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Synthesis and characterization of Calcium oxide as catalyst for biodiesel production

The catalyzer for biodiesel production in this work was prepared from cockle shell. The cockle shell was heated in the air at different temperature from 200 to 1300 C for 4 h. The cockle shell before and after heated was characterized by X-ray diffraction (XRD) and Fourier transform infrared spectroscopy (FTIR). Nuclear magnetic resonance spectroscopy (NMR) was used to determine yield of biodiesel from cockle catalyze. The results shown that the natural phase of cockle shell was aragonite phase and changed to calcite phase after heated at 400 C. The calcite phase of cockle shell was completely transformed to calcium oxide (CaO) after heated at 900 C. The yield of biodiesel from CaO from cockle shell after heated at 1100 to 1300 C had higher than other were compered. The results from this research indicated that the CaO from cockle shell could be used as a catalyst for biodiesel production.

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