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Biodiesel production from used cooking oil using green solid catalyst derived from calcined fusion waste chicken and fish bones

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Highlights

- Waste chicken and fish bone were utilized for biodiesel production as solid catalyst.
- RSM was implemented to optimize the transesterification process.
- The prepared catalyst was reusable without significant loss in its activity.
- Maximum 89.5% yield at 1.98%w/v catalyst and alcohol/oil ratio of 10:1 at 65 °C in 1.54 h.

Abstract

This paper evaluates the feasibility of using fusion waste chicken and fish bones as the reusable and low cost solid catalyst for synthesis of biodiesel from used cooking oil via two-step