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Intensification of ultrasound assisted esterification of karanja oil for production of biodiesel with optimization using response surface methodology

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Research highlights:

- Intensification of esterification of free fatty acid using ultrasound
- Optimization of operating parameters using statistical analysis
- Comparison of ultrasonic reactors and scale up aspects
- Comparison of different process approaches on biodiesel yield
- Maximum yield of about 90% obtained under optimized processing

Abstract:

Intensification of acid catalyzed esterification of karanja oil using an ultrasound assisted approach was investigated with sulphuric acid as catalyst. Pretreated oil was also utilized further for biodiesel production via alkali catalyzed transesterification reaction. Response Surface Methodology (RSM) was employed to optimize the operating parameters in case of

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