



Hasanudin Hasanudin &lt;hasanudin@mipa.unsri.ac.id&gt;

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## Reviewer Invitation for Biodiesel derived from waste cooking oil in blends with Ultra-Low Sulphur Diesel and its spray macroscopic properties under split injection strategy - TBFU-2022-0193

1 pesan

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**Biofuels** <em@editorialmanager.com>

9 Agustus 2022 pukul 02.32

Balas Ke: Biofuels &lt;tbfu-peerreview@journals.tandf.co.uk&gt;

Kepada: Hasanudin Hasanudin &lt;hasanudin@mipa.unsri.ac.id&gt;

Aug 08, 2022

**Dear Dr. Hasanudin,**

You have been invited to review a manuscript for Biofuels.

I would be grateful if you would review a paper entitled "Biodiesel derived from waste cooking oil in blends with Ultra-Low Sulphur Diesel and its spray macroscopic properties under split injection strategy" for this journal.

This is the abstract:

This article evaluates the effect of Ultra-Low Sulphur Diesel (ULSD)-Waste Cooking Oil Biodiesel (WCO) blends (B5, B10, B20) on the fuel spray macroscopic properties such as penetration, angle, and area when a split injection strategy is used. The spray macroscopic parameters were measured in a constant volume chamber under non-reactive and evaporative conditions using an injection and back pressure of 120 MPa and 5 MPa, respectively. WCO biodiesel was produced at a semi-industrial scale using real waste cooking oil collected in Mexico City. It was observed that the increase of density and viscosity directly influences spray tip penetration, whereas surface tension affects spray angle. The values of spray penetration and spray area of all fuels during the second injection were higher than those of the first injection. Accordingly, the first injection event provokes an improvement mixing process of the second injection event in all cases. The values of spray penetration and area corresponding to B10 and B20 were higher than those of B5 and ULSD in both injection events at all times. Therefore, the split injection could be an effective strategy to improve the mixing process of biodiesel blends to optimize emissions and engine performance.

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The manuscript reference is TBFU-2022-0193.

If possible, I would appreciate receiving your review in 14 days. You may submit your comments online at the above URL. There you will find spaces for confidential comments to the editor, comments for the author and a report form to be completed.

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Marc A. Rosen, PhD  
Editor-in-Chief

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Hasanudin Hasanudin &lt;hasanudin@mipa.unsri.ac.id&gt;

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## Thank you for agreeing to review - TBFU-2022-0193

1 pesan

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**Biofuels** <em@editorialmanager.com>

9 Agustus 2022 pukul 03.42

Balas Ke: Biofuels <tbfu-peerreview@journals.tandf.co.uk>

Kepada: Hasanudin Hasanudin <hasanudin@mipa.unsri.ac.id>

Aug 08, 2022

Dear Dr. Hasanudin,

Thank you for agreeing to review manuscript TBFU-2022-0193 for Biofuels.

To download the paper now, please click this link: <https://www.editorialmanager.com/tbfu/l.asp?i=118852&I=QYBF2CE5> \*

If possible, I would appreciate receiving your review by Aug 22, 2022.

You may submit your comments online at <https://www.editorialmanager.com/tbfu/>. Your User Name is hasanudin and your password can be set at this link: <https://www.editorialmanager.com/tbfu/l.asp?i=118853&I=JEPC8BFU>.

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With kind regards

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## TBFU-2022-0193

### "Biodiesel derived from waste cooking oil in blends with Ultra-Low Sulphur Diesel and its spray macroscopic properties under split injection strategy"

#### Original Submission

#### Hasanudin Hasanudin (Reviewer 2)

<b>Reviewer Recommendation Term:</b>	Major Revision
<b>Custom Review Question(s):</b>	<b>Response</b>
As a thank you and to acknowledge the contribution of our reviewers, the journal may publish a list of the names of those who have reviewed at the end of the year. This will not be linked to any specific paper and will only be done if the list of reviewers is long enough to protect the anonymity of the review process for individual papers. If you would prefer for your name <b>not to be included</b> in a published list of reviewers, please indicate this below.	Include my name
If anyone else was involved in writing this report, for example a student or a colleague, and they agree to be recognised for this work please provide their name and email address in the free text box below.	
Would you be willing to review a revision of this manuscript?	<b>Yes:</b> There are several suggestions given in this article for further confirmation
Is there a financial or other conflict of interest between your work and that of the authors?	No
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<b>Comments to Editor:</b>	
I am very honored to be able to contribute to reviewing articles that will be published in your reputable journal. Please be invited back to review articles that will be published in your journal in the future.	

**Comments to Author:**

1. In the biodiesel production procedure section, the author does not explain in detail the ratio of used cooking oil to methanol. It should be explained in detail so that other researchers who will conduct similar studies will be able to compare the results of their research with this study.
2. When viewed from the feedstock used is WCO which contains about 3% FFA, then the catalyst used greatly affects the product, while in this study it has not been explained the type of catalyst used.
3. The results of the research in the chemical reaction section, this article states: "For the five batches produced, with a content of methyl esters for each batch was greater than 96.5%w, which was monitored by infrared spectroscopy". The author has not explained where the 96.5% value can be obtained, the author should explain the calculation of the 96.5% value obtained.
4. Identification of the FAME formed using <sup>1</sup>H-NMR without the <sup>1</sup>H-NMR spectrum of WCO feed before the reaction was carried out. So it is difficult to identify the success of the esterification process of WCO into FAME. author Can refer to the article: "Pertanika Journal Science & Technology 30 (1): 377 - 395 (2022)", the article describes the formation of FAME from fatty and fatty acid feeds.

<b>Transfer Authorization</b>	<b>Response</b>
If this submission is transferred to another publication, do we have your consent to include your identifying information?	Yes
If this submission is transferred to another publication, do we have your consent to include your review?	Yes
If this submission is transferred to another publication with "Open Peer Review", do we have your consent to publish your review in a pre-publication history?	Yes

Close



Hasanudin Hasanudin &lt;hasanudin@mipa.unsri.ac.id&gt;

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## Thank you for the review of TBFU-2022-0193

1 pesan

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20 Agustus 2022 pukul 07.02

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Kepada: Hasanudin Hasanudin <hasanudin@mipa.unsri.ac.id>

Aug 19, 2022

Ref.: Ms. No. TBFU-2022-0193

Biodiesel derived from waste cooking oil in blends with Ultra-Low Sulphur Diesel and its spray macroscopic properties under split injection strategy  
Biofuels

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**A decision has been made on TBFU-2022-0193**

1 pesan

**Biofuels** <em@editorialmanager.com>

22 Agustus 2022 pukul 10.43

Balas Ke: Biofuels &lt;tbfu-peerreview@journals.tandf.co.uk&gt;

Kepada: Hasanudin Hasanudin &lt;hasanudin@mipa.unsri.ac.id&gt;

Aug 21, 2022

Ref.: Ms. No. TBFU-2022-0193

Biodiesel derived from waste cooking oil in blends with Ultra-Low Sulphur Diesel and its spray macroscopic properties under split injection strategy  
Biofuels

Dear Dr. Hasanudin,

A decision of Major Revision has been made on Biodiesel derived from waste cooking oil in blends with Ultra-Low Sulphur Diesel and its spray macroscopic properties under split injection strategy, the manuscript that you recently reviewed for Biofuels.

Thank-you for taking the time to review this manuscript. A copy of the decision letter can be found below.

You can also access your review comments and the decision letter by logging onto the Editorial Manager as a Reviewer.

To: \*\*\*\*\*

From: "Biofuels" [TBFU-peerreview@journals.tandf.co.uk](mailto:tbfu-peerreview@journals.tandf.co.uk)

Subject: 223355996 (Biofuels) A revise decision has been made on your submission

Aug 21, 2022

Ref: TBFU-2022-0193

223355996

Biodiesel derived from waste cooking oil in blends with Ultra-Low Sulphur Diesel and its spray macroscopic properties under split injection strategy  
Biofuels

Dear \*\*\*\*\* ,

Reviewers have now commented on your paper. You will see that they are advising that you revise your manuscript. If you are prepared to undertake the work required, I would be pleased to review a revision.

For your guidance, reviewers' comments are appended below.

Your revision is due by Sep 20, 2022.

In accordance with our format-free submission policy, an editable version of the article must be supplied at the revision stage. Please submit your revised manuscript files in an editable file format.

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- Briefly explain at the end of the anonymous version of the manuscript how you addressed the review comments, on a point by point basis. For review comments that you feel should not be incorporated into the paper, or with which you disagree, please provide your reasoning.

Yours sincerely

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Editor-in-Chief  
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Comments from the Editors and Reviewers:

Reviewer #1: The manuscript discusses an important topic. However, there are few issues that are to be addressed by the authors:

- \* The abstract needs to be improved. The author should follow the pattern of abstract composition: [problem definition] -> [concept] -> [action] -> [results] -> [significance].
- \* The research gap is not clear. The authors should clearly state the research gap and significance of the study in the introduction section.
- \* The literature review is not comprehensive. I suggest to present the literature review in more elaborative way and incorporating more recent studies.
- \* The authors need to critically present their findings in the discussion section. Perhaps, few comparative analysis with similar studies could be suitable. I strongly suggest to go through few relevant papers indexed in Scopus or Web of Science.

Reviewer #2: 1. In the biodiesel production procedure section, the author does not explain in detail the ratio of used cooking oil to methanol. It should be explained in detail so that other researchers who will conduct similar studies will be able to compare the results of their research with this study.  
2. When viewed from the feedstock used is WCO which contains about 3% FFA, then the catalyst used greatly affects the product, while in this study it has not been explained the type of catalyst used.  
3. The results of the research in the chemical reaction section, this article states: "For the five batches produced, with a content of methyl esters for each batch was greater than 96.5%w, which was monitored by infrared spectroscopy". The author has not explained where the 96.5% value can be obtained, the author should explain the calculation of the 96.5% value obtained.  
4. Identification of the FAME formed using <sup>1</sup>H-NMR without the <sup>1</sup>H-NMR spectrum of WCO feed before the reaction was carried out. So it is difficult to identify the success of the esterification process of WCO into FAME. author Can refer to the article: "Pertanika Journal Science & Technology 30 (1): 377 - 395 (2022)", the article describes the formation of FAME from fatty and fatty acid feeds.



Best Regards,

Aaishweryaa Gopikrisner

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## Thank you for the review of TBFU-2022-0193R1

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**Biofuels** <em@editorialmanager.com>

3 Oktober 2022 pukul 05.16

Balas Ke: Biofuels <tbfu-peerreview@journals.tandf.co.uk>

Kepada: Hasanudin Hasanudin <hasanudin@mipa.unsri.ac.id>

Oct 02, 2022

Ref.: Ms. No. TBFU-2022-0193R1

Biodiesel derived from waste cooking oil in blends with Ultra-Low Sulphur Diesel and its spray macroscopic properties under split injection strategy  
Biofuels

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Research Article

# Biodiesel derived from waste cooking oil in blends with ultra-low sulphur diesel and its spray macroscopic properties under split injection strategy

Violeta Y. Mena-Cervantes  , Simón Martínez-Martínez , Oscar A. de la Garza, Raúl Hernández-Altamirano , Miguel García-Yera & Miguel F. Altamirano-Muratalla

Received 03 Aug 2022, Accepted 06 Oct 2022, Published online: 19 Oct 2022

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## Abstract

There is a significant interest to evaluate alternative injection strategies in order to improve the performance of biofuels and its blends in internal combustion engines as a way to decarbonize the transport sector. particularly in

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high potency demand niche. Biodiesel is the renewable analogue for petroleum diesel but the performance assessment of its blends from related to their spray macroscopical properties is scarce in the literature. This article evaluates the effect of Waste Cooking Oil Biodiesel (WCO) produced at semi-industrial scale in blends (B05, B10, B20) with commercial Ultra Low Sulphur Diesel (ULSD) on the fuel spray macroscopic properties such as penetration, angle, and area when a split injection strategy is used in a constant volume chamber under non-reactive and evaporative conditions using an injection and back pressure of 120 MPa and 5 MPa, respectively. These results were analysed in conjunction with relevant physicochemical properties of the fuels to identify the optimum diesel-WCO biodiesel blend, that could be implemented in a conventional diesel engine. It was observed that the increase of density and viscosity directly influences spray tip penetration, whereas surface tension affects spray angle. The values of spray penetration and spray area of all fuels during the second injection were higher than those of the first injection. Accordingly, the first injection event provokes an improvement mixing process of the second injection event in all cases. The values of spray penetration and area corresponding to B10 and B20 were higher than those of B5 and ULSD in both injection events at all times. Therefore, the split injection could be an effective strategy to improve the mixing process of biodiesel blends as well as the efficiency and emission performance in conventional diesel engines.

**Q Keywords:** [biodiesel blends](#) [WCO](#) [split injection](#) [diesel](#) [spray properties](#)

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## Aknowledgements

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injection strategies on the injection process in a diesel common-rail system, and project (2). influence of multiple injection strategies on the injection process using direct-acting piezoelectric and solenoid diesel injectors), and UANL-PAICYT (grant number: 570-IT-2022). We give special acknowledgments to the Laboratorio Nacional de Desarrollo y Aseguramiento de la Calidad de Biocombustibles (LaNDACBio) and Laboratory for Research and Innovation in Energy Technology (LIITE).

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## Disclosure statement

No potential conflict of interest was reported by the authors.

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