

# Transforming Low-cost Waste Experiment Gloves to Proper Catalyst for Biodiesel Production.

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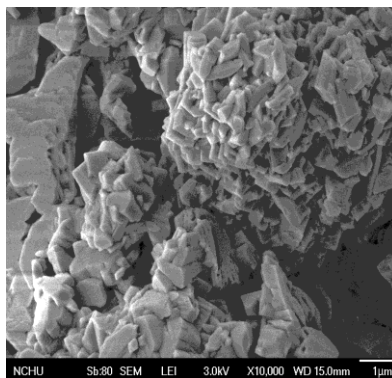
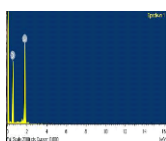
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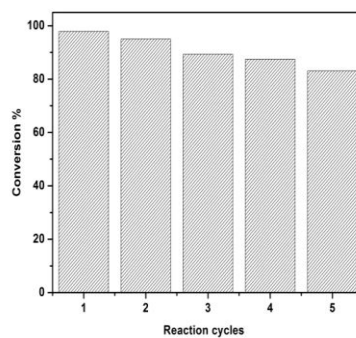
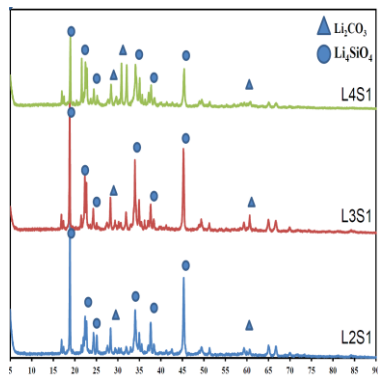
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Reusing waste products is one goal of environmental sustainability and has become an option to add value to producers. SiO<sub>2</sub> is obtained after the calcinations of waste experiment gloves above 900 °C and then thermal activation with Li<sub>2</sub>CO<sub>3</sub> to prepare the base catalysts for the transesterification of soybean oil. The prepared waste experiment glove catalysts are characterized by X-ray diffraction (XRD), and the Hammett indicator is used for obtaining their physical and chemical properties. The effects of thermal activation with Li<sub>2</sub>CO<sub>3</sub> amount, alcohol/oil ratio (mol/mol), and catalyst amount (wt % of oil) on the activity of waste experiment glove catalysts are also investigated. Transesterification with heating shows the FAME conversion 96.7% with 1 wt % waste experiment gloves and Li<sub>2</sub>CO<sub>3</sub> being calcined at 800°C for four hours and with the oil/methanol molar ratio 1:36 for 3 hour. The catalysts are characterized using XRD, SEM-EDS, BET, and TGA tests.

**Keywords :** Waste experiments glove, Biodiesel, Transesterification, Solid catalyst





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