**Transesterification of sunflower oil using heterogeneous catalyst derived from date seeds of South Algeria**


## ABSTRACT

Date Seeds (DS) were transformed into catalyst by calcining them at various temperatures. The produced catalyst was fully characterized by SEM, XRF, and BET analyses. The basicity of the catalyst was determined using CO2-TPD technique. The catalytic efficiency of the prepared catalyst was tested in the transesterification of sunflower oil with methanol. The effect of calcination temperature on the yield of Fatty Acid Methyl Ester (FAME) was investigated. In addition the transesterification process was optimised. In this study, the effect of FFA (Free Fatty Acid) on FAME yield was also investigated. The results show that the produced catalyst from date seeds is a good catalyst for biodiesel production reaction. The maximum biodiesel yield reached about 96.7% under the optimal conditions.



**Keyword:** Biodiesel; Transesterification; Vegetable oil; Heterogeneous catalyst; Date seeds