Review Form 1.6

Journal Name:	**Journal of Energy Research and Reviews**
Manuscript Number:	**Ms_JENRR_89970**
Title of the Manuscript:	**CENTRAL COMPOSITE DESIGN OF BIODIESEL PRODUCTION FROM WASTE COOKING OIL USING TYMPANOTONUS FUSCATUS (PERIWINKLE) SHELLS AS CATALYST**
Type of the Article	**Original Research Article**

General guideline for Peer Review process:

This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lack of Novelty'**, provided the manuscript is scientifically robust and technically sound.
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PART 1: Review Comments

	Reviewer's comment	**Author's comment** *(if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)*
Compulsory REVISION comments	**Abstract** This section needs significant improvement. An abstract should state the problem statement, the needs for a better solution and therefore the objectives of the present study, significant results, conclusion and recommendation for future studies. Avoid extensive mention of methodology. Results were merely stated in the abstract without highlighting the significance (for instance, did the utilization of RSM improved the yield of biodiesel compared to OFAT optimization?). What are the values of ANOVA that make the model significant? The novelty of study was highlighted. Briefly state the characteristics of the biodiesel that makes it suitable for actual use. Tympanotonus Fuscatus should be in italic. Please check for similar errors in the manuscript. Arrange keywords following alphabetical order and omit ANOVA and metal oxides from the list. **Introduction** (a) Why chose WCO? State the statistics of WCO production and elaborate more on WCO. Please use the references below: - Maegala, N. M., Anupriya, S., Hazwan, A. H., Suhaila, Y. N., & Hasdianty, A. (2020, July). Conversion of waste cooking oil to glycerol by halal microbial lipase. In *IOP Conference Series: Earth and Environmental Science* (Vol. 505, No. 1, p. 012056). IOP Publishing. - Bhatia, S. K., Gurav, R., Choi, T. R., Kim, H. J., Yang, S. Y., Song, H. S., ... & Yang, Y. H. (2020). Conversion of waste cooking oil into biodiesel using heterogenous catalyst derived from cork biochar. *Bioresource technology*, *302*, 122872. (b) What are the unique characteristics of WTFS that prompts its use as the catalyst for WCO conversion? What are the advantages of WTFS compared to commonly used biocatalysts such as from microorganisms and commercially used porcine lipase. (c) State the benefits of using RSM as an optimization tool. **Methodology** (a) State the model and manufacturer of equipment such as oven, furnace, etc (b) Was one-factor-at-a-time optimization (OFAT) carried out to determine to prevalent factors affecting the yield of biodiesel? If not, why factors namely 1 – 10 %wt. in relation to the acid), reaction temperature (30 ^{o}C – 90 ^{o}C) and reaction time (30 – 180 minutes) were selected in this study? **Results and discussion** (a) 3.2: Please remove the theory on how FTIR operates. (b) Please explain why 900 °C and 2 hours were selected for calcination. (c) It would be nice to see the characteristics comparison between the properties of biodiesel produced in this study with the standard for validity purposes when FTIR, XRD and XRF were used. Furthermore, this part needs more discussion and comparison with previously published papers to show WTFS can serve as a better catalyst for WCO conversion. (d) Is the presence of CaO, MgO and Al_2O_3 advantageous? Please explain. (e) No comparison with previous literatures were carried out for RSM discussion. This is necessary to emphasize the superiority of the present study. (f) *However, this is an indication that the biodiesel is more unstable compared with petroleum diesel* Please explain how the biodiesel from this study can be of practical application if it is unstable. **Conclusion** This section should highlight the novelty of the study and state the recommendations for future study. **References** (a) The format should be consistent with the requirement by the journal. (b) Most references are outdated. Please cite references dating 5 years and below. This important to show the relevancy of the present study.	
Minor REVISION comments	**Not Applicable**	
Optional/General comments	**English language polishing is needed since some grammar errors were detected.**	

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PART 2:

	Reviewer's comment	**Author's comment** *(if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)*
Are there ethical issues in this manuscript?	*(If yes, Kindly please write down the ethical issues here in details)*	

Reviewer Details:

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