiesel Production: Chemical and Biological Approach

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Abstract : This work will be conducted within the framework of the environmental sustainable development. It involves waste recovering into biodiesel fuel. Low cost feedstocks such as waste of frying oil and animal fats have been utilized to replace refined vegetable oil for biodiesel production. Biodiesel which refers to fatty acid methyl esters (FAME) was carried out by both chemical and enzymatic reaction of transesterification. In order to compare the two studied reactions the obtained biodiesel was characterized by determining its esters content and its fuel properties according to the European standard EN 14214. It was noted that the chemical method gave the product with the best physical property. But the biological one was found more effective for obtaining important ester content. Thus it would be interesting to optimize the enzymatic pathway of production of biodiesel to obtain a better property of biodiesel.

Keywords : biodiesel, fatty acid methyl esters, transesterification, waste frying oil, waste beef fat

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